

The term "litz wire" is derived from the German word *litzendraht*, meaning "woven wire." Generally defined, it is a wire constructed of individually film-insulated wires bunched or braided together in a uniform pattern of twists and length of lay.

The multistrand configuration minimizes the power losses otherwise encountered in a solid conductor due to the "skin effect," or the tendency of radio frequency current to be concentrated at the surface of the conductor.

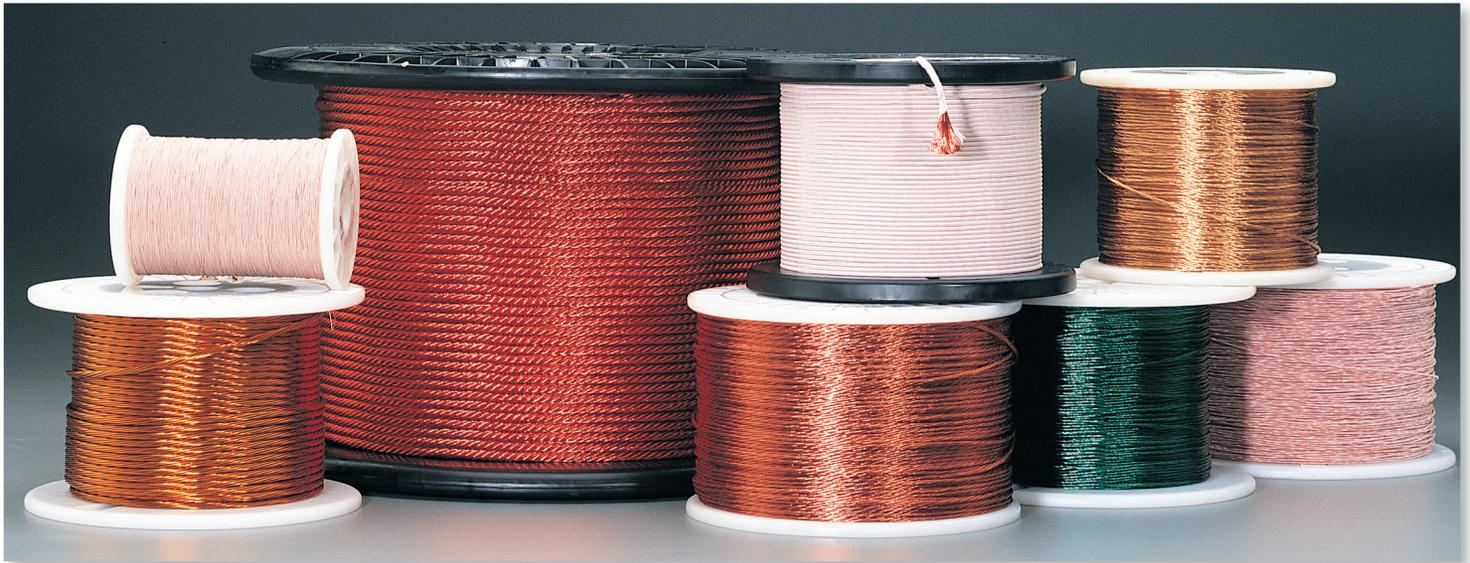
In order to counteract this effect, it is necessary to increase the amount of surface area without appreciably increasing the size of the conductor. It is also essential to position each individual strand in the litz construction in a uniform pattern, moving from the center to the outside and back in a given length.

Even properly constructed litz wires will exhibit some skin effect due to the limitations of stranding. Wires intended for higher frequency ranges require more strands of a finer gauge size than litz wires of equal cross-sectional area, but composed of fewer and larger strands.

Polyurethane and Polyurethane Nylon are the films most often used for insulating individual strands because of their low electrical losses and their solderability. Other insulations shown on pages 2 and 3 can also be used. Litz wires are generally further insulated with a single or double wrap or serving of a textile — typically nylon — but are also available unserved.

