E.M.I SERVICE LTD.

MARCONIPHONE 922
HIS MASTER'S VOICE 1113

SERVICE MANUAL

5 Valve A.C. Superheterodyne Wartime Models - S.W. and M.W. Only

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Part No. 33835

OCTOBER 1942 Reprinted MAY 1946

MAINS:

195 - 255 volts (2 tappings) 50 - 100 cycles. Consumption 65 watts.

VALVES.

Marconi	X65	Frequency Changer
"	KTW61M	I.F. Amplifier
	6Q7G	Detector, A.V.C. and or
Marconi	DH63	L.F. Amplifier
"	KT61	Output
	U10	Rectifier

I.F. FREQUENCY:

465 kc/s

OUTPUT:

Max. 5 watts.

WAVE - RANGES:

MW	195 - 580 metres
SW	16.5 - 50 metres

LOUDSPEAKER:

Elliptical cone moving coil loudspeaker with energised field magnet. Impedance 5 ohms, at 800 c.p.s.

CONTROLS:

Four controls on front namely,

Volume and ON - OFF) on the left of the scale.
Tone (top cut))

Tuning (single speed)) on the right of the scale.
Wave band (2 position))

Part No. 33835.

PICK UP SOCKETS·

Provided at back - no gramophone switch is provided.

EXTRA LOUDSPEAKER:

An extra loudspeaker of 3 - 6 ohms may be connected to sockets at back. A plug switch is provided for disconnecting the internal loudspeaker.

SIZE:

Height	-	$14\frac{1}{4}$"
Width	-	$16\frac{3}{4}$"
Depth	-	$11\frac{3}{4}$"

CABINET:

Walnut finished cabinet with dark moulded feet. The sloping scale escutcheon is in the centre at the bottom between the control knobs. The loudspeaker opening above the scale has a cross-banded surround and is masked with furnishing fabric.

CIRCUIT:

Inductively coupled aerial circuit which tunes the grid of the frequency changer (X65). This valve is a triode-hexode operating with mixed coupled oscillator circuits.

An iron-cored I.F. transformer couples V1 to the high slope tetrode I.F. amplifier KTW61M.

A second I.F. transformer feeds the double-diode triode DH63. A single diode is utilized for speech and A.V.C. and good characteristics are ensured by adequate filtering and by the use of only a portion of the diode load for speech voltages. The volume control has a bass compensating circuit to maintain good tone balance at low volume levels.

The output valve (KT61) is resistance capacity coupled from the triode portion of the DH63 and feeds the loudspeaker via a matching transformer. A negative feed-back circuit provides for tone control and the overall response of the stage is improved by degeneration introduced by the unbypassed cathode resistance.

High tension voltage for the valves is provided by the full wave rectifier U10.

ALIGNMENT OF TUNED CIRCUITS.

I.F. GANGING:

Set tone control to max: top response, volume control max:
Inject 465 kc/s signal in V2 grid and adjust IFT2 (TC12 and 13)

for max: output.
Inject 465 kc/s signal in V1 grid and adjust IFT1 TC5 and 6 for max: output not making any further adjustments on IFT2.

M.W. GANGING:

Set Tone Control to max: top response. Volume Control max: Gang on the max: position, set pointer to 580 metres on the scale.

1. With pointer indicating 195 metres on the scale, tune in 195 m. signal by adjusting oscillator trimmer TC4.
2. Pointer indicating 550 metres on the scale, tune in 550 m, signal by adjusting oscillator inductance L7.
3. Tune in 210 m signal and adjust aerial trimmer TC3 for max: output.
4. Tune in 530 m signal and adjust aerial inductance L4 for max: output.
5. Repeat 1,2,3 and 4 for max: output.

