

DRAFT INTERNATIONAL STANDARD

ISO/DIS 3185

ISO/TC 20/SC 4

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Aerospace — Bolts, normal bihexagonal head, normal shank, short or medium 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 bihexagonale normale, avec tige normale et filetages MJ courts ou de longueur moyenne, en matériau métallique, revêtues ou non revêtues, des classes de résistance inférieures ou égales à 1 100 MPa — Dimensions

ICS: 49.030.20

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established 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. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. 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.

ISO 3185 was prepared by Technical Committee ISO/TC 20, *Aircraft and space vehicles*, Subcommittee SC 4, *Aerospace fastener systems*.

This second edition cancels and replaces the first edition (ISO 3185:1993).

This third edition cancels and replaces the second edition (ISO 3185:2008), of which it constitutes a minor revision.

The changes compared to the previous edition are as follows:

- Update of normative references from dated to undated;
- Some Titles of columns in [table 1](#) have been corrected.

Aerospace — Bolts, normal bihexagonal head, normal shank, short or medium 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 bihexagonal head bolts, with close or large tolerance normal shank and short or medium length MJ threads, in metallic material, coated or uncoated, with strength classes less than or equal to 1 100 MPa.

This International Standard is applicable to the compilation of aerospace product standards.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 286-2, *Geometrical product specifications (GPS) — ISO code system for tolerances on linear sizes — Part 2: Tables of standard tolerance classes and limit deviations for holes and shafts*

ISO 3353-1, *Aerospace — Lead and runout threads — Part 1: Rolled external threads*

ISO 4095, *Aerospace — Bihexagonal drives — Wrenching configuration — Metric series*

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

ISO 7913, *Aerospace — Bolts and screws, metric — Tolerances of form and position*

3 Configuration and dimensions

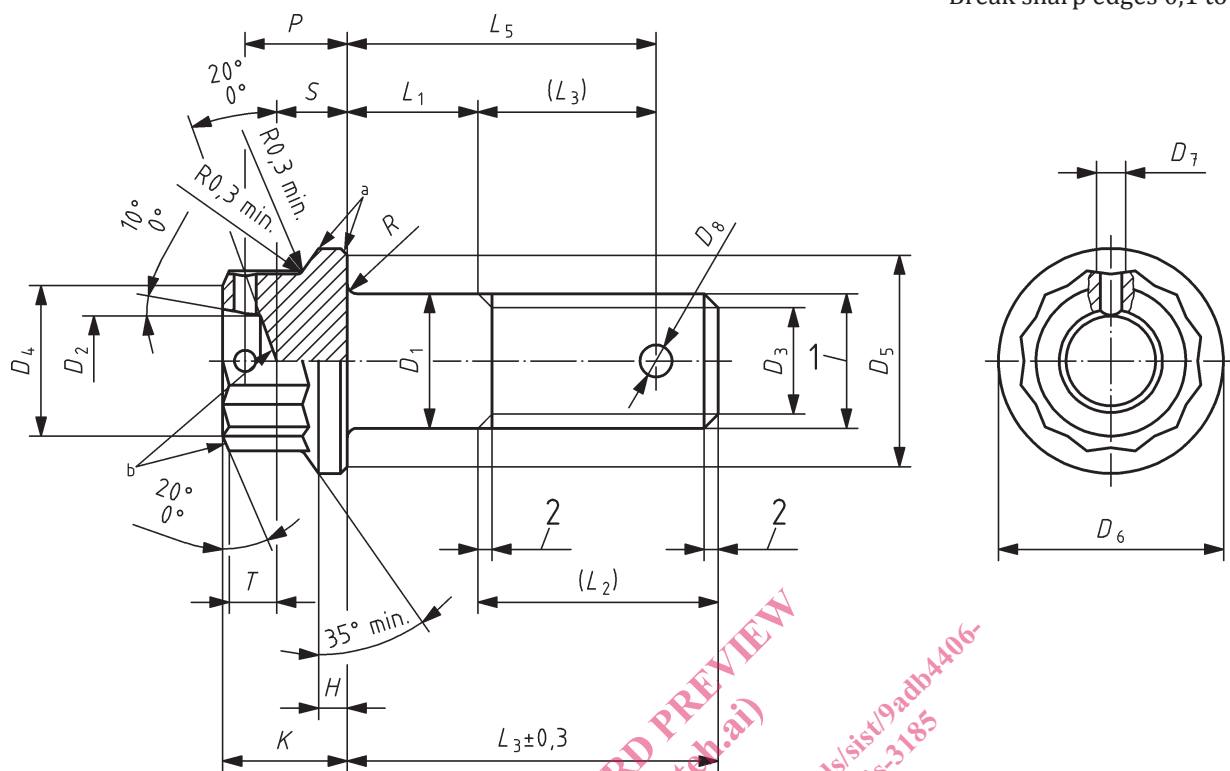
See [Figure 1](#) and [Table 1](#).

