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# INTERNATIONAL STANDARD



# 965/III

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INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

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## ISO general purpose metric screw threads — Tolerances — Deviations for constructional threads

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**Descriptors :** fasteners, screw threads, threads, screws, nuts (fasteners), dimensional tolerances, designation.

Price based on 14 pages

**FOREWORD**

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO Member Bodies). The work of developing International Standards is carried out through ISO Technical Committees. Every Member Body interested in a subject for which a Technical Committee has been set up 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.

Draft International Standards adopted by the Technical Committees are circulated to the Member Bodies for approval before their acceptance as International Standards by the ISO Council.

Prior to 1972, the results of the work of the Technical Committees were published as ISO Recommendations; these documents are now in the process of being transformed into International Standards. As part of this process, International Standard ISO 965/III replaces ISO Recommendation R 965/III-1969 drawn up by Technical Committee ISO/TC 1, *Screw threads*.

The Member Bodies of the following countries approved the Recommendation :

|                     |                |                       |
|---------------------|----------------|-----------------------|
| Argentina           | France         | Romania               |
| Australia           | Germany        | South Africa, Rep. of |
| Austria             | Greece         | Spain                 |
| Belgium             | India          | Sweden                |
| Brazil              | Israel         | Switzerland           |
| Canada              | Italy          | Turkey                |
| Chile               | Japan          | United Kingdom        |
| Czechoslovakia      | Korea, Rep. of | U.S.A.                |
| Denmark             | Netherlands    | Yugoslavia            |
| Egypt, Arab Rep. of | New Zealand    |                       |
| Finland             | Norway         |                       |

No Member Body expressed disapproval of the Recommendation.

This International Standard is one of a number of ISO publications determining tolerances for ISO metric screw threads. The complete set is made up as follows :

ISO 965/I, *ISO general purpose metric screw threads – Tolerances – Principles and basic data.*

ISO 965/II, *ISO general purpose metric screw threads – Tolerances – Limits of sizes for commercial bolt and nut threads – Medium quality.*

ISO 965/III, *ISO general purpose metric screw threads – Tolerances – Deviations for constructional threads.*

ISO/R 1501, *ISO miniature screw threads.*

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# ISO general purpose metric screw threads — Tolerances — Deviations for constructional threads

## 1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies deviations for pitch and crest diameters for ISO general purpose metric screw threads conforming to ISO 261, *ISO general purpose metric screw threads — General plan*.

The deviations specified are derived from the fundamental deviations and tolerances specified in ISO 965/I.

## 2 DESIGNATION

Tolerances are designated by the relevant tolerance class as found under the heading “Tolerance class” in the tables.

*Examples :*

M6—6H  
M6—5g6g

A fit between threaded parts is indicated by the nut thread tolerance designation followed by the bolt thread tolerance designation separated by a stroke.

*Example :*

M6—6H/5g6g

## 3 REMARKS

For nut threads as well as bolt threads, the actual root contour shall not in any point transgress the basic profile.

The tabulated values for the minor diameter of the bolt thread are calculated on the basis of an  $H/6$  truncation and are to be used for stress calculations, etc.

For coated threads, the tolerances apply to the parts *before* coating, unless otherwise stated. After coating, the actual thread profile shall not in any point transgress the maximum material limits for position H or h respectively.

4 DEVIATIONS

ES, es = upper deviation  
EI, ei = lower deviation

| Basic major diameter |                 | Pitch | Nut thread      |                |     |                | Bolt thread |                 |                |     |                |     |                                                   |
|----------------------|-----------------|-------|-----------------|----------------|-----|----------------|-------------|-----------------|----------------|-----|----------------|-----|---------------------------------------------------|
| over                 | up to and incl. |       | Tolerance class | Pitch diameter |     | Minor diameter |             | Tolerance class | Major diameter |     | Pitch diameter |     | Minor diameter<br>(for stress calculations, etc.) |
|                      |                 |       |                 | ES             | EI  | ES             | EI          |                 | es             | ei  | es             | ei  |                                                   |
|                      |                 |       |                 | μm             | μm  | μm             | μm          |                 | μm             | μm  | μm             | μm  |                                                   |
| 0,99                 | 1,4             | 0,2   | —               | —              | —   | —              | —           | 3h4h            | 0              | −36 | 0              | −24 | −29                                               |
|                      |                 |       | 4H              | +40            | 0   | +38            | 0           | 4h              | 0              | −36 | 0              | −30 | −29                                               |
|                      |                 |       | 5G              | —              | —   | —              | —           | 5g6g            | −17            | −73 | −17            | −55 | −46                                               |
|                      |                 |       | 5H              | —              | —   | —              | —           | 5h4h            | 0              | −36 | 0              | −38 | −29                                               |
|                      |                 |       | —               | —              | —   | —              | —           | 5h6h            | 0              | −56 | 0              | −38 | −29                                               |
|                      |                 |       | —               | —              | —   | —              | —           | 6e              | —              | —   | —              | —   | —                                                 |
|                      |                 |       | 6G              | —              | —   | —              | —           | 6g              | −17            | −73 | −17            | −65 | −46                                               |
|                      |                 |       | 6H              | —              | —   | —              | —           | 6h              | 0              | −56 | 0              | −48 | −29                                               |
|                      |                 |       | —               | —              | —   | —              | —           | 7e6e            | —              | —   | —              | —   | —                                                 |
|                      |                 |       | 7G              | —              | —   | —              | —           | 7g6g            | —              | —   | —              | —   | —                                                 |
|                      |                 |       | 7H              | —              | —   | —              | —           | 7h6h            | —              | —   | —              | —   | —                                                 |
|                      |                 |       | 8G              | —              | —   | —              | —           | 8g              | —              | —   | —              | —   | —                                                 |
|                      |                 |       | 8H              | —              | —   | —              | —           | 9g8g            | —              | —   | —              | —   | —                                                 |
|                      |                 | 0,25  | —               | —              | —   | —              | —           | 3h4h            | 0              | −42 | 0              | −26 | −36                                               |
|                      |                 |       | 4H              | +45            | 0   | +45            | 0           | 4h              | 0              | −42 | 0              | −34 | −36                                               |
|                      |                 |       | 5G              | +74            | +18 | +74            | +18         | 5g6g            | −18            | −85 | −18            | −60 | −54                                               |
|                      |                 |       | 5H              | +56            | 0   | +56            | 0           | 5h4h            | 0              | −42 | 0              | −42 | −36                                               |
|                      |                 |       | —               | —              | —   | —              | —           | 5h6h            | 0              | −67 | 0              | −42 | −36                                               |
|                      |                 |       | —               | —              | —   | —              | —           | 6e              | —              | —   | —              | —   | —                                                 |
|                      |                 |       | 6G              | —              | —   | —              | —           | 6g              | −18            | −85 | −18            | −71 | −54                                               |
|                      |                 |       | 6H              | —              | —   | —              | —           | 6h              | 0              | −67 | 0              | −53 | −36                                               |
|                      |                 |       | —               | —              | —   | —              | —           | 7e6e            | —              | —   | —              | —   | —                                                 |
|                      |                 |       | 7G              | —              | —   | —              | —           | 7g6g            | —              | —   | —              | —   | —                                                 |
|                      |                 |       | 7H              | —              | —   | —              | —           | 7h6h            | —              | —   | —              | —   | —                                                 |
|                      |                 |       | 8G              | —              | —   | —              | —           | 8g              | —              | —   | —              | —   | —                                                 |
|                      |                 |       | 8H              | —              | —   | —              | —           | 9g8g            | —              | —   | —              | —   | —                                                 |
|                      |                 | 0,3   | —               | —              | —   | —              | —           | 3h4h            | 0              | −48 | 0              | −28 | −43                                               |
|                      |                 |       | 4H              | +48            | 0   | +53            | 0           | 4h              | 0              | −48 | 0              | −36 | −43                                               |
|                      |                 |       | 5G              | +78            | +18 | +85            | +18         | 5g6g            | −18            | −93 | −18            | −63 | −61                                               |
|                      |                 |       | 5H              | +60            | 0   | +67            | 0           | 5h4h            | 0              | −48 | 0              | −45 | −43                                               |
|                      |                 |       | —               | —              | —   | —              | —           | 5h6h            | 0              | −75 | 0              | −45 | −43                                               |
|                      |                 |       | —               | —              | —   | —              | —           | 6e              | —              | —   | —              | —   | —                                                 |
|                      |                 |       | 6G              | +93            | +18 | +103           | +18         | 6g              | −18            | −93 | −18            | −74 | −61                                               |
|                      |                 |       | 6H              | +75            | 0   | +85            | 0           | 6h              | 0              | −75 | 0              | −56 | −43                                               |
|                      |                 |       | —               | —              | —   | —              | —           | 7e6e            | —              | —   | —              | —   | —                                                 |
|                      |                 |       | 7G              | —              | —   | —              | —           | 7g6g            | —              | —   | —              | —   | —                                                 |
|                      |                 |       | 7H              | —              | —   | —              | —           | 7h6h            | —              | —   | —              | —   | —                                                 |
|                      |                 |       | 8G              | —              | —   | —              | —           | 8g              | —              | —   | —              | —   | —                                                 |
|                      |                 |       | 8H              | —              | —   | —              | —           | 9g8g            | —              | —   | —              | —   | —                                                 |

