INTERNATIONAL STANDARD

ISO 3185

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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 filetage MJ court ou de longueur moyenne, en matériau métallique, revêtues ou non revêtues, des classes de résistance inférieures ou égales à 1 100 MPa — Dimensions

Reference number
ISO 3185:1993(E)

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.

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 3185 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 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.

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.*

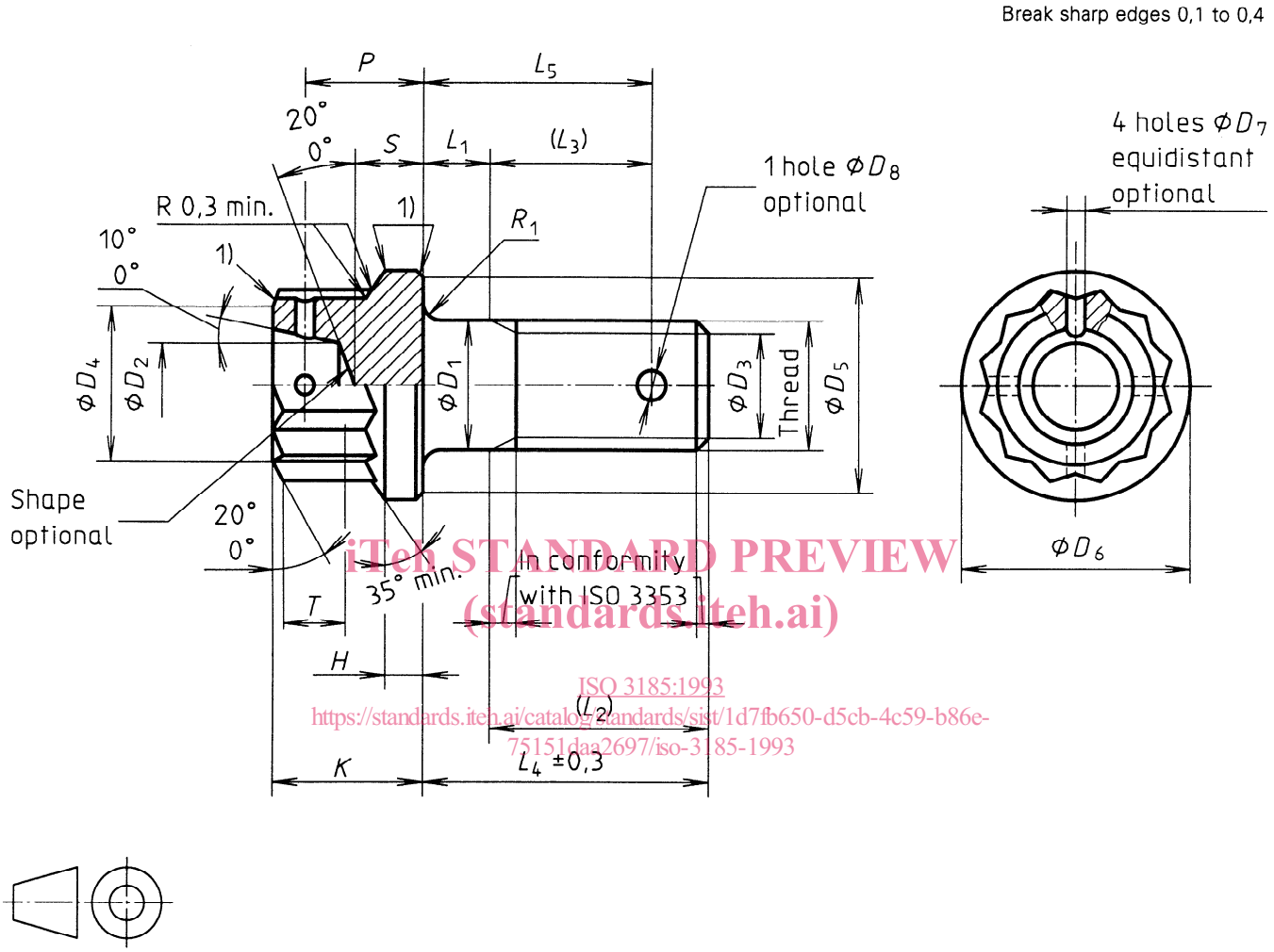
ISO 3353:1992, *Aerospace — Rolled threads for bolts — Lead and runout requirements.*

ISO 4095:1978, *Fasteners for aerospace construction — Bi-hexagonal wrenching configuration.*

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

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.



1) Rounded or chamfered in this area.

Figure 1

Table 1

Diameter code	Thread[1]	D_1					D_2	D_3		D_4	D_5	D_6	D_7	D_8
		nom.	Coated bolts tol. close	Coated bolts tol. large	Uncoated bolts tol. close	Uncoated bolts tol. large	$^{+0,5}_{0}$	nom.	tol.	min.	min.	max.	H13[2]	H13[2]
040	MJ4×0,7 – 4h6h	4	$^{-0,010}_{-0,035}$	h12[2]	f7[2]	h12[2]	—	3	$^{0}_{-0,5}$	5,8	7,5	8,3	1	1,1
050	MJ5×0,8 – 4h6h	5					3,2	3,4	± 0,5	6,8	8,3	9,1		1,5
060	MJ6×1 – 4h6h	6					4,1	4,2		7,8	9,8	10,6	1,4	
070	MJ7×1 – 4h6h	7	$^{-0,013}_{-0,038}$				4,9	5,2		8,8	11,3	12,1		1,9
080	MJ8×1 – 4h6h	8					5,2	6,2		9,8	12,8	13,6		
100	MJ10×1,25 – 4h6h	10					6,7	7,9		11,8	15,7	16,7	1,6	2,4
120	MJ12×1,25 – 4h6h	12	$^{-0,016}_{-0,041}$				8	9,8		13,7	18,8	19,9		

Diameter code	H	K	L_1[3]		L_2 Thread		L_3 Thread		P	R_1		S	T	Wrenching dash number[4]
	min.	h15[2]	nom.	tol.	short	medium	short	medium		nom.	tol.	$^{+0,4}_{0}$	min.	
040	0,8	5,5	2 to 40	± 0,2	7,5	10	5	6	3,5	0,4	$^{0}_{-0,2}$	—	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		2,8	3,5	08
070	1,4	8,2	4 to 70		11	15		9,5	5,9			3,3	3,8	09
080	1,6	8,6	4 to 80		11,5	16,5	7,5	10,5	6,3			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

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

2) See ISO 286-2.

3) Increments:

   1 for $L_1 \leqslant 30$

   2 for $30 < L_1 \leqslant 100$

   4 for $L_1 > 100$

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

4) In conformity with ISO 4095 over T min.

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Descriptors: aircraft industry, aircraft equipment, fasteners, bolts, dimensions, dimensional tolerances.

Price based on 3 pages