
International Standard



7050

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Cross recessed countersunk (flat) head tapping screws (common head style)

Vis à tête à tête fraisée à empreinte cruciforme

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[ISO 7050:1983](#)

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UDC 621.882.216.5.082.8

Ref. No. ISO 7050-1983 (E)

Descriptors : fasteners, screws, countersunk head screws, dimensions, designation.

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been authorized 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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 7050 was developed by Technical Committee ISO/TC 2, *Fasteners*, and was circulated to the member bodies in December 1981.

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It has been approved by the member bodies of the following countries:

Australia	Germany, F.R.	New Zealand
Austria	Hungary	Norway
Belgium	India	Romania
China	Ireland	South Africa, Rep. of
Czechoslovakia	Japan	Spain
Denmark	Korea, Dem. P. Rep. of	Sri Lanka
Egypt, Arab Rep. of	Korea, Rep. of	Sweden
Finland	Mexico	Switzerland
France	Netherlands	USA

The member bodies of the following countries expressed disapproval of the document on technical grounds:

Italy
Poland
United Kingdom
USSR

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1 Scope and field of application

This International Standard specifies the characteristics of cross recessed countersunk (flat) head tapping screws with thread sizes from ST 2,2 to ST 9,5 inclusive.

2 References

ISO 225, *Fasteners — Bolts, screws, studs and nuts — Symbols and designations of dimensions.*

ISO 1478, *Tapping screws thread.*

ISO 2702, *Heat-treated steel tapping screws — Mechanical properties.*

ISO 3269, *Fasteners — Acceptance inspection.*¹⁾

ISO 4042, *Threaded components — Electroplated coatings components.*¹⁾

ISO 4757, *Cross recesses for screws.*

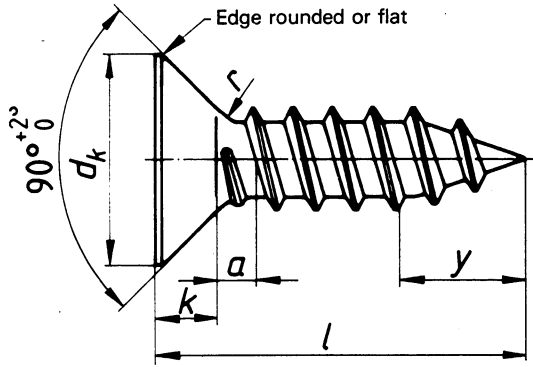
ISO 4759/1, *Tolerances for fasteners — Part 1: Bolts, screws and nuts with thread diameters > 1,6 and < 150 mm and product grades A, B and C.*

ISO 7721, *Countersunk head screws — Head configurations and gauging.*

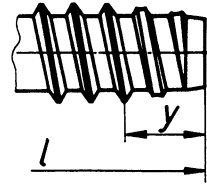
¹⁾ At present at the stage of draft.

3 Dimensions

Type C

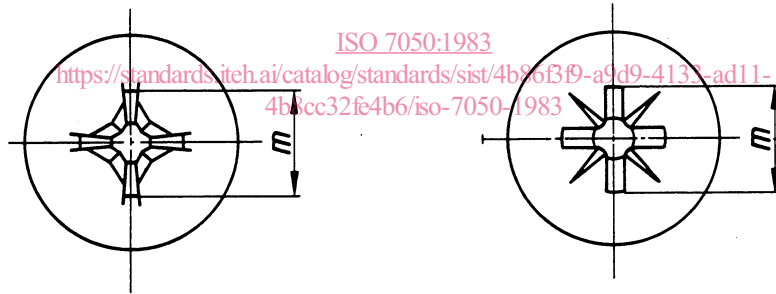


Type F



Recess

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Type H Type Z
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Dimensions in millimetres

