

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION

R 965/III

ISO GENERAL PURPOSE METRIC SCREW THREADS
TOLERANCES

DEVIATIONS FOR CONSTRUCTIONAL THREADS

1st EDITION

February 1969

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BRIEF HISTORY

The ISO Recommendation R 965/III, *ISO general purpose metric screw threads – Tolerances – Deviations for constructional threads*, was drawn up by Technical Committee ISO/TC 1, *Screw threads*, the Secretariat of which is held by the Sveriges Standardiseringskommission (SIS).

Work on this question by the Technical Committee led, in 1964, to the adoption of the proposed tolerance system for ISO metric screw threads.

In September 1966, a Draft ISO Recommendation (No. 981) was circulated to all the ISO Member Bodies for enquiry. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

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

No Member Body opposed the approval of the Draft.

The Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided, in February 1969, to accept it as an ISO RECOMMENDATION.

FOREWORD

This document is one of a number of ISO Recommendations determining tolerances for ISO metric screw threads.

The complete set of these ISO Recommendations is made up as follows :

- ISO/R 965/I, *ISO general purpose metric screw threads – Tolerances – Principles and basic data;*
- ISO/R 965/II, *ISO general purpose metric screw threads – Tolerances – Limits of sizes for commercial bolt and nut threads -- Medium quality;*
- ISO/R 965/III (this document), *ISO general purpose metric screw threads – Tolerances -- Deviations for constructional threads;*
- ISO/R . . . *, *ISO miniature screw threads.*

• At present Draft ISO Recommendation No. 1501.

CONTENTS

	Page
1. Scope	5
2. Designations	5
3. Application	5
4. Deviations	6

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ISO GENERAL PURPOSE METRIC SCREW THREADS TOLERANCES

DEVIATIONS FOR CONSTRUCTIONAL THREADS

1. SCOPE

This ISO Recommendation tabulates deviations for pitch and crest diameters for ISO general purpose metric screw threads according to ISO Recommendation R 261*.

2. DESIGNATIONS

Tolerances according to this ISO Recommendation 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. APPLICATION

3.1 Deviations

The deviations specified in this document are derived from the fundamental deviations and tolerances specified in ISO Recommendation R 965/I, *ISO general purpose metric screw threads - Tolerances - Principles and basic data*.

3.2 Root contours

For nut threads as well as bolt threads the actual root contour should 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 should not in any point transgress the maximum material limits for position H or h respectively.

* At present under revision, under the new title, *ISO general purpose metric screw threads - General plan* (Draft ISO Recommendation No. 1499).

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.)	
				ES	EI	ES	EI		es	ei	es	ei		
				μm	μm	μm	μm		μm	μm	μm	μm		
mm	mm	mm												
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	
				μm	μm	μm	μm		μm	μm	μm	μm	
mm	mm	mm											
1.4	2.8	0.2	—	—	—	—	—	3h4h	0	- 35	0	- 25	-29
			4H	+ 42	0	+ 38	0	4h	0	- 33	0	- 32	-29
			5G	—	—	—	—	5g6g	-17	- 73	-17	- 57	-46
			5H	—	—	—	—	5h4h	0	- 36	0	- 40	-29
			—	—	—	—	—	5h6h	0	- 56	0	- 40	-29
			—	—	—	—	—	6e	—	—	—	—	—
			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
		4H		+ 48	0	+ 45	0	4h	0	- 42	0	- 35	-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	- 63	-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
			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	- 62	-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
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				
				μm	μm	μm	μm		μm	μm	μm	μm				
mm	mm	mm														
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	- 35	- 65			
			4H	+ 60	0	+ 80	0	4h	0	- 63	0	- 45	- 65			
			5G	+ 95	+20	+120	+20	5g6g	-20	-120	-20	- 75	- 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	
				μm	μm	μm	μm		μm	μm	μm	μm	
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	-103	- 87
			8G	—	—	—	—	8g	—	—	—	—	—
			8H	—	—	—	—	9g8g	—	—	—	—	—
		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	-145	-157
			6G	+140	+22	+202	+22	6g	-22	-162	-22	-112	-123
			6H	+118	0	+180	0	6h	0	-140	0	- 90	-101
			—	—	—	—	—	7e6e	-55	-193	-56	-188	-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	—	—	—	—	—	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	-143	-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	—	—	—	—	—	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			
				μm	μm	μm	μm		μm	μm	μm	μm		μm	
mm	mm	mm													
2.8	5.6	0.8	—	—	—	—	—	7e8e	-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	-193	-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	—	—	—	—	—	—	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	—		—	—	—	—	—	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	
				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	—	—	—	—	—	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	-131	-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	-160	-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	—	—	—	—	—	3h4h	0	-150	0	- 71	-217
			4H	+118	0	+190	0	4h	0	-150	0	- 90	-217
			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		
				μm	μm	μm	μm		μm	μm	μm	μm		
mm	mm	mm												
11.2	22.4	1.5	-	-	-	-	-	7e6e	-67	-303	-67	-247	-284	
			7G	+268	+32	+407	+32	7gog	-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	
		1.75	-	-	-	-	-	3h4h	0	-170	0	-75	-253	
			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	7gog	-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	5gog	-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	7gog	-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	7gog	-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	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	
				µm	µm	µm	µm		µm	µm	µm	µm	
mm	mm	mm											
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	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		
				μm	μm	μm	μm		μm	μm	μm	μm		
mm	mm	mm												
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	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	
				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
		2	—	—	—	—	—	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
		3	—	—	—	—	—	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
		4	—	—	—	—	—	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.)
				ES	EI	ES	EI		es	ei	es	ei	
				μm	μm	μm	μm		μm	μm	μm	μm	
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
			-	-	-	-	-	6c	-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
			-	-	-	-	-	6c	-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
			-	-	-	-	-	6c	-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