

## Slotted cheese head screws

Product grade A  
(ISO 1207:1992)  
English version of DIN EN ISO 1207

**DIN**  
EN ISO 1207

This standard incorporates the English version of **ISO 1207**.

ICS 21.060.10

Descriptors: Fastener, screw, slotted head screw, cheese head screw, dimensions.

Supersedes DIN 84,  
August 1990 edition.

Zylinderschrauben mit Schlitze; Produktklasse A  
(ISO 1207:1992)

**European Standard EN ISO 1207:1994 has the status of a DIN Standard.**

*A comma is used as the decimal marker.*

### National foreword

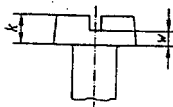
This standard has been published in accordance with a decision taken by CEN/TC 185 to adopt, without alteration, International Standard ISO 1207 as a European Standard.

The responsible German body involved in its preparation was the *Normenausschuß Mechanische Verbindungselemente* (Fasteners Standards Committee).

Other relevant ISO Standards on the mechanical properties of tapping screws, tapping screws thread and cross recesses have also been superseded by the corresponding EN ISO Standards.

It should be noted that there are no major changes between the old and the new head dimensions specified in the DIN EN Standards so that interchangeability is not adversely affected. As a rule, interchangeability of products should be checked in such cases where use of automatic feed or assembly systems is being made.

The following table compares the main head dimensions of screws as specified in DIN EN ISO 1207 and DIN 84 and should provide a useful means of deciding whether spare parts can be provided without difficulties.



Dimensions in mm

| Thread size (d) |                 | M 1,6 | M 2  | M 2,5 | M 3  | M 3,5 | M 4  | M 5  | M 6 | M 8 | M 10 |
|-----------------|-----------------|-------|------|-------|------|-------|------|------|-----|-----|------|
| $k_{\max}$      | DIN EN ISO 1207 | 1,1   | 1,4  | 1,8   | 2,0  | 2,4   | 2,6  | 3,3  | 3,9 | 5,0 | 6,0  |
|                 | DIN 84          | 1,0   | 1,3  | 1,6   | 2,0  | 2,4   | 2,6  | 3,3  | 3,9 | 5,0 | 6,0  |
| $w_{\min}$      | DIN EN ISO 1207 | 0,4   | 0,5  | 0,7   | 0,75 | 1,0   | 1,1  | 1,3  | 1,6 | 2,0 | 2,4  |
|                 | DIN 84          | 0,26  | 0,36 | 0,56  | 0,76 | 0,96  | 1,06 | 1,52 | 1,6 | 2,2 | 2,7  |

Continued overleaf.  
EN comprises 7 pages.

The DIN Standards corresponding to the International Standards referred to in clause 2 of the EN are as follows:

| ISO Standard | DIN Standard   |
|--------------|----------------|
| ISO 225      | DIN EN 20225   |
| ISO 898-1    | DIN EN 20898-1 |
| ISO 6157-1   | DIN EN 26157-1 |
| ISO 6157-3   | DIN EN 26157-3 |
| ISO 8839     | DIN EN 28839   |

#### Tabular layout of article characteristics

The DIN 4000-2-1 tabular layout of article characteristics shall apply to the screws covered in this standard.

#### Amendments

The following amendments have been made to the August 1990 editions of DIN 84.

- Sizes M1, M1,2, M1,4 and (M1,8) are no longer specified.
- For M1,6, M2 and M2,5 screws, the head height has been amended.
- The values of  $r_{min}$  and  $w_{min}$  have been changed.
- The nominal lengths 18 mm, 22 mm and 28 mm are no longer specified.
- Property class 8.8 is no longer specified.
- For screws with a thread size of M2 or less, material A1-50 is no longer specified.
- The technical delivery conditions have been revised.

#### Previous editions

DIN 83-1: 1924-03 and DIN 83-2: 1924-03; DIN 83: 1938-11; DIN 84-1: 1921-08, 1924-03, 1937-01, 1942-10;  
DIN 84-2: 1921-08, 1924-03, 1943-04; DIN 84: 1942X-10, 1952-12, 1964-04, 1968-07, 1970-10, 1988-10, 1990-08.

