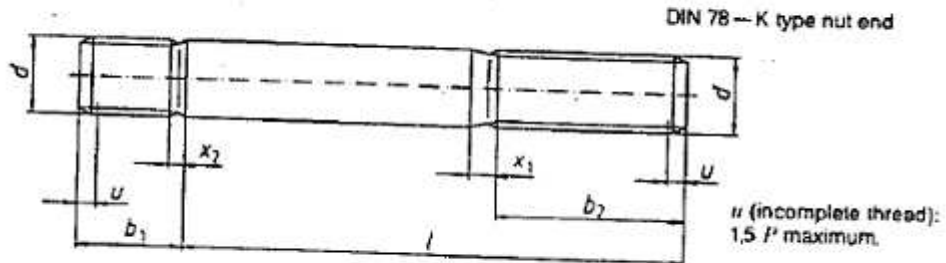


Studs

with a length of engagement equal to about $1,25 d$

2 Dimensions



b_1 = stud end
 b_2 = nut end

u (incomplete thread):
1,5 P maximum.

Table 1: Dimensions

d	M4	M5	M6	(M7)	M8 M8×1	M10 M10×1,25	M12 M12×1,25 M12×1,5	(M14) (M14×1,5)	M16 M16×1,5	(M18) (M18×1,5)	M20 M20×1,5	(M22) (M22×1,5)	M24 M24×2
b ₁	5	6,5	7,5	9	10	12	15	18	20	22	25	28	30
b ₂ ¹⁾	14	16	18	20	22	26	30	34	38	42	46	50	54
b ₂ ²⁾	20	22	24	26	28	32	36	40	44	48	52	56	60
b ₂ ³⁾	—	—	—	—	—	45	49	53	57	61	65	69	73
x ₁	1,75	2,0	2,5	2,5	3,2	3,8	4,3	5,0	5,0	6,3	6,3	6,3	7,5
x ₂	0,9	1,0	1,25	1,25	1,6	1,9	2,2	2,5	2,5	3,2	3,2	3,2	3,8
f	Approximate mass (7,85 kg/dm ³) per 1 000 units, in kg												
12													
(14)													
16													
(18)													
20	2,03												
(22)	2,23	3,65											
25	2,52	4,11	5,85										
(28)	2,82	4,57	6,52	9,49									
30	3,02	4,88	6,96	10,1	13,1								
35	3,51	5,85	8,07	11,6	15,1	24,2							
40	4,01	6,42	9,18	13,1	17,0	27,2	41,0						
45		7,19	10,2	14,6	19,0	30,3	45,4	64,0					
50		7,96	11,4	16,1	21,0	33,3	49,9	70,0	94,9				
55			12,5	17,7	22,9	36,4	54,3	76,1	103	130			
60			13,6	19,2	24,9	39,5	58,8	82,1	111	140	180		
65				20,7	26,9	42,6	63,2	88,2	119	150	192	242	
70				22,2	28,9	45,7	67,6	94,2	126	160	205	257	
75					30,8	48,8	72,1	100	134	170	217	272	305
80					32,8	51,8	76,5	106	142	180	229	287	341
(85)						54,9	81,0	112	150	190	241	302	358
90						58,0	85,4	118	158	199	254	317	376
(95)						61,1	89,8	124	166	210	266	332	394
100						64,2	94,3	130	174	220	279	346	412
110							103	143	190	240	303	376	447
120							112	155	205	260	328	406	483
130								167	221	280	353	436	518
140								179	237	300	377	466	554
150									253	320	402	496	589
160									269	340	427	525	625
170										360	451	555	660
180										380	476	585	696
190											501	615	731
200											525	645	767

For ¹⁾ to ³⁾, see page 3.

