

THREE valve portable tape recorder released August, 1959, at 28gns.

Mains. 200-250V AC, 50c/s.

Consumption. 60W.

Valves. ECC83, ECL82, EM84.

Rectifiers. EC1/U568, M3/460.

Output. 2.5W.

Speaker. 8x3in. elliptical, 3ohms.

Deck and tape speeds. BSR Monardeck; 3ips.

Tracks. Standard half track, left to right.

Maximum spool size. 5½ins.

Microphone. Crystal type included.

Manufacturer. Ferguson Radio Corporation, Ltd.

Service department. Eley's Estate, Angel Road, Edmonton, N18; 24 Sheepcote Street, Birmingham, 15; Thorn House, Derby Street,

Cheetham, Manchester, 8; 160/162 Battlefield Road, Glasgow, S2.

DISMANTLING

Deck and chassis removal. Remove tape spools and head cover, pull off four control knobs (these fit tightly and may be removed with the aid of a stout cord), unscrew six top cover retaining screws and lift off top cover. Earlier models had only four retaining screws.

Tape deck, chassis and socket panel are held, as one unit, by four self tapping screws. When these have been removed, complete assembly can be lifted out of case. Speaker leads are long enough for most servicing purposes. Retaining screw beneath head cover also secures serial number plate, which should be refitted on reassembly.