*ES, es* = upper deviation  
*EI, ei* = lower deviation

| Basic major diameter |                 | Pitch | Nut thread      |                |     |                |      |                 | Bolt thread    |      |                |      |                                                   |  |  |
|----------------------|-----------------|-------|-----------------|----------------|-----|----------------|------|-----------------|----------------|------|----------------|------|---------------------------------------------------|--|--|
| over                 | up to and incl. |       | Tolerance class | Pitch diameter |     | Minor diameter |      | Tolerance class | Major diameter |      | Pitch diameter |      | Minor diameter<br>(for stress calculations, etc.) |  |  |
|                      |                 |       |                 | ES             | EI  | ES             | EI   |                 | es             | ei   | es             | ei   |                                                   |  |  |
|                      |                 |       |                 | μm             | μm  | μm             | μm   |                 | μm             | μm   | μm             | μm   |                                                   |  |  |
| mm                   | mm              | mm    |                 |                |     |                |      |                 |                |      |                |      |                                                   |  |  |
| 1,4                  | 2,8             | 0,2   | —               | —              | —   | —              | —    | 3h4h            | 0              | - 36 | 0              | - 25 | -29                                               |  |  |
|                      |                 |       | 4H              | + 42           | 0   | + 38           | 0    | 4h              | 0              | - 36 | 0              | - 32 | -29                                               |  |  |
|                      |                 |       | 5G              | —              | —   | —              | —    | 5g6g            | -17            | - 73 | - 17           | - 57 | -46                                               |  |  |
|                      |                 |       | 5H              | —              | —   | —              | —    | 5h4h            | 0              | - 36 | 0              | - 40 | -29                                               |  |  |
|                      |                 |       | —               | —              | —   | —              | —    | 5h6h            | 0              | - 56 | 0              | - 40 | -29                                               |  |  |
|                      |                 |       | —               | —              | —   | —              | —    | 6c              | —              | —    | —              | —    | —                                                 |  |  |
|                      |                 |       | 6G              | —              | —   | —              | —    | 6g              | -17            | - 73 | -17            | - 67 | -45                                               |  |  |
|                      |                 |       | 6H              | —              | —   | —              | —    | 6h              | 0              | - 56 | 0              | - 50 | -29                                               |  |  |
|                      |                 |       | —               | —              | —   | —              | —    | 7e6e            | —              | —    | —              | —    | —                                                 |  |  |
|                      |                 |       | 7G              | —              | —   | —              | —    | 7g6g            | —              | —    | —              | —    | —                                                 |  |  |
|                      |                 |       | 7H              | —              | —   | —              | —    | 7h6h            | —              | —    | —              | —    | —                                                 |  |  |
|                      |                 |       | 8G              | —              | —   | —              | —    | 8g              | —              | —    | —              | —    | —                                                 |  |  |
|                      |                 | 8H    | —               | —              | —   | —              | 9g8g | —               | —              | —    | —              | —    |                                                   |  |  |
|                      |                 | 0,25  | —               | —              | —   | —              | —    | 3h4h            | 0              | - 42 | 0              | - 28 | -33                                               |  |  |
|                      |                 |       | 4H              | + 48           | 0   | + 45           | 0    | 4h              | 0              | - 42 | 0              | - 36 | -33                                               |  |  |
|                      |                 |       | 5G              | + 78           | +18 | + 74           | +18  | 5g6g            | -18            | - 85 | -18            | - 63 | -54                                               |  |  |
|                      |                 |       | 5H              | + 60           | 0   | + 56           | 0    | 5h4h            | 0              | - 42 | 0              | - 45 | -33                                               |  |  |
|                      |                 |       | —               | —              | —   | —              | —    | 5h6h            | 0              | - 67 | 0              | - 45 | -33                                               |  |  |
|                      |                 |       | —               | —              | —   | —              | —    | 6e              | —              | —    | —              | —    | —                                                 |  |  |
|                      |                 |       | 6G              | —              | —   | —              | —    | 6g              | -18            | - 85 | -18            | - 74 | -54                                               |  |  |
|                      |                 |       | 6H              | —              | —   | —              | —    | 6h              | 0              | - 67 | 0              | - 56 | -33                                               |  |  |
|                      |                 |       | —               | —              | —   | —              | —    | 7e6e            | —              | —    | —              | —    | —                                                 |  |  |
|                      |                 |       | 7G              | —              | —   | —              | —    | 7g6g            | —              | —    | —              | —    | —                                                 |  |  |
|                      |                 |       | 7H              | —              | —   | —              | —    | 7h6h            | —              | —    | —              | —    | —                                                 |  |  |
|                      |                 |       | 8G              | —              | —   | —              | —    | 8g              | —              | —    | —              | —    | —                                                 |  |  |
|                      |                 | 8H    | —               | —              | —   | —              | 9g8g | —               | —              | —    | —              | —    |                                                   |  |  |
|                      |                 | 0,35  | —               | —              | —   | —              | —    | 3h4h            | 0              | - 53 | 0              | - 32 | -51                                               |  |  |
|                      |                 |       | 4H              | + 53           | 0   | + 63           | 0    | 4h              | 0              | - 53 | 0              | - 40 | -51                                               |  |  |
|                      |                 |       | 5G              | + 86           | +19 | + 99           | +19  | 5g6g            | -19            | -104 | -19            | - 69 | -70                                               |  |  |
|                      |                 |       | 5H              | + 67           | 0   | + 80           | 0    | 5h4h            | 0              | - 53 | 0              | - 50 | -51                                               |  |  |
|                      |                 |       | —               | —              | —   | —              | —    | 5h6h            | 0              | - 85 | 0              | - 50 | -51                                               |  |  |
|                      |                 |       | —               | —              | —   | —              | —    | 6e              | —              | —    | —              | —    | —                                                 |  |  |
|                      |                 |       | 6G              | +104           | +19 | +119           | +19  | 6g              | -19            | -104 | -19            | - 82 | -70                                               |  |  |
|                      |                 |       | 6H              | + 85           | 0   | +100           | 0    | 6h              | 0              | - 85 | 0              | - 63 | -51                                               |  |  |
|                      |                 |       | —               | —              | —   | —              | —    | 7e6e            | —              | —    | —              | —    | —                                                 |  |  |
|                      |                 |       | 7G              | —              | —   | —              | —    | 7g6g            | -19            | -104 | -19            | - 99 | -70                                               |  |  |
|                      |                 |       | 7H              | —              | —   | —              | —    | 7h6h            | 0              | - 85 | 0              | - 80 | -51                                               |  |  |
|                      |                 |       | 8G              | —              | —   | —              | —    | 8g              | —              | —    | —              | —    | —                                                 |  |  |
|                      |                 | 8H    | —               | —              | —   | —              | 9g8g | —               | —              | —    | —              | —    |                                                   |  |  |
|                      |                 | 0,4   | —               | —              | —   | —              | —    | 3h4h            | 0              | - 60 | 0              | - 34 | -58                                               |  |  |
|                      |                 |       | 4H              | + 56           | 0   | + 71           | 0    | 4h              | 0              | - 60 | 0              | - 42 | -58                                               |  |  |
|                      |                 |       | 5G              | + 90           | +19 | +109           | +19  | 5g6g            | -19            | -114 | -19            | - 72 | -77                                               |  |  |
|                      |                 |       | 5H              | + 71           | 0   | + 90           | 0    | 5h4h            | 0              | - 60 | 0              | - 53 | -58                                               |  |  |
|                      |                 |       | —               | —              | —   | —              | —    | 5h6h            | 0              | - 95 | 0              | - 53 | -58                                               |  |  |
|                      |                 |       | —               | —              | —   | —              | —    | 6e              | —              | —    | —              | —    | —                                                 |  |  |
|                      |                 |       | 6G              | +109           | +19 | +131           | +19  | 6g              | -19            | -114 | -19            | - 86 | -77                                               |  |  |
|                      |                 |       | 6H              | + 90           | 0   | +112           | 0    | 6h              | 0              | - 95 | 0              | - 67 | -58                                               |  |  |
|                      |                 | —     | —               | —              | —   | —              | 7e6e | —               | —              | —    | —              | —    |                                                   |  |  |

ES, es = upper deviation  
EI, ei = lower deviation

| Basic major diameter |                 | Pitch | Nut thread      |                |     |                | Bolt thread |                 |                |      |                |      |                                                   |
|----------------------|-----------------|-------|-----------------|----------------|-----|----------------|-------------|-----------------|----------------|------|----------------|------|---------------------------------------------------|
| over                 | up to and incl. |       | Tolerance class | Pitch diameter |     | Minor diameter |             | Tolerance class | Major diameter |      | Pitch diameter |      | Minor diameter<br>(for stress calculations, etc.) |
|                      |                 |       |                 | ES             | EI  | ES             | EI          |                 | es             | ei   | es             | ei   |                                                   |
|                      |                 |       |                 | μm             | μm  | μm             | μm          |                 | μm             | μm   | μm             | μm   |                                                   |
| 1,4                  | 2,8             | 0,4   | 7G              | —              | —   | —              | —           | 7g6g            | -19            | -114 | -19            | -104 | - 77                                              |
|                      |                 |       | 7H              | —              | —   | —              | —           | 7h6h            | 0              | - 95 | 0              | - 85 | - 58                                              |
|                      |                 |       | 8G              | —              | —   | —              | —           | 8g              | —              | —    | —              | —    | —                                                 |
|                      |                 |       | 8H              | —              | —   | —              | —           | 9g8g            | —              | —    | —              | —    | —                                                 |
|                      |                 | 0,45  | —               | —              | —   | —              | —           | 3h4h            | 0              | - 63 | 0              | - 36 | - 65                                              |
|                      |                 |       | 4H              | + 60           | 0   | + 80           | 0           | 4h              | 0              | - 63 | 0              | - 45 | - 65                                              |
|                      |                 |       | 5G              | + 95           | +20 | +120           | +20         | 5g6g            | -20            | -120 | -20            | - 76 | - 85                                              |
|                      |                 |       | 5H              | + 75           | 0   | +100           | 0           | 5h4h            | 0              | - 63 | 0              | - 56 | - 65                                              |
|                      |                 |       | —               | —              | —   | —              | —           | 5h6h            | 0              | -100 | 0              | - 56 | - 65                                              |
|                      |                 |       | —               | —              | —   | —              | —           | 6e              | —              | —    | —              | —    | —                                                 |
|                      |                 |       | 6G              | +115           | +20 | +145           | +20         | 6g              | -20            | -120 | -20            | - 91 | - 85                                              |
|                      |                 |       | 6H              | + 95           | 0   | +125           | 0           | 6h              | 0              | -100 | 0              | - 71 | - 65                                              |
|                      |                 |       | —               | —              | —   | —              | —           | 7e6e            | —              | —    | —              | —    | —                                                 |
|                      |                 |       | 7G              | —              | —   | —              | —           | 7g6g            | -20            | -120 | -20            | -110 | - 85                                              |
|                      |                 |       | 7H              | —              | —   | —              | —           | 7h6h            | 0              | -100 | 0              | - 90 | - 85                                              |
|                      |                 |       | 8G              | —              | —   | —              | —           | 8g              | —              | —    | —              | —    | —                                                 |
|                      |                 |       | 8H              | —              | —   | —              | —           | 9g8g            | —              | —    | —              | —    | —                                                 |
| 2,8                  | 5,6             | 0,35  | —               | —              | —   | —              | —           | 3h4h            | 0              | - 53 | 0              | - 34 | - 51                                              |
|                      |                 |       | 4H              | + 56           | 0   | + 63           | 0           | 4h              | 0              | - 53 | 0              | - 42 | - 51                                              |
|                      |                 |       | 5G              | + 90           | +19 | + 99           | +19         | 5g6g            | -19            | -104 | -19            | - 72 | - 70                                              |
|                      |                 |       | 5H              | + 71           | 0   | + 80           | 0           | 5h4h            | 0              | - 53 | 0              | - 53 | - 51                                              |
|                      |                 |       | —               | —              | —   | —              | —           | 5h6h            | 0              | - 85 | 0              | - 53 | - 51                                              |
|                      |                 |       | —               | —              | —   | —              | —           | 6e              | —              | —    | —              | —    | —                                                 |
|                      |                 |       | 6G              | +109           | +19 | +119           | +19         | 6g              | -19            | -104 | -19            | - 86 | - 70                                              |
|                      |                 |       | 6H              | + 90           | 0   | +100           | 0           | 6h              | 0              | - 85 | 0              | - 67 | - 51                                              |
|                      |                 |       | —               | —              | —   | —              | —           | 7e6e            | —              | —    | —              | —    | —                                                 |
|                      |                 |       | 7G              | —              | —   | —              | —           | 7g6g            | -19            | -104 | -19            | -104 | - 70                                              |
|                      |                 |       | 7H              | —              | —   | —              | —           | 7h6h            | 0              | - 85 | 0              | - 85 | - 51                                              |
|                      |                 |       | 8G              | —              | —   | —              | —           | 8g              | —              | —    | —              | —    | —                                                 |
|                      |                 |       | 8H              | —              | —   | —              | —           | 9g8g            | —              | —    | —              | —    | —                                                 |
|                      |                 | 0,5   | —               | —              | —   | —              | —           | 3h4h            | 0              | - 67 | 0              | - 38 | - 72                                              |
|                      |                 |       | 4H              | + 63           | 0   | + 90           | 0           | 4h              | 0              | - 67 | 0              | - 48 | - 72                                              |
|                      |                 |       | 5G              | +100           | +20 | +132           | +20         | 5g6g            | -20            | -126 | -20            | - 80 | - 92                                              |
|                      |                 |       | 5H              | + 80           | 0   | +112           | 0           | 5h4h            | 0              | - 67 | 0              | - 60 | - 72                                              |
|                      |                 |       | —               | —              | —   | —              | —           | 5h6h            | 0              | -105 | 0              | - 60 | - 72                                              |
|                      |                 |       | —               | —              | —   | —              | —           | 6e              | -50            | -156 | -50            | -125 | -122                                              |
|                      |                 |       | 6G              | +120           | +20 | +160           | +20         | 6g              | -20            | -126 | -20            | - 95 | - 92                                              |
|                      |                 |       | 6H              | +100           | 0   | +140           | 0           | 6h              | 0              | -105 | 0              | - 75 | - 72                                              |
|                      |                 |       | —               | —              | —   | —              | —           | 7e6e            | -50            | -156 | -50            | -145 | -122                                              |
|                      |                 |       | 7G              | +145           | +20 | +200           | +20         | 7g6g            | -20            | -126 | -20            | -115 | - 92                                              |
|                      |                 |       | 7H              | +125           | 0   | +180           | 0           | 7h6h            | 0              | -106 | 0              | - 95 | - 72                                              |
|                      |                 |       | 8G              | —              | —   | —              | —           | 8g              | —              | —    | —              | —    | —                                                 |
|                      |                 |       | 8H              | —              | —   | —              | —           | 9g8g            | —              | —    | —              | —    | —                                                 |

