# INTERNATIONAL STANDARD

ISO 14584

Second edition 2011-03-15

# Hexalobular socket raised countersunk head screws

Vis à métaux à tête fraisée bombée à six lobes internes



Reference number ISO 14584:2011(E)

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#### **Foreword**

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ISO 14584 was prepared by Technical Committee ISO/TC 2, Fasteners, Subcommittee SC 10, Product standards for fasteners.

This second edition cancels and replaces the first edition (ISO 14584:2001), of which it constitutes a minor revision.

#### Hexalobular socket raised countersunk head screws

#### 1 Scope

This International Standard specifies the characteristics of hexalobular socket raised countersunk head screws of product grade A, and with thread sizes from M2 up to and including M10.

If, in special cases, specifications other than those listed in this International Standard are required, they can be selected from existing International Standards, for example ISO 261, ISO 888, ISO 898-1, ISO 965-2, ISO 3506-1 and ISO 4759-1.

#### 2 Normative references

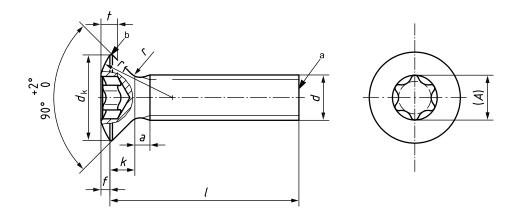
The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

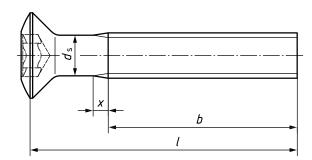
- ISO 225, Fasteners Bolts, screws, studs and nuts Symbols and descriptions of dimensions
- ISO 261, ISO general-purpose metric screw threads General plan
- ISO 898-1, Mechanical properties of fasteners made of carbon steel and alloy steel Part 1: Bolts, screws and studs with specified property classes Coarse thread and fine pitch thread
- ISO 965-2, ISO general purpose metric screw threads Tolerances Part 2: Limits of sizes for general purpose external and internal screw threads Medium quality
- ISO 3269, Fasteners Acceptance inspection
- ISO 3506-1, Mechanical properties of corrosion-resistant stainless steel fasteners Part 1: Bolts, screws and studs
- ISO 4042, Fasteners Electroplated coatings
- ISO 4759-1, Tolerances for fasteners Part 1: Bolts, screws, studs and nuts Product grades A, B and C
- ISO 6157-1, Fasteners Surface discontinuities Part 1: Bolts, screws and studs for general requirements
- ISO 7721, Countersunk head screws Head configuration and gauging
- ISO 8839, Mechanical properties of fasteners Bolts, screws, studs and nuts made of non-ferrous metals
- ISO 8992, Fasteners General requirements for bolts, screws, studs and nuts
- ISO 10664, Hexalobular internal driving feature for bolts and screws
- ISO 10683, Fasteners Non-electrolytically applied zinc flake coatings

#### **Dimensions**

See Figure 1 and Table 1.

Symbols and descriptions of dimensions are specified in ISO 225.





The shank diameter,  $d_{\rm S}$ , is approximately equal to the pitch diameter or equal to the major thread diameter NOTE permissible.

- As-rolled end.
- Edge may be rounded or flat.