#### Standards referred to

(and not included in Normative references and Annex ZA)

|                |  |
|----------------|--|
| DIN 4000-2     | Tabular layouts of article characteristics for screws and nuts   |
| DIN EN 20225   | Bolts, screws, studs and nuts; symbols and designations for dimensioning (ISO 225:1983)                      |
| DIN EN 20898-1 | Mechanical properties of fasteners; bolts, screws and studs (ISO 898-1:1988)                                 |
| DIN EN 26157-1 | Fasteners; surface discontinuities; bolts, screws and studs for general requirements (ISO 6157-1:1988)       |
| DIN EN 26157-3 | Fasteners; surface discontinuities; bolts, screws and studs for special requirements (ISO 6157-3:1988)       |
| DIN EN 28839   | Mechanical properties of fasteners; bolts, screws, studs and nuts made of non-ferrous metals (ISO 8839:1986) |

#### International Patent Classification

F 16 B 023/00

UDC 621.882.14.091.1

Descriptors: Fastener, screw, slotted head screw, cheese head screw, dimensions.

English version

Slotted cheese head screws

Product grade A  
(ISO 1207:1992)

Vis à métaux à tête cylindrique fendue;  
grade A (ISO 1207:1992)

Zylinderschrauben mit Schlitz;  
Produktklasse A (ISO 1207:1992)

This European Standard was approved by CEN on 1994-06-20 and is identical to the ISO Standard as referred to.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CEN

European Committee for Standardization  
Comité Européen de Normalisation  
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

## Foreword

International Standard

ISO 7418:1989 Slotted cheese head screws; product grade A

which was prepared by ISO/TC 2 'Fasteners' of the International Organization for Standardization, has been adopted by Technical Committee CEN/TC 185 'Threaded and non-threaded mechanical fasteners and accessories' as a European Standard.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, and conflicting national standards withdrawn, by January 1995 at the latest.

In accordance with the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard:

Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

## Endorsement notice

The text of the International Standard ISO 1207:1992 was approved by CEN as a European Standard without any modification.

NOTE: Normative references to international publications are listed in Annex ZA (normative).