ES, es = upper deviation

EI, ei = lower deviation

| Basic major diameter |                 | Pitch | Nut thread      |                |     |                |     |                 | Bolt thread    |      |                |      |                                                   |  |
|----------------------|-----------------|-------|-----------------|----------------|-----|----------------|-----|-----------------|----------------|------|----------------|------|---------------------------------------------------|--|
| over                 | up to and incl. |       | Tolerance class | Pitch diameter |     | Minor diameter |     | Tolerance class | Major diameter |      | Pitch diameter |      | Minor diameter<br>(for stress calculations, etc.) |  |
|                      |                 |       |                 | ES             | EI  | ES             | EI  |                 | es             | ei   | es             | ei   |                                                   |  |
|                      |                 |       |                 | μm             | μm  | μm             | μm  |                 | μm             | μm   | μm             | μm   |                                                   |  |
| mm                   | mm              | mm    |                 |                |     |                |     |                 |                |      |                |      |                                                   |  |
| 2,8                  | 5,6             | 0,6   | —               | —              | —   | —              | —   | 3h4h            | 0              | - 80 | 0              | - 42 | - 87                                              |  |
|                      |                 |       | 4H              | + 71           | 0   | +100           | 0   | 4h              | 0              | - 80 | 0              | - 53 | - 87                                              |  |
|                      |                 |       | 5G              | +111           | +21 | +146           | +21 | 5g6g            | -21            | -146 | -21            | - 86 | -108                                              |  |
|                      |                 |       | 5H              | + 90           | 0   | +125           | 0   | 5h4h            | 0              | - 80 | 0              | - 67 | - 87                                              |  |
|                      |                 |       | —               | —              | —   | —              | —   | 5h6h            | 0              | -125 | 0              | - 67 | - 87                                              |  |
|                      |                 |       | —               | —              | —   | —              | —   | 6e              | -53            | -178 | -53            | -138 | -140                                              |  |
|                      |                 |       | 6G              | +133           | +21 | +181           | +21 | 6g              | -21            | -146 | -21            | -106 | -108                                              |  |
|                      |                 |       | 6H              | +112           | 0   | +160           | 0   | 6h              | 0              | -125 | 0              | - 85 | - 87                                              |  |
|                      |                 |       | —               | —              | —   | —              | —   | 7e6e            | -53            | -178 | -53            | -159 | -140                                              |  |
|                      |                 |       | 7G              | +161           | +21 | +221           | +21 | 7g6g            | -21            | -146 | -21            | -127 | -108                                              |  |
|                      |                 |       | 7H              | +140           | 0   | +200           | 0   | 7h6h            | 0              | -125 | 0              | -106 | - 87                                              |  |
|                      |                 |       | 8G              | —              | —   | —              | —   | 8g              | —              | —    | —              | —    | —                                                 |  |
|                      |                 |       | 8H              | —              | —   | —              | —   | 9g8g            | —              | —    | —              | —    | —                                                 |  |
|                      |                 | 0,7   | —               | —              | —   | —              | —   | 3h4h            | 0              | - 90 | 0              | - 45 | -101                                              |  |
|                      |                 |       | 4H              | + 75           | 0   | +112           | 0   | 4h              | 0              | - 90 | 0              | - 56 | -101                                              |  |
|                      |                 |       | 5G              | +117           | +22 | +162           | +22 | 5g6g            | -22            | -162 | -22            | - 93 | -123                                              |  |
|                      |                 |       | 5H              | + 95           | 0   | +140           | 0   | 5h4h            | 0              | - 90 | 0              | - 71 | -101                                              |  |
|                      |                 |       | —               | —              | —   | —              | —   | 5h6h            | 0              | -140 | 0              | - 71 | -101                                              |  |
|                      |                 |       | —               | —              | —   | —              | —   | 6e              | -56            | -196 | -56            | -146 | -157                                              |  |
|                      |                 |       | 6G              | +140           | +22 | +202           | +22 | 6g              | -22            | -162 | -22            | -112 | -123                                              |  |
|                      |                 |       | 6H              | +118           | 0   | +180           | 0   | 6h              | 0              | -140 | 0              | - 90 | -101                                              |  |
|                      |                 |       | —               | —              | —   | —              | —   | 7e6e            | -56            | -196 | -56            | -168 | -157                                              |  |
|                      |                 |       | 7G              | +172           | +22 | +246           | +22 | 7g6g            | -22            | -162 | -22            | -134 | -123                                              |  |
|                      |                 |       | 7H              | +150           | 0   | +224           | 0   | 7h6h            | 0              | -140 | 0              | -112 | -101                                              |  |
|                      |                 |       | 8G              | —              | —   | —              | —   | 8g              | —              | —    | —              | —    | —                                                 |  |
|                      |                 |       | 8H              | —              | —   | —              | —   | 9g8g            | —              | —    | —              | —    | —                                                 |  |
|                      |                 | 0,75  | —               | —              | —   | —              | —   | 3h4h            | 0              | - 90 | 0              | - 45 | -108                                              |  |
|                      |                 |       | 4H              | + 75           | 0   | +118           | —   | 4h              | 0              | - 90 | 0              | - 56 | -108                                              |  |
|                      |                 |       | 5G              | +117           | +22 | +172           | +22 | 5g6g            | -22            | -162 | -22            | - 93 | -130                                              |  |
|                      |                 |       | 5H              | + 95           | 0   | +150           | 0   | 5h4h            | 0              | - 90 | 0              | - 71 | -108                                              |  |
|                      |                 |       | —               | —              | —   | —              | —   | 5h6h            | 0              | -140 | 0              | - 71 | -108                                              |  |
|                      |                 |       | —               | —              | —   | —              | —   | 6e              | -56            | -196 | -56            | -146 | -164                                              |  |
|                      |                 |       | 6G              | +140           | +22 | +212           | +22 | 6g              | -22            | -162 | -22            | -112 | -130                                              |  |
|                      |                 |       | 6H              | +118           | 0   | +190           | 0   | 6h              | 0              | -140 | 0              | - 90 | -108                                              |  |
|                      |                 |       | —               | —              | —   | —              | —   | 7e6e            | -56            | -196 | -56            | -168 | -164                                              |  |
|                      |                 |       | 7G              | +172           | +22 | +258           | +22 | 7g6g            | -22            | -162 | -22            | -134 | -130                                              |  |
|                      |                 |       | 7H              | +150           | 0   | +235           | 0   | 7h6h            | 0              | -140 | 0              | -112 | -108                                              |  |
|                      |                 |       | 8G              | —              | —   | —              | —   | 8g              | —              | —    | —              | —    | —                                                 |  |
|                      |                 |       | 8H              | —              | —   | —              | —   | 9g8g            | —              | —    | —              | —    | —                                                 |  |
|                      |                 | 0,8   | —               | —              | —   | —              | —   | 3h4h            | 0              | - 95 | 0              | - 48 | -116                                              |  |
|                      |                 |       | 4H              | + 80           | 0   | +125           | 0   | 4h              | 0              | - 95 | 0              | - 60 | -116                                              |  |
|                      |                 |       | 5G              | +124           | +24 | +184           | +24 | 5g6g            | -24            | -174 | -24            | - 99 | -140                                              |  |
|                      |                 |       | 5H              | +100           | 0   | +160           | 0   | 5h4h            | 0              | - 95 | 0              | - 75 | -116                                              |  |
|                      |                 |       | —               | —              | —   | —              | —   | 5h6h            | 0              | -150 | 0              | - 75 | -116                                              |  |
|                      |                 |       | —               | —              | —   | —              | —   | 6e              | -60            | -210 | -60            | -155 | -176                                              |  |
|                      |                 |       | 6G              | +149           | +24 | +224           | +24 | 6g              | -24            | -174 | -24            | -119 | -140                                              |  |
|                      |                 |       | 6H              | +125           | 0   | +200           | 0   | 6h              | 0              | -150 | 0              | - 95 | -116                                              |  |

