

**BORE DIAMETERS AND TOLERANCES FOR INTERNAL THREADS**

Page 1 Standard metric threads  
 Page 2+ 3 Fine metric threads  
 Page 3 UNC threads  
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**N.B. To convert mm to inches multiply by 25.4**

Except for inch diameters and TPI pitches  
 all other dimensions are in mm

Standard metric threads (6H is standard if not otherwise specified)						Drill diameter	
Nominal diameter	Pitch	Hole diameter for tolerance classes				Cut thread	Formed thread
		5H max.	6H max.	7H max.	5H, 6H, 7H min.		
2	0.4	1.657	1.679		1.567	1.60	1.8
2.2	0.45	1.813	1.838		1.713	1.75	2.00
2.5	0.45	2.113	2.138		2.013	2.05	2.30
3	0.5	2.571	2.599	2.639	2.459	2.50	2.80
3.5	0.6	2.975	3.010	3.050	2.850	2.90	3.20
4	0.7	3.382	3.422	3.466	3.242	3.30	3.70
4.5	0.75	3.838	3.878	3.924	3.688	3.70	4.20
5	0.8	4.294	4.334	4.384	4.134	4.20	4.60
6	1	5.107	5.153	5.217	4.917	5.00	5.50
7	1	6.107	6.153	6.217	5.917	6.00	6.50
8	1.25	6.859	6.912	6.982	6.647	6.80	7.40
9	1.25	7.859	7.912	7.982	7.647	7.80	8.40
10	1.5	8.612	8.676	8.751	8.376	8.50	9.30
11	1.5	9.612	9.676	9.751	9.376	9.50	10.30
12	1.75	10.371	10.441	10.531	10.106	10.20	11.20
14	2	12.135	12.210	12.310	11.835	12.00	13.00
16	2	14.135	14.210	14.310	13.835	14.00	15.00
18	2.5	15.649	15.744	15.854	15.294	15.50	16.80
20	2.5	17.649	17.744	17.854	17.294	17.50	18.80
22	2.5	19.649	19.744	19.854	19.294	19.50	20.80
24	3	21.152	21.252	21.382	20.752	21.00	22.50
27	3	24.152	24.252	24.382	23.752	24.00	25.50
30	3.5	26.661	26.771	26.921	26.211	26.50	28.25
33	3.5	29.661	29.771	29.921	29.211	29.50	31.25
36	4	32.145	32.270	32.420	31.670	32.00	34.00
39	4	35.145	35.270	35.420	34.670	35.00	37.00
42	4.5	37.659	37.799	37.979	37.129	37.50	39.75
45	4.5	40.659	40.799	40.979	40.129	40.50	42.75
48	5	43.147	43.297	43.487	42.587	43.00	45.50
52	5	47.147	47.297	47.487	46.587	47.00	49.50
56	5.5	50.646	50.796	50.996	50.046	50.50	53.25

