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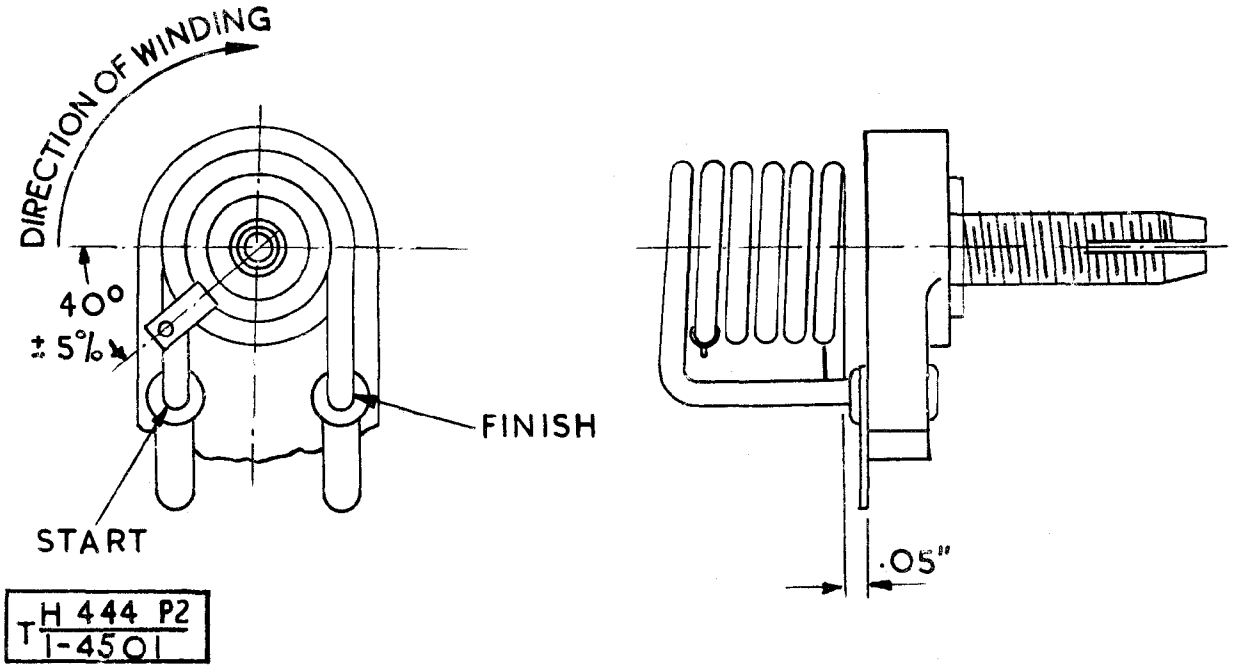
STATION, RADIO, C42, NO 1

TECHNICAL HANDBOOK - BASE REPAIRS

This EMER contains coil winding and testing data only. All other information necessary for Base Repairs is contained in Tels H 444 Part 1, Issue 3.

Fig No	Coil No	Designation	Cat No
4501	L1	Transformer, radio frequency	Z1/5950-99-949-0647
4502	L2	Transformer, radio frequency	Z1/5950-99-949-0678
4503	L3	Transformer, radio frequency	Z1/5950-99-949-0647
4504	L4	Transformer, radio frequency	Z1/5950-99-949-0646
4527	TR9	Transformer, intermediate frequency	Z1/5950-99-949-0780
4505	L9	Inductor, radio frequency	Z1/5950-99-949-0882
4506	L10	Transformer, radio frequency	Z1/5950-99-949-0611
4507	L11	Inductor, radio frequency	Z1/5950-99-949-0993
4508	L12	Transformer, radio frequency	Z1/5950-99-949-0662
4505	L13	Inductor, radio frequency	Z1/5950-99-949-0882
4507	L14	Inductor, radio frequency	Z1/5950-99-949-0982
4509	L15	Transformer, radio frequency	Z1/5950-99-949-0610
4505	L17	Inductor, radio frequency	Z1/5950-99-949-0882
4507	L18	Suppressor, parasitic	Z1/5950-99-949-0614
4510	L16	Inductor, radio frequency	Z1/5950-99-949-0724
4511	L21	Inductor, radio frequency	Z1/5950-99-949-0723
4512	L22	Inductor, radio frequency	Z1/5950-99-949-0725
4513	L23	Inductor, radio frequency	Z1/5950-99-949-0830
4505	L28	Inductor, radio frequency	Z1/5950-99-949-0882
4524	TR6	Transformer, radio frequency	Z1/5950-99-949-0781
4525	TR7	Transformer, radio frequency	Z1/5950-99-949-0783
4528	TR10	Transformer, radio frequency	Z1/5950-99-949-0784
4529	TR11	Transformer, radio frequency	Z1/5950-99-949-0782
4514	L29	Inductor, radio frequency	Z1/5950-99-949-0728
4515	L32	Inductor, radio frequency	Z1/5950-99-949-0722
4516	L33	Inductor, radio frequency	Z1/5950-99-949-0726
4517	L34	Inductor, radio frequency	Z1/5950-99-949-0727
4518	L35	Inductor, radio frequency	Z1/5950-99-949-0721
4526	TR8	Transformer, intermediate frequency	Z1/5950-99-949-0885
4505	L36	Inductor, radio frequency	Z1/5950-99-949-0882
4505	L37	Inductor, radio frequency	Z1/5950-99-949-0882
4505	L38	Inductor, radio frequency	Z1/5950-99-949-0882
4520	TR1	Transformer, a.f., plate coupling type	Z1/5950-99-949-0617
4507	L41	Inductor, radio frequency	Z1/5950-99-949-0993
4530	TR12	Transformer, radio frequency	Z1/5950-99-949-0594
4523	TR4	Transformer, a.f. input type	Z1/5950-99-949-0617
4522	TR5	Transformer, a.f. input type	Z1/5950-99-911-0989
4520	TR2	Transformer, a.f., plate coupling type	Z1/5950-99-911-0868
4521	TR3	Transformer, a.f., input type	Z1/5950-99-911-0859
4519	L39	Inductor, radio frequency, fixed	Z1/5950-99-911-0994

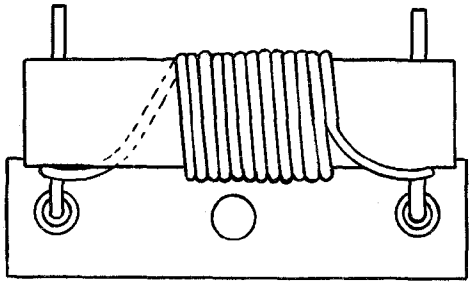
Table 4501 - Index to coil winding and testing data

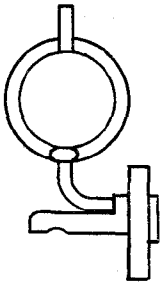


Winding: 5.1/2 turns of No 16 S.W.G. silver plated copper wire, with tap at position indicated.
Coil to be 31/64 in. ±1/64 in. long measured to outside of end turns parallel to axis. Turns to be evenly spaced.
A .010 in. feeler gauge to pass between adjacent turns and between tapping strip and adjacent turns.

Fig 4501 - Coil L1 winding data

L2

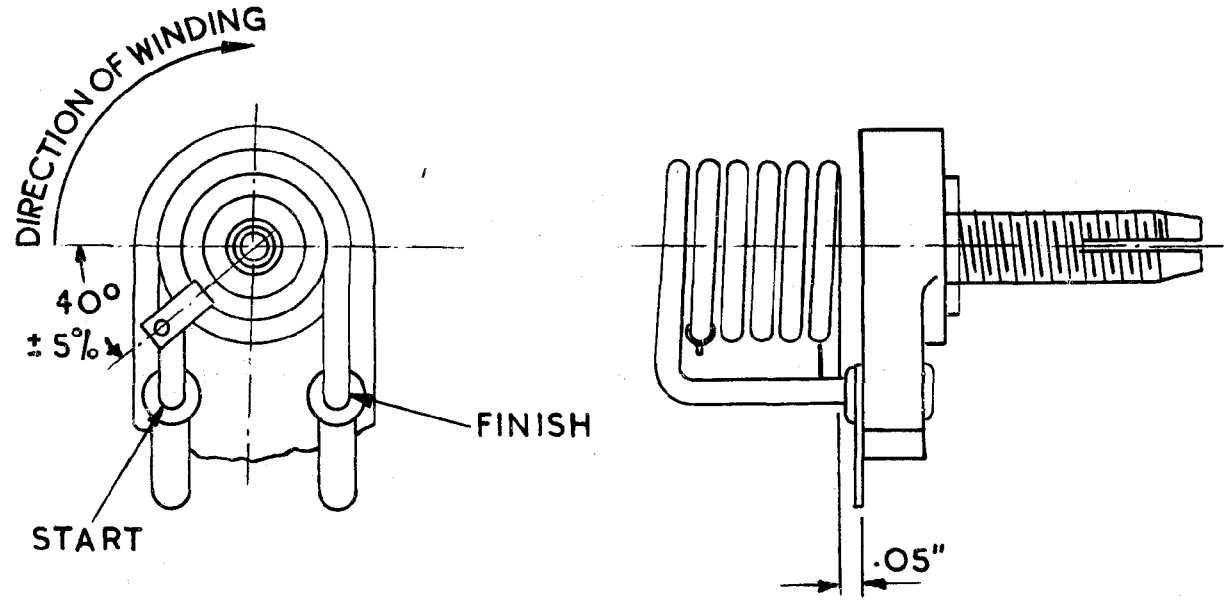




T H444 P2
1-4502

Winding: 15 turns of No 20 S.W.G. synthetic enamelled covered copper wire, close wound centrally on former.

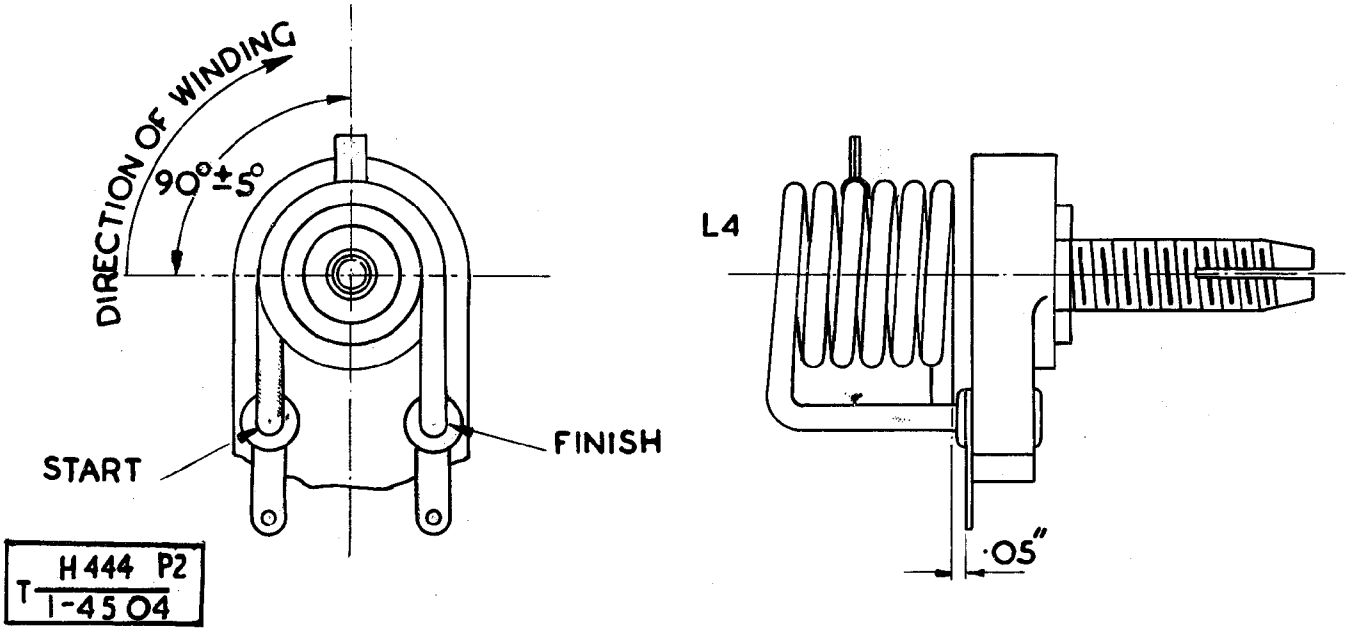
Fig 4502 - L2 coil winding data



T H 444 P2
1-4503

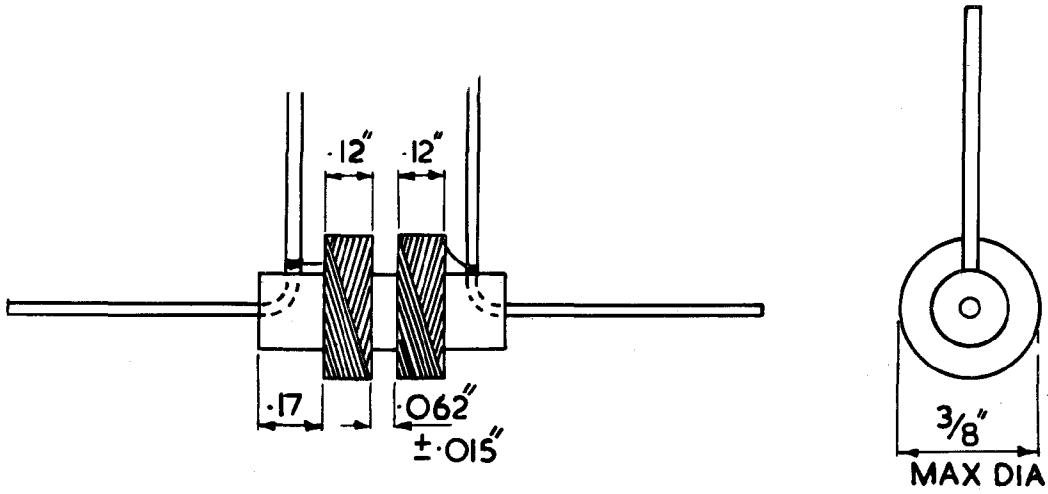
Winding: 5.1/2 turns of No 16 S.W.G. silver plated, copper wire, with tap at position indicated.
Coils to be 31/64 in. ±1/64 in. long measured to outside of end turns parallel to axis. Turns to be evenly spaced.
A .010 in. feeler gauge to pass between adjacent turns and between tapping strip and adjacent turns.

