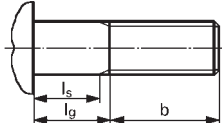
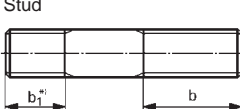

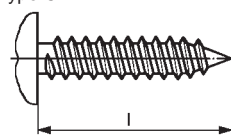
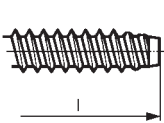
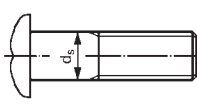
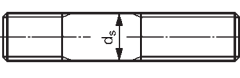
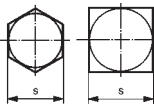
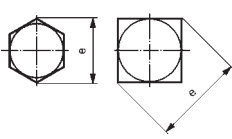
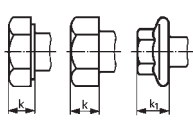
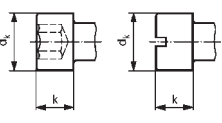
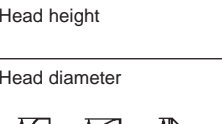
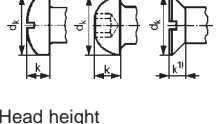
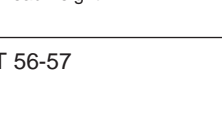


## Tolerance for fasteners

Feature	Tolerance for product grades			Notes								
	A	B	C									
Internal thread (nuts)	6H	6H	7H	For electroplated coatings and hot dip galvanizing, see relevant product and coating standards.								
External thread (screws)	6g	6g	8g									
Thread length 	$b + \begin{matrix} 2P \\ 0 \end{matrix}$	$b + \begin{matrix} 2P \\ 0 \end{matrix}$	$b + \begin{matrix} 2P \\ 0 \end{matrix}$	P = pitch of thread Tolerance + 2 P only for such bolts where l <sub>s</sub> and l <sub>g</sub> are not fixed in the product standard.								
Stud 	$b + \begin{matrix} 2P \\ 0 \\ b_1 \text{ js16} \end{matrix}$	$b + \begin{matrix} 2P \\ 0 \\ b_1 \text{ js17} \end{matrix}$	$b + \begin{matrix} 2P \\ 0 \\ b_1 \text{ js17} \end{matrix}$		*) Only stud end of studs.							
Nominal length 	js 15 js 16 for slotted and cross recessed screws with length . 50 mm	js 17	l < 150 : js 17 l . 150 : 2 js 17									
Type C 		<table border="1"> <thead> <tr> <th>l</th> <th>tolerance</th> </tr> </thead> <tbody> <tr> <td># 25</td> <td>± 0,8</td> </tr> <tr> <td>. 25</td> <td>± 1,3</td> </tr> </tbody> </table>		l	tolerance	# 25	± 0,8	. 25	± 1,3			
l	tolerance											
# 25	± 0,8											
. 25	± 1,3											
Type F 		<table border="1"> <thead> <tr> <th>l</th> <th>tolerance</th> </tr> </thead> <tbody> <tr> <td># 19</td> <td><math>\begin{matrix} 0 \\ -0,8 \end{matrix}</math></td> </tr> <tr> <td>. 19 # 38</td> <td><math>\begin{matrix} 0 \\ -1,3 \end{matrix}</math></td> </tr> <tr> <td>. 38</td> <td><math>\begin{matrix} 0 \\ -1,5 \end{matrix}</math></td> </tr> </tbody> </table>		l	tolerance	# 19	$\begin{matrix} 0 \\ -0,8 \end{matrix}$	. 19 # 38	$\begin{matrix} 0 \\ -1,3 \end{matrix}$	. 38	$\begin{matrix} 0 \\ -1,5 \end{matrix}$	
l	tolerance											
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. 19 # 38	$\begin{matrix} 0 \\ -1,3 \end{matrix}$											
. 38	$\begin{matrix} 0 \\ -1,5 \end{matrix}$											
Shank diameter  	h13	h14	± IT 15	The tolerance is not applicable in the areas of the underhead fillet and thread run-out. Allowance for the swelling under the head, see the relevant product standard.								

Feature	Tolerance for product grades			Notes																
	A	B	C																	
Width across flats 	<table border="1"> <thead> <tr> <th>s</th> <th>tolerance</th> </tr> </thead> <tbody> <tr> <td>% 30</td> <td>h13</td> </tr> <tr> <td>. 30</td> <td>h1</td> </tr> </tbody> </table>	s	tolerance	% 30	h13	. 30	h1	<table border="1"> <thead> <tr> <th>s</th> <th>tolerance</th> </tr> </thead> <tbody> <tr> <td>% 18</td> <td>h14</td> </tr> <tr> <td>. 18 % 60</td> <td>h15</td> </tr> <tr> <td>. 60 % 180</td> <td>h16</td> </tr> <tr> <td>. 180</td> <td>h17</td> </tr> </tbody> </table>	s	tolerance	% 18	h14	. 18 % 60	h15	. 60 % 180	h16	. 180	h17		
s	tolerance																			
% 30	h13																			
. 30	h1																			
s	tolerance																			
% 18	h14																			
. 18 % 60	h15																			
. 60 % 180	h16																			
. 180	h17																			
Width across corners 	e min. ± 1,13 s min. e min. ± 1,12 s min. for flanged bolts and screws and other cold forged heads without trimming operation																			
Head height 	js14	js15	<table border="1"> <thead> <tr> <th>k</th> <th>tolerance</th> </tr> </thead> <tbody> <tr> <td>, 10</td> <td>js16</td> </tr> <tr> <td>± 10</td> <td>js17</td> </tr> </tbody> </table>	k	tolerance	, 10	js16	± 10	js17	1) For flanged hexagon bolts and screws k is defined only as a maximum.										
k	tolerance																			
, 10	js16																			
± 10	js17																			
Head diameter 	h13 *)	h14 **)	-	*) ± IT 13 for knurled heads **) ± IT 14 for knurled heads																
Head height 	% M 5 : h13 . M 5 : h14	h14	-																	
Head diameter 	h14	h14	-	Tapping screws are product grade B																
Head height 	% M 5 : h13 . M 5 : h14	h14	-	1) For flat head screws k is defined only as a maximum.																