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INTERNATIONAL STANDARD



965/III

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ISO general purpose metric screw threads — Tolerances —  
Deviations for constructional threads

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**Descriptors** : fasteners, screw threads, threads, screws, nuts (fasteners), dimensional tolerances, designation.

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## FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (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 set up 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.

Prior to 1972, the results of the work of the Technical Committees were published as ISO Recommendations; these documents are now in the process of being transformed into International Standards. As part of this process, International Standard ISO 965/III replaces ISO Recommendation R 965/III-1969 drawn up by Technical Committee ISO/TC 1, *Screw threads*.

The Member Bodies of the following countries approved the Recommendation :

Argentina	France	Romania
Australia	Germany	South Africa, Rep. of
Austria	Greece	Spain
Belgium	India	Sweden
Brazil	Israel	Switzerland
Canada	Italy	Turkey
Chile	Japan	United Kingdom
Czechoslovakia	Korea, Rep. of	U.S.A.
Denmark	Netherlands	Yugoslavia
Egypt, Arab Rep. of	New Zealand	
Finland	Norway	

No Member Body expressed disapproval of the Recommendation.

This International Standard is one of a number of ISO publications determining tolerances for ISO metric screw threads. The complete set is made up as follows :

ISO 965/I, *ISO general purpose metric screw threads – Tolerances – Principles and basic data.*

ISO 965/II, *ISO general purpose metric screw threads – Tolerances – Limits of sizes for commercial bolt and nut threads – Medium quality.*

ISO 965/III, *ISO general purpose metric screw threads – Tolerances – Deviations for constructional threads.*

ISO/R 1501, *ISO miniature screw threads.*

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# ISO general purpose metric screw threads – Tolerances – Deviations for constructional threads

## 1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies deviations for pitch and crest diameters for ISO general purpose metric screw threads conforming to ISO 261, *ISO general purpose metric screw threads – General plan*.

The deviations specified are derived from the fundamental deviations and tolerances specified in ISO 965/I.

## 2 DESIGNATION

Tolerances are designated by the relevant tolerance class as found under the heading "Tolerance class" in the tables.

*Examples :*

M6–6H  
M6–5g6g

A fit between threaded parts is indicated by the nut thread tolerance designation followed by the bolt thread tolerance designation separated by a stroke.

*Example :*

M6–6H/5g6g

## 3 REMARKS

For nut threads as well as bolt threads, the actual root contour shall not in any point transgress the basic profile.

The tabulated values for the minor diameter of the bolt thread are calculated on the basis of an  $H/6$  truncation and are to be used for stress calculations, etc.

For coated threads, the tolerances apply to the parts *before* coating, unless otherwise stated. After coating, the actual thread profile shall not in any point transgress the maximum material limits for position H or h respectively.

4 DEVIATIONS

*ES, es* = upper deviation  
*EI, ei* = lower deviation

Basic major diameter		Pitch	Nut thread				Bolt thread						
over	up to and incl.		Tolerance class	Pitch diameter		Minor diameter		Tolerance class	Major diameter		Pitch diameter		Minor diameter (for stress calculations, etc.)
				<i>ES</i>	<i>EI</i>	<i>ES</i>	<i>EI</i>		<i>es</i>	<i>ei</i>	<i>es</i>	<i>ei</i>	
mm	mm			mm	μm	μm	μm		μm	μm	μm	μm	
0,99	1,4	0,2	-	-	-	-	3h4h	0	-36	0	-24	-29	
			4H	+40	0	+38	0	4h	0	-36	0	-30	-29
			5G	-	-	-	-	5g6g	-17	-73	-17	-55	-46
			5H	-	-	-	-	5h4h	0	-36	0	-38	-29
			-	-	-	-	-	5h6h	0	-56	0	-38	-29
			-	-	-	-	-	6e	-	-	-	-	-
			6G	-	-	-	-	6g	-17	-73	-17	-65	-46
			6H	-	-	-	-	6h	0	-56	0	-48	-29
			-	-	-	-	-	7e6e	-	-	-	-	-
			7G	-	-	-	-	7g6g	-	-	-	-	-
			7H	-	-	-	-	7h6h	-	-	-	-	-
			8G	-	-	-	-	8g	-	-	-	-	-
		8H	-	-	-	-	9g8g	-	-	-	-	-	
		0,25	-	-	-	-	3h4h	0	-42	0	-26	-36	
			4H	+45	0	+45	0	4h	0	-42	0	-34	-36
			5G	+74	+18	+74	+18	5g6g	-18	-85	-18	-60	-54
			5H	+56	0	+56	0	5h4h	0	-42	0	-42	-36
			-	-	-	-	-	5h6h	0	-67	0	-42	-36
			-	-	-	-	-	6e	-	-	-	-	-
			6G	-	-	-	-	6g	-18	-85	-18	-71	-54
			6H	-	-	-	-	6h	0	-67	0	-53	-36
			-	-	-	-	-	7e6e	-	-	-	-	-
			7G	-	-	-	-	7g6g	-	-	-	-	-
			7H	-	-	-	-	7h6h	-	-	-	-	-
			8G	-	-	-	-	8g	-	-	-	-	-
		8H	-	-	-	-	9g8g	-	-	-	-	-	
		0,3	-	-	-	-	3h4h	0	-48	0	-28	-43	
			4H	+48	0	+53	0	4h	0	-48	0	-36	-43
			5G	+78	+18	+85	+18	5g6g	-18	-93	-18	-63	-61
			5H	+60	0	+67	0	5h4h	0	-48	0	-45	-43
			-	-	-	-	-	5h6h	0	-75	0	-45	-43
			-	-	-	-	-	6e	-	-	-	-	-
			6G	+93	+18	+103	+18	6g	-18	-93	-18	-74	-61
			6H	+75	0	+85	0	6h	0	-75	0	-56	-43
			-	-	-	-	-	7e6e	-	-	-	-	-
			7G	-	-	-	-	7g6g	-	-	-	-	-
7H	-		-	-	-	7h6h	-	-	-	-	-		
8G	-		-	-	-	8g	-	-	-	-	-		
8H	-	-	-	-	9g8g	-	-	-	-	-			