Fig 4503 - L3 coil winding data



Winding: 5.1/2 turns of No 16 S.W.G. silver plated copper wire with tap at position indicated.
Coil to be 31/64 in. long ±1/64 in. measured to outside of end turns parallel to axis. Turns to be evenly spaced.
A .010 in. feeler gauge to pass between adjacent turns and between tapping strip and adjacent turns.

Fig 4504 - L4 coil winding data

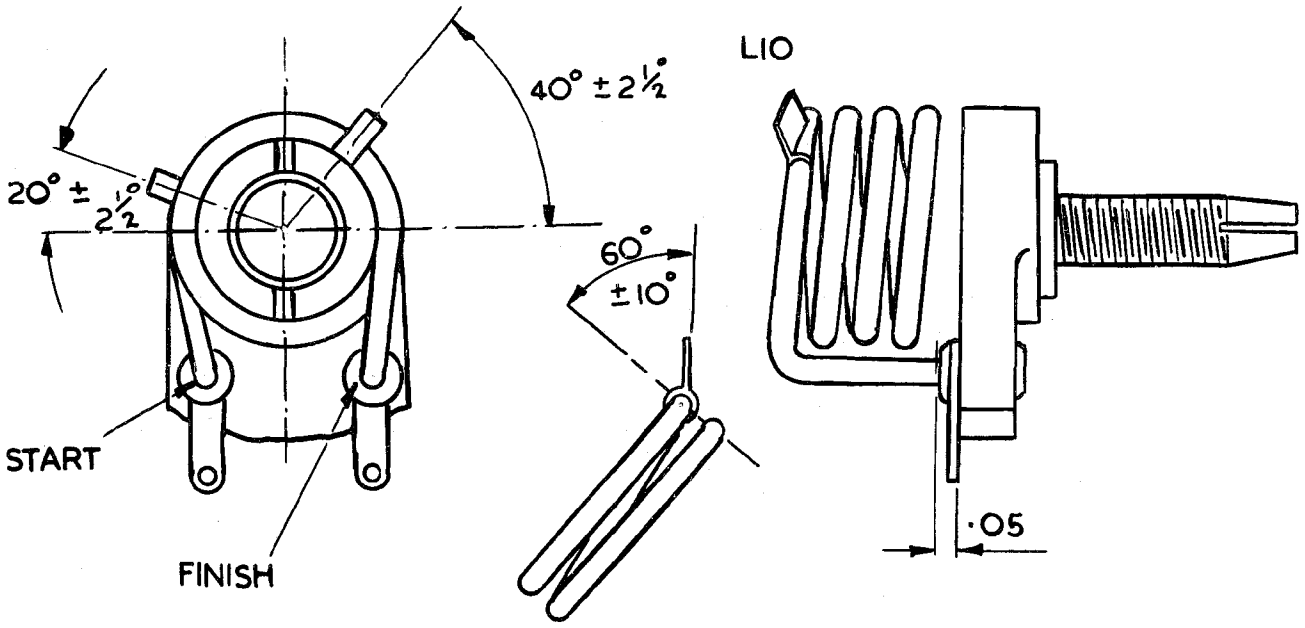


T H 444 P2 / 1-4505

Winding: Two sections continuously wound each of 42 turns No 32 S.W.G. enamelled single artificial silk covered copper wire, 2 wave .12 in. pitch.

Test data: Inductance: 25μA ±20% at 1000c/s
D.C. resistance: 0.5Ω min. 0.63Ω max.

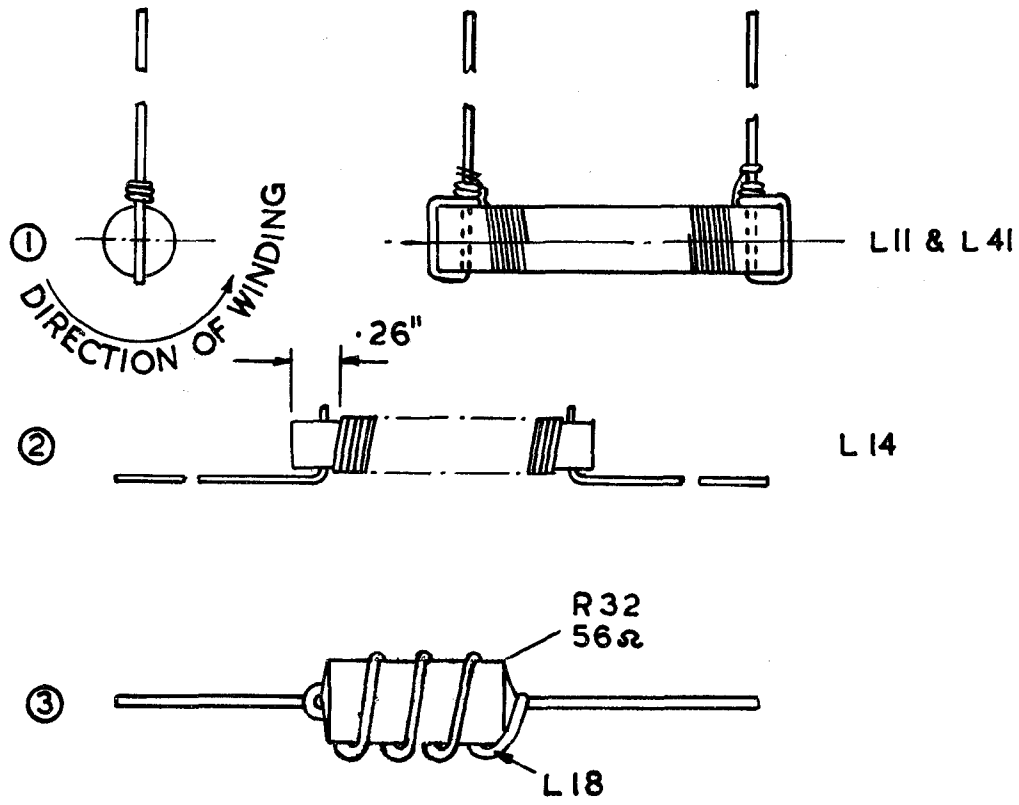
Fig 4505 - L9, 13, 17, 28, 36, 37, 38 coil winding data



T H444 P2
1-4506

Winding: 3.3/4 turns of No 16 S.W.G. silver plated copper wire, with taps at positions indicated.
Coil to be .305 to .336 in. long measured to outside of end turns parallel to axis. Turns to be evenly spaced.
A .010 in. feeler gauge to pass between adjacent turns and between tapping strips and adjacent turns.

Fig 4506 - L10 coil winding data



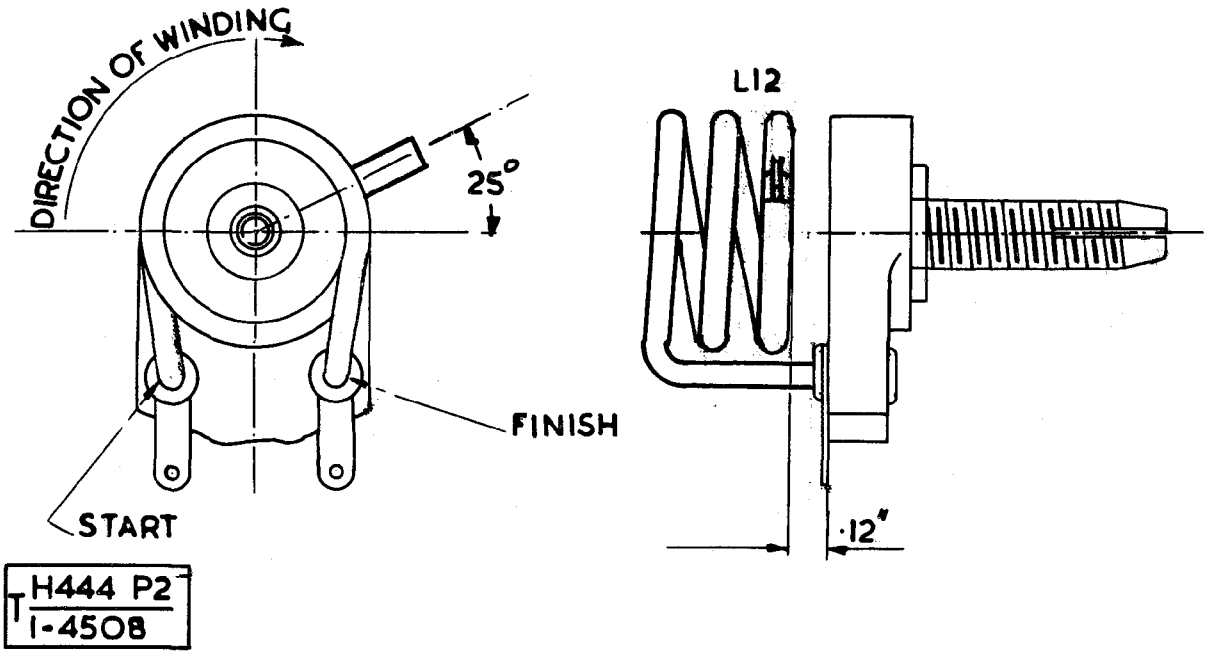
T H444 P2
1-4507

Winding L11 and L41: 94 turns close wound 38 S.W.G. enamelled copper wire.

Winding L14: 60 turns close wound 27 S.W.G. enamelled copper wire.

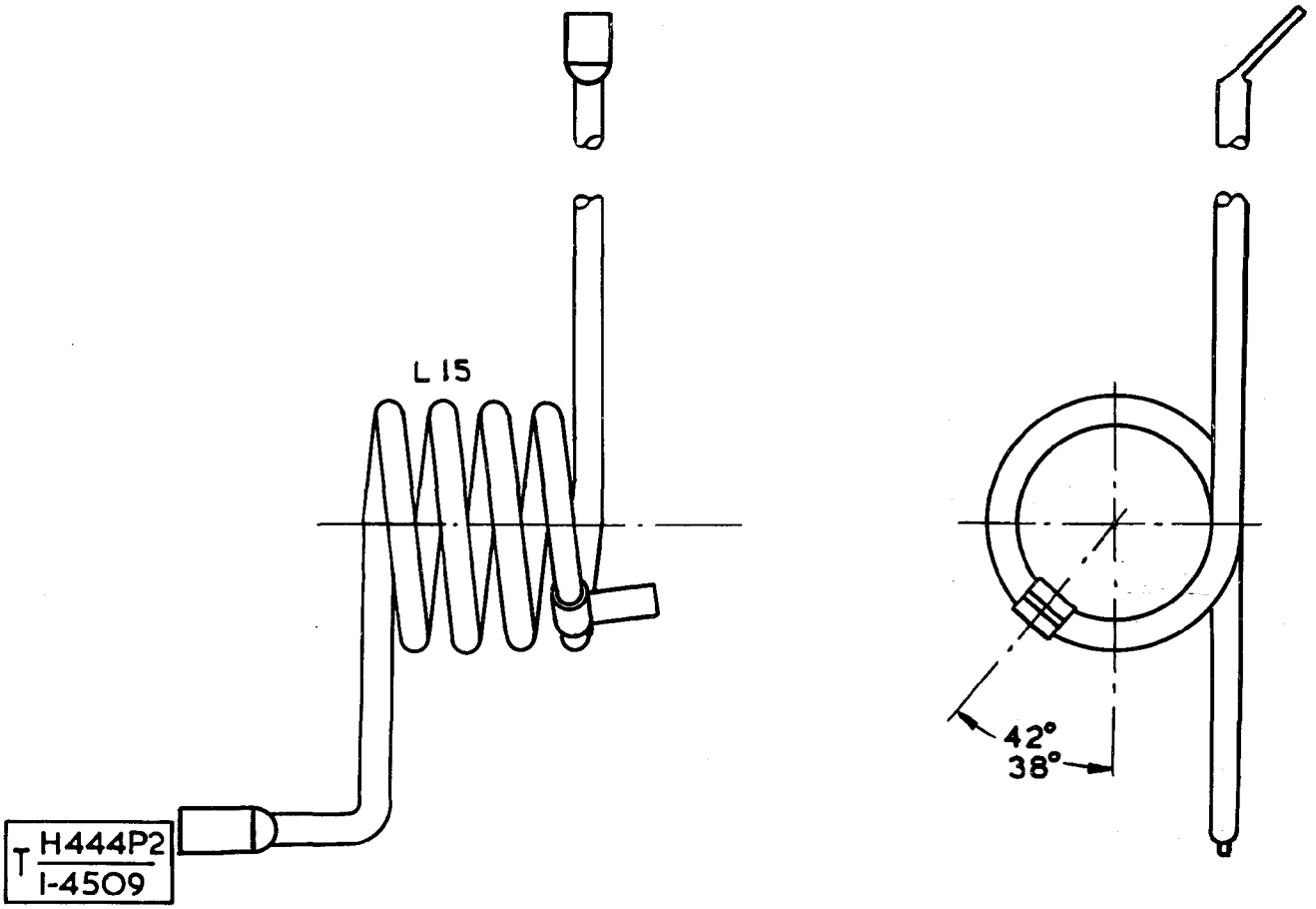
Winding L18: 3.1/2 turns 22 S.W.G. tinned copper wire wound over 56Ω, 1/2W resistor.