S.W. GANGING:

6. With pointer indicating 16.5 metres on the scale tune in 16.5 m signal by adjusting oscillator trimmer TC1. *
7. Adjust aerial trimmer TC2 for max: output rocking the gang condenser.
8. With pointer indicating 50 metres on the scale tune in 50 m signal by adjusting oscillator L5 inductance loop.
9. Adjust aerial inductance loop L2 for max: output.
10. Repeat 6,7,8 and 9 for max: output.

* On some models TC1 will be found mounted separately and not incorporated in the gang condenser as shown in the illustration.

For valve readings see circuit diagram.

SPARE PARTS LIST

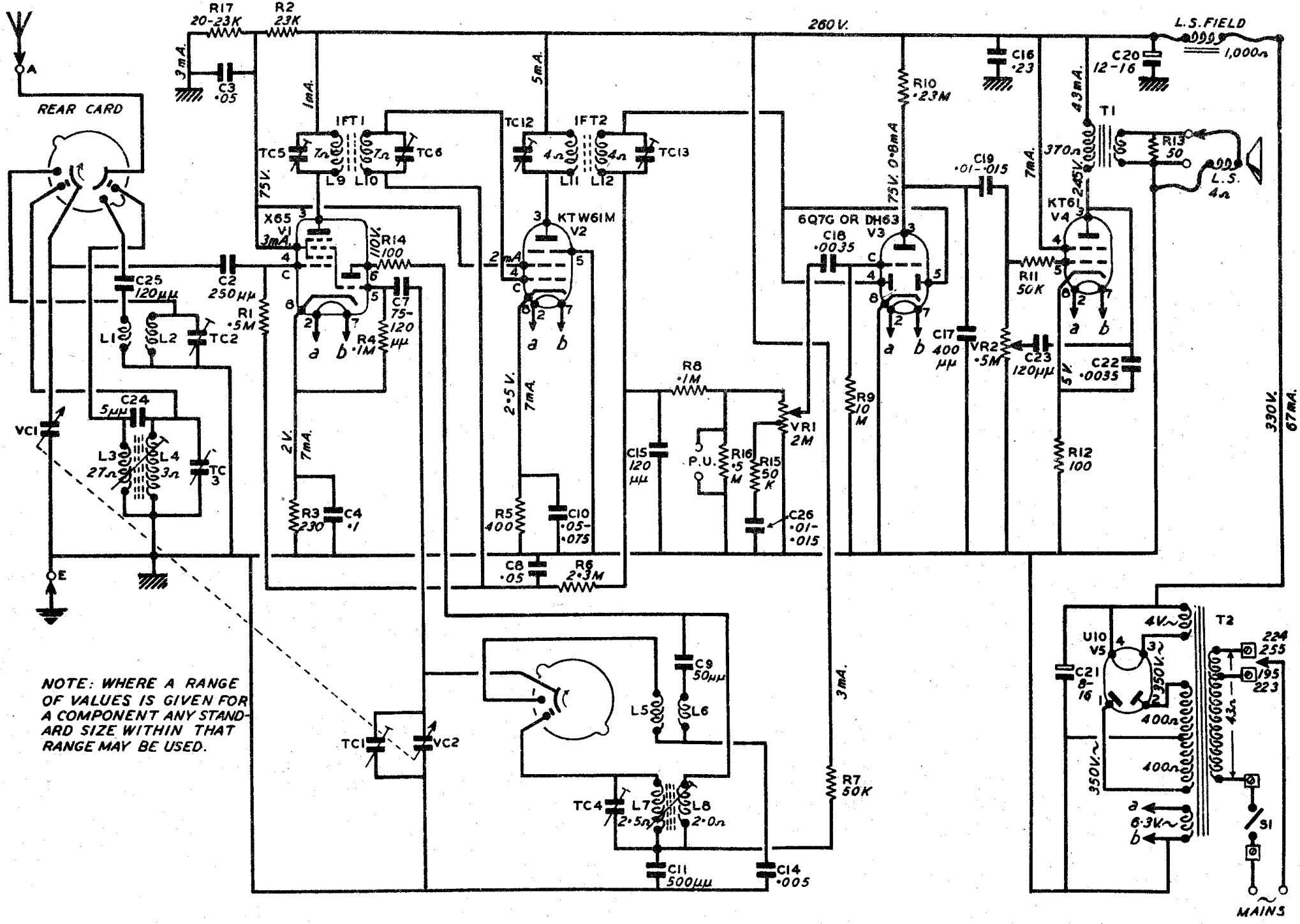
L1 & L2	S.W. aerial coils	27388 G
L3 & L4	M.W. aerial coils	27389 J
L5 & L6	S.W. oscillator coils	27388 D
L7 & L8	M.W. oscillator coils	27389 H
IFT1	1st I.F. transformer	26330 BQ
IFT2	2nd I.F. transformer	26330 AW
C2	250 mmf	28444 V or 31880 V
C3	0.05 mfd	24900 W
C4	0.10 mfd	26300 AA
C5 & C6	in I.F/1. 30123AB.	Can be 30433 D 31880 D or 28444 D
C7	75 - 120 mmf	22330 AJ 28444 A or 31880 L
C8	0.05 mfd	24900 W
C9	50 mmf	28444 A or 31880

