

Threaded Fitting Product Weight/Volume Chart

Instructions for Use

1. The weights listed in this table are calculated based on the outer diameter and wall thickness specified in relevant standards such as ASME B16.11. The calculations appropriately account for the impact of material selection and manufacturing conditions on product weight (e.g., thickness compensation). Therefore, the weights provided represent approximate net weights per piece and are for reference only.

Pipe schedule numbers marked with "S" in the table indicate stainless steel pipe fitting weights; others represent carbon steel weights. When consulting stainless steel weights, note that wall thickness values for the same pipe schedule number may differ between carbon steel and stainless steel.

2. Weight calculation formula for 90° elbows: $W = 9.685 \times 10^{-6}R(D^2 - d^2)$

Where: W - Weight of 90° elbow, kg;

R - Curvature radius of the elbow (structural dimension), mm;

D - Elbow outer diameter, mm;

d - Inner diameter of the elbow, mm.

The formula uses the density of carbon steel, 7.85 kg/dm³.

The weights of 45° and 180° elbows are calculated as half and twice the weight of a 90° elbow, respectively.

3. Steel pipe weight calculation formula: $W = 0.02466T(D - T)$

Where: W - Weight per meter of steel pipe, kg/m;

T - Steel pipe wall thickness, mm;

D - Outer diameter of the steel pipe, mm.

The steel pipe weight formula uses the density of carbon steel, i.e., 7.85 kg/dm³. The weight of austenitic stainless steel pipes is 1.015 times the weight calculated by the above formula.

5. The volumes listed in this table represent the external contour volume of a single product and account for space occupied during packaging. The approximate volumes shown are indicative of the packaging space required per unit for reference purposes. When using these values, consider factors such as volume calculations for nested packaging and whether small product volumes need to be factored in.

SW & THD UNION

Nominal Size		Approximate weight kg	Approximate volume m ³	Nominal Size		Approximate weight kg	Approximate volume m ³
DN	NPS			DN	NPS		
6	1/8	0.25	0.070*10 ⁻³	32	1-1/4	1.35	0.375*10 ⁻³
8	1/4	0.30	0.070*10 ⁻³	40	1-1/2	1.92	0.520*10 ⁻³
10	3/8	0.35	0.098*10 ⁻³	50	2	2.85	0.740*10 ⁻³
15	1/2	0.46	0.125*10 ⁻³	65	2-1/2	4.90	1.17*10 ⁻³
20	3/4	0.61	0.220*10 ⁻³	80	3	7.10	1.53*10 ⁻³
25	1	0.85	0.280*10 ⁻³	-	-	-	-

THD 90° ELBOW

Nominal Size		Approximate weight kg			Approximate volume m ³		
DN	NPS	SCH80/2000	SCH160/3000	XXS/6000	SCH80/2000	SCH160/3000	XXS/6000
6	1/8	0.08	0.10	0.18	0.020*10 ⁻³	0.029*10 ⁻³	-
8	1/4	0.08	0.15	0.30	0.028*10 ⁻³	0.045*10 ⁻³	-
10	3/8	0.13	0.30	0.45	0.045*10 ⁻³	0.070*10 ⁻³	-
15	1/2	0.22	0.45	0.72	0.070*10 ⁻³	0.130*10 ⁻³	0.190*10 ⁻³
20	3/4	0.32	0.70	1.20	0.130*10 ⁻³	0.195*10 ⁻³	0.320*10 ⁻³
25	1	0.50	1.21	1.65	0.190*10 ⁻³	0.330*10 ⁻³	0.410*10 ⁻³
32	1-1/4	0.80	1.47	2.70	0.330*10 ⁻³	0.405*10 ⁻³	0.760*10 ⁻³
40	1-1/2	0.93	2.60	3.30	0.410*10 ⁻³	0.760*10 ⁻³	1.140*10 ⁻³
50	2	1.60	3.05	6.05	0.770*10 ⁻³	1.135*10 ⁻³	1.760*10 ⁻³
65	2-1/2	2.95	5.80	9.88	1.140*10 ⁻³	1.760*10 ⁻³	-
80	3	5.60	8.85	16.40	2.350*10 ⁻³	2.600*10 ⁻³	-
100	4	10.5	13.5	23.5	3.850*10 ⁻³	-	-

