

Power consumption

7 watts max.

Dimensions

3.0 × 13.7 × 7.4 in.

Connection leads

Mains lead—9 ft long, output—4 ft long. A flex shortener is provided for each lead.

L520 FLOOR LOUDSPEAKERS

Frequency range

50–20,000 Hz.

Drive units

8", 2½", 2½".

Impedance

3.2 ohm.

Power handling

15 watts (DIN 45-573).

Enclosure volume

20.0 litres.

Features

Fitted with brackets for wall mounting. Front badge may be rotated.

Dimensions

Each—16.9 × 11.0 × 9.5 in.

Connection leads

Each—20 ft long. A flex shortener is provided for each lead.

L510 SHELF LOUDSPEAKERS

Frequency range

60–20,000 Hz.

Drive units

6½", 2½", 2½".

Impedance

4 ohm

Power handling

15 watts (DIN 45-573)

Enclosure volume

17.4 litres.

Features

Fitted with brackets for wall mounting. Front badge may be rotated.

Dimensions

Each—14.0 × 9.6 × 7.8 in.

Connection leads

Each—20 ft long. A flex shortener is provided for each lead.

RTA2000 COMPACT

Transistors/Diodes

40 transistors (including 2 Mosfets), 28 diodes.

Record-player unit section

Unit

Lenco B55 transcription deck.

Operation

Manual single play, infinitely variable speed adjustment between 30–86 rpm (click stops at 16⅔/33⅓/45/78 rpm), stroboscope disc, cueing device, bias compensator.

Cartridge

Goldring G800E 'Free Field' high compliance magnetic cartridge.

Stylus

Diamond, elliptical tip 0.0007" × 0.0003".

Tracking weight

1½–1¾ grams.

Signal/Noise ratio

Magnetic pick-up 70 dB, Tape playback 70 dB (at rated power output).

Harmonic distortion

Less than 0.6% from 40–12,500 Hz. for rated power output.

Frequency response

20–25,000 Hz –3 dB.

Controls

Volume/on-off, Bass +12 dB (50 Hz), Treble +11 –13 dB (10 KHz), Balance, Loudness control, Input selection, Mono/stereo switch.

Inputs

Tape playback 120 mV (100 K ohm).

Outputs

Tape recorder 300 mV (250 K ohm). Loudspeakers 3–15 ohm, Stereo headphones 3–50 ohm.

Tuner Section

FM Coverage

87–108 MHz.

FM Sensitivity

1.5 µV for 26 dB signal/noise.

Frequency response

20–15,000 Hz –3 dB.

FM aerial input

75 ohm (external FM aerial provided).

Features

Push button selection of 5 pre-tuned FM stations, AFC, stereo decoder, tuning meter, stereo indicator.

General

Power supply

110/130/220/240 v. AC 50 Hz.

Power consumption

100 watts max.

Dimensions

6.8 × 22.7 × 12.8 in.

Connection lead

Mains lead—9 ft long. A flex shortener is provided.

TA2700 STEREO FM TUNER-AMPLIFIER

Transistors/Diodes

36 transistors (including 2 Mosfets), 26 diodes.

Amplifier Section

Power output

15 watts per channel—continuous simultaneous sine wave (rms) rating and music power (IHF) rating (3.2 ohm).

Signal/Noise ratio

Magnetic pick-up 70 dB, Tape playback 70 dB (at rated power output).

Harmonic distortion

Less than 0.6% for 40–12,500 Hz. for rated power output.

Frequency response

20–25,000 Hz –3 dB.

Controls

Volume/on-off Bass ±12 dB (50 Hz), Treble +11 –13 dB (10 KHz), Balance, Loudness Control, Rumble filter, Mono/stereo switch, Loudspeaker selection, Input selection.

Inputs

Magnetic pick-up 3 mV (47 K ohm). Tape playback 120 mV (100 K ohm). Auxiliary inputs (× 2) 60 mV (47 K ohm).

Outputs

Tape recorder 300 mV (250 K ohm). Loudspeakers (2 pairs) 3–15 ohm. Stereo headphones 3–50 ohm.

Tuner Section

FM Coverage

87–108 MHz.

FM Sensitivity

1.5 µV for 26 dB signal/noise.

Frequency response

20–15,000 Hz –3dB.

FM aerial input

75 ohm (external FM aerial provided).

Features

Push button selection of 5 pre-tuned FM stations, AFC, stereo decoder, stereo/mono switch, tuning meter, stereo indicator.

General

Power supply

110/130/220/240 v AC 50 Hz.

Power consumption

100 watts max.

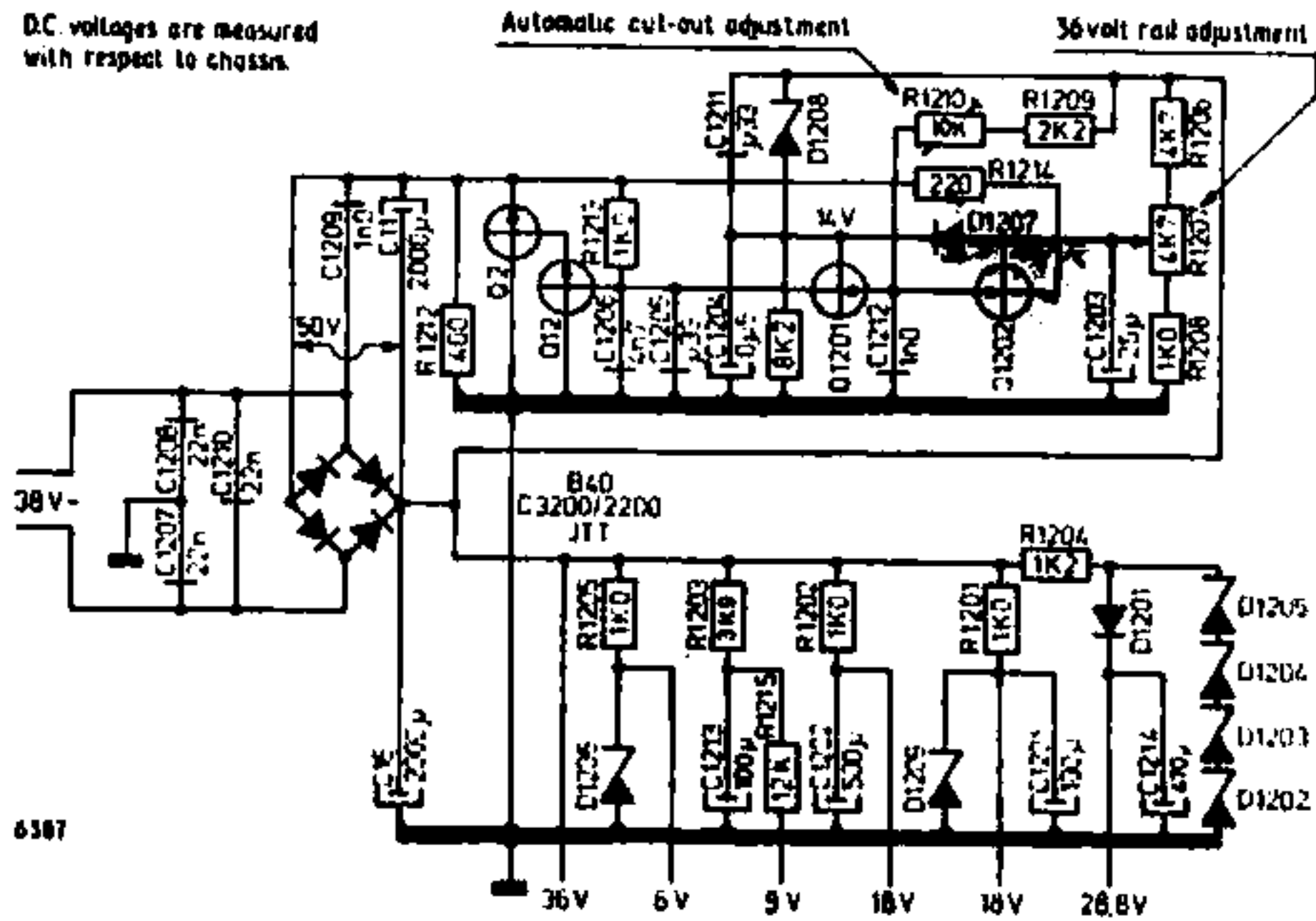
Dimensions

3.2 × 19.5 × 9.8 in.

Connection lead

Mains lead—9 ft long. A flex shortener is provided.

D.C. voltages are measured with respect to chassis.



6387

Fig. 5 Power supply circuit.

D.C. VOLTAGES MODEL RTA2000

Before starting work on the RTA2000 the voltages indicated in Fig. 6 should be checked.