The data that follows covers a broad range of sizes but is not intended to represent all possible constructions available. Inquire as to particular litz wire constructions and allow us to provide you with wire to meet your specifications.

NUMBER OF STRANDS	SIZE (AWG)	CIRCULAR MILS	NEAREST AWG EQUIV. (CIR. MILS)	RESISTANCE (OHMS PER 1000 FT. AT 20°C)	UNSERVED						SERVED		
					SINGLE POLYURETHANE			HEAVY POLYURETHANE			SINGLE NYLON — SINGE POLY		
					MEAN O.D. (INCHES)	FEET PER POUND	POUNDS PER 1000 FT.	MEAN O.D. (INCHES)	FEET PER POUND	POUNDS PER 1000 FT.	MEAN O.D. (INCHES)	FEET PER POUND	POUNDS PER 1000 FT.
					NOMINAL			NOMINAL			NOMINAL		
3	34	119.07	29½	87.10	.014	2680	.373	.015	2627	.381	.016	2495	.401
4	34	158.76	28	65.33	.016	2010	.498	.017	1970	.508	.018	1889	.529
5	34	198.45	27	52.26	.018	1608	.622	.019	1576	.635	.020	1523	.657
6	34	238.14	26½	43.55	.020	1340	.746	.021	1313	.762	.022	1277	.783
7	34	277.83	25½	37.33	.021	1148	.871	.023	1126	.888	.024	1097	.912
8	34	317.52	25	32.66	.023	1005	.995	.025	985	1.02	.025	963	1.04
9	34	357.21	24½	29.03	.024	893	1.12	.026	876	1.14	.027	856	1.17
10	34	396.90	24	26.13	.026	804	1.24	.027	788	1.27	.028	772	1.30
15	34	595.35	22½	17.42	.031	536	1.87	.034	525	1.91	.034	517	1.93
20	34	793.80	21	13.07	.036	402	2.49	.039	394	2.54	.038	389	2.57
3	36	75.00	31	138.27	.011	4230	.236	.012	4151	.241	.013	3875	.258
4	36	100.00	30	103.70	.013	3173	.315	.014	3113	.321	.015	2941	.340
5	36	125.00	29	82.96	.015	2538	.394	.016	2491	.401	.017	2370	.422
6	36	150.00	28	69.13	.016	2115	.473	.017	2076	.482	.018	1982	.505
7	36	175.00	27½	59.26	.017	1813	.552	.018	1779	.562	.019	1706	.586
8	36	200.00	27	51.85	.018	1586	.631	.020	1557	.642	.021	1499	.667
9	36	225.00	26½	46.09	.019	1410	.709	.021	1384	.723	.022	1337	.748
10	36	250.00	26	41.48	.021	1269	.788	.022	1245	.803	.023	1208	.828
15	36	375.00	24½	27.65	.025	846	1.18	.027	830	1.21	.027	809	1.24
20	36	500.00	23	20.74	.029	635	1.58	.031	623	1.61	.031	611	1.64
25	36	625.00	22	16.59	.032	508	1.97	.035	498	2.01	.035	490	2.04
30	36	750.00	21½	13.83	.035	423	2.36	.038	415	2.41	.038	409	2.44
40	36	1000.00	20	10.37	.041	317	3.16	.044	311	3.22	.043	308	3.25
50	36	1250.00	19	8.30	.046	254	3.94	.049	249	4.02	.048	248	4.03
