

# INTERNATIONAL STANDARD

**ISO**  
**3193**

First edition  
1991-01-15

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**Aerospace — Bolts, normal hexagonal 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**

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*Aéronautique et espace — Vis à tête hexagonale 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*

<https://standards.iteh.ai/catalog/standards/iso/cbf7d3ee-a117-4281-bdb6-8cdb9558a38f/iso-3193-1991>

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Reference number  
ISO 3193:1991(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 3193 was prepared by Technical Committee ISO/TC 20, *Aircraft and space vehicles*.

ISO 3193:1991

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International Organization for Standardization

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# Aerospace — Bolts, normal hexagonal 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 hexagonal 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.

plying 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 3353:1976, *Aerospace construction — Rolled threads — Runout and lead threads*.

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

## 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 ap-

## 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.

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

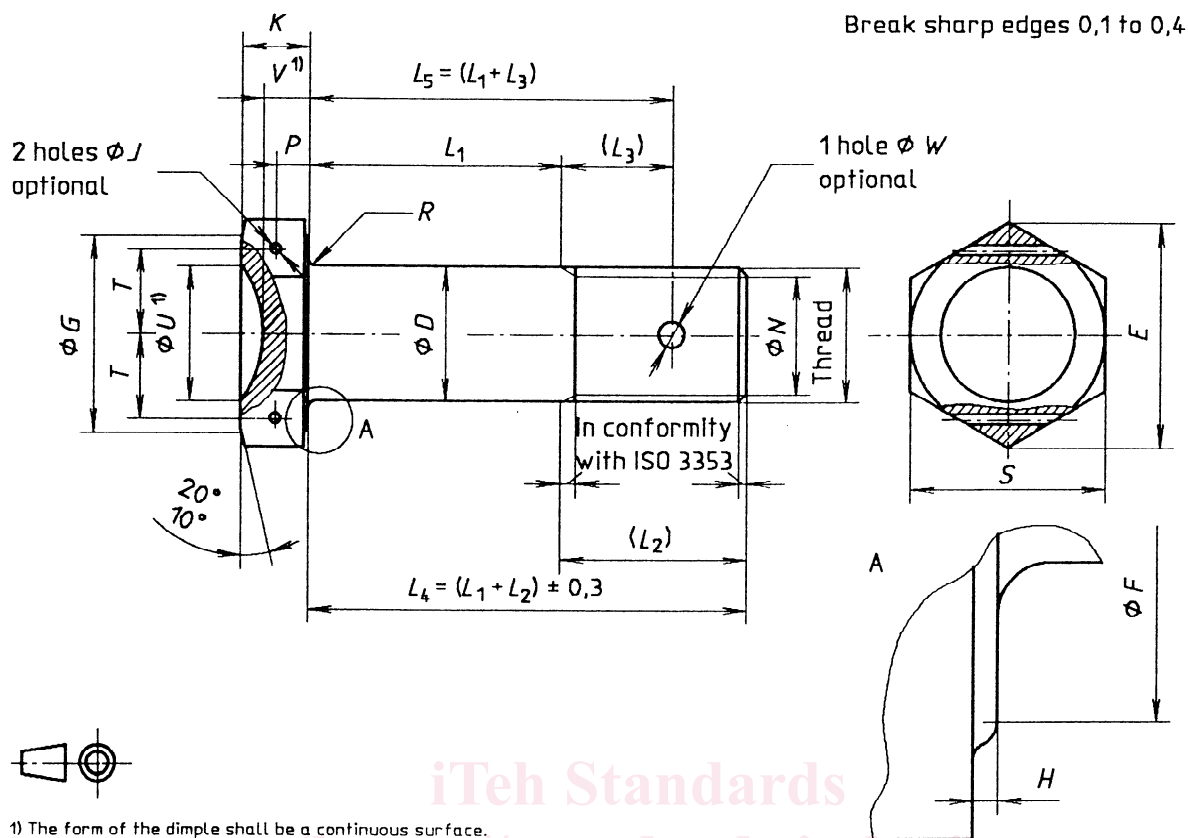


Figure 1

Table 1

Size code	Thread <sup>1) 2)</sup>	<i>D</i>					<i>E</i>  min.	<i>F</i> 3)  min.	<i>G</i>  min.	<i>H</i>		<i>J</i>  H134)	<i>K</i>  0 -0,3	<i>L</i> <sub>1</sub> <sup>5)</sup>	
		nom.	Coated bolts		Uncoated bolts					max.	min.			nom.	tol.
			tol. close	large	tol. close	large									
030	MJ3 × 0,5 – 4h6h	3	-0,007 -0,032	h124)	f74)	h124)	6,5	5,4	5,5	0,4	0,2	—	2	2 to 30	± 0,2
040	MJ4 × 0,7 – 4h6h	4	-0,010 -0,035				7,6	6,4	6,4	0,5	0,2	—	2,5	2 to 40	
050	MJ5 × 0,8 – 4h6h	5					8,7	7,4	7,4			1	3	3 to 50	
060	MJ6 × 1 – 4h6h	6					10,9	9,3	9,4			1,4	3,5	3 to 60	
070	MJ7 × 1 – 4h6h	7	-0,013 -0,038				12	10,2	10,3	4	4 to 70				
080	MJ8 × 1 – 4h6h	8					14,3	12,2	12,3	4,5	4 to 80				
100	MJ10 × 1,25 – 4h6h	10					18,9	16	16,3	0,6	0,3	1,6	5	5 to 100	
120	MJ12 × 1,25 – 4h6h	12	21,1				18	18,3	6				6 to 120		
140	MJ14 × 1,5 – 4h6h	14	24,5				21	21,3	7				7 to 140		
160	MJ16 × 1,5 – 4h6h	16	26,8				23	23,3	8				8 to 160		
180	MJ18 × 1,5 – 4h6h	18	30,2				26	26,3	9				9 to 180		
200	MJ20 × 1,5 – 4h6h	20	-0,020 -0,045				33,6	29	29,3	10	10 to 200				