BS EN ISO 14582:2013

BSI Standards Publication

Fasteners — Hexalobular socket countersunk head screws, high head

bsi.

...making excellence a habit.™

National foreword

This British Standard is the UK implementation of EN ISO 14582:2013.

The UK participation in its preparation was entrusted to Technical Committee FME/9, Fasteners.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

ISBN 978 0 580 75165 3

ICS 21.060.10

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 30 September 2013.

Amendments issued since publication

Date	Text affected

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 14582

September 2013

ICS 21.060.10

English Version

Fasteners - Hexalobular socket countersunk head screws, high head (ISO 14582:2013)

Éléments de fixation - Vis à tête fraisée à six lobes internes, tête haute (ISO 14582:2013)

Mechanische Verbindungselemente - Senkschrauben mit Innensechsrund, hoher Kopf (ISO 14582:2013)

This European Standard was approved by CEN on 24 August 2013.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Ref. No. EN ISO 14582:2013: E

Foreword

This document (EN ISO 14582:2013) has been prepared by Technical Committee ISO/TC 2 "Fasteners" in collaboration with Technical Committee CEN/TC 185 “Fasteners” the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by March 2014, and conflicting national standards shall be withdrawn at the latest by March 2014.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 14582:2013 has been approved by CEN as EN ISO 14582:2013 without any modification.

Contents

Page

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established 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. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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. www.iso.org/directives

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received. www.iso.org/patents

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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

INTERNATIONAL STANDARD **ISO 14582:2013(E)**

Fasteners — Hexalobular socket countersunk head screws, high head

1 Scope

This International Standard specifies hexalobular socket countersunk head bolts and screws with high head (full loadability), of product grade A, and thread diameters from M3 up to and including M10 and property classes 4.8, 8.8 and 10.9.

NOTE 1 In comparison with ISO common countersunk head, the height of the head has been slightly increased in order to have screws with full loadability, in conformity with the mechanical properties specified in ISO 898-1.

This International Standard also specifies gauge dimensions for the control of the head dimensions.

NOTE 2 Because of the increased head height, these screws are not fully interchangeable with other countersunk ISO metric screws. The assembled parts also need a slightly deeper countersink than those specified in ISO 15065.

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 and ISO 4759-1.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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 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 8992, *Fasteners — General requirements for bolts, screws, studs and nuts*

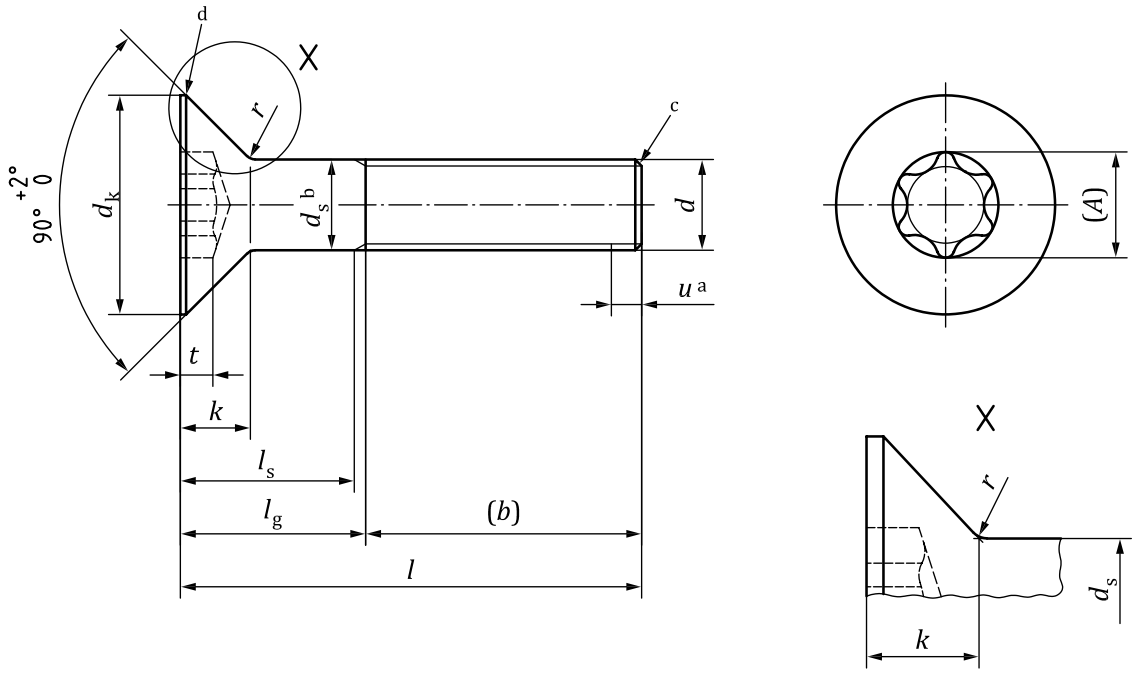
ISO 10664, *Hexalobular internal driving feature for bolts and screws*

