

General Description: Stereogram with an output of 2 watts continuous tone per channel. Record changer; B.S.R. Superslim UA15 with B.S.R. C1 cartridge and stylus type ST3. Aerials; ferrite rod for A.M. and internal dipole for F.M. Sockets; A.M. aerial, F.M. dipole and tape input and output. 200–250 volts A.C. 50 c/s.

Wavebands: S.W. 18.2–5.8 Mc/s. M.W. 1620–530 kc/s. L.W. 268–148 kc/s. V.H.F. 101–87.5 Mc/s.

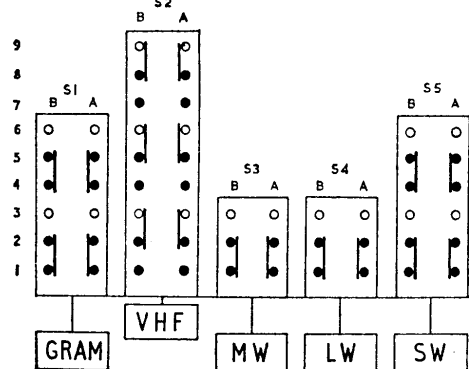
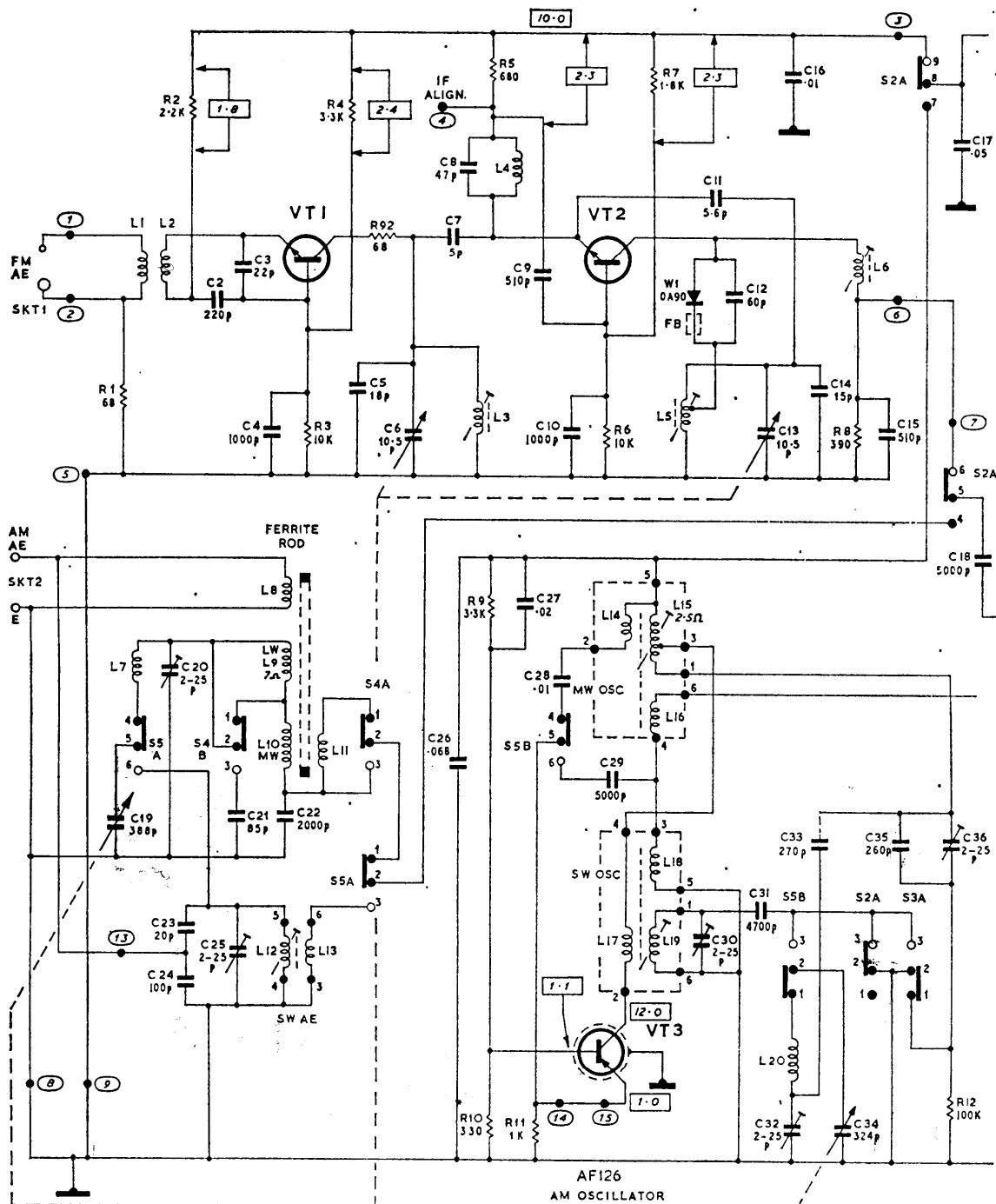
Alignment (General): Remove chassis. Connect an output meter adjusted for 15-ohm impedance in place of L.H. or R.H. loudspeaker or a 20,000-ohm volt-meter set to a suitable A.C. voltage range across the L.H. or R.H. loudspeaker sockets. Zero, trim and pad markers are provided on the scale diffuser.