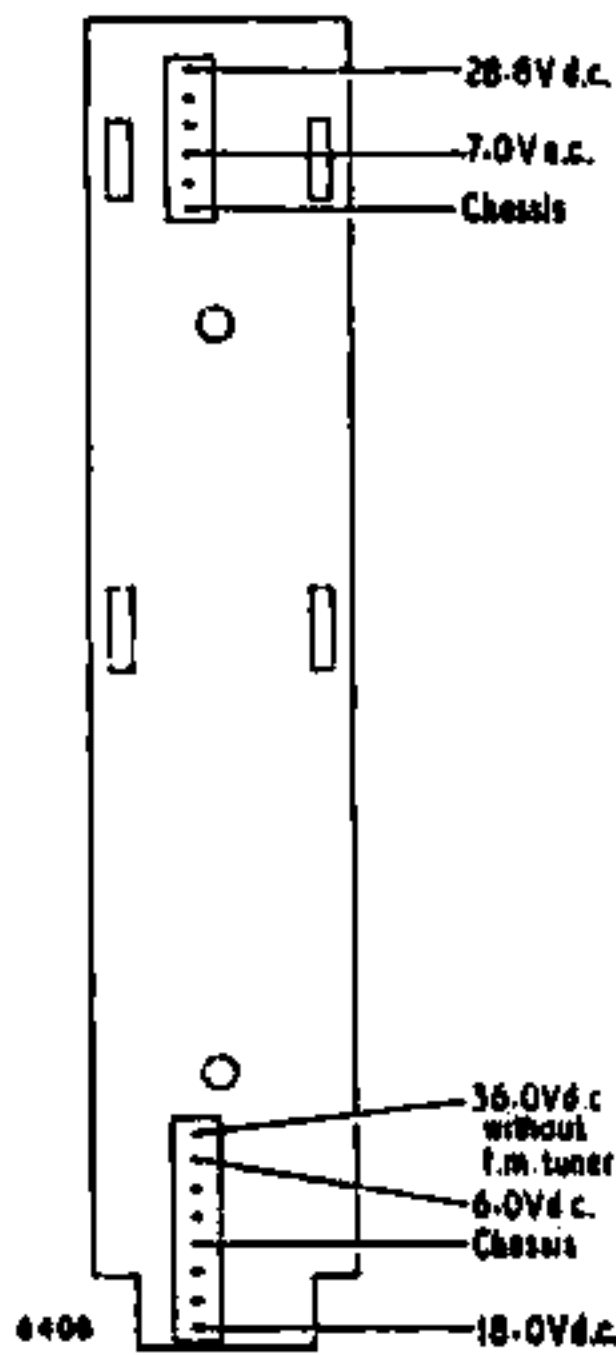
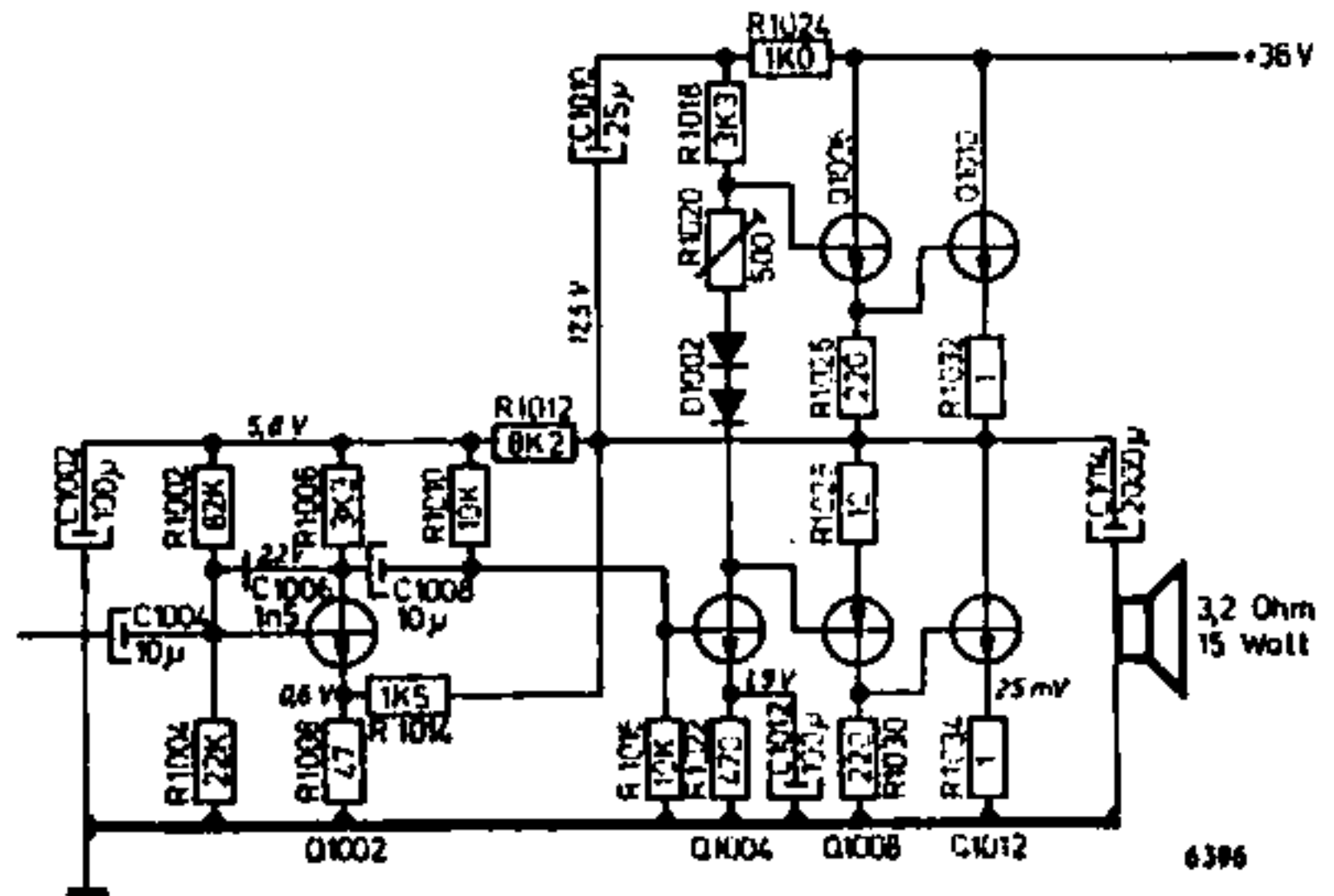


Fig. 6 Voltage readings—RTA2000

AMPLIFIER OUTPUT STAGES

Check the voltages indicated in Figs. 7 and 8.

Fig. 7 Audio output stage.



6386

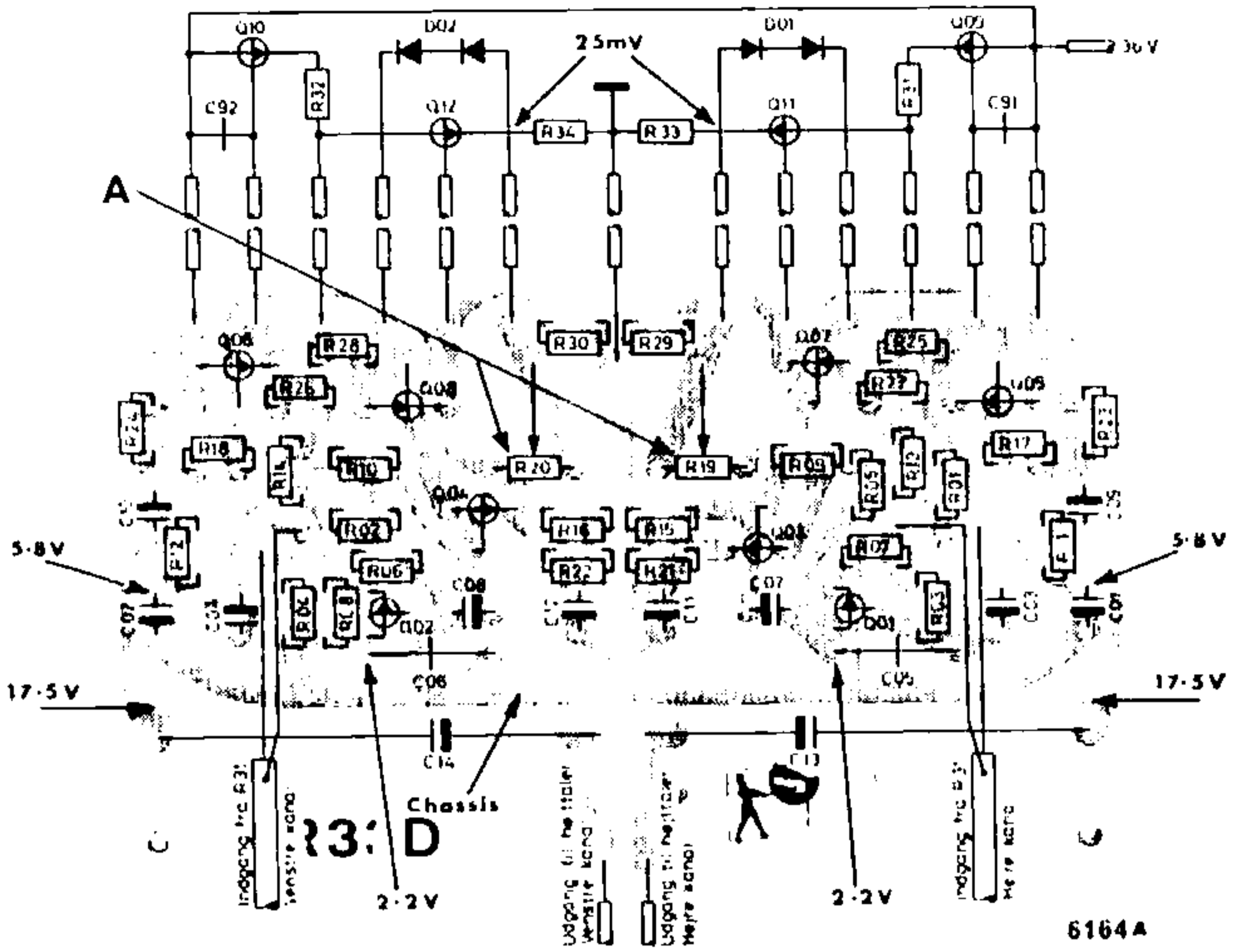


Fig. 8 Output stage pane..