ISO 10683, *Fasteners — Non-electrolytically applied zinc flake coatings*

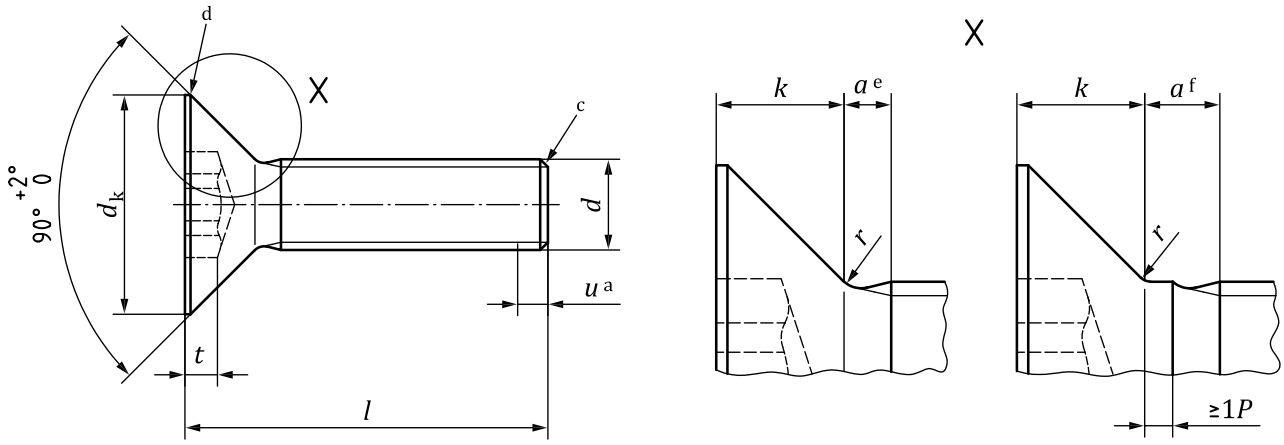
ISO 10684, *Fasteners — Hot dip galvanized coatings*

3 Dimensions

See Figures 1 and 2 and Table 1. Symbols and descriptions of dimensions are specified in ISO 225.



a) Partially threaded screw



without shoulder **with shoulder**g

b) Screw threaded to the head

a Incomplete thread $u \leq 2P$.

b d_s applies if values of $l_{s,min}$ are specified.

c Point is to be chamfered or, for sizes ≤ M4, "as rolled" in conformity with ISO 4753.

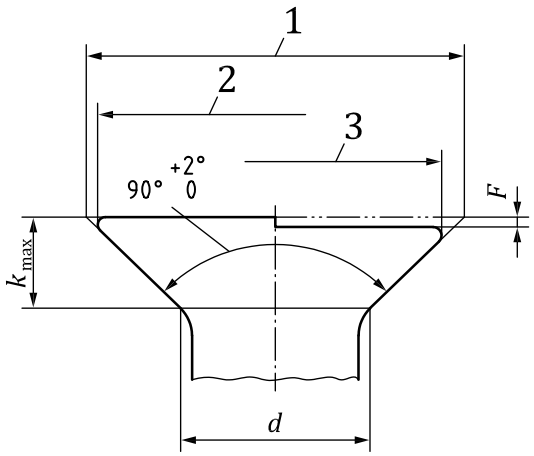
d Edge of the head flat or rounded.

e $a_{max} \leq 2P$.

f $a_{max} \leq 2{,}5P$.

g Any shape or size of the reinforcing feature is at the discretion of the manufacturer and shall not exceed *d*.