Circuit Diagram Notes: Voltage measurements shown in rectangles were taken relative to the positive rail of each transistor (except where otherwise indicated) with a 20,000-ohm volt-meter, and with a mains input of 245 volts. D.C. resistance readings are shown against inductors where these are 1 ohm or greater. When a stereo decoder unit Type SD2 is plugged into socket SKT5, the wire links A, B and C are cut where shown.

RADIO SERVICING

FM RF AMP,
BF216

FM OSC. & MIXER
BF217



See Above
Voltage \square
Measured with 475KHz Input to Contact 4 of S5A and
with MW button depressed.

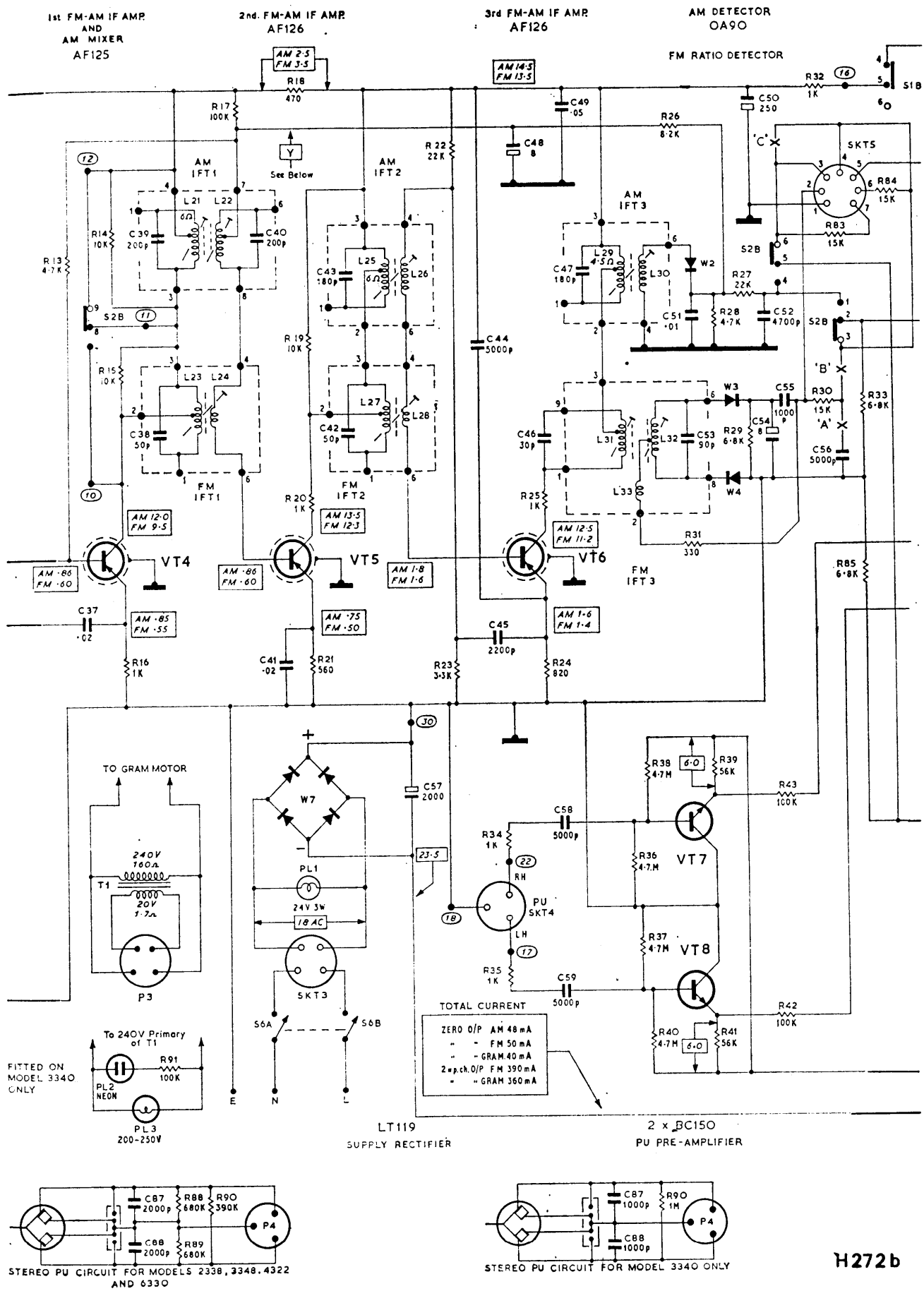
Zero Signal	0.86V
100 μ V	0.65V
1mV	0.3V