THD 45° ELBOW

Nominal Size		Approximate weight kg			Approximate volume m ³		
DN	NPS	SCH80/200 0	SCH160/30 00	XXS/6000	SCH80/200 0	SCH160/30 00	XXS/6000
6	1/8	0.08	0.17	-	0.025*10 ⁻³	0.035*10 ⁻³	-
8	1/4	0.08	0.17	-	0.036*10 ⁻³	0.055*10 ⁻³	-
10	3/8	0.11	0.28	-	0.052*10 ⁻³	0.078*10 ⁻³	-
15	1/2	0.23	0.35	0.85	0.079*10 ⁻³	0.155*10 ⁻³	0.210*10 ⁻³
20	3/4	0.29	0.59	1.40	0.155*10 ⁻³	0.208*10 ⁻³	0.395*10 ⁻³
25	1	0.43	0.96	1.90	0.205*10 ⁻³	0.395*10 ⁻³	0.460*10 ⁻³
32	1-1/4	0.67	1.15	2.65	0.395*10 ⁻³	0.460*10 ⁻³	0.850*10 ⁻³
40	1-1/2	0.82	2.02	3.90	0.462*10 ⁻³	0.845*10 ⁻³	1.480*10 ⁻³
50	2	1.32	2.30	6.30	0.850*10 ⁻³	1.465*10 ⁻³	2.580*10 ⁻³
65	2-1/2	3.30	4.20	-	1.465*10 ⁻³	2.465*10 ⁻³	-
80	3	5.40	6.50	-	2.560*10 ⁻³	4.170*10 ⁻³	-
100	4	9.00	-	-	4.500*10 ⁻³	-	-

THD TEE

Nominal Size		Approximate weight kg			Approximate volume m ³		
DN	NPS	SCH80/200 0	SCH160/30 00	XXS/6000	SCH80/200 0	SCH160/30 00	XXS/6000
6	1/8	0.13	0.22	-	0.032*10 ⁻³	0.039*10 ⁻³	-
8	1/4	0.13	0.22	-	0.039*10 ⁻³	0.040*10 ⁻³	-
10	3/8	0.16	0.40	-	0.040*10 ⁻³	0.006*10 ⁻³	-
15	1/2	0.35	0.58	1.15	0.006*10 ⁻³	0.202*10 ⁻³	0.301*10 ⁻³
20	3/4	0.45	0.90	1.80	0.202*10 ⁻³	0.301*10 ⁻³	0.465*10 ⁻³
25	1	0.66	1.46	2.25	0.301*10 ⁻³	0.465*10 ⁻³	0.659*10 ⁻³
32	1-1/4	1.00	1.90	3.95	0.465*10 ⁻³	0.659*10 ⁻³	1.092*10 ⁻³
40	1-1/2	1.40	3.40	4.87	0.659*10 ⁻³	1.092*10 ⁻³	1.523*10 ⁻³
50	2	2.20	3.80	8.89	1.092*10 ⁻³	1.523*10 ⁻³	2.520*10 ⁻³
65	2-1/2	4.20	7.20	-	1.523*10 ⁻³	2.350*10 ⁻³	-
80	3	6.15	10.7	-	2.480*10 ⁻³	3.620*10 ⁻³	-
100	4	14.7	17.0	-	3.980*10 ⁻³	-	-

Note: The table lists approximate weights for equal-diameter tees. If unequal-diameter tees are forged using the same die as equal-diameter tees, their weight will be greater than that of equal-diameter tees.

THD COUPLING

Nominal Size		Approximate weight kg		Approximate volume m ³	
DN	NPS	SCH160/3000	XXS/6000	SCH160/3000	XXS/6000
6	1/8	0.06	0.09	0.009*10 ⁻³	0.015*10 ⁻³
8	1/4	0.08	0.13	0.015*10 ⁻³	0.023*10 ⁻³
10	3/8	0.11	0.24	0.021*10 ⁻³	0.042*10 ⁻³
15	1/2	0.22	0.40	0.042*10 ⁻³	0.075*10 ⁻³
20	3/4	0.30	0.52	0.064*10 ⁻³	0.100*10 ⁻³
25	1	0.55	1.06	0.120*10 ⁻³	0.205*10 ⁻³
32	1-1/4	0.86	1.32	0.220*10 ⁻³	0.265*10 ⁻³
40	1-1/2	1.26	2.20	0.327*10 ⁻³	0.470*10 ⁻³
50	2	1.65	3.37	0.508*10 ⁻³	0.750*10 ⁻³
65	2-1/2	3.00	4.81	0.787*10 ⁻³	1.100*10 ⁻³
80	3	4.25	7.25	1.283*10 ⁻³	1.700*10 ⁻³
100	4	7.80	12.0	2.400*10 ⁻³	3.000*10 ⁻³

Note:

- 1) The table lists approximate weights for full couplings of the same diameter. full couplings of different diameters are generally slightly heavier than those of the same diameter.
- 2) The weight and volume of half couplings are half that of full couplings.