AF AMPLIFIER

Check the voltages indicated in Figs. 9 and 10.

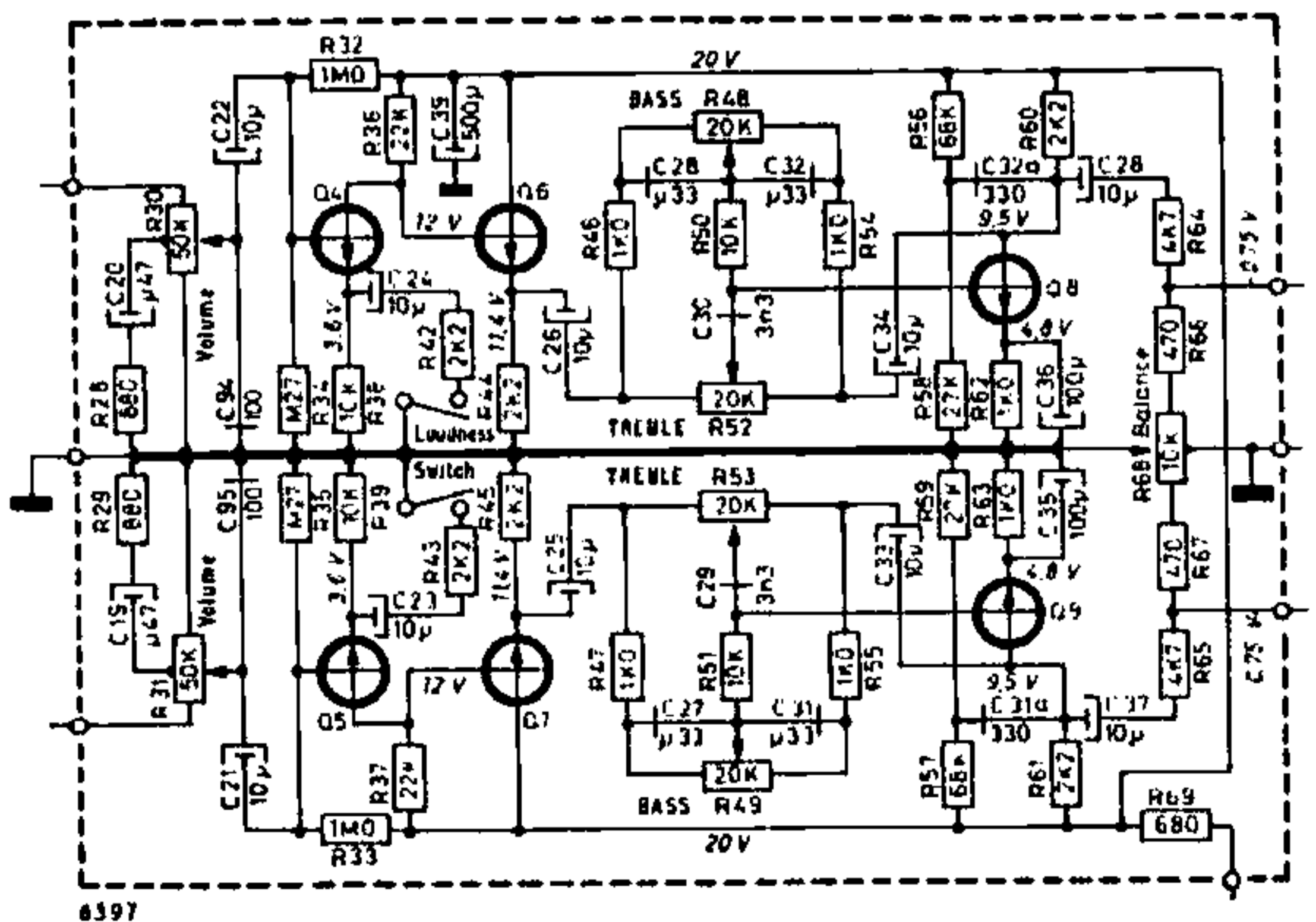


Fig. 9 Circuit diagram—A.F. amplifier panel.

V_{in} 120 mV
 f_{in} 370
 R_{out} 1.18 V

RM 0.1
 UM 1.15

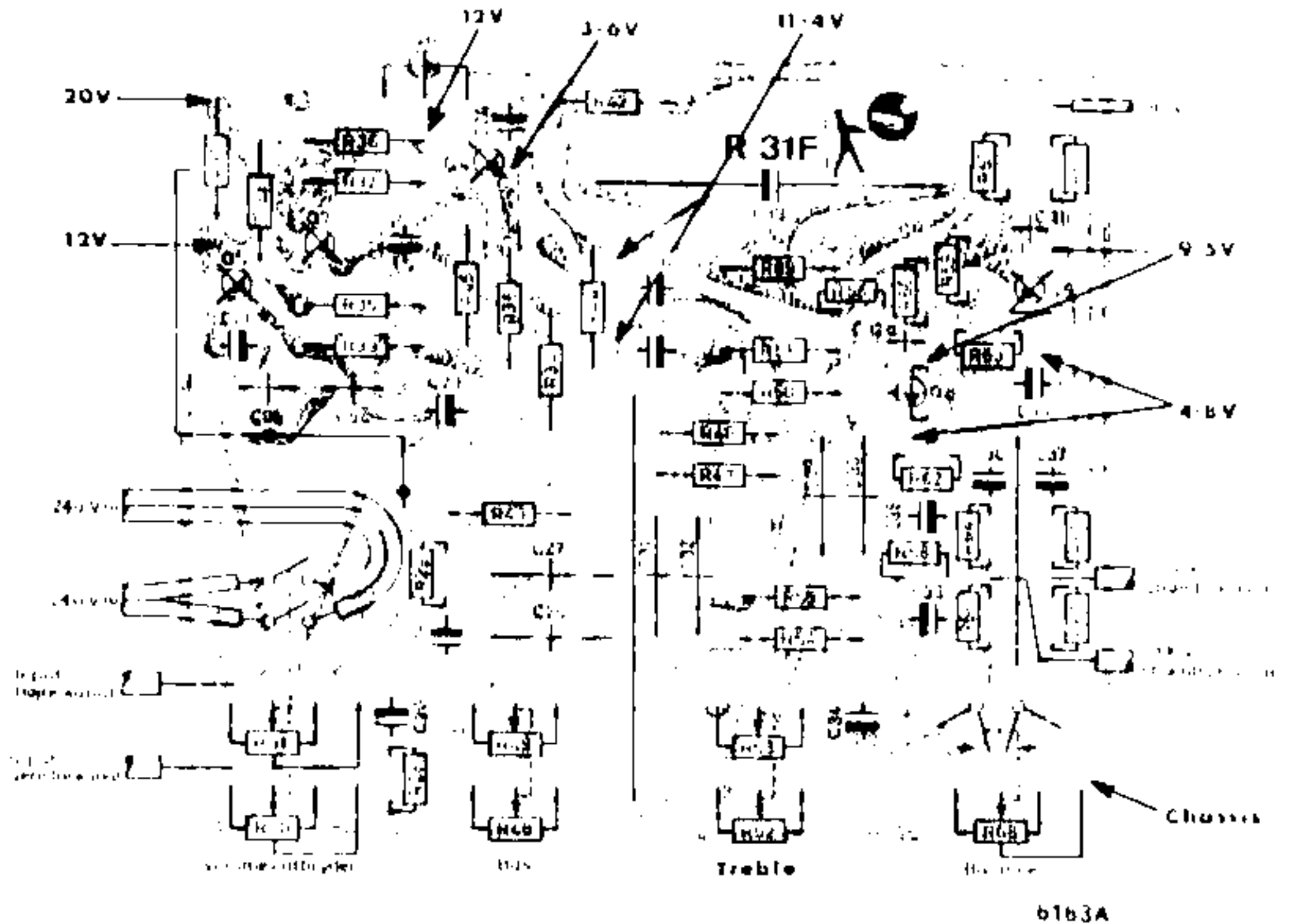


Fig. 10 A.F. amplifier panel.

AMPLIFIER TESTING

Connect an audio generator to pin 3 or pin 5 of the tape recorder socket.

Input signal: 120 mV, 1000 Hz.

Input impedance: 100 k ohms at 1000 Hz.

Connect a suitably rated 3.2 ohm load resistor across each loudspeaker socket. Check that 6.9 volts (15 watts) is developed across each load resistor.

PREAMPLIFIER MODULE 17

Measure the voltage at module pins 2 and 8. It should be 9.0 volts.

If module 17 draws no current, the voltage at pins 2 and 8 should be 36 volts.

FM R.F./I.F. CHECK

Connections

Connect an FM signal generator to the aerial input of the receiver.