Fig 4507 - L11, 14, 18, 41 coil winding data



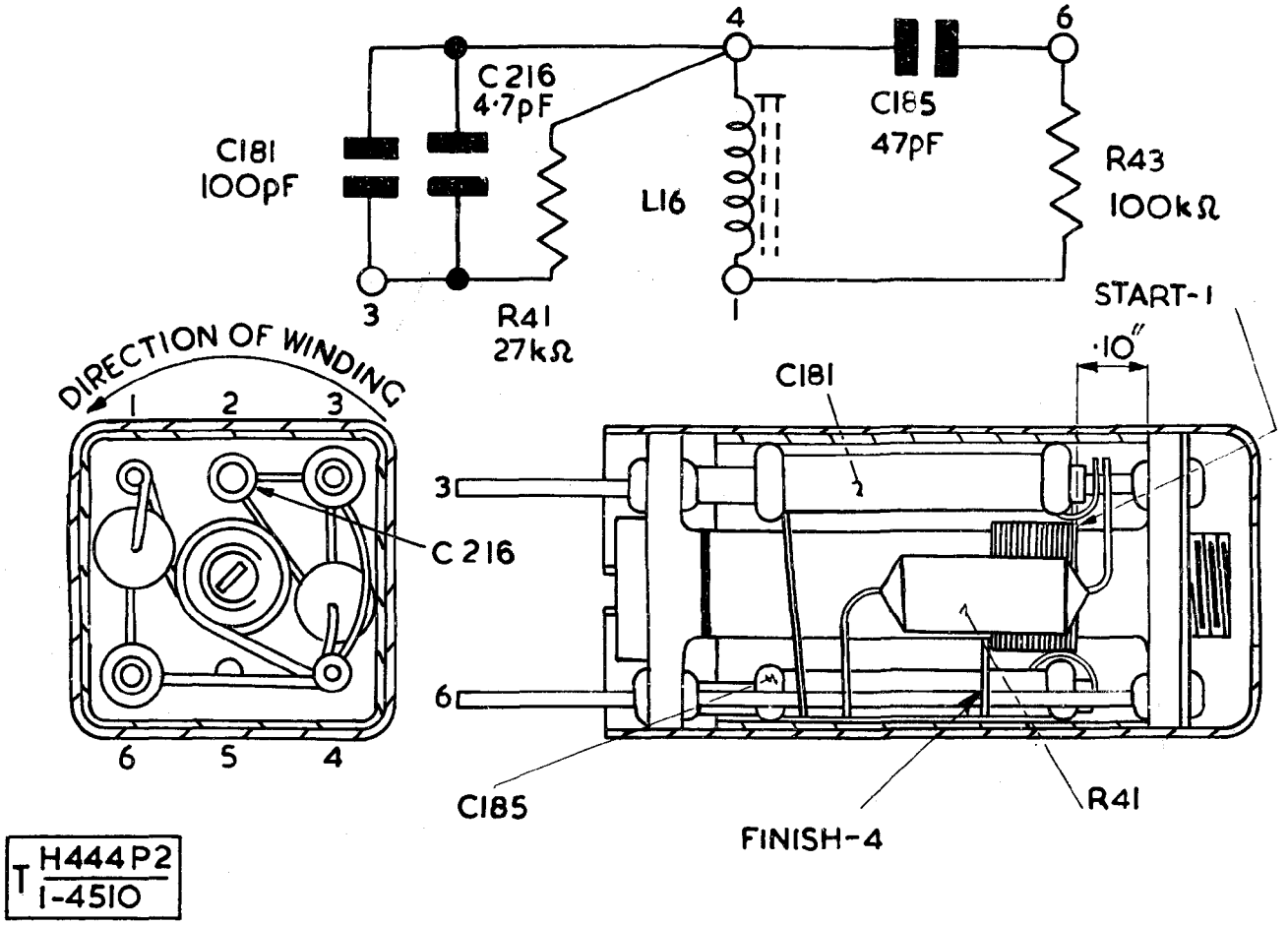
Winding: 2.3/4 turns of No 16 S.W.G. silver plated copper wire.
Coil to be .215 to .246 in. long measured to outside of end turns parallel to axis. Turns to be evenly spaced.
A .010 in. feeler gauge to pass between adjacent turns.

Fig 4508 - L12 coil winding data



Winding: 3.1/4 turns of No 16 S.W.G. silver plated copper wire with tap at position indicated.
Coil to be .225 to .246 in. long measured to outside of end turns parallel to axis.
Turns to be evenly spaced and final turn to be pulled out so that tapping clip just clears adjacent turn.

Fig 4509 - L15 coil winding data

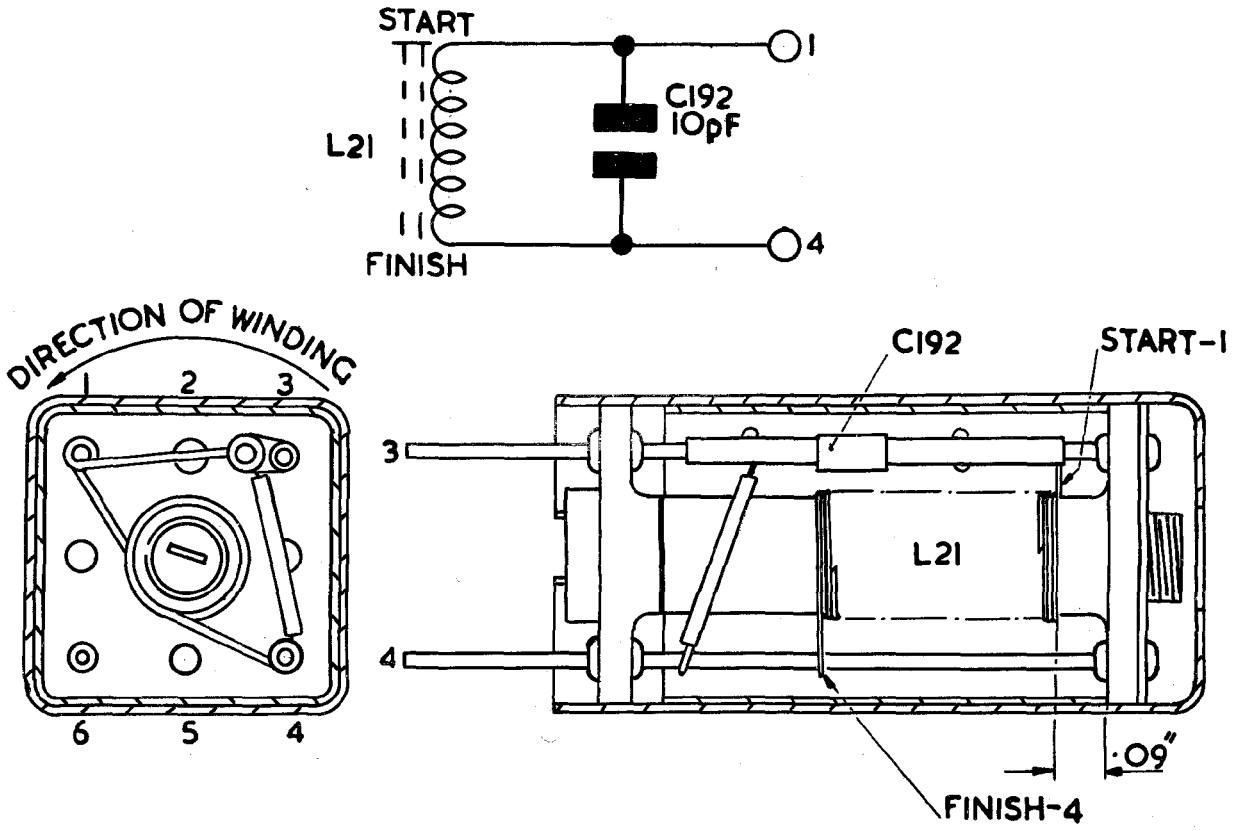


Winding: 23 turns of 5/46 Fortisan enamelled single artificial silk covered copper wire space wound at 85 t.p.i.

Test data: On Meter, circuit magnification No 1 -

	L μH	F Mc/s	C pF	Q
Less core and can:	2.96	4.61	400	80
Less can with core project 1/4 in. over top:	7.0	6.0	100	150

Fig 4510 - L16 coil winding data



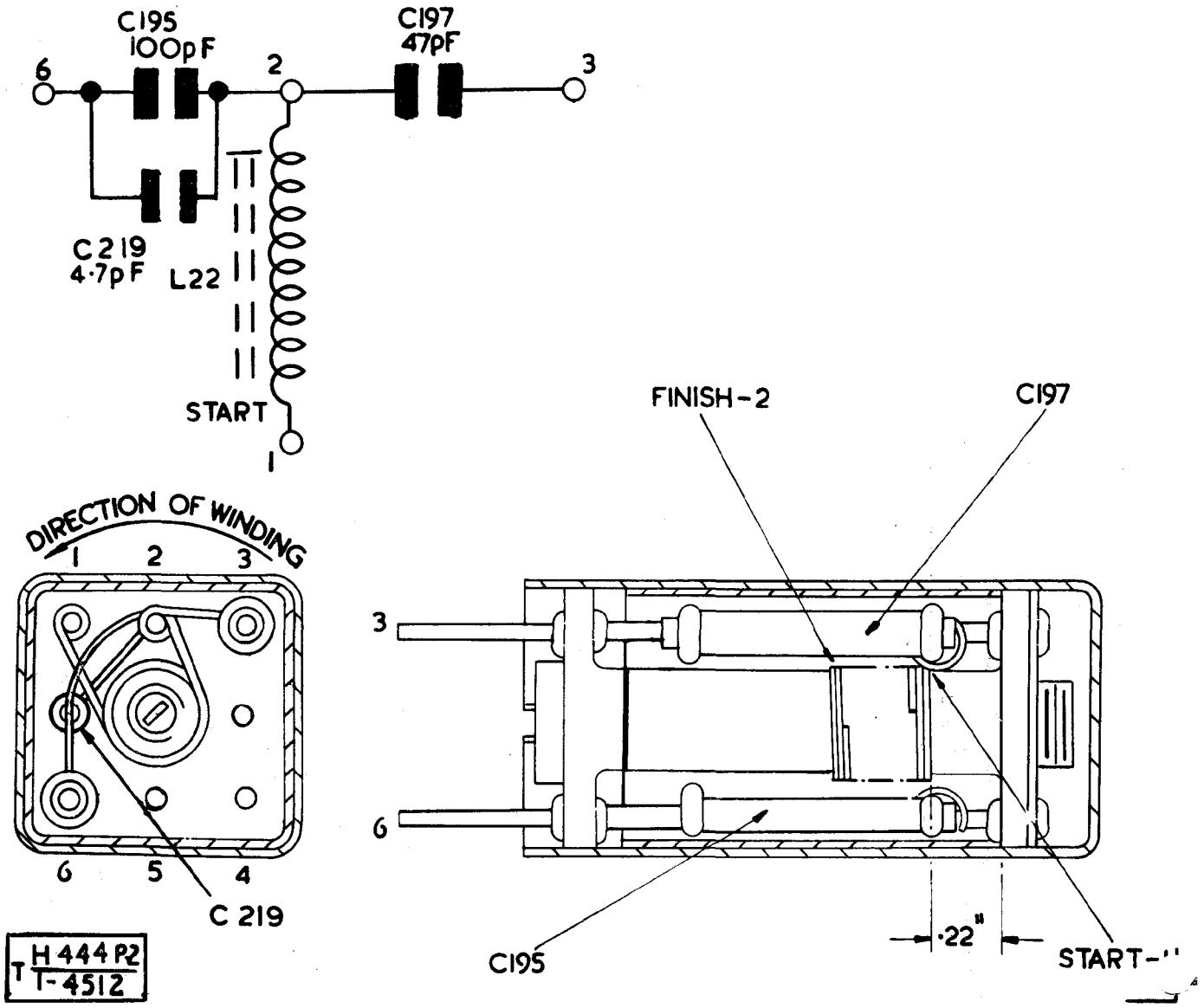
T H 444 P2
1-4511

Winding: 53 turns of No 32 S.W.G. enamelled copper wire, close wound.