C10	0.05 - 0. 075 mfd	24900 X,Y or W
C11	500 mmf	22330 BN
C12 & C13	in I.F/2 30123 N Can be 30433 J, 31880 J or 28444 J	
C14	0.005 mfd	22005 A or 24900 J
C15	120 mmf	28444 L or 31880 L
C16	0.23 mfd	24900 AE
C17	400 mmf	28444 X or 31880 X
C18	0.0035 mfd	26300 G
C19	0.01 mfd - 0.015 mfd	24900 N,Q,R or P
C22	0.0035 mfd	26300 G
C23	120 mmf	28444 L or 31880 L
C24	5 mmf	22164 A
C25	120 mmf	28444 L or 31880 L
C26	0.01 - 0.015 mfd	24900 N Q,R or P
TC2	Trimmer	25618 A
TC3	"	"
TC4	"	"
TC1 *	"	"
VC1 & 2	2 gang condenser	32317 B or 18712 R

Use only tuning scale HB2857 with the former or HB2858 with the latter

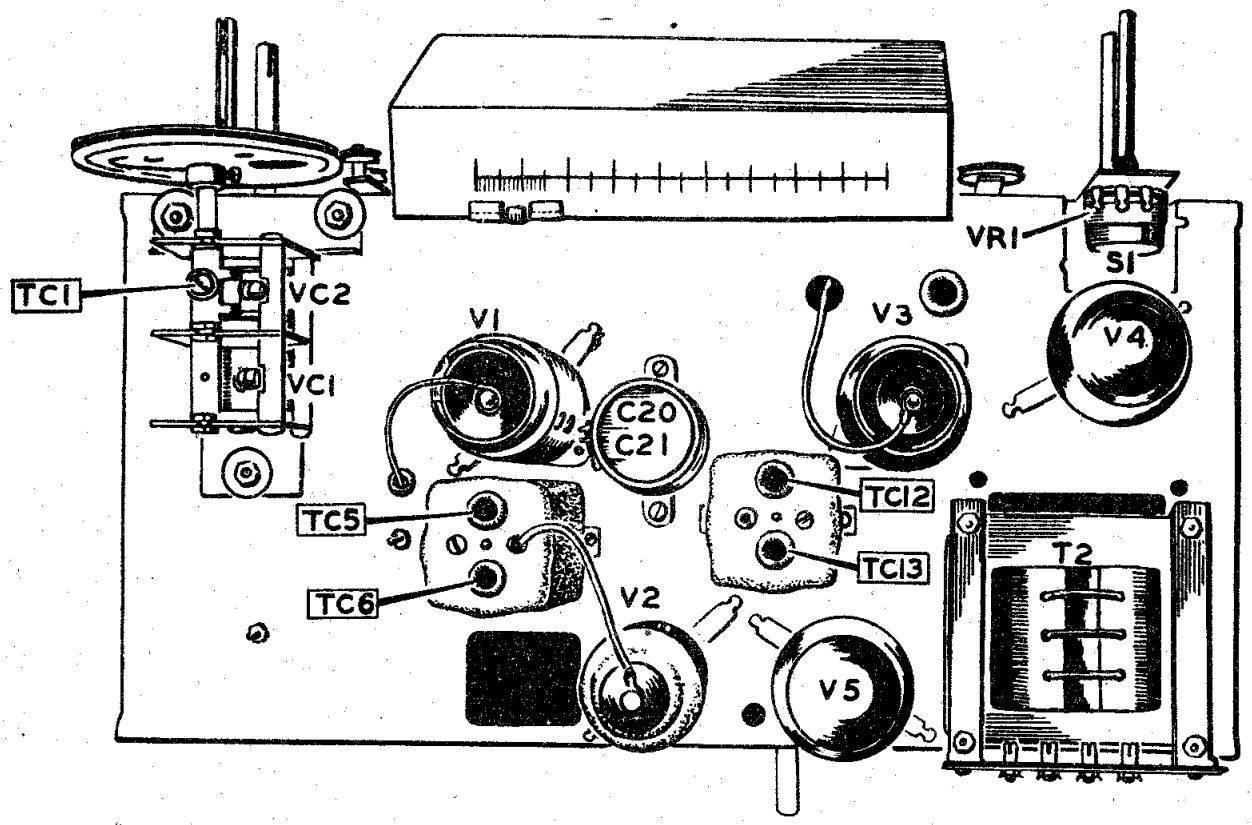
R1	0.5 MΩ	1/4	Watt 19202 N
R2	23,000Ω	2	" 2(29300 A)or(1)31834 AY
R3	230Ω	1/2	" 25900 BW
R4	0.1 MΩ	1/4	" 19202 L
R5	400Ω	1/2	" 25900 CR (30020 CR)
R6	2.3 MΩ	1/4	" 19202 AM
R7	50,000Ω	1	" 29300 A
R8	0.1 MΩ	1/4	" 19202 L
R9	10.0 MΩ	1/4	" 19202 T or 24150 T
R10	0.23 MΩ	1/4	" 19202 M
R11	50,000Ω	1/4	" 19202 J
R12	100Ω + 5% −	1/2	" 30020 BU
R13	50Ω	1/2	" 30020 BH
R14	100Ω	1/4	" 24150 AA or 19202 AA
R15	50,000Ω	1/4	" 24150 J or 19202 J
R16	0.5 MΩ	1/4	" 19202 N
R17	20,000-23,000Ω	1	Watt 29300 P or J
VR1 & S1	Volume Control and Switch		18300 FZ or GL or 23651 FZ
VR2	Tone Control		18300 GK or 23651 GK
T1	Output transformer		27386 C
T2	Mains transformer		HD 36227
S2	Wave change switch		HD 36061
LS	Loudspeaker		HD 36228
LSF	Field winding		27414 E