ES, es = upper deviation  
EI, ei = lower deviation

Basic major diameter		Pitch	Nut thread				Bolt thread						
over	up to and incl.		Tolerance class	Pitch diameter		Minor diameter		Tolerance class	Major diameter		Pitch diameter		Minor diameter (for stress calculations, etc.)
				ES	EI	ES	EI		es	ei	es	ei	
				$\mu\text{m}$	$\mu\text{m}$	$\mu\text{m}$	$\mu\text{m}$		$\mu\text{m}$	$\mu\text{m}$	$\mu\text{m}$	$\mu\text{m}$	
1,4	2,8	0,2	-	-	-	-	3h4h	0	- 36	0	- 25	-29	
			4H	+ 42	0	+ 38	0	4h	0	- 36	0	- 32	-29
			5G	-	-	-	-	5g6g	-17	- 73	- 17	- 57	-46
			5H	-	-	-	-	5h4h	0	- 36	0	- 40	-29
			-	-	-	-	-	5h6h	0	- 56	0	- 40	-29
			-	-	-	-	-	6c	-	-	-	-	-
			6G	-	-	-	-	6g	-17	- 73	-17	- 67	-45
			6H	-	-	-	-	6h	0	- 56	0	- 50	-29
			-	-	-	-	-	7e6e	-	-	-	-	-
			7G	-	-	-	-	7g6g	-	-	-	-	-
			7H	-	-	-	-	7h6h	-	-	-	-	-
			8G	-	-	-	-	8g	-	-	-	-	-
			8H	-	-	-	-	9g8g	-	-	-	-	-
		0,25	-	-	-	-	-	3h4h	0	- 42	0	- 28	-33
			4H	+ 48	0	+ 45	0	4h	0	- 42	0	- 36	-33
			5G	+ 78	+18	+ 74	+18	5g6g	-18	- 85	-18	- 63	-54
			5H	+ 60	0	+ 56	0	5h4h	0	- 42	0	- 45	-33
			-	-	-	-	-	5h6h	0	- 67	0	- 45	-33
			-	-	-	-	-	6e	-	-	-	-	-
			6G	-	-	-	-	6g	-18	- 85	-18	- 74	-54
			6H	-	-	-	-	6h	0	- 67	0	- 56	-33
			-	-	-	-	-	7e6e	-	-	-	-	-
			7G	-	-	-	-	7g6g	-	-	-	-	-
			7H	-	-	-	-	7h6h	-	-	-	-	-
			8G	-	-	-	-	8g	-	-	-	-	-
			8H	-	-	-	-	9g8g	-	-	-	-	-
		0,35	-	-	-	-	-	3h4h	0	- 53	0	- 32	-51
			4H	+ 53	0	+ 63	0	4h	0	- 53	0	- 40	-51
			5G	+ 86	+19	+ 99	+19	5g6g	-19	-104	-19	- 69	-70
			5H	+ 67	0	+ 80	0	5h4h	0	- 53	0	- 50	-51
			-	-	-	-	-	5h6h	0	- 85	0	- 50	-51
			-	-	-	-	-	6e	-	-	-	-	-
			6G	+104	+19	+119	+19	6g	-19	-104	-19	- 82	-70
			6H	+ 85	0	+100	0	6h	0	- 85	0	- 63	-51
			-	-	-	-	-	7e6e	-	-	-	-	-
			7G	-	-	-	-	7g6g	-19	-104	-19	- 99	-70
			7H	-	-	-	-	7h6h	0	- 85	0	- 80	-51
			8G	-	-	-	-	8g	-	-	-	-	-
			8H	-	-	-	-	9g8g	-	-	-	-	-
		0,4	-	-	-	-	-	3h4h	0	- 60	0	- 34	-58
			4H	+ 56	0	+ 71	0	4h	0	- 60	0	- 42	-58
			5G	+ 90	+19	+109	+19	5g6g	-19	-114	-19	- 72	-77
			5H	+ 71	0	+ 90	0	5h4h	0	- 60	0	- 53	-58
			-	-	-	-	-	5h6h	0	- 95	0	- 53	-58
			-	-	-	-	-	6e	-	-	-	-	-
			6G	+109	+19	+131	+19	6g	-19	-114	-19	- 86	-77
			6H	+ 90	0	+112	0	6h	0	- 95	0	- 67	-58
			-	-	-	-	-	7e6e	-	-	-	-	-