Test data: On Meter, circuit magnification No 1 -

	L μH	F Mc/s	C pF	Q
Less core and can:	8.5	2.73	400	72
Less can with core projecting 1/4 in. over top:	14.4	6.0	67	87

Fig 4511 - L21 coil winding data

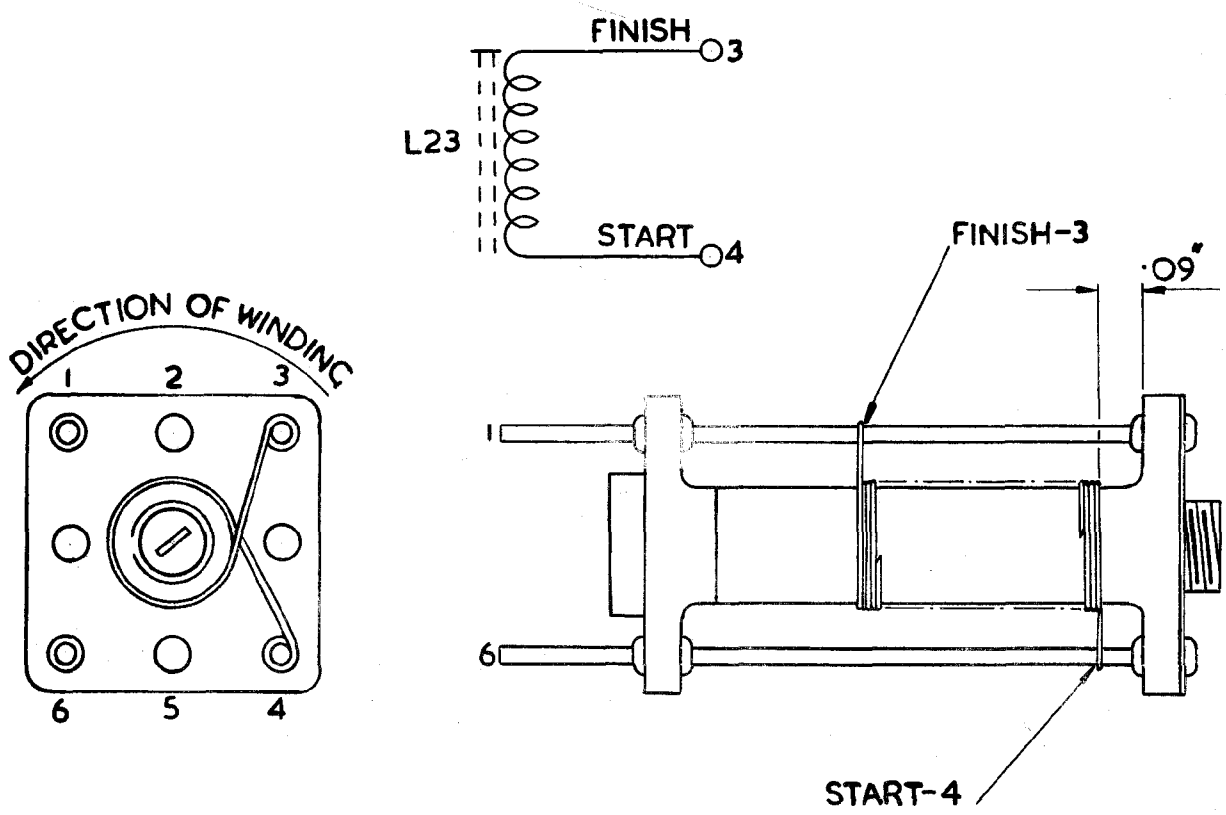


Winding: 24.1/2 turns of 5/46 enamelled copper wire, space wound at 85 t.p.i.

Test data: On Meter, circuit magnification No 1 -

	L μH	F Mc/s	C pF	Q
Less core and can:	3.35	4.35	400	78
Less can with core projecting 1/4 in. over top:	7.6	6.0	92.5	135

Fig 4512 - L22 coil winding data



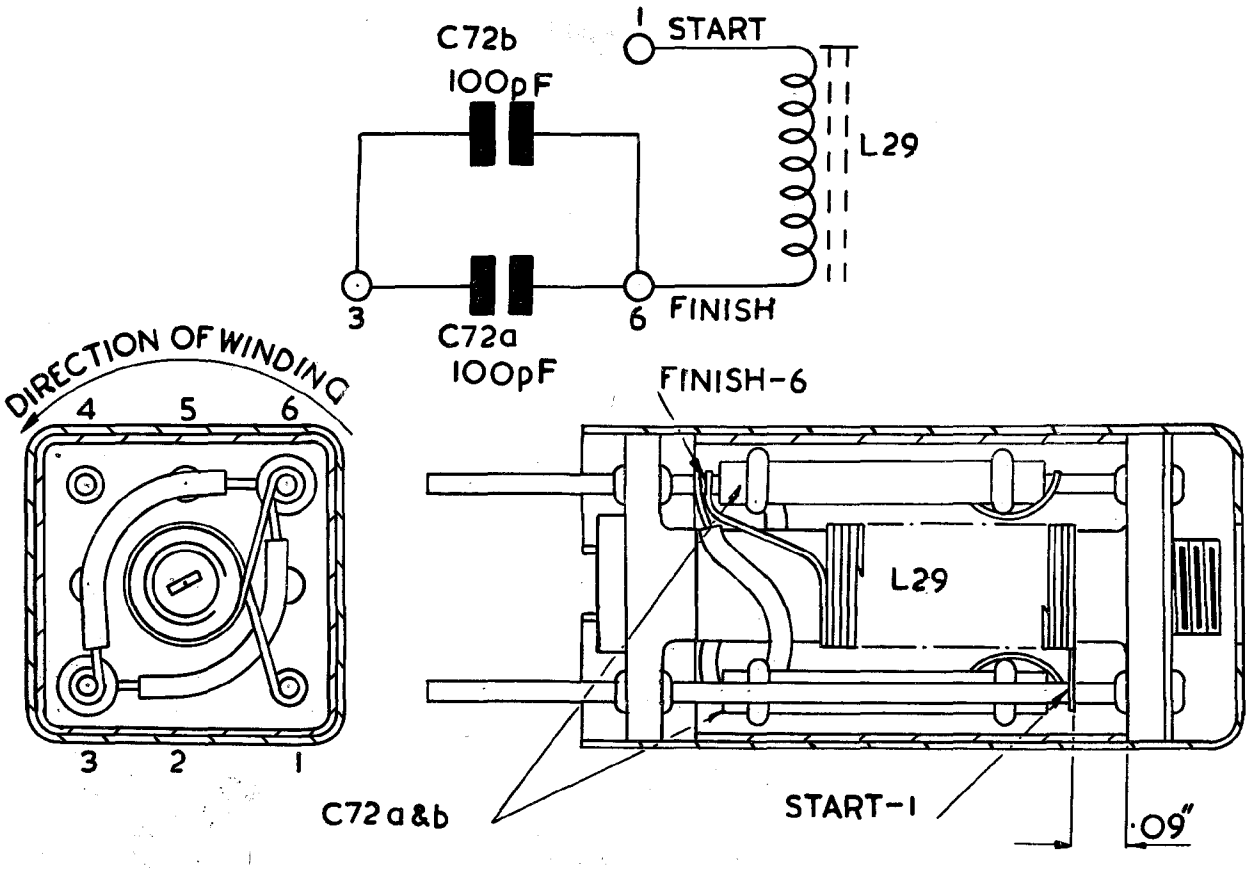
T H 444 P2 / 1-4513

Winding: 46 turns of No 30 S.W.G. enamelled copper wire, close wound.

Test data: On Meter, circuit magnification No 1 -

	L µH	F Mc/s	C pF	Q
Less core and can:	6.3	3.17	400	77
Less can with core projecting 1/4 in. over top:	10.5	6.0	67	87

Fig 4513 - L23 coil winding data



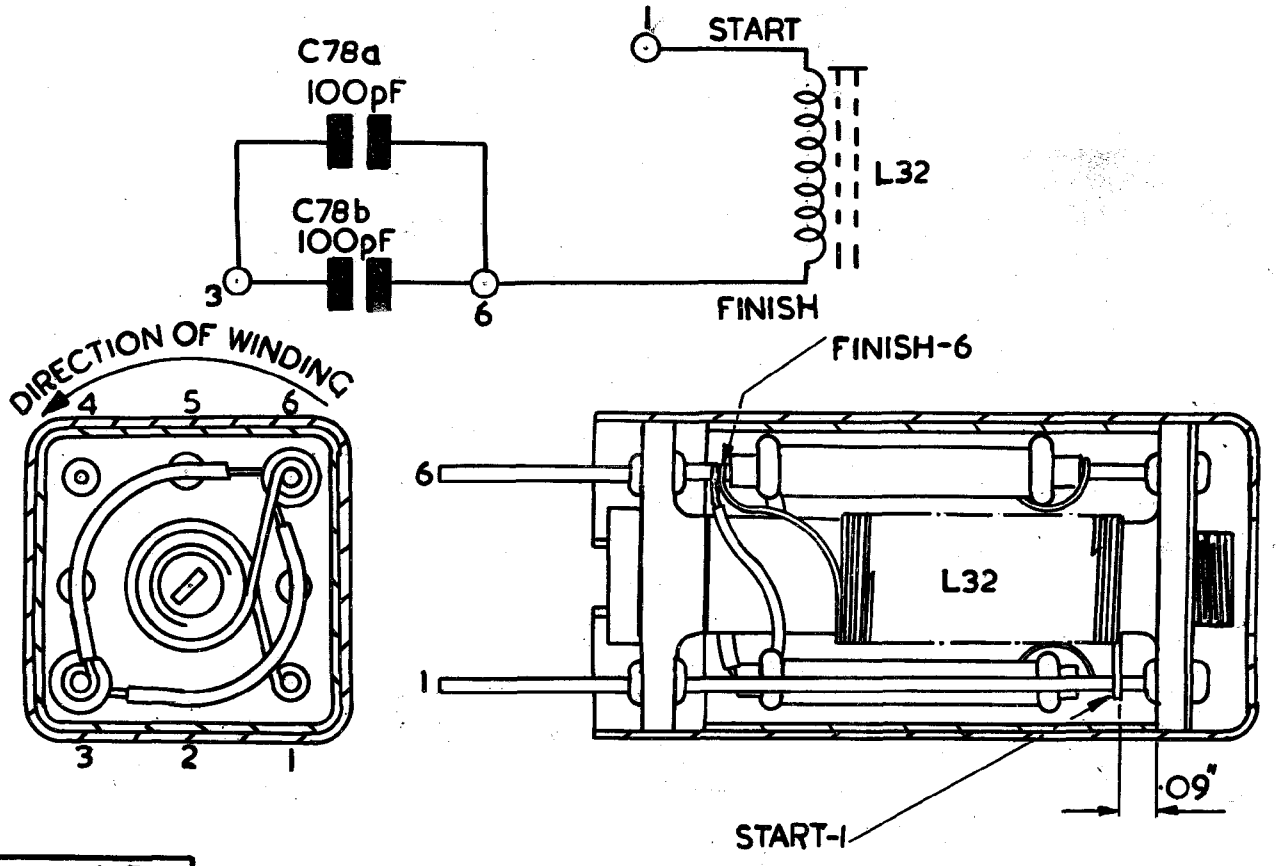
T H444 P2
1-4514

Winding: 80 turns of 5/46 Fortisan, enamelled and single artificial silk covered copper wire, space wound at 85 t.p.i.

Test data: On Meter, circuit magnification No 1 -

	L μH	F Mc/s	C pF	Q
Less core and can:	12.2	2.27	400	68
Less can with core projecting 1/4 in. over top:	20.0	2.4	218.5	100

Fig 4514 - L29 coil winding data



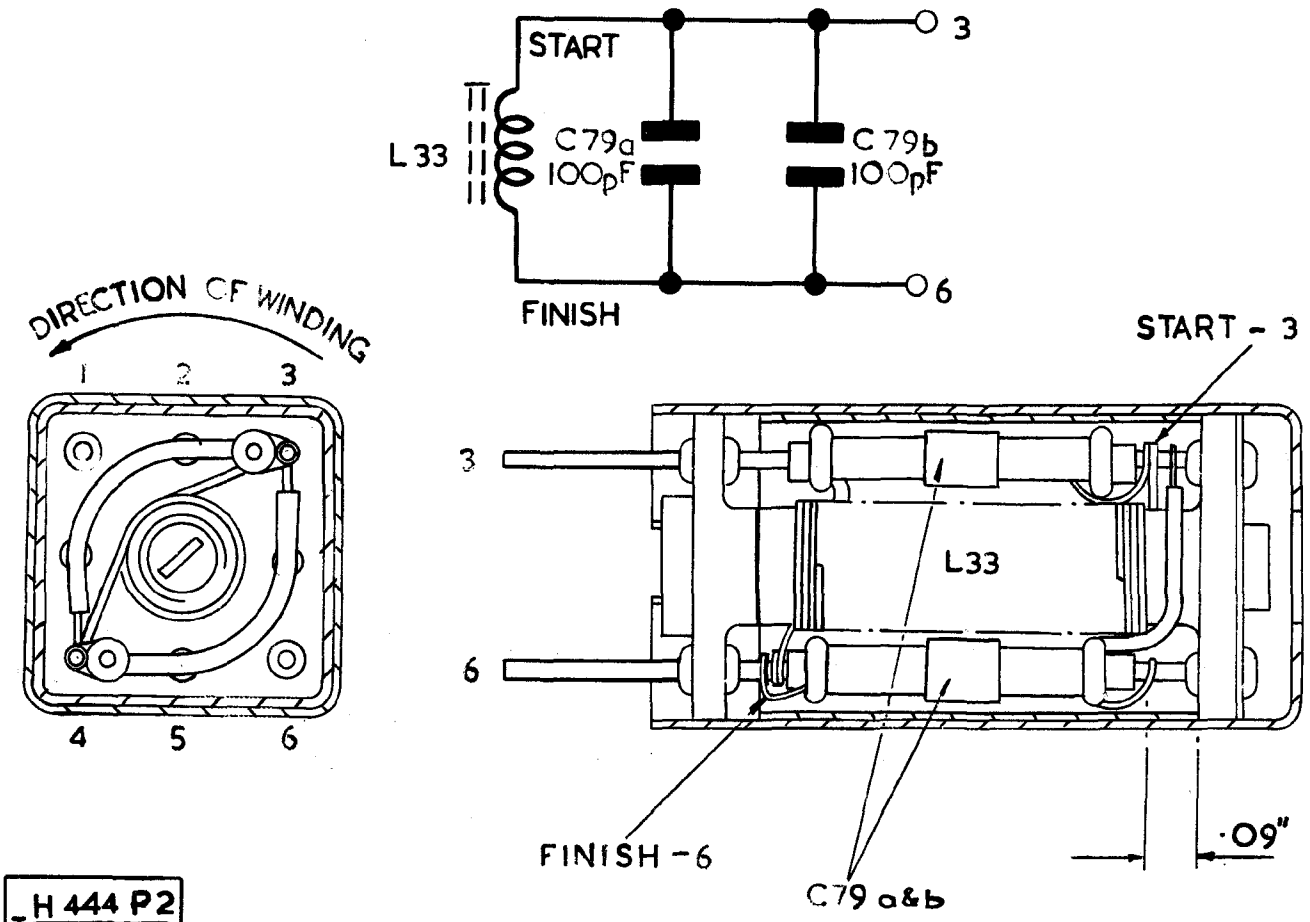
T H 444 P2
1-4515

Winding: 82 turns of 5/46 Fortisan enamelled and single artificial silk covered copper wire, space wound at 85 t.p.i.

