

# PCB HARDWARE

**Wire Gauges  
Metric Drill Bits  
Metric Screw Sizes**

# Wire Gauges

	AWG	STRANDING	DIAMETER MILS	DIAMETER MM	CIRCULAR MIL AREA	WEIGHT LBS./ 1000 FT.	WEIGHT KG/KM	DC RESISTANCE OHMS/ 1000 FT.	DC RESISTANCE OHMS/KM
1	36	Solid	5.0	0.127	25.0	0.08	0.113	445.0	1460.0
2	36	7/44	6.0	0.152	28.0	0.09	0.126	371.0	1271.0
3	34	Solid	6.3	0.160	39.7	0.12	0.179	280.0	918.0
4	34	7/42	7.5	0.191	43.8	0.13	0.196	237.0	777.0
5	32	Solid	8.0	0.203	67.3	0.19	0.289	174.0	571.0
6	32	7/40	8.0	0.203	67.3	0.20	0.302	164.0	538.0
7	32	19/44	9.0	0.229	76.0	0.23	0.342	136.0	448.0
8	30	Solid	10.0	0.254	100.0	0.30	0.450	113.0	365.0
9	30	7/38	12.0	0.305	112.0	0.34	0.504	103.0	339.0
10	30	19/42	12.0	0.305	118.8	0.36	0.534	87.3	286.7
11	28	Solid	13.0	0.330	159.0	0.48	0.720	70.8	232.0
12	28	7/36	15.0	0.381	175.0	0.53	0.787	64.9	213.0
13	28	19/40	16.0	0.406	182.6	0.55	0.823	56.7	186.0
14	27	7/35	18.0	0.457	219.5	0.66	0.988	54.5	179.0
15	26	Solid	16.0	0.406	256.0	0.77	1.140	43.6	143.0
16	26	10/36	21.0	0.533	250.0	0.76	1.130	41.5	137.0
17	26	19/38	20.0	0.508	304.0	0.92	1.370	34.4	113.0
18	26	7/34	19.0	0.483	277.8	0.84	1.250	37.3	122.0
19	24	Solid	20.0	0.508	404.0	1.22	1.820	27.3	89.4
20	24	7/32	24.0	0.610	448.0	1.36	2.020	23.3	76.4
21	24	10/34	23.0	0.584	396.9	1.20	1.790	26.1	85.6
22	24	19/36	24.0	0.610	475.0	1.43	2.130	21.1	69.2
23	24	41/40	23.0	0.584	384.4	1.16	1.730	25.6	84.0
24	22	Solid	25.0	0.635	640.0	1.95	2.910	16.8	55.3
25	22	7/30	30.0	0.762	700.0	2.12	3.160	14.7	48.4
26	22	19/34	31.0	0.787	754.1	2.28	3.390	13.7	45.1
27	22	26/36	30.0	0.762	650.0	1.97	2.930	15.9	52.3
28	20	Solid	32.0	0.813	1020.0	3.10	4.610	10.5	34.6
29	20	7/28	38.0	0.965	1111.0	3.49	5.190	10.3	33.8
30	20	10/30	35.0	0.889	1000.0	3.03	4.050	10.3	33.9
31	20	19/32	37.0	0.940	1216.0	3.70	5.480	8.6	28.3
32	20	26/34	36.0	0.914	1031.9	3.12	4.640	10.0	33.0
33	20	41/36	36.0	0.914	1025.0	3.10	4.610	10.0	32.9
34	18	Solid	40.0	1.02	1620.0	4.92	7.320	6.6	21.8
35	18	7/26	48.0	1.22	1769.6	5.36	7.980	5.9	19.2
36	18	16/30	47.0	1.19	1600.0	4.84	7.200	8.5	21.3
37	18	16/30	49.0	1.24	1900.0	5.75	8.560	5.5	17.9
38	18	41/34	47.0	1.19	1627.3	4.92	7.320	6.4	20.9
39	18	65/36	47.0	1.19	1625.0	4.91	7.310	6.4	21.0
40	16	Solid	51.0	1.30	2580.0	7.81	11.600	4.2	13.7
41	16	7/24	60.0	1.52	2828.0	8.56	12.740	3.7	12.0
42	16	65/34	59.0	1.50	2579.9	7.81	11.620	4.0	13.2
43	16	26/30	59.0	1.50	2600.0	7.87	11.710	4.0	13.1
44	16	19/29	58.0	1.47	2426.3	7.35	10.940	4.3	14.0

