

Hexagon fit bolts

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Descriptors: Fasteners, bolts, fit bolts, hexagon bolts.

Sechskant-Paßschrauben mit langem Gewindezapfen

In keeping with current practice in standards published by the International Organization for Standardization (ISO), a comma has been used throughout as the decimal marker.

Dimensions in mm

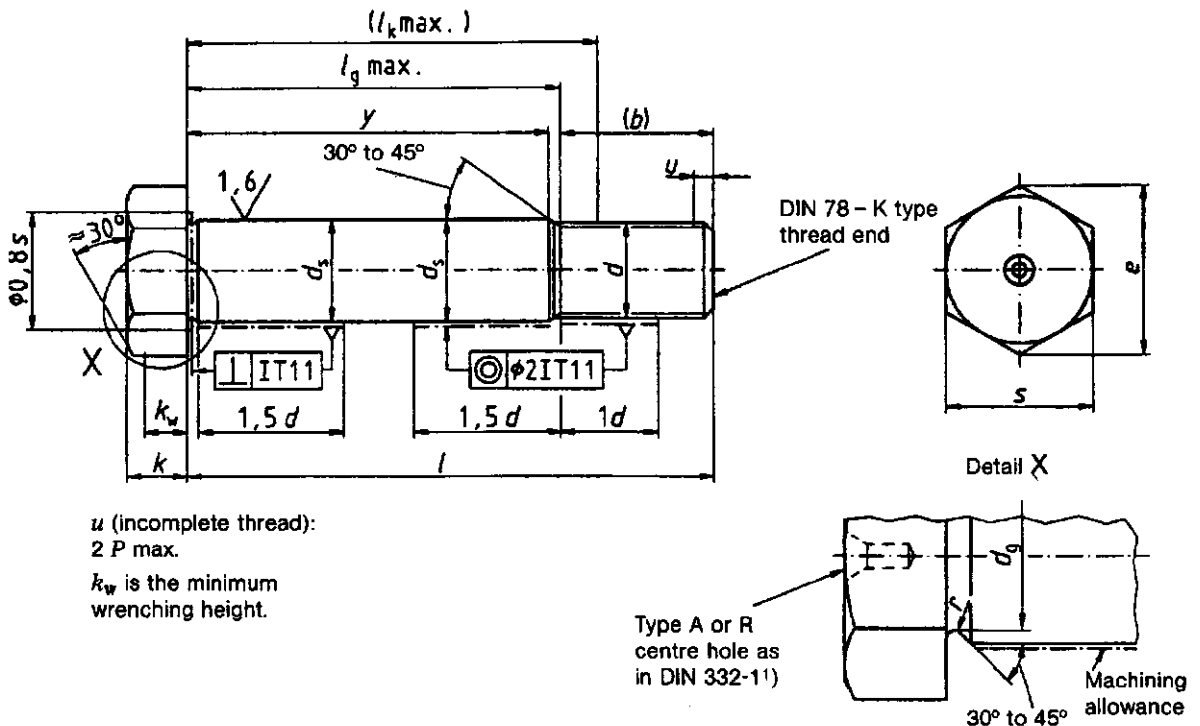
**1 Scope and field of application**

This standard specifies dimensions and technical delivery conditions for M8 to M52 hexagon fit bolts, assigned to product grade A (for size M10 or less) or product grade B (for size M12 or greater).

For hexagon fit bolts of sizes greater than M39, the specifications of this standard apply only with regard to dimensions and tolerances, the other properties being subject to agreement.

NOTE: For sizes M10, M12, M14 and M22 bolts, this standard specifies widths across flats which are in current use, i.e. 16 mm, 18 mm, 21 mm and 34 mm, in accordance with ISO 272. Specifications for obsolete widths across flats (17 mm, 19 mm, 22 mm and 32 mm) are provided in Appendix A.

**2 Dimensions**



$u$  (incomplete thread):  
2  $P$  max.  
 $k_w$  is the minimum wrenching height.

1) A centre hole is only obligatory for bolts with a machining allowance (i.e.  $d_s$  is larger); for finished bolts, any centre hole shall be at the manufacturer's discretion.

Continued on pages 2 to 10.

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Table 1: Dimensions

Thread size	M8	M10	M12	(M14)	M16	(M18)	M20	
	M8 × 1	M10 × 1,25	M12 × 1,25	(M14 × 1,5)	M16 × 1,5	(M18 × 1,5)	M20 × 1,5	
	—	M 10 × 1	M12 × 1,5	—	—	(M18 × 2)	M20 × 2	
<i>b</i> (auxiliary size)	1)	14,5	17,5	20,5	22	25	27,5	28,5
	2)	16,5	19,5	22,5	24	27	29,5	30,5
	3)	21,5	24,5	27,5	29	32	34,5	35,5
<i>d<sub>s</sub></i> <sup>4)</sup>	Nominal size	9	11	13	15	17	19	21
	min.	9,001	11,001	13,001	15,001	17,001	19,002	21,002
	max.	9,010	11,012	13,012	15,012	17,012	19,015	21,015
<i>d<sub>g</sub></i>	min.	7,9	9,9	11,5	13,5	15,5	17,5	19,1
	max.	8,2	10,2	11,8	13,8	15,8	17,8	19,4
<i>e</i>	min.	14,38	17,77	19,85	22,78	26,17	29,56	32,95
<i>k</i>	Nominal size	5,3	6,4	7,5	8,8	10	11,5	12,5
	min.	5,15	6,22	7,21	8,51	9,71	11,15	12,15
	max.	5,45	6,58	7,79	9,09	10,29	11,85	12,85
<i>k<sub>w</sub></i>	min.	3,61	4,35	5,05	5,96	6,8	7,81	8,51
<i>r</i>	min.	0,4	0,4	0,6	0,6	0,6	0,6	0,8
	max.	0,55	0,55	0,75	0,75	0,75	0,75	0,95
<i>s</i>	max. = nominal size	13	16	18	21	24	27	30
	min.	12,73	15,73	17,57	20,16	23,16	26,16	29,16

For 1) to 4), see page 4.

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