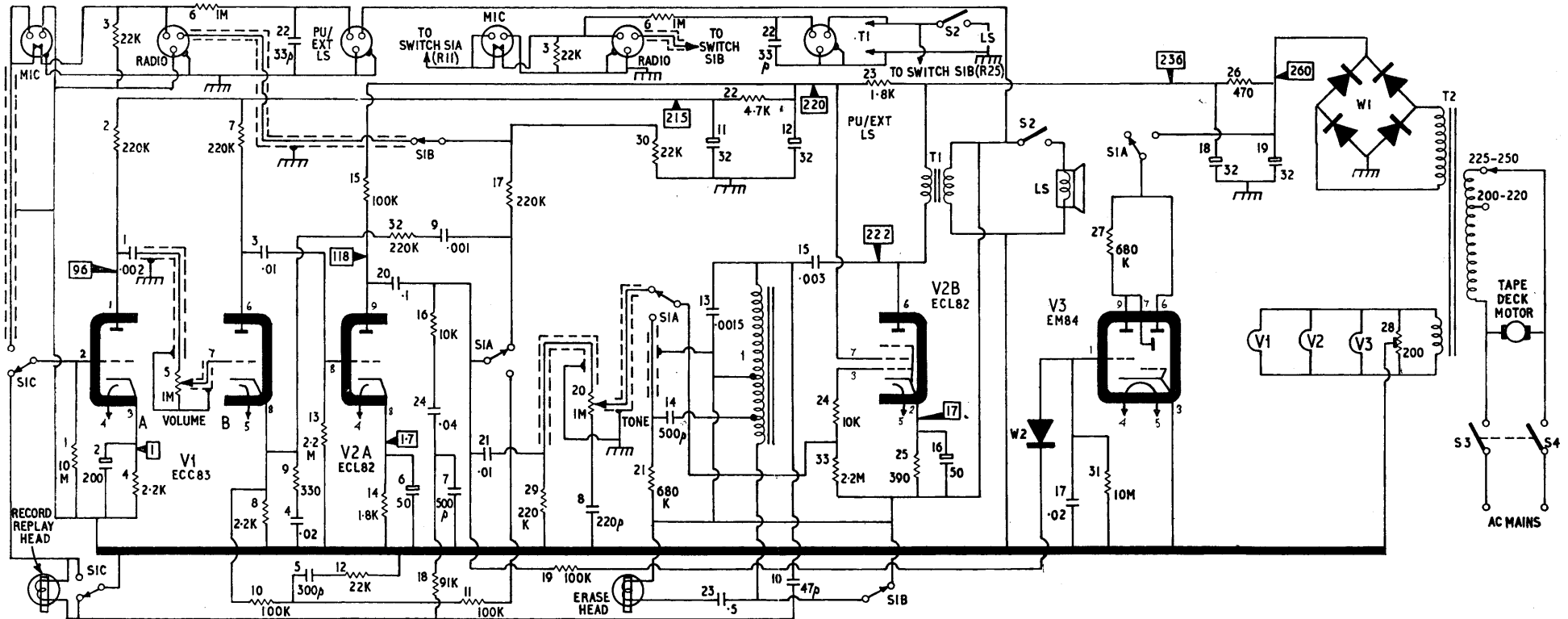
SERVICE NOTES

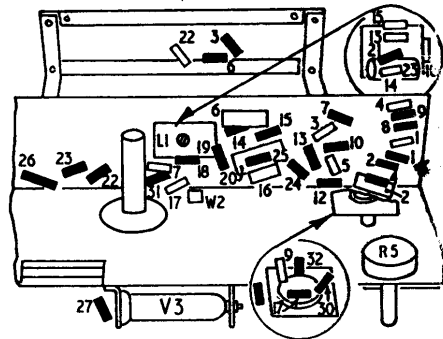
Controls. At front-left of machine is combined volume/record level (R5) and at right-front combined tone (R20) and mains on/off (S3/4). Behind volume control is the record/replay (S1) interlock switch and behind the tone control the main mechanical function control.

A switch (S2) for muting the internal speaker is mounted on the rear socket panel.

Inputs and outputs. The three input sockets on the back panel are, from left to right, for pickup (1M), radio (22K) and microphone (10M). Pickup socket is also used for extension speaker outlet and radio socket for signal voltage outlet (at minimum load of 50K) on replay. Pin numbers for differing functions

Continued overleaf





are shown on circuit.

Bias and erase frequency. L1/C13 should resonate at approximately 54kc/s and C10 is chosen for optimum recording bias.

Head adjustments. Slacken off both adjusting screws on each head and, when resetting, first tighten screw not fitted with compression spring then tighten other screw to hold head securely without over tightening.

Adjust erase head to obtain complete erasure on previously recorded tape. To set replay head, play a standard test tape on the 5kc/s band and adjust for maximum output with a output meter connected across external speaker socket, keeping output level at about 50mW (0.4V RMS in 3 ohms) by means of volume control.

Sensitivities and level indicator. Nominal inputs for full recording level are as follows:—Microphone and radio, 1.5mV; pickup, 75mV. Magic eye V3 should give maximum deflection on peak modulation; time constant of its feeding components ensures accurate peak reading with a slow decay.

Frequency response. Nominal overall response is 50c/s-10kc/s.

Noise level. To minimise hum if R28 has been disturbed proceed as follows:—Screen the chassis electrostatically, especially around V1 and the input sockets, take off tape spools and set to record. Short circuit R21 to stop oscillator and plug-in a dummy microphone connector with 1000pF connected between the tags.

Connect a sensitive valve voltmeter between junction C20/R16 and chassis, allow 10 minutes to warm up and adjust R28 for minimum reading. This should be approximately 80mV.

Heads and associated parts should be de-

COMPONENT RATINGS

Capacitors

400V: C1 3 21
300V: C18 19
300V AC: C15
275V: C11 12
250V: C20
150V: C5 17 23 24
25V: C16
12V: C6
6V: C2
All others 350V wkg.

Resistors

1W: R26
½W: R23 25
All others ½W.

magnetised if excessive background noise is experienced.

Voltages. Readings shown on circuit are taken with a 20K-per-volt meter with S1 in replay position.

Circuit differences. Main circuit is of Mk. 2 models; differences on Mk. 1 version are as follows:—Input and output sockets are arranged as in inset diagram, R33 is omitted, and V2B grid is returned to chassis via R29 on playback and R21 on record.

On some models R9 is 270ohms.

Circuit notes. On the circuit all sections of S1 are shown in the replay position. HT is removed from V3 on replay by S1A.

MECHANICAL ADJUSTMENTS

Cleaning. Heads, capstan, tape guides and pinch wheel will need occasional cleaning, and this should be done with a soft cloth dampened with methylated spirit and placed over a wooden spill. Do not use petrol or carbon tetrachloride and avoid iron or steel objects coming into contact with heads.

Brakes. Brake arms should move freely under action of spring and should be free from distortion. If the brakes slip, clean brake pad and rim of spool carrier and check that they are free from oil or grease.

Pressure roller and pads. Pressure roller should be free to move in slot and springs should push it towards front of slot. If tape slips at capstan, clean capstan and roller and ensure that they are free from oil and grease.

Pressure pad and its spring should be adjusted to between 15 and 20gms.

Lubrication. If spool support casting becomes tight on its spindle, remove and clean, then assemble with light grease.



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