ES, es = upper deviation  
EI, ei = lower deviation

Basic major diameter		Pitch	Nut thread				Bolt thread						
over	up to and incl.		Tolerance class	Pitch diameter		Minor diameter		Tolerance class	Major diameter		Pitch diameter		Minor diameter (for stress calculations, etc.)
				ES	EI	ES	EI		es	ei	es	ei	
				$\mu\text{m}$	$\mu\text{m}$	$\mu\text{m}$	$\mu\text{m}$		$\mu\text{m}$	$\mu\text{m}$	$\mu\text{m}$	$\mu\text{m}$	
1,4	2,8	0,4	7G	-	-	-	-	7g6g	-19	-114	-19	-104	- 77
			7H	-	-	-	-	7h6h	0	- 95	0	- 85	- 58
			8G	-	-	-	-	8g	-	-	-	-	-
			8H	-	-	-	-	9g8g	-	-	-	-	-
		0,45	-	-	-	-	-	3h4h	0	- 63	0	- 36	- 65
			4H	+ 60	0	+ 80	0	4h	0	- 63	0	- 45	- 65
			5G	+ 95	+20	+120	+20	5g6g	-20	-120	-20	- 76	- 85
			5H	+ 75	0	+100	0	5h4h	0	- 63	0	- 56	- 65
			-	-	-	-	-	5h6h	0	-100	0	- 56	- 65
			-	-	-	-	-	6e	-	-	-	-	-
			6G	+115	+20	+145	+20	6g	-20	-120	-20	- 91	- 85
			6H	+ 95	0	+125	0	6h	0	-100	0	- 71	- 65
			-	-	-	-	-	7e6e	-	-	-	-	-
			7G	-	-	-	-	7g6g	-20	-120	-20	-110	- 85
			7H	-	-	-	-	7h6h	0	-100	0	- 90	- 85
			8G	-	-	-	-	8g	-	-	-	-	-
			8H	-	-	-	-	9g8g	-	-	-	-	-
2,8	5,6	0,35	-	-	-	-	-	3h4h	0	- 53	0	- 34	- 51
			4H	+ 56	0	+ 63	0	4h	0	- 53	0	- 42	- 51
			5G	+ 90	+19	+ 99	+19	5g6g	-19	-104	-19	- 72	- 70
			5H	+ 71	0	+ 80	0	5h4h	0	- 53	0	- 53	- 51
			-	-	-	-	-	5h6h	0	- 85	0	- 53	- 51
			-	-	-	-	-	6e	-	-	-	-	-
			6G	+109	+19	+119	+19	6g	-19	-104	-19	- 86	- 70
			6H	+ 90	0	+100	0	6h	0	- 85	0	- 67	- 51
			-	-	-	-	-	7e6e	-	-	-	-	-
			7G	-	-	-	-	7g6g	-19	-104	-19	-104	- 70
			7H	-	-	-	-	7h6h	0	- 85	0	- 85	- 51
			8G	-	-	-	-	8g	-	-	-	-	-
			8H	-	-	-	-	9g8g	-	-	-	-	-
		0,5	-	-	-	-	-	3h4h	0	- 67	0	- 38	- 72
			4H	+ 63	0	+ 90	0	4h	0	- 67	0	- 48	- 72
			5G	+100	+20	+132	+20	5g6g	-20	-126	-20	- 80	- 92
			5H	+ 80	0	+112	0	5h4h	0	- 67	0	- 60	- 72
			-	-	-	-	-	5h6h	0	-105	0	- 60	- 72
			-	-	-	-	-	6e	-50	-156	-50	-125	-122
			6G	+120	+20	+160	+20	6g	-20	-126	-20	- 95	- 92
			6H	+100	0	+140	0	6h	0	-105	0	- 75	- 72
			-	-	-	-	-	7e6e	-50	-156	-50	-145	-122
			7G	+145	+20	+200	+20	7g6g	-20	-126	-20	-115	- 92
			7H	+125	0	+180	0	7h6h	0	-106	0	- 95	- 72
			8G	-	-	-	-	8g	-	-	-	-	-
			8H	-	-	-	-	9g8g	-	-	-	-	-

ES, es = upper deviation  
EI, ei = lower deviation

Basic major diameter		Pitch	Nut thread				Bolt thread								
over	up to and incl.		Tolerance class	Pitch diameter		Minor diameter		Tolerance class	Major diameter		Pitch diameter		Minor diameter (for stress calculations, etc.)		
				ES	EI	ES	EI		es	ei	es	ei			
				$\mu\text{m}$	$\mu\text{m}$	$\mu\text{m}$	$\mu\text{m}$		$\mu\text{m}$	$\mu\text{m}$	$\mu\text{m}$	$\mu\text{m}$		$\mu\text{m}$	
mm	mm	mm													
2,8	5,6	0,6	-	-	-	-	3h4h	0	- 80	0	- 42	- 87			
			4H	+ 71	0	+100	0	4h	0	- 80	0	- 53	- 87		
			5G	+111	+21	+146	+21	5g6g	-21	-146	-21	- 86	-108		
			5H	+ 90	0	+125	0	5h4h	0	- 80	0	- 67	- 87		
			-	-	-	-	-	5h6h	0	-125	0	- 67	- 87		
			-	-	-	-	-	6e	-53	-178	-53	-138	-140		
			6G	+133	+21	+181	+21	6g	-21	-146	-21	-106	-108		
			6H	+112	0	+160	0	6h	0	-125	0	- 85	- 87		
			-	-	-	-	-	7e6e	-53	-178	-53	-159	-140		
			7G	+161	+21	+221	+21	7g6g	-21	-146	-21	-127	-108		
			7H	+140	0	+200	0	7h6h	0	-125	0	-106	- 87		
			8G	-	-	-	-	8g	-	-	-	-	-		
		8H	-	-	-	-	9g8g	-	-	-	-	-			
		0,7	0,7	0,7	-	-	-	-	3h4h	0	- 90	0	- 45	-101	
					4H	+ 75	0	+112	0	4h	0	- 90	0	- 56	-101
					5G	+117	+22	+162	+22	5g6g	-22	-162	-22	- 93	-123
					5H	+ 95	0	+140	0	5h4h	0	- 90	0	- 71	-101
					-	-	-	-	-	5h6h	0	-140	0	- 71	-101
					-	-	-	-	-	6e	-56	-196	-56	-146	-157
					6G	+140	+22	+202	+22	6g	-22	-162	-22	-112	-123
					6H	+118	0	+180	0	6h	0	-140	0	- 90	-101
					-	-	-	-	-	7e6e	-56	-196	-56	-168	-157
					7G	+172	+22	+246	+22	7g6g	-22	-162	-22	-134	-123
					7H	+150	0	+224	0	7h6h	0	-140	0	-112	-101
					8G	-	-	-	-	8g	-	-	-	-	-
		8H	-	-	-	-	9g8g	-	-	-	-	-			
		0,75	0,75	0,75	-	-	-	-	3h4h	0	- 90	0	- 45	-108	
					4H	+ 75	0	+118	-	4h	0	- 90	0	- 56	-108
					5G	+117	+22	+172	+22	5g6g	-22	-162	-22	- 93	-130
					5H	+ 95	0	+150	0	5h4h	0	- 90	0	- 71	-108
					-	-	-	-	-	5h6h	0	-140	0	- 71	-108
					-	-	-	-	-	6e	-56	-196	-56	-146	-164
					6G	+140	+22	+212	+22	6g	-22	-162	-22	-112	-130
					6H	+118	0	+190	0	6h	0	-140	0	- 90	-108
					-	-	-	-	-	7e6e	-56	-196	-56	-168	-164
					7G	+172	+22	+258	+22	7g6g	-22	-162	-22	-134	-130
					7H	+150	0	+235	0	7h6h	0	-140	0	-112	-108
					8G	-	-	-	-	8g	-	-	-	-	-
		8H	-	-	-	-	9g8g	-	-	-	-	-			
		0,8	0,8	0,8	-	-	-	-	3h4h	0	- 95	0	- 48	-116	
					4H	+ 80	0	+125	0	4h	0	- 95	0	- 60	-116
					5G	+124	+24	+184	+24	5g6g	-24	-174	-24	- 99	-140
					5H	+100	0	+160	0	5h4h	0	- 95	0	- 75	-116
					-	-	-	-	-	5h6h	0	-150	0	- 75	-116
					-	-	-	-	-	6e	-60	-210	-60	-155	-176
					6G	+149	+24	+224	+24	6g	-24	-174	-24	-119	-140
					6H	+125	0	+200	0	6h	0	-150	0	- 95	-116