Dimensions and tolerances are expressed in millimetres. They are applicable after any coating (tolerance on shank diameter before coating is also specified for heat cured matrix coatings), but before the application of any lubricant.

Details of form not stated are left to the manufacturer's discretion.

Tolerances of form and position are specified in ISO 7913.

Break sharp edges 0,1 to 0,4.



Key

- 1 thread
- 2 in accordance with ISO 3353-1
- a Rounded or chamfered in this area.
- b Shape optional.

Figure 1

Table 1

Diameter code	Thread ^a	D ₁						D ₂	D ₃		D ₄	D ₅	D ₆	D ₇	D ₈		
		Coated bolts			Uncoated bolts				nom.	Tol.						min.	max.
		nom.	Tolerance		Tolerance												
			before coating ^b	close	large	close	large										
040	MJ4 × 0,7-4h6h	-0,030	-0,010				3	0	5,8	7,5	8,3		1	1,1			
050	MJ5 × 0,8-4h6h	-0,045	-0,035				3,4	-0,5	6,8	8,3	9,1		1	1,5			
060	MJ6 × 1-4h6h						4,2		7,8	9,8	10,6		1,4	1,9			
070	MJ7 × 1-4h6h	-0,033	-0,013	h12 ^c	f7 ^c		5,2	± 0,5	8,8	11,3	12,1		1,4	1,9			
080	MJ8 × 1-4h6h	-0,048	-0,038				6,2		9,8	12,8	13,6		1,6	2,4			
100	MJ10 × 1,25-4h6h						7,9		11,8	15,7	16,7		1,6	2,4			
120	MJ12 × 1,25-4h6h	-0,036 -0,051	-0,016 -0,041				9,8		13,7	18,8	19,9		1,6	2,4			

Table 1 — (continued)

Diameter code	H min.	K h15 ^c	$L_1 \pm 0,2^d$	L_2 Thread Length		L_3 Thread length		P	R		S	T min.	Wrenching dash number ^e
				short	medium	short	medium		nom.	Tol.			
040	0,8	5,5	2 to 40	7,5	10	5	6	3,5	0,4		-	2,5	06
050	1	6,5	3 to 50	9	12	6	7,5	4,5	0,5		2,5	2,8	07
060	1,2	7,5	3 to 60	10	14	7	8,5	5,2	0,7	0	2,8	3,5	08
070	1,4	8,2	4 to 70	11	15	7	9,5	5,9	0,7	-0,2	3,3	3,8	09
080	1,6	8,6	4 to 80	11,5	16,5	7,5	10,5	6,3	0,8		3,7	3,9	10
100	2	10,1	5 to 100	14,5	20,5	9	13	7,7	0,8		4,7	4,2	12
120	2,4	11,4	6 to 120	16	22,5	10	14,5	8,8	0,9	0 -0,3	5,6	4,5	14

^a In conformity with ISO 5855-2, except for the maximum thread major diameter "d max." of bolts with a close tolerance on D_1 , which shall be equal to D_1 min. -0,025.

^b Heat cured organic matrix coatings for close tolerance normal shanks. If greater lengths are required, they shall be chosen using these increments.

^c See ISO 286-2.

^d Increments: 1 for $L_1 \leq 30$
2 for $30 < L_1 \leq 100$
4 for $L_1 > 100$

In conformity with ISO 4095 over 7 min.

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