भारतीय मानक
Indian Standard

IS 1366 : 2022
ISO 1207 : 2011

खांचित चीज़ शीर्ष पेंच — उत्पाद ग्रेड ऐ

(चौथा पुनरीक्षण)

Slotted Cheese Head Screws — Product Grade A

(Fourth Revision)

ICS 21.060.10

भारतीय मानक ब्यूरो
BUREAU OF INDIAN STANDARDS
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December 2022 **Price Group 5**

NATIONAL FOREWORD

This Indian Standard (Fourth Revision) which is identical with ISO 1207 : 2011 'Slotted cheese head screws — Product grade A' issued by the International Organization for Standardization (ISO) was adopted by the Bureau of Indian Standards on recommendation of the General Engineering and Fasteners Standards Sectional Committee and approval of the Production and General Engineering Division Council.

This standard was originally published in 1962 as an indigenous standard and subsequently revised in 1968 and 1982. The standard was further revised in 2002 as an identical adoption of ISO 1207 : 1992. The fourth revision of the standard has been taken up to align it with ISO 1207 : 2011.

The text of International Standard has been approved as suitable for publication as Indian Standard without deviation. Certain terminologies and conventions are, however, not identical to those used in the Indian Standards; attention is particularly drawn to the following:

a) Wherever the words 'International Standard' appears, referring to this standard, they should be read as 'Indian Standard'.

b) Comma (,) has been used as decimal marker, while in Indian Standards, it is current practice to use a full point (.) as the decimal marker.

In adopted standard, references appear to certain International Standards for which Indian Standards also exist. The corresponding Indian Standards which are to be substituted in their respective places, are listed below along with their degree of equivalence for the editions indicated:

International Standard	*Corresponding Indian Standard*	*Degree of Equivalence*
ISO 225 Fasteners — Bolts, screws, studs and nuts — Symbols and descriptions of dimensions	IS 8536 : 2021 Fasteners — Bolts screws studs and nuts — Symbols and designation of dimensions	Identical with ISO 225 : 2010
ISO 261 ISO general purpose metric screw threads — General plan	IS 4218 (Part 2) : 2001 ISO general purpose metric screw threads: Part 2 General plan (*second revision*)	Identical with ISO 261 : 1998
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	IS 1367 (Part 3) : 2017 Technical supply conditions for threaded steel fasteners: Part 3 Mechanical properties of fasteners made of carbon steel and bolts, screws and studs (*fifth revision)*	Identical with ISO 898-1 : 2013
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	IS 14962 (Part 2) : 2001 ISO general purpose metric screw threads — Tolerances: Part 2 Limits of sizes for general purpose external and internal screw threads — Medium quality	Identical with ISO 965-2 : 1988
ISO 965-3 ISO general purpose metric screw threads — Tolerances — Part 3: Deviations for constructional screw thread	IS 14962 (Part 3) : 2001 ISO general purpose metric screw threads — Tolerances: Part 3 Deviations for constructional screw threads	Identical with ISO 965-3 : 1988
ISO 3269 Fasteners — Acceptance inspection	IS 1367 (Part 17) : 2005 Technical supply conditions for threaded steel fasteners: Part 17 Inspections, sampling and acceptance procedure (*fourth revision*)	Identical with ISO 3269 : 2000

(*Continued on third cover*)

Indian Standard

SLOTTED CHEESE HEAD SCREWS — PRODUCT GRADE A

(Fourth Revision)

1 Scope

This International Standard specifies the characteristics of slotted cheese head screws of product grade A and with threads from M1,6 to M10 inclusive.

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

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

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*

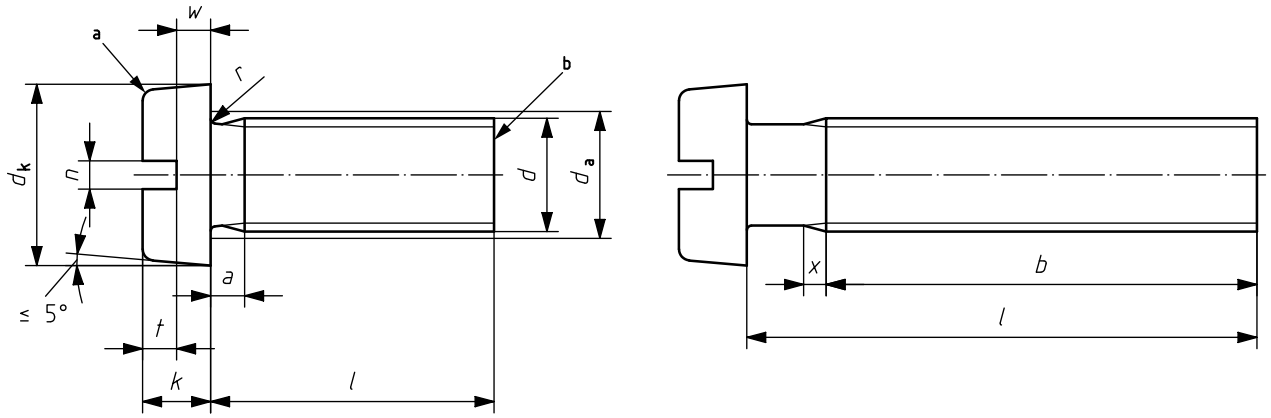
ISO 16048, *Passivation of corrosion-resistant stainless-steel fasteners*