(continued)

Table 1 (concluded)

<i>d</i>	(M27) (M27×2)	M30 M30×2	(M33) (M33×2)	M36 M36×3	(M39) (M39×3)	M42 M42×3	(M45) (M45×3)	M48 M48×3	(M52) (M52×3)
<i>b</i> ₁	35	38	42	45	50	52	58	60	65
<i>b</i> ₂	¹⁾ 60	66	72	78	84	90	96	102	110
	²⁾ 66	72	78	84	90	96	102	108	116
	³⁾ 79	85	91	97	103	109	115	121	129
<i>x</i> ₁	7,5	9,0	9,0	10,0	10,0	11,0	11,0	12,5	12,5
<i>x</i> ₂	3,8	4,5	4,5	5,0	5,0	5,5	5,5	6,3	6,3
<i>l</i> [515]	Approximate mass (7,85 kg/dm ³) per 1000 units, in kg								
50									
55									
60									
65									
70									
75	430								
80	452								
(85)	475	591							
90	497	619	776						
(95)	520	646	810						
100	542	674	843	1011					
110	587	730	910	1091	1326				
120	632	785	977	1171	1420	1647	1963		
130	677	841	1045	1251	1514	1756	2088		
140	722	896	1112	1331	1607	1865	2213	2364	
								2506	3027
150	767	952	1179	1411	1701	1973	2338	2648	3194
160	812	1007	1246	1490	1795	2092	2462	2790	3360
170	857	1062	1313	1570	1889	2191	2587	2932	3527
180	902	1118	1380	1650	1982	2300	2712	3074	3694
190	947	1173	1447	1730	2076	2408	2837	3216	3861
200	992	1229	1515	1810	2170	2517	2962	3358	4027
220	1082	1340	1649	1970	2358	2735	3211	3642	4361
240	1172	1450	1784	2130	2545	2952	3461	3927	4694
260	1262	1562	1918	2289	2733	3170	3711	4211	5028
280	1352	1672	2052	2449	2920	3387	3961	4495	5361
300		1784	2186	2609	3108	3605	4210	4779	5694
320			2321	2769	3295	3822	4460	5063	6028
340			2455	2929	3483	4040	4710	5347	6361
360				3088	3670	4267	4959	5631	6695
380					3858	4475	5209	5915	7028
400					4045	4692	5459	6199	7362

¹⁾ For lengths, *l*, of 125 mm or less.

²⁾ For lengths, *l*, above 125 mm up to 200 mm.

³⁾ For lengths, *l*, exceeding 200 mm.

Lengths above 400 mm shall be graded in 20 mm steps.

Drecketed sizes and intermediate lengths should be avoided if possible.

The zone between the continuous thick lines indicates the range of commercial sizes of studs with coarse pitch thread.

Studs of sizes above this range cannot be manufactured with a nut end thread length *b*₂, as specified in the table. In such cases, *b*₂ will be approximately equal to *l* · (1,1 + 3). For sizes above the dashed line, *b*₂ · *x*₁ will be less than 1,2 · *b*₁. The nut end of these studs shall be rounded (ie given a DIN 78 1 type oval), unless the end is already marked with the property class.

Table 2: Technical delivery conditions

Material		Steel	
General requirements		As specified in ISO 8992	
Thread	Tolerance	Stud end: 5k6	Nut end: 6g
	As specified in	DIN 13-51	DIN 13-12 and DIN 13-15
Mechanical properties	Property class (material) ¹⁾	5.6, 8.8 or 10.9	
	As specified in	DIN EN 20 898-1	
Limit deviations, geometrical tolerances	Product grade	A	
	As specified in	ISO 4759-1	
Surface finish	Property class 5.6: as processed. Property classes 8.8 and 10.9: (thermally or chemically) blackened. DIN 267-2 shall apply with regard to surface roughness. DIN EN 26 157-3 shall apply with regard to limits for surface discontinuities. ISO 4042 shall apply with regard to electroplating. The limits of thread size shall also apply after coating.		
Acceptance inspection	As specified in ISO 3269		
¹⁾ Use of other property classes or materials shall be subject to agreement.			