60	36	1500.00	18½	6.91	.050	212	4.72	.054	208	4.81	.052	208	4.81
3	38	48.00	33	216.07	.009	6748	.148	.010	6549	.135	.011	6080	.164
4	38	64.00	32	162.05	.010	5061	.198	.011	4912	.204	.013	4606	.217
5	38	80.00	31	129.64	.012	4048	.247	.013	3929	.255	.014	3716	.269
6	38	96.00	30	108.03	.013	3374	.296	.014	3274	.305	.015	3121	.320
7	38	112.00	29½	92.60	.014	2892	.346	.015	2807	.356	.016	2681	.373
8	38	128.00	29	81.03	.015	2530	.395	.016	2456	.407	.017	2363	.423
9	38	144.00	28½	72.02	.016	2249	.445	.017	2183	.458	.018	2105	.475
10	38	160.00	28	64.82	.016	2024	.494	.018	1965	.509	.019	1901	.526
15	38	240.00	26½	43.21	.020	1350	.741	.022	1310	.763	.022	1284	.779
20	38	320.00	25	32.41	.023	1012	.988	.025	982	1.02	.025	969	1.03
25	38	400.00	24	25.93	.026	810	1.24	.028	786	1.27	.028	778	1.29
30	38	480.00	23½	21.61	.029	675	1.48	.031	655	1.53	.031	649	1.54
40	38	640.00	22	16.21	.033	506	1.98	.036	491	2.04	.035	489	2.04
50	38	800.00	21	12.96	.037	405	2.47	.040	393	2.55	.039	392	2.55
60	38	960.00	20½	10.80	.040	337	2.97	.044	327	3.06	.043	328	3.05



NUMBER OF STRANDS	SIZE (AWG)	CIRCULAR MILS	NEAREST AWG EQUIV. (CIR. MILS)	RESISTANCE (OHMS PER 1000 FT. AT 20°C)	UNSERVED						SERVED		
					SINGLE POLYURETHANE			HEAVY POLYURETHANE			SINGLE NYLON — SINGE POLY		
					MEAN O.D. (INCHES)	FEET PER POUND	POUNDS PER 1000 FT.	MEAN O.D. (INCHES)	FEET PER POUND	POUNDS PER 1000 FT.	MEAN O.D. (INCHES)	FEET PER POUND	POUNDS PER 1000 FT.
					NOMINAL			NOMINAL			NOMINAL		
3	40	28.83	35½	359.73	.007	10650	.0939	.008	10449	.0957	.009	9276	.108
4	40	38.44	34	269.80	.008	7987	.125	.009	7837	.128	.010	7108	.141
5	40	48.05	33	215.84	.009	6390	.157	.010	6270	.160	.011	5757	.174
6	40	57.66	32½	179.87	.010	5325	.188	.011	5225	.191	.012	4824	.207
7	40	67.27	32	154.17	.011	4564	.219	.012	4478	.223	.013	4162	.240
8	40	76.88	31	134.90	.011	3994	.250	.012	3919	.255	.014	3662	.273
9	40	86.49	30½	119.91	.012	3550	.282	.013	3483	.287	.014	3273	.306
10	40	96.10	30	107.92	.013	3195	.313	.014	3135	.319	.015	2955	.338
15	40	144.15	28½	71.95	.016	2130	.470	.017	2090	.478	.018	1994	.502
20	40	192.20	27	53.96	.018	1597	.626	.020	1567	.638	.020	1508	.663
25	40	240.25	26	43.17	.020	1278	.783	.022	1254	.797	.022	1215	.823
30	40	288.30	25½	35.97	.022	1065	.939	.024	1045	.957	.024	1020	.980