H272 a

(H272a) CIRCUIT DIAGRAM—MODEL 4322 (PART)

Alignment (A.M. I.F.): Switch receiver to M.W.: turn gang to maximum capacitance position and volume control fully clockwise. Inject a 475 kc/s., 30 per cent. modulated, signal via a 0.1- μ F. capacitor between contact 5 of

MARCONIPHONE



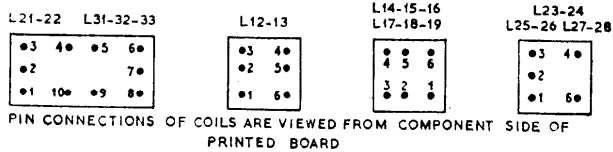
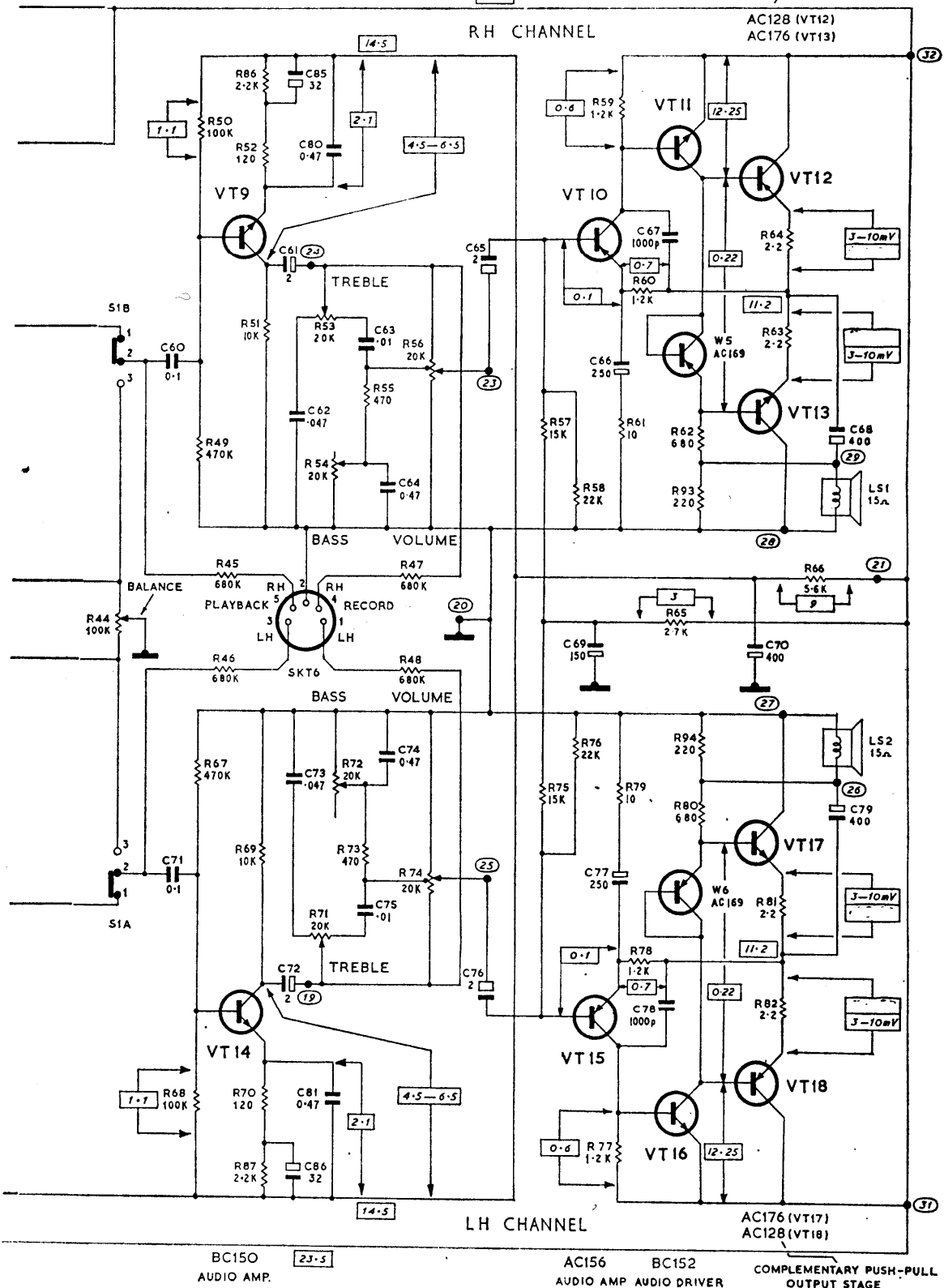
(H272b) CIRCUIT DIAGRAM—MODEL 4322 (PART)