ES, es = upper deviation  
EI, ei = lower deviation

Basic major diameter		Pitch	Nut thread				Bolt thread								
over	up to and incl.		Tolerance class	Pitch diameter		Minor diameter		Tolerance class	Major diameter		Pitch diameter		Minor diameter (for stress calculations, etc.)		
				ES	EI	ES	EI		es	ei	es	ei			
				$\mu\text{m}$	$\mu\text{m}$	$\mu\text{m}$	$\mu\text{m}$		$\mu\text{m}$	$\mu\text{m}$	$\mu\text{m}$	$\mu\text{m}$		$\mu\text{m}$	
mm	mm	mm													
2,8	5,6	0,8	-	-	-	-	7e6e	-60	-210	-60	-178	-176			
			7G	+184	+24	+274	+24	7g6g	-24	-174	-24	-142	-140		
			7H	+160	0	+250	0	7h6h	0	-150	0	-118	-116		
			8G	+224	+24	+339	+24	8g	-24	-260	-24	-174	-140		
			8H	+200	0	+315	0	9g8g	-24	-260	-24	-214	-140		
5,6	11,2	0,75	-	-	-	-	3h4h	0	-90	0	-50	-103			
			4H	+85	0	+118	0	4h	0	-90	0	-63	-103		
			5G	+128	+22	+172	+22	5g6g	-22	-162	-22	-102	-130		
			5H	+106	0	+150	0	5h4h	0	-90	0	-80	-103		
			-	-	-	-	5h6h	0	-140	0	-80	-103			
			-	-	-	-	6e	-56	-196	-56	-156	-164			
			6G	+154	+22	+212	+22	6g	-22	-162	-22	-122	-130		
			6H	+132	0	+190	0	6h	0	-140	0	-100	-108		
			-	-	-	-	7e6e	-56	-196	-56	-181	-164			
			7G	+192	+22	+258	+22	7g6g	-22	-162	-22	-147	-130		
			7H	+170	0	+236	0	7h6h	0	-140	0	-125	-108		
			8G	-	-	-	-	8g	-	-	-	-	-		
		8H	-	-	-	-	9g8g	-	-	-	-	-			
		1	1,25	1	-	-	-	-	3h4h	0	-112	0	-56	-144	
					4H	+95	0	+150	0	4h	0	-112	0	-71	-144
					5G	+144	+26	+216	+26	5g6g	-26	-206	-26	-116	-170
					5H	+118	0	+190	0	5h4h	0	-112	0	-90	-144
					-	-	-	-	5h6h	0	-180	0	-90	-144	
					-	-	-	-	6e	-60	-240	-60	-172	-204	
					6G	+176	+26	+262	+26	6g	-26	-206	-26	-138	-170
					6H	+150	0	+236	0	6h	0	-180	0	-112	-144
					-	-	-	-	7e6e	-60	-240	-60	-200	-204	
					7G	+216	+26	+326	+26	7g6g	-26	-206	-26	-166	-170
7H	+190				0	+300	0	7h6h	0	-180	0	-140	-144		
8G	+262	+26	+401	+26	8g	-26	-306	-26	-206	-170					
8H	+236	0	+375	0	9g8g	-26	-306	-26	-250	-170					
1,25	1,25	1,25	-	-	-	-	3h4h	0	-132	0	-60	-180			
			4H	+100	0	+170	0	4h	0	-132	0	-75	-180		
			5G	+153	+28	+240	+28	5g6g	-28	-240	-28	-123	-208		
			5H	+125	0	+212	0	5h4h	0	-132	0	-95	-180		
			-	-	-	-	5h6h	0	-212	0	-95	-180			
			-	-	-	-	6e	-63	-275	-63	-181	-243			
			6G	+188	+28	+293	+28	6g	-28	-240	-28	-146	-208		
			6H	+160	0	+265	0	6h	0	-212	0	-118	-180		
			-	-	-	-	7e6e	-63	-275	-63	-213	-243			
			7G	+228	+28	+363	+28	7g6g	-28	-240	-28	-178	-208		
			7H	+200	0	+335	0	7h6h	0	-212	0	-150	-180		
			8G	+278	+28	+453	+28	8g	-28	-363	-28	-218	-208		
8H	+250	0	+425	0	9g8g	-28	-363	-28	-264	-208					

