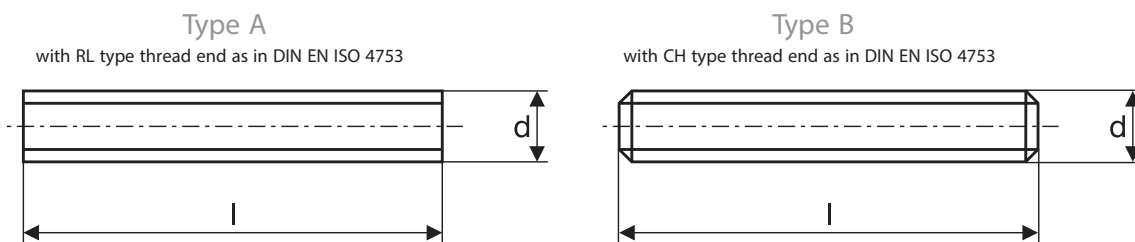


Stud Bolts

DIN 976 - 1 High Tensile



DIN 976-1 Stud bolt dimensions

Thread size (d)			M10	M12	(M14)	M16	(M18)	M20	(M22)	M24	(M27)	M30	(M33)
			M10 x 1.25	M12 x 1.25	M14 x 1.5	M16 x 1.5	M18 x 1.5	M20 x 1.5	M22 x 1.5	M24 x 2.0	M27 x 2.0	M30 x 2.0	M33 x 2.0
Length (l)			Approximate mass in kilograms per 1000 units										
Nominal size	min.	max.											
25	24.58	25.42	12.6	18.2									
30	29.58	30.42	15.1	21.8	29.8	40.0							
35	34.5	35.5	17.5	25.5	34.8	46.6	57.9						
40	39.5	40.5	20.1	29.1	39.8	53.3	66.1	83.3					
45	44.5	45.5	22.5	32.7	44.8	60.0	74.4	93.7	115				
50	49.5	50.5	25.1	36.4	49.7	66.6	82.7	104	128	150			
55	54.4	55.6	27.5	40.0	54.7	73.3	90.9	115	141	165	213		
60	59.4	60.6	30.1	43.7	59.7	80.0	99.2	125	154	180	232	284	
65	64.4	65.6	32.5	47.3	64.6	86.6	107	135	166	195	251	308	378
70	69.4	70.6	35.2	50.9	69.6	93.3	116	146	179	210	271	332	407
75	74.4	75.6	37.7	54.7	74.6	100	124	156	192	225	290	355	437
80	79.4	80.6	40.2	58.2	79.6	107	132	167	205	240	310	379	466
90	89.3	90.7	45.2	65.5	89.5	120	149	187	230	270	348	427	524
100	99.3	100.7	50.2	72.8	99.5	133	165	208	256	300	387	474	582
110	109.3	110.7	56.2	80.0	109	147	182	229	282	330	426	521	640
120	119.3	120.7	60.2	87.3	119	160	198	250	307	360	464	569	698
130	129.2	130.8	65.1	94.6	129	173	215	271	333	390	503	616	757
140	139.2	140.8	70.1	102	139	187	231	291	358	420	542	664	815
150	149.2	150.8	75.1	109	149	200	248	312	383	450	580	711	873
160	159.2	160.8	80.1	117	159	213	265	333	410	480	619	758	931
170	169.2	170.8	85.0	124	169	226	281	354	435	510	658	806	990
180	179.2	180.8	90.0	131	180	239	298	375	461	540	696	853	1048
190	189.08	190.93	95.0	138	190	252	315	396	486	570	735	901	1106
200	199.08	200.93	99.9	146	199	265	332	416	512	600	774	948	1164
220	219.08	220.93		160	218	291	366	456	563	660	851	1043	1281
240	239.08	240.93		175	237	317	400	496	614	720	929	1138	1397
260	258.95	261.05			256	343	434	535	665	780	1006	1232	1513
280	278.95	281.05			275	369	468	575	716	840	1083	1327	1630
300	298.95	301.05				395	502	615	767	900	1161	1422	1746
320	318.85	321.15				421	536	655	818	960	1239	1517	1862
340	338.85	341.15					570	694	869	1020	1317	1612	1978
360	358.85	361.15					604	734	920	1080	1395	1707	2094
380	378.85	381.15						774	971	1140	1473	1802	2210
400	398.85	401.15						815	1022	1200	1551	1897	2325
420	418.75	421.25							1073	1260	1629	1992	2442
440	438.75	441.25							1124	1320	1707	2087	2548
460	458.75	461.25								1380	1785	2182	2674
480	478.75	481.25								1440	1863	2277	2790
500	498.75	501.25									1941	2372	2906
1000	995.5	1004.5	502	728	995	1330	1650	2080	2560	3000	3882	4744	5812
2000	1992.5	2007.5	1004	1456	1990	2660	3300	4160	5120	6000	7764	9488	11624
3000	2989.5	3010.5	1506	2184	2985	3990	4950	6240	7680	9000	11646	14232	17436

