

英制、美制及公制螺纹基本尺寸及公差

一、英制圆柱管螺纹 **BSPP** 的基本尺寸及公差（牙形角 55°）

螺纹代号	基本直径			内螺纹		外螺纹			
	大径	中径	小径	中径公差	小径公差	A 级		B 级	
						中径公差	大径公差	中径公差	大径公差
G1/8" × 28	9.728	9.147	8.566	+0.170	+0.282 0	0 -0.107	0 -0.214	0 -0.214	0 -0.214
G1/4" × 19	13.157	12.301	11.445	+0.125	+0.445	-0.125	-0.250	-0.250	0-0.250
G3/8" × 19	16.662	15.806	14.950	+0.125 0	+0.445 0	0 -0.125	0 -0.250	0 -0.250	0 -0.250
G1/2" × 14	20.955	19.793	18.631	+0.142 0	+0.541 0	0 -0.142	0 -0.284	0 -0.284	0 -0.284
G5/8" × 14	22.911	21.749	20.587	+0.142 0	+0.541 0	0 -0.142	0 -0.284	0 -0.284	0 -0.284
G3/4" × 14	26.441	25.279	24.117	+0.142 0	+0.541 0	0 -0.142	0 -0.284	0 -0.284	0 -0.284
G1" × 11	33.249	31.770	30.291	+0.180 0	+0.640 0	0 -0.180	0 -0.360	0 -0.360	0 -0.360
G1.1/4" × 11	41.910	40.431	38.952	+0.180 0	+0.640 0	0 -0.180	0 -0.360	0 -0.360	0 -0.360
G1.1/2" × 11	47.803	46.324	44.854	+0.180 0	+0.640 0	0 -0.180	0 -0.360	0 -0.360	0 -0.360
G2" × 11	59.614	58.135	56.656	+0.180 0	+0.640 0	0 -0.180	0 -0.360	0 -0.360	0 -0.360
G2.1/2"X11	75.184	73.705	72.226	+0.217 0	+0.640 0	0 -0.217	0 -0.434	0 -0.434	0 -0.434
G3"X11	87.884	86.405	84.926	+0.217 0	+0.640 0	0 -0.217	0 -0.434	0 -0.434	0 -0.434
G3.1/2"X11	100.330	98.851	97.372	+0.217 0	+0.640 0	0 -0.217	0 -0.434	0 -0.434	0 -0.434

二、英制圆锥管螺纹（BSPT）的基本尺寸及公差（牙形角 55°）

螺纹代号	基面上的直径			基准长度			有效螺纹长度			圆锥内螺纹基面轴向 位移偏差（±mm）
	大径	中径	小径	基本	最大	最小	基本	最大	最小	
R1/8" ×28	9.728	9.147	8.566	4.0	4.9	3.1	6.5	7.4	5.6	1.1
R1/4" ×19	13.157	12.301	11.445	6.0	7.3	4.7	9.7	11.0	8.4	1.7
R3/8" ×19	16.662	15.806	14.950	6.4	7.7	5.1	10.1	11.4	8.8	1.7
R1/2" ×14	20.955	19.793	18.631	8.2	10.0	6.4	13.2	15.0	11.4	2.3
R3/4" ×14	26.441	25.279	24.117	9.5	11.3	7.7	14.5	16.3	12.7	2.3
R1" ×11	33.249	31.770	30.291	10.4	12.7	8.1	16.8	19.1	14.5	2.9
R1.1/4" ×11	41.910	40.431	38.952	12.7	15.0	10.4	19.1	21.4	16.8	2.9
R1.1/2" ×11	47.803	46.324	44.845	12.7	15.0	10.4	19.1	21.4	16.8	2.9
R2" ×11	59.614	58.135	56.656	15.9	18.2	13.6	23.4	25.7	21.1	2.9
R2.1/2"X11	75.184	73.705	72.226	17.5	21.0	14.0	26.7	30.2	23.2	3.5
R3"X11	87.884	86.405	84.926	20.6	24.1	17.1	29.8	33.3	26.3	3.5
R3.1/2"X11	100.330	98.851	97.372	22.2	25.7	18.7	31.4	34.9	27.9	3.5

三、美制管螺纹 (UN(F)) 基本尺寸及公差 (牙形角 60°)