ES, es = upper deviation  
EI, ei = lower deviation

Basic major diameter		Pitch	Nut thread				Bolt thread										
over	up to and incl.		Tolerance class	Pitch diameter		Minor diameter		Tolerance class	Major diameter		Pitch diameter		Minor diameter (for stress calculations, etc.)				
				ES	EI	ES	EI		es	ei	es	ei					
mm	mm			μm	μm	μm	μm		μm	μm	μm	μm		μm			
5,6	11,2	1,5	-	-	-	-	3h4h	0	-150	0	-67	-217					
			4H	+112	0	+190	0	4h	0	-150	0	-85	-217				
			5G	+172	+32	+268	+32	5g6g	-32	-268	-32	-138	-249				
			5H	+140	0	+236	0	5h4h	0	-150	0	-106	-217				
			-	-	-	-	5h6h	0	-236	0	-106	-217					
			-	-	-	-	6e	-67	-303	-67	-199	-284					
			6G	+212	+32	+332	+32	6g	-32	-268	-32	-164	-249				
			6H	+180	0	+300	0	6h	0	-236	0	-132	-217				
			-	-	-	-	7e6e	-67	-303	-67	-237	-284					
			7G	+256	+32	+407	+32	7g6g	-32	-268	-32	-202	-249				
			7H	+224	0	+375	0	7h6h	0	-236	0	-170	-217				
			8G	+312	+32	+507	+32	8g	-32	-407	-32	-244	-249				
			8H	+280	0	+475	0	9g8g	-32	-407	-32	-297	-249				
11,2	22,4	1	-	-	-	-	3h4h	0	-112	0	-60	-144					
			4H	+100	0	+150	0	4h	0	-112	0	-75	-144				
			5G	+151	+26	+216	+26	5g6g	-26	-206	-26	-121	-170				
			5H	+125	0	+190	0	5h4h	0	-112	0	-95	-144				
			-	-	-	-	5h6h	0	-180	0	-95	-144					
			-	-	-	-	6e	-60	-240	-60	-178	-204					
			6G	+186	+26	+262	+26	6g	-26	-206	-26	-144	-170				
			6H	+160	0	+236	0	6h	0	-180	0	-118	-144				
			-	-	-	-	7e6e	-60	-240	-60	-210	-204					
			7G	+226	+26	+326	+26	7g6g	-26	-206	-26	-176	-170				
			7H	+200	0	+300	0	7h6h	0	-180	0	-150	-144				
			8G	+276	+26	+401	+26	8g	-26	-306	-26	-216	-170				
			8H	+250	0	+375	0	9g8g	-26	-306	-26	-262	-170				
			1,25	1,25	1,25	-	-	-	-	3h4h	0	-132	0	-67	-180		
						4H	+112	0	+170	0	4h	0	-132	0	-85	-180	
		5G				+168	+28	+240	+28	5g6g	-28	-240	-28	-134	-208		
		5H				+140	0	+212	0	5h4h	0	-132	0	-106	-180		
		-				-	-	-	5h6h	0	-212	0	-106	-180			
		-				-	-	-	6e	-63	-275	-63	-195	-243			
		6G				+208	+28	+293	+28	6g	-28	-240	-28	-134	-208		
		6H				+180	0	+265	0	6h	0	-212	0	-132	-180		
		-				-	-	-	7e6e	-63	-275	-63	-233	-243			
		7G				+252	+28	+363	+28	7g6g	-28	-240	-28	-198	-208		
		7H				+224	0	+335	0	7h6h	0	-212	0	-170	-180		
		8G				+308	+28	+453	+28	8g	-28	-363	-28	-240	-208		
		8H				+280	0	+425	0	9g8g	-28	-363	-28	-293	-208		
		1,5				1,5	1,5	-	-	-	-	3h4h	0	-150	0	-71	-217
								4H	+118	0	+190	0	4h	0	-150	0	-90
			5G	+182	+32			+268	+32	5g6g	-32	-268	-32	-144	-249		
			5H	+150	0			+236	0	5h4h	0	-150	0	-112	-217		
-	-		-	-	5h6h			0	-236	0	-112	-217					
-	-		-	-	6e			-67	-303	-67	-207	-284					
6G	+222	+32	+332	+32	6g	-32	-268	-32	-172	-249							
6H	+190	0	+300	0	6h	0	-236	0	-140	-217							

ES, es = upper deviation  
EI, ei = lower deviation

Basic major diameter		Pitch	Nut thread				Bolt thread						
over	up to and incl.		Tolerance class	Pitch diameter		Minor diameter		Tolerance class	Major diameter		Pitch diameter		Minor diameter (for stress calculations, etc.)
				ES	EI	ES	EI		es	ei	es	ei	
mm	mm			μm	μm	μm	μm		μm	μm	μm	μm	
11,2	22,4	1,5	-	-	-	-	7e6e	-67	-303	-67	-247	-284	
			7G	+268	+32	+407	+32	7g6g	-32	-268	-32	-212	-249
			7H	+236	0	+375	0	7h6h	0	-236	0	-180	-217
			8G	+332	+32	+507	+32	8g	-32	-407	-32	-256	-249
			8H	+300	0	+475	0	9g8g	-32	-407	-32	-312	-249
			-	-	-	-	-	3h4h	0	-170	0	-75	-253
		1,75	4H	+125	0	+212	0	4h	0	-170	0	95	-253
			5G	+194	+34	+299	+34	5g6g	-34	-299	-34	-152	-287
			5H	+160	0	+265	0	5h4h	0	-170	0	-118	-253
			-	-	-	-	-	5h6h	0	-265	0	-118	-253
			-	-	-	-	-	6e	-71	-336	-71	-221	-324
			6G	+234	+34	+369	+34	6g	-34	-299	-34	-184	-287
			6H	+200	0	+335	0	6h	0	-265	0	-150	-253
			-	-	-	-	-	7e6e	-71	-336	-71	-261	-324
			7G	+284	+34	+459	+34	7g6g	-34	-299	-34	-224	-287
			7H	+250	0	+425	0	7h6h	0	-265	0	-190	-253
			8G	+349	+34	+564	+34	8g	-34	-459	-34	-270	-287
			8H	+315	0	+530	0	9g8g	-34	-459	-34	-334	-287
	2	-	-	-	-	-	3h4h	0	-180	0	-80	-289	
		4H	+132	0	+236	0	4h	0	-180	0	-100	-289	
		5G	+208	+38	+338	+38	5g6g	-38	-318	-38	-163	-327	
		5H	+170	0	+300	0	5h4h	0	-180	0	-125	-289	
		-	-	-	-	-	5h6h	0	-280	0	-125	-289	
		-	-	-	-	-	6e	-71	-351	-71	-231	-360	
		6G	+250	+38	+413	+38	6g	-38	-318	-38	-198	-327	
		6H	+212	0	+375	0	6h	0	-280	0	-160	-289	
		-	-	-	-	-	7e6e	-71	-351	-71	-271	-360	
		7G	+303	+38	+513	+38	7g6g	-38	-318	-38	-238	-327	
		7H	+265	0	+475	0	7h6h	0	-280	0	-200	-289	
		8G	+373	+38	+638	+38	8g	-38	-488	-38	-288	-327	
	8H	+335	0	+600	0	9g8g	-38	-488	-38	-353	-327		
	2,5	-	-	-	-	-	3h4h	0	-212	0	-85	-361	
		4H	+140	0	+280	0	4h	0	-212	0	-106	-361	
		5G	+222	+42	+397	+42	5g6g	-42	-377	-42	-174	-403	
		5H	+180	0	+355	0	5h4h	0	-212	0	-132	-361	
		-	-	-	-	-	5h6h	0	-335	0	-132	-361	
		-	-	-	-	-	6e	-80	-415	-80	-250	-441	
		6G	+266	+42	+492	+42	6g	-42	-377	-42	-212	-403	
		6H	+224	0	+450	0	6h	0	-335	0	-170	-361	
		-	-	-	-	-	7e6e	-80	-415	-80	-292	-441	
		7G	+322	+42	+602	+42	7g6g	-42	-377	-42	-254	-403	
		7H	+280	0	+560	0	7h6h	0	-335	0	-212	-361	
8G		+397	+42	+752	+42	8g	-42	-572	-42	-307	-403		
8H	+355	0	+710	0	9g8g	-42	-572	-42	-377	-403			