ES, es = upper deviation  
EI, ei = lower deviation

| Basic major diameter |                 | Pitch | Nut thread      |                |     |                | Bolt thread |                 |                |      |                |      |                                                   |
|----------------------|-----------------|-------|-----------------|----------------|-----|----------------|-------------|-----------------|----------------|------|----------------|------|---------------------------------------------------|
| over                 | up to and incl. |       | Tolerance class | Pitch diameter |     | Minor diameter |             | Tolerance class | Major diameter |      | Pitch diameter |      | Minor diameter<br>(for stress calculations, etc.) |
|                      |                 |       |                 | ES             | EI  | ES             | EI          |                 | es             | ei   | es             | ei   |                                                   |
|                      |                 |       |                 | μm             | μm  | μm             | μm          |                 | μm             | μm   | μm             | μm   |                                                   |
| 2,8                  | 5,6             | 0,8   | —               | —              | —   | —              | —           | 7e6e            | -60            | -210 | -60            | -178 | -176                                              |
|                      |                 |       | 7G              | +184           | +24 | +274           | +24         | 7g6g            | -24            | -174 | -24            | -142 | -140                                              |
|                      |                 |       | 7H              | +160           | 0   | +250           | 0           | 7h6h            | 0              | -150 | 0              | -118 | -116                                              |
|                      |                 |       | 8G              | +224           | +24 | +339           | +24         | 8g              | -24            | -260 | -24            | -174 | -140                                              |
|                      |                 |       | 8H              | +200           | 0   | +315           | 0           | 9g8g            | -24            | -260 | -24            | -214 | -140                                              |
| 5,6                  | 11,2            | 0,75  | —               | —              | —   | —              | —           | 3h4h            | 0              | - 90 | 0              | - 50 | -103                                              |
|                      |                 |       | 4H              | + 85           | 0   | +118           | 0           | 4h              | 0              | - 90 | 0              | - 63 | -103                                              |
|                      |                 |       | 5G              | +128           | +22 | +172           | +22         | 5g6g            | -22            | -162 | -22            | -102 | -130                                              |
|                      |                 |       | 5H              | +106           | 0   | +150           | 0           | 5h4h            | 0              | - 90 | 0              | - 80 | -103                                              |
|                      |                 |       | —               | —              | —   | —              | —           | 5h6h            | 0              | -140 | 0              | - 80 | -103                                              |
|                      |                 |       | —               | —              | —   | —              | —           | 6e              | -56            | -196 | -56            | -156 | -164                                              |
|                      |                 |       | 6G              | +154           | +22 | +212           | +22         | 6g              | -22            | -162 | -22            | -122 | -130                                              |
|                      |                 |       | 6H              | +132           | 0   | +190           | 0           | 6h              | 0              | -140 | 0              | -100 | -108                                              |
|                      |                 |       | —               | —              | —   | —              | —           | 7e6e            | -56            | -196 | -56            | -181 | -164                                              |
|                      |                 |       | 7G              | +192           | +22 | +258           | +22         | 7g6g            | -22            | -162 | -22            | -147 | -130                                              |
|                      |                 |       | 7H              | +170           | 0   | +236           | 0           | 7h6h            | 0              | -140 | 0              | -125 | -108                                              |
|                      |                 |       | 8G              | —              | —   | —              | —           | 8g              | —              | —    | —              | —    | —                                                 |
|                      |                 |       | 8H              | —              | —   | —              | —           | 9g8g            | —              | —    | —              | —    | —                                                 |
|                      |                 | 1     | —               | —              | —   | —              | —           | 3h4h            | 0              | -112 | 0              | - 56 | -144                                              |
|                      |                 |       | 4H              | + 95           | 0   | +150           | 0           | 4h              | 0              | -112 | 0              | - 71 | -144                                              |
|                      |                 |       | 5G              | +144           | +26 | +216           | +26         | 5g6g            | -26            | -206 | -26            | -116 | -170                                              |
|                      |                 |       | 5H              | +118           | 0   | +190           | 0           | 5h4h            | 0              | -112 | 0              | - 90 | -144                                              |
|                      |                 |       | —               | —              | —   | —              | —           | 5h6h            | 0              | -180 | 0              | - 90 | -144                                              |
|                      |                 |       | —               | —              | —   | —              | —           | 6e              | -60            | -240 | -60            | -172 | -204                                              |
|                      |                 |       | 6G              | +176           | +26 | +262           | +26         | 6g              | -26            | -206 | -26            | -138 | -170                                              |
|                      |                 |       | 6H              | +150           | 0   | +236           | 0           | 6h              | 0              | -180 | 0              | -112 | -144                                              |
|                      |                 |       | —               | —              | —   | —              | —           | 7e6e            | -60            | -240 | -60            | -200 | -204                                              |
|                      |                 |       | 7G              | +216           | +26 | +326           | +26         | 7g6g            | -26            | -206 | -26            | -166 | -170                                              |
|                      |                 |       | 7H              | +190           | 0   | +300           | 0           | 7h6h            | 0              | -180 | 0              | -140 | -144                                              |
|                      |                 |       | 8G              | +262           | +26 | +401           | +26         | 8g              | -26            | -306 | -26            | -206 | -170                                              |
|                      |                 |       | 8H              | +236           | 0   | +375           | 0           | 9g8g            | -26            | -306 | -26            | -250 | -170                                              |
|                      |                 | 1,25  | —               | —              | —   | —              | —           | 3h4h            | 0              | -132 | 0              | - 60 | -180                                              |
|                      |                 |       | 4H              | +100           | 0   | +170           | 0           | 4h              | 0              | -132 | 0              | - 75 | -180                                              |
|                      |                 |       | 5G              | +153           | +28 | +240           | +28         | 5g6g            | -28            | -240 | -28            | -123 | -208                                              |
|                      |                 |       | 5H              | +125           | 0   | +212           | 0           | 5h4h            | 0              | -132 | 0              | - 95 | -180                                              |
|                      |                 |       | —               | —              | —   | —              | —           | 5h6h            | 0              | -212 | 0              | - 95 | -180                                              |
|                      |                 |       | —               | —              | —   | —              | —           | 6e              | -63            | -275 | -63            | -181 | -243                                              |
|                      |                 |       | 6G              | +188           | +28 | +293           | +28         | 6g              | -28            | -240 | -28            | -146 | -208                                              |
|                      |                 |       | 6H              | +160           | 0   | +265           | 0           | 6h              | 0              | -212 | 0              | -118 | -180                                              |
|                      |                 |       | —               | —              | —   | —              | —           | 7e6e            | -63            | -275 | -63            | -213 | -243                                              |
|                      |                 |       | 7G              | +228           | +28 | +363           | +28         | 7g6g            | -28            | -240 | -28            | -178 | -208                                              |
|                      |                 |       | 7H              | +200           | 0   | +335           | 0           | 7h6h            | 0              | -212 | 0              | -150 | -180                                              |
|                      |                 |       | 8G              | +278           | +28 | +453           | +28         | 8g              | -28            | -363 | -28            | -218 | -208                                              |
|                      |                 |       | 8H              | +250           | 0   | +425           | 0           | 9g8g            | -28            | -363 | -28            | -264 | -208                                              |

