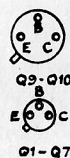
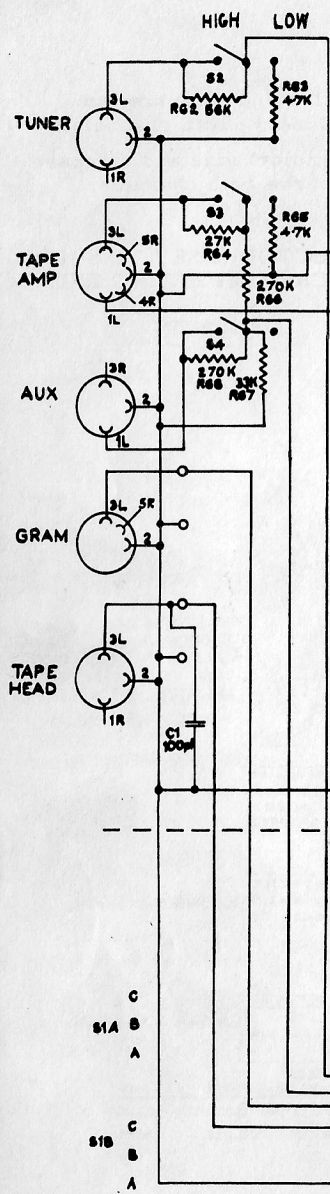
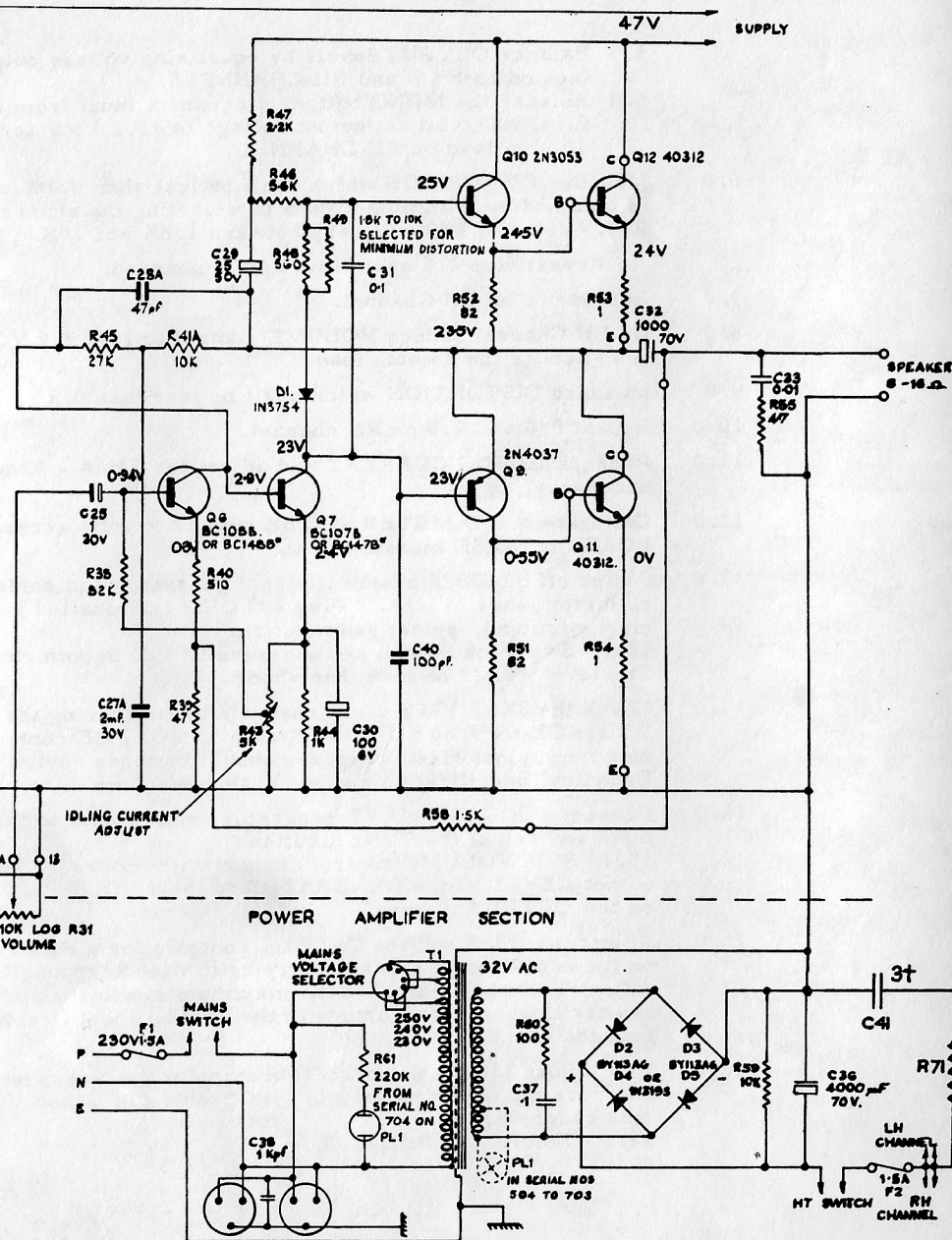
