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IS 1366 (2002): Slotted Cheese Head Screws - Product Grade A [PGD 31: Bolts, Nuts and Fasteners Accessories]



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भारतीय मानक
खांचित चीज शीर्ष पेंच—उत्पाद ग्रेड ए
(तीसरा पुनरीक्षण)

Indian Standard

SLOTTED CHEESE HEAD SCREWS—PRODUCT
GRADE A

(Third Revision)

ICS 21.060.10

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

NATIONAL FOREWORD

This Indian Standard (Third Revision) which is identical with ISO 1207:1992 'Slotted cheese head screws — Product grade A' issued by the International Organization for Standardization (ISO) was adopted by the Bureau of Indian Standards on the recommendation of the Bolts, Nuts and Fasteners Accessories Sectional Committee and approval of the Basic and Production Engineering Division Council.

This standard was originally published in 1962 and subsequently revised in 1968 and 1982. This revision of the standard has been taken up to align it with ISO 1207:1992 by adoption under dual numbering system.

The text of ISO Standard has been approved as suitable for publication as Indian Standard without deviations. Certain terminology and conventions are, however, not identical to those used in the Indian Standards. Attention is drawn especially to the following:

- a) Wherever the words 'International Standard' appear referring to this standard, they should be read as 'Indian Standard'.
- b) Comma (,) has been used as a decimal marker while in Indian Standards, the current practice is to use a point (.) as the decimal marker.

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

<i>International Standard</i>	<i>Corresponding Indian Standard</i>	<i>Degree of Equivalence</i>
ISO 225:1983	IS 8536:1987 Fasteners — Bolts, screws, studs and nuts — Symbols and designation of dimensions (<i>first revision</i>)	Identical
ISO 261:1973 ¹⁾	IS 4218 (Part 2):2001 ISO General purpose metric screw threads: Part 2 General plan (<i>second revision</i>)	do
ISO 888:1976	IS 4206:1987 Dimensions for nominal lengths and thread lengths for bolts, screws and studs (<i>first revision</i>)	do
ISO 898-1: 1988 ²⁾	IS 1367 (Part 3):2002 Technical supply conditions for threaded steel fasteners: Part 3 Mechanical properties of fasteners made of carbon steel and alloy steel — Bolts, screws and studs (<i>fourth revision</i>)	do
ISO 965-2:1980 ¹⁾	IS 14962 (Part 2):2001 ISO General purpose metric screw threads — Tolerances: Part 2 Limits of sizes for general purposes external and internal screw threads medium quality	do
ISO 3269:1988	IS 1367 (Part 17):1996 Industrial fasteners — Threaded steel fasteners — Technical supply conditions : Part 17 Inspection, sampling and acceptance procedure (<i>third revision</i>)	do

(Continued on third cover)

¹⁾ Since revised in 1998.
²⁾ Since revised in 1999.

Indian Standard
**SLOTTED CHEESE HEAD SCREWS—PRODUCT
GRADE A**
(Third 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 others than those listed in this International Standard are required, they should be selected from existing International Standards, for example ISO 261, ISO 888, ISO 898-1, ISO 965-2, ISO 3506, ISO 4759-1.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 225:1983, *Fasteners — Bolts, screws, studs and nuts — Symbols and designations of dimensions.*

ISO 261:1973, *ISO general purpose metric screw threads — General plan.*

ISO 888:1976, *Bolts, screws and studs — Nominal lengths, and thread lengths for general purpose bolts.*

ISO 898-1:1988, *Mechanical properties of fasteners — Part 1: Bolts, screws and studs.*

ISO 965-2:1980, *ISO general purpose metric screw threads — Tolerances — Part 2: Limits of sizes for general purpose bolt and nut threads — Medium quality.*

ISO 3269:1988, *Fasteners — Acceptance inspection.*

ISO 3506:1979, *Corrosion-resistant stainless steel fasteners — Specifications.*

ISO 4042:1989, *Threaded components — Electroplated coatings.*

ISO 4759-1:1978, *Tolerances for fasteners — Part 1: Bolts, screws and nuts with thread diameters between 1,6 (inclusive) and 150 mm (inclusive) and product grades A, B and C.*

ISO 6157-1:1988, *Fasteners — Surface discontinuities — Part 1: Bolts, screws and studs for general requirements.*

ISO 6157-3:1988, *Fasteners — Surface discontinuities — Part 3: Bolts, screws and studs for special requirements.*

ISO 8839:1986, *Mechanical properties of fasteners — Bolts, screws, studs and nuts made of non-ferrous metals.*

ISO 8992:1986, *Fasteners — General requirements for bolts, screws, studs and nuts.*

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.

NOTE 1 The symbols and specifications for dimensions are specified in ISO 225.