40	40	384.40	24½	26.98	.026	799	1.25	.028	784	1.28	.028	767	1.30
50	40	480.50	23½	21.58	.029	639	1.57	.031	627	1.60	.031	615	1.63
60	40	576.60	22½	17.99	.031	532	1.88	.034	523	1.91	.034	513	1.95
75	40	720.75	21½	14.39	.035	426	2.35	.038	418	2.39	.037	412	2.43
100	40	961.00	20½	10.79	.040	319	3.14	.044	313	3.20	.043	310	3.23
125	40	1201.25	19½	8.63	.045	256	3.91	.049	251	3.98	.047	250	4.00
150	40	1441.50	18½	7.19	.050	213	4.70	.054	209	4.79	.052	209	4.78
175	40	1681.75	18	6.17	.054	183	5.46	.058	179	5.59	.056	180	5.56
3	41	23.52	36	441.00	.006	13495	.0741	.007	13228	.0756	.008	11551	.0866
4	41	31.36	35	330.75	.007	10122	.0990	.008	9921	.108	.009	8867	.113
5	41	39.20	34	264.60	.008	8097	.124	.009	7937	.126	.010	7198	.139
6	41	47.04	33	220.50	.009	6748	.148	.010	6614	.151	.011	6066	.165
7	41	54.88	32½	189.00	.010	5784	.173	.010	5669	.176	.012	5235	.191
8	41	62.72	32	156.38	.010	5061	.198	.011	4960	.202	.012	4600	.217
9	41	70.56	31½	147.00	.011	4498	.222	.012	4409	.227	.013	4111	.243
10	41	78.40	31	132.30	.011	4049	.247	.012	3968	.252	.014	3717	.269
15	41	117.60	29½	88.20	.014	2699	.371	.015	2646	.378	.016	2515	.398
20	41	156.80	28	66.15	.016	2024	.494	.018	1984	.504	.018	1899	.527
25	41	196.00	27	52.92	.018	1619	.618	.020	1587	.630	.020	1528	.654
30	41	235.20	26½	44.10	.020	1350	.741	.022	1323	.756	.022	1283	.779
40	41	313.60	25	33.08	.023	1012	.988	.025	992	1.01	.025	970	1.03
50	41	392.00	24	26.46	.025	810	1.24	.028	794	1.26	.028	778	1.29
60	41	470.40	23½	22.05	.028	675	1.48	.030	661	1.51	.030	649	1.54
75	41	588.00	22½	17.64	.031	540	1.85	.034	529	1.89	.033	521	1.92
100	41	784.00	21	13.23	.036	405	2.47	.039	397	2.52	.038	392	2.55
125	41	980.00	20	10.58	.040	342	3.09	.044	317	3.15	.042	315	3.17
150	41	1176.00	19½	8.82	.044	270	3.70	.048	265	3.77	.046	264	3.79
175	41	1372.00	18½	7.56	.047	231	4.33	.052	227	4.41	.050	226	4.42

NUMBER OF STRANDS	SIZE (AWG)	CIRCULAR MILS	NEAREST AWG EQUIV. (CIR. MILS)	RESISTANCE (OHMS PER 1000 FT. AT 20°C)	UNSERVED						SERVED		
					SINGLE POLYURETHANE			HEAVY POLYURETHANE			SINGLE NYLON – SINGE POLY		
					MEAN O.D. (INCHES)	FEET PER POUND	POUNDS PER 1000 FT.	MEAN O.D. (INCHES)	FEET PER POUND	POUNDS PER 1000 FT.	MEAN O.D. (INCHES)	FEET PER POUND	POUNDS PER 1000 FT.