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45	16	105/36	59.0	1.50	2625.0	7.95	11.830	4.0	13.1
46	14	Solid	64.0	1.63	4110.0	12.40	18.500	2.6	8.6
47	14	7/22	73.0	1.85	4480.0	13.56	20.180	2.3	7.6
48	14	19/27	73.0	1.85	3830.4	11.59	17.250	2.7	8.9
49	14	41/30	73.0	1.85	4100.0	12.40	18.450	2.5	8.3
50	14	105/34	73.0	1.85	4167.5	12.61	18.770	2.5	8.2
51	12	Solid	81.0	2.06	6530.0	19.80	29.500	1.7	5.4
52	12	7/20	96.0	2.44	7168.0	21.69	32.280	1.5	4.8
53	12	19/25	93.0	2.36	6087.6	18.43	27.430	1.7	5.6
54	12	65/30	95.0	2.41	6500.0	19.66	29.260	1.8	5.7
55	12	165/34	95.0	2.41	6548.9	19.82	29.490	1.6	5.2
56	10	Solid	102.0	2.59	1038.0	31.40	46.800	1.0	3.4
57	10	37/26	115.0	2.92	9353.6	28.31	41.130	1.1	3.6
58	10	49/27	116.0	2.95	9878.4	29.89	44.480	1.1	3.6
59	10	105/30	116.0	2.95	10530.0	31.76	47.26	1.0	3.2
60	8	49/25	147.0	3.73	15697.0	47.53	70.730	0.7	2.2
61	8	133/29	147.0	3.73	16984.0	51.42	76.520	0.6	2.0
62	8	655/36	147.0	3.73	16625.0	49.58	73.780	0.6	2.0
63	6	133/27	184.0	4.67	26813.0	81.14	120.740	0.5	1.5
64	6	259/30	184.0	4.67	25900.0	78.35	116.590	0.4	1.3
65	6	1050/36	184.0	4.67	26250.0	79.47	118.260	0.4	1.3
66	4	133/25	232.0	5.89	42613.0	129.01	191.980	0.2	0.8
67	4	259/27	232.0	5.89	52214.0	158.02	235.150	0.2	0.7
68	4	1666/36	232.0	5.89	41650.0	126.10	187.650	0.3	0.8
69	2	133/23	292.0	7.42	67936.0	205.62	305.980	0.2	0.5
70	2	259/26	292.0	7.42	65475.0	198.14	294.850	0.2	0.5
71	2	665/30	292.0	7.42	66500.0	201.16	299.350	0.2	0.5
72	2	2646/36	292.0	7.42	66150.0	200.28	298.040	0.2	0.5
73	1	163195.9	328.0	8.33	85133.0	257.60	383.340	0.1	0.4
74	1	172508.0	328.0	8.33	82984.0	251.20	373.810	0.1	0.4
75	1	817/30	328.0	8.33	81700.0	247.10	367.710	0.1	0.4
76	1	2109/34	328.0	8.33	83706.0	253.29	376.920	0.1	0.4
77	1/0	133/21	368.0	9.35	108036.0	327.05	486.680	0.1	0.3
78	1/0	259/24	368.0	9.35	104636.0	316.76	471.370	0.1	0.3
79	2/0	133/20	414.0	10.52	136192.0	412.17	613.350	0.1	0.3
80	2/0	259/23	414.0	10.52	132297.0	400.41	595.850	0.1	0.3
81	3/0	259/22	464.0	11.79	163195.0	501.70	746.580	0.1	0.2
82	3/0	427/24	464.0	11.79	172508.0	522.20	777.090	0.1	0.2
83	4/0	259/21	522.0	13.26	210386.0	638.88	950.720	0.0	0.2
84	4/0	427/23	522.0	13.26	218112.0	660.01	982.160	0.0	0.2