switch S5A and chassis, then peak L29, L25, L22 and L21 for maximum output, adjusting signal input level as required to maintain an output level of 200 mW.

RADIO SERVICING

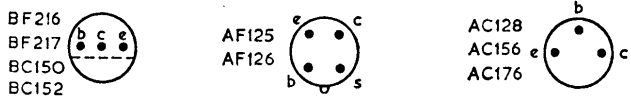
AUDIO AMP.
BC150

AUDIO AMP. AUDIO DRIVER COMPLEMENTARY PUSH-PULL
AC156 BC152 OUTPUT STAGE



PIN CONNECTIONS OF COILS ARE VIEWED FROM COMPONENT SIDE OF PRINTED BOARD

THESE CONNECTIONS MUST BE CUT WHEN A STEREO DECODER UNIT IS FITTED



H272c

(H272c) CIRCUIT DIAGRAM—MODEL 4322 (CONTINUED)

Alignment (A.M. R.F.): Align M.W. first. 30 per cent. modulated signal should be injected at A.M. aerial/earth socket (SKT2) via a 30-pF. series capacitor. With the tuning gang at maximum, check that the cursor coincides with the zero marker on the scale diffuser.

<i>Range</i>	<i>Frequency</i>	<i>Cursor position</i>	<i>Adjust</i>
M.W.	600 kc/s.	M.W. pad marker	L15, L10
	1400 kc/s.	M.W. trim marker	C32, C20
L.W.	220 kc/s.	L.W. 220 kc/s. marker	C36, L9
S.W.	6.7 Mc/s.	M.W. pad marker	L19, L12
	15.8 Mc/s.	M.W. trim marker	C30, C25

Notes: Adjust L10 by sliding ring along ferrite rod. Adjust L9 by sliding former along ferrite rod.

Alignment (F.M. I.F.): Use a signal generator providing Band II coverage, also 10.7 Mc/s. A.M. (30 per cent. modulated) and 10.7 Mc/s. F.M. signals (25 kc/s. deviation) at an impedance of 75 ohms.

Switch to V.H.F., and allow the receiver and test equipment to warm up for about 10 min.; set volume control 90 deg. back from maximum with treble and bass controls set to the midway position. Inject 10.7 Mc/s. F.M. signal between tag 7 and chassis, then adjust L31, L32, L27 and L23 for maximum output.

Notes: Tune L31 and L32 to outer peak with cores protruding from top of coil can.