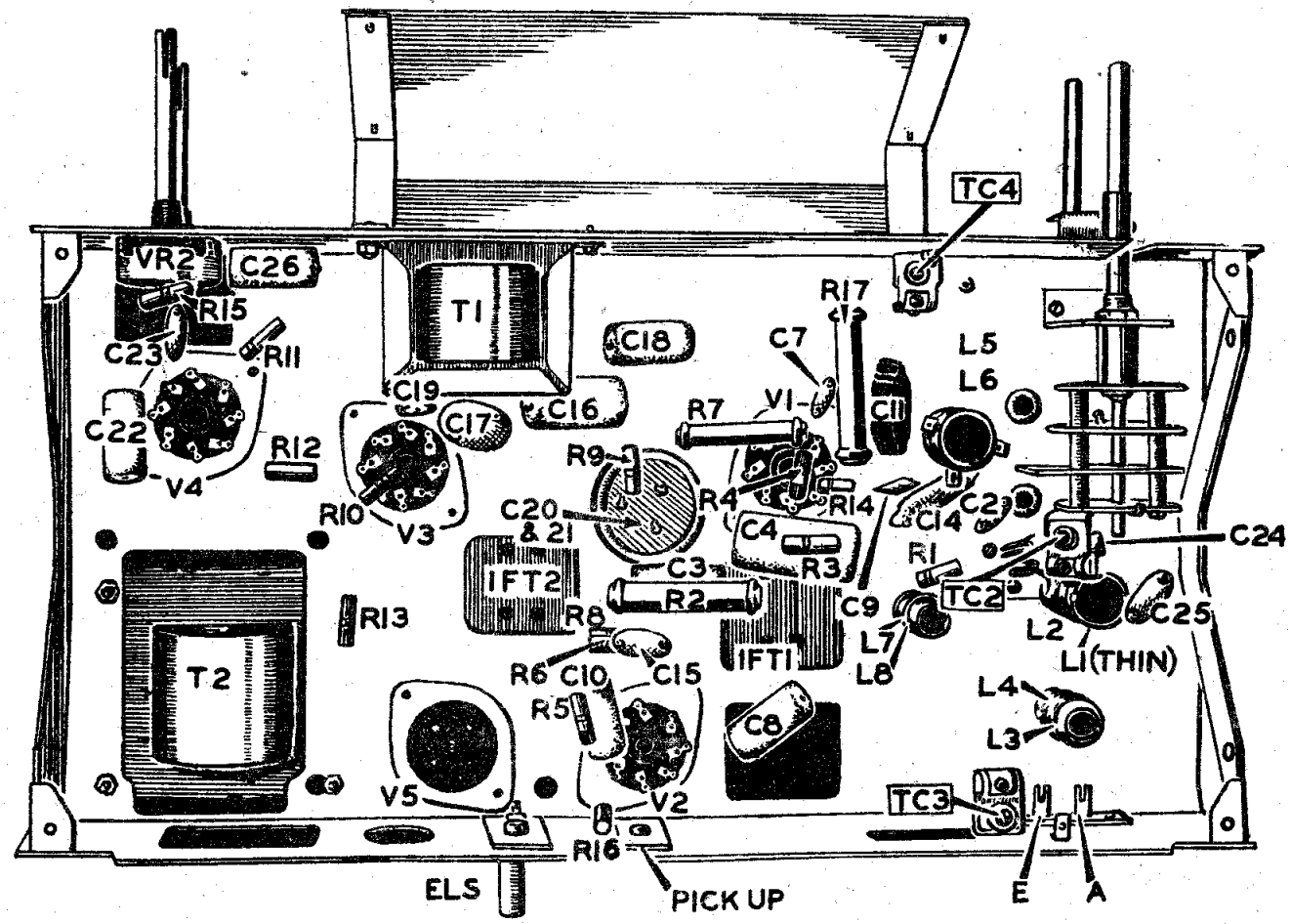
* When not incorporated on gang condenser.



NOTE: WHERE A RANGE OF VALUES IS GIVEN FOR A COMPONENT ANY STANDARD SIZE WITHIN THAT RANGE MAY BE USED.