ES, es = upper deviation

EI, ei = lower deviation

| Basic major diameter |                 | Pitch | Nut thread      |                |     |                |     |                 | Bolt thread    |      |                |      |                                                   |   |
|----------------------|-----------------|-------|-----------------|----------------|-----|----------------|-----|-----------------|----------------|------|----------------|------|---------------------------------------------------|---|
| over                 | up to and incl. |       | Tolerance class | Pitch diameter |     | Minor diameter |     | Tolerance class | Major diameter |      | Pitch diameter |      | Minor diameter<br>(for stress calculations, etc.) |   |
|                      |                 |       |                 | ES             | EI  | ES             | EI  |                 | es             | ei   | es             | ei   |                                                   |   |
|                      |                 |       |                 | μm             | μm  | μm             | μm  |                 | μm             | μm   | μm             | μm   |                                                   |   |
| mm                   | mm              | mm    |                 |                |     |                |     |                 |                |      |                |      |                                                   |   |
| 5,6                  | 11,2            | 1,5   | —               | —              | —   | —              | —   | 3h4h            | 0              | -150 | 0              | - 67 | -217                                              |   |
|                      |                 |       | 4H              | +112           | 0   | +190           | 0   | 4h              | 0              | -150 | 0              | - 85 | -217                                              |   |
|                      |                 |       | 5G              | +172           | +32 | +268           | +32 | 5g6g            | -32            | -268 | -32            | -138 | -249                                              |   |
|                      |                 |       | 5H              | +140           | 0   | +236           | 0   | 5h4h            | 0              | -150 | 0              | -106 | -217                                              |   |
|                      |                 |       | —               | —              | —   | —              | —   | 5h6h            | 0              | -236 | 0              | -106 | -217                                              |   |
|                      |                 |       | —               | —              | —   | —              | —   | 6e              | -67            | -303 | -67            | -199 | -284                                              |   |
|                      |                 |       | 6G              | +212           | +32 | +332           | +32 | 6g              | -32            | -268 | -32            | -164 | -249                                              |   |
|                      |                 |       | 6H              | +180           | 0   | +300           | 0   | 6h              | 0              | -236 | 0              | -132 | -217                                              |   |
|                      |                 |       | —               | —              | —   | —              | —   | 7e6e            | -67            | -303 | -67            | -237 | -284                                              |   |
|                      |                 |       | 7G              | +256           | +32 | +407           | +32 | 7g6g            | -32            | -268 | -32            | -202 | -249                                              |   |
|                      |                 |       | 7H              | +224           | 0   | +375           | 0   | 7h6h            | 0              | -236 | 0              | -170 | -217                                              |   |
|                      |                 |       | 8G              | +312           | +32 | +507           | +32 | 8g              | -32            | -407 | -32            | -244 | -249                                              |   |
|                      |                 |       | 8H              | +280           | 0   | +475           | 0   | 9g8g            | -32            | -407 | -32            | -297 | -249                                              |   |
|                      |                 |       | 11,2            | 22,4           | 1   | —              | —   | —               | —              | —    | 3h4h           | 0    | -112                                              | 0 |
| 4H                   | +100            | 0     |                 |                |     | +150           | 0   | 4h              | 0              | -112 | 0              | - 75 | -144                                              |   |
| 5G                   | +151            | +26   |                 |                |     | +216           | +26 | 5g6g            | -26            | -206 | -26            | -121 | -170                                              |   |
| 5H                   | +125            | 0     |                 |                |     | +190           | 0   | 5h4h            | 0              | -112 | 0              | - 95 | -144                                              |   |
| —                    | —               | —     |                 |                |     | —              | —   | 5h6h            | 0              | -180 | 0              | - 95 | -144                                              |   |
| —                    | —               | —     |                 |                |     | —              | —   | 6e              | -60            | -240 | -60            | -178 | -204                                              |   |
| 6G                   | +186            | +26   |                 |                |     | +262           | +26 | 6g              | -26            | -206 | -26            | -144 | -170                                              |   |
| 6H                   | +160            | 0     |                 |                |     | +236           | 0   | 6h              | 0              | -180 | 0              | -118 | -144                                              |   |
| —                    | —               | —     |                 |                |     | —              | —   | 7e6e            | -60            | -240 | -60            | -210 | -204                                              |   |
| 7G                   | +226            | +26   |                 |                |     | +326           | +26 | 7g6g            | -26            | -206 | -26            | -176 | -170                                              |   |
| 7H                   | +200            | 0     |                 |                |     | +300           | 0   | 7h6h            | 0              | -180 | 0              | -150 | -144                                              |   |
| 8G                   | +276            | +26   |                 |                |     | +401           | +26 | 8g              | -26            | -306 | -26            | -216 | -170                                              |   |
| 8H                   | +250            | 0     |                 |                |     | +375           | 0   | 9g8g            | -26            | -306 | -26            | -262 | -170                                              |   |
| 1,25                 | —               | —     |                 |                | —   | —              | —   | 3h4h            | 0              | -132 | 0              | - 67 | -180                                              |   |
|                      | 4H              | +112  |                 |                | 0   | +170           | 0   | 4h              | 0              | -132 | 0              | - 85 | -180                                              |   |
|                      | 5G              | +168  |                 |                | +28 | +240           | +28 | 5g6g            | -28            | -240 | -28            | -134 | -208                                              |   |
|                      | 5H              | +140  |                 |                | 0   | +212           | 0   | 5h4h            | 0              | -132 | 0              | -106 | -180                                              |   |
|                      | —               | —     |                 |                | —   | —              | —   | 5h6h            | 0              | -212 | 0              | -106 | -180                                              |   |
|                      | —               | —     |                 |                | —   | —              | —   | 6e              | -63            | -275 | -63            | -195 | -243                                              |   |
|                      | 6G              | +208  |                 |                | +28 | +293           | +28 | 6g              | -28            | -240 | -28            | -134 | -208                                              |   |
|                      | 6H              | +180  |                 |                | 0   | +265           | 0   | 6h              | 0              | -212 | 0              | -132 | -180                                              |   |
|                      | —               | —     |                 |                | —   | —              | —   | 7e6e            | -63            | -275 | -63            | -233 | -243                                              |   |
|                      | 7G              | +252  |                 |                | +28 | +363           | +28 | 7g6g            | -28            | -240 | -28            | -198 | -208                                              |   |
|                      | 7H              | +224  |                 |                | 0   | +335           | 0   | 7h6h            | 0              | -212 | 0              | -170 | -180                                              |   |
|                      | 8G              | +308  |                 |                | +28 | +453           | +28 | 8g              | -28            | -363 | -28            | -240 | -208                                              |   |
|                      | 8H              | +280  |                 |                | 0   | +425           | 0   | 9g8g            | -28            | -363 | -28            | -293 | -208                                              |   |
| 1,5                  | —               | —     |                 |                | —   | —              | —   | 3h4h            | 0              | -150 | 0              | - 71 | -217                                              |   |
|                      | 4H              | +118  |                 |                | 0   | +190           | 0   | 4h              | 0              | -150 | 0              | - 90 | -217                                              |   |
|                      | 5G              | +182  |                 |                | +32 | +268           | +32 | 5g6g            | -32            | -268 | -32            | -144 | -249                                              |   |
|                      | 5H              | +150  |                 |                | 0   | +236           | 0   | 5h4h            | 0              | -150 | 0              | -112 | -217                                              |   |
|                      | —               | —     |                 |                | —   | —              | —   | 5h6h            | 0              | -236 | 0              | -112 | -217                                              |   |
|                      | —               | —     |                 |                | —   | —              | —   | 6e              | -67            | -303 | -67            | -207 | -284                                              |   |
|                      | 6G              | +222  |                 |                | +32 | +332           | +32 | 6g              | -32            | -268 | -32            | -172 | -249                                              |   |
|                      | 6H              | +190  |                 |                | 0   | +300           | 0   | 6h              | 0              | -236 | 0              | -140 | -217                                              |   |

ES, es = upper deviation  
EI, ei = lower deviation

| Basic major diameter |                 | Pitch | Nut thread      |                |     |                |     |                 | Bolt thread    |      |                |      |                                                   |    |
|----------------------|-----------------|-------|-----------------|----------------|-----|----------------|-----|-----------------|----------------|------|----------------|------|---------------------------------------------------|----|
| over                 | up to and incl. |       | Tolerance class | Pitch diameter |     | Minor diameter |     | Tolerance class | Major diameter |      | Pitch diameter |      | Minor diameter<br>(for stress calculations, etc.) |    |
|                      |                 |       |                 | ES             | EI  | ES             | EI  |                 | es             | ei   | es             | ei   |                                                   |    |
|                      |                 |       |                 | μm             | μm  | μm             | μm  |                 | μm             | μm   | μm             | μm   |                                                   | μm |
| 11,2                 | 22,4            | 1,5   | —               | —              | —   | —              | —   | 7e6e            | -67            | -303 | -67            | -247 | -284                                              |    |
|                      |                 |       | 7G              | +268           | +32 | +407           | +32 | 7g6g            | -32            | -268 | -32            | -212 | -249                                              |    |
|                      |                 |       | 7H              | +236           | 0   | +375           | 0   | 7h6h            | 0              | -236 | 0              | -180 | -217                                              |    |
|                      |                 |       | 8G              | +332           | +32 | +507           | +32 | 8g              | -32            | -407 | -32            | -256 | -249                                              |    |
|                      |                 |       | 8H              | +300           | 0   | +475           | 0   | 9g8g            | -32            | -407 | -32            | -312 | -249                                              |    |
|                      |                 | 1,75  | —               | —              | —   | —              | —   | 3h4h            | 0              | -170 | 0              | -75  | -253                                              |    |
|                      |                 |       | 4H              | +125           | 0   | +212           | 0   | 4h              | 0              | -170 | 0              | 95   | -253                                              |    |
|                      |                 |       | 5G              | +194           | +34 | +299           | +34 | 5g6g            | -34            | -299 | -34            | -152 | -287                                              |    |
|                      |                 |       | 5H              | +160           | 0   | +265           | 0   | 5h4h            | 0              | -170 | 0              | -118 | -253                                              |    |
|                      |                 |       | —               | —              | —   | —              | —   | 5h6h            | 0              | -265 | 0              | -118 | -253                                              |    |
|                      |                 |       | —               | —              | —   | —              | —   | 6e              | -71            | -336 | -71            | -221 | -324                                              |    |
|                      |                 |       | 6G              | +234           | +34 | +369           | +34 | 6g              | -34            | -299 | -34            | -184 | -287                                              |    |
|                      |                 |       | 6H              | +200           | 0   | +335           | 0   | 6h              | 0              | -265 | 0              | -150 | -253                                              |    |
|                      |                 |       | —               | —              | —   | —              | —   | 7e6e            | -71            | -336 | -71            | -261 | -324                                              |    |
|                      |                 |       | 7G              | +284           | +34 | +459           | +34 | 7g6g            | -34            | -299 | -34            | -224 | -287                                              |    |
|                      |                 |       | 7H              | +250           | 0   | +425           | 0   | 7h6h            | 0              | -265 | 0              | -190 | -253                                              |    |
|                      |                 |       | 8G              | +349           | +34 | +564           | +34 | 8g              | -34            | -459 | -34            | -270 | -287                                              |    |
|                      |                 |       | 8H              | +315           | 0   | +530           | 0   | 9g8g            | -34            | -459 | -34            | -334 | -287                                              |    |
|                      |                 | 2     | —               | —              | —   | —              | —   | 3h4h            | 0              | -180 | 0              | -80  | -289                                              |    |
|                      |                 |       | 4H              | +132           | 0   | +236           | 0   | 4h              | 0              | -180 | 0              | -100 | -289                                              |    |
|                      |                 |       | 5G              | +208           | +38 | +338           | +38 | 5g6g            | -38            | -318 | -38            | -163 | -327                                              |    |
|                      |                 |       | 5H              | +170           | 0   | +300           | 0   | 5h4h            | 0              | -180 | 0              | -125 | -289                                              |    |
|                      |                 |       | —               | —              | —   | —              | —   | 5h6h            | 0              | -280 | 0              | -125 | -289                                              |    |
|                      |                 |       | —               | —              | —   | —              | —   | 6e              | -71            | -351 | -71            | -231 | -360                                              |    |
|                      |                 |       | 6G              | +250           | +38 | +413           | +38 | 6g              | -38            | -318 | -38            | -198 | -327                                              |    |
|                      |                 |       | 6H              | +212           | 0   | +375           | 0   | 6h              | 0              | -280 | 0              | -160 | -289                                              |    |
|                      |                 |       | —               | —              | —   | —              | —   | 7e6e            | -71            | -351 | -71            | -271 | -360                                              |    |
|                      |                 |       | 7G              | +303           | +38 | +513           | +38 | 7g6g            | -38            | -318 | -38            | -238 | -327                                              |    |
|                      |                 |       | 7H              | +265           | 0   | +475           | 0   | 7h6h            | 0              | -280 | 0              | -200 | -289                                              |    |
|                      |                 |       | 8G              | +373           | +38 | +638           | +38 | 8g              | -38            | -488 | -38            | -288 | -327                                              |    |
|                      |                 |       | 8H              | +335           | 0   | +600           | 0   | 9g8g            | -38            | -488 | -38            | -353 | -327                                              |    |
|                      |                 | 2,5   | —               | —              | —   | —              | —   | 3h4h            | 0              | -212 | 0              | -85  | -361                                              |    |
|                      |                 |       | 4H              | +140           | 0   | +280           | 0   | 4h              | 0              | -212 | 0              | -106 | -361                                              |    |
|                      |                 |       | 5G              | +222           | +42 | +397           | +42 | 5g6g            | -42            | -377 | -42            | -174 | -403                                              |    |
|                      |                 |       | 5H              | +180           | 0   | +355           | 0   | 5h4h            | 0              | -212 | 0              | -132 | -361                                              |    |
|                      |                 |       | —               | —              | —   | —              | —   | 5h6h            | 0              | -335 | 0              | -132 | -361                                              |    |
|                      |                 |       | —               | —              | —   | —              | —   | 6e              | -80            | -415 | -80            | -250 | -441                                              |    |
|                      |                 |       | 6G              | +266           | +42 | +492           | +42 | 6g              | -42            | -377 | -42            | -212 | -403                                              |    |
|                      |                 |       | 6H              | +224           | 0   | +450           | 0   | 6h              | 0              | -335 | 0              | -170 | -361                                              |    |
|                      |                 |       | —               | —              | —   | —              | —   | 7e6e            | -80            | -415 | -80            | -292 | -441                                              |    |
|                      |                 |       | 7G              | +322           | +42 | +602           | +42 | 7g6g            | -42            | -377 | -42            | -254 | -403                                              |    |
|                      |                 |       | 7H              | +280           | 0   | +560           | 0   | 7h6h            | 0              | -335 | 0              | -212 | -361                                              |    |
|                      |                 |       | 8G              | +397           | +42 | +752           | +42 | 8g              | -42            | -572 | -42            | -307 | -403                                              |    |
|                      |                 |       | 8H              | +355           | 0   | +710           | 0   | 9g8g            | -42            | -572 | -42            | -377 | -403                                              |    |