Test data: On Meter, circuit magnification No 1 -

	L µH	F Mc/s	C pF	Q
Less core and can:	13.6	2.15	400	69
Less can with core projecting 1/4 in. over top:	20.0	2.4	217	103

Fig 4515 - L32 coil winding data



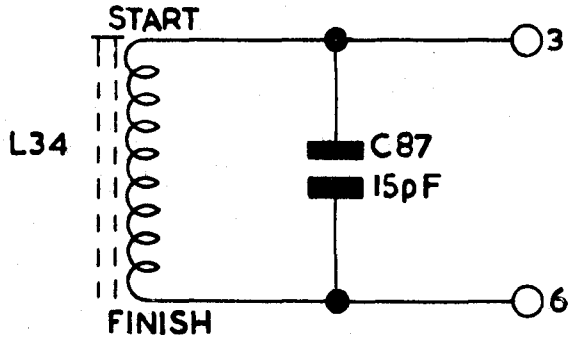
T H 444 P2
1-4516

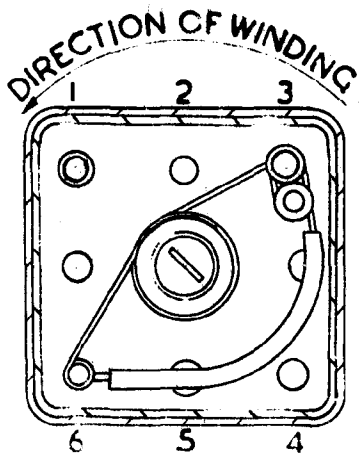
Winding: 75 turns of 5/46 Fortisan, enamelled single artificial silk covered (S.A.S.C.) copper wire, space wound at 85 t.p.i.

Test data: On Meter, circuit magnification No 1 -

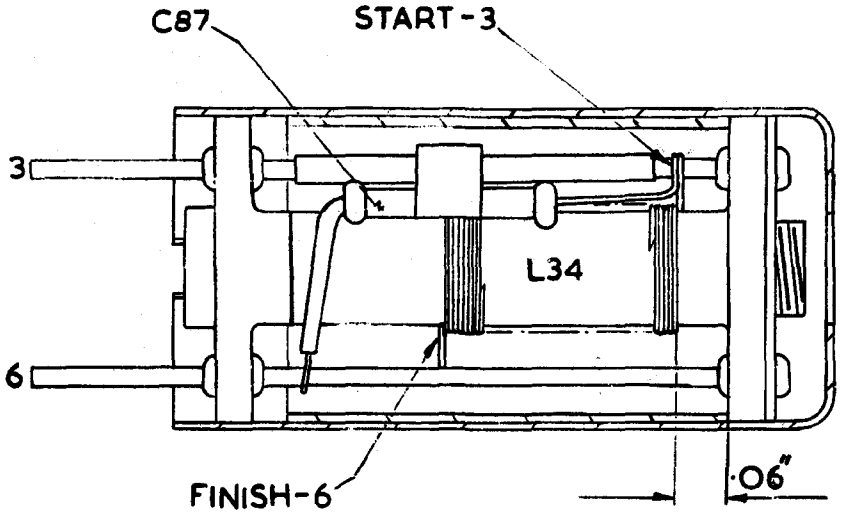
	L µH	F Mc/s	C pf	Q
Less core and can:	12.4	2.26	400	69
Less can with core projecting 1/4 in. over top:	19.3	2.4	227	104

Fig 4516 - L33 coil winding data





H444 P2
1-4517

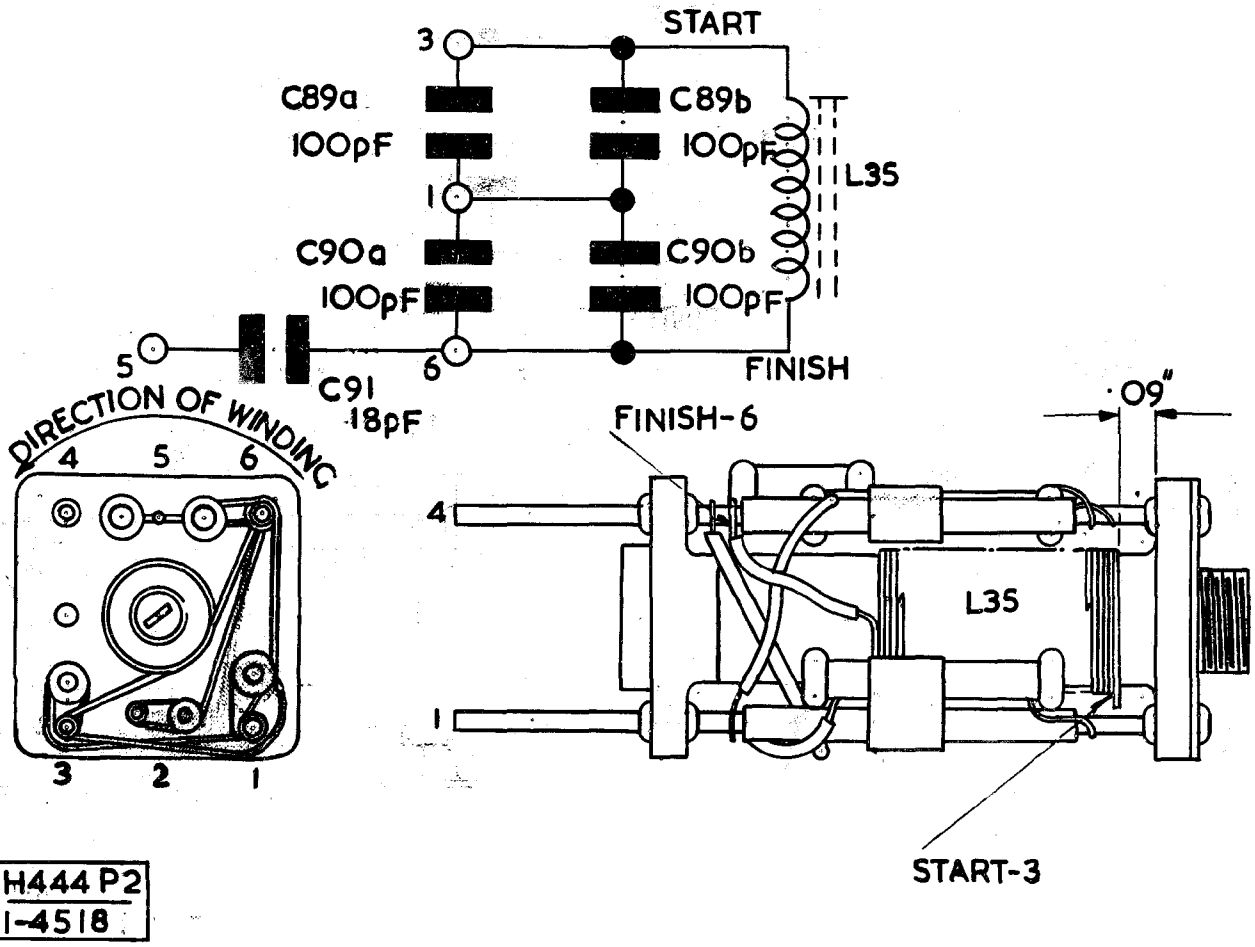


Winding: 106 turns of No 40 S.W.G. enamelled copper wire, close wound.

Test data: On Meter, circuit magnification No 1 -

	L µH	F Mc/s	C pF	Q
Less core and can:	32.6	1.39	400	60
Less can with core projecting 1/4 in. over top	67.5	2.4	65	97

Fig 4517 - L34 coil winding data

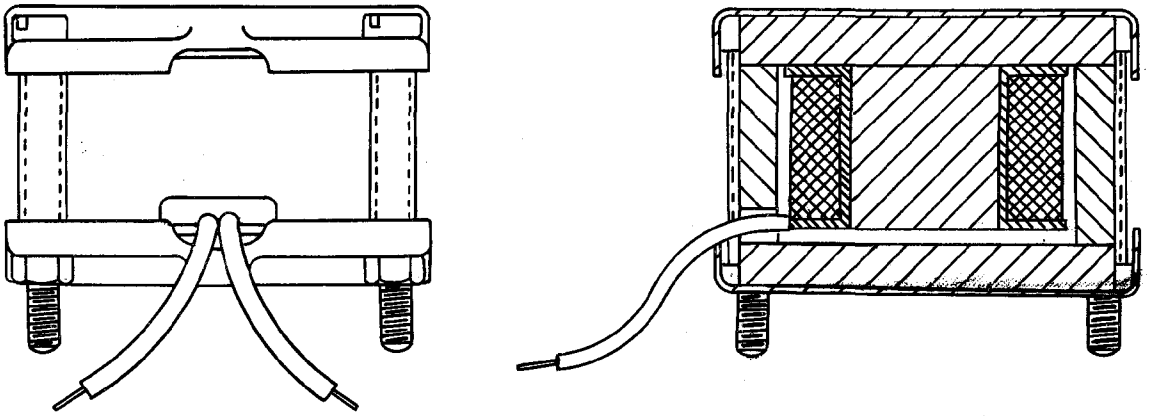


Winding: 84 turns of No 37 S.W.G. enamelled copper wire, close wound.

Test data: On Meter, circuit magnification No 1 -

	L µH	F Mc/s	C pF	Q
Less core and can:	19.5	1.8	400	65
Less can with core projecting 1/4 in. over top:	32.2	2.4	118	78

Fig 4518 - L35 coil winding data



T H 444-P2
1-4519

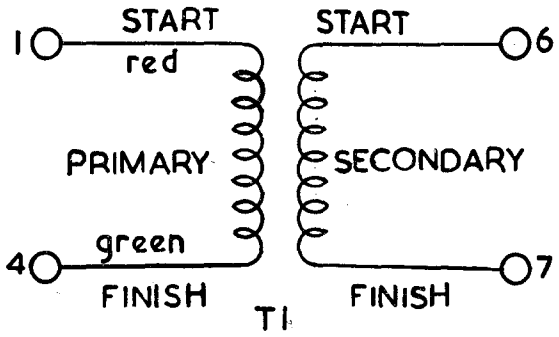
Winding: 820 turns of No 40 S.W.G. enamelled copper wire, retained on bobbin with 2 in. long x 1/2 in. wide Lassolastic tape. Leadouts as indicated.

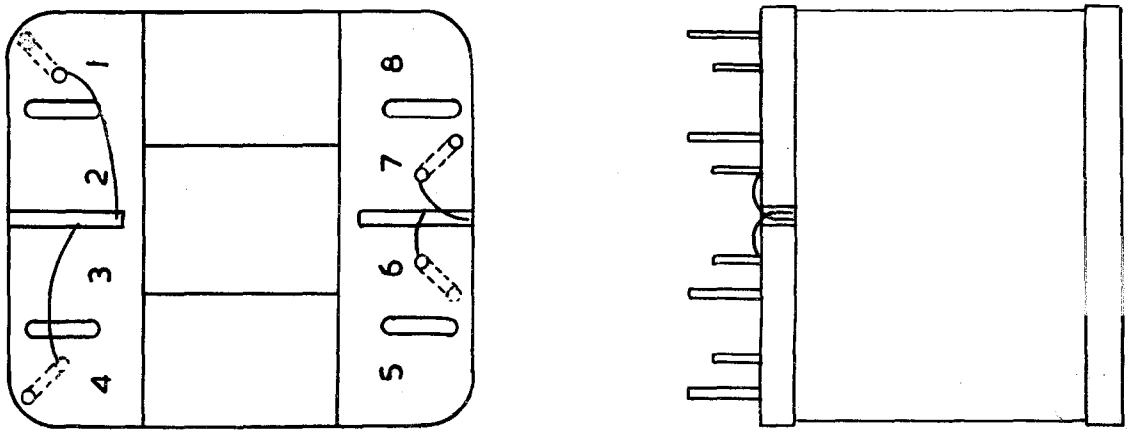
Test data: Q = 32 on Marconi 1kc/s bridge