Input signal: less than 4 μ V.

Frequency swing: \pm 250 kHz.

Connect the Y input of an oscilloscope to the tape recorder output (pin 1 or pin 4 of the tape recorder socket) and the X input to the signal-generator sweep voltage output.

Procedure

Signal: 4 μ V.

Frequency swing: \pm 250 kHz.

Y-axis: 0.2 volt/div.

X-axis: 62.5 kHz/div.

Measured at 94 MHz.

If the S-curve is present, the I.F. cores should be adjusted for optimum S-curve.

Check the S-curve for straightness and symmetry.

Faulty modules can be localized by applying the I.F. signal (10.7 MHz) to the inputs of the various modules, starting at the detector (module 5).

WARNING: Adjustment of the R.F. stage and oscillator of module 14 should not be attempted as this will involve the risk of disturbing the tracking of the capacitance diodes. If any faults are present in module 14, replace the module.

STEREO DECODER

1 Connect an FM signal generator that is capable of being modulated with a stereo signal (multiplex signal) to the aerial input.

2 Modulate the signal generator with a signal on the left channel and measure the signal strength on the right channel.

3 Adjust the signal for minimum response, using R 709 in module 7.

4 Modulate the signal generator with a signal on the right channel and measure the signal strength on the left channel.

5 Adjust the signal for minimum response, using R 709 in module 7.

NOTE: Adjustment of the channel separation by means of R 709 will be a compromise, reducing the two undesired signals as much as possible.

38 kHz Circuits

1 Connect the stereo generator modulated by a multiplex signal.

2 Reduce the stereo generator pilot tone so that the neon lamp of the receiver (the stereo indicator) does not come on. When the lamp is on, the circuits are loaded so that the tuning will not be possible.

3 Connect a d.c. voltmeter between pins 1 and 2 of module 7.

4 Adjust L601, L602, L701 and L603 for maximum signal at pins 1 and 2 of module 7.

RTA2000

CAPACITORS

| Ref. | Value (Farads) | Tolerance (%) | Rating (volts) | Part Number |
|-------|----------------|---------------|----------------|-------------|
| C1 | 2μ | — | 12/15 | 2050009 |
| C2 | 2μ | — | 12/15 | 2050009 |
| C3 | 25μ | — | 40 | 2050117 |
| C4-10 | Not allocated | — | — | — |
| C11 | 2000μ | — | 60/80 | 2050046 |
| C12 | — | — | — | — |
| C13 | — | — | — | — |
| C14 | — | — | — | — |
| C15 | — | — | — | — |
| C16 | 2000μ | — | 60/60 | 2050046 |
| C17 | — | — | — | — |
| C18 | — | — | — | — |
| C19 | μ47 | — | 63 | 2050037 |
| C20 | μ47 | — | 63 | 2050037 |
| C21 | 10μ | — | 30/35 | 2050079 |
| C22 | 10μ | — | 30/35 | 2050079 |
| C23 | 10μ | — | 30/35 | 2050079 |
| C24 | 10μ | — | 30/35 | 2050079 |
| C25 | 10μ | — | 30/35 | 2050079 |
| C26 | 10μ | — | 30/35 | 2050079 |
| C27 | μ33 | 20 | 100 | 2030002 |
| C28 | μ33 | 20 | 100 | 2030002 |
| C29 | 3n3 | 20 | 125 | 2110025 |
| C30 | 3n3 | 20 | 125 | 2110025 |
| C31 | μ33 | 20 | 100 | 2030002 |
| C31a | 330p | 5 | 160 | 2120019 |
| C32 | μ33 | 20 | 100 | 2030002 |
| C32a | 330p | 5 | 160 | 2120019 |
| C33 | 10μ | — | 30/35 | 2050079 |
| C34 | 10μ | — | 30/35 | 2050079 |
| C35 | 100μ | — | 10/12 | 2050044 |
| C36 | 100μ | — | 10/12 | 2050044 |
| C37 | 10μ | — | 30/35 | 2050079 |
| C38 | 10μ | — | 30/35 | 2050079 |
| C39 | 500μ | — | 25/30 | 2050042 |
| C201 | 22n | 20/80 | 30 | 2000000 |
| C202 | 10μ | — | 30/35 | 2050079 |
| C203 | 0μ1 | 20 | 100 | 2030000 |
| C204 | — | — | — | — |
| C205 | 47p | 2 | 63 | 2000019 |
| C206 | 47p | 2 | 63 | 2000019 |
| C207 | — | — | — | — |
| C208 | 650p | 5 | 160 | 2120059 |
| C301 | 22n | 20/80 | 30 | 2000000 |
| C302 | 0μ1 | 20 | 100 | 2030000 |
| C303 | 22n | 20/80 | 30 | 2000000 |
| C304 | 2.5p | — | 400 | 2200074 |
| C305 | — | — | — | — |
| C306 | 47p | 2 | 63 | 2000019 |
| C307 | 10μ | — | 30/35 | 2050079 |
| C308 | 47p | 2 | 63 | 2000019 |
| C309 | — | — | — | — |
| C310 | 650p | 5 | 160 | 2120059 |
| C401 | 22n | 20/30 | 30 | 2000000 |
| C402 | 10μ | — | 30/35 | 2050079 |
| C403 | 0μ1 | 20 | 100 | 2030000 |
| C404 | 650p | 5 | 160 | 2120059 |
| C405 | 47p | 2 | 63 | 2000019 |
| C406 | 47p | 2 | 63 | 2000019 |
| C407 | 1n8 | — | — | — |
| C408 | 22n | 20/80 | 30 | 2000000 |
| C409 | 4n7 | 20/80 | 500 | 2200066 |
| C410 | 10μ | — | 30/35 | 2050079 |
| C411 | 22p | 5 | 50 | 2000049 |
| C412 | 4.7p | — | 400 | 2200018 |
| C501 | 2μ | — | 50 | 2050001 |
| C502 | 22n | 20/80 | 30 | 2000000 |
| C503 | 10μ | — | 30/35 | 2050079 |
| C504 | 0μ1 | 20 | 100 | 2030000 |
| C505 | 47p | 2 | 63 | 2000019 |
| C506 | 220p | 5 | 160 | 2120018 |
| C507 | 47p | 2 | 63 | 2000019 |
| C508 | 2μ | — | 50 | 2050001 |
| C509 | 220p | 5 | 160 | 2120018 |
| C601 | 10μ | — | 30/35 | 2050079 |
| C602 | 22n | 5 | 250 | 2130034 |
| C603 | 22n | 5 | 250 | 2130034 |
| C604 | 22n | 5 | 250 | 2130034 |
| C605 | 0μ1 | 20 | 100 | 2030000 |
| C606 | 470p | 10 | 100 | 2000082 |
| C607 | 4n7 | 20/80 | 500 | 2200066 |
| C701 | 22n | 50 | 250 | 2130034 |
| C702 | 1n | 10 | 63 | 2000024 |
| C703 | 1n | 10 | 63 | 2000024 |
| C704 | 4n7 | 20/80 | 500 | 2200066 |
| C705 | 4n7 | 20/80 | 500 | 2200066 |
| C1001 | 100μ | 10/12 | — | 2050044 |
| C1002 | 100μ | 10/12 | — | 2050044 |
| C1003 | 10μ | — | 30/35 | 2050079 |
| C1004 | 10μ | — | 30/35 | 2050079 |
| C1005 | 1n5 | 5 | 160 | 2120060 |
| C1006 | 1n5 | 5 | 160 | 2120060 |
| C1007 | 10μ | — | 30/35 | 2050079 |
| C1008 | 10μ | — | 30/35 | 2050079 |
| C1009 | 25μ | — | 35/40 | 2050041 |
| C1010 | 25μ | — | 35/40 | 2050041 |

