

**TECHNICAL INFORMATION:  
 Ground Ware**

**GROUND WARE**

ASTM Commercial Standards (and latest revisions) are strictly observed in the manufacture of Kontes interchangeable taper-ground joints, stopcocks, stoppers, and spherically-ground joints. The following tables are consistent with ASTM specifications and are reproduced here for your convenience.

**Standard Dimensions for Full-length Interchangeable  
 Taper-Ground Joints**

Standard Joint Size Number (§ Designation)	Approximate Diameter at Small End mm	Approximate Length of Ground Zone mm	Computed Diameter at Large End of Ground Zone (Gauging Point) mm
7/25 .....	5	25	7.5
10/30 .....	7	30	10.0
12/30 .....	9.5	30	12.5
14/35 .....	11	35	14.5
19/38 .....	15	38	18.8
24/40 .....	20	40	24.0
29/42 .....	25	42	29.2
34/45 .....	30	45	34.5
40/50 .....	35	50	40.0
45/50 .....	40	50	45.0
50/50 .....	45	50	50.0
55/50 .....	50	50	55.0
60/50 .....	55	50	60.0
71/60 .....	65	60	71.0
103/60 .....	97	60	103.0

**Standard Dimensions for Short-length Interchangeable  
 Taper-Ground Joints**

Standard Joint Size Number (§ Designation)	Approximate Diameter at Small End mm	Approximate Length of Ground Zone mm	Computed Diameter at Large End of Ground Zone (Gauging Point) mm
5/8 .....	4.2	8	5.0
7/10 .....	6.5	10	7.5
10/7 .....	9.3	7	10.0
10/10 .....	9.0	10	10.0
12/10 .....	11.5	10	12.5
14/10 .....	13.5	10	14.5
19/10 .....	17.8	10	18.8
24/12 .....	22.8	12	24.0
29/12 .....	28.0	12	29.2
34/12 .....	33.3	12	34.5
40/12 .....	38.8	12	40.0
45/12 .....	43.8	12	45.0
50/12 .....	48.8	12	50.0
55/12 .....	53.8	12	55.0
60/12 .....	58.8	12	60.0
71/15 .....	69.5	15	71.0

## GROUND WARE (continued)

### Standard Dimensions for Medium-length Interchangeable Taper-Ground Joints

Standard Joint Size Number (§ Designation)	Approximate Diameter at Small End mm	Approximate Length of Ground Zone mm	Computed Diameter at Large End of Ground Zone (Gauging Point) mm
5/12	3.8	12	5.0
7/15	6.0	15	7.5
10/18	8.2	18	10.0
12/18	10.7	18	12.5
14/20	12.5	20	14.5
19/22	16.6	22	18.8
24/25	21.5	25	24.0
29/26	26.6	26	29.2
34/28	31.7	28	34.5
40/35	36.5	35	40.0

### Standard Dimensions for Interchangeable Spherical-Ground Joints

Standard Joint Size Number (§ Designation)	Nominal Diameter mm	Nominal Tube Diameter I.D. mm	Gauging Ball Diameter inches
7/1	7	1	.28125 ± .00005
12/1	12	1	.5000 ± .0001
12/1.5	12	1.5	.5000 ± .0001
12/2	12	2	.5000 ± .0001
12/3	12	3	.5000 ± .0001
12/5	12	5	.5000 ± .0001
18/7	18	7	.7500 ± .0001
18/9	18	9	.7500 ± .0001
28/12	28	12	1.1250 ± .00015
28/15	28	15	1.1250 ± .00015
35/20	35	20	1.3750 ± .00015
35/25	35	25	1.3750 ± .00015
40/25	40	25	1.6500 ± .00015
50/30	50	30	2.0000 ± .00015
65/40	65	40	2.5000 ± .0002
75/50	75	50	3.0000 ± .00025
102/75	102	75	4.0000 ± .0003

### Standard Dimensions for Interchangeable Taper-Ground Flask Stoppers

Standard Flask Stopper Number (§ Designation)	Approximate Diameter at Small End mm	Length of Ground Zone mm	Computed Diameter at Large End of Ground Zone (Gauging Point) mm
8	7.25	10.0 ± 1.0	8.25
9	8	14.0 ± 1.0	9.4
13	12	14.0 ± 1.0	13.4
16	15	15.0 ± 1.0	16.5
19	18	17.0 ± 1.0	19.7
22	20	20.5 ± 1.5	22.05
27	25	21.5 ± 1.5	27.15
32	30	21.5 ± 1.5	32.15
38	35	30.0 ± 2.0	38.0

### Standard Dimensions for Interchangeable Straight-bore Taper-Ground Stopcocks Standard

Standard Stopcock Number (§ Designation)	Diameter of Plug at Center Line of Bore mm	Length of Shell of Bore ±0.5 mm, mm	Diameter of Bore Hole in Plug mm
1M (Micro size)	7	20	1
1	12	30	1
1.5	12	30	1.5
2	12	30	2
3	17	40	3
4	17	40	4
5	20	44	5
6	20	44	6
8	25	52	8
10	35	56	10

### Standard Dimensions for Interchangeable Single Oblique-bore Taper-Ground Stopcocks

Standard Stopcock Number (§ Designation)	Diameter of Plug at Gauging Point mm	Length of Shell of Bore ±0.5 mm, mm	Diameter of Bore Hole in Plug mm
1	12.60	40	1
1.5	12.60	40	1.5
2	12.60	40	2
3	17.35	50	3
4	17.35	50	4

### Standard Dimensions for Interchangeable Double Oblique-bore (3-Way) Taper-Ground Stopcocks

Standard Stopcock Number (§ Designation)	Diameter of Plug at Gauging Point mm	Length of Shell of Bore ±0.5 mm, mm	Diameter of Bore Hole in Plug mm
1	14.5	50	1
1.5	14.5	50	1.5
2	14.5	50	2
3	16.2	56	3
4	16.2	56	4

### Standard Dimensions for Interchangeable T-bore and 120° bore Taper-Ground Stopcocks

Standard Stopcock Number (§ Designation)	Diameter of Plug at Gauging Point mm	Length of Shell of Bore ±0.5 mm, mm	Diameter of Bore Hole in Plug mm
1	17	40	1
1.5	17	40	1.5
2	17	40	2
3	20	44	3
4	20	44	4