**BORE DIAMETERS AND TOLERANCES FOR INTERNAL THREADS**

Fine metric threads (6H is standard if not otherwise specified)						Drill diameter	
Nominal diameter	Pitch	Hole diameter for tolerance classes				Cut thread	Formed thread
		5H max.	6H max.	7H max.	5H, 6H, 7H min.		
2.5	0.35	2.201	2.221		2.121	2.15	2.35
3	0.35	2.701	2.721		2.621	2.65	2.85
3.5	0.35	3.201	3.221		3.121	3.15	3.35
4	0.5	3.571	3.599	3.639	3.459	3.50	3.80
4.5	0.5	4.071	4.099	4.139	3.959	4.00	4.30
5	0.5	4.571	4.599	4.639	4.459	4.50	4.80
5.5	0.5	5.071	5.099	5.139	4.959	5.00	5.30
6	0.75	5.338	5.378	5.424	5.188	5.20	5.60
7	0.75	6.338	6.378	6.424	6.188	6.20	6.60
8	0.75	7.338	7.378	7.424	7.188	7.20	7.60
	1	7.107	7.153	7.217	6.917	7.00	7.50
9	0.75	8.338	8.378	8.424	8.188	8.20	8.60
	1	8.107	8.153	8.217	7.917	8.00	8.50
10	0.75	9.338	9.378	9.424	9.188	9.20	9.60
	1	9.107	9.153	9.217	8.917	9.00	9.50
	1.25	8.859	8.912	8.982	8.647	8.80	9.40
11	0.75	10.338	10.378	10.424	10.188	10.20	10.60
	1	10.107	10.153	10.217	9.917	10.00	10.50
12	1	11.107	11.153	11.217	10.917	11.00	11.50
	1.25	10.859	10.912	10.982	10.647	10.80	11.40
14	1	13.107	13.153	13.217	12.917	13.00	13.50
	1.25	12.859	12.912	12.982	12.647	12.80	13.40
15	1	14.107	14.153	14.217	13.917	14.00	14.50
16	1	15.107	15.153	15.217	14.917	15.00	15.50
	1.5	14.612	14.676	14.751	14.376	14.50	15.30
17	1	16.107	16.153	16.217	15.917	16.00	16.50
	1.5	15.612	15.676	15.751	15.376	15.50	16.30
18	1	17.107	17.153	17.217	17.917	17.00	17.50
	1.5	16.612	16.676	16.751	16.376	16.50	17.30
	2	16.135	16.210	16.310	15.835	16.00	17.00
20	1	19.107	19.153	19.217	18.917	19.00	19.50
	1.5	18.612	18.676	18.751	18.376	18.50	19.30
	2	18.135	18.210	18.310	17.835	18.00	19.00
22	1	21.107	21.153	22.217	20.917	21.00	21.50
	1.5	20.612	20.676	20.751	20.376	22.50	23.30
	2	20.135	20.210	20.310	19.835	20.00	21.00
24	1	23.107	23.153	23.217	22.917	23.00	23.50
	1.5	22.612	22.676	22.751	22.376	22.50	23.30
	2	22.135	22.210	22.310	21.835	22.00	23.00
25	1	24.107	24.153	24.217	24.917	24.00	24.50
	1.5	23.612	23.676	23.751	23.376	23.50	24.30
	2	23.135	23.210	23.310	22.835	23.00	24.00
26	1.5	25.612	25.676	25.751	25.376	25.50	26.30
27	1	26.107	26.153	26.217	25.917	26.00	26.50
	1.5	25.612	25.676	25.751	26.376	28.50	29.30
	2	25.135	25.210	25.310	24.835	25.00	26.00
28	1	27.107	27.153	27.217	26.917	27.00	27.50
	1.5	26.612	26.676	26.751	26.376	26.50	27.30
	2	26.135	26.210	26.310	27.835	28.00	29.00
30	1	29.107	29.153	29.217	28.917	29.00	29.50
	1.5	28.612	28.676	28.751	28.376	28.50	29.30
	2	28.135	28.210	28.310	27.835	28.00	29.00
	3	27.152	27.252	27.382	26.752	27.00	28.50
32	1.5	30.612	30.676	30.751	30.376	30.50	31.30
	2	30.135	30.210	30.310	29.835	30.00	31.00
33	1.5	31.612	31.676	31.751	31.376	31.50	32.30
	2	31.152	31.210	31.310	30.835	31.00	32.00
	3	30.152	30.252	30.382	29.752	30.00	31.50
35	1.5	33.612	33.676	33.751	33.376	33.50	34.30
36	1.5	34.612	34.676	34.751	34.376	34.50	35.30
	2	34.135	34.210	34.310	33.835	34.00	35.00
	3	33.152	33.252	33.382	32.752	33.00	34.50
38	1.5	36.612	36.676	36.751	36.376	36.50	37.30
39	1.5	37.612	37.676	37.751	37.376	37.50	38.30
	2	37.135	37.210	37.310	36.835	37.00	38.00
	3	36.152	36.252	36.382	35.752	36.00	37.50

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Fine metric threads (6H is standard if not otherwise specified)						Drill diameter	
Nominal diameter	Pitch	Hole diameter for tolerance classes				Cut thread	Formed thread
		5H max.	6H max.	7H max.	5H, 6H, 7H min.		
40	1.5	38.612	38.676	38.751	38.376	38.50	39.30
	2	38.135	38.210	38.310	37.835	38.00	39.00
	3	37.152	37.252	37.382	36.752	37.00	38.50
42	1.5	40.612	40.676	40.751	40.376	40.50	41.30
	2	40.135	40.210	40.310	39.835	40.00	41.00
	3	39.152	39.252	39.382	38.752	39.00	40.50
45	4	38.145	38.270	38.420	37.670	38.00	40.00
	1.5	43.612	43.676	43.751	43.376	43.50	44.30
	2	43.135	43.210	43.310	42.835	43.00	44.00
48	3	42.152	42.252	42.382	41.752	42.00	43.50
	4	41.145	41.270	41.420	40.670	41.00	43.00
	1.5	46.612	46.676	46.751	46.376	46.50	47.30
50	2	46.135	46.210	46.310	45.835	46.00	47.00
	3	45.152	45.252	45.382	44.752	45.00	46.50
	4	44.145	44.270	44.420	43.670	44.00	43.00
52	1,5	48.612	48.676	48.751	48.376	48.50	49.30
	2	48.135	48.210	48.310	47.835	48.00	49.00
	3	47.152	47.252	47.382	46.752	47.00	48.50
52	1.5	50.612	50.676	50.751	50.376	50.50	51.30
	2	50.135	50.210	50.310	49.835	50.00	51.00
	3	49.152	49.252	49.382	48.752	49.00	50.50
	4	48.145	48.270	48.420	47.670	48.00	50.00