CAPACITORS—Continued

| Ref. | Value (Farads) | Tolerance (%) | Rating (volts) | Part Number |
|----------|----------------|---------------|----------------|-------------|
| C1011 | 110μ | — | 10/12 | 2050044 |
| C1012 | 100μ | — | 10/12 | 2050044 |
| C1013 | 2000μ | — | 35/40 | 2050045 |
| C1014 | 2000μ | — | 35/40 | 2050045 |
| C1201 | 100μ | — | 50/60 | 2050080 |
| C1202 | 500μ | — | 35/40 | 2050098 |
| C1203 | 25μ | — | 35/40 | 2050041 |
| C1204 | μ47 | — | 63 | 2050037 |
| C1206 | μ33 | 20 | 100 | 2030002 |
| C1206 | 4n7 | 20/50 | 500 | 2200066 |
| C1207 | 22n | 10 | 250 | 2130013 |
| C1208 | 22n | 10 | 250 | 2130013 |
| C1209 | 1n | 10 | 63 | 2000024 |
| C1210 | 22n | 10 | 250 | 2130013 |
| C1211 | μ33 | 20 | 100 | 2030002 |
| C1212 | 1n | 20/50 | 500 | 2200016 |
| C1213 | 100μ | — | 50/60 | 2050080 |
| C1214 | 470μ | — | 25 | 2050122 |
| C1400 | 82p | 2 | 63 | 2000045 |
| C1401 | 10n | 20/80 | 30 | 2000015 |
| C1402 | 330p | 5 | 125 | 2120072 |
| C1403 | 1.5p | 5 | 250 | 2100009 |
| C1404-9 | Not allocated | — | — | — |
| C1410 | 330p | 5 | 125 | 2120072 |
| C1411* | 2.5-6p | — | — | 2060029 |
| C1412 | 1n | 10 | 63 | 2000024 |
| C1413 | 1n | 10 | 63 | 2000024 |
| C1414-19 | Not allocated | — | — | — |
| C1420* | 2.5-6p | — | — | 2060029 |
| C1421 | 2.5p | — | 250 | 2100000 |
| C1422 | 330p | 5 | 125 | 2120072 |
| C1423 | 1n | 10 | 63 | 2000024 |
| C1424 | 10n | 20/80 | 30 | 2000015 |
| C1425-29 | Not allocated | — | — | — |
| C1430* | 3.3p | — | 250 | 2100000 |
| C1431* | 2.5-6p | — | — | 2060029 |
| C1432 | 4n7 | 10 | 63 | 2000023 |
| C1433 | 330p | 5 | 125 | 2120072 |
| C1434 | 330p | 5 | 63 | 2000024 |
| C1435 | 1n | 10 | 63 | 2000024 |
| C1701 | 10μ | — | — | 2050079 |
| C1702 | 10μ | — | — | 2050079 |
| C1703 | 680p | — | — | 2000083 |
| C1704 | 680p | — | — | 2000083 |
| C1705 | 250μ | — | — | 2050048 |
| C1706 | 250μ | — | — | 2050048 |
| C1707 | 4n3 | — | — | 2000084 |
| C1708 | 4n3 | — | — | 2000084 |
| C1709 | 15n | — | — | 2130035 |
| C1710 | 15n | — | — | 2130035 |
| C6001 | 0μ1 | 20 | 250 | 2130022 |
| C6002 | 10μ | — | 16/18 | 2050003 |
| C6003 | 2μ | — | 12/15 | 2050009 |
| C6004 | 2μ | — | 12/15 | 2050009 |
| C6005 | μ47 | — | 63 | 2050037 |
| C6006 | μ47 | — | 63 | 2050037 |
| C6007 | 1n | 5 | 160 | 2120034 |
| C6008 | 10n | 10 | 250 | 2130000 |
| C6009 | — | — | — | — |
| C6010 | 47n | 20 | 250 | 2130015 |
| C6011 | 22n | 10 | 250 | 2130013 |
| C- | 10p | 2% | 63 | 2000031 |

*Variable

RESISTORS

| Ref. | Value (ohms) | Tolerance (%) | Rating (watts) | Part Number |
|-------|---------------|---------------|----------------|-------------|
| R1 | 47k | 5 | 1/4 | 2500139 |
| R2 | 5k5 | 5 | 1/4 | 2500130 |
| R3 | 5k6 | 5 | 1/4 | 2500130 |
| R4 | 47k | 5 | 1/4 | 2500139 |
| R5 | 220k (M22) | 5 | 1/4 | 2500143 |
| R6 | 220k (M22) | 5 | 1/4 | 2500143 |
| R7-27 | Not allocated | — | — | — |
| R28 | 880 | 5 | 1/4 | 2500148 |
| R29 | 880 | 5 | 1/4 | 2500148 |
| R30 | 50k | — | — | 2930055 |
| R31 | 50k | — | — | — |
| R32 | 1 Meg. (1M0) | 5 | 1/4 | 2500147 |
| R33 | 1 Meg. (1M0) | 5 | 1/4 | 2500147 |
| R34 | 270k (M27) | 5 | 1/4 | 2500144 |
| R35 | 270k (M27) | 5 | 1/4 | 2500144 |
| R36 | 22k | 5 | 1/4 | 2500136 |
| R37 | 22k | 5 | 1/4 | 2500136 |
| R38 | 10k | 5 | 1/4 | 2500133 |
| R39 | 10k | 5 | 1/4 | 2500133 |
| R40 | — | — | — | — |
| R41 | — | — | — | — |
| R42 | 2k2 | 5 | 1/4 | 2500127 |
| R43 | 2k2 | 5 | 1/4 | 2500127 |
| R44 | 2k2 | 5 | 1/4 | 2500127 |
| R45 | 2k2 | 5 | 1/4 | 2500127 |
| R46 | 1k | 5 | 1/4 | 2500124 |
| R47 | 1k | 5 | 1/4 | 2500124 |

*Variable

RESISTORS—Continued

| Ref. | Value (ohms) | Tolerance (±%) | Rating (watts) | Part Number |
|---------|---------------|----------------|----------------|-------------|
| R48 } | 20k | — | — | 2930174 |
| R49 } | 20k | — | — | 2930174 |
| R50 | 10k | 5 | 1/8 | 2500133 |
| R51 | 10k | 5 | 1/8 | 2500133 |
| R52 } | 20k | — | — | 2930174 |
| R53 } | 20k | — | — | 2930174 |
| R54 | 1k | 5 | 1/8 | 2500124 |
| R55 | 1k | 5 | 1/8 | 2500124 |
| R56 | 68k | 5 | 1/8 | 2500140 |
| R57 | 68k | 5 | 1/8 | 2500140 |
| R58 | 27k | 5 | 1/8 | 2500150 |
| R59 | 27k | 5 | 1/8 | 2500150 |
| R60 | 2k2 | 5 | 1/8 | 2500127 |
| R61 | 2k2 | 5 | 1/8 | 2500127 |
| R62 | 1k | 5 | 1/8 | 2500124 |
| R63 | 1k | 5 | 1/8 | 2500124 |
| R64 | 4k7 | 5 | 1/8 | 2500129 |
| R65 | 4k7 | 5 | 1/8 | 2500129 |
| R66 | 470 | 5 | 1/8 | 2500122 |
| R67 | 470 | 5 | 1/8 | 2500122 |
| R68* | 10k | — | — | 2930122 |
| R69 | 680 | 5 | 1/8 | 2500123 |
| R70-100 | Not allocated | | | |
| R101 | 100 | 5 | 1/8 | 2500118 |
| R102 | 100 | 5 | 1/8 | 2500118 |
| R103 | 4.7 (4E7) | 5 | 1/8 | 2500178 |
| R104 | 4.7 (4E7) | 5 | 1/8 | 2500178 |
| R201 | 10k | 5 | 1/8 | 2500133 |
| R202 | 1k | 5 | 1/8 | 2500124 |
| R203 | 180 | 5 | 1/8 | 2500119 |
| R301 | 10k | 5 | 1/8 | 2500133 |
| R302 | 1k | 5 | 1/8 | 2500124 |
| R303 | 180 | 5 | 1/8 | 2500119 |
| R304 | 22k | 5 | 1/8 | 2500136 |
| R401 | 8k2 | 5 | 1/8 | 2500132 |
| R402 | 22k | 5 | 1/8 | 2500136 |
| R403 | 1k | 5 | 1/8 | 2500124 |
| R404 | 180 | 5 | 1/8 | 2500119 |
| R405 | 6k8 | 5 | 1/8 | 2500131 |
| R406 | 100k (M10) | 5 | 1/8 | 2500142 |
| R407 | 3k3 | 5 | 1/8 | 2500128 |
| R408 | 22k | 5 | 2/8 | 2500136 |
| R501 | 22k | 5 | 1/8 | 2500136 |
| R502 | 8k2 | 5 | 1/8 | 2500132 |
| R503 | 39k | 5 | 1/8 | 2500138 |
| R504 | 1k | 5 | 1/8 | 2500124 |
| R505 | 180 | 5 | 1/8 | 2500119 |
| R506 | 330 | 5 | 1/8 | 2500121 |
| R507 | 47 | 5 | 1/8 | 2500117 |
| R508 | 180 | 5 | 1/8 | 2500119 |
| R509 | 22k | 5 | 1/8 | 1500186 |
| R510 | — | — | — | — |
| R611 | 22k | 5 | 1/8 | 2500186 |
| R601 | 22k | 5 | 1/8 | 2500136 |
| R602 | 100k (M10) | 5 | 1/8 | 2500142 |
| R603 | 33k | 5 | 1/8 | 2500137 |
| R604 | 2.2k | 5 | 1/8 | 2500127 |
| R605 | 10k | 5 | 1/8 | 2500133 |
| R606 | 100k (M10) | 5 | 1/8 | 2500142 |
| R607 | 15k | 5 | 1/8 | 2500134 |
| R608 | 1k | 5 | 1/8 | 2500124 |
| R701 | 10k | 5 | 1/8 | 2500133 |
| R702 | 100 | 5 | 1/8 | 2500118 |
| R703 | 15k | 5 | 1/8 | 2500134 |
| R704 | 15k | 5 | 1/8 | 2500134 |
| R705 | 15k | 5 | 1/8 | 2500134 |
| R706 | 15k | 5 | 1/8 | 2500134 |
| R707 | 5k6 | 5 | 1/8 | 2500130 |
| R708 | 2k2 | 5 | 1/8 | 2500127 |
| R709* | 10k | — | — | 2930048 |
| R710 | 5k6 | 5 | 1/8 | 2500130 |
| R711 | 2k2 | 5 | 1/8 | 2500127 |
| R1001 | 82k | 5 | 1/8 | 2500141 |
| R1002 | 82k | 5 | 1/8 | 2500141 |
| R1003 | 22k | 5 | 1/8 | 2500136 |
| R1004 | 22k | 5 | 1/8 | 2500136 |
| R1005 | 3k3 | 5 | 1/8 | 2500128 |
| R1006 | 3k3 | 5 | 1/8 | 2500128 |
| R1007 | 47 | 5 | 1/8 | 2500117 |
| R1008 | 47 | 5 | 1/8 | 2500117 |
| R1009 | 10k | 5 | 1/8 | 2500133 |
| R1010 | 10k | 5 | 1/8 | 2500133 |
| R1011 | 8k2 | 5 | 1/8 | 2500132 |
| R1012 | 8k2 | 5 | 1/8 | 2500132 |
| R1013 | 1k5 | 5 | 1/8 | 2500126 |
| R1014 | 1k5 | 5 | 1/8 | 2500126 |
| R1015 | 10k | 5 | 1/8 | 2500133 |
| R1016 | 10k | 5 | 1/8 | 2500133 |
| R1017 | 3k3 | 5 | 1/8 | 2500128 |
| R1018 | 3k3 | 5 | 1/8 | 2500128 |
| R1019* | 500 | — | — | 2930048 |
| R1020* | 500 | — | — | 2930048 |
| R1021 | 470 | 5 | 1/8 | 2500122 |
| R1022 | 470 | 5 | 1/8 | 2500122 |
| R1023 | 1k | 5 | 1/8 | 2500124 |
| R1024 | 1k | 5 | 1/8 | 2500124 |