ES, es = upper deviation  
EI, ei = lower deviation

Basic major diameter		Pitch mm	Nut thread				Bolt thread						
over mm	up to and incl. mm		Tolerance class	Pitch diameter		Minor diameter		Tolerance class	Major diameter		Pitch diameter		Minor diameter (for stress calculations, etc.) µm
				ES	EI	ES	EI		es	ei	es	ei	
µm	µm			µm	µm	µm	µm		µm	µm	µm	µm	
22,4	45	1	-	-	-	-	3h4h	0	-112	0	-63	-144	
			4H	+106	0	+150	0	4h	0	-112	0	-80	-144
			5G	+158	+26	+216	+26	5g6g	-26	-206	-26	-126	-170
			5H	+132	0	+190	0	5h4h	0	-112	0	-100	-144
			-	-	-	-	-	5h6h	0	-180	0	-100	-144
			-	-	-	-	-	6e	-60	-240	-60	-185	-204
			6G	+196	+26	+262	+26	6g	-26	-206	-26	-151	-170
			6H	+170	0	+236	0	6h	0	-180	0	-125	-144
			-	-	-	-	-	7e6e	-60	-240	-60	-220	-204
			7G	+238	+26	+326	+26	7g6g	-26	-206	-26	-186	-170
			7H	+212	0	+300	0	7h6h	0	-180	0	-160	-144
			8G	-	-	-	-	8g	-26	-306	-26	-226	-170
		8H	-	-	-	-	9g8g	-26	-306	-26	-276	-170	
		1,5	-	-	-	-	-	3h4h	0	-150	0	-75	-217
			4H	+125	0	+190	0	4h	0	-150	0	-95	-217
			5G	+192	+32	+268	+32	5g6g	-32	-268	-32	-150	-249
			5H	+160	0	+236	0	5h4h	0	-150	0	-118	-217
			-	-	-	-	-	5h6h	0	-236	0	-118	-217
			-	-	-	-	-	6e	-67	-303	-67	-217	-284
			6G	+232	+32	+332	+32	6g	-32	-268	-32	-182	-249
			6H	+200	0	+300	0	6h	0	-236	0	-150	-217
			-	-	-	-	-	7e6e	-67	-303	-67	-257	-284
			7G	+282	+32	+407	+32	7g6g	-32	-268	-32	-222	-249
			7H	+250	0	+375	0	7h6h	0	-236	0	-190	-217
			8G	+347	+32	+507	+32	8g	-32	-407	-32	-268	-249
		8H	+315	0	+475	0	9g8g	-32	-407	-32	-332	-249	
		2	-	-	-	-	-	3h4h	0	-180	0	-85	-289
			4H	+140	0	+236	0	4h	0	-180	0	-106	-289
			5G	+218	+38	+338	+38	5g6g	-38	-318	-38	-170	-327
			5H	+180	0	+300	0	5h4h	0	-180	0	-132	-289
			-	-	-	-	-	5h6h	0	-280	0	-132	-289
			-	-	-	-	-	6e	-71	-351	-71	-241	-360
			6G	+262	+38	+413	+38	6g	-38	-318	-38	-208	-327
			6H	+224	0	+375	0	6h	0	-280	0	-170	-289
			-	-	-	-	-	7e6e	-71	-351	-71	-283	-360
			7G	+318	+38	+513	+38	7g6g	-38	-318	-38	-250	-327
			7H	+280	0	+475	0	7h6h	0	-280	0	-212	-289
			8G	+393	+38	+638	+38	8g	-38	-488	-38	-303	-327
		8H	+355	0	+600	0	9g8g	-38	-488	-38	-373	-327	
		3	-	-	-	-	-	3h4h	0	-236	0	-100	-433
			4H	+170	0	+315	0	4h	0	-236	0	-125	-433
			5G	+260	+48	+448	+48	5g6g	-48	-423	-48	-208	-481
			5H	+212	0	+400	0	5h4h	0	-236	0	-160	-433
			-	-	-	-	-	5h6h	0	-375	0	-160	-433
			-	-	-	-	-	6e	-85	-460	-85	-285	-518
			6G	+313	+48	+548	+48	6g	-48	-423	-48	-248	-481
			6H	+265	0	+500	0	6h	0	-375	0	-200	-433