Alignment (A.M. Rejection): Switch signal generator to 10.7 Mc/s. A.M. and tune L32 for minimum output (this should be a sharply defined dip in output). Switch signal generator to 10.7 Mc/s. F.M. and check that F.M. output has been retained. If maximum A.M. rejection does not coincide with maximum F.M. output, L32 should be tuned for maximum rejection at the expense of a slight reduction in F.M. output. Reset signal generator to 100 μ V. F.M. output and recheck operations 1, 2 and 3 using volume control to maintain the output level at 500 mW.

Alignment (F.M. R.F.): Check that the cursor coincides with the "zero" marker on the scale diffuser when the gang is fully closed. Tune receiver to F.M. 94 Mc/s. marker on scale diffuser. Inject 94 Mc/s. F.M. signal into F.M. aerial socket (SKT1) and adjust L5, L3 and L6 for maximum output. Repeat as necessary for correct calibration.

Pickup Balance: R44 is a pre-set control which balances the left-hand and right-hand outputs from the pre-amplifier and, normally, will require adjustment only if the pickup cartridge is replaced.

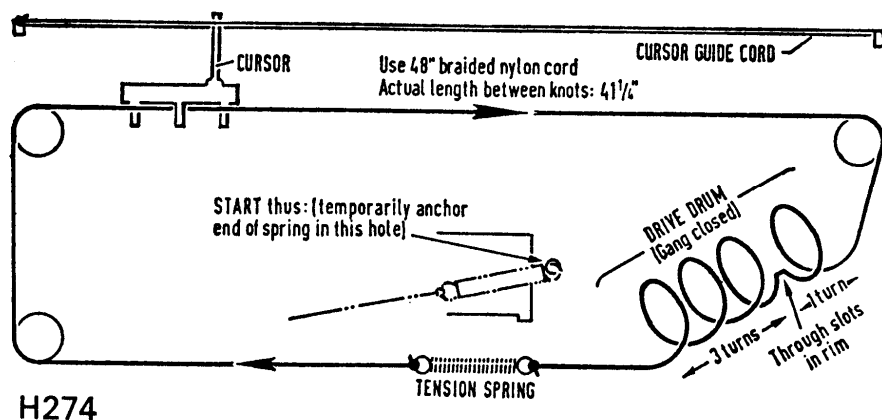
Audio Check: Connect a 15-ohm impedance output meter in place of each loudspeaker. Alternatively, examine output waveform on an oscilloscope connected between tag 29 (or tag 26 for LH channel) and chassis. Switch to gram and turn both treble and bass controls fully clockwise, then connect audio oscillator between tags 22 and 18. Inject a 15–20 mV. 800 c/s. signal and note output: for a correctly functioning amplifier this

should be clean, unclipped and approximately 2 watts. Transfer input to tags 17 and 18 and similarly check other amplifier.

Tone Control Check: With test conditions as for the audio amplifier check, volume control at maximum and tone controls set to the midway position, reduce input of 800 c/s. signal to produce 200 mW. output: this will require an input of approximately 5 mV. Back off volume control 20 db, i.e. increase input 20 db and adjust volume control to reduce output to original level. Inject an 80 c/s. audio signal and turn bass control from minimum to maximum: this should produce a variation of 12 db in output level. Inject an 8 kc/s. audio signal and turn treble control from minimum to maximum: this should produce a variation of 18 db. in output level.

Chassis Removal: Pull off rotary control knobs, best done by using a length of stout cord as a "puller". Disconnect F.M. aerial plug and remove back cover. Pull out A.M. aerial and F.M. aerial plugs from chassis then release tape recorder and aerial sockets panel from cabinet. Release mains lead clamp, then detach connections from chassis (mains transformer, pickup and loudspeaker). When removing loudspeaker socket connection from printed board, pull outward only to avoid breaking soldered connections on copper side of board. Remove 2BA nut and washers or 2BA bolt from chassis fixing lug located centrally at rear of chassis. The chassis assembly may now be pulled clear of front locating studs and manoeuvred clear of cabinet.

Record Changer Removal: Take out screws, swivel turnclips, and unplug F.M. and A.M. leads to release back covers. Unplug pickup and mains transformer connections from radio chassis, remove two 4BA nuts and shake-proof washers securing mains transformer to cabinet floor, and (in Models 2338, 3348 and 4322 only) take out sliding shelf beneath record changer. With record changer transit screws turned fully clockwise, pivot clips on lower end of transit screws to enable them to pass through motor board, then lift record changer and mains transformer clear of cabinet.

