BRITISH STANDARD

BS EN ISO 4026:2003

Incorporating Corrigendum No. 1

Hexagon socket set screws with flat point

The European Standard EN ISO 4026:2003 has the status of a British Standard

ICS 21.060.10

Confirmed December 2008

BSI British Standards

National foreword

This British Standard is the official English language version of EN ISO 4026:2003. It is identical with ISO 4026:2003. It supersedes BS 4168-2:1994 which is withdrawn.

The UK participation in its preparation was entrusted by Technical Committee FME/9, Nuts, bolts and accessories, to Subcommittee FME/9/8, Hexagon socket screws, which has the responsibility to:

— aid enquirers to understand the text;

— present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;

— monitor related international and European developments and promulgate them in the UK.

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

Cross-references

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Summary of pages

This document comprises a front cover, an inside front cover, the EN ISO title page, the EN ISO foreword page, the ISO title page, pages ii and iii, a blank page, pages 1 to 4, the Annex ZA page and a back cover.

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 4026

December 2003

ICS 21.060.10

English version

Hexagon socket set screws with flat point (ISO 4026:2003)

Vis sans tête à six pans creux, à bout plat (ISO 4026:2003)

Gewindestifte mit Innensechskant mit Kegelkuppe (ISO 4026:2003)

This European Standard was approved by CEN on 4 November 2003.

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Ref. No. EN ISO 4026:2003 E

CORRECTED 2004-03-03

Foreword

This document (EN ISO 4026:2003) has been prepared by Technical Committee ISO/TC 2 "Fasteners" in collaboration with Technical Committee CEN/TC 185 "Threaded and non-threaded mechanical fasteners and accessories", 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of an identical text or by endorsement, at the latest by June 2004, and conflicting national standards shall be withdrawn at the latest by June 2004.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

Endorsement notice

The text of ISO 4026:2003 has been approved by CEN as EN ISO 4026:2003 without any modifications.

NOTE Normative references to International Standards are listed in Annex ZA (normative).

EN ISO 4026:2003

INTERNATIONAL STANDARD

ISO 4026

Third edition
2003-12-01

Hexagon socket set screws with flat point

Vis sans tête à six pans creux, à bout plat

Reference number
ISO 4026:2003(E)

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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 4026 was prepared by Technical Committee ISO/TC 2, *Fasteners*.

This third edition cancels and replaces the second edition (ISO 4026:1993), which has been technically revised.

Hexagon socket set screws with flat point

1 Scope

This International Standard specifies the characteristics of hexagon socket set screws with flat point and threads from M1,6 up to and including M24 and of product grade A.

If, in special cases, specifications other than those listed in this International Standard are required, they should be selected from existing International Standards, e.g. ISO 261, ISO 898-5, ISO 965-2, ISO 3506-3 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 designations of dimensions*

ISO 261, *ISO general-purpose metric screw threads — General plan*

ISO 898-5, *Mechanical properties of fasteners made of carbon steel and alloy steel — Part 5: Set screws and similar threaded fasteners not under tensile stresses*

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 965-3, *ISO general purpose metric screw threads — Tolerances — Part 3: Deviations for constructional screw threads*

ISO 3269, *Fasteners — Acceptance inspection*

ISO 3506-3, *Mechanical properties of corrosion-resistant stainless-steel fasteners — Part 3: Set screws and similar fasteners not under tensile stress*

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 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*