THD CAP

Nominal Size		Approximate weight kg		Approximate volume m ³	
DN	NPS	SCH160/3000	XXS/6000	SCH160/3000	XXS/6000
6	1/8	0.03	-	0.006*10 ⁻³	-
8	1/4	0.05	0.11	0.009*10 ⁻³	0.019*10 ⁻³
10	3/8	0.07	0.17	0.014*10 ⁻³	0.031*10 ⁻³
15	1/2	0.14	0.29	0.028*10 ⁻³	0.052*10 ⁻³
20	3/4	0.24	0.42	0.050*10 ⁻³	0.080*10 ⁻³
25	1	0.41	0.76	0.085*10 ⁻³	0.143*10 ⁻³
32	1-1/4	0.71	0.96	0.150*10 ⁻³	0.193*10 ⁻³
40	1-1/2	0.88	1.42	0.190*10 ⁻³	0.283*10 ⁻³
50	2	1.25	2.24	0.290*10 ⁻³	0.450*10 ⁻³
65	2-1/2	2.29	3.80	0.528*10 ⁻³	0.772*10 ⁻³
80	3	3.29	5.43	0.785*10 ⁻³	1.130*10 ⁻³
100	4	5.65	9.26	1.360*10 ⁻³	1.94*10 ⁻³

SQUAREHEAD PLUG & HEXHEAD PLUG & ROUNDHEAD PLUG

Nominal Size		Approximate weight kg			Approximate volume m ³		
DN	NPS	SQUAREHEAD PLUG	HEXHEAD PLUG	ROUNDHEAD PLUG	SQUAREHEAD PLUG	HEXHEAD PLUG	ROUNDHEAD PLUG
6	1/8	0.01	0.02	0.02	0.002*10 ⁻³	0.003*10 ⁻³	0.004*10 ⁻³
8	1/4	0.02	0.03	0.05	0.004*10 ⁻³	0.006*10 ⁻³	0.009*10 ⁻³
10	3/8	0.03	0.05	0.08	0.007*10 ⁻³	0.009*10 ⁻³	0.014*10 ⁻³
15	1/2	0.06	0.08	0.12	0.012*10 ⁻³	0.014*10 ⁻³	0.020*10 ⁻³
20	3/4	0.10	0.14	0.20	0.020*10 ⁻³	0.024*10 ⁻³	0.033*10 ⁻³
25	1	0.18	0.25	0.34	0.036*10 ⁻³	0.045*10 ⁻³	0.058*10 ⁻³
32	1-1/4	0.30	0.49	0.59	0.065*10 ⁻³	0.086*10 ⁻³	0.098*10 ⁻³
40	1-1/2	0.41	0.65	0.73	0.090*10 ⁻³	0.110*10 ⁻³	0.020*10 ⁻³
50	2	0.67	1.16	1.44	0.150*10 ⁻³	0.190*10 ⁻³	0.240*10 ⁻³
65	2-1/2	1.11	1.83	2.36	0.250*10 ⁻³	0.295*10 ⁻³	0.385*10 ⁻³
80	3	1.69	2.92	3.50	0.390*10 ⁻³	0.465*10 ⁻³	0.580*10 ⁻³
100	4	3.48	5.50	6.08	0.760*10 ⁻³	0.860*10 ⁻³	1.000*10 ⁻³

HEX HEAD BUSHING & FLUSH BUSHING

Nominal Size		Approximate weight kg		Approximate volume m ³	
DN	NPS	HEX HEAD BUSHING	FLUSH BUSHING	HEX HEAD BUSHING	FLUSH BUSHING
8	1/4	0.01	0.006	0.005*10 ⁻³	0.003*10 ⁻³
10	3/8	0.02	0.008	0.007*10 ⁻³	0.006*10 ⁻³
15	1/2	0.03	0.135	0.012*10 ⁻³	0.009*10 ⁻³
20	3/4	0.04	0.210	0.020*10 ⁻³	0.014*10 ⁻³
25	1	0.07	0.360	0.040*10 ⁻³	0.029*10 ⁻³
32	1-1/4	0.12	0.052	0.075*10 ⁻³	0.045*10 ⁻³
40	1-1/2	0.14	0.064	0.090*10 ⁻³	0.060*10 ⁻³
50	2	0.22	0.089	0.170*10 ⁻³	0.090*10 ⁻³
65	2-1/2	0.36	0.165	0.250*10 ⁻³	0.165*10 ⁻³
80	3	0.46	0.220	0.360*10 ⁻³	0.245*10 ⁻³
100	4	0.78	0.325	0.660*10 ⁻³	0.450*10 ⁻³

Note: The weights listed in the table are calculated based on a single-step diameter change. For larger diameter changes, the actual weight will exceed the values shown in the table.