*Variable

RESISTORS—Continued

| Ref. | Value (ohms) | Tolerance (±%) | Rating (watts) | Part Number |
|----------|---------------|----------------|----------------|-------------|
| H1025 | 220 | 5 | 1/8 | 2500120 |
| R1026 | 220 | 5 | 1/8 | 2500120 |
| R1027 | 10 | 5 | 1/8 | 2500115 |
| R1028 | 10 | 5 | 1/8 | 2500115 |
| R1029 | 220 | 5 | 1/8 | 2500120 |
| R1030 | 220 | 5 | 1/8 | 2500120 |
| R1031 | 1.0 | 10 | 1 | 2710001 |
| R1032 | 1.0 | 10 | 1 | 2710001 |
| R1033 | 1.0 | 10 | 1 | 2710001 |
| R1034 | 1.0 | 10 | 1 | 2710001 |
| R1201 | 1k | 10 | 1/8 | 2600015 |
| R1202 | 1k | 10 | 1/8 | 2600015 |
| R1203 | 3k9 | 10 | 1/8 | 2600048 |
| R1204 | 1k2 | 10 | 1/8 | 2600111 |
| R1205 | 1k | 10 | 1/8 | 2600015 |
| R1208 | 4k7 | 10 | 1/8 | 2600031 |
| R1207* | 4k7 Lin. | — | — | 2930047 |
| R1208 | 1k | 5 | 1/8 | 2600064 |
| R1209 | 2k2 | 10 | 1/8 | 2600016 |
| R1210* | 10k | — | — | 2930116 |
| R1211 | 8k2 | 10 | 1/8 | 2600027 |
| R1212 | 400 | 10 | 5 | 2910022 |
| R1213 | 1k | 5 | 1/3 | 2600015 |
| R1214 | 220 | 10 | 4 | 2910023 |
| R1215 | 12k | 10 | 1/2 | 2600049 |
| R1400 | 220 | 10 | 1/6 | 2500159 |
| R1401-9 | Not allocated | | | |
| R1410 | 100k (M10) | 10 | 1/6 | 2500165 |
| R1411 | 220 | 10 | 1/6 | 2500159 |
| R1412 | 220 | 10 | 1/6 | 2500159 |
| R1413-19 | Not allocated | | | |
| R1420 | 100k (M10) | 10 | 1/6 | 2500165 |
| R1421 | 100k (M10) | 10 | 1/6 | 2500165 |
| R1422 | 330 | 10 | 1/6 | 2500160 |
| R1423 | 680 | 10 | 1/6 | 2500161 |
| R1424-29 | Not allocated | | | |
| R1430 | 8k2 | 10 | 1/6 | 2500163 |
| R1431 | 15k | 10 | 1/6 | 2500164 |
| R1432 | 4k7 | 10 | 1/6 | 2500162 |
| R1433 | 100k (M10) | 10 | 1/6 | 2500165 |
| R1434 | 100k (M10) | 10 | 1/6 | 2500165 |
| R1701 | 68k | 5 | 1/8 | 2500140 |
| R1702 | 68k | 5 | 1/8 | 2500140 |
| R1703 | 1k2 | 5 | 1/8 | 2500126 |
| R1704 | 1k2 | 5 | 1/8 | 2500126 |
| R1705 | 47k | 5 | 1/8 | 2500139 |
| R1706 | 37k | 5 | 1/8 | 2500139 |
| R1707 | 18k | 5 | 1/8 | 2500135 |
| R1708 | 18k | 5 | 1/8 | 2500135 |
| R1709 | 5k6 | 5 | 1/8 | 2500130 |
| R1710 | 6k6 | 5 | 1/8 | 2500130 |
| R1711 | 1k | 5 | 1/8 | 2500124 |
| R1712 | 1k | 5 | 1/8 | 2500124 |
| R1713 | 220k (M22) | 5 | 1/8 | 2500143 |
| R1714 | 220k (M22) | 5 | 1/8 | 2500143 |
| R6001 | 47 | 5 | 1/8 | 2500117 |
| R6002 | 100 | 5 | 1/8 | 2500118 |
| R6003 | 100 | 5 | 1/8 | 2500118 |
| R6004 | 1k | 5 | 1/8 | 2500124 |
| R6006 | 2k2 | 5 | 1/8 | 2500127 |
| R6006 | 2k2 | 5 | 1/8 | 2500127 |
| R6007 | 10k | 5 | 1/8 | 2500133 |
| R6008 | 47k | 5 | 1/8 | 2500139 |
| R6009 | 220k (M22) | 5 | 1/8 | 2500143 |
| R6010 | 100k (M10) | 5 | 1/8 | 2500142 |
| R6011 | 220k (M22) | 5 | 1/8 | 2500143 |
| R6012 | 270k (M27) | 5 | 1/8 | 2500144 |
| R6013 | 470k (M47) | 5 | 1/8 | 2500146 |
| R6014 | 470k (M47) | 5 | 1/8 | 2500146 |
| R6015* | 100k Lin. | — | — | 2930090 |
| R6018* | 10k Lin. | — | — | 2930048 |
| R6017 | 2k2 | 5 | 1/8 | 2500127 |
| R6018* | 10k Lin. | — | — | 2930048 |
| R6019 | 820 | 5 | 1/8 | 2500148 |

*Variable

COILS AND TRANSFORMERS

| Ref. | Title | Part Number |
|------|-------------------------|-------------|
| L201 | 10.7 MHz trans. | 1740012 |
| L202 | | |
| L301 | | |
| L302 | 10.7 MHz trans. | 1740012 |
| L401 | | |
| L402 | 10.7 MHz trans. | 1740012 |
| L403 | | |
| L404 | | |
| L501 | AM transformer not used | 1741024 |
| L502 | 10.7 MHz trans. | 1741022 |
| L601 | | |
| L602 | | |
| L603 | 19 kHz coils | 1741009 |
| | 38 kHz coil | 1740004 |

COILS AND TRANSFORMERS—Continued

| Ref. | Type | Part Number |
|-------|-------------------|-------------|
| L701 | 38 kHz trans. | 1741010 |
| L1400 | FM I.F. coil | 1701018 |
| L1401 | FM choke | 1700034 |
| L1410 | FM Aerial coil | 1750023 |
| L1420 | FM R.F. coil | 1750023 |
| L1430 | FM Osc. coil | 1750030 |
| L6001 | 38 kHz coil | 1741034 |
| L6002 | Filter coil | 1760016 |
| L6003 | Filter coil | 1750016 |
| T1 | Mains transformer | 1763024 |

TRANSISTORS

| Ref. | Type | Part Number |
|-------|--|-------------|
| Q2 | 2N3055 | 1367005 |
| Q4 | } BC239C or BC409C or BC173C } | 1367042 |
| Q6 | | |
| Q8 | | |
| Q9 | | |
| Q12 | HD187 | 1367057 |
| Q201 | BF167H/BF198H | 1367044 |
| Q301 | BF167H/BF198H | 1367044 |
| Q401 | BF167/BF198 | 1367058 |
| Q501 | BF167/BF198 | 1367058 |
| Q601 | BC171B | 1367057 |
| Q602 | BC171B | 1367057 |
| Q701 | BC171B | 1367057 |
| Q702 | BC171B | 1367057 |
| Q703 | BC171B | 1367057 |
| Q1001 | BC239C | 1367042 |
| Q1002 | BC239C | 1367042 |
| Q1003 | HD102 | 1367047 |
| Q1004 | HD102 | 1367047 |
| Q1005 | BC160 | 1367034 |
| Q1006 | BC160 | 1367034 |
| Q1007 | BC140 | 1367048 |
| Q1008 | BC140 | 1367048 |
| Q1009 | 60201 | 1367009 |
| Q1010 | 60201 | 1367009 |
| Q1011 | 60201 | 1367009 |
| Q1012 | 60201 | 1367009 |