ES, es = upper deviation

EI, ei = lower deviation

| Basic major diameter |                 | Pitch | Nut thread      |                |     |                | Bolt thread |                 |                |      |                |      |                                                   |
|----------------------|-----------------|-------|-----------------|----------------|-----|----------------|-------------|-----------------|----------------|------|----------------|------|---------------------------------------------------|
| over                 | up to and incl. |       | Tolerance class | Pitch diameter |     | Minor diameter |             | Tolerance class | Major diameter |      | Pitch diameter |      | Minor diameter<br>(for stress calculations, etc.) |
|                      |                 |       |                 | ES             | EI  | ES             | EI          |                 | es             | ei   | es             | ei   |                                                   |
|                      |                 |       |                 | μm             | μm  | μm             | μm          |                 | μm             | μm   | μm             | μm   |                                                   |
| mm                   | mm              | mm    |                 |                |     |                |             |                 |                |      |                |      |                                                   |
| 22,4                 | 45              | 1     | —               | —              | —   | —              | —           | 3h4h            | 0              | -112 | 0              | - 63 | -144                                              |
|                      |                 |       | 4H              | +106           | 0   | +150           | 0           | 4h              | 0              | -112 | 0              | - 80 | -144                                              |
|                      |                 |       | 5G              | +158           | +26 | +216           | +26         | 5g6g            | -26            | -206 | -26            | -126 | -170                                              |
|                      |                 |       | 5H              | +132           | 0   | +190           | 0           | 5h4h            | 0              | -112 | 0              | -100 | -144                                              |
|                      |                 |       | —               | —              | —   | —              | —           | 5h6h            | 0              | -180 | 0              | -100 | -144                                              |
|                      |                 |       | —               | —              | —   | —              | —           | 6e              | -60            | -240 | -60            | -185 | -204                                              |
|                      |                 |       | 6G              | +196           | +26 | +262           | +26         | 6g              | -26            | -206 | -26            | -151 | -170                                              |
|                      |                 |       | 6H              | +170           | 0   | +236           | 0           | 6h              | 0              | -180 | 0              | -125 | -144                                              |
|                      |                 |       | —               | —              | —   | —              | —           | 7e6e            | -60            | -240 | -60            | -220 | -204                                              |
|                      |                 |       | 7G              | +238           | +26 | +326           | +26         | 7g6g            | -26            | -206 | -26            | -186 | -170                                              |
|                      |                 |       | 7H              | +212           | 0   | +300           | 0           | 7h6h            | 0              | -180 | 0              | -160 | -144                                              |
|                      |                 |       | 8G              | —              | —   | —              | —           | 8g              | -26            | -306 | -26            | -226 | -170                                              |
|                      |                 |       | 8H              | —              | —   | —              | —           | 9g8g            | -26            | -306 | -26            | -276 | -170                                              |
|                      |                 | 1,5   | —               | —              | —   | —              | —           | 3h4h            | 0              | -150 | 0              | - 75 | -217                                              |
|                      |                 |       | 4H              | +125           | 0   | +190           | 0           | 4h              | 0              | -150 | 0              | - 95 | -217                                              |
|                      |                 |       | 5G              | +192           | +32 | +268           | +32         | 5g6g            | -32            | -268 | -32            | -150 | -249                                              |
|                      |                 |       | 5H              | +160           | 0   | +236           | 0           | 5h4h            | 0              | -150 | 0              | -118 | -217                                              |
|                      |                 |       | —               | —              | —   | —              | —           | 5h6h            | 0              | -236 | 0              | -118 | -217                                              |
|                      |                 |       | —               | —              | —   | —              | —           | 6e              | -67            | -303 | -67            | -217 | -284                                              |
|                      |                 |       | 6G              | +232           | +32 | +332           | +32         | 6g              | -32            | -268 | -32            | -182 | -249                                              |
|                      |                 |       | 6H              | +200           | 0   | +300           | 0           | 6h              | 0              | -236 | 0              | -150 | -217                                              |
|                      |                 |       | —               | —              | —   | —              | —           | 7e6e            | -67            | -303 | -67            | -257 | -284                                              |
|                      |                 |       | 7G              | +282           | +32 | +407           | +32         | 7g6g            | -32            | -268 | -32            | -222 | -249                                              |
|                      |                 |       | 7H              | +250           | 0   | +375           | 0           | 7h6h            | 0              | -236 | 0              | -190 | -217                                              |
|                      |                 |       | 8G              | +347           | +32 | +507           | +32         | 8g              | -32            | -407 | -32            | -268 | -249                                              |
|                      |                 |       | 8H              | +315           | 0   | +475           | 0           | 9g8g            | -32            | -407 | -32            | -332 | -249                                              |
|                      |                 | 2     | —               | —              | —   | —              | —           | 3h4h            | 0              | -180 | 0              | - 85 | -289                                              |
|                      |                 |       | 4H              | +140           | 0   | +236           | 0           | 4h              | 0              | -180 | 0              | -106 | -289                                              |
|                      |                 |       | 5G              | +218           | +38 | +338           | +38         | 5g6g            | -38            | -318 | -38            | -170 | -327                                              |
|                      |                 |       | 5H              | +180           | 0   | +300           | 0           | 5h4h            | 0              | -180 | 0              | -132 | -289                                              |
|                      |                 |       | —               | —              | —   | —              | —           | 5h6h            | 0              | -280 | 0              | -132 | -289                                              |
|                      |                 |       | —               | —              | —   | —              | —           | 6e              | -71            | -351 | -71            | -241 | -360                                              |
|                      |                 |       | 6G              | +262           | +38 | +413           | +38         | 6g              | -38            | -318 | -38            | -208 | -327                                              |
|                      |                 |       | 6H              | +224           | 0   | +375           | 0           | 6h              | 0              | -280 | 0              | -170 | -289                                              |
|                      |                 |       | —               | —              | —   | —              | —           | 7e6e            | -71            | -351 | -71            | -283 | -360                                              |
|                      |                 |       | 7G              | +318           | +38 | +513           | +38         | 7g6g            | -38            | -318 | -38            | -250 | -327                                              |
|                      |                 |       | 7H              | +280           | 0   | +475           | 0           | 7h6h            | 0              | -280 | 0              | -212 | -289                                              |
|                      |                 |       | 8G              | +393           | +38 | +638           | +38         | 8g              | -38            | -488 | -38            | -303 | -327                                              |
|                      |                 |       | 8H              | +355           | 0   | +600           | 0           | 9g8g            | -38            | -488 | -38            | -373 | -327                                              |
|                      |                 | 3     | —               | —              | —   | —              | —           | 3h4h            | 0              | -236 | 0              | -100 | -433                                              |
|                      |                 |       | 4H              | +170           | 0   | +315           | 0           | 4h              | 0              | -236 | 0              | -125 | -433                                              |
|                      |                 |       | 5G              | +260           | +48 | +448           | +48         | 5g6g            | -48            | -423 | -48            | -208 | -481                                              |
|                      |                 |       | 5H              | +212           | 0   | +400           | 0           | 5h4h            | 0              | -236 | 0              | -160 | -433                                              |
|                      |                 |       | —               | —              | —   | —              | —           | 5h6h            | 0              | -375 | 0              | -160 | -433                                              |
|                      |                 |       | —               | —              | —   | —              | —           | 6e              | -85            | -460 | -85            | -285 | -518                                              |
|                      |                 |       | 6G              | +313           | +48 | +548           | +48         | 6g              | -48            | -423 | -48            | -248 | -481                                              |
|                      |                 |       | 6H              | +265           | 0   | +500           | 0           | 6h              | 0              | -375 | 0              | -200 | -433                                              |

