INTERNATIONAL STANDARD

**ISO 9254**

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# Aerospace — Bolts, normal spline head, normal or pitch diameter shank, long length MJ threads, metallic material, coated or uncoated, strength classes less than or equal to 1 100 MPa — Dimensions

*Aéronautique et espace — Vis à tête cannelée normale, avec tige normale ou de diamètre égal au diamètre sur flancs, et filetage MJ long, en matériau métallique, revêtues ou non revêtues, des classes de résistance inférieures ou égales à* 1 100 MPa — *Dimensions*

Reference number
ISO 9254 1993(E)

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# Foreword

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

International Standard ISO 9254 was prepared by Technical Committee ISO/TC 20, *Aircraft and space vehicles*, Sub-Committee SC 4, *Aerospace fastener systems*.

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# Aerospace — Bolts, normal spline head, normal or pitch diameter shank, long length MJ threads, metallic material, coated or uncoated, strength classes less than or equal to 1 100 MPa — Dimensions

## 1 Scope

This International Standard specifies the dimensions of normal spline head bolts, with normal or pitch diameter shank, and long length MJ threads, in metallic material, coated or uncoated, with strength classes less than or equal to 1 100 MPa.

It is intended for the drawing up of aerospace product standards.

## 2 Normative references

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

ISO 286-2:1988, *ISO system of limits and fits — Part 2: Tables of standard tolerance grades and limit deviations for holes and shafts.*

ISO 3353:1992, *Aerospace — Rolled threads for bolts — Lead and runout requirements.*

ISO 5855-2:1988, *Aerospace — MJ threads — Part 2: Limit dimensions for bolts and nuts.*

ISO 7403:1983, *Fasteners for aerospace construction — Spline drive wrenching configuration — Metric series.*

## 3 Configuration and dimensions

See figure 1 and table 1. Dimensions and tolerances are expressed in millimetres. They are applicable after any surface coating, but before the application of any lubricant.



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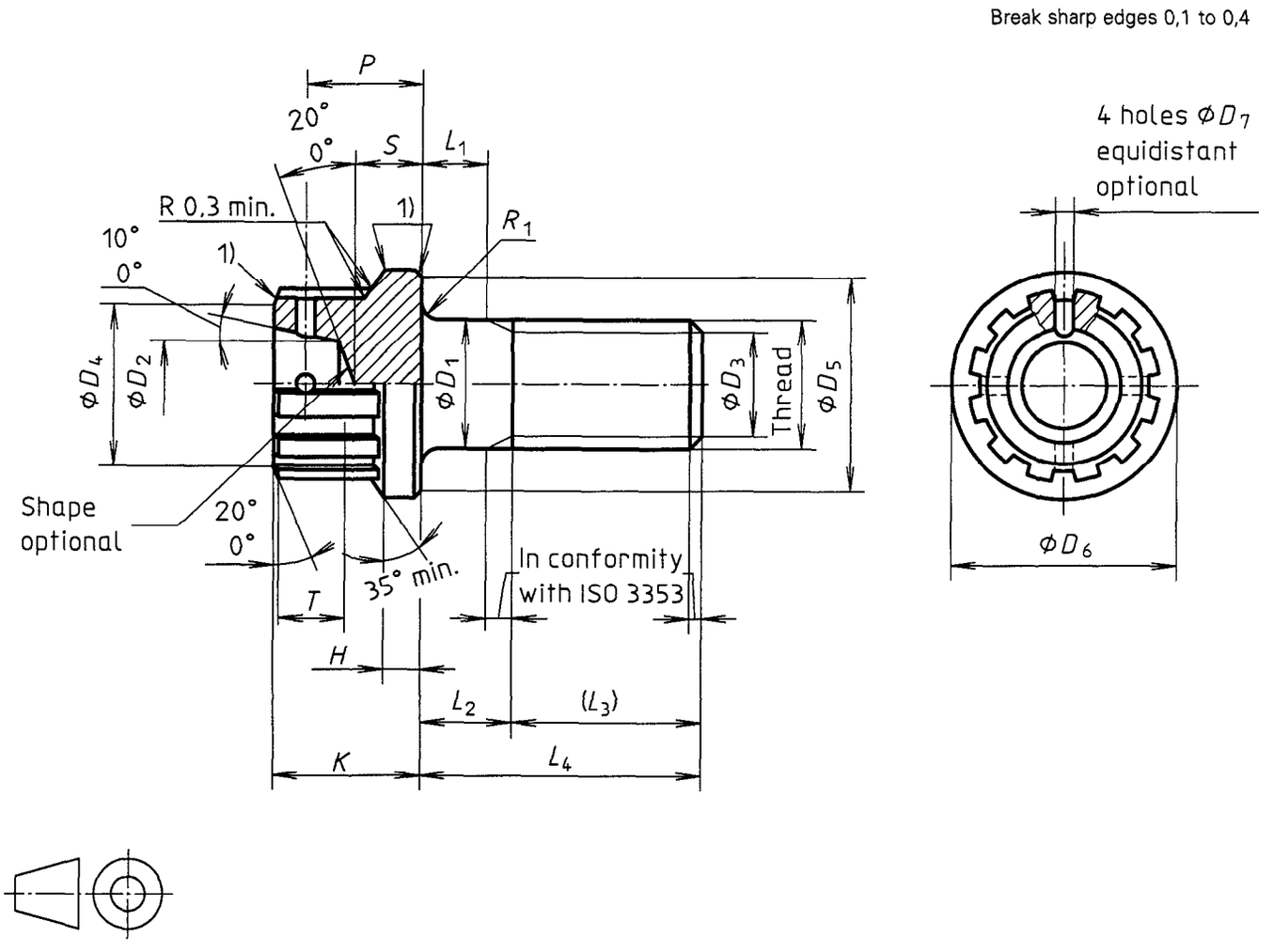