Q = Not less than 110 at 10kc/s

L = 0.26H ±10% with core

Fig 4519 - L39 coil winding data





T H444 P2
1-4520

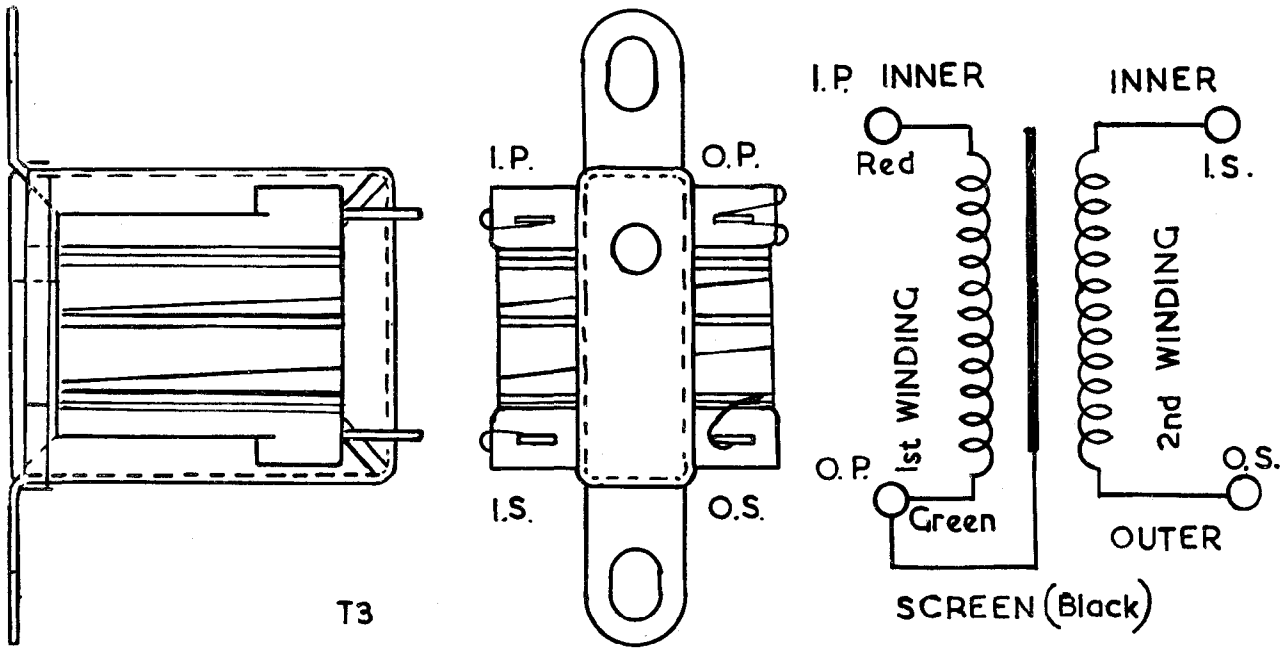
Winding:

1st winding:	5500 turns of No 44 S.W.G. enamelled copper wire, random wound.
2nd winding:	205 turns of No 30 S.W.G. enamelled copper wire, random wound.

Test data:

Primary inductance:	22H ±20% at 8V 100c/s with 10mA d.c.
Turns ratio:	26.8:1 ±2.1/2%
Insulation:	1000MΩ min at 500V d.c. between windings and windings and core.

Fig 4520 - TR1 and TR2 winding data



T H444P2 / 1-4521

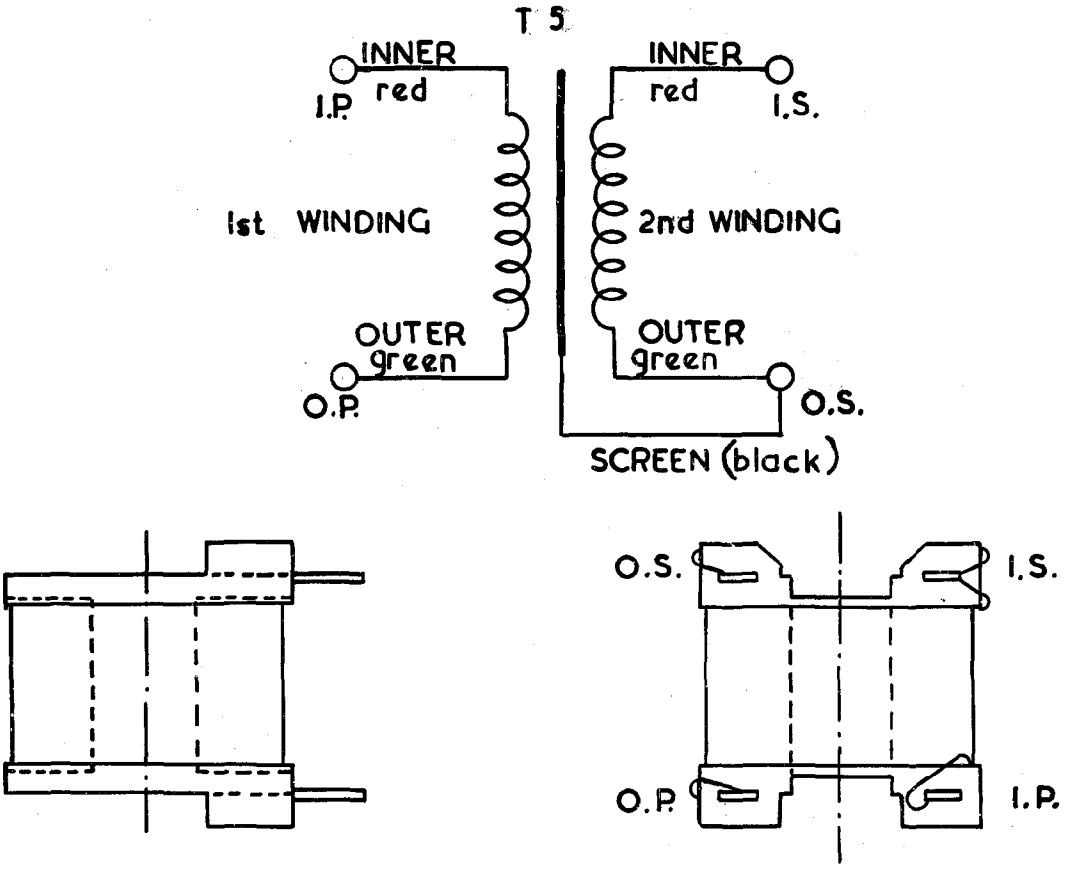
Winding:

1st winding:	4500 turns of No 46 S.W.G. enamelled copper wire, random wound.
Screen:	As TR4
2nd winding:	270 turns of No 38 S.W.G. enamelled copper wire, random wound.

Test data:

Inductance:	1st winding - 90H min at 16V r.m.s. 1000c/s 2nd winding - 0.32H min at 1V r.m.s. 1000c/s
Turns ratio:	16.7:1 ±2.1/2%
Insulation:	1000MΩ at 500V d.c. between windings and winding and core.
Screen continuity:	Capacitance between O.P. and I.S. terminals at 1kc/s to be not less than 63pF.

Fig 4521 - TR3 winding data



T H 444 P2
1-4522

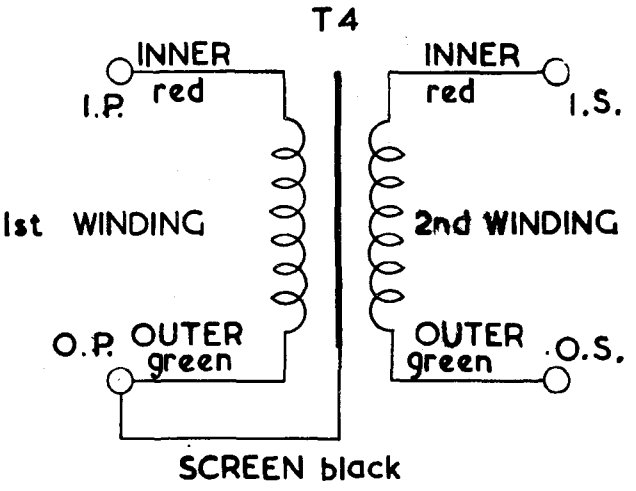
Winding:

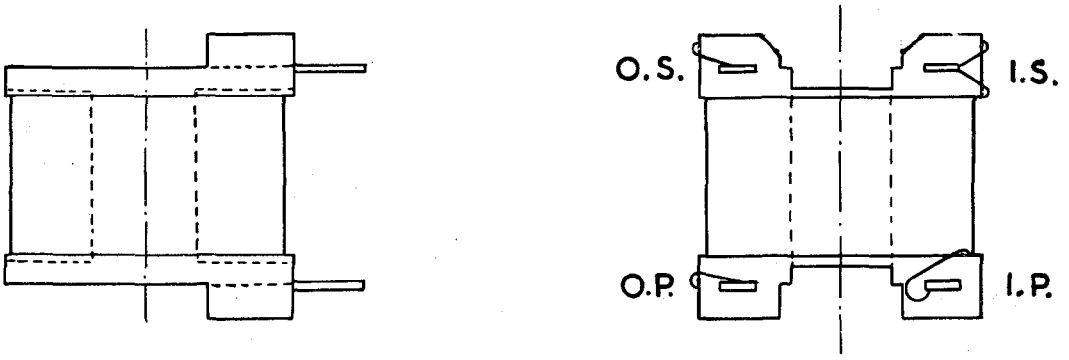
1st winding:	4000 turns of No 47 S.W.G. synthetic enamelled copper wire, random wound.
Screen:	AS TR4
2nd winding:	2100 turns of No 46 S.W.G. synthetic enamelled copper wire, random wound.

Test data:

L 1st winding:	min 71.0H at 15V r.m.s. 1000c/s
L 2nd winding:	min 19.5H at 8V r.m.s. 1000c/s
Turns ratio:	1.91:1 ±2.1/2%
Insulation:	1000MΩ min at 500V d.c. between windings and windings and core
Screen continuity:	Capacitance between O.P. and O.S. terminals not less than 30pF at 1kc/s

Fig 4522 - TR5 winding data





T H 444 P2 / 1-4523

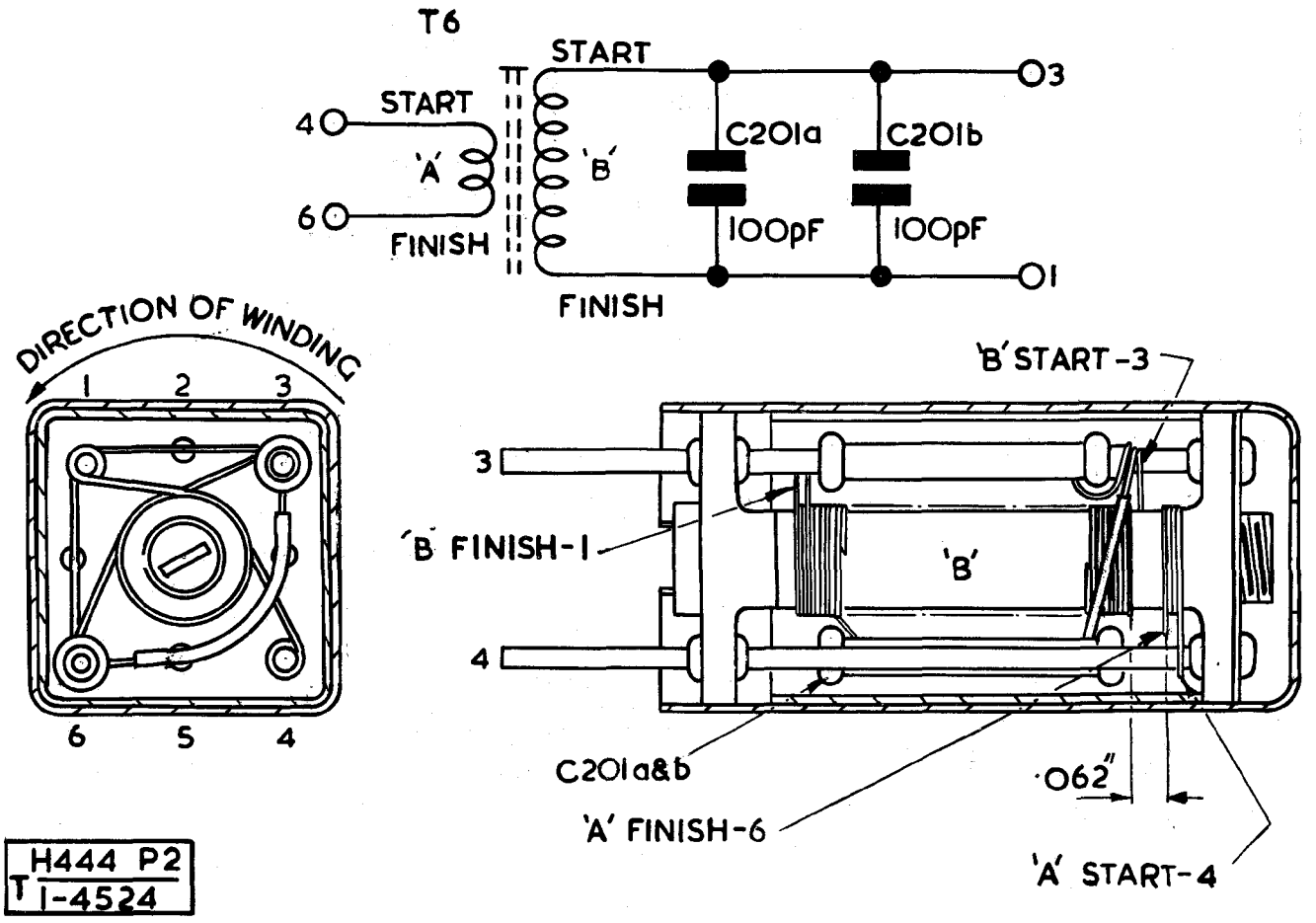
Winding:

1st winding:	4500 turns of No 46 S.W.G. synthetic enamelled copper wire, random wound.
Screen:	3 turns of .0015 in. thick x 7/16 in. wide interleave paper, insert end of copper foil screen and wind paper and screen on together until screen is covered, wind on 3 more turns of paper.
2nd winding:	270 turns of No 38 S.W.G. enamelled copper wire, random wound. Cover winding with 3 turns of interleave paper.

