

ERT SERVICE CHART 1806



Marconiphone Unit Three comprising a record player and amplifier in a combined unit plus a pair of speaker systems. All in teak finish

MARCONIPHONE UNIT THREE Model 4406

Player/Amplifier 4405
Speaker - - - 4407

| RESISTOR | |
|----------|--|
| R1 | |
| R2 | |
| R3 | |
| R4 | |
| R5 | |
| R6 | |
| R7 | |
| R8 | |
| R9 | |
| R10 | |
| R11 | |
| R12 | |
| R13 | |
| R14 | |
| R15 | |
| R16 | |
| R17 | |
| R18 | |
| R19 | |
| R20 | |
| R21 | |

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|------|-----|-----|------|------|------|----|-----|-----|----|----|----|----|----|----|----|----|----|
| R | 70 | 10 | 8 | 12 | 14 | 21 | 15 | 17 | 23 | 18 | 19 | 25 | 27 | 29 | 31 | 33 | 35 |
| C | | 4 | 5 | | | 7 | | | | 13 | 9 | 12 | 8 | 15 | 17 | 19 | 25 |
| Misc | S10 | SIC | SKT5 | SKT2 | SKT1 | | SIB | SIA | S2 | | | | | | | | |

MARCONIPHONE UNIT THREE, model 4406, is a combined record player and amplifier (Unit 4405) plus a pair of speaker systems (Unit 4407).

Unit 4405 can be used as a feed amplifier for tape recorders or as a boost amplifier for tape recorders or transistor radios.

Unit 4407 is a compact speaker system for use—in pairs—with the 4405.

Mains. 200-250V 50Hz.

Consumption. Quiescent current 20-24mA per channel.

Fuse. F1 2A.

Transistors: BRC classification, TR1 VS1, TR2 AF8, TR3 AF8 voltage stabilisation, TR4/TR10 pre-amplifier AF1, TR5/TR11 pre-amplifier AF2, TR6/TR12 AF amplifier AF1, TR7/TR13 driver AF4, TR8/TR14 AD162, TR9/TR15 AD161 complementary push-pull output.

Diodes. W1 supply rectifier LT116VA, W2 voltage stabilising D4, W3/W4 bias stabilising D5.

Pilot lamp. PL1 Pilot-neon bulb.

Inputs. Skt 1 tape 5-pin DIN, pin 3 LH channel pin 5 RH. Skt 2 pickup. Skt 5 radio 5-pin DIN, pins 1 and 5 RH channel pin 3 LH.

Outputs. Skt 1 tape, pin 1 LH channel, pin 4 RH. Skts 3 and 4 speakers.

Output. 6W sine wave per channel. Distortion less than 5 per cent.

Frequency response. -3dB at 40Hz and 18kHz referred to 0dB at 1kHz.