TRANSISTORS—Continued

| Ref. | Type | Part Number |
|-------|--------------|-------------|
| Q1201 | E1044/2N2905 | 1367045 |
| Q1202 | E1044/2N2905 | 1367045 |
| Q1410 | 40488A | 1367078 |
| Q1420 | 3N128 | 1367083 |
| Q1430 | BF167/BF198 | 1367058 |
| Q1701 | BC239C | 1367042 |
| Q1702 | BC239C | 1367042 |
| Q1703 | BC239C | 1367042 |
| Q1704 | BC239C | 1367042 |
| Q8001 | BC239C | 1367042 |
| Q8002 | BC239C | 1367042 |

DIODES

| Ref. | Type | Part Number |
|-------|--------------------------------|-------------|
| D301 | AA143 | 1271046 |
| D401 | AA143 | 1271046 |
| D402 | AA143 | 1271046 |
| D501 | AA143 | 1271046 |
| D602 | AA143 | 1271046 |
| D603 | AA143 | 1271046 |
| D601 | AA143 | 1271046 |
| D802 | AA143 | 1271046 |
| D701 | AA143 | 1271046 |
| D702 | AA143 | 1271046 |
| D703 | AA143 | 1271046 |
| D704 | AA143 | 1271046 |
| D1001 | 1V5 | 1271031 |
| D1002 | 1V6 | 1271031 |
| D1201 | AA143 | 1271046 |
| D1202 | ZF8-2 | 1271021 |
| D1203 | ZF8-2 | 1271018 |
| D1204 | ZF8-2 | 1271021 |
| D1205 | ZF8-2 | 1271018 |
| D1206 | ZF8-2 | 1271018 |
| D1207 | AA143 | 1271046 |
| D1208 | ZF22 | 1271008 |
| D1209 | Zener 18V., 5%, 1W. | 1271054 |
| D1410 | 8B141 | 1271051 |
| D1420 | 8B141 | 1271051 |
| D1430 | 8B141 | 1271051 |
| — | Bridge Rectifier B40 3200/2200 | 1260003 |

TA2700

CAPACITORS

| Ref. | Value (Farads) | Tolerance (±%) | Rating (volts) | Part Number |
|--------|----------------|----------------|----------------|-------------|
| C1 | — | — | — | — |
| C2 | — | — | — | — |
| C3 | — | — | — | — |
| C4 | 0μ1 | 20 | 100 | 2030000 |
| C5 | μ47 | — | 63 | 2050037 |
| C6 | 10n | 20/80 | 30 | 2000015 |
| C7 | 2μ | — | 12/15 | 2050009 |
| C8 | 2μ | — | 12/15 | 2050009 |
| C9 | 2μ | — | 12/15 | 2050009 |
| C10 | 2μ | — | 12/15 | 2050009 |
| C11 | 2000μ | — | 50/80 | 2050046 |
| C12 | μ47 | — | 63 | 2050037 |
| C13 | — | — | — | — |
| C14 | — | — | — | — |
| C15 | 47n | 20 | 250 | 2130015 |
| C16 | 2000μ | — | 50/80 | 2050046 |
| C17 | 25μ | — | 40 | 2050117 |
| C18 | — | — | — | — |
| C19 | μ47 | — | 63 | 2050037 |
| C20 | μ47 | — | 63 | 2050037 |
| C21 | 10μ | — | 30/35 | 2050079 |
| C22 | 10μ | — | 30/35 | 2050079 |
| C23 | 10μ | — | 30/35 | 2050079 |
| C24 | 10μ | — | 30/35 | 2050079 |
| C25 | 10μ | — | 30/35 | 2050079 |
| C26 | 10μ | — | 30/35 | 2050079 |
| C27 | μ33 | 20 | 100 | 2030002 |
| C28 | μ33 | 20 | 100 | 2030002 |
| C29 | 3n3 | 20 | 125 | 2110025 |
| C30 | 3n3 | 20 | 125 | 2110025 |
| C31 | μ33 | 20 | 100 | 2030002 |
| C31a | 330p | 5 | 160 | 2120019 |
| C32 | μ33 | 20 | 100 | 2030002 |
| C32a | 330p | 5 | 160 | 2120019 |
| C33 | 10μ | — | 30/35 | 2050079 |
| C34 | 10μ | — | 30/35 | 2050079 |
| C35 | 100μ | — | 10/12 | 2050044 |
| C36 | 100μ | — | 10/12 | 2050044 |
| C37 | 10μ | — | 30/35 | 2050079 |
| C38 | 10μ | — | 30/35 | 2050079 |
| C39 | 500μ | — | 25/30 | 2050042 |
| C40 | 10μ | — | 18/18 | 2050003 |
| C41 | 470p | — | — | 2220038 |
| C42-72 | Not allocated | — | — | — |
| C73 | 4n7 | 10 | 63 | 2000023 |

CAPACITORS—Continued

| Ref. | Value (Farada) | Tolerance (±%) | Rating (volts) | Part Number |
|--------|----------------|----------------|----------------|-------------|
| C74 | — | — | — | — |
| C75 | — | — | — | — |
| C76 | 0μ1 | 20 | 100 | 2030000 |
| C77-83 | Not allocated | — | — | — |
| C84 | 22n | 20/80 | 30 | 2000000 |
| C85-92 | Not allocated | — | — | — |
| C93 | 18p | — | — | 2200030 |
| C94 | 100p | 5 | 160 | 2120062 |
| C95 | 100p | 5 | 160 | 2120062 |
| C96 | 0μ1 | 10 | 250 | 2130002 |
| C97 | 0μ1 | 10 | 250 | 2130002 |
| C98 | 27p | — | — | 2200061 |
| C99 | 1n | 10 | 63 | 2000024 |
| C100 | 22n | 20/80 | 30 | 2000000 |
| C201 | 22n | 20/80 | 30 | 2000000 |
| C202 | 10μ | — | 30/35 | 2050079 |
| C203 | 0μ1 | 20 | 100 | 2030000 |
| C204 | — | — | — | — |
| C205 | 47p | 2 | 63 | 2000019 |
| C206 | 47p | 2 | 63 | 2000019 |
| C207 | — | — | — | — |
| C208 | 650p | 5 | 160 | 2120059 |
| C301 | 22n | 20/80 | 30 | 2000000 |
| C302 | 0μ1 | 20 | 100 | 2030000 |
| C303 | 22n | 20/80 | 30 | 2000000 |
| C304 | 2.5p | — | 400 | 2200074 |
| C305 | — | — | — | — |
| C306 | 47p | 2 | 63 | 2000019 |
| C307 | 10μ | — | 30/35 | 2050079 |
| C308 | 47p | 2 | 63 | 2000019 |
| C309 | — | — | — | — |
| C310 | 650p | 5 | 160 | 2120059 |
| C401 | 22n | 20/30 | 30 | 2000000 |
| C402 | 10μ | — | 30/35 | 2050079 |
| C403 | 0μ1 | 20 | 100 | 2030000 |
| C404 | 650p | 5 | 160 | 2120059 |
| C405 | 47p | 2 | 63 | 2000019 |
| C406 | 47p | 2 | 63 | 2000019 |
| C407 | 1n8 | — | — | — |
| C408 | 22n | 20/80 | 30 | 2000000 |
| C409 | 4n7 | 20/80 | 500 | 2200068 |
| C410 | 10μ | — | 30/35 | 2050079 |
| C411 | 22p | 5 | 50 | 1000049 |
| C412 | 4.7p | — | 400 | 2200018 |
| C501 | 2μ | — | 50 | 2050001 |

ELECTRICAL TESTS AND ADJUSTMENTS

MODELS RTA 2000, TA 2700 & TA 2800

MAINS VOLTAGE ADJUSTMENT

The receiver can be switched between 110, 130, 220, and 240 volts. Switching is carried out by turning the selector on the back of the chassis, which should be set so that the desired voltage appears in the window adjacent to the selector.

IMPORTANT

Keep in mind the voltage adjustment must be carried out both on the motor and on the amplifier on the RTA2000.

POWER SUPPLY

The power supply delivers 36 volts of stabilized output. An electronic protection circuit turns off the power if the current drawn from the power supply exceeds approximately 3 amps (corresponding to 15 watts of audio output).

Check the voltages indicated in Fig. 3.

The two voltages marked * will have the values indicated only if normal current is drawn from the stereo decoder (18 volts) or from module 17 (9 volts). If the FM section or module 17 is removed, 36 volts should be present at both points.

36 VOLT D.C. RAIL

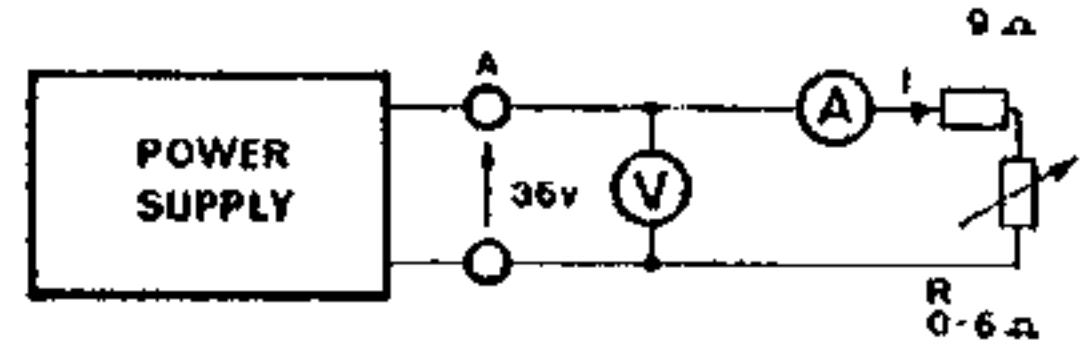
The main 36 volt d.c. rail is adjusted by R(12)07 (see Fig. 3). This adjustment should be carried out under no-signal conditions.