Test data:

L 1st winding:	min 90H at 16V r.m.s. 1000c/s
L 2nd winding:	min 0.32H at 1V r.m.s. 1000c/s
Turns ratio:	16.7:1 ±2.1/2%
Insulation:	1000MΩ min at 500V d.c. between windings and windings and core.
Screen continuity:	Capacitance between O.P. and I.S. terminals not less than 63pF at 1kc/s

Fig 4523 - TR4 winding data



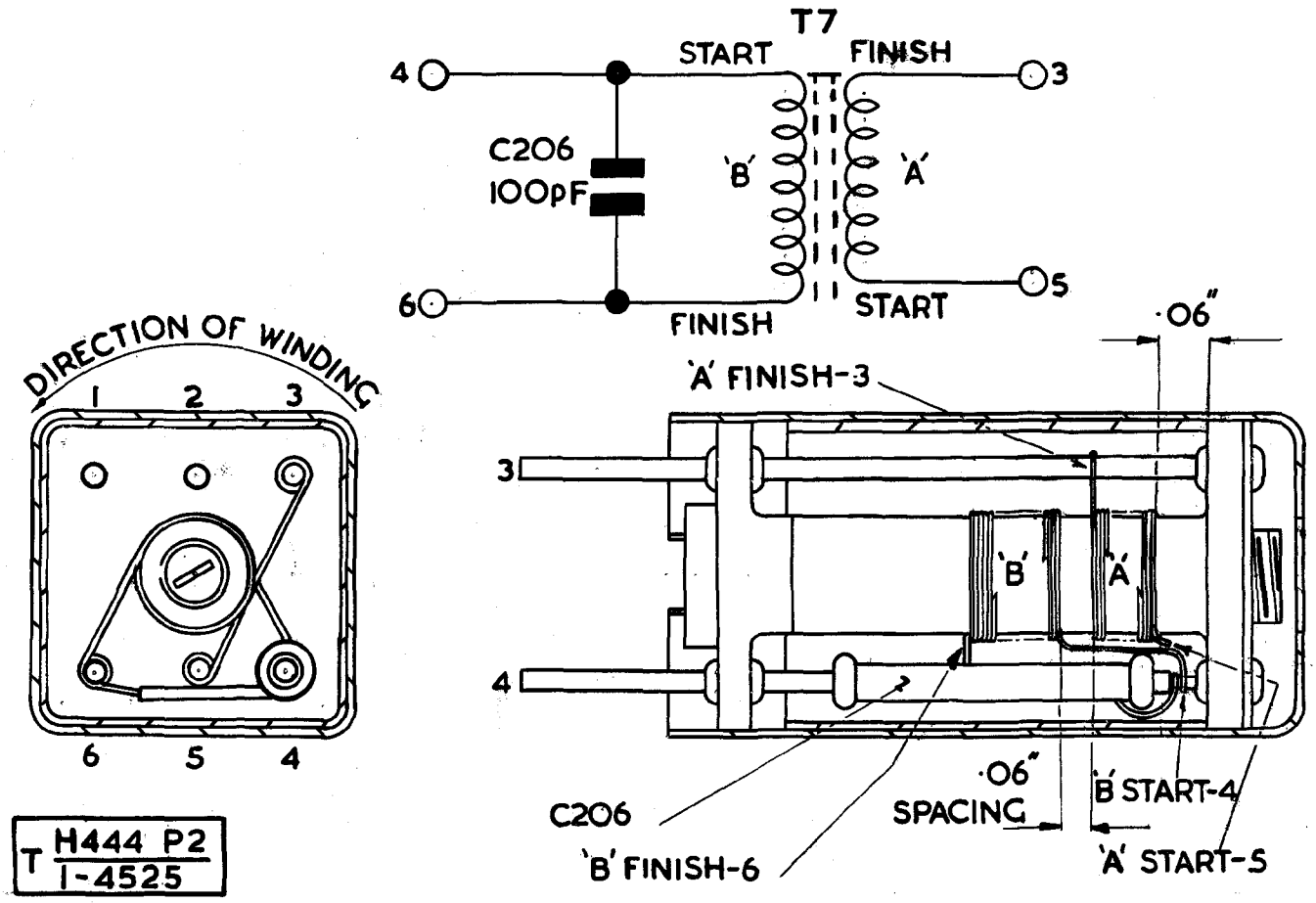
Winding: 'A' - 3.1/2 turns of 5/46 Fortisan enamelled S.A.S.C. copper wire, space wound at 85 t.p.i.

'B' - 78 turns of 5/46 Fortisan enamelled S.A.S.C. copper wire, space wound at 85 t.p.i.

Test data: On Meter, circuit magnification No 1 -

	Winding	L µH	F Mc/s	C pF	Q
Less core and can:	A	0.35	13.4	400	51
	B	13.0	2.2	400	70
Less can with core projecting 1/4 in. over top:	B	17.8	2.4	247	95

Fig 4524 - TR6 winding data

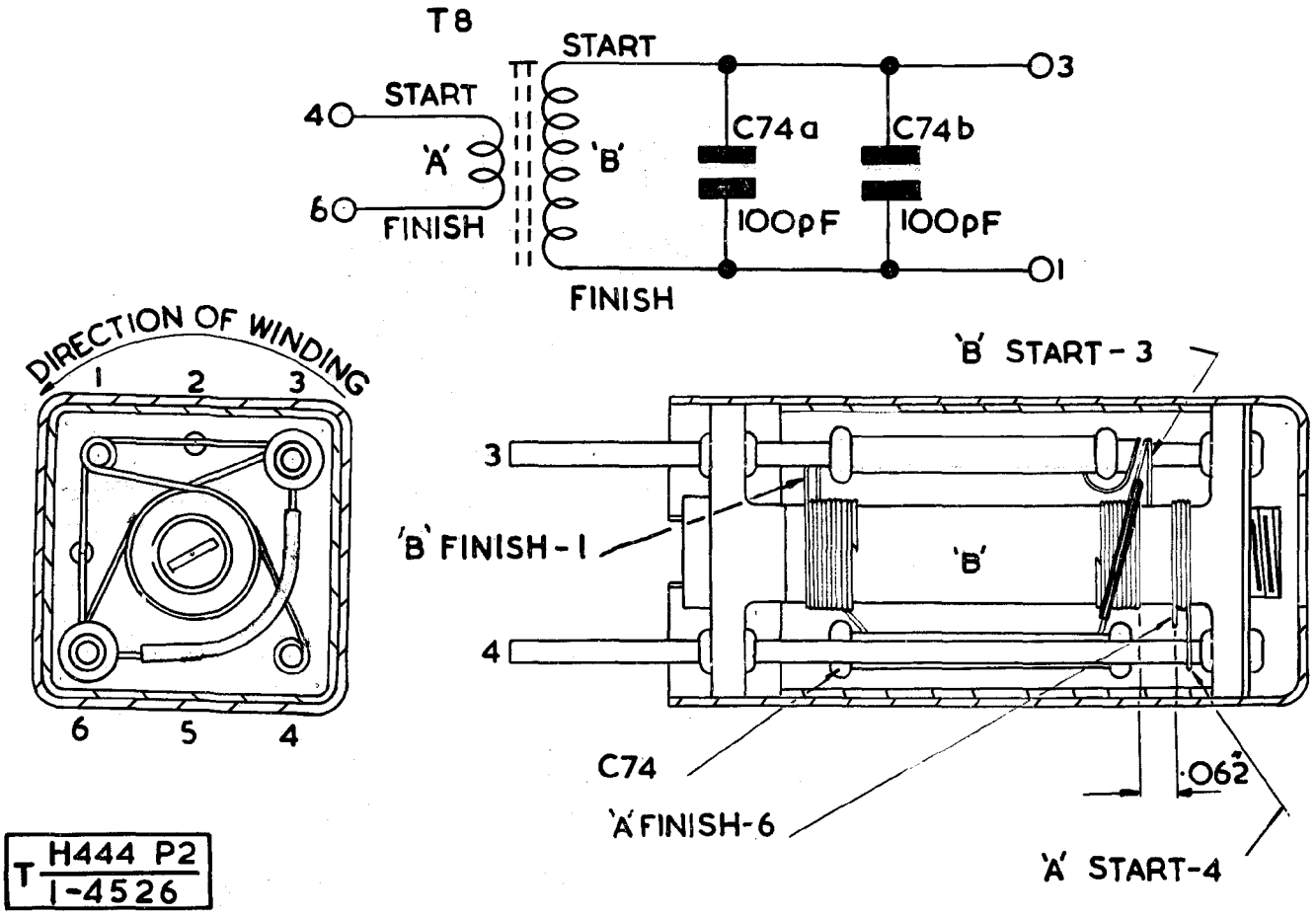


Winding: 'A' - 22 turns of No 36 S.W.G. enamelled copper wire, close wound.
'B' - 22.1/2 turns of No 36 S.W.G. enamelled copper wire, close wound.

Test data: On Meter, circuit magnification No 1 -

	Winding	L µH	F Mc/s	C pF	Q
Less core and can:	A	3.5	4.23	400	58
	B	3.6	4.19	400	60
Less can with core projecting 1/4 in. over top:	A	8.25	8.4	43.5	83
	B	4.05 ±5%	8.4	88.5	80

Fig 4525 - TR7 winding data



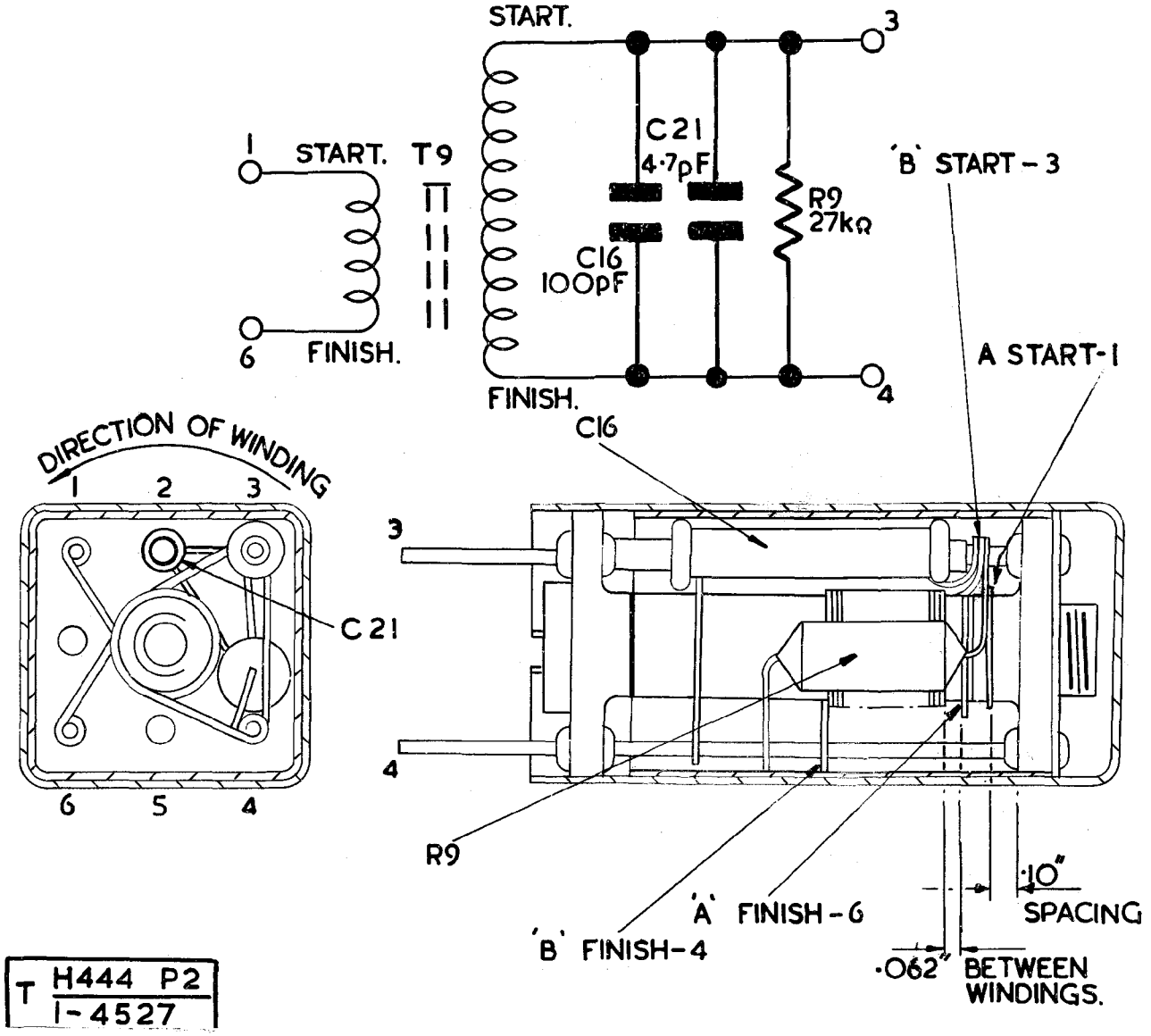
Winding: 'A' - 3.1/2 turns of 5/46 Fortisan enamelled S.A.S.C. copper wire, space wound at 85 t.p.i.

'B' - 82 turns of 5/46 Fortisan enamelled S.A.S.C. copper wire, space wound at 85 t.p.i.