ES, es = upper deviation  
EI, ei = lower deviation

| Basic major diameter |                | Pitch | Nut thread      |                |     |                | Bolt thread |                 |                |      |                |      |                                                   |
|----------------------|----------------|-------|-----------------|----------------|-----|----------------|-------------|-----------------|----------------|------|----------------|------|---------------------------------------------------|
| over                 | up to and incl |       | Tolerance class | Pitch diameter |     | Minor diameter |             | Tolerance class | Major diameter |      | Pitch diameter |      | Minor diameter<br>(for stress calculations, etc.) |
|                      |                |       |                 | ES             | EI  | ES             | EI          |                 | es             | ei   | es             | ei   |                                                   |
|                      |                |       |                 | μm             | μm  | μm             | μm          |                 | μm             | μm   | μm             | μm   |                                                   |
| mm                   | mm             | mm    |                 |                |     |                |             |                 |                |      |                |      |                                                   |
| 22,4                 | 45             | 3     | —               | —              | —   | —              | —           | 7e6e            | -85            | -460 | -85            | -335 | -518                                              |
|                      |                |       | 7G              | +383           | +48 | +678           | +48         | 7g6g            | -48            | -423 | -48            | -298 | -481                                              |
|                      |                |       | 7H              | +335           | 0   | +630           | 0           | 7h6h            | 0              | -375 | 0              | -250 | -433                                              |
|                      |                |       | 8G              | +473           | +48 | +848           | +48         | 8g              | -48            | -648 | -48            | -363 | -481                                              |
|                      |                |       | 8H              | +425           | 0   | +800           | 0           | 9g8g            | -48            | -648 | -48            | -448 | -481                                              |
|                      |                | 3,5   | —               | —              | —   | —              | —           | 3h4h            | 0              | -265 | 0              | -106 | -505                                              |
|                      |                |       | 4H              | +180           | 0   | +355           | 0           | 4h              | 0              | -265 | 0              | -132 | -505                                              |
|                      |                |       | 5G              | +277           | +53 | +503           | +53         | 5g6g            | -53            | -478 | -53            | -223 | -558                                              |
|                      |                |       | 5H              | +224           | 0   | +450           | 0           | 5h4h            | 0              | -265 | 0              | -170 | -505                                              |
|                      |                |       | —               | —              | —   | —              | —           | 5h6h            | 0              | -425 | 0              | -170 | -505                                              |
|                      |                |       | —               | —              | —   | —              | —           | 6e              | -90            | -515 | -90            | -302 | -595                                              |
|                      |                |       | 6G              | +333           | +53 | +613           | +53         | 6g              | -53            | -478 | -53            | -265 | -558                                              |
|                      |                |       | 6H              | +280           | 0   | +560           | 0           | 6h              | 0              | -425 | 0              | -212 | -505                                              |
|                      |                |       | —               | —              | —   | —              | —           | 7e6e            | -90            | -515 | -90            | -355 | -595                                              |
|                      |                |       | 7G              | +408           | +53 | +763           | +53         | 7g6g            | -53            | -478 | -53            | -318 | -558                                              |
|                      |                |       | 7H              | +355           | 0   | +710           | 0           | 7h6h            | 0              | -425 | 0              | -265 | -505                                              |
|                      |                |       | 8G              | +503           | +53 | +953           | +53         | 8g              | -53            | -723 | -53            | -388 | -558                                              |
|                      |                |       | 8H              | +450           | 0   | +900           | 0           | 9g8g            | -53            | -723 | -53            | -478 | -558                                              |
|                      |                | 4     | —               | —              | —   | —              | —           | 3h4h            | 0              | -300 | 0              | -112 | -577                                              |
|                      |                |       | 4H              | +190           | 0   | +375           | 0           | 4h              | 0              | -300 | 0              | -140 | -577                                              |
|                      |                |       | 5G              | +296           | +60 | +535           | +60         | 5g6g            | -60            | -535 | -60            | -240 | -637                                              |
|                      |                |       | 5H              | +236           | 0   | +475           | 0           | 5h4h            | 0              | -300 | 0              | -180 | -577                                              |
|                      |                |       | —               | —              | —   | —              | —           | 5h6h            | 0              | -475 | 0              | -180 | -577                                              |
|                      |                |       | —               | —              | —   | —              | —           | 6e              | -95            | -570 | -95            | -319 | -672                                              |
|                      |                |       | 6G              | +360           | +60 | +660           | +60         | 6g              | -60            | -535 | -60            | -284 | -637                                              |
|                      |                |       | 6H              | +300           | 0   | +600           | 0           | 6h              | 0              | -475 | 0              | -224 | -577                                              |
|                      |                |       | —               | —              | —   | —              | —           | 7e6e            | -95            | -570 | -95            | -375 | -672                                              |
|                      |                |       | 7G              | +435           | +60 | +810           | +60         | 7g6g            | -60            | -535 | -60            | -340 | -637                                              |
|                      |                |       | 7H              | +375           | 0   | +750           | 0           | 7h6h            | 0              | -475 | 0              | -280 | -577                                              |
|                      |                |       | 8G              | +535           | +60 | +1010          | +60         | 8g              | -60            | -810 | -60            | -415 | -637                                              |
|                      |                |       | 8H              | +475           | 0   | +950           | 0           | 9g8g            | -60            | -810 | -60            | -510 | -637                                              |
|                      |                | 4,5   | —               | —              | —   | —              | —           | 3h4h            | 0              | -315 | 0              | -118 | -650                                              |
|                      |                |       | 4H              | +200           | 0   | +425           | 0           | 4h              | 0              | -315 | 0              | -150 | -650                                              |
|                      |                |       | 5G              | +313           | +63 | +593           | +63         | 5g6g            | -63            | -563 | -63            | -253 | -713                                              |
|                      |                |       | 5H              | +250           | 0   | +530           | 0           | 5h4h            | 0              | -315 | 0              | -190 | -650                                              |
|                      |                |       | —               | —              | —   | —              | —           | 5h6h            | 0              | -500 | 0              | -190 | -650                                              |
|                      |                |       | —               | —              | —   | —              | —           | 6e              | -100           | -600 | -100           | -336 | -750                                              |
|                      |                |       | 6G              | +378           | +63 | +733           | +63         | 6g              | -63            | -563 | -63            | -299 | -713                                              |
|                      |                |       | 6H              | +315           | 0   | +670           | 0           | 6h              | 0              | -500 | 0              | -236 | -650                                              |
|                      |                |       | —               | —              | —   | —              | —           | 7e6e            | -100           | -600 | -100           | -400 | -750                                              |
|                      |                |       | 7G              | +463           | +63 | +913           | +63         | 7g6g            | -63            | -563 | -63            | -363 | -713                                              |
|                      |                |       | 7H              | +400           | 0   | +850           | 0           | 7h6h            | 0              | -500 | 0              | -300 | -650                                              |
|                      |                |       | 8G              | +563           | +63 | +1123          | +63         | 8g              | -63            | -863 | -63            | -438 | -713                                              |
|                      |                |       | 8H              | +500           | 0   | +1060          | 0           | 9g8g            | -63            | -863 | -63            | -538 | -713                                              |

ES, es = upper deviation

EI, ei = lower deviation

| Basic major diameter |                 | Pitch | Nut thread      |                |     |                | Bolt thread |                 |                |      |                |      |                                                   |
|----------------------|-----------------|-------|-----------------|----------------|-----|----------------|-------------|-----------------|----------------|------|----------------|------|---------------------------------------------------|
| over                 | up to and incl. |       | Tolerance class | Pitch diameter |     | Minor diameter |             | Tolerance class | Major diameter |      | Pitch diameter |      | Minor diameter<br>(for stress calculations, etc.) |
|                      |                 |       |                 | ES             | EI  | ES             | EI          |                 | es             | ei   | es             | ei   |                                                   |
|                      |                 |       |                 | μm             | μm  | μm             | μm          |                 | μm             | μm   | μm             | μm   |                                                   |
| mm                   | mm              | mm    |                 |                |     |                |             |                 |                |      |                |      |                                                   |
| 45                   | 90              | 1,5   | —               | —              | —   | —              | —           | 3h4h            | 0              | -150 | 0              | - 80 | -217                                              |
|                      |                 |       | 4H              | +132           | 0   | +190           | 0           | 4h              | 0              | -150 | 0              | -100 | -217                                              |
|                      |                 |       | 5G              | +202           | +32 | +268           | +32         | 5g6g            | -32            | -268 | -32            | -157 | -249                                              |
|                      |                 |       | 5H              | +170           | 0   | +236           | 0           | 5h4h            | 0              | -150 | 0              | -125 | -217                                              |
|                      |                 |       | —               | —              | —   | —              | —           | 5h6h            | 0              | -236 | 0              | -125 | -217                                              |
|                      |                 |       | —               | —              | —   | —              | —           | 6e              | -67            | -303 | -67            | -227 | -284                                              |
|                      |                 |       | 6G              | +244           | +32 | +332           | +32         | 6g              | -32            | -268 | -32            | -192 | -249                                              |
|                      |                 |       | 6H              | +212           | 0   | +300           | 0           | 6h              | 0              | -236 | 0              | -160 | -217                                              |
|                      |                 |       | —               | —              | —   | —              | —           | 7e6e            | -67            | -303 | -67            | -267 | -284                                              |
|                      |                 |       | 7G              | +297           | +32 | +407           | +32         | 7g6g            | -32            | -268 | -32            | -232 | -249                                              |
|                      |                 |       | 7H              | +265           | 0   | +375           | 0           | 7h6h            | 0              | -236 | 0              | -200 | -217                                              |
|                      |                 |       | 8G              | +367           | +32 | +507           | +32         | 8g              | -32            | -407 | -32            | -282 | -249                                              |
|                      |                 |       | 8H              | +335           | 0   | +475           | 0           | 9g8g            | -32            | -407 | -32            | -347 | -249                                              |
|                      |                 | 2     | —               | —              | —   | —              | —           | 3h4h            | 0              | -180 | 0              | - 90 | -289                                              |
|                      |                 |       | 4H              | +150           | 0   | +236           | 0           | 4h              | 0              | -180 | 0              | -112 | -289                                              |
|                      |                 |       | 5G              | +228           | +38 | +338           | +38         | 5g6g            | -38            | -318 | -38            | -178 | -327                                              |
|                      |                 |       | 5H              | +190           | 0   | +300           | 0           | 5h4h            | 0              | -180 | 0              | -140 | -289                                              |
|                      |                 |       | —               | —              | —   | —              | —           | 5h6h            | 0              | -280 | 0              | -140 | -289                                              |
|                      |                 |       | —               | —              | —   | —              | —           | 6e              | -71            | -351 | -71            | -251 | -360                                              |
|                      |                 |       | 6G              | +274           | +38 | +413           | +38         | 6g              | -38            | -318 | -38            | -218 | -327                                              |
|                      |                 |       | 6H              | +236           | 0   | +375           | 0           | 6h              | 0              | -280 | 0              | -180 | -289                                              |
|                      |                 |       | —               | —              | —   | —              | —           | 7e6e            | -71            | -351 | -71            | -295 | -360                                              |
|                      |                 |       | 7G              | +338           | +38 | +513           | +38         | 7g6g            | -38            | -318 | -38            | -262 | -327                                              |
|                      |                 |       | 7H              | +300           | 0   | +475           | 0           | 7h6h            | 0              | -280 | 0              | -224 | -289                                              |
|                      |                 |       | 8G              | +413           | +38 | +638           | +38         | 8g              | -38            | -488 | -38            | -318 | -327                                              |
|                      |                 |       | 8H              | +375           | 0   | +600           | 0           | 9g8g            | -38            | -488 | -38            | -393 | -327                                              |
|                      |                 | 3     | —               | —              | —   | —              | —           | 3h4h            | 0              | -236 | 0              | -106 | -433                                              |
|                      |                 |       | 4H              | +180           | 0   | +315           | 0           | 4h              | 0              | -236 | 0              | -132 | -433                                              |
|                      |                 |       | 5G              | +272           | +48 | +448           | +48         | 5g6g            | -48            | -423 | -48            | -218 | -481                                              |
|                      |                 |       | 5H              | +224           | 0   | +400           | 0           | 5h4h            | 0              | -236 | 0              | -170 | -433                                              |
|                      |                 |       | —               | —              | —   | —              | —           | 5h6h            | 0              | -375 | 0              | -170 | -433                                              |
|                      |                 |       | —               | —              | —   | —              | —           | 6e              | -85            | -460 | -85            | -297 | -518                                              |
|                      |                 |       | 6G              | +328           | +48 | +548           | +48         | 6g              | -48            | -423 | -48            | -260 | -481                                              |
|                      |                 |       | 6H              | +280           | 0   | +500           | 0           | 6h              | 0              | -375 | 0              | -212 | -433                                              |
|                      |                 |       | —               | —              | —   | —              | —           | 7e6e            | -85            | -460 | -85            | -350 | -518                                              |
|                      |                 |       | 7G              | +403           | +48 | +678           | +48         | 7g6g            | -48            | -423 | -48            | -313 | -481                                              |
|                      |                 |       | 7H              | +355           | 0   | +630           | 0           | 7h6h            | 0              | -375 | 0              | -265 | -433                                              |
|                      |                 |       | 8G              | +498           | +48 | +848           | +48         | 8g              | -48            | -648 | -48            | -383 | -481                                              |
|                      |                 |       | 8H              | +450           | 0   | +800           | 0           | 9g8g            | -48            | -648 | -48            | -473 | -481                                              |
|                      |                 | 4     | —               | —              | —   | —              | —           | 3h4h            | 0              | -300 | 0              | -118 | -577                                              |
|                      |                 |       | 4H              | +200           | 0   | +375           | 0           | 4h              | 0              | -300 | 0              | -150 | -577                                              |
|                      |                 |       | 5G              | +310           | +60 | +535           | +60         | 5g6g            | -60            | -535 | -60            | -250 | -637                                              |
|                      |                 |       | 5H              | +250           | 0   | +475           | 0           | 5h4h            | 0              | -300 | 0              | -190 | -577                                              |
|                      |                 |       | —               | —              | —   | —              | —           | 5h6h            | 0              | -475 | 0              | -190 | -577                                              |
|                      |                 |       | —               | —              | —   | —              | —           | 6e              | -95            | -570 | -95            | -331 | -672                                              |