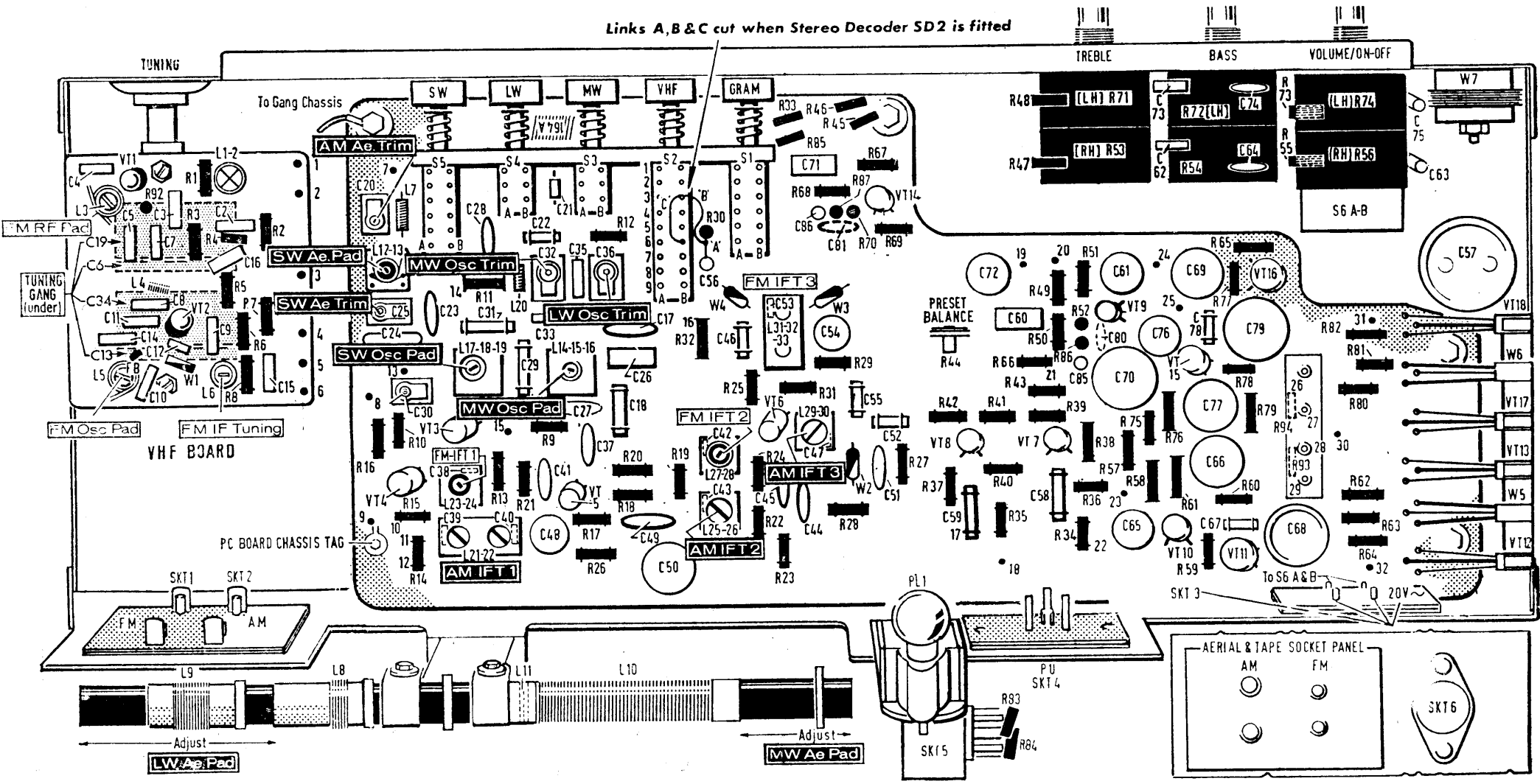


H274

(H274) DRIVE CORD—MODEL 4322

275

Links A, B & C cut when Stereo Decoder SD2 is fitted



MARCONIPHONE

H273

(H273) COMPONENT LOCATIONS—MODEL 4322