BSP Thread Chart

1/16 to 6 inch - Basic Dimensions in mm and Inches

Basic thread dimensions for all 24 ISO 228-1 sizes, from 1/16 to 6 inch. G and Rp are parallel; R and Rc taper diameters refer to the gauge plane. Nominal inch size is a pipe-thread designation, not the measured OD or hose bore. Values are basic dimensions, not manufacturing limits.

Nominal Size	TPI	Pitch (mm)	Pitch (inch)	Major Ø (mm)	Major Ø (inch)	Minor Ø (mm)	Minor Ø (inch)	Standard Series
1/16	28	0.907	0.036	7.723	0.304	6.561	0.258	G; R/Rp/Rc
1/8	28	0.907	0.036	9.728	0.383	8.566	0.337	G; R/Rp/Rc
1/4	19	1.337	0.053	13.157	0.518	11.445	0.451	G; R/Rp/Rc
3/8	19	1.337	0.053	16.662	0.656	14.950	0.589	G; R/Rp/Rc
1/2	14	1.814	0.071	20.955	0.825	18.631	0.734	G; R/Rp/Rc
5/8	14	1.814	0.071	22.911	0.902	20.587	0.811	G Only
3/4	14	1.814	0.071	26.441	1.041	24.117	0.949	G; R/Rp/Rc
7/8	14	1.814	0.071	30.201	1.189	27.877	1.098	G Only
1	11	2.309	0.091	33.249	1.309	30.291	1.193	G; R/Rp/Rc
1-1/8	11	2.309	0.091	37.897	1.492	34.939	1.376	G Only
1-1/4	11	2.309	0.091	41.910	1.650	38.952	1.534	G; R/Rp/Rc
1-1/2	11	2.309	0.091	47.803	1.882	44.845	1.766	G; R/Rp/Rc
1-3/4	11	2.309	0.091	53.746	2.116	50.788	2.000	G Only
2	11	2.309	0.091	59.614	2.347	56.656	2.231	G; R/Rp/Rc
2-1/4	11	2.309	0.091	65.710	2.587	62.752	2.471	G Only
2-1/2	11	2.309	0.091	75.184	2.960	72.226	2.844	G; R/Rp/Rc
2-3/4	11	2.309	0.091	81.534	3.210	78.576	3.094	G Only
3	11	2.309	0.091	87.884	3.460	84.926	3.344	G; R/Rp/Rc
3-1/2	11	2.309	0.091	100.330	3.950	97.372	3.834	G Only
4	11	2.309	0.091	113.030	4.450	110.072	4.334	G; R/Rp/Rc
4-1/2	11	2.309	0.091	125.730	4.950	122.772	4.834	G Only
5	11	2.309	0.091	138.430	5.450	135.472	5.334	G; R/Rp/Rc
5-1/2	11	2.309	0.091	151.130	5.950	148.172	5.834	G Only
6	11	2.309	0.091	163.830	6.450	160.872	6.334	G; R/Rp/Rc

G Only: ISO 228-1 sizes absent from ISO 7-1. R/Rc diameters are at the gauge plane; G and Rp are parallel. Inch values = published mm / 25.4, rounded to 3 decimals. Basic minor diameter is not a tapping drill recommendation.

Identify the Thread

Measure male OD across the crests with calipers; compare positions to check taper. Match TPI with a thread gauge, then identify the sealing face or seat. BSP has a 55-degree profile; NPT has a 60-degree profile. Nominal inch names do not establish compatibility.

Check How It Seals

G: separate sealing face/seat, such as a bonded seal or designed O-ring arrangement. R: male taper; Rp: female parallel; Rc: female taper. Specified R-to-Rp / R-to-Rc joints seal at the threads using suitable sealant. Confirm the mating connection and manufacturer instructions.

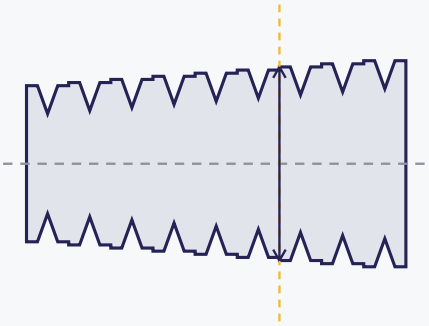
Reading the Dimensions

G 1/2 · Parallel



Major Ø 20.955 mm
Minor Ø 18.631 mm

R 1/2 · Taper



Gauge Plane

Major Ø 20.955 mm at This Plane

55° Whitworth Thread Profile · Taper 1:16 on Diameter

Schematic Only — Not to Scale; Rounded Crests/Roots Simplified

Basic Dimensions, Not Acceptance Limits

Tapered thread diameter changes with axial position. The gauge plane is the reference section for the tabulated R / Rc values; a measurement at the tip need not match. Use the complete standard, drawing and appropriate gauges for tolerances, engagement and inspection. The dimension table does not specify a pressure rating or replace inspection gauges.

Typical Tapping Drill Sizes

Typical, confirm with your tap supplier. Values are in mm for cutting taps. Rc values use the catalogue's Drill Only column, not its Drill & Reamer column. The required pre-hole depends on the tap, material, thread engagement and hole preparation; these are not basic thread diameters or values for forming taps.

Nominal Size	G Parallel Drill Ø (mm)	Rc Taper Drill Ø (mm), Drill Only
1/8	8.8	8.4
1/4	11.8	11.2
3/8	15.3	14.75
1/2	19.0	18.25
3/4	24.5	23.75

Data Sources and Basis

ISO 228-1:2000 — Pipe threads where pressure-tight joints are not made on the threads — Part 1: Dimensions, tolerances and designation - Table 1: all 24 G sizes, TPI, pitch and basic major/minor diameters in mm. Inch values are RHPL conversions (mm divided by 25.4, rounded to three decimals).

ISO 7-1:1994 — Pipe threads where pressure-tight joints are made on the threads — Part 1: Dimensions, tolerances and designation - Table 1: the 15 R / Rp / Rc sizes and basic diameters at the gauge plane for taper threads.

Sutton Tools: Export Catalogue, Technical Information — Tapping Drill Sizes, p. 465 - Published G (BSPF) tapping drills and Rc (BSPT) Drill Only values for the separate typical drill table; distributor-hosted manufacturer catalogue.

Swagelok: Thread and End Connection Identification Guide - Measurement procedure, 55-degree BSP / 60-degree NPT profiles and sealing arrangements.

Technical review: 2026-11-08. Basic dimensions: ISO 228-1:2000 Table 1 and ISO 7-1:1994 Table 1. HTML and PDF share one dataset. Manufacturer references do not endorse RHPL.