Figure 1

Table 1 — Dimensions

Dimensions in millimetres

Thread, $d$			M2	M2,5	М3	(M3,5) <sup>a</sup>	M4	M5	М6	М8	M10
$P^{b}$			0,4	0,45	0,5	0,6	0,7	0,8	1,0	1,25	1,5
а		max.	0,8	0,9	1	1,2	1,4	1,6	2	2,5	3
b		min.	25	25	25	38	38	38	38	38	38
th	eoretical	max.	4,4	5,5	6,3	8,2	9,4	10,4	12,6	17,3	20,0
d <sub>k</sub> <sup>c</sup>	ctual –	nom. = max.	3,8	4,7	5,5	7,30	8,40	9,30	11,30	15,80	18,30
a	cluai	min.	3,5	4,4	5,2	6,94	8,04	8,94	10,87	15,37	17,78
f		≈	0,5	0,6	0,7	0,8	1	1,2	1,4	2	2,3
k <sup>C</sup>		nom. = max.	1,2	1,5	1,65	2,35	2,7	2,7	3,3	4,65	5
r		max.	0,5	0,6	0,8	0,9	1,0	1,3	1,5	2,0	2,5
r <sub>f</sub> ≈		4	5	6	8,5	9,5	9,5	12	16,5	19,5	
x		max.	1,0	1,1	1,25	1,5	1,75	2,0	2,5	3,2	3,8
	<u>:</u>	Socket no.	6	8	10	15	20	25	30	45	50
Hexalobula	r <u>-</u>	A ref.	1,75	2,4	2,8	3,35	3,95	4,5	5,6	7,95	8,95
socket <sup>d</sup>		max.	0,77	1,04	1,15	1,53	1,80	2,03	2,42	3,31	3,81
		min.	0,63	0,91	0,88	1,27	1,42	1,65	2,02	2,92	3,42
/e Approximate mass of carbo						rbon steel screws, in kilograms per 1 000 pieces					
nom.a	min.	in. $(\rho = 7,85 \text{ kg/dm}^3)$ (for information only)									
3	2,8	3,2	0,119	0,212				- 37			
4	3,76	4,24	0,138	0,242	0,351						
5	4,76	5,24	0,156	0,272	0,395	0,669	0,99				
6	5,76	6,24	0,175	0,302	0,439	0,729	1,07	1,49			
8	7,71	8,29	0.040								
10		0,20	0,212	0,362	0,527	0,849	1,23	1,73	2,79		
	9,71	10,29	0,212	0,362	0,527 0,615	0,849 0,969	1,23 1,39	1,73 1,97	2,79 3,14	6,89	
12	9,71 11,65					,				6,89 7,53	11,4
12 (14)		10,29	0,249	0,422	0,615	0,969	1,39	1,97	3,14		11,4 12,5
	11,65	10,29 12,35	0,249	0,422	0,615 0,703	0,969	1,39 1,54	1,97 2,21	3,14 3,49	7,53	
(14)	11,65 13,65	10,29 12,35 14,35	0,249 0,287 0,325	0,422 0,482 0,543	0,615 0,703 0,791	0,969 1,09 1,21	1,39 1,54 1,70	1,97 2,21 2,45	3,14 3,49 3,84	7,53 8,17	12,5
(14) 16	11,65 13,65 15,65	10,29 12,35 14,35 16,35	0,249 0,287 0,325 0,362	0,422 0,482 0,543 0,603	0,615 0,703 0,791 0,879	0,969 1,09 1,21 1,33	1,39 1,54 1,70 1,85	1,97 2,21 2,45 2,69	3,14 3,49 3,84 4,19	7,53 8,17 8,81	12,5 13,5
(14) 16 20	11,65 13,65 15,65 19,58	10,29 12,35 14,35 16,35 20,42	0,249 0,287 0,325 0,362	0,422 0,482 0,543 0,603 0,723	0,615 0,703 0,791 0,879 1,06	0,969 1,09 1,21 1,33 1,57	1,39 1,54 1,70 1,85 2,17	1,97 2,21 2,45 2,69 3,17	3,14 3,49 3,84 4,19 4,89	7,53 8,17 8,81 10,1	12,5 13,5 15,5
(14) 16 20 25	11,65 13,65 15,65 19,58 24,58	10,29 12,35 14,35 16,35 20,42 25,42	0,249 0,287 0,325 0,362	0,422 0,482 0,543 0,603 0,723	0,615 0,703 0,791 0,879 1,06 1,28	0,969 1,09 1,21 1,33 1,57 1,87	1,39 1,54 1,70 1,85 2,17 2,56	1,97 2,21 2,45 2,69 3,17 3,77	3,14 3,49 3,84 4,19 4,89 5,77	7,53 8,17 8,81 10,1 11,7	12,5 13,5 15,5 18,0
(14) 16 20 25 30	11,65 13,65 15,65 19,58 24,58 29,58	10,29 12,35 14,35 16,35 20,42 25,42 30,42	0,249 0,287 0,325 0,362	0,422 0,482 0,543 0,603 0,723	0,615 0,703 0,791 0,879 1,06 1,28	0,969 1,09 1,21 1,33 1,57 1,87 2,17	1,39 1,54 1,70 1,85 2,17 2,56 2,95	1,97 2,21 2,45 2,69 3,17 3,77 4,37	3,14 3,49 3,84 4,19 4,89 5,77 6,64	7,53 8,17 8,81 10,1 11,7 13,3	12,5 13,5 15,5 18,0 20,6
(14) 16 20 25 30 35	11,65 13,65 15,65 19,58 24,58 29,58 34,5	10,29 12,35 14,35 16,35 20,42 25,42 30,42 35,5	0,249 0,287 0,325 0,362	0,422 0,482 0,543 0,603 0,723	0,615 0,703 0,791 0,879 1,06 1,28	0,969 1,09 1,21 1,33 1,57 1,87 2,17	1,39 1,54 1,70 1,85 2,17 2,56 2,95 3,34	1,97 2,21 2,45 2,69 3,17 3,77 4,37 4,97	3,14 3,49 3,84 4,19 4,89 5,77 6,64 7,52	7,53 8,17 8,81 10,1 11,7 13,3 14,9	12,5 13,5 15,5 18,0 20,6 23,1
(14) 16 20 25 30 35 40	11,65 13,65 15,65 19,58 24,58 29,58 34,5 39,5	10,29 12,35 14,35 16,35 20,42 25,42 30,42 35,5 40,5	0,249 0,287 0,325 0,362	0,422 0,482 0,543 0,603 0,723	0,615 0,703 0,791 0,879 1,06 1,28	0,969 1,09 1,21 1,33 1,57 1,87 2,17	1,39 1,54 1,70 1,85 2,17 2,56 2,95 3,34	1,97 2,21 2,45 2,69 3,17 3,77 4,37 4,97 5,57	3,14 3,49 3,84 4,19 4,89 5,77 6,64 7,52 8,39	7,53 8,17 8,81 10,1 11,7 13,3 14,9	12,5 13,5 15,5 18,0 20,6 23,1 25,6
(14) 16 20 25 30 35 40 45	11,65 13,65 15,65 19,58 24,58 29,58 34,5 39,5 44,5	10,29 12,35 14,35 16,35 20,42 25,42 30,42 35,5 40,5 45,5	0,249 0,287 0,325 0,362	0,422 0,482 0,543 0,603 0,723	0,615 0,703 0,791 0,879 1,06 1,28	0,969 1,09 1,21 1,33 1,57 1,87 2,17	1,39 1,54 1,70 1,85 2,17 2,56 2,95 3,34	1,97 2,21 2,45 2,69 3,17 3,77 4,37 4,97 5,57 6,16	3,14 3,49 3,84 4,19 4,89 5,77 6,64 7,52 8,39 9,27	7,53 8,17 8,81 10,1 11,7 13,3 14,9 16,5	12,5 13,5 15,5 18,0 20,6 23,1 25,6 28,1