					NOMINAL			NOMINAL			NOMINAL		
3	42	18.75	37½	553.00	.006	17129	.0584	.006	16750	.0597	.008	14354	.0697
4	42	25.00	36	414.75	.007	12847	.0778	.007	12563	.0796	.009	11048	.0905
5	42	31.25	35	3321.80	.007	10277	.0973	.008	10050	.0995	.009	8992	.111
6	42	37.50	34½	276.50	.008	8564	.117	.009	8375	.119	.010	7596	.132
7	42	43.75	33½	237.00	.009	7341	.136	.009	7179	.139	.011	6570	.152
8	42	50.00	33	207.38	.009	6423	.156	.010	6281	.159	.011	5794	.173
9	42	56.25	32½	184.33	.010	5710	.175	.010	5583	.179	.012	5168	.193
10	42	62.50	32	165.90	.010	5139	.195	.011	5025	.199	.012	4671	.214
15	42	93.75	30½	110.60	.013	3426	.292	.013	3350	.299	.015	3166	.316
20	42	125.00	29	82.95	.015	2569	.389	.016	2513	.398	.017	2399	.417
25	42	156.25	28	66.36	.016	2055	.487	.017	2010	.498	.018	1928	.519
30	42	187.50	27½	55.30	.018	1713	.584	.019	1675	.597	.020	1615	.619
40	42	250.00	26	41.48	.021	1285	.778	.022	1256	.796	.023	1223	.818
50	42	312.50	25	33.18	.023	1028	.973	.025	1005	.995	.025	985	1.02
60	42	375.00	24½	27.65	.025	856	1.17	.027	838	1.19	.027	822	1.22
75	42	468.75	23½	22.12	.028	685	1.46	.030	670	1.49	.030	659	1.52
100	42	625.00	22	16.59	.032	514	1.95	.035	503	1.99	.035	496	2.02
125	42	781.25	21	13.27	.036	411	2.43	.039	402	2.49	.038	398	2.51
150	42	937.50	20½	11.06	.040	343	2.92	.042	335	2.99	.042	333	3.00
175	42	1093.75	19½	9.48	.043	294	3.40	.046	287	3.48	.045	286	3.50
3	43	14.52	38½	714.33	.005	21533	.0464	.005	20964	.0477	.007	17614	.0568
4	43	19.36	37	535.75	.006	16150	.0619	.006	15723	.0636	.008	13598	.0735
5	43	24.20	36	428.60	.007	12920	.0774	.007	12579	.0795	.009	11072	.0903
6	43	29.04	35½	357.17	.007	10767	.0929	.008	10482	.0954	.009	9378	.107
10	43	48.40	33	214.30	.009	6460	.155	.010	6289	.159	.011	5814	.172
20	43	96.80	30	107.15	.013	3230	.310	.014	3145	.318	.015	2991	.334
30	43	145.20	28½	71.43	.016	2153	.464	.017	2096	.477	.018	2015	.496
60	43	290.40	25½	35.72	.022	1077	.929	.024	1048	.954	.025	1032	.969
100	43	484.00	23	21.43	.029	646	1.55	.031	629	1.59	.031	621	1.61
150	43	726.00	21½	14.29	.035	431	2.32	.038	419	2.39	.038	417	2.40
3	44	12.00	39	864.33	.004	27034	.0370	.005	26247	.0381	.007	21303	.0469
4	44	16.00	38	648.25	.005	20276	.0493	.006	19685	.0508	.007	16748	.0597
5	44	20.00	37	518.60	.006	16221	.0616	.007	15748	.0635	.008	13691	.0730
6	44	24.00	36	432.17	.006	13517	.0740	.007	13123	.0762	.008	11598	.0862
7	44	28.00	35½	370.43	.007	11586	.0863	.008	11249	.0889	.009	10057	.0994
8	44	32.00	35	324.13	.007	10138	.0986	.008	9843	.102	.009	8891	.112
9	44	36.00	34½	288.10	.008	9011	.111	.009	8749	.114	.010	7966	.126
10	44	40.00	34	259.30	.008	8110	.123	.009	7874	.127	.010	7218	.139
15	44	60.00	32½	172.87	.010	5407	.185	.011	5349	.191	.012	4910	.204