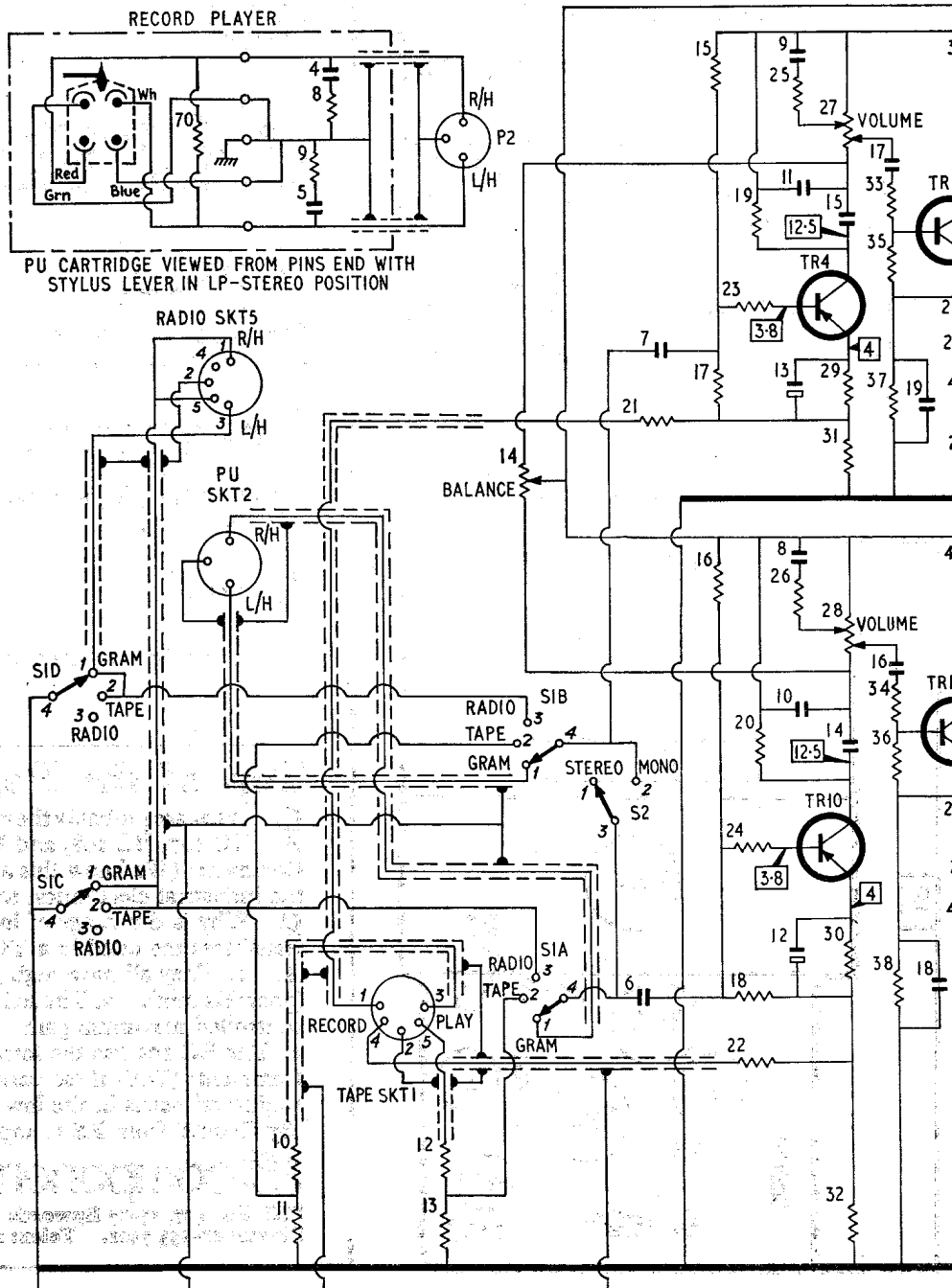
Speakers. Impedance 8 ohm.

Record deck. Garrard SP25 MK2S.

Cartridge. KS40A.

Dimensions. 4405 16½ × 14½ × 7½ins. 4407 14½ × 9½ × 7½ins.

Finish. Teak, all units.



Price. £84.80.

Manufacturer. British Radio Corporation Ltd.

Service departments. London—PO Box 121, Lea Valley Trading Estate, Angel Road, Edmonton, London N18 3BP. Tel: 01-807 3060. Spare parts, Tel: 01-807 0791. Answering service 01-807 6332. Manchester—Thorn House, Derby Street, Cheetham, Manchester 8. Tel: 061-832 2499. Glasgow—155 Shieldhall Road, Glasgow SW1. Tel: 041-882 4512.

DISMANTLING

4405. Turn transit screws fully anti-clockwise to lock record changer, secure pickup then unscrew and remove six screws and cup washers securing motor board to case. Lift motor sufficiently clear for access to motor and pickup lead plugs. Disconnect and lift motor board assembly out of case.

For access to foil side of amplifier circuit panel unscrew and remove five screws securing case bottom cover and remove cover.

To remove the complete amplifier assembly, pull off control knobs, detach neon lamp from its clip and remove screws from brackets securing rear of amplifier mounting board.

Unscrew and remove nuts and washers securing controls mounting panel also five screws securing balance control and socket panel. Invert the panel and with the balance control knob downwards it may be passed through the rear of the case.

Move the amplifier assembly rearwards and tilt right hand side to lift it out of the case. A self-adhesive screening card is fixed on the underside of the amplifier mounting panel. The card, which is wired to the main printed panel foil, is normally positioned slightly below and to the right of the printed board aperture in the panel.

