

Decimal Equivalent & Tap Size

Fraction Drill Size	Dec. Equ.	Tap Size	Fraction Drill Size	Dec. Equ.	Tap Size	Fraction Drill Size	Dec. Equ.	Tap Size
80	.0135		28	.1405		T	.3580	
79	.0145		9/64"	.1406		23/64"	.3594	7/16-14
1/64"	.0156		27	.1440		U	.3680	
78	.0160		26	.1470	10-24	3/8"	.3750	
77	.0180		25	.1495		V	.3770	
76	.0200		24	.1520		W	.3860	
75	.0210		23	.1540		25/64"	.3906	
74	.0225		5/32"	.1562		X	.3970	
73	.0240		22	.1570		Y	.3970	
72	.0250		21	.1590	10-32	13/32"	.4062	
71	.0260		20	.1610		Z	.4130	
70	.028		19	.1660		27/64"	.4219	1/2-13
69	.0292		18	.1695		7/16"	.4375	
68	.0310		11/64"	.1719		29/64"	.4531	
1/32"	.0312		17	.1730		15/32"	.4688	
67	.0330		16	.1770	12-24	31/64"	.4844	9/16-12
66	.0350		15	.1800	12-24	1/2"	.5000	
64	.0360		14	.1820		33/64"	.5156	9/16-18
63	.0370		13	.1850		17/32"	.5312	5/8-11
62	.0380		3/16"	.1875		35/64"	.5469	
61	.0390		12	.1890		9/16"	.5625	
60	.0400		11	.1910		37/64"	.5781	5/8-18
59	.0410		10	.1935		9/32"	.5938	
58	.0420		9	.1960		39/64"	.6094	
57	.0430		8	.1990		5/8"	.6250	
56	.0465		7	.2010		41/64"	.6406	
3/64"	.0469	0-80	13/64"	.2031		21/32"	.6562	3/4-10
55	.0520		6	.2040		43/64"	.6719	
54	.0550		5	.2055		11/16"	.6875	3/4-16
53	.0595	1-64,72	4	.2090		45/64"	.7031	
1/16"	.0625		3	.2130	1/4-28	23/32"	.7188	
52	.0635		7/32"	.2188		47/64"	.7344	
51	.0670		2	.2210		3/4"	.7500	
50	.0700	2-56,64	1	.2280		49/64"	.7656	7/8-9
49	.0730		A	.2340		25/32"	.7812	
48	.0760		15/64"	.2344		51/64"	.7969	
5/64"	.0781		B	.2380		13/16"	.8125	7/8-14
47	.0785	3-48	C	.2420		53/64"	.8281	
46	.0810	3-56	D	.2460		27/32"	.8438	
45	.0820		1/4"	.2500	E	.2500	.8594	
44	.0860		F.2570	.5/16-18		7/8"	.8750	1-8
43	.0890	4-40	G	.2610		57/64"	.8906	
42	.0935	4-48	17/64"	.2656		29/32"	.9062	
3/32"	.0938		H	.2660		59/64"	.9219	1-1/2
41	.0960		I	.2720	5/16-24	15/16"	.9575	
40	.0980		J	.2770		61/64"	.9531	
39	.0995		K	.2810		31/32"	.9688	
38	.1015		9/32"	.2812		63/64"	.9844	11/8-7
36	.1040	5-40	L	.2900		1"	1.0000	
37	.1040	5-44	M	.2950		1 3/64"	1.0469	1 1/8-12
36	.1065	6-32	19/64"	.2969		1 7/64"	1.1094	1 1/4-7
7/64"	.1094		N	.3020		1 1/8"	1.1250	
35	.1100		5/16"	.3125	3/8-16	1 11/64"	1.1719	1 1/4-12
34	.1110		O	.3160		1 7/32"	1.2188	1 3/8-6
33	.1130	6-40	P	.3230		1 1/4"	1.250	
32	.1160		21/64"	.3281		1 19/64"	1.2969	1 3/8-12
31	.1200		Q	.3320	3/8-24	1 11/32"	1.3438	1 1/2-6
1/8"	.1250		R	.3390		1 3/8"	1.3750	
30	.1285		11/32"	.3438		1 27/64"	1.4219	1 1/2-12
29	.1360	8-32,36	S	.3480		1 1/2"	1.5000	

Weights and Measures

Cubic Measure

1000 cu. millimeters	=	1 cu. centimeter
1000 cu. centimeters	=	1 cu. decimeter
1000 cu. decimeters	=	1 cu. meter

Linear Measurement

12 inches	=	1 foot
3 feet	=	1 yard
5 1/4 rod	=	1 rod
40 yards	=	1 furlong
8 furlongs	=	1 mile

Marine Measure

6 feet	=	1 fathom
1000 fathoms	=	1 nautical mi.
3 nautical mi.	=	1 league

Square Measure

144 sq. inches	=	1 square foot
9 sq. feet	=	1 square yard
30 1/4 sq. yards	=	1 square rod
160 sq. rods	=	1 acre
640 sq. acres	=	1 sq. mile

Cubic Measure

1728 cu in	=	1 cu foot
27 cu ft	=	1 cubic yard

Surveyor's Measure

7.92 inches	=	1 cf
100 links	=	1 chain

Liquid Measure

4 gills	=	1 pint
2 pints	=	1 quart
4 quarts	=	1 gallon
31 1/2 gal	=	1 barrel
2 barrels	=	1 hogshead

Apothecaries' Fluid Measure

8 fluid ounces	=	1 fluid dram
16 fluid ounces	=	1 pint
4 quarts	=	1 gallon

The Metric System

10 millimeters	=	1 centimeter
10 centimeter	=	1 decimeter
10 decimeter	=	1 meter
10 meters	=	1 decameter
10 decameter	=	1 hectometer
10 hectometer	=	1 kilometer

Square Measure

100 millimeters ²	=	1 sq. centimeter
100 centimeters ²	=	1 sq. decimeter
100 decimeters ²	=	1 sq. meter
100 meters ²	=	1 sq. decameter
100 decameters ²	=	1 sq. hectometer
100 hectometers ²	=	1 sq. kilometer

Dry Measure

2 pints	=	1 quart
8 quarts	=	1 peck
4 pecks	=	1 bushel

Wood Measure

16 cubic feet	=	1 cord foot
8 cord feet	=	1 cord

Time Measure

60 seconds	=	1 minute
60 minutes	=	1 hour
24 hours	=	1 day
7 days	=	1 week
4 weeks	=	1 month
12 months	=	1 year
100 years	=	1 century

Angular & Circular

60 seconds	=	1 minute
60 minutes	=	1 degree
90 degree	=	1 rt. angle
180 degree	=	1 st. angle

Troy Measure

24 grains	=	1 pw
20 pw	=	1 ounce
12 ounces	=	1 pound

Avoirdupois Weight

27 11/32 g	=	1 dram
16 drams	=	1 ounce
16 ounces	=	1 pound
100 pounds	=	1 sw
20sw	=	1 st

Apothecaries' Weight

20 grains	=	1 scruple
3 scruples	=	1 dram
8 drams	=	1 ounce
12 ounces	=	1 pound

Liquid Measure

10 milliliters	=	1 centiliter
10 centiliters	=	1 deciliter
10 deciliters	=	1 decaliter
10 liters	=	1 decaiter
10 decaliters	=	1 hectoliter
10 hectoliters	=	1 kiloliter

Weights

10 milligrams	=	1 centigram
10 centigrams	=	1 decigram
10 decigrams	=	1 gram
10 dicagrams	=	1 hectogram
10 hectogram	=	1 kilogram
100 kilograms	=	1 quintal
1 sq. quintal	=	1 ton

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Conversion Factors

<u>To Change</u>	<u>To</u>	<u>Multiply By</u>
Liters	Pints (dry)	1.8162
Liters	Pints (liquid)	2.1134
Liters	Quarts (dry)	.9081
Liters	Quarts (liquid)	1.0567
Meters	Feet	3.2808
Meters	Miles	.0006214
Meters	Yards	1.0936
Metric Tons	Tons (short)	1.1023
Miles	Kilometers	1.6093
Miles (nautical)	Miles (statute)	1.1516
Miles/hour	Feet/min	88
Millimeters	Inches	.0394
Ounces avdp.	Grams	28.3495
Ounces	Pounds	.0625
Ounces (troy)	Ounces (avdp)	1.09714
Pecks	Liters	8.8096
Pints (dry)	Liters	.5506
Pints (liquid)	Liters	0.473176
Pounds ap or t	Kilograms	.3782
Pounds avdp	Kilograms	.4536
Quarts (dry)	Liters	1.1012
Quarts (liquid)	Liters	.9463
Rods	Feet	16.5
Square feet	Square meters	.9029
Square kilos	Square miles	.3861
Square meters	Square feet	10.7639
Square meters	Square yards	1.1960
Square miles	Square kilos	2.5900
Square yards	Square meters	.8361
Tons (short)	Metric tons	.9072
Ton (short)	Pounds	2000
Watts	BTU/hr.	3.4129
Watts	Horsepower	.001341
Yards	Meters	.9144
Yards	Miles	.0005682

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Conversion Factors

To determine the approximate number of linear feet in a roll of paper, use the formula and factors shown below.

Formula

$$\frac{(\text{NET WEIGHT}) \times 12 \times \text{FACTOR}}{(\text{BASIS WEIGHT}) \times (\text{WIDTH})} = \text{LINEAR FEET}$$

Factors

Bond	1300
Cover	1805
Book or Offset	3300
Vellum Bristol (22.5 x 28.5)	2700
Printing Bristol (22.5 x 35)	2739
Wrapping, Tissue, Newsprint, Waxing (24 x 36)	3000

Example

To find the number of linear feet in a roll of Form Bond 20" wide, sub. 16 lb., net weight 750 lbs.

$$\frac{750 \times 12 \times 1300}{16 \times 20} = 36.562 \text{ LINEAR FEET}$$

Formula for Weight per Ream

To determine the ream weight of paper when the sheet size and basis weight are known, multiply the size of the sheet x its basis weight. Then divide by the standard sheet size.

$$\frac{(\text{SHEET SIZE}) \times (\text{BASIS WEIGHT})}{(\text{STANDARD SHEET SIZE})} = \text{WEIGHT PER REAM}$$

To determine the size of the sheet, multiply the width of the sheet by it's depth.

$$(\text{SHEET WIDTH}) \times (\text{SHEET DEPTH}) = \text{SIZE IN SQUARE (INCHES, CM...)}$$

For example, to calculate the weight per ream of a sheet of 60 lb. Basis weight of 19 x 25 offset book, use the following formula. The standard size of offset paper is 25 x 38.

$$\frac{60 \times 19 \times 25}{25 \times 38} = 30 \text{ lbs. (Ream Weight)}$$

"A" Series Size Chart

<u>A</u>	<u>Size</u>		<u>Area</u>	
<u>Number</u>	<u>Millimeters</u>	<u>Inches</u>	<u>Square Meters</u>	<u>Square Inches</u>
A0	841 x 1189	33.1" x 46.8"	1.0	1549.08
A1	594 x 841	23.4" x 33.1"	.05	774.54
A2	420 x 594	16.5" x 23.4"	0.25	356.10
A3	297 x 420	11.7" x 16.5"	0.125	193.05
A4	210 x 297	8.3" x 11.7"	0.063	97.11
A5	148 x 210	5.8" x 8.3"	0.031	48.14

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Terminology and Technical Data

Pipe Size for Compressed Air Lines

<u>CFM</u>	<u>Air</u>							
	<u>25</u>	<u>50</u>	<u>75</u>	<u>100</u>	<u>150</u>	<u>200</u>	<u>250</u>	<u>300</u>
1-5	.5"	.5"	.5"	.5"	.5"	.5"	.5"	.5"
6-10	.5"	.5"	.5"	.5"	.75"	.75"	.75"	.75"
11-15	.5"	.75"	.75"	.75"	.75"	.75"	.75"	.75"
16-20	.5"	.75"	.75"	.75"	.75"	.75"	.75"	.75"
21-25	.75"	.75"	.75"	.75"	.75"	1"	1"	1"
16-30	.75"	.75"	.45"	.75"	1"	1"	1"	1"
31-35	.75"	.75"	1"	1"	1"	1"	1"	1"
36-40	.75"	1"	1"	1"	1"	1"	1"	1"
41-59	1"	1"	1"	1"	1"	1"	1"	1"
60-79	1"	1"	1"	1"	1.25"	1.25"	1.25"	1.25"
80-100	1.25"	1.25"	1.25"	1.25"	1.5"	1.5"	1.5"	1.5"

Air Flow (CFM) through Orifice of Jet

<u>PSI</u>	<u>1/64</u>	<u>1/16</u>	<u>1/8</u>	<u>1/4</u>
10	.084	1.36	5.45	21.8
25	.133	2.16	8.6	34.5
50	.225	3.64	14.5	58.2
80	.330	5.32	21.2	85.0
100	.400	6.45	25.8	103.0
120	.470	7.58	30.2	121.0
150	.570	9.20	36.7	147.0
200	.760	12.20	48.7	195.0

Formulas

Hydraulic Formulas

PSI = F/S	Fluid Pressure (PSI) = Force (lbs.) / Area (sq. in.)
A = δ*r ²	Cylinder area (sq. in.) = 3.1416 x Radius ² (in)
F = P*A	Cylinder force (lbs.) = Pressure (PSI) x Area (sq. in.)
V = (.3208*Q)/A	Cylinder speed (ft/sec) = 231 x GPM/(12 x 60 x Area)
HP = (Q*P)/1714	Hydraulic horsepower (Pressure [PSI] x GPM)/1714
T = (P*D)/2*δ	Fluid motor torque (in-lbs.) = Pressure [PSI] x disp. [cu in] / 6.2822
N = (231 * Q)/d	Fluid motor speed (RPM) = (231 x GPM) / disp (cu in.)
HP = T*N/63025	Fluid motor horsepower = Torque [in-lbs.] x RPM/63025
63025	
Q = (n*D)/231	Pump output flow (GPM) = Speed (RPM) x Displacement [cu in] / 231
ment [cu in] /231	

1 Gallon = 231 Cubic Inches

Input HP = PSI x GPM x .0007

Hydraulic Motor HP = Torque x RPM / 63025

Volume (in³)=Area (in²) x Stroke (in)

Flow (GPM) = Rod Speed (in/min) x Area (in²) / 231

Force (lbs.) = Pressure applied (PSI) x Piston Area (in²)