20	44	80.00	31	129.65	.011	4055	.247	.013	3937	.254	.014	3722	.269
25	44	100.00	30	103.72	.013	3244	.308	.014	3150	.317	.015	3007	.333
30	44	120.00	29	86.43	.014	2703	.370	.016	2625	.381	.016	2519	.397
40	44	160.00	28	64.83	.016	2028	.493	.018	1969	.508	.018	1904	.525
50	44	200.00	27	51.86	.018	1622	.617	.020	1575	.635	.020	1533	.652
60	44	240.00	26½	43.22	.020	1352	.740	.022	1312	.762	.022	1286	.778
75	44	300.00	25½	34.57	.022	1081	.925	.025	1050	.952	.024	1036	.965
100	44	400.00	24	25.93	.025	811	1.23	.029	787	1.27	.028	779	1.28
125	44	500.00	23	20.74	.028	649	1.54	.032	630	1.59	.031	624	1.60
150	44	600.00	22½	17.29	.031	541	1.85	.035	525	1.90	.033	522	1.92
175	44	700.00	21½	14.82	.034	463	2.16	.038	450	2.22	.036	448	2.23
3	45	9.30	40½	1116.00	.0040	34500	.0290	.0045	33033	.0303	.0060	26358	.0379
4	45	12.40	39	837.00	.0045	25875	.0386	.0050	24775	.0404	.0065	20803	.0481
5	45	15.50	38	669.60	.0050	20700	.0483	.0055	19820	.0505	.0070	17056	.0586
6	45	18.60	37½	558.00	.0055	17250	.0580	.0060	16517	.0605	.0075	14455	.0692
10	45	31.00	35	334.80	.0070	10350	.0966	.0080	9910	.101	.0095	9056	.110

NUMBER OF STRANDS	SIZE (AWG)	CIRCULAR MILS	NEAREST AWG EQUIV. (CIR. MILS)	RESISTANCE (OHMS PER 1000 FT. AT 20°C)	UNSERVED						SERVED		
					SINGLE POLYURETHANE			HEAVY POLYURETHANE			SINGLE NYLON — SINGE POLY		
					MEAN O.D. (INCHES)	FEET PER POUND	POUNDS PER 1000 FT.	MEAN O.D. (INCHES)	FEET PER POUND	POUNDS PER 1000 FT.	MEAN O.D. (INCHES)	FEET PER POUND	POUNDS PER 1000 FT.
					NOMINAL			NOMINAL			NOMINAL		
20	45	62.00	32	167.40	.010	5175	.193	.011	4955	.202	.012	4704	.213
30	45	93.00	30	111.60	.012	3450	.290	.014	3303	.303	.014	3188	.314
60	45	186.00	27½	55.80	.017	1725	.580	.019	1652	.605	.019	1627	.614
100	45	310.00	25	33.48	.022	1035	.966	.025	991	1.01	.024	992	1.01
150	45	465.00	23½	22.32	.027	690	1.45	.030	661	1.51	.029	664	1.51
3	46	7.41	41	1402.23	.0035	43367	.0231	.0040	41267	.0242	.0055	31224	.0320
4	46	9.88	40	1051.75	.0040	32525	.0307	.0045	30950	.0323	.0060	24686	.0405
5	46	12.35	39	841.40	.0045	26020	.0384	.0050	24760	.0404	.0065	20842	.0480
6	46	14.82	38½	701.16	.0050	21683	.0461	.0055	20633	.0485	.0070	17780	.0562
7	46	17.29	37½	601.00	.0055	18586	.0538	.0060	17686	.0565	.0075	15500	.0645
8	46	19.76	37	525.87	.0055	16263	.0615	.0065	15475	.0646	.0080	13709	.0729
9	46	22.23	36½	467.40	.0060	14456	.0692	.0070	13756	.0727	.0080	12316	.0812
10	46	24.70	36	420.70	.0065	13010	.0769	.0075	12380	.0808	.0085	11188	.0894
15	46	37.05	34	280.46	.0080	8673	.115	.0090	8253	.121	.010	7684	.130
20	46	49.40	33	210.35	.0090	6505	.154	.010	6190	.162	.011	5861	.171
25	46	61.75	32	168.28	.010	5204	.192	.011	4952	.202	.012	4730	.211
30	46	74.10	31½	140.22	.011	4337	.231	.012	4127	.242	.013	3972	.252