螺纹代号	外螺纹					内螺纹				
	公差等级					公差等级				
	2A					2B				
	大径		中径		小径	小径		中径		大径
	最大	最小	最大	最小		最小	最大	最小	最大	
JIC 螺纹										
7/16" ×20UNF	11.079	10.874	10.254	10.147	9.568	9.728	10.033	10.287	10.424	11.113
1/2" ×20UNF	12.667	12.461	11.841	11.732	11.156	11.328	11.608	11.875	12.017	12.7
9/16" ×18UNF	14.252	14.031	13.335	13.221	12.573	12.751	13.081	13.371	13.52	14.288
3/4" ×16UNF	19.012	18.773	17.981	17.854	17.12	17.323	17.678	18.019	18.184	19.05
7/8" ×14UNF	22.184	21.923	21.006	20.869	20.025	20.269	20.676	21.046	21.224	22.225
1-1/16" ×12UN	26.944	26.655	25.57	25.425	24.425	24.689	25.146	25.613	25.801	26.988
1-5/16" ×12UN	33.294	33.005	31.92	31.773	30.775	31.039	31.496	31.963	32.154	33.338
1-5/8" ×12UN	41.229	40.94	39.885	39.705	38.71	38.989	39.446	39.901	40.094	41.275
1-7/8" ×12UN	47.579	47.29	46.205	46.053	45.06	45.339	45.796	46.251	46.449	47.625
2-1/2" ×12UN	63.452	63.162	62.078	61.92	60.932	61.214	61.671	62.126	62.332	63.5
ORFS 螺纹										
9/16" ×18UNF	14.252	14.031	13.335	13.221	12.573	12.751	13.081	13.371	13.52	14.288
11/16" ×16UN	17.427	17.188	16.396	16.274	15.535	15.748	16.104	16.431	16.589	17.463
13/16" ×16UN	20.599	20.361	19.568	19.444	18.707	18.923	19.279	19.606	19.766	20.638
1" ×14UNF	25.357	25.095	24.178	24.036	23.195	23.444	23.825	24.221	24.407	25.4
1-3/16" ×12UN	30.119	29.83	28.745	28.598	27.6	27.864	28.321	28.788	28.979	30.163
1-7/16" ×12UN	36.467	36.177	35.093	34.943	33.947	34.214	34.671	35.138	35.331	36.513
1-11/16" ×12UN	42.817	42.527	41.443	41.29	40.297	40.564	41.021	41.488	41.686	42.863
2" ×12UN	50.754	50.465	49.38	49.225	48.235	48.514	48.971	49.426	49.627	50.8
SAE 螺纹										
5/8" ×18UNF	15.839	15.618	14.923	14.803	14.161	14.351	14.681	14.958	15.11	15.875
1-1/16" ×14UN	26.947	26.683	25.743	25.608	24.74	24.968	25.375	25.783	25.961	26.987
其它美制螺纹										
9/16" ×16UN	14.252	14.013	13.221	13.101	12.36	12.573	12.929	13.256	13.411	14.288
7/8" ×12UN	22.182	21.892	20.808	20.668	19.662	19.939	20.396	20.851	21.034	22.225
2-1/4" ×12UN	57.104	56.815	55.73	55.575	54.585	54.864	55.321	55.776	55.976	57.15
注：UNC 粗牙螺纹系列， UNF 细牙螺纹系列， UNEF 超细牙螺纹系列， UN 不变螺距系列										

四、布锥管螺纹（NPT）基本尺寸及公差(牙形角 60°)

螺纹代号	基面上的直径			螺纹长度	
	大径	中径	小径	有效长度	管端至基面长
Z1/8" × 27	10.272	9.519	8.766	7	4.572
Z1/4" × 18	13.572	12.443	11.314	9.5	5.080
Z3/8" × 18	17.055	15.926	14.797	10.5	6.096
Z1/2" × 14	21.223	19.772	18.321	13.5	8.028
Z3/4" × 14	26.568	25.117	23.666	14	8.611
Z1" × 11.5	33.228	31.461	29.694	17.5	10.160
Z1.1/4" × 11.5	41.985	40.218	38.451	18	10.688
Z1.1/2" × 11.5	48.054	46.287	44.520	18.5	10.688
Z2" × 11.5	60.092	58.325	56.558	19	11.074

五、公制螺纹基本尺寸及公差(牙形角 60°)