Stud Bolts

DIN 976 - 1 High Tensile

DIN 976-1 Stud bolt dimensions (concluded)

Thread size (d)			M36	(M39)	M42	(M45)	M48	(M52)	M56	(M60)	M64	(M68)	M72
			M36 x 3.0	M39 x 3.0	M42 x 3.0	M45 x 3.0	M48 x 3.0	M52 x 3.0	M56 x 4.0	M60 x 4.0	M64 x 4.0	M68 x 4.0	-
Length (l)			Approximate mass in kilograms per 1000 units										
Nominal size	min.	max.											
70	69.4	70.6	482										
75	74.4	75.6	516										
80	79.4	80.6	550	654									
90	89.3	90.7	619	735	847								
100	99.3	100.7	688	817	941	1091	1235						
110	109.3	110.7	757	899	1036	1201	1358						
120	119.3	120.7	825	980	1131	1310	1482	1758	2034				
130	129.2	130.8	894	1062	1224	1419	1605	1905	2203	2552	2895		
140	139.2	140.8	963	1143	1318	1528	1729	2052	2372	2748	3118	3547	
150	149.2	150.8	1032	1225	1412	1637	1852	2198	2542	2945	3341	3800	4289
160	159.2	160.8	1101	1307	1506	1747	1976	2345	2711	3141	3563	4054	4575
170	169.2	170.8	1169	1389	1600	1856	2099	2491	2881	3337	3786	4307	4861
180	179.2	180.8	1238	1471	1695	1965	2223	2637	3050	3533	4009	4560	5147
190	189.08	190.93	1307	1552	1789	2074	2346	2784	3219	3729	4232	4814	5433
200	199.08	200.93	1376	1634	1883	2183	2470	2931	3389	3926	4455	5067	5719
220	219.08	220.93	1513	1797	2071	2401	2716	3224	3728	4319	4901	5574	6291
240	239.08	240.93	1651	1961	2260	2620	2963	3517	4067	4712	5347	6080	6863
260	258.95	261.05	1788	2124	2448	5838	3210	3810	4406	5104	5793	6587	7435
280	278.95	281.05	1926	2288	2636	3056	3457	4103	4745	5497	6239	7094	8007
300	298.95	301.05	2064	2451	2824	3275	3704	4396	5084	5889	6682	7600	8579
320	318.85	321.15	2202	2614	3013	3493	3951	4689	5423	6282	7127	8107	9150
340	338.85	341.15	2340	2778	3201	3711	4198	4982	5762	6675	7572	8614	9722
360	358.85	361.15	2478	2941	3389	3930	4445	5275	6101	7067	8017	9121	10294
380	378.85	381.15	2816	3104	3578	4148	4692	5568	6440	7480	8462	9627	10866
400	398.85	401.15	2754	3267	3766	4366	4939	5861	6779	7853	8908	10134	11438
420	418.75	421.25	2892	3430	3954	4585	5186	6155	7118	8245	9354	10641	12009
440	438.75	441.25	3030	3593	4142	4803	5433	6448	7457	8638	9799	11147	12582
460	458.75	461.25	3168	3756	4330	5021	5680	6741	7796	9030	10245	11654	13154
480	478.75	481.25	3306	3919	4518	5239	5927	7034	8134	9423	10690	12161	13726
500	498.75	501.25	3444	4082	4706	5457	6174	7327	8473	9816	11136	12667	14298
1000	995.5	1004.5	6888	8164	9412	10914	12348	14654	96946	19632	22272	25334	28596
2000	1992.5	2007.5	13776	16328	18824	21828	24696	29308	33892	39264	44544	50668	57192
3000	2989.5	3010.5	20664	24492	28236	32742	37044	43962	50838	58896	68816	76002	85788

Stud bolts are generally manufactured in the sizes for which a value of mass has been specified.
 Lengths between 500mm and 1000mm shall be graded in 20mm steps.
 Bracketed sizes are non-preferred diameters.

Technical delivery conditions

Characteristic		Standard
Material		Steel
General Requirements		As specified in ISO 8992
Thread	Tolerance	6g
	Standard	DIN ISO 965-2
Mechanical Properties	Property Class (material)	For sizes M3 up to M39: 4.8, 5.6, 5.8, 8.8, 10.9 or 12.9.
		For sizes above M39: subject to agreement.
	Standard	DIN EN ISO 898-1 (test programme B).
Limit deviations and geometrical tolerances ³	Product Grade	A
	Standard	DIN EN ISO 4759 Part 1
Surface finish		As processed.
		DIN 267 Part 2 applies with regard to surface roughness.
		DIN EN ISO 4042 applies with regard to electroplating.
		DIN EN ISO 10683 applies with regard to zinc flake coatings.
Surface discontinuities		DIN EN 26157-3 applies with regard to limits for surface discontinuities for property classes 5.6, 8.8, 10.9 and 12.9.
Acceptability		DIN 267 Part 5 shall apply with regard to acceptance inspection.
a For stud bolts with nominal lengths of 1000mm or more, the tolerance on length shall be js17 (product grade B as in DIN EN ISO 4759-1).		