3 Dimensions

See Figure 1 and Table 1.

The shank diameter is approximately equal to the pitch diameter or equal to the major thread diameter permissible.

The symbols and descriptions of dimensions are specified in ISO 225.



a Edge may be rounded or flat.

b As-rolled end (RL) in accordance with ISO 4753.

Figure 1 — Slotted cheese head screws

Table 1 — Dimensions

Dimensions in millimetres

Thread, d			**M1,6**	**M2**	**M2,5**	**M3**	**(M3,5)**[a]	**M4**	**M5**	**M6**	**M8**	**M10**
P[b]			0,35	0,4	0,45	0,5	0,6	0,7	0,8	1	1,25	1,5
a		max.	0,7	0,8	0,9	1,0	1,2	1,4	1,6	2,0	2,5	3,0
b		min.	25	25	25	25	38	38	38	38	38	38
d_a		max.	2,0	2,6	3,1	3,6	4,1	4,7	5,7	6,8	9,2	11,2
d_k	nom. =	max.	3,00	3,80	4,50	5,50	6,00	7,00	8,50	10,00	13,00	16,00
		min.	2,86	3,62	4,32	5,32	5,82	6,78	8,28	9,78	12,73	15,73
k	nom. =	max.	1,10	1,40	1,80	2,00	2,40	2,60	3,30	3,9	5,0	6,0
		min.	0,96	1,26	1,66	1,86	2,26	2,46	3,12	3,6	4,7	5,7
n		nom.	0,4	0,5	0,6	0,8	1	1,2	1,2	1,6	2	2,5
		max.	0,60	0,70	0,80	1,00	1,20	1,51	1,51	1,91	2,31	2,81
		min.	0,46	0,56	0,66	0,86	1,06	1,26	1,26	1,66	2,06	2,56
r		min.	0,10	0,10	0,10	0,10	0,10	0,20	0,20	0,25	0,40	0,40
t		min.	0,45	0,60	0,70	0,85	1,00	1,10	1,30	1,60	2,00	2,40
w		min.	0,40	0,50	0,70	0,75	1,00	1,10	1,30	1,60	2,00	2,40
x		max.	0,90	1,00	1,10	1,25	1,50	1,75	2,00	2,50	3,20	3,80

l[c]			Approximate mass, in kilograms per 1 000 pieces ($\rho = 7{,}85$ kg/dm^3) (for information only)									
nom.[a]	min.	max.										
2	1,80	2,20	0,07									
3	2,80	3,20	0,082	0,16	0,272							
4	3,76	4,24	0,094	0,179	0,302	0,515						
5	4,76	5,24	0,105	0,198	0,332	0,56	0,786	1,09				
6	5,76	6,24	0,117	0,217	0,362	0,604	0,845	1,17	2,06			
8	7,71	8,29	0,14	0,254	0,422	0,692	0,966	1,33	2,3	3,56		
10	9,71	10,29	0,163	0,291	0,482	0,78	1,08	1,47	2,55	3,92	7,85	
12	11,65	12,35	0,186	0,329	0,542	0,868	1,2	1,63	2,8	4,27	8,49	14,6
(14)	13,65	14,35	0,209	0,365	0,602	0,956	1,32	1,79	3,05	4,62	9,13	15,6
16	15,65	16,35	0,232	0,402	0,662	1,04	1,44	1,95	3,3	4,98	9,77	16,6
20	19,58	20,42		0,478	0,782	1,22	1,68	2,25	3,78	5,69	11	18,6
25	24,58	25,42			0,932	1,44	1,98	2,64	4,4	6,56	12,6	21,1
30	29,58	30,42				1,66	2,28	3,02	5,02	7,45	14,2	23,6
35	34,50	35,50					2,57	3,41	5,62	8,25	15,8	26,1
40	39,50	40,50						3,8	6,25	9,2	17,4	28,6
45	44,50	45,50							6,88	10	18,9	31,1
50	49,50	50,50							7,5	10,9	20,6	33,6
(55)	54,05	55,95								11,8	22,1	36,1
60	59,05	60,95								12,7	23,7	38,6
(65)	64,05	65,95									25,2	41,1
70	69,05	70,95									26,8	43,6
(75)	74,05	75,95									28,3	46,1
80	79,05	80,95									29,8	48,6

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

[a] Sizes in parentheses should be avoided if possible.