螺纹代号	基本直径			内 螺 纹				外螺纹	
	大 径	中 径	小 径	公 差 等 级				公差等级	
				6H		7H		6g	
				中径公差	小径公差	中径公差	小径公差	中径公差	大径公差
M10X1	10	9.350	8.917	+0.150 0	+0.236 0	+0.190 0	+0.300 0	-0.026 -0.138	-0.026 -0.206
M12X1	12	11.350	10.917	+0.160 0	+0.236 0	+0.200 0	+0.300 0	-0.026 -0.144	-0.026 -0.206
M14X1	14	13.350	12.917	+0.160 0	+0.236 0	+0.200 0	+0.300 0	-0.026 -0.144	-0.026 -0.206
M12X1.25	12	11.188	10.647	+0.180 0	+0.265 0	+0.224 0	+0.335 0	-0.028 -0.160	-0.028 -0.240
M14X1.25	14	13.188	12.647	+0.180 0	+0.265 0	+0.224 0	+0.335 0	-0.028 -0.160	-0.028 -0.240
M12X1.5	12	11.026	10.376	+0.190 0	+0.300 0	+0.236 0	+0.375 0	-0.032 -0.172	-0.032 -0.268
M14X1.5	14	13.026	12.376	+0.190 0	+0.300 0	+0.236 0	+0.375 0	-0.032 -0.172	-0.032 -0.268
M16X1.5	16	15.026	14.376	+0.190 0	+0.300 0	+0.236 0	+0.375 0	-0.032 -0.172	-0.032 -0.268
M18X1.5	18	17.026	16.373	+0.190 0	+0.300 0	+0.236 0	+0.375 0	-0.032 -0.172	-0.032 -0.268
M20X1.5	20	19.026	18.376	+0.190 0	+0.300 0	+0.236 0	+0.375 0	-0.032 -0.172	-0.032 -0.268
M22X1.5	22	21.026	20.376	+0.190 0	+0.300 0	+0.236 0	+0.375 0	-0.032 -0.172	-0.032 -0.268
M24X1.5	24	23.026	22.376	+0.200 0	+0.300 0	+0.250 0	+0.375 0	-0.032 -0.182	-0.032 -0.268
M26X1.5	26	25.026	24.376	+0.200 0	+0.300 0	+0.250 0	+0.375 0	-0.032 -0.182	-0.032 -0.268
M27X1.5	27	26.026	25.376	+0.200 0	+0.300 0	+0.250 0	+0.375 0	-0.032 -0.182	-0.032 -0.268
M30X1.5	30	29.026	28.376	+0.200 0	+0.300 0	+0.250 0	+0.375 0	-0.032 -0.182	-0.032 -0.268
M33X1.5	33	32.026	31.376	+0.200 0	+0.300 0	+0.250 0	+0.375 0	-0.032 -0.182	-0.032 -0.268
M36X1.5	36	35.026	34.376	+0.200 0	+0.300 0	+0.250 0	+0.375 0	-0.032 -0.182	-0.032 -0.268
M39X1.5	39	38.026	37.376	+0.200 0	+0.300 0	+0.250 0	+0.375 0	-0.032 -0.182	-0.032 -0.268
M42X1.5	42	41.026	40.376	+0.200 0	+0.300 0	+0.250 0	+0.375 0	-0.032 -0.182	-0.032 -0.268
M27X2	27	25.701	24.835	+0.224 0	+0.375 0	+0.280 0	+0.475 0	-0.038 -0.208	-0.038 -0.318
M30X2	30	28.701	27.835	+0.224 0	+0.375 0	+0.280 0	+0.475 0	-0.038 -0.208	-0.038 -0.318

M33X2	33	31.701	30.835	+0.224 0	+0.375 0	+0.280 0	+0.475 0	-0.038 -0.208	-0.038 -0.318
M36X2	36	34.701	33.835	+0.224 0	+0.375 0	+0.280 0	+0.475 0	-0.038 -0.208	-0.038 -0.318
M39X2	39	37.701	36.835	+0.224 0	+0.375 0	+0.280 0	+0.475 0	-0.038 -0.208	-0.038 -0.318
M42X2	42	40.701	39.835	+0.224 0	+0.375 0	+0.280 0	+0.475 0	-0.038 -0.208	-0.038 -0.318
M45X2	45	43.701	42.835	+0.224 0	+0.375 0	+0.280 0	+0.475 0	-0.038 -0.208	-0.038 -0.318
M52X2	52	50.701	49.835	+0.236 0	+0.375 0	+0.300 0	+0.475 0	-0.038 -0.218	-0.038 -0.318
M60X2	60	58.701	57.835	+0.236 0	+0.375 0	+0.300 0	+0.475 0	-0.038 -0.218	-0.038 -0.318
M64X2	64	62.701	61.835	+0.236 0	+0.375 0	+0.300 0	+0.475 0	-0.038 -0.218	-0.038 -0.318
M72X2	72	70.701	69.835	+0.236 0	+0.375 0	+0.300 0	+0.475 0	-0.038 -0.218	-0.038 -0.318