ES, es = upper deviation  
EI, ei = lower deviation

Basic major diameter		Pitch mm	Nut thread				Bolt thread							
over mm	up to and incl mm		Tolerance class	Pitch diameter		Minor diameter		Tolerance class	Major diameter		Pitch diameter		Minor diameter (for stress calculations, etc.) µm	
				ES	EI	ES	EI		es	ei	es	ei		
µm	µm			µm	µm	µm	µm		µm	µm	µm	µm		
22,4	45	3	-	-	-	-	7e6e	-85	-460	-85	-335	-518		
			7G	+383	+48	+678	+48	7g6g	-48	-423	-48	-298	-481	
			7H	+335	0	+630	0	7h6h	0	-375	0	-250	-433	
			8G	+473	+48	+848	+48	8g	-48	-648	-48	-363	-481	
			8H	+425	0	+800	0	9g8g	-48	-648	-48	-448	-481	
			3,5	-	-	-	-	3h4h	0	-265	0	-106	-505	
				4H	+180	0	+355	0	4h	0	-265	0	-132	-505
				5G	+277	+53	+503	+53	5g6g	-53	-478	-53	-223	-558
				5H	+224	0	+450	0	5h4h	0	-265	0	-170	-505
				-	-	-	-	5h6h	0	-425	0	-170	-505	
				-	-	-	-	6e	-90	-515	-90	-302	-595	
				6G	+333	+53	+613	+53	6g	-53	-478	-53	-265	-558
		6H		+280	0	+560	0	6h	0	-425	0	-212	-505	
		-		-	-	-	7e6e	-90	-515	-90	-355	-595		
		7G		+408	+53	+763	+53	7g6g	-53	-478	-53	-318	-558	
		7H		+355	0	+710	0	7h6h	0	-425	0	-265	-505	
		8G		+503	+53	+953	+53	8g	-53	-723	-53	-388	-558	
		8H	+450	0	+900	0	9g8g	-53	-723	-53	-478	-558		
		4	-	-	-	-	3h4h	0	-300	0	-112	-577		
			4H	+190	0	+375	0	4h	0	-300	0	-140	-577	
			5G	+296	+60	+535	+60	5g6g	-60	-535	-60	-240	-637	
			5H	+236	0	+475	0	5h4h	0	-300	0	-180	-577	
			-	-	-	-	5h6h	0	-475	0	-180	-577		
			-	-	-	-	6e	-95	-570	-95	-319	-672		
			6G	+360	+60	+660	+60	6g	-60	-535	-60	-284	-637	
			6H	+300	0	+600	0	6h	0	-475	0	-224	-577	
			-	-	-	-	7e6e	-95	-570	-95	-375	-672		
			7G	+435	+60	+810	+60	7g6g	-60	-535	-60	-340	-637	
			7H	+375	0	+750	0	7h6h	0	-475	0	-280	-577	
			8G	+535	+60	+1010	+60	8g	-60	-810	-60	-415	-637	
		8H	+475	0	+950	0	9g8g	-60	-810	-60	-510	-637		
		4,5	-	-	-	-	3h4h	0	-315	0	-118	-650		
			4H	+200	0	+425	0	4h	0	-315	0	-150	-650	
			5G	+313	+63	+593	+63	5g6g	-63	-563	-63	-253	-713	
			5H	+250	0	+530	0	5h4h	0	-315	0	-190	-650	
			-	-	-	-	5h6h	0	-500	0	-190	-650		
			-	-	-	-	6e	-100	-600	-100	-336	-750		
			6G	+378	+63	+733	+63	6g	-63	-563	-63	-299	-713	
			6H	+315	0	+670	0	6h	0	-500	0	-236	-650	
			-	-	-	-	7e6e	-100	-600	-100	-400	-750		
			7G	+463	+63	+913	+63	7g6g	-63	-563	-63	-363	-713	
			7H	+400	0	+850	0	7h6h	0	-500	0	-300	-650	
			8G	+563	+63	+1123	+63	8g	-63	-863	-63	-438	-713	
		8H	+500	0	+1060	0	9g8g	-63	-863	-63	-538	-713		

ES, es = upper deviation  
EI, ei = lower deviation

Basic major diameter		Pitch mm	Nut thread				Bolt thread						
over mm	up to and incl. mm		Tolerance class	Pitch diameter		Minor diameter		Tolerance class	Major diameter		Pitch diameter		Minor diameter (for stress calculations, etc.) µm
				ES	EI	ES	EI		es	ei	es	ei	
µm	µm			µm	µm	µm	µm		µm	µm	µm	µm	
45	90	1,5	-	-	-	-	3h4h	0	-150	0	-80	-217	
			4H	+132	0	+190	0	4h	0	-150	0	-100	-217
			5G	+202	+32	+268	+32	5g6g	-32	-268	-32	-157	-249
			5H	+170	0	+236	0	5h4h	0	-150	0	-125	-217
			-	-	-	-	-	5h6h	0	-236	0	-125	-217
			-	-	-	-	-	6e	-67	-303	-67	-227	-284
			6G	+244	+32	+332	+32	6g	-32	-268	-32	-192	-249
			6H	+212	0	+300	0	6h	0	-236	0	-160	-217
			-	-	-	-	-	7e6e	-67	-303	-67	-267	-284
			7G	+297	+32	+407	+32	7g6g	-32	-268	-32	-232	-249
			7H	+265	0	+375	0	7h6h	0	-236	0	-200	-217
			8G	+367	+32	+507	+32	8g	-32	-407	-32	-282	-249
		8H	+335	0	+475	0	9g8g	-32	-407	-32	-347	-249	
		-	-	-	-	-	3h4h	0	-180	0	-90	-289	
		4H	+150	0	+236	0	4h	0	-180	0	-112	-289	
		5G	+228	+38	+338	+38	5g6g	-38	-318	-38	-178	-327	
		5H	+190	0	+300	0	5h4h	0	-180	0	-140	-289	
		-	-	-	-	-	5h6h	0	-280	0	-140	-289	
		-	-	-	-	-	6e	-71	-351	-71	-251	-360	
		6G	+274	+38	+413	+38	6g	-38	-318	-38	-218	-327	
		6H	+236	0	+375	0	6h	0	-280	0	-180	-289	
		-	-	-	-	-	7e6e	-71	-351	-71	-295	-360	
		7G	+338	+38	+513	+38	7g6g	-38	-318	-38	-262	-327	
		7H	+300	0	+475	0	7h6h	0	-280	0	-224	-289	
		8G	+413	+38	+638	+38	8g	-38	-488	-38	-318	-327	
		8H	+375	0	+600	0	9g8g	-38	-488	-38	-393	-327	
		-	-	-	-	-	3h4h	0	-236	0	-106	-433	
		4H	+180	0	+315	0	4h	0	-236	0	-132	-433	
		5G	+272	+48	+448	+48	5g6g	-48	-423	-48	-218	-481	
		5H	+224	0	+400	0	5h4h	0	-236	0	-170	-433	
		-	-	-	-	-	5h6h	0	-375	0	-170	-433	
		-	-	-	-	-	6e	-85	-460	-85	-297	-518	
		6G	+328	+48	+548	+48	6g	-48	-423	-48	-260	-481	
		6H	+280	0	+500	0	6h	0	-375	0	-212	-433	
		-	-	-	-	-	7e6e	-85	-460	-85	-350	-518	
		7G	+403	+48	+678	+48	7g6g	-48	-423	-48	-313	-481	
		7H	+355	0	+630	0	7h6h	0	-375	0	-265	-433	
		8G	+498	+48	+848	+48	8g	-48	-648	-48	-383	-481	
		8H	+450	0	+800	0	9g8g	-48	-648	-48	-473	-481	
		-	-	-	-	-	3h4h	0	-300	0	-118	-577	
		4H	+200	0	+375	0	4h	0	-300	0	-150	-577	
		5G	+310	+60	+535	+60	5g6g	-60	-535	-60	-250	-637	
		5H	+250	0	+475	0	5h4h	0	-300	0	-190	-577	
		-	-	-	-	-	5h6h	0	-475	0	-190	-577	
		-	-	-	-	-	6e	-95	-570	-95	-331	-672	