[b] P = pitch of the thread.

[c] Screws with nominal lengths above the discontinuous line are threaded up to the head ($b = l - a$).

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		
	International Standard	ISO 261, ISO 965-2, ISO 965-3		
Mechanical property	Property class	4.8, 5.8	A2-50, A2-70	As agreed
	International Standard	ISO 898-1	ISO 3506-1	ISO 8839
Tolerances	Product grade	A		
	International Standard	ISO 4759-1		
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 passivation are specified in ISO 16048.	Requirements for electroplating are specified in ISO 4042.
		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 inspection is specified in ISO 3269.		

5 Designation

EXAMPLE A slotted cheese head screw with thread M5, nominal length $l = 20$ mm and property class 4.8 is designated as follows:

Cheese head screw ISO 1207 - M5 × 20 - 4.8

Bibliography

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

National Annex A

(*National Foreword*)

A-1 BIS CERTIFICATION MARKING

The product(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the *Bureau of Indian Standards Act*, 2016 and the Rules and Regulations framed thereunder, and the product(s) may be marked with the Standard Mark.

(*Continued from second cover*)

International Standard	*Corresponding Indian Standard*	*Degree of Equivalence*
ISO 3506-1 Mechanical properties of corrosion-resistant stainless steel fasteners — Part 1: Bolts, screws and studs	IS 1367 (Part 14/Sec 1) : 2018 Technical supply conditions for threaded steel fasteners: Part 14 Mechanical properties of corrosion — Resistant stainless — Steel fasteners, Section 1 Bolts, screws and studs (*fourth revision*)	Identical with ISO 3506-1 : 2009
ISO 4042 Fasteners — Electroplated coatings	IS 1367 (Part 11) : 2020 Technical supply conditions for threaded steel fasteners: Part 11 Electroplated coating systems (*fourth revision*)	Identical with ISO 4042 : 2018
ISO 4753 Fasteners — Ends of parts with external ISO metric thread	is 1368 : 2018 dimensions for ends of parts with external ISO metric threads (*fourth revision*)	Identical with ISO 4753 : 2011
ISO 4759-1 Tolerances for fasteners — Part 1: Bolts, screws, studs and nuts — Product grades A, B and C	IS 1367 (Part 2) : 2002 Technical supply conditions for threaded steel fasteners: Part 2 Tolerances for fasteners — Bolts, screws, studs and nuts — Product grades A, B and C (*third revision*)	Identical with ISO 4759-1 : 2000
ISO 6157-1 Fasteners — Surface discontinuities — Part 1: Bolts, screws and studs for general requirements	IS 1367 (Part 9/Sec 1) : 1993 Technical supply conditions for threaded steel fasteners: Part 9 Surface discontinuities, Section 1 Bolts, screws and studs for general applications (*third revision*)	Identical with ISO 6157-1 : 1988
ISO 8992 Fasteners — General requirements for bolts, screws, studs and nuts	IS 1367 (Part 1) : 2014 Technical supply conditions for threaded steel fasteners: Part 1 General requirements for bolts, screws, studs and nuts (*fourth revision*)	Identical with ISO 8992 : 2005
ISO 10683 Fasteners — Non-electrolytically applied zinc flake coatings	IS/ISO 10683 : 2018 Fasteners — Non-electrolytically applied zinc flake coating systems	Identical with ISO 10683 : 2018

The technical committee has reviewed the provisions of the following International Standard referred in this adopted standard and has decided that they are acceptable for use in conjunction with this standard:

International Standard	*Title*
ISO 8839	Mechanical properties of fasteners — Bolts, screws, studs and nuts made of non-ferrous metals
ISO 16048	Passivation of corrosion-resistant stainless-steel fasteners

This standard also makes a reference to the BIS Certification Marking of the product. Details of which are given in National Annex A.

For the purpose of deciding whether a particular requirement of this standard is complied with the final value, observed or calculated, expressing the result of a test or analysis shall be rounded off in accordance with IS 2 : 2022 ‘Rules for rounding off numerical values (*second revision*)’.

Bureau of Indian Standards

BIS is a statutory institution established under the *Bureau of Indian Standards Act*, 2016 to promote harmonious development of the activities of standardization, marking and quality certification of goods and attending to connected matters in the country.

Review of Indian Standards

Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the website- www.bis.gov.in or www.standardsbis.in.

This Indian Standard has been developed from Doc No.: PGD 37 (18342).

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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