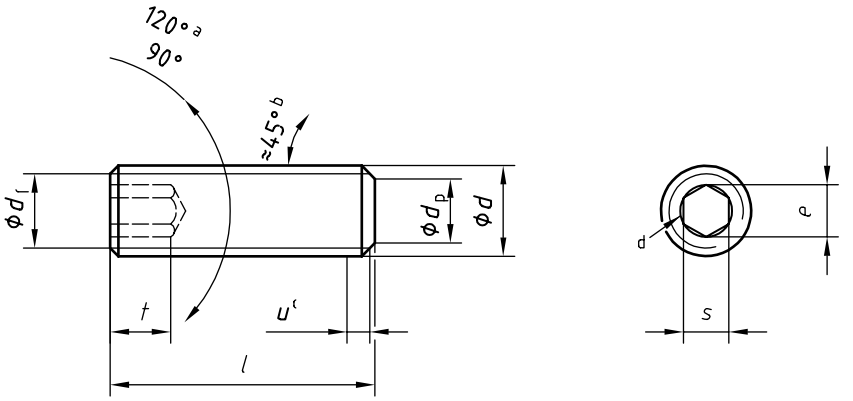
ISO 10683, *Fasteners — Non-electrolytically applied zinc flake coatings*

ISO 23429, *Gauging of hexagon sockets*

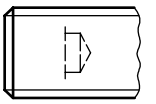
3 Dimensions

See Figure 1 and Table 1.

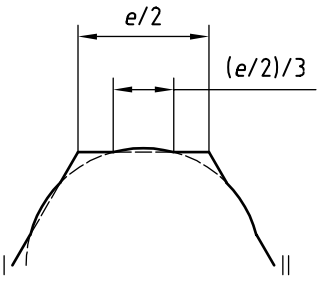
Symbols and designations of dimensions are specified in ISO 225.



Permissible alternative form of socket



For broached sockets which are at the maximum limit of size, the overcut resulting from drilling shall not exceed 1/3 of the length of any flat of the socket which is $e/2$.



[a] The 120° angle is a requirement for short-length screws of nominal length, l, situated in the shaded areas in Table 1.

[b] The 45° angle applies only to the portion of the point situated below the root diameter of the thread.

[c] Incomplete thread $u < 2P$.

[d] A slight rounding or countersink at the mouth of the socket is permissible.

Figure 1

Table 1 — Dimensions

Dimensions in millimetres

Thread (d)			M1,6	M2	M2,5	M3	M4	M5	M6	M8	M10	M12	M16	M20	M24
P[a]			0,35	0,4	0,45	0,5	0,7	0,8	1	1,25	1,5	1,75	2	2,5	3
d_p	max.		0,80	1,00	1,50	2,00	2,50	3,5	4,0	5,5	7,00	8,50	12,00	15,00	18,00
	min.		0,55	0,75	1,25	1,75	2,25	3,2	3,7	5,2	6,64	8,14	11,57	14,57	17,57
d_f	min.		≈ Minor thread diameter												
e[b, c]	min.		0,809	1,011	1,454	1,733	2,303	2,873	3,443	4,583	5,723	6,863	9,149	11,429	13,716
s[c]	nom.		0,7	0,9	1,3	1,5	2	2,5	3	4	5	6	8	10	12
	max.		0,724	0,913	1,300	1,58	2,08	2,58	3,08	4,095	5,14	6,14	8,175	10,175	12,212
	min.		0,710	0,887	1,275	1,52	2,02	2,52	3,02	4,020	5,02	6,02	8,025	10,025	12,032
t	min.	[d]	0,7	0,8	1,2	1,2	1,5	2	2	3	4	4,8	6,4	8	10
		[e]	1,5	1,7	2	2	2,5	3	3,5	5	6	8	10	12	15
l			Approximate mass, in kilograms per 1 000 pieces (ρ = 7,85 kg/dm^3) (for information only)												
nom.	min.	max.													
2	1,8	2,3	0,021	0,029											
2,5	2,3	2,7	0,025	0,037	0,063										
3	2,8	3,2	0,029	0,044	0,075	0,1									
4	3,76	4,24	0,037	0,059	0,1	0,14	0,22								
5	4,76	5,24	0,046	0,074	0,125	0,18	0,3	0,44							
6	5,76	6,24	0,054	0,089	0,15	0,22	0,38	0,56	0,76						
8	7,71	8,29	0,07	0,119	0,199	0,3	0,54	0,8	1,11	1,89					
10	9,71	10,29		0,148	0,249	0,38	0,7	1,04	1,46	2,52	3,78				
12	11,65	12,35			0,299	0,46	0,86	1,28	1,81	3,15	4,78	6,8			
16	15,65	16,35				0,62	1,18	1,76	2,51	4,41	6,78	9,6	16,3		
20	19,58	20,42					1,49	2,24	3,21	5,67	8,76	12,4	21,5	32,3	
25	24,58	25,42						2,84	4,09	7,25	11,2	15,9	28	42,6	57
30	29,58	30,42							4,97	8,82	13,7	19,4	34,6	52,9	72
35	34,5	35,5								10,4	16,2	22,9	41,1	63,2	87
40	39,5	40,5								12	18,7	26,4	47,7	73,5	102
45	44,5	45,5									21,2	29,9	54,2	83,8	117
50	49,5	50,5									23,7	33,4	60,7	94,1	132
55	54,4	55,6										36,8	67,3	104	147
60	59,4	60,6										40,3	73,7	115	162