Thread size		ST 2,2	ST 2,9	ST 3,5	ST 4,2	ST 4,8	ST 5,5	ST 6,3	ST 8	ST 9,5					
$P^{1)}$		0,8	1,1	1,3	1,4	1,6	1,8	1,8	2,1	2,1					
$a^{2)}$ max.		0,8	1,1	1,3	1,4	1,6	1,8	1,8	2,1	2,1					
d_k	theoretical ³⁾ max.	4,4	6,3	8,2	9,4	10,4	11,5	12,6	17,3	20					
	actual	max.	3,8	5,5	7,3	8,4	9,3	10,3	11,3	15,8	18,3				
		min.	3,5	5,2	6,9	8	8,9	9,9	10,9	15,4	17,8				
k max.		1,1	1,7	2,35	2,6	2,8	3	3,15	4,65	5,25					
r max.		0,8	1,2	1,4	1,6	2	2,2	2,4	3,2	4					
Recess No.		0	1	2			3		4						
Cross recess	Type H	m ref.	1,9	3,2	4,4	4,6	5,2	6,6	6,8	8,9	10				
		Penetration	min.	0,9	1,7	1,9	2,1	2,7	2,8	3	4	5,1			
			max.	1,2	2,1	2,4	2,6	3,2	3,3	3,5	4,6	5,7			
	Type Z	m ref.	2	3,2	4,3	4,6	5,1	6,5	6,8	9	10				
		Penetration	min.	0,95	1,6	1,75	2,05	2,6	2,75	3	4,15	5,2			
			max.	1,2	2	2,2	2,5	3,05	3,2	3,45	4,6	5,65			
y ref. ⁴⁾	Type C	2	2,6	3,2	3,7	4,3	5	6	7,5	8					
	Type F	1,6	2,1	2,5	2,8	3,2	3,6	3,6	4,2	4,2					
/5)		Type C		Type F		<p style="text-align: center; color: red; font-weight: bold;">iTech STANDARD PREVIEW</p> <p style="text-align: center; color: red;">(standards.itech.ai)</p> <p style="text-align: center; color: red;">ISO 7050:1983</p> <p style="text-align: center; color: red;">https://standards.itech.ai/catalog/standards/sist/4b86f3f9-a9d9-4133-ad11-4b8cc32fe4b6/iso-7050-1983</p>									
		nom.	min.	max.	min.						max.				
4,5	3,7	5,3	3,7	4,5	—						—	—	—	—	—
6,5	5,7	7,3	5,7	6,5	—						—	—	—	—	—
9,5	8,7	10,3	8,7	9,5	—						—	—	—	—	—
13	12,2	13,8	12,2	13	—						—	—	—	—	—
16	15,2	16,8	15,2	16	Range										
19	18,2	19,8	18,2	19	of										
22	21,2	22,8	20,7	22	commercial										
25	24,2	25,8	23,7	25	lengths										
32	30,7	33,3	30,7	32											
38	36,7	39,3	36,7	38											
45	43,7	46,3	43,5	45											
50	48,7	51,3	48,5	50											

- 1) P = pitch of the thread.
- 2) Distance from the underside of the head to the first major diameter of the thread within specified limits.
- 3) See ISO 7721.
- 4) Length of incomplete thread.
- 5) Sizes with lengths marked with a dash (—) in the table shall not be manufactured.

4 Specifications and reference International Standards

Material	Steel, according to ISO 2702	
Thread	According to ISO 1478	
Mechanical properties	According to ISO 2702	
Tolerances	Product grade	A
	International Standard	ISO 4759/1
Finish	Plain Requirements for electroplating are covered in ISO 4042. If different electroplating requirements are desired or if requirements are needed for other finishes, they should be negotiated between supplier and customer.	
Acceptability	The acceptance procedure is covered in ISO 3269.	

5 Designation

Example for the designation of a cross recessed countersunk (flat) head tapping screw with thread size ST 3,5, nominal length $l = 16$ mm, cone end type C and recess type Z:

Tapping screw ISO 7050 - ST 3,5 × 16 - C - Z

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