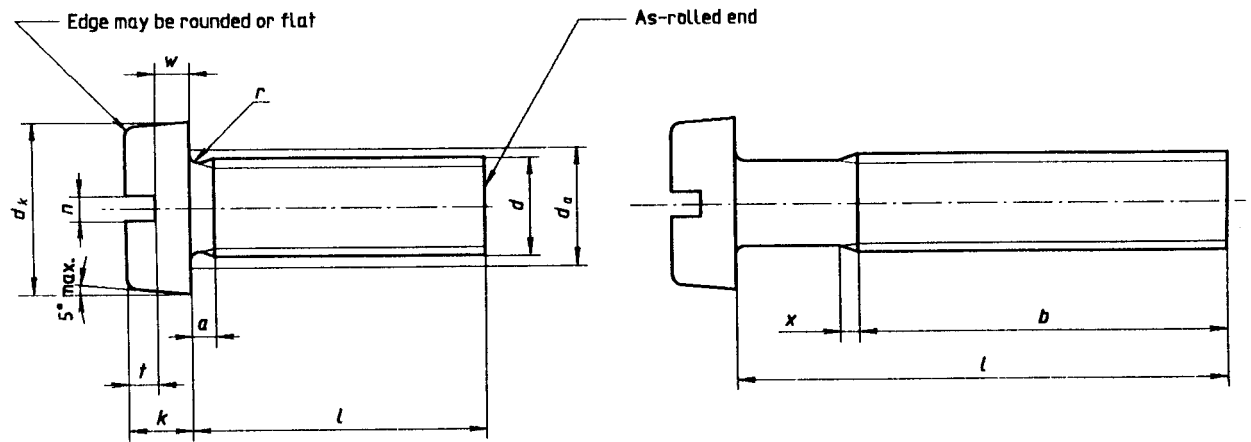


Figure 1

Table 1

Dimensions in millimetres

Thread (d)			M1,6	M2	M2,5	M3	(M3,5) ¹⁾	M4	M5	M6	M8	M10
<i>p</i> ²⁾			0,35	0,4	0,45	0,5	0,6	0,7	0,8	1	1,25	1,5
<i>a</i>	max.		0,7	0,8	0,9	1	1,2	1,4	1,6	2	2,5	3
<i>b</i>	min.		25	25	25	25	38	38	38	38	38	38
<i>d_k</i>	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
<i>d_a</i>	max.		2	2,6	3,1	3,6	4,1	4,7	5,7	6,8	9,2	11,2
<i>k</i>	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
<i>n</i>	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
<i>r</i>	min.		0,1	0,1	0,1	0,1	0,1	0,2	0,2	0,25	0,4	0,4
<i>t</i>	min.		0,45	0,6	0,7	0,85	1	1,1	1,3	1,6	2	2,4
<i>w</i>	min.		0,4	0,5	0,7	0,75	1	1,1	1,3	1,6	2	2,4
<i>x</i>	max.		0,9	1	1,1	1,25	1,5	1,75	2	2,5	3,2	3,8
nom. ¹⁾ <i>p</i> ²⁾ min. max.			Approximate mass, in kilograms per 1 000 pieces ($\rho = 7,85 \text{ kg/dm}^3$) (for information only)									
2	1,8	2,2	0,07									
3	2,8	3,2	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	34,5	35,5					2,57	3,41	5,62	8,25	15,8	26,1
40	39,5	40,5						3,8	6,25	9,2	17,4	28,6
45	44,5	45,5							6,88	10	18,9	31,1
50	49,5	50,5							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 – Popular lengths are those between the stepped, continuous, bold lines.

- 1) Sizes in parentheses should be avoided if possible.
- 2) *P* = pitch of the thread
- 3) Screws with nominal lengths above the bold dotted line are threaded up to the head ($b = l - a$).

4 Specifications and reference International Standards

See table 2.

Table 2

Material		Steel	Stainless steel	Non-ferrous metal
General requirements	International Standard	ISO 8992		
	Tolerance	6g		
Thread	International Standards	ISO 261, ISO 965-2		
	Property class	4.8, 5.8	A2-70, A2-50	...
Mechanical properties	International Standards	ISO 898-1	ISO 3506	ISO 8839
	Product grade	A		
Tolerances	International Standard	ISO 4759-1		
	Finish	Plain Requirements for electroplating are covered in ISO 4042. If different electroplating requirements are desired or if requirements are needed for other finishes, they should be agreed between customer and supplier. Limits for surface discontinuities are covered in ISO 6157-1 and ISO 6157-3.		
Acceptability		Acceptance procedure is covered in ISO 3269.		

5 Designation

Example for the designation of a slotted cheese head screw with thread M5, nominal length $l = 20$ mm and property class 4.8:

Cheese head screw ISO 1207 - M5 × 20 - 4.8

(Continued from second cover)

<i>International Standard</i>	<i>Corresponding Indian Standard</i>	<i>Degree of Equivalence</i>
ISO 3506:1979 ¹⁾	IS 1367 (Part 14/Sec 1):2002 Technical supply conditions for threaded steel fasteners : Part 14 Mechanical properties of corrosion-resistant stainless-steel fasteners, Section 1 Bolts, screws and studs (<i>third revision</i>)	Identical
ISO 4042:1989 ²⁾	IS 1367 (Part 11):2002 Technical supply conditions for threaded steel fasteners : Part 11 Electroplated coatings (<i>third revision</i>)	do
ISO 4759-1:1978 ³⁾	IS 1367 (Part 2):2002 Technical supply conditions for threaded steel fasteners : Part 2 Product grades and tolerances (<i>third revision</i>)	do
ISO 6157-1: 1988	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 (<i>third revision</i>)	do
ISO 6157-3:1988	IS 1369 (Part 9/Sec 2):1993 Technical supply conditions for threaded steel fasteners : Part 9 Surface discontinuities, Section 2 Bolts, screws and studs for special applications (<i>third revision</i>)	do
ISO 8992:1986	IS 1367 (Part 1):2002 Technical supply conditions for threaded steel fasteners : Part 1 Introduction and general information (<i>third revision</i>)	do

The concerned Technical Committee has reviewed the provisions of following ISO Standard referred in this adopted standard and has decided that it is acceptable for use in conjunction with this standard:

<i>ISO Standard</i>	<i>Title</i>
ISO 8839:1986	Mechanical properties of fasteners—Bolts, screws, studs and nuts made of non-ferrous metals.

BIS CERTIFICATION MARKING

Details available with the Bureau of Indian Standards.

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 2:1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

¹⁾ Since revised in 1997.
²⁾ Since revised in 1999.
³⁾ Since revised in 2000.

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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 latest issue of 'BIS Catalogue' and 'Standards: Monthly Additions'.

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Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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