40	46	98.80	30	105.18	.013	3253	.307	.014	3095	.323	.015	3016	.332
50	46	123.50	29	84.14	.014	2602	.384	.016	2476	.404	.016	2430	.412
60	46	148.20	28½	70.12	.016	2168	.461	.018	2063	.485	.018	2031	.492
75	46	185.25	27½	56.09	.017	1735	.576	.020	1651	.606	.020	1634	.612
100	46	247.00	26	42.07	.020	1301	.769	.023	1238	.808	.022	1239	.807
125	46	308.75	25	33.66	.022	1041	.961	.025	990	1.01	.025	997	1.00
150	46	370.50	24½	28.05	.025	867	1.15	.028	825	1.21	.027	832	1.20
175	46	432.25	23½	24.04	.026	743	1.35	.030	707	1.41	.029	714	1.40
3	47	5.88	42½	1763.67	.0030	54100	.0185	.0035	51533	.0194	.0055	35976	.0278
4	47	7.84	41	1322.75	.0035	40575	.0246	.0040	38650	.0259	.0060	30228	.0331
5	47	9.80	40	1058.20	.0040	32460	.0308	.0045	30920	.0323	.0065	25188	.0397
6	47	11.76	39	881.83	.0045	27050	.0370	.0050	25767	.0388	.0065	21558	.0464
10	47	19.60	37	529.10	.0060	16230	.0616	.0065	15460	.0647	.0080	13681	.0731
20	47	39.20	34	264.55	.0080	8115	.123	.0090	7730	.129	.010	7214	.139
30	47	58.80	32½	176.37	.010	5410	.185	.011	5153	.194	.012	4896	.204
60	47	117.60	29½	88.18	.014	2705	.370	.016	2577	.388	.016	2521	.397
100	47	196.00	27	52.91	.018	1623	.616	.021	1546	.647	.021	1532	.653
150	47	294.00	25½	35.27	.022	1082	.924	.025	1031	.970	.025	1037	.964
3	48	4.62	43	2248.33	.0030	68333	.0146	.0030	65567	.0153	.0050	43938	.0228
4	48	6.16	42	1686.25	.0030	51250	.0195	.0035	49175	.0203	.0055	34901	.0287
5	48	7.70	41	1349.00	.0035	41000	.0244	.0040	39340	.0254	.0060	29561	.0338
6	48	9.24	40	1124.16	.0040	34167	.0293	.0045	32783	.0305	.0060	26069	.0384
7	48	10.78	39½	963.57	.0045	29286	.0341	.0045	28100	.0356	.0065	22989	.0435
8	48	12.32	39	843.13	.0045	25625	.0390	.0050	24588	.0407	.0070	20525	.0487
9	48	13.86	38½	749.44	.0050	22778	.0439	.0055	21856	.0458	.0070	18564	.0539
10	48	15.40	38	674.50	.0050	20500	.0488	.0060	19670	.0508	.0075	16892	.0592
15	48	23.10	36½	449.66	.0065	13667	.0732	.0070	13113	.0763	.0085	11685	.0856
20	48	30.80	35	337.25	.0070	10250	.0976	.0080	9835	.102	.0095	8969	.111
25	48	38.50	34	269.80	.0080	8200	.122	.0090	7868	.127	.010	7282	.137
30	48	46.20	33½	224.83	.0090	6833	.146	.010	6557	.153	.011	6136	.163
40	48	61.60	32	168.63	.010	5125	.195	.011	4918	.203	.012	4659	.215
50	48	77.00	31	134.90	.011	4100	.244	.013	3934	.254	.014	3760	.266
60	48	92.40	30½	112.42	.013	3417	.293	.014	3278	.305	.015	3157	.317
75	48	115.50	29½	89.93	.014	2733	.366	.016	2623	.381	.016	2547	.393
100	48	154.00	28	67.45	.016	2050	.488	.018	1967	.508	.018	1923	.520
125	48	192.50	27	53.96	.018	1640	.610	.020	1574	.635	.020	1548	.646
150	48	231.00	26½	44.96	.020	1367	.732	.022	1311	.763	.022	1297	.771
175	48	269.50	25½	38.54	.021	1171	.854	.024	1124	.890	.024	1118	.894