American UNC threads (2B is standard if not otherwise specified)						Drill diameter	
Nominal diameter	TPI	Pitch (mm)	Hole diameter for tolerance classes			Cut thread	Formed thread
			2B max.	3B max.	2B, 3B min.		
No. 1	64	0.397	1.582	1.582	1.425	1.55	
No. 2	56	0.454	1.872	1.872	1.694	1.85	1.96
No. 3	48	0.529	2.146	2.146	1.941	2.10	2.25
No.4	40	0.635	2.385	2.385	2.156	2.35	2.50
No. 5	40	0.635	2.697	2.697	2.487	2.65	2.85
No. 6	32	0.794	2.896	2.896	2.642	2.85	3.10
No. 8	32	0.794	3.351	3.528	3.302	3.50	3.80
No. 10	24	1.058	3.962	3.950	3.683	3.90	4.30
No. 12	24	1.058	4.597	4.590	4.343	4.50	5.00
1/4"	20	1.270	5.268	5.250	4.976	5.10	5.70
5/16"	18	1.411	6.734	6.680	6.411	6.60	7.20
3/8"	16	1.588	8.164	8.082	7.805	8.00	8.70
7/16"	14	1.814	9.550	9.441	9.149	9.40	10.20
1/2"	13	1.954	11.013	10.881	10.584	10.80	11.70
9/16"	12	2.117	12.456	12.301	11.996	12.20	13.30
5/8"	11	2.309	13.868	13.693	13.376	13.50	14.80
3/4"	10	2.540	16.833	16.624	16.299	16.50	
7/8"	9	2.822	19.748	19.520	19.169	19.50	
1"	8	3.175	22.598	22.344	21.963	22.26	
1 1/8"	7	3.629	24.349	25.082	24.648	25.00	
1 1/4"	7	3.629	28.524	28.258	27.823	28.00	
1 3/8"	6	4.233	31.120	30.851	30.343	30.75	
1 1/2"	6	4.233	34.295	34.026	33.518	34.00	
1 3/4"	5	5.080	39.814	39.560	38.951	39.50	
2"	4½	5.644	45.598	45.367	44.689	45.00	

**BORE DIAMETERS AND TOLERANCES FOR INTERNAL THREADS**

<b>American UNF threads (2B is standard if not otherwise specified)</b>						<b>Drill diameter</b>	
Nominal diameter	TPI	Pitch (mm)	Hole diameter for tolerance classes			Cut thread	Formed thread
			<b>2B max.</b>	3B max.	<b>2B, 3B min.</b>		
No.0	80	0.318	1.306	1.306	1.181	1.25	
No. 1	72	0.353	1.613	1.613	1.473	1.55	
No. 2	64	0.397	1.913	1.913	1.755	1.90	2.00
No. 3	56	0.454	2.197	2.197	2.024	2.15	2.30
No.4	48	0.529	2.459	2.459	2.271	2.40	2.60
No. 5	44	0.577	2.741	2.741	2.550	2.70	2.90
No. 6	40	0.635	3.023	3.012	2.819	2.95	3.20
No. 8	36	0.706	3.607	3.597	3.404	3.50	3.80
No. 10	32	0.794	4.166	4.168	3.962	4.10	4.40
No. 12	28	0.907	4.724	4.717	4.496	4.70	6.10
1/4"	28	0.907	5.580	5.563	5.367	5.50	5.90
5/16"	24	1.058	7.038	6.995	6.792	6.90	7.40
3/8"	24	1.058	8.626	8.565	8.379	8.50	9.00
7/16"	20	1.270	10.030	9.947	9.738	9.90	10.50
1/2"	20	1.270	11.618	11.524	11.326	11.50	12.10
9/16"	18	1.411	13.084	12.969	12.761	12.90	13.70
5/8"	18	1.411	14.671	14.554	14.348	14.50	13.30
3/4"	16	1.588	17.689	17.546	17.330	17.50	
7/8"	14	1.814	20.663	20.493	20.282	20.40	
1"	12	2.117	23.569	23.363	23.109	23.25	
1 1/8"	12	2.117	26.744	26.538	26.284	26.50	
1 1/4"	12	2.117	29.919	29.713	29.459	29.50	
1 3/8"	12	2.117	33.094	32.888	32.634	32.75	
1 1/2"	12	2.117	36.269	36.063	35.809	36.00	

<b>Whitworth pipe thread ISO 228/1 (BSP &amp; G)</b>					<b>Drill diameter</b>	
Nominal diameter	TPI	Pitch (mm)	Hole diameter		Cut thread	Formed thread
			Max.	Min.		
1/8"	28	0.907	8.848	8.566	8.80	9.40
1/4"	19	1.337	11.890	11.445	11.80	12.00
3/8"	19	1.337	16.395	14.950	15.25	16.00
1/2"	14	1.814	19.172	18.631	19.00	20.20
5/8"	14	1.814	21.128	20.587	21.00	22.10
3/4"	14	1.814	24.658	24.117	24.50	25.70
7/8"	14	1.814	28.418	28.877	28.25	29.40
1	11	2.309	30.931	30.291	30.75	32.30
1 1/4"	11	2.309	39.592	39.952	39.50	
1 1/2"	11	2.309	45.485	44.845	45.00	
1 3/4"	11	2.309	51.428	50.788	51.00	
2"	11	2.309	57.296	56.656	57.00	