

ENGINEERING INFORMATION

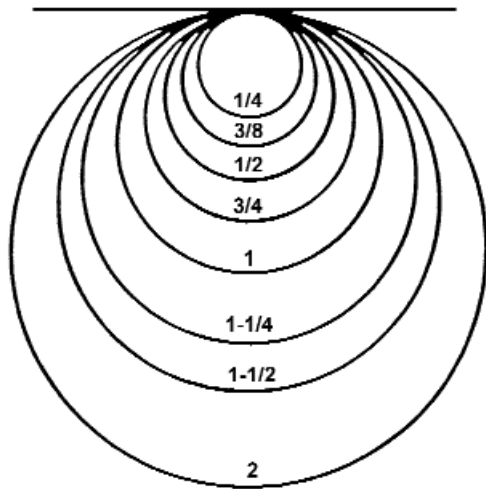
Thread Data

To determine the thread size of a fitting, measure the outside diameter of the male thread (D) or the inside diameter of the female thread (d) and then identify the number of threads per inch in the case of American and BSP threads or the pitch for Metric threads.

American Fittings

NPT threads

To obtain the nominal dimensions of an NPT thread, place the threaded end on the appropriate circle and read the diameter.



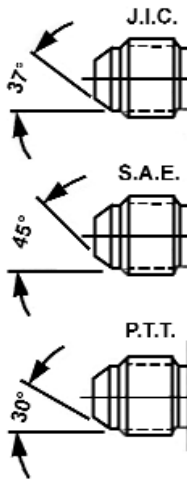
BSP Fittings

D = outside diameter male thread
d = inside diameter female thread

Nominal thread diameter	Threads per inch	D (inches)	d (inches)
1/8	28	.383	.338
1/4	19	.518	.451
3/8	19	.656	.589
1/2	14	.825	.734
5/8	14	.902	.811
3/4	14	1.041	.950
1	11	1.309	1.193
1-1/4	11	1.650	1.534
1-1/2	11	1.882	1.766
1-3/4	11	2.116	2.000
2	11	2.347	2.231
2-1/2	11	2.587	2.471

American threads have an angle of 60° and are identified by the "Diameter and the number of threads per inch", e.g. 1/2-20. "UN" means standard thread. "F" is fine thread, "EF" is extra fine thread, "S" is special thread.

The size is the nominal diameter in 1/16 of an inch, e.g. - 8 = 1/2 inch

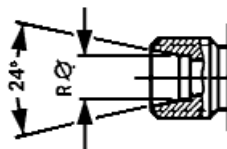


D = outside diameter male thread
d = inside diameter female thread

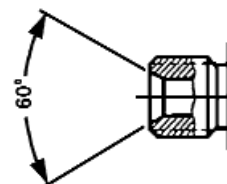
Thread	D Inches	d Inches	JIC Size	SAE Size	PTT Size
7/16-20UNF	.437	.395	-4	-4	
1/2-20UNF	.500	.457	-5	-5	
9/16-18UNF	.562	.511	-6		
5/8-18UNF	.625	.573		-6	
3/4-16UNF	.750	.691	-8	-8	
7/8-14UNF	.875	.807	-10	-10	
1-1/16-12UN	1.062	.982	-12		
1-1/16-14UNS	1.062	1.000		-12	
1-5/16-12UN	1.312	1.232	-16		-16
1-5/16-14UNS	1.312	1.251			
1-5/8-12UN	1.625	1.545	-20		-20
1-5/8-14UNS	1.625	1.564			
1-7/8-12UN	1.875	1.795	-24		-24
1-7/8-14UNS	1.875	1.814			
2-1/2-12UN	2.500	2.420	-32		-32
3-12UN	3.000	2.920	-40		
3-1/2-12UN	3.500	3.420	-48		

Metric Fittings

D = outside diameter male thread d = inside diameter female thread



Male inverted flare 24° (for flareless tube fittings)



Male inverted flare 60° (for female Globeseal™ fittings)

Thread	D (mm)	d (mm)	Male inverted flare 24° - RQ	
			DIN. I.Rh. (mm)	DIN. s.Rh. (mm)
M12 x 1	12.0	11.0		
M12 x 1.5	12.0	10.5	6	
M14 x 1.5	14.0	12.5	8	6
M16 x 1.5	16.0	14.5	10	8
M18 x 1.5	18.0	16.5	12	10
M20 x 1.5	20.0	18.5		12
M22 x 1.5	22.0	20.5	15	14
M24 x 1.5	24.0	22.5		16
M26 x 1.5	26.0	24.5	18	
M27 x 1.5	27.0	25.5		
M30 x 1.5	30.0	28.5		
M30 x 2	30.0	27.9	22	20
M33 x 1.5	33.0	31.5		
M36 x 1.5	36.0	34.5		
M36 x 2	36.0	33.9	28	25
M38 x 1.5	38.0	36.5		
M39 x 1.5	39.0	37.5		
M42 x 1.5	42.0	40.5		
M42 x 2	42.0	39.9		30
M45 x 1.5	45.0	43.5		
M45 x 2	45.0	42.9	35	
M48 x 1.5	48.0	46.5		
M52 x 1.5	52.0	50.5		
M52 x 2	52.0	49.9	42	38
M54 x 2	54.0	51.9		
M58 x 2	58.0	55.9		
M65 x 2	65.0	62.9		
M78 x 2	78.0	75.9		
M90 x 2	90.0	87.9		
M100 x 2	100.0	97.9		
M110 x 2	110.0	107.9		
M120 x 2	120.0	117.9		