ES, es = upper deviation  
EI, ei = lower deviation

| Basic major diameter |                 | Pitch | Nut thread      |                |     |                |     |                 | Bolt thread    |       |                |      |                                                   |  |
|----------------------|-----------------|-------|-----------------|----------------|-----|----------------|-----|-----------------|----------------|-------|----------------|------|---------------------------------------------------|--|
| over                 | up to and incl. |       | Tolerance class | Pitch diameter |     | Minor diameter |     | Tolerance class | Major diameter |       | Pitch diameter |      | Minor diameter<br>(for stress calculations, etc.) |  |
|                      |                 |       |                 | ES             | EI  | ES             | EI  |                 | es             | ei    | es             | ei   |                                                   |  |
|                      |                 |       |                 | μm             | μm  | μm             | μm  |                 | μm             | μm    | μm             | μm   |                                                   |  |
| 45                   | 90              | 4     | 6G              | +375           | +60 | +660           | +60 | 6g              | -60            | -535  | -60            | -296 | -637                                              |  |
|                      |                 |       | 6H              | +315           | 0   | +600           | 0   | 6h              | 0              | -475  | 0              | -236 | -577                                              |  |
|                      |                 |       | —               | —              | —   | —              | —   | 7e6e            | -95            | -570  | -95            | -395 | -672                                              |  |
|                      |                 |       | 7G              | +460           | +60 | +810           | +60 | 7g6g            | -60            | -535  | -60            | -360 | -637                                              |  |
|                      |                 |       | 7H              | +400           | 0   | +750           | 0   | 7h6h            | 0              | -475  | 0              | -300 | -577                                              |  |
|                      |                 |       | 8G              | +560           | +60 | +1010          | +60 | 8g              | -60            | -810  | -60            | -435 | -637                                              |  |
|                      |                 | 5     | 8H              | +500           | 0   | +950           | 0   | 9g8g            | -60            | -810  | -60            | -535 | -637                                              |  |
|                      |                 |       | —               | —              | —   | —              | —   | 3h4h            | 0              | -335  | 0              | -125 | -722                                              |  |
|                      |                 |       | 4H              | +212           | 0   | +450           | 0   | 4h              | 0              | -335  | 0              | -160 | -722                                              |  |
|                      |                 |       | 5G              | +336           | +71 | +631           | +71 | 5g6g            | -71            | -601  | -71            | -271 | -793                                              |  |
|                      |                 |       | 5H              | +265           | 0   | +560           | 0   | 5h4h            | 0              | -335  | 0              | -200 | -722                                              |  |
|                      |                 |       | —               | —              | —   | —              | —   | 5h6h            | 0              | -530  | 0              | -200 | -722                                              |  |
|                      |                 |       | —               | —              | —   | —              | —   | 6e              | -106           | -636  | -106           | -356 | -828                                              |  |
|                      |                 |       | 6G              | +406           | +71 | +781           | +71 | 6g              | -71            | -601  | -71            | -321 | -793                                              |  |
|                      |                 |       | 6H              | +335           | 0   | +710           | 0   | 6h              | 0              | -530  | 0              | -250 | -722                                              |  |
|                      |                 |       | —               | —              | —   | —              | —   | 7e6e            | -106           | -636  | -106           | -421 | -828                                              |  |
|                      |                 |       | 7G              | +496           | +71 | +971           | +71 | 7g6g            | -71            | -601  | -71            | -386 | -793                                              |  |
|                      |                 |       | 7H              | +425           | 0   | +900           | 0   | 7h6h            | 0              | -530  | 0              | -315 | -722                                              |  |
|                      |                 | 5,5   | 8G              | +601           | +71 | +1191          | +71 | 8g              | -71            | -921  | -71            | -471 | -793                                              |  |
|                      |                 |       | 8H              | +530           | 0   | +1120          | 0   | 9g8g            | -71            | -921  | -71            | -571 | -793                                              |  |
|                      |                 |       | —               | —              | —   | —              | —   | 3h4h            | 0              | -355  | 0              | -132 | -794                                              |  |
|                      |                 |       | 4H              | +224           | 0   | +475           | 0   | 4h              | 0              | -355  | 0              | -170 | -794                                              |  |
|                      |                 |       | 5G              | +355           | +75 | +675           | +75 | 5g6g            | -75            | -635  | -75            | -287 | -869                                              |  |
|                      |                 |       | 5H              | +280           | 0   | +600           | 0   | 5h4h            | 0              | -355  | 0              | -212 | -794                                              |  |
|                      |                 |       | —               | —              | —   | —              | —   | 5h6h            | 0              | -560  | 0              | -212 | -794                                              |  |
|                      |                 |       | —               | —              | —   | —              | —   | 6e              | -112           | -672  | -112           | -377 | -906                                              |  |
|                      |                 |       | 6G              | +430           | +75 | +825           | +75 | 6g              | -75            | -635  | -75            | -340 | -869                                              |  |
|                      |                 |       | 6H              | +355           | 0   | +750           | 0   | 6h              | 0              | -560  | 0              | -265 | -794                                              |  |
|                      |                 |       | —               | —              | —   | —              | —   | 7e6e            | -112           | -672  | -112           | -447 | -906                                              |  |
|                      |                 |       | 7G              | +525           | +75 | +1025          | +75 | 7g6g            | -75            | -635  | -75            | -410 | -869                                              |  |
|                      |                 | 6     | 7H              | +450           | 0   | +950           | 0   | 7h6h            | 0              | -560  | 0              | -335 | -794                                              |  |
|                      |                 |       | 8G              | +635           | +75 | +1255          | +75 | 8g              | -75            | -975  | -75            | -500 | -869                                              |  |
|                      |                 |       | 8H              | +560           | 0   | +1180          | 0   | 9g8g            | -75            | -975  | -75            | -605 | -869                                              |  |
|                      |                 |       | —               | —              | —   | —              | —   | 3h4h            | 0              | -375  | 0              | -140 | -866                                              |  |
|                      |                 |       | 4H              | +236           | 0   | +500           | 0   | 4h              | 0              | -375  | 0              | -180 | -866                                              |  |
|                      |                 |       | 5G              | +380           | +80 | +710           | +80 | 5g6g            | -80            | -680  | -80            | -304 | -946                                              |  |
|                      |                 |       | 5H              | +300           | 0   | +630           | 0   | 5h4h            | 0              | -375  | 0              | -224 | -866                                              |  |
|                      |                 |       | —               | —              | —   | —              | —   | 5h6h            | 0              | -600  | 0              | -224 | -866                                              |  |
|                      |                 |       | —               | —              | —   | —              | —   | 6e              | -118           | -718  | -118           | -398 | -984                                              |  |
|                      |                 |       | 6G              | +455           | +80 | +880           | +80 | 6g              | -80            | -680  | -80            | -360 | -946                                              |  |
|                      |                 |       | 6H              | +375           | 0   | +800           | 0   | 6h              | 0              | -600  | 0              | -280 | -866                                              |  |
|                      |                 |       | —               | —              | —   | —              | —   | 7e6e            | -118           | -718  | -118           | -473 | -984                                              |  |
|                      |                 |       | 7G              | +555           | +80 | +1080          | +80 | 7g6g            | -80            | -680  | -80            | -435 | -946                                              |  |
|                      |                 |       | 7H              | +475           | 0   | +1000          | 0   | 7h6h            | 0              | -600  | 0              | -355 | -866                                              |  |
|                      |                 |       | 8G              | +680           | +80 | +1330          | +80 | 8g              | -80            | -1030 | -80            | -530 | -946                                              |  |
|                      |                 |       | 8H              | +600           | 0   | +1250          | 9   | 9g8g            | -80            | -1030 | -80            | -640 | -946                                              |  |