NOTE Preferred lengths are the ones between the solid, bold, stepped lines.

a Sizes in parentheses should be avoided, if possible.

b P is the pitch of the thread.

The gauging of head dimensions is specified in ISO 7721.

d For the acceptance of the hexalobular socket and for gauges, see ISO 10664.

Screws with nominal lengths above the discontinuous, stepped line are threaded up to the head [b = l - (k + a)].

### 4 Specifications and reference International Standards

See Table 2.

Table 2 — Specifications and reference International Standards

Material		Steel	Stainless steel	Non-ferrous metal			
General requirements International Standard		ISO 8992					
Thread	Tolerance class	6g					
IIIIeau	International Standard	ISO 261, ISO 965-2					
Mechanical property	Property class	4.8	A2-70 A3-70	As agreed			
	International Standard	ISO 898-1	ISO 3506-1	ISO 8839			
Tolerance	Product grade	A					
Tolerance	International Standard		ISO 4759-1				
Hexalobular socket	International Standard	ISO 10664					
Finish — Coating		As processed  Requirements for electroplating are specified in ISO 4042.  Requirements for non-electrolytically applied zinc flake coatings are specified in ISO 10683.  Additional requirements	As processed	As processed  Requirements for electroplating are specified in ISO 4042.			
Surface integrity			the supplier and the pu				
Acceptability		Acceptance inspection is specified in ISO 3269.					

## 5 Designation

EXAMPLE A hexalobular socket raised countersunk head screw with thread M5, nominal length l = 20 mm and property class 4.8 is designated as follows:

Hexalobular socket raised countersunk head screw ISO 14584 -  $M5 \times 20$  - 4.8

# **Bibliography**

[1] ISO 888, Bolts, screws and studs — Nominal lengths, and thread lengths for general purpose bolts



ICS 21.060.10

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