SERVICE NOTES

All DC voltages indicated on the circuit diagram were measured under quiescent conditions with a 20,000ohm/V meter. They were taken on a mains input of 245V with R6 adjusted for a 24V DC output from the voltage stabilising circuit. Except where otherwise indicated, the values are negative with respect to positive chassis line.

Mains input. The instrument is wired for operation on 240V 50Hz (nominal) but if necessary the soldered connections on the mains transformer T1 can be altered for 220V or 200V operation. If this modification is carried out, a notice to this effect must be prominently displayed to

avoid subsequent connection to a higher mains voltage.

Stylus replacement. To remove the styli, first remove the pickup head by unscrewing the locking collar and pulling the head free of the arm. Turn the indicator flag to its mid-position and then, by pulling the indicator outwards, the complete stylus assembly can be withdrawn.

The indicator of the replacement assembly must be similarly placed in the mid-position before attempting to press the assembly home.

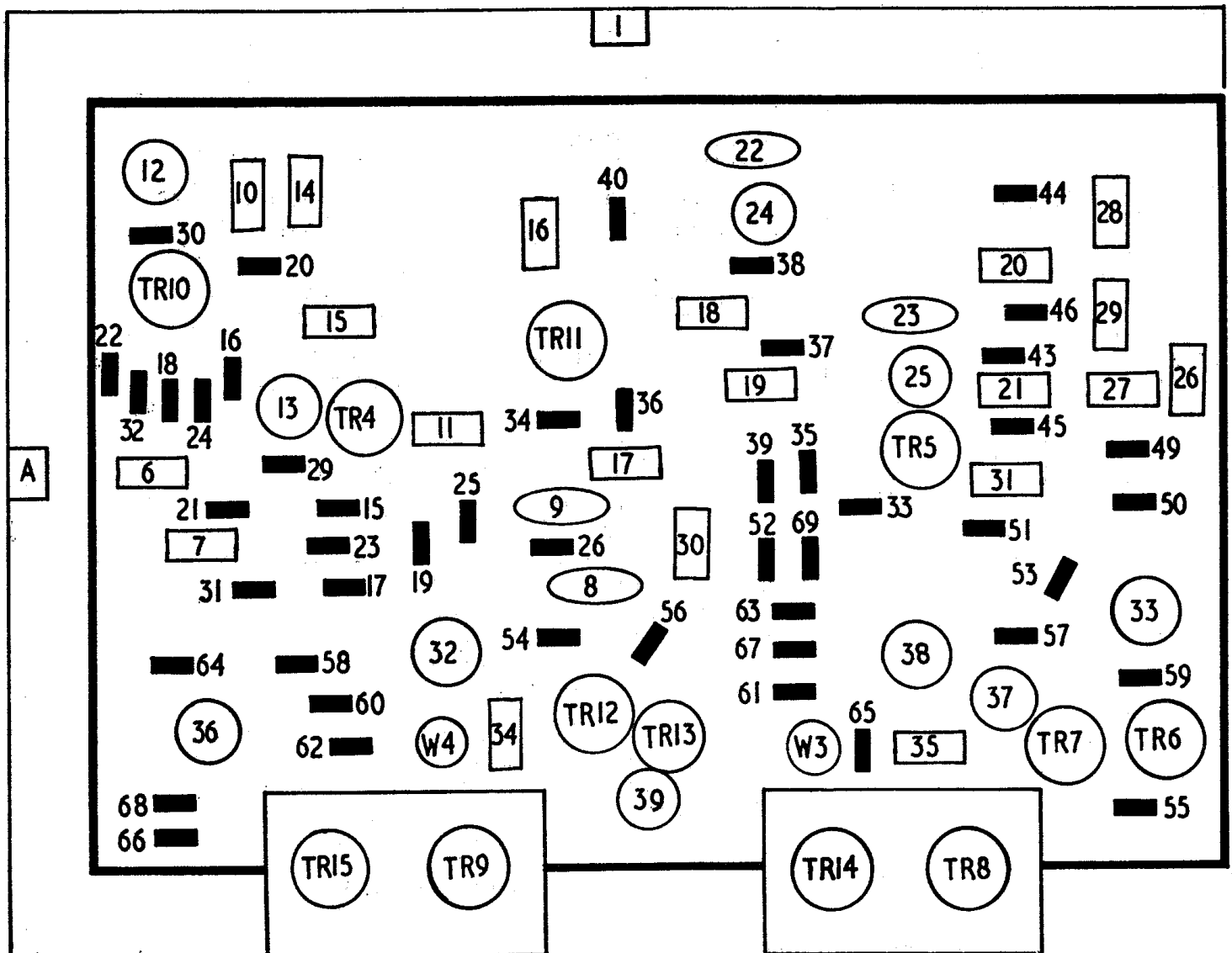
Audio checks. Before carrying out any tests, check that DC supply voltage is 24V and, if necessary, correct by adjusting R6.