ELECTRONIC PROTECTION CIRCUIT

- 1 Connect a measuring circuit (shown in Fig. 4) to the main power-supply voltage (36 volts, Fig. 3).
- 2 Check that 36 volts is present.
- 3 Increase the load until a current of 3 amps. is measured.
- 4 Adjust (12)R10 so that the voltage (36 volts) is reduced to zero at approximately 3 amps.

STABILIZATION CHECK

- 5 Check that the 36 volt d.c. rail does not vary by more than approximately 10% (3-4 volts) when the load current varies from 0 to 2.5 amps.



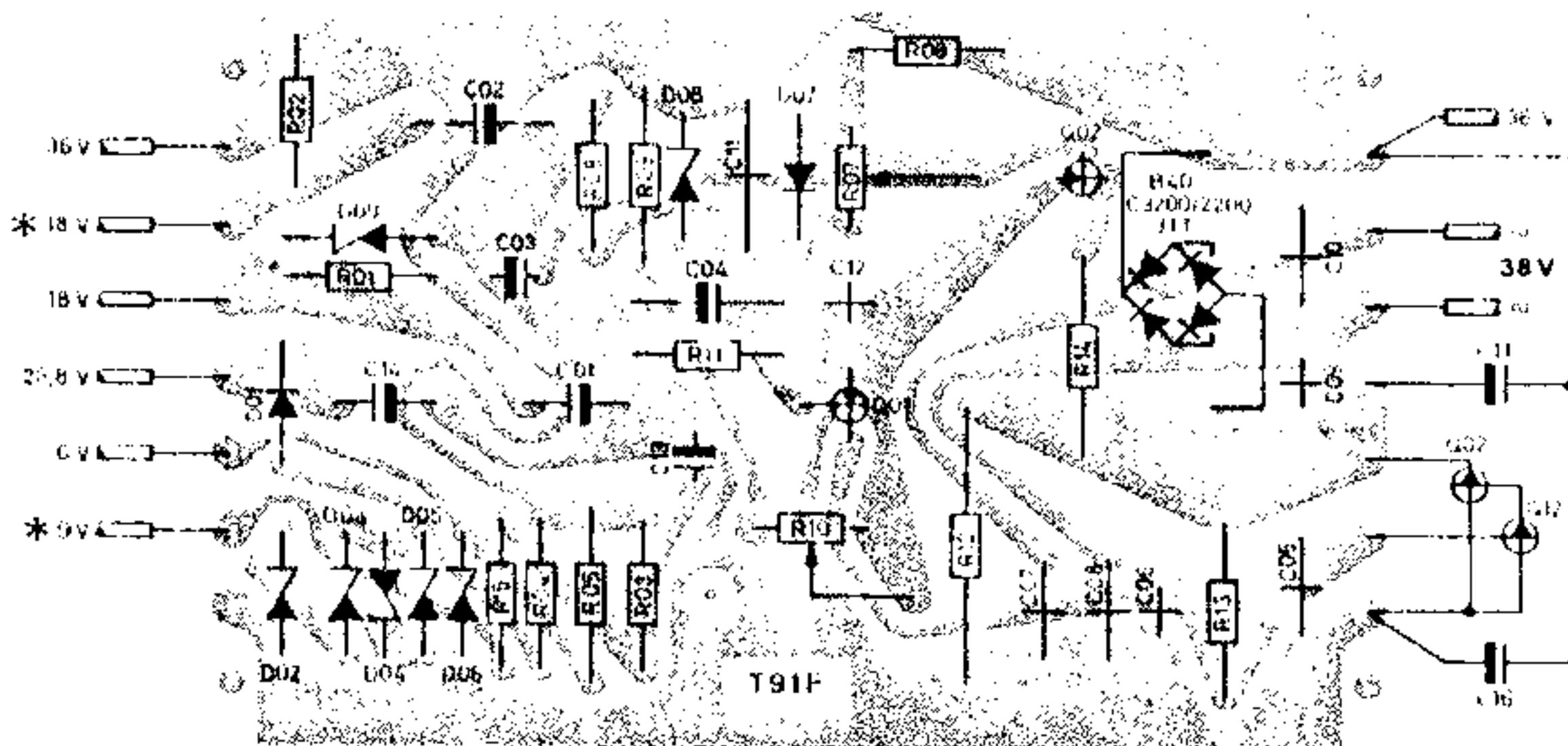
6395

Fig. 4 Interconnection diagram.

OUTPUT AMPLIFIER NO-SIGNAL CURRENT

- 1 Apply power to the set and make the adjustment without delay.
- 2 Measure the voltages across R (10) 33 and R (10) 34 Fig. 8.
- 3 Adjust the voltage to 25 mV by means of R (10) 19 and R (10) 20, respectively (A) Fig. 8.

NOTE: The no-signal current should be checked whenever a replacement has been made in the output stage.



6165A

Fig. 3 Power supply panel.

FM R.F. ALIGNMENT

Adjustment Procedure RTA2000

- 1 Connect an FM signal generator to the aerial socket.
- 2 Set R6016 to approximately the middle of the control range.
- 3 Select one of the FM tuning buttons and set the receiver tuning to 102 MHz. Switch off the AFC.
- 4 Set the signal generator to 102 MHz (10-500µV).
- 5 Adjust R6018 for maximum output.
- 6 Set the receiver and generator to 90 MHz and adjust R6016 for maximum output.
- 7 Repeat operations 3 to 6 until the calibration is correct at both points.

Adjustment of tuning-diode voltage

Adjustment potentiometers are located directly behind the preomat.

Adjustment Procedure TA2700 and TA2800

- 1 Connect an FM signal generator to the aerial input socket.
- 2 Set the receiver tuning control so that the dial pointer is at 102 MHz. Switch off the AFC.
- 3 Set R1108 to approximately the middle of its control range.
- 4 Set the signal generator to 102 MHz (10-500 µV).
- 5 Adjust R1110 for maximum output.
- 6 Set the receiver and generator to 90 MHz and adjust R1108 for maximum output.
- 7 Repeat operations 3 to 5 until the calibration is correct at both points.

AM ALIGNMENT TA2800

I.F. Circuits

- 1 Connect a signal generator to pin 8 of module 2. Input signal: 470 kHz, 30% modulation at 400 Hz.
- 2 Set the volume control to maximum.
- 3 Increase the signal generator output until a signal can be measured at the speaker output sockets using a voltmeter connected across 3-2 ohms.
- 4 Adjust the AM-I.F. cores of modules 2, 3, and 4 for maximum output.

R.F. Circuits

NOTE: The R.F. circuits should only be aligned if the I.F. and A.F. sections have been checked and found to be in order.

- 1 Connect a signal generator to the aerial input socket via a dummy aerial.

Input Signal: Frequency, see table below.

Modulation frequency: 400 Hz.

Modulation depth: 30%.

Signal level: 100-200 µV.

- 2 Connect a voltmeter or wattmeter across 3-2 ohms at the loudspeaker sockets.
- 3 Alignment should be carried out on all wavebands in the following order.

| Waveband | LW■* | | MW■ | |
|-----------------|-----------|------------|-----------|------------|
| | 180 | 270 | 650 | 1400 |
| Frequency (kHz) | | | | |
| Adjust for max. | L10 L4 | C45 C51 | L13 L7 | C46 C52 |
| Waveband | FB (SW2)▼ | | KB (SW1)● | |
| | 1600 | 3700 | 5900 | 6200 |
| Frequency (kHz) | | | | |
| Adjust for max. | L16 L8 | C49 C53 | L17 L9 | C50 C54 |

*Adjust the receiver tuning so that the scale pointer registers with the appropriate symbol on the tuning scale back plate.

Filter Coils

NOTE: Filter coils L11 and L13a are fixed tuned and require no adjustment.

- 1 Connect a signal generator to the aerial input socket.

Input signal: Frequency, 470 kHz.

Modulation: 30% mod 400 Hz.

- 2 Increase the input signal until a measurable output signal is obtained at the speaker output.
- 3 Adjust the parallel trap (L6 and C65) and series trap (L5 and C64) for minimum output signal. Adjust L6 and L5 in that order.
- 4 Because the two circuits interact to some extent it is suggested that they be adjusted "roughly" without tuning them for minimum response each time. The input signal level should be kept relatively low to begin with and increased gradually as the adjustment is improved.

Ferrite Aerial

The ferrite aerial should be adjusted at the frequencies listed in the table below.

| Waveband | LW■ | | MW■ | |
|-----------------|-----|-----|-----|------|
| | 180 | 270 | 650 | 1400 |
| Frequency (kHz) | | | | |
| Adjust | L14 | C47 | L15 | C48 |

