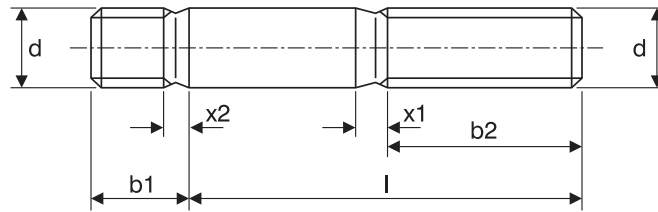


# Studs Metal End = 1xd

## DIN 938 Metric



### DIN 938 Dimensions of Studs Metal End = 1xd

Diameter d	M8	M10	M12	(M14)	M16	(M18)	M20	(M22)	M24	
	M8 x 1.0	M10 x 1.25	M12 x 1.5	M14 x 1.5	M16 x 1.5	M18 x 1.5	M20 x 1.5	M22 x 1.5	M24 x 2.0	
b1	8	10	12	14	16	18	20	22	24	
b2	≤125	22	26	30	34	38	42	46	50	54
	125-200	28	32	36	40	44	48	52	56	60
	≥200	-	45	49	53	57	61	65	69	73
x1	3.2	3.8	4.3	5.0	5.0	6.3	6.3	6.3	7.5	
x2	1.6	1.9	2.2	2.5	2.5	3.2	3.2	3.2	3.8	
Length (l) js15	Approximate mass (7.85kg/dm <sup>3</sup> ) per 1000 units in kilograms									
30	12.5									
35	14.8	23.2								
40	16.4	26.3	38.8							
45	18.4	29.4	43.2	60.0						
50	20.4	32.4	47.7	66.0	89.6					
55	22.4	35.5	52.1	72.1	97.5	123				
60	24.3	36.6	56.6	78.1	105	133	170			
65	26.3	41.7	61.0	84.2	113	143	182	226		
70	28.3	44.8	65.4	90.2	121	153	195	241	287	
75	30.3	47.9	69.9	96.3	129	163	207	256	305	
80	32.2	50.9	74.3	102	137	173	219	271	323	
90		57.1	83.2	114	153	193	244	301	358	
100		63.3	82.1	126	169	213	269	330	394	
110			101	139	184	233	293	360	429	
120			110	151	200	253	318	390	465	
130				163	216	273	342	420	500	
140				175	232	293	367	450	536	
150					247	313	392	480	571	
160					263	333	417	509	607	
170						353	441	539	642	
180						373	466	569	678	
190							491	599	713	
200							515	629	749	

# Studs Metal End = 1xd

## DIN 938 Metric

### DIN 938 Dimensions of Studs Metal End = 1xd (concluded)

Diameter d	(M27)	M30	(M33)	M36	(M39)	M42	(M45)	M48	(M52)	
	M27 x 2.0	M30 x 2.0	M33 x 2.0	M36 x 3.0	M39 x 3.0	M42 x 3.0	M45 x 3.0	M48 x 3.0	M52 x 3.0	
b1	25	30	32	35	38	42	45	48	52	
b2	≤125	60	66	72	78	84	90	98	102	110
	125-200	66	72	78	84	90	96	102	108	116
	≥200	79	85	91	97	103	109	115	121	129
x1	7.5	9.0	9.0	10.0	10.0	11.0	11.0	12.5	12.5	
x2	3.8	4.5	4.5	5.0	5.0	5.5	5.5	6.3	6.3	
Length (l) js15	Approximate mass (7.85kg/dm <sup>3</sup> ) per 1000 units in kilograms									
75	392									
80	414									
90	459	580	718							
100	504	636	785	942						
110	549	691	852	1022	1228					
120	594	747	919	1102	1322	1550	1822			
130	639	802	986	1182	1416	1659	1947	2216		
140	684	858	1054	1262	1509	1767	2072	2358	2837	
150	729	913	1121	1342	1603	1876	2197	2500	3004	
160	774	969	1188	1421	1697	1985	2321	2642	3170	
170	819	1024	1255	1501	1791	2094	2446	2784	3337	
180	864	1080	1322	1581	1864	2202	2571	2926	3504	
190	909	1135	1389	1661	1978	2311	2696	3068	3571	
200	953	1191	1456	1741	2072	2420	2841	3210	3837	
220	1043	1302	1591	1901	2259	2637	3071	3494	4171	
240	1133	1413	1725	2061	2447	2855	3320	3779	4504	
260	1223	1524	1859	2220	2635	3072	3570	4063	4838	
280	1313	1635	1994	2380	2822	3290	3820	4347	5171	
300		1746	2128	2540	3010	3507	4069	4631	5504	
320			2262	2700	3197	3725	4319	4915	5838	
340			2396	2860	3385	3942	4569	5199	6171	
360				3019	3572	4160	4819	5483	6505	
380					3760	4377	5068	5767	6838	
400					3947	4595	5318	6051	7172	

Bracketed sizes are non-preferred diameters.  
 NOTE: when ordering studs according to DIN the diameter d x the effective length l has to be stated e.g. stud M10 x 65 - DIN 939 where l = 65mm is the working length and b1 = 12mm the metal end. The total length is 65 + 12 = 77mm. The thread length on the outside b2 = 26mm. The screw-in threaded end has been made with tolerance Sk6, acc. to DIN 13-51, meaning "heavy fit", and prevents loosening of studs during disassembly. Studs acc. to DIN 939 with a metal end ≈ 1,25D have many applications, among others is cast-iron.

# Studs Metal End = 1xd

## DIN 938 Metric

### Technical delivery conditions

Characteristic		Material	
Material		Steel	
General Requirements		As specified in ISO 8992	
Thread	Tolerance	Stud end: Sk5	Nut end: 6g
	Standard	DIN 13-51	DIN 13-12 and DIN 13-15
Mechanical Properties	Property Class (material) <sup>a</sup>	5.6, 8.8 or 10.9	
	Standard	DIN EN 20898-1	
Limit deviations and geometrical tolerances	Product grade	A	
	Standard	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 26157-3 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.	
Acceptability		As specified in ISO 3269	
a Use of other property classes or materials shall be subject to agreement.			