1) Rounded or chamfered in this area.

**Figure 1**



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**Table 1**

| Diameter code | Thread[1] | $D_1$ | | | | $D_2$ | $D_3$ | | $D_4$ | $D_5$ | $D_6$ | $D_7$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Normal | | Pitch diameter | | | | | | | | |
| | | nom. | tol. | nom | tol | $^{+0,5}_{0}$ | nom. | tol | min. | min | max. | H13[2] |
| **040** | MJ4×0,7 – 4h6h | 4 | h12[2] | 3,54 | ± 0,13 | — | 3 | $^{0}_{-0,5}$ | 6 | 7,5 | 8,3 | 1 |
| **050** | MJ5×0,8 – 4h6h | 5 | | 4,48 | | 3,2 | 3,4 | ± 0,5 | 7 | 8,3 | 9,1 | |
| **060** | MJ6×1 – 4h6h | 6 | | 5,35 | | 4,1 | 4,2 | | 8 | 9,8 | 10,6 | 1,4 |
| **070** | MJ7×1 – 4h6h | 7 | | 6,35 | | 4,9 | 5,2 | | 9 | 11,3 | 12,1 | |
| **080** | MJ8×1 – 4h6h | 8 | | 7,35 | | 5,2 | 6,2 | | 10 | 12,8 | 13,6 | |
| **100** | MJ10×1,25 – 4h6h | 10 | | 9,19 | | 6,7 | 7,9 | | 12 | 15,7 | 16,7 | 1,6 |
| **120** | MJ12×1,25 – 4h6h | 12 | | 11,19 | | 8 | 9,8 | | 14 | 18,8 | 19,9 | |

| Diameter code | $H$ | $K$ | $L_1$[3) 4) 5)] | $L_2$[3) 4) 5)] | $L_3$ | $L_4$[5)] | | $P$ | $R_1$ | | $S$ | $T$ | Wrenching dash number[6)] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | min. | h15[2] | min | max. | | nom. | tol | | nom. | tol. | $^{+0,4}_{0}$ | min. | |
| **040** | 0,8 | 5,5 | 0,4 | 2 | 14 | 16 to 56 | ± 0,3 | 3,5 | 0,4 | $^{0}_{-0,2}$ | — | 2,5 | 060 |
| **050** | 1 | 6,5 | 0,5 | 4 | 16 | 20 to 70 | | 4,5 | 0,5 | | 2,5 | 2,8 | 070 |
| **060** | 1,2 | 7,5 | 0,7 | | 18 | 22 to 84 | | 5,2 | 0,7 | | 2,8 | 3,5 | 080 |
| **070** | 1,4 | 8,2 | | | 20 | 24 to 98 | | 5,9 | | | 3,3 | 3,8 | 090 |
| **080** | 1,6 | 8,6 | | | 22 | 26 to 112 | | 6,3 | | | 3,7 | 3,9 | 100 |
| **100** | 2 | 10,1 | 0,8 | 6 | 26 | 32 to 140 | | 7,7 | 0,8 | | 4,7 | 4,2 | 120 |
| **120** | 2,4 | 11,4 | 0,9 | | 30 | 36 to 168 | | 8,8 | 0,9 | $^{0}_{-0,3}$ | 5,6 | 4,5 | 140 |

1) In conformity with ISO 5855-2.

2) See ISO 286-2.

3) First length, corresponding to first $L_4$ length.

4) Conditions $L_1$ min. and $L_2$ max. cannot be obtained simultaneously.

5) Increments:

2 for $L_4 \leqslant 100$

4 for $L_4 > 100$

If greater lengths are required, they shall be chosen using these increments.

6) In conformity with ISO 7403 over $T$ min.

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