HEXAGONAL NIPPLE

Nominal Size		Approximate weight kg		Approximate volume m ³
DN	NPS	SCH80	SCH160	
6	1/8	0.02	0.02	0.005*10 ⁻³
8	1/4	0.03	0.04	0.010*10 ⁻³
10	3/8	0.05	0.06	0.017*10 ⁻³
15	1/2	0.10	0.12	0.032*10 ⁻³
20	3/4	0.13	0.17	0.054*10 ⁻³
25	1	0.22	0.29	0.097*10 ⁻³
32	1-1/4	0.34	0.41	0.160*10 ⁻³
40	1-1/2	0.47	0.58	0.229*10 ⁻³
50	2	0.69	0.9	0.377*10 ⁻³
65	2-1/2	1.35	1.69	0.737*10 ⁻³
80	3	2.03	2.55	1.140*10 ⁻³

Note: The weights listed in the table are calculated based on a single-step diameter change. For larger diameter changes, the actual weight will exceed the values shown in the table.

NIPPLE

Nominal Size		Approximate weight kg		Approximate volume m ³
DN	NPS	SCH80/L=100mm	SCH160/L=100mm	
6	1/8	0.05	-	0.012*10 ⁻³
8	1/4	0.08	-	0.019*10 ⁻³
10	3/8	0.11	-	0.030*10 ⁻³
15	1/2	0.16	0.20	0.046*10 ⁻³
20	3/4	0.22	0.30	0.072*10 ⁻³
25	1	0.33	0.43	0.112*10 ⁻³
32	1-1/4	0.45	0.57	0.180*10 ⁻³
40	1-1/2	0.55	0.73	0.234*10 ⁻³
50	2	0.76	1.12	0.365*10 ⁻³
65	2-1/2	1.14	1.50	0.535*10 ⁻³
80	3	1.55	2.15	0.790*10 ⁻³
100	4	2.24	3.36	1.310*10 ⁻³

SWAGED NIPPLE

Nominal Size		Approximate weight kg						Approximate volume m ³
DN	NPS	SCH10S	SCH20	STD	SCH40	XS	SCH80	
8	1/4	0.03	-	0.03	0.03	0.04	0.04	0.011*10 ⁻³
10	3/8	0.04	-	0.05	0.05	0.06	0.06	0.018*10 ⁻³
15	1/2	0.07	-	0.08	0.08	0.10	0.10	0.031*10 ⁻³
20	3/4	0.10	-	0.11	0.11	0.14	0.14	0.054*10 ⁻³
25	1	0.18	-	0.25	0.25	0.27	0.27	0.100*10 ⁻³
32	1-1/4	0.35	-	0.33	0.33	0.41	0.41	0.182*10 ⁻³
40	1-1/2	0.35	-	0.45	0.45	0.55	0.55	0.266*10 ⁻³
50	2	0.65	-	0.86	0.86	1.25	1.25	0.600*10 ⁻³
65	2-1/2	1.00	-	1.48	1.48	1.84	1.84	0.960*10 ⁻³
80	3	1.40	-	2.15	2.15	3.03	3.03	1.620*10 ⁻³
90	3-1/2	1.65	-	2.70	2.70	3.51	3.51	2.116*10 ⁻³
100	4	2.06	-	3.72	3.72	4.97	4.97	3.005*10 ⁻³
125	5	3.21	-	6.15	6.15	8.60	8.60	5.590*10 ⁻³
150	6	4.15	-	8.38	8.38	12.1	12.1	8.640*10 ⁻³
200	8	6.75	11.0	13.8	13.8	20.8	20.8	0.016
250	10	11.2	15.8	22.5	22.5	30.5	36.9	0.028
300	12	15.5	20.3	28.6	31.3	38.6	52.7	0.042

Note: The weights listed in the table are calculated based on a single-step diameter change. For larger diameter changes, the actual weight will be lighter than the values shown in the table.