

INTERNATIONAL STANDARD

ISO
13921

First edition
1996-08-15

**Aerospace — Screws, 100° reduced
countersunk head, internal offset cruciform
ribbed or unribbed drive, 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 fraisée 100° réduite, à empreinte cruciforme déportée, avec ou sans saillies antidérapantes, à 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 13921:1996(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 13921 was prepared by Technical Committee ISO/TC 20, *Aircraft and space vehicles*, Subcommittee SC 4, *Aerospace fastener systems*.

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1 Scope

This International Standard specifies the dimensions of 100° reduced countersunk head screws with internal offset cruciform ribbed or unribbed drive, close or large tolerance normal shank, 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 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 7913:1994, *Aerospace — Bolts and screws, metric — Tolerances of form and position.*

ISO 14275:—¹⁾, *Aerospace — Drives, internal, offset cruciform, ribbed — Metric series.*

ISO 14276:—¹⁾, *Aerospace — Drives, internal, offset cruciform — 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.

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

Tolerances of form and position are specified in ISO 7913.

1) To be published.

Break sharp edges 0,1 to 0,4

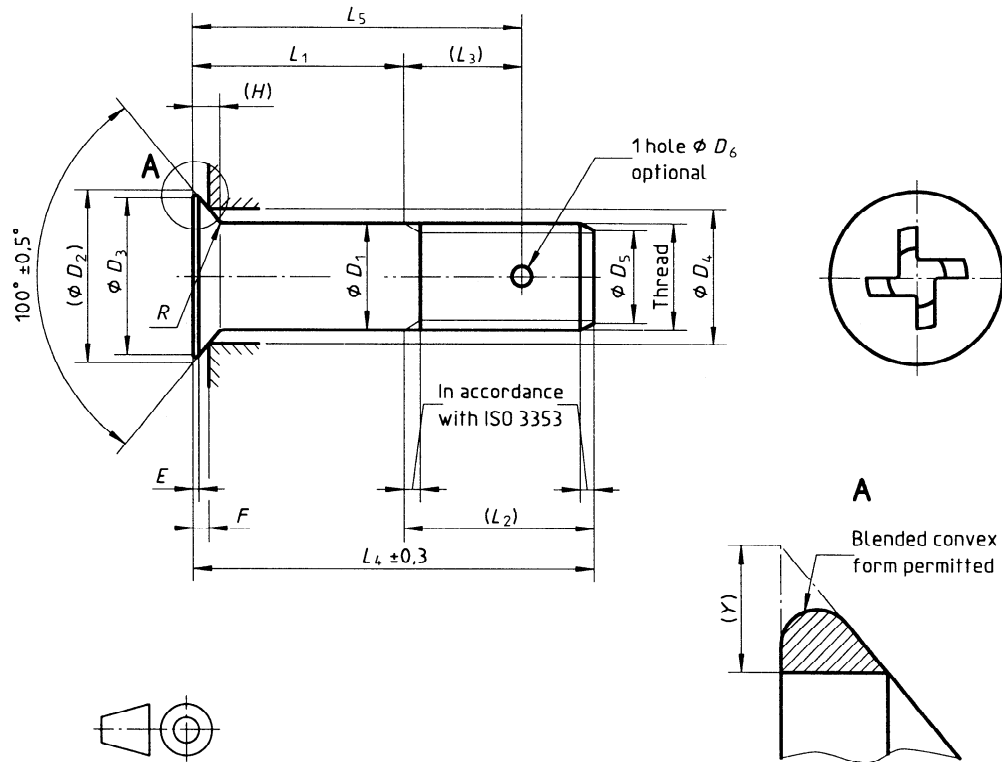


Figure 1
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Table 1

Diameter code	Thread ^{1) 2)}	nom.	D_1				D_2 max.	D_3 min.	D_4	H	L_1 ³⁾ $\pm 0,2$
			Coated screws		Uncoated screws						
			tol. close	tol. large	tol. close	tol. large					
040	MJ4 × 0,7 - 4h6h	4	-0,010 -0,035	h12 ⁴⁾	f7 ⁴⁾	h12 ⁴⁾	6,25	5,45	4,82	0,95	3 to 40
050	MJ5 × 0,8 - 4h6h	5					7,8	6,8	5,79	1,18	4 to 50
060	MJ6 × 1 - 4h6h	6					9,4	8,2	7,71	1,44	5 to 60
070	MJ7 × 1 - 4h6h	7	10,95				9,75	9	1,67	6 to 70	
080	MJ8 × 1 - 4h6h	8	-0,013 -0,038				12,5	11,3	10,28	1,9	6 to 80
100	MJ10 × 1,25 - 4h6h	10					15,6	14,4	12,86	2,37	8 to 100
120	MJ12 × 1,25 - 4h6h	12	-0,016 -0,041				18,75	17,55	15,43	2,86	10 to 120
140	MJ14 × 1,5 - 4h6h	14					21,85	20,65	18	3,32	10 to 140
160	MJ16 × 1,5 - 4h6h	16					25	23,8	20,57	3,81	10 to 160
180	MJ18 × 1,5 - 4h6h	18					28,1	26,9	23,14	4,28	11 to 180
200	MJ20 × 1,5 - 4h6h	20	-0,020 -0,045	31,2	30	25,71	4,74	12 to 200			

Diameter code	L_2		L_3		D_5		F	R		E	D_6	Y	Drive code ⁵⁾				
	Thread		Thread		nom.	tol.	$\begin{matrix} 0 \\ -0,08 \end{matrix}$	nom.	tol.	min.	H13 ⁴⁾						
040	7,5	10	5	6	3	$\begin{matrix} 0 \\ -0,5 \end{matrix}$	0,6	0,4	0 -0,2	0,08	1,1	0,4	R3				
050	9	12	6	7,5	3,4	$\pm 0,5$	0,85	0,5		0,1	0,1	1,5	0,5	R4			
060	10	14	7	8,5	4,2		0,71	0,7					0,7	0,7	1,9	0,6	R5
070	11	15		9,5	5,2		0,82										0,8
080	11,5	16,5	7,5	10,5	6,2		0,93	1,1					0,9	3	0,6	R8	
100	14,5	20,5	9	13	7,9		1,15									1,1	0,9
120	16	22,5	10	14,5	9,8		1,4	1,3					1,3	3,8	0,6		
140	19	26	12	17	11,5		1,62									1,3	1,3
160	20,5	28,5	12,5	18,5	13,5		1,87	1,3					1,3	3,8	0,6		
180	22,5	31	14,5	21	15,5		2,09									1,3	1,3
200	24,5	33,5	15	22,5	17,5		2,32	1,3	1,3				3,8	0,6	R16		

1) In accordance with ISO 5855-2.

2) For coated or uncoated screws with a close tolerance on D_1 , the thread major diameter, d , shall be

$$d \text{ max.} = D_1 \text{ min.} - 0,025$$

3) Increments:

1 for $L_1 \leq 30$

2 for $30 < L_1 \leq 100$

4 for $L_1 > 100$

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

4) See ISO 286-2.

5) In accordance with ISO 14275 or ISO 14276.

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ICS 49.040.20

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Price based on 3 pages