Test data: On Meter, circuit magnification No 1 -

	Winding	L μH	F Mc/s	C pF	Q
Less core and can:	A	0.38	12.9	400	55
	B	13.6	2.16	400	69
Less can with core projecting 1/4 in. over top:	B	20.2	2.4	217	100

Fig 4526 - TR8 winding data



T H444 P2 / 1-4527

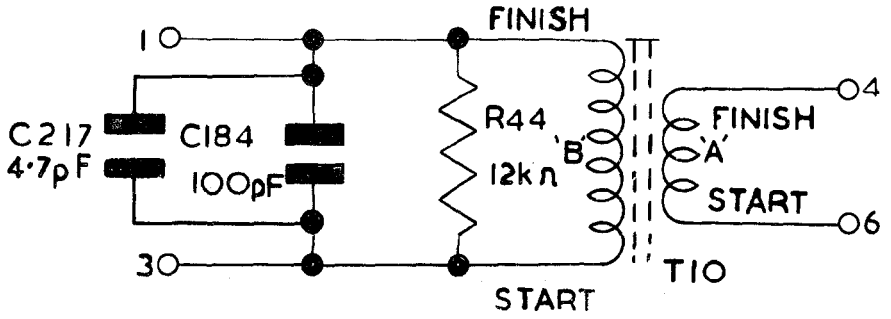
Winding: 'A' - 2 turns of 5/46 Fortisan enamelled S.A.S.C. copper wire, close wound.

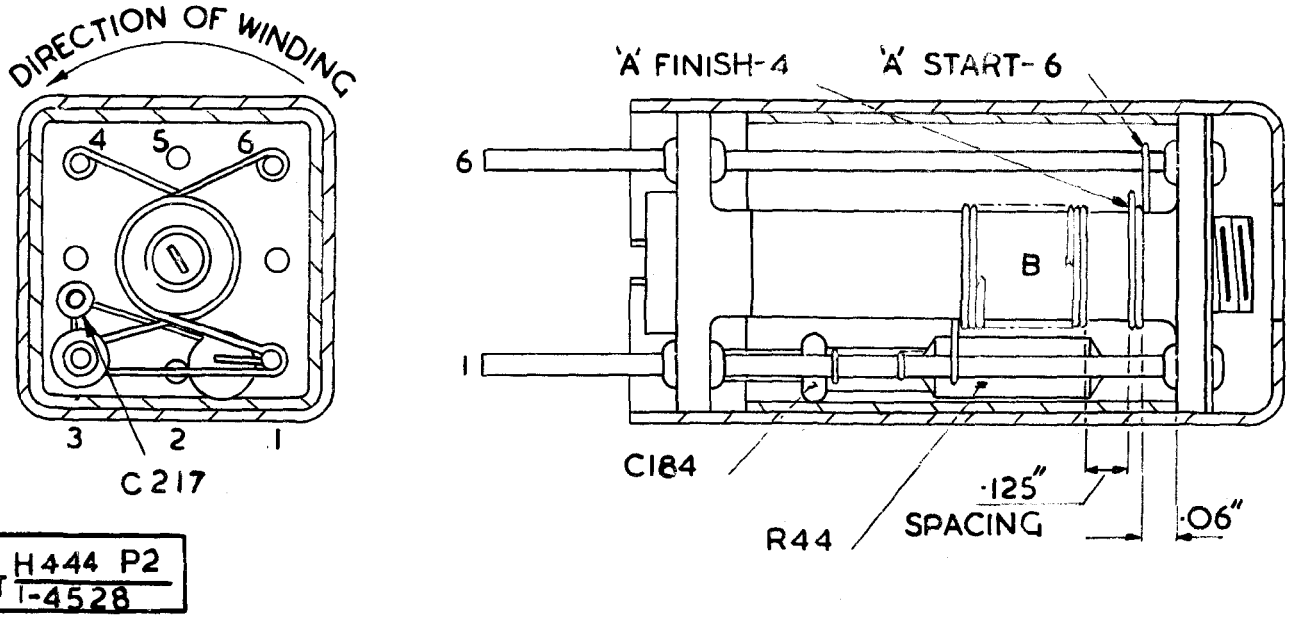
'B' - 28.1/2 turns of 5/46 Fortisan enamelled S.A.S.C. copper wire, space wound at 85 t.p.i.

Test data: On Meter, circuit magnification No 1 -

	Winding	L μH	F Mc/s	C pF	Q
Less can and core:	A	0.27	15.2	400	45
	B	4.2	3.87	400	79
Less can with core projecting 1/4 in. over top:	B	7.25	6.0	97	125

Fig 4527 - TR9 winding data





T H444 P2
T T-4528

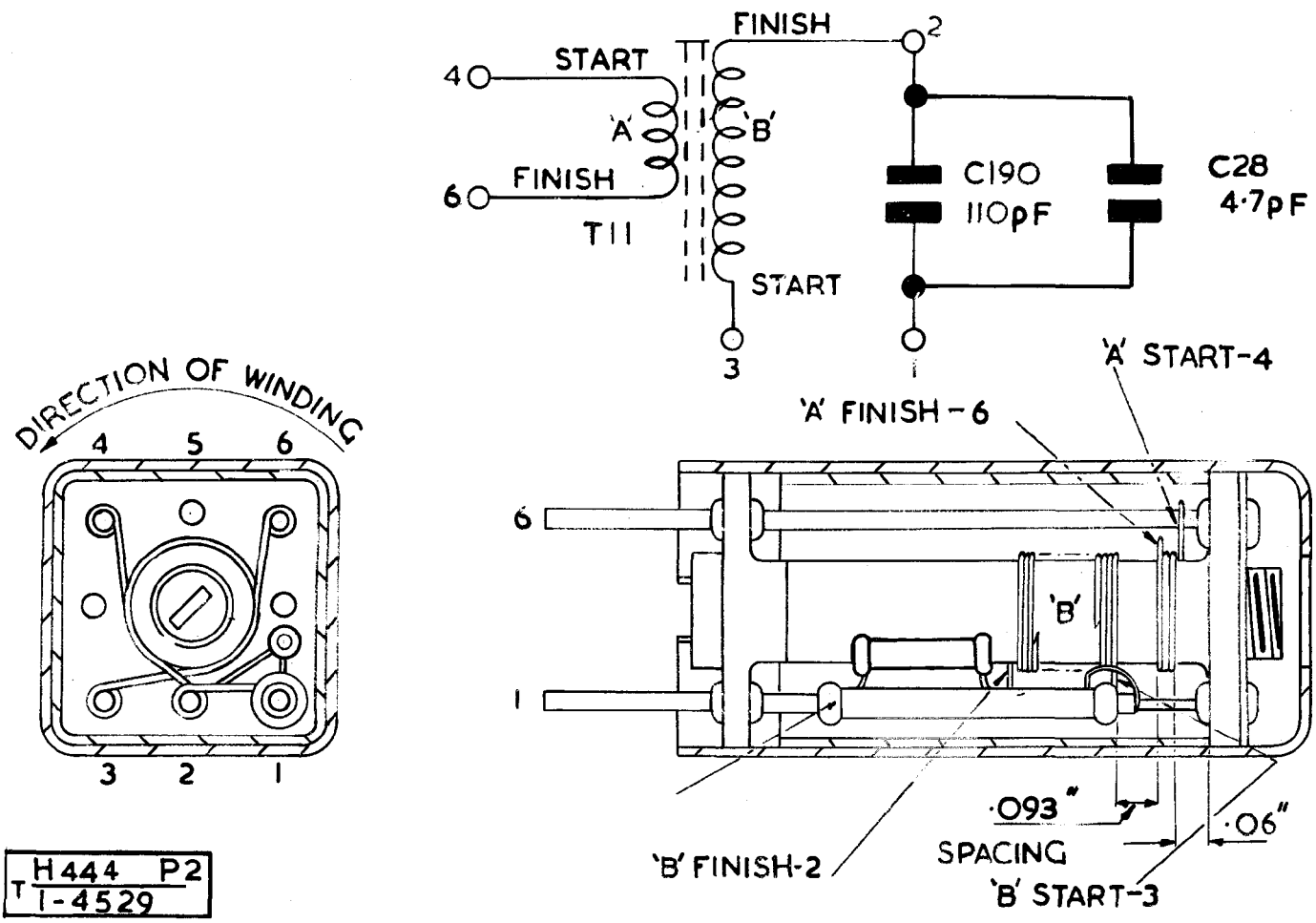
Winding: 'A' - 1 turns of 5/46 Fortisan enamelled S.A.S.C. copper wire, close wound.

'B' - 24 turns of 5/46 Fortisan enamelled S.A.S.C. copper wire, space wound at 85 t.p.i.

Test data: On Meter, circuit magnification No 1 -

	Winding	L µH	F Mc/s	C pF	Q
Less can and core:	B	3.26	4.4	400	80
Less can with core projecting 1/4 in. over top:	B	8.2	6	117	127

Fig 4528 - TR10 winding data



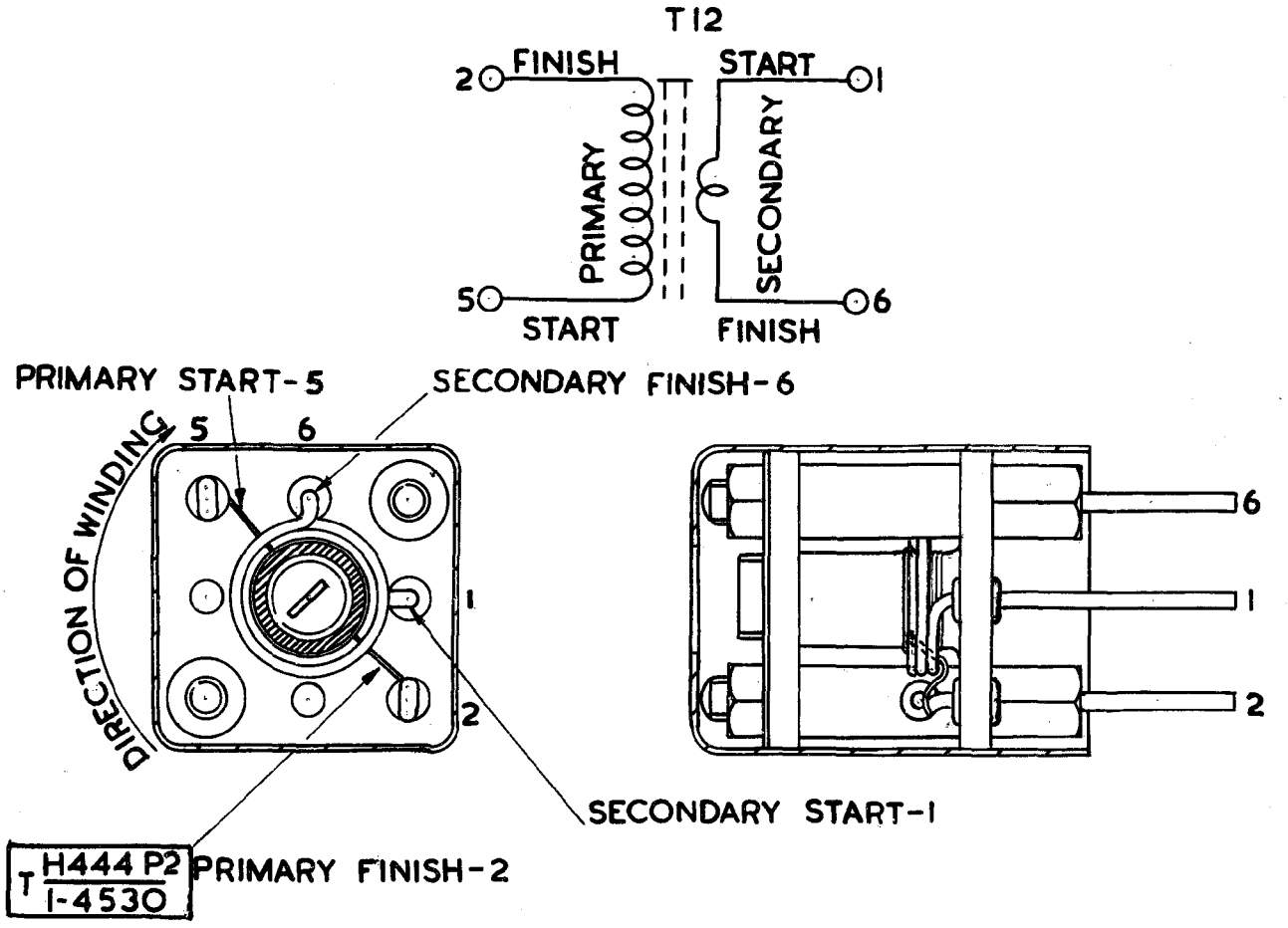
Winding: 'A' - 1/2 turn of 5/46 Fortisan enamelled S.A.S.C. copper wire, close wound.

'B' - 26 turns of 5/46 Fortisan enamelled S.A.S.C. copper wire, space wound at 85 t.p.i.

Test data: On Meter, circuit magnification No 1 -

	Winding	L μH	F Mc/s	C pF	Q
Less core and can:	B	3.57	4.2	400	78
Less can with core projecting 1/4 in. over top:	B	6.5	6	108	122

Fig 4529 - TR11 winding data



Winding: Primary - 9.1/2 turns of No 36 S.W.G. enamelled copper wire, close wound.

Secondary - 2.3/4 turns of No 20 S.W.G. tinned enamelled copper wire, close wound.

Test data: On Meter, circuit magnification No 1 -

	Winding	L μH	F Mc/s	C pF	Q
Less can and core:	PRI	0.95	8.15	400	55
	SEC	0.179	18.8	400	79
Less can with core projecting 1/4 in. over top:	PRI	0.95	20.0	66.5	82
	SEC	0.184	20.0	342.5	80

Fig 4530 - TR12 winding data

EME8c/1046

END