Figure 1 — Hexalobular socket countersunk head screw, high head



Key

1 $d_{k\ theoretical,max}$

2 $d_{k\ actual,max}$

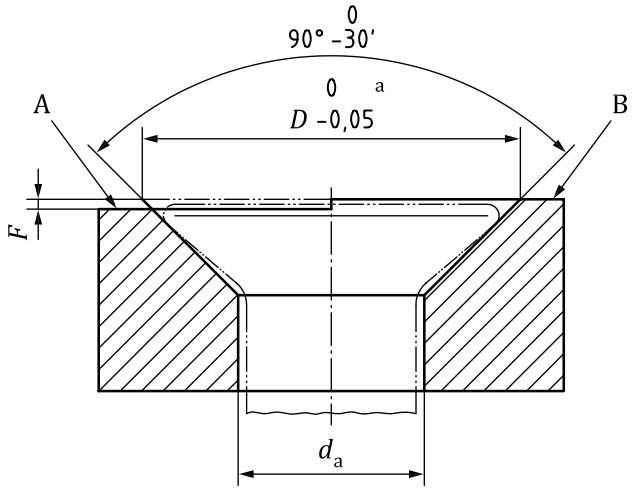
3 $d_{k\ actual,min}$

F flushness tolerance of the gauge (see Table 1)

Figure 2 — Countersunk head configuration

For gauging of the head and for dimensions of the gauge allowing the control of the head dimensions see Figure 3 and Table 1. The top surface of the screw shall be located between the gauge surfaces A and B.

Tolerances in millimetres



Key

F flushness tolerance of the gauge (see Table 1)

a $D = d_{k\ theoretical,max}$

Figure 3 — Flushness gauge

Table 1 — Dimensions for hexalobular socket countersunk head screws, high head

Dimensions in millimetres

Thread, *d*			**M3**	**M4**	**M5**	**M6**	**M8**	**M10**
P[a]			0,5	0,7	0,8	1	1,25	1,5
b		ref.	18	20	22	24	28	32
d_a		max.	3,30	4,40	5,50	6,60	8,54	10,62
		min.[b]	3,20	4,30	5,40	6,50	8,44	10,52
d_k	theoretical	max.	7,40	10,02	12,00	14,44	19,38	23,00
	actual	max.	6,57	9,02	10,90	13,20	17,90	21,30
		min.	6,17	8,52	10,27	12,46	17,09	20,49
d_s		max.	3,00	4,00	5,00	6,00	8,00	10,00
		min.	2,86	3,82	4,82	5,82	7,78	9,78
F[c]		max.	0,25	0,25	0,30	0,35	0,40	0,40
k[d]		max.	2,20	3,01	3,50	4,22	5,69	6,50
r		min.	0,10	0,20	0,20	0,25	0,40	0,40
Hexalobular socket	Socket No.		**10**	**20**	**25**	**30**	**45**	**50**
	A	ref.	2,8	3,95	4,5	5,6	7,93	8,95
	t	max.	1,18	1,69	1,89	2,22	2,99	3,30
		min.	0,92	1,30	1,50	1,83	2,60	2,91

l[e]			l_s and l_g											
			l_s	l_g	l_s	l_g	l_s	l_g	l_s	l_g	l_s	l_g	l_s	l_g
nom.[f]	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.
8	7,71	8,29												
10	9,71	10,29												
12	11,65	12,35												
(14)	13,65	14,35												
16	15,65	16,35												
20	19,58	20,42												
25	24,58	25,42												
30	29,58	30,42	9,5	12	6,5	10								
35	34,5	35,5			11,5	15	9	13						
40	39,5	40,5			16,5	20	14	18	11	16				
45	44,5	45,5					19	23	16	21				
50	49,5	50,5					24	28	21	26	15,75	22		
55	54,4	55,6							26	31	20,75	27	15,5	23
60	59,4	60,6							31	36	25,75	32	20,5	28
65	64,4	65,6									30,75	37	25,5	33
70	69,4	70,6									35,75	42	30,5	38
80	79,4	80,6									45,75	52	40,5	48
90	89,3	90,7											50,5	58
100	99,3	100,7											60,5	68

a P is the pitch of the thread.

b Values for $d_{a,min}$ are based on a radius $r = 0{,}25d$.

c The flushness tolerance of the gauge, F, has the tolerance $^{0}_{-0{,}01}$.

d The dimensions of the gauges defined in ISO 7721 are not adapted to this countersunk head.

e Preferred lengths are between the bold, stepped lines. Lengths above the discontinuous, stepped line are threaded to the head within $3P$. Lengths below the discontinuous, stepped line have values of l_g and l_s in accordance with the following formulae:

$l_{g,max} = l_{nom} - b$

$l_{s,min} = l_{g,max} - 5P$

f Dimensions in parentheses should be avoided.

4 Requirements and reference International Standards

See Table 2.

Table 2 — Requirements and reference International Standards

Material		Steel
General requirements	International Standard	ISO 8992
Thread	Tolerance class	6g
	International Standards	ISO 261, ISO 965-2
Mechanical properties	Property class	4.8, 8.8, 10.9
	International Standard	ISO 898-1
Tolerance	Product grade	A
	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. Requirements for hot dip galvanizing are specified in ISO 10684. Additional requirements or other finishes or coatings shall be agreed between the supplier and the purchaser.
Surface integrity		Limits for surface discontinuities are specified in ISO 6157-1.
Acceptability		Acceptance procedure is specified in ISO 3269.

5 Marking

When requested, screws of diameter M5 and above shall be marked in accordance with ISO 898-1.

6 Designation

The designation requirements shall apply as specified in ISO 898-1.

EXAMPLE A hexalobular socket countersunk head screw, high head, with thread M10, nominal length l = 40 mm and property class 10.9 is designated as follows:

Countersunk head screw ISO 14582 - M10 × 40 – 10.9

Bibliography

[1] ISO 888, *Fasteners — Bolts, screws and studs — Nominal lengths and thread lengths*

[2] ISO 4753, *Fasteners — Ends of parts with external ISO metric thread*

[3] ISO 7721, *Countersunk head screws — Head configuration and gauging*

[4] ISO 15065, *Countersinks for countersunk head screws with head configuration in accordance with ISO 7721*

This page deliberately left blank

This page deliberately left blank

British Standards Institution (BSI)

BSI is the national body responsible for preparing British Standards and other standards-related publications, information and services.

BSI is incorporated by Royal Charter. British Standards and other standardization products are published by BSI Standards Limited.

About us

We bring together business, industry, government, consumers, innovators and others to shape their combined experience and expertise into standards -based solutions.

The knowledge embodied in our standards has been carefully assembled in a dependable format and refined through our open consultation process. Organizations of all sizes and across all sectors choose standards to help them achieve their goals.

Information on standards

We can provide you with the knowledge that your organization needs to succeed. Find out more about British Standards by visiting our website at bsigroup.com/standards or contacting our Customer Services team or Knowledge Centre.

Buying standards

You can buy and download PDF versions of BSI publications, including British and adopted European and international standards, through our website at bsigroup.com/shop, where hard copies can also be purchased.

If you need international and foreign standards from other Standards Development Organizations, hard copies can be ordered from our Customer Services team.

Subscriptions

Our range of subscription services are designed to make using standards easier for you. For further information on our subscription products go to bsigroup.com/subscriptions.

With **British Standards Online (BSOL)** you'll have instant access to over 55,000 British and adopted European and international standards from your desktop. It's available 24/7 and is refreshed daily so you'll always be up to date.

You can keep in touch with standards developments and receive substantial discounts on the purchase price of standards, both in single copy and subscription format, by becoming a **BSI Subscribing Member**.

PLUS is an updating service exclusive to BSI Subscribing Members. You will automatically receive the latest hard copy of your standards when they're revised or replaced.

To find out more about becoming a BSI Subscribing Member and the benefits of membership, please visit bsigroup.com/shop.

With a **Multi-User Network Licence (MUNL)** you are able to host standards publications on your intranet. Licences can cover as few or as many users as you wish. With updates supplied as soon as they're available, you can be sure your documentation is current. For further information, email bsmusales@bsigroup.com.

BSI Group Headquarters

389 Chiswick High Road London W4 4AL UK

Revisions

Our British Standards and other publications are updated by amendment or revision.

We continually improve the quality of our products and services to benefit your business. If you find an inaccuracy or ambiguity within a British Standard or other BSI publication please inform the Knowledge Centre.

Copyright

Useful Contacts:

Customer Services
Tel: +44 845 086 9001
Email (orders): orders@bsigroup.com
Email (enquiries): cservices@bsigroup.com

Subscriptions
Tel: +44 845 086 9001
Email: subscriptions@bsigroup.com

Knowledge Centre
Tel: +44 20 8996 7004
Email: knowledgecentre@bsigroup.com

Copyright & Licensing
Tel: +44 20 8996 7070
Email: copyright@bsigroup.com

bsi.

...making excellence a habit.™