Toroid Inductance Chart
David Smith G4COE

To save a little time from calculating and experimenting when winding toroid cores here a chart of the most commonly used cores, simply pick the inductance required and read the required number of turns for the selected core. To keep things easy we'll stick to three most common cores, T37, T50 and T68 and we'll use the -2 and 6 mix, these figures are for single layer windings only, and the windings should cover the entire core evenly.

Turns - Inductance in µH

Turns	Red T37-2	Yellow T37-6	Red T50-2	Yellow T50-6	Red T68-2	Yellow T68-6
1	.004	.003	.005	.004	.006	.005
2	.016	.012	.020	.016	.023	.019
3	.036	.027	.044	.036	.051	.042
4	.064	.048	.078	.064	.091	.075
5	.100	.075	.120	.100	.140	0.12
6	.140	.110	.180	.140	.210	0.17
7	.196	.150	.240	.196	.280	0.23
8	.256	.190	.310	.256	.360	0.30
9	.324	.240	.400	.324	.460	0.38
10	.400	.300	.490	.400	.750	0.47
11	.484	.360	.590	.484	.690	0.57
12	.576	.430	.710	.576	.820	0.68
13	.676	.500	.830	.676	.960	0.79
14	.784	.590	.960	.784	1.10	0.92
15	.900	.680	1.10	.900	1.30	1.10
16	1.02	.770	1.30	1.02	1.50	1.20
17	1.16	.870	1.40	1.16	1.60	1.40
18	1.30	.970	1.60	1.30	1.80	1.50
19	1.40	1.10	1.80	1.40	2.10	1.70
20	1.60	1.20	2.00	1.60	2.30	1.90
21	1.80	1.30	2.20	1.80	2.50	2.10
22	1.90	1.50	2.40	1.90	2.80	2.30
23	2.10	1.60	2.60	2.10	3.00	2.50
24	2.30	1.70	3.10	2.30	3.30	2.70
25	2.50	1.90	3.10	2.50	3.60	3.40

Turns	Red T37-2	Yellow T37-6	Red T50-2	Yellow T50-6	Red T68-2	Yellow T68-6
26	2.70	2.00	3.30	2.70	3.90	3.20
27	2.90	2.20	3.60	2.90	4.20	3.40
28	3.10	2.40	3.80	3.10	4.50	3.70
29	3.40	2.50	4.10	3.40	4.80	4.00
30	3.60	2.70	4.40	3.60	5.10	4.20
31	3.80	2.90	4.70	3.80	5.50	4.50
32	4.10	3.10	5.00	4.10	5.80	4.80
33	4.40	3.30	5.30	4.40	6.20	5.10
34	4.60	3.50	5.70	4.60	6.60	5.40
35			6.00	4.90	7.00	5.80
36			6.40	5.20	7.40	6.10
37			6.70	5.50	7.80	6.40
38			7.10	5.80	8.20	6.80
39			7.50	6.10	8.70	7.10
40			7.80	6.40	9.10	7.50
41			8.20	6.70	9.60	7.90
42			8.60	7.10	10.0	8.30
43			9.10	7.40	11.0	8.70
44			9.50	7.70	11.0	9.10
45			9.90	7.90	12.0	9.50
46			10.0	8.50	12.0	9.90
47			11.0	8.80	13.0	10.0
48			11.0	9.20	13.0	11.0
49			12.0	9.60	14.0	11.0
50			12.0	10.0	14.0	12.0

For those interested in equations (√ L uH / AL value) x 100 will give us the turns required. To find the inductance of a pre-wound core, L uH = (turns/100)2 x AL value of the core.

This list could be expanded to cover many cores and greater winding ranges but would probably many pages of Sprat, this being pointless because many would not be used generally and any inductances greater than the range given above could be calculated with the above formula.

Inductance in µH - Turns

µH	Red T37-2	Yellow T37-6	Red T50-2	Yellow T50-6	Red T68-2	Yellow T68-6
1	16	18	14	15	13	15
2	22	26	20	21	19	21
3	27	31	25	25	23	25
4	32	36	28	29	26	29
5	35	41	32	33	30	33
6	39	45	35	36	32	36
7	42	48	38	39	35	39
8	45	52	40	42	37	41
9	47	55	43	44	40	44
10	50	58	45	47	42	46
11	52	60	47	49	44	48
12	55	63	49	51	46	51
13	57	66	51	53	48	53
14	59	68	53	55	50	55
15	61	71	55	57	51	56
16	63	73	57	59	53	58
17	65	75	59	61	55	60
18	67	77	61	62	56	62
19	69	79	62	64	58	64
20	71	81	64	66	59	65
21			65	67	61	67
22			67	69	62	68
23			68	71	64	70
24			70	72	65	71
25			71	74	66	73

µH	Red T37-2	Yellow T37-6	Red T50-2	Yellow T50-6	Red T68-2	Yellow T68-6
26			73	75	68	74
27			74	77	69	76
28			76	78	70	77
29			77	79	71	79
30			78	80	73	80
31			79	82	74	81
32			80	83	75	83
33			82	85	76	84
34			83	86	77	85
35			84	87	78	86
36			86	88	79	88
37			87	89	80	89
38			88	91	82	90
39			89	92	83	91
40			90	93	84	92
41			91	94	85	93
42			92	96	86	95
43			94	97	87	96
44			95	98	88	97
45			96	99	89	98
46			97	100	90	99
47			98	101	91	100
48			99	102	92	101
49			100	103	93	102
50			101	104	94	103