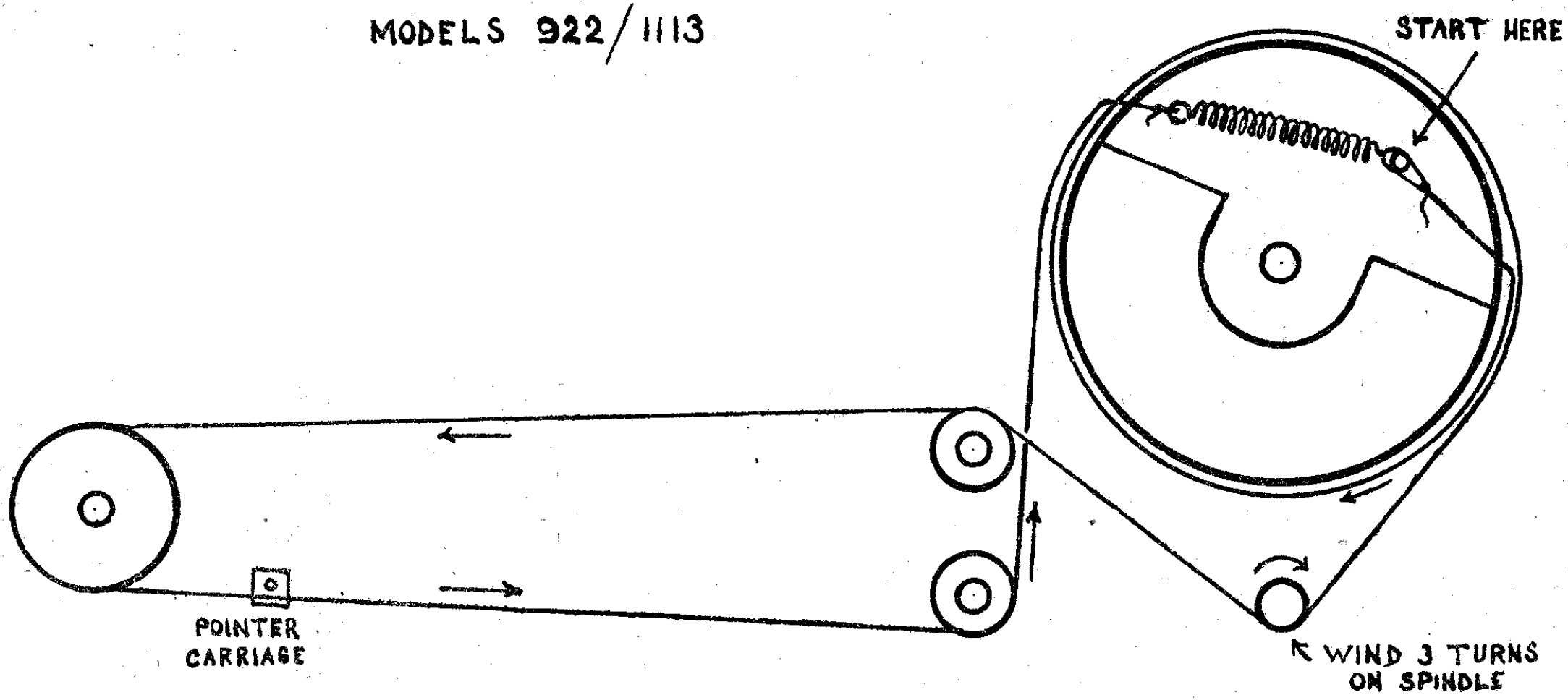
H. M. V. 1113 MARCONIPHONE 922


TC1
VC2
VC1
V1
C20
C21
V3
VR1
S1
V4
TC12
TC13
T2
TC5
TC6
V2
V5


TC4
VR2
C26
R15
T1
C23
R11
C18
C7
L5
L6
C19
C16
C17
R7
V1
R17
C11
C22
R12
V4
R9
R4
R14
C14
C2
C24
R10
V3
C20
& 21
C4
R1
IFT2
C3
R3
TC2
R13
R2
R8
C9
L7
L8
L2
C25
L1(THIN)
T2
IFT1
R6
C10
C15
R5
C8
L4
L3
V5
V2
TC3
R16
ELS
PICK UP
E
A

CORD TUNING DRIVE

MODELS 922/1113



GEL1 21 12 43