Output. Connect an 8ohm output meter in place of each speaker or, alternatively, an oscilloscope across the speaker and observe the output waveform.

Switch to 'Mono' and 'Gram' and turn volume, bass and treble fully clockwise.

Feed in a 50mV 800Hz signal into either of the pickup leads and adjust balance control to provide equal outputs which should be 5W each channel, clean and unclipped. The balance control should now be at or near the centre of its range.

Component layout on unit 4405 amplifier, panel viewed from component side



Tone controls. With test conditions as above, set tone controls to mid-position and reduce 800Hz signal to give an output level of 500mW—input required should be of the order 10-15mV. To obtain a suitable reference point on the volume control, increase signal input by 25dB then reduce volume control to give original output level of 500mW.

Feed in an 80Hz signal and turn bass control from minimum to maximum; the output should vary by 24dB.

Feed in an 8kHz signal and turn treble control from minimum to maximum; the output should vary by 20dB.

The output from one channel should be within 2dB of the other during above checks.

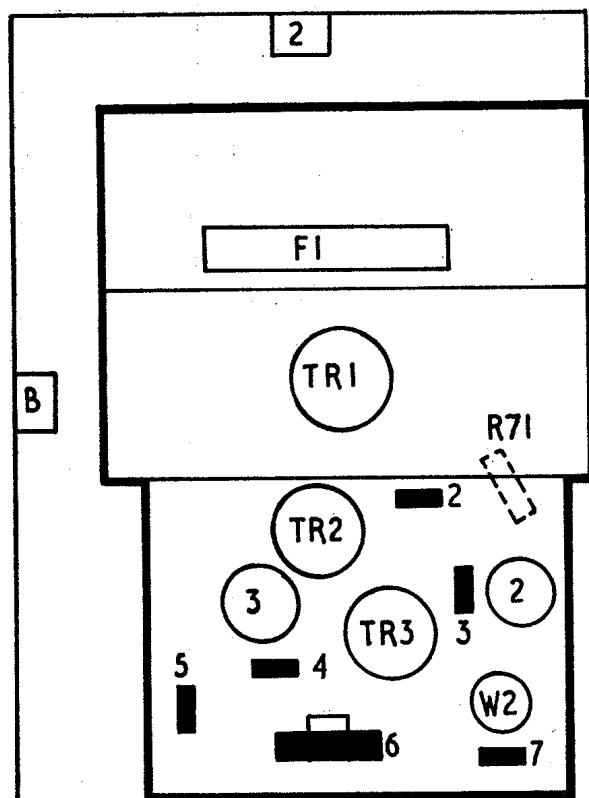
Tape Output. Unless there is a fault condition in the audio amplifier, operation of the volume, bass and treble controls should have no effect on the output voltage to the tape recorder.

Inputs. Switch to 'Tape' and feed in an 800Hz signal to Skt 1. With volume at maximum and tone controls at mid-position an input of 300mV should give 5W output per channel.

Switch to 'Radio' and transfer input signal to Skt 5. With controls set as for 'Tape' an input of 50mV should give 5W output. Output at tape socket should be 150mV for a radio signal input of 150mV.

Unit 4407. Note: If, during servicing, it is required to operate the unit with the back cover removed, the volume must be kept well down in order to avoid damaging the high-compliance speaker cones.

Voltage stabilising unit viewed from component side of panel



Some units are fitted with EMI speakers. When replacing with Goodmans speakers, use the four fixing clamps which are supplied.

The reversible electrolytic capacitor (2μF) is 3μF in some units.

Circuit component variations. In some models C4, C5 are 8K2pF and R8, R9 are 1K5ohm.

Additional copies of this chart 25p, including postage. Payment with order please to ERT, Dorset House, Stamford, Street, London SE1.

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