ES, es = upper deviation  
EI, ei = lower deviation

Basic major diameter		Pitch	Nut thread				Bolt thread						
over	up to and incl.		Tolerance class	Pitch diameter		Minor diameter		Tolerance class	Major diameter		Pitch diameter		Minor diameter (for stress calculations, etc.)
mm	mm			ES	EI	ES	EI		es	ei	es	ei	
				$\mu\text{m}$	$\mu\text{m}$	$\mu\text{m}$	$\mu\text{m}$		$\mu\text{m}$	$\mu\text{m}$	$\mu\text{m}$	$\mu\text{m}$	
45	90	4	6G	+375	+60	+660	+60	6g	-60	-535	-60	-296	-637
			6H	+315	0	+600	0	6h	0	-475	0	-236	-577
			-	-	-	-	-	7e6e	-95	-570	-95	-395	-672
			7G	+460	+60	+810	+60	7g6g	-60	-535	-60	-360	-637
			7H	+400	0	+750	0	7h6h	0	-475	0	-300	-577
			8G	+560	+60	+1010	+60	8g	-60	-810	-60	-435	-637
		8H	+500	0	+950	0	9g8g	-60	-810	-60	-535	-637	
		5	-	-	-	-	-	3h4h	0	-335	0	-125	-722
			4H	+212	0	+450	0	4h	0	-335	0	-160	-722
			5G	+336	+71	+631	+71	5g6g	-71	-601	-71	-271	-793
			5H	+265	0	+560	0	5h4h	0	-335	0	-200	-722
			-	-	-	-	-	5h6h	0	-530	0	-200	-722
			-	-	-	-	-	6e	-106	-636	-106	-356	-828
			6G	+406	+71	+781	+71	6g	-71	-601	-71	-321	-793
			6H	+335	0	+710	0	6h	0	-530	0	-250	-722
			-	-	-	-	-	7e6e	-106	-636	-106	-421	-828
			7G	+496	+71	+971	+71	7g6g	-71	-601	-71	-386	-793
			7H	+425	0	+900	0	7h6h	0	-530	0	-315	-722
			8G	+601	+71	+1191	+71	8g	-71	-921	-71	-471	-793
		8H	+530	0	+1120	0	9g8g	-71	-921	-71	-571	-793	
		5,5	-	-	-	-	-	3h4h	0	-355	0	-132	-794
			4H	+224	0	+475	0	4h	0	-355	0	-170	-794
			5G	+355	+75	+675	+75	5g6g	-75	-635	-75	-287	-869
			5H	+280	0	+600	0	5h4h	0	-355	0	-212	-794
			-	-	-	-	-	5h6h	0	-560	0	-212	-794
			-	-	-	-	-	6e	-112	-672	-112	-377	-906
			6G	+430	+75	+825	+75	6g	-75	-635	-75	-340	-869
			6H	+355	0	+750	0	6h	0	-560	0	-265	-794
			-	-	-	-	-	7e6e	-112	-672	-112	-447	-906
			7G	+525	+75	+1025	+75	7g6g	-75	-635	-75	-410	-869
			7H	+450	0	+950	0	7h6h	0	-560	0	-335	-794
			8G	+635	+75	+1255	+75	8g	-75	-975	-75	-500	-869
		8H	+560	0	+1180	0	9g8g	-75	-975	-75	-605	-869	
		6	-	-	-	-	-	3h4h	0	-375	0	-140	-866
			4H	+236	0	+500	0	4h	0	-375	0	-180	-866
			5G	+380	+80	+710	+80	5g6g	-80	-680	-80	-304	-946
			5H	+300	0	+630	0	5h4h	0	-375	0	-224	-866
			-	-	-	-	-	5h6h	0	-600	0	-224	-866
			-	-	-	-	-	6e	-118	-718	-118	-398	-984
			6G	+455	+80	+880	+80	6g	-80	-680	-80	-360	-946
			6H	+375	0	+800	0	6h	0	-600	0	-280	-866
			-	-	-	-	-	7e6e	-118	-718	-118	-473	-984
7G	+555		+80	+1080	+80	7g6g	-80	-680	-80	-435	-946		
7H	+475		0	+1000	0	7h6h	0	-600	0	-355	-866		
8G	+680		+80	+1330	+80	8g	-80	-1030	-80	-530	-946		
8H	+600		0	+1250	9	9g8g	-80	-1030	-80	-640	-946		