## 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 per-  
missible.

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

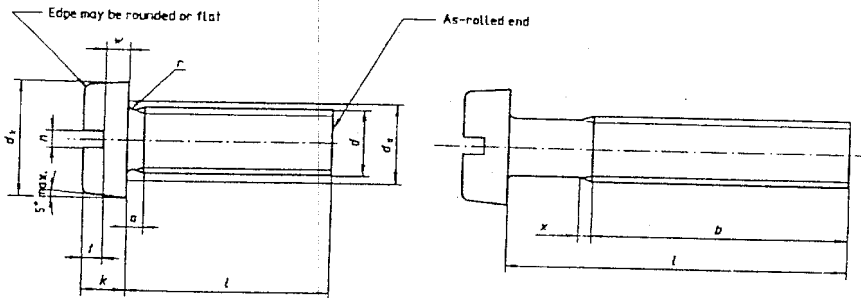


Figure 1

Table 1

Dimensions in millimetres

| Thread (d)             | M1,6             | M2  | M2,5  | M3    | (M3,5) <sup>1)</sup> | M4    | M5    | M6    | M8    | M10   |
|------------------------|------------------|---|-------|-------|----------------------|-------|-------|-------|-------|-------|
| <i>p</i> <sup>2)</sup> | 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    | 30                   | 38    | 38    | 38    | 38    | 38    |
| <i>d<sub>k</sub></i>   | nom. = max. 3,00 | 3,80  | 4,50  | 5,50  | 6,00                 | 7,00  | 8,50  | 10,00 | 13,00 | 16,00 |
|                        | min. 2,96        | 3,82  | 4,32  | 5,32  | 5,82                 | 6,78  | 8,28  | 9,78  | 12,73 | 15,73 |
| <i>d<sub>o</sub></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   |
| <i>P</i> <sup>3)</sup> |                  | Approximate mass, in kilograms per 1 000 pieces ( $\rho = 7,85 \text{ kg/dm}^3$ )<br>(for information only) |       |       |                      |       |       |       |       |       |
| nom. <sup>1)</sup>     | min.             | max.  |       |       |                      |       |       |       |       |       |
| 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                | 0,504 | 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  |
| 12                     | 11,55            | 12,35   | 0,186 | 0,329 | 0,542                | 0,868 | 1,2   | 1,63  | 2,8   | 4,27  |
| 14                     | 13,65            | 14,35   | 0,209 | 0,365 | 0,602                | 0,956 | 1,32  | 1,79  | 3,05  | 4,62  |
| 16                     | 15,65            | 16,35   | 0,232 | 0,402 | 0,662                | 1,04  | 1,44  | 1,95  | 3,3   | 4,98  |
| 20                     | 19,58            | 20,42   |       | 0,478 | 0,782                | 1,22  | 1,68  | 2,25  | 3,78  | 5,69  |
| 25                     | 24,58            | 25,42   |       |       | 0,932                | 1,44  | 1,98  | 2,64  | 4,4   | 6,56  |
| 30                     | 29,58            | 30,42   |       |       |                      | 1,66  | 2,28  | 3,02  | 5,02  | 7,45  |
| 35                     | 34,5             | 35,5  |       |       |                      |       | 2,57  | 3,41  | 5,62  | 8,25  |
| 40                     | 39,5             | 40,5  |       |       |                      |       |       | 3,8   | 6,25  | 9,2   |
| 45                     | 44,5             | 45,5  |       |       |                      |       |       |       | 6,88  | 10    |
| 50                     | 49,5             | 50,5  |       |       |                      |       |       |       | 7,5   | 10,9  |
| (55)                   | 54,05            | 55,95   |       |       |                      |       |       |       |       | 11,8  |
| 60                     | 59,05            | 60,95   |       |       |                      |       |       |       |       | 12,7  |
| (65)                   | 64,05            | 65,95   |       |       |                      |       |       |       |       |       |
| 70                     | 69,05            | 70,95   |       |       |                      |       |       |       |       |       |
| (75)                   | 74,05            | 75,95   |       |       |                      |       |       |       |       |       |
| 80                     | 79,05            | 80,95   |       |       |                      |       |       |       |       |       |
|                        |                  |   |       |       |                      |       |       |       |       | 29,8  |
|                        |                  |   |       |       |                      |       |       |       |       | 48,6  |

NOTE - Popular lengths are those between the stepped, continuous, bold lines.

1) Sizes in parenthesis should be avoided if possible.

2) *P* = pitch of the thread3) 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   |                 |                   |
| Thread                | Tolerance               | 6g   |                 |                   |
|                       | International Standards | ISO 261, ISO 965-2   |                 |                   |
| Mechanical properties | Property class          | 4.8, 5.8   | A2-70, A2-50    | ...               |
|                       | International Standards | ISO 898-1  | ISO 3506        | ISO 8839          |
| Tolerances            | Product grade           | A  |                 |                   |
|                       | International Standard  | ISO 4759-1   |                 |                   |
| Finish                |                         | Plain<br>Requirements for electroplating are covered in ISO 4042.<br>If different electroplating requirements are desired or if requirements are needed for other finishes, they should be agreed between customer and supplier.<br>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**



**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).

| <u>Publication</u> | <u>Year</u> | <u>Title</u>   | <u>EN/HD</u> | <u>Year</u> |
|--------------------|-------------|--|--------------|-------------|
| ISO 225            | 1983        | Fasteners - Bolts, screws, studs-Symbols and designation of dimensions                         | EN 20225     | 1991        |
| ISO 898-1          | 1988        | Mechanical properties of fasteners - Part 1: Bolts, screws and studs                           | EN 20898-1   | 1991        |
| ISO 6157-1         | 1988        | Fasteners - Surface discontinuities - Part 1: Bolts, screws and studs for general requirements | EN 26157-1   | 1991        |
| ISO 6157-3         | 1988        | Fasteners - Surface discontinuities - Part 3: Bolts, screws and studs for special requirements | EN 26157-3   | 1991        |
| ISO 8839           | 1986        | Mechanical properties of fasteners - Bolts, screws studs and nuts made of non-ferrous metals   | EN 28839     | 1991        |