NOTE Commercial lengths are those between the bold stepped lines.

[a] P is the pitch of the thread.

[b] $e_{min} = 1{,}14\ s_{min}$.

[c] Combined gauging os socket dimensions e and s, see ISO 23429.

[d] For screws with nominal lengths in the shaded areas.

[e] For screws with nominal lengths below the shaded areas.

4 Requirements 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	6g		
	International Standards	ISO 261, ISO 965-2, ISO 965-3		
Mechanical properties	Property class	45H	A1-12H, A2-21H, A3-21H, A4-21H, A5-21H	As agreed
	International Standards	ISO 898-5	ISO 3506-3	ISO 8839
Tolerances	Product grade	A		
	International Standard	ISO 4759-1		
Finish		As processed Requirements for electroplating are covered in ISO 4042. Requirements for non-electrolytically applied zinc flake coatings are covered in ISO 10683.	Plain	Plain Requirements for electroplating are covered in ISO 4042.
Surface discontinuities		Limits for surface discontinuities are covered in ISO 6157-1.	—	—
Acceptability		For acceptance procedure, see ISO 3269.		

5 Designation

EXAMPLE A hexagon socket set screw with flat point, thread M6, nominal length $l = 12$ mm and of property class 45H, is designated as follows:

Hexagon socket set screw ISO 4026 - M6×12 - 45H

Annex ZA
(normative)

Normative references to international publications with their relevant European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

NOTE Where an International Publication has been modified by common modifications, indicated by (mod.), the relevant EN/HD applies.

Publication	Year	Title	EN	Year
ISO 225	1983	Fasteners - Bolts, screws, studs and nuts - Symbols and designations of dimensions	EN 20225	1991
ISO 898-5	1998	Mechanical properties of fasteners made of carbon steel and alloy steel - Part 5: Set screws and similar threaded fasteners not under tensile stresses	EN ISO 898-5	1998
ISO 3269	2000	Fasteners - Acceptance inspection	EN ISO 3269	2000
ISO 3506-3	1997	Mechanical properties of corrosion-resistant stainless-steel fasteners - Part 3: Set screws and similar fasteners not under tensile stress	EN ISO 3506-3	1997
ISO 4042	1999	Fasteners - Electroplated coatings	EN ISO 4042	1999
ISO 4759-1	2000	Tolerances for fasteners - Part 1: Bolts, screws, studs and nuts - Product grades A, B and C	EN ISO 4759-1	2000
ISO 6157-1	1988	Fasteners - Surface discontinuities - Part 1: Bolts, screws and studs for general requirements	EN 26157-1	1991
ISO 8839	1986	Mechanical properties of fasteners - Bolts, screws, studs and nuts made of non-ferrous metals	EN 28839	1991
ISO 10683	2000	Fasteners - Non-electrolytically applied zinc flake coatings	EN ISO 10683	2000
ISO 23429	2004	Gauging of hexagon sockets	EN ISO 23429	2004

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