## Standard Metric Drill Bits

Metric	Inch Equiv.	Metric	Inch Equiv.	Metric	Inch Equiv.	Metric	Inch Equiv.
0.15	0.0059	1.90	0.0748	5.80	0.2283	10.80	0.4252
0.16	0.0063	1.95	0.0768	5.90	0.2323	11.00	0.4331
0.17	0.0067	2.00	0.0787	6.00	0.2362	11.20	0.4409
0.18	0.0071	2.05	0.0807	6.10	0.2402	11.50	0.4528
0.19	0.0075	2.10	0.0827	6.20	0.2441	11.80	0.4646
0.20	0.0079	2.15	0.0846	6.30	0.248	12.00	0.4724
0.22	0.0087	2.20	0.0866	6.40	0.252	12.20	0.4803
0.25	0.0098	2.25	0.0886	6.50	0.2559	12.50	0.4921
0.28	0.011	2.30	0.0906	6.60	0.2598	12.90	0.5039
0.30	0.0118	2.35	0.0925	6.70	0.2638	13.00	0.5118
0.32	0.0126	2.40	0.0945	6.80	0.2677	13.20	0.5197
0.35	0.0138	2.45	0.0965	6.90	0.2717	13.50	0.5315
0.38	0.015	2.50	0.0984	7.00	0.2756	13.80	0.5433
0.40	0.0157	2.60	0.1024	7.10	0.2795	14.00	0.5512
0.42	0.0165	2.70	0.1063	7.20	0.2835	14.25	0.561
0.45	0.0177	2.80	0.1102	7.30	0.2874	14.50	0.5709
0.48	0.0189	2.90	0.1142	7.40	0.2913	14.75	0.5807
0.50	0.0197	3.00	0.1181	7.50	0.2953	15.00	0.5906
0.55	0.0217	3.10	0.122	7.60	0.2992	15.25	0.6004
0.60	0.0236	3.20	0.126	7.70	0.3031	15.50	0.6102
0.65	0.0256	3.30	0.1299	7.80	0.3071	15.75	0.6201
0.70	0.0276	3.40	0.1339	7.90	0.311	16.00	0.6299
0.75	0.0295	3.50	0.1378	8.00	0.315	16.25	0.6398
0.80	0.0315	3.60	0.1417	8.10	0.3189	16.50	0.6496
0.85	0.0335	3.70	0.1457	8.20	0.3228	16.75	0.6594
0.90	0.0354	3.80	0.1496	8.30	0.3268	17.00	0.6693
0.95	0.0374	3.90	0.1535	8.40	0.3307	17.25	0.6791
1.00	0.0394	4.00	0.1575	8.50	0.3346	17.50	0.689
1.05	0.0413	4.10	0.1614	8.60	0.3386	18.00	0.7087
1.10	0.0433	4.20	0.1654	8.70	0.3425	18.50	0.7283
1.15	0.0453	4.30	0.1693	8.80	0.3465	19.00	0.748
1.20	0.0472	4.40	0.1732	8.90	0.3504	19.50	0.7677
1.25	0.0492	4.50	0.1772	9.00	0.3543	20.00	0.7874
1.30	0.0512	4.60	0.1811	9.10	0.3583	20.50	0.8071
1.35	0.0531	4.70	0.185	9.20	0.3622	21.00	0.8268
1.40	0.0551	4.80	0.189	9.30	0.3661	21.50	0.8465
1.45	0.0571	4.90	0.1929	9.40	0.3701	22.00	0.8661
1.50	0.0591	5.00	0.1969	9.50	0.374	22.50	0.8858
1.55	0.061	5.10	0.2008	9.60	0.378	23.00	0.9055
1.60	0.063	5.20	0.2047	9.70	0.3819	23.50	0.9252
1.65	0.065	5.30	0.2087	9.80	0.3858	24.00	0.9449
1.70	0.0669	5.40	0.2126	9.90	0.3898	24.50	0.9646
1.75	0.0689	5.50	0.2165	10.00	0.3937	25.00	0.9843
1.80	0.0709	5.60	0.2205	10.20	0.4016		
1.85	0.0728	5.70	0.2244	10.50	0.4134		

# Metric Screws

Metric Coarse Sizes					
Tap	Drill	Tap	Drill	Tap	Drill
M1 x .25	0.75	M1.1 x .25	0.85	M1.2 x .25	0.95
M1.4 x .3	1.1	M1.6 x .35	1.25	M1.7 x .35	1.3
M1.8 x .35	1.45	M2 x .4	1.6	M2.2 x .45	1.75
M2.5 x .45	2.05	M3 x .5	2.5	M3.5 x .6	2.9
M4 x .7	3.3	M4.5 x .75	3.7	M5 x .8	4.2
M6 x 1	5	M7 x 1	6	M8 x 1.25	6.8
M9 x 1.25	7.8	M10 x 1.5	8.5	M11 x 1.5	9.5
M12 x 1.75	10.2	M14 x 2	12	M16 x 2	14
M18 x 2.5	15.5	M20 x 2.5	17.5	M22 x 2.5	19.5
M24 x 3	21	M27 x 3	24	M30 x 3.5	26.5
M33 x 3.5	29.5	M36 x 4	32	M39 x 4	35

Metric Fine Sizes					
Tap	Drill	Tap	Drill	Tap	Drill
		M4 x .35	3.6	M4 x .5	3.5
M5 x .5	4.5	M6 x .5	5.5	M6 x .75	5.25
M7 x .75	6.25	M8 x .5	7	M8 x .75	7.25
M8 x 1	7.5	M9 x 1	8	M10 x .75	9.25
M10 x 1	9	M10 x 1.25	8.8	M11 x 1	10
M12 x .75	11.25	M12 x 1	11	M12 x 1.5	10.5
M14 x 1	13	M14 x 1.25	12.8	M14 x 1.5	12.5
M16 x 1	15	M16 x 1.5	14.5	M18 x 1	17
M18 x 2	16	M20 x 1	19	M20 x 1.5	18.5
M20 x 2	18	M22 x 1	21	M22 x 1.5	20.5
M22 x 2	20	M24 x 1.5	22.5	M24 x 2	22
M26 x 1.5	24.5	M27 x 1.5	25.5	M27 x 2	25
M28 x 1.5	26.5	M30 x 1.5	28.5	M30 x 2	28
M33 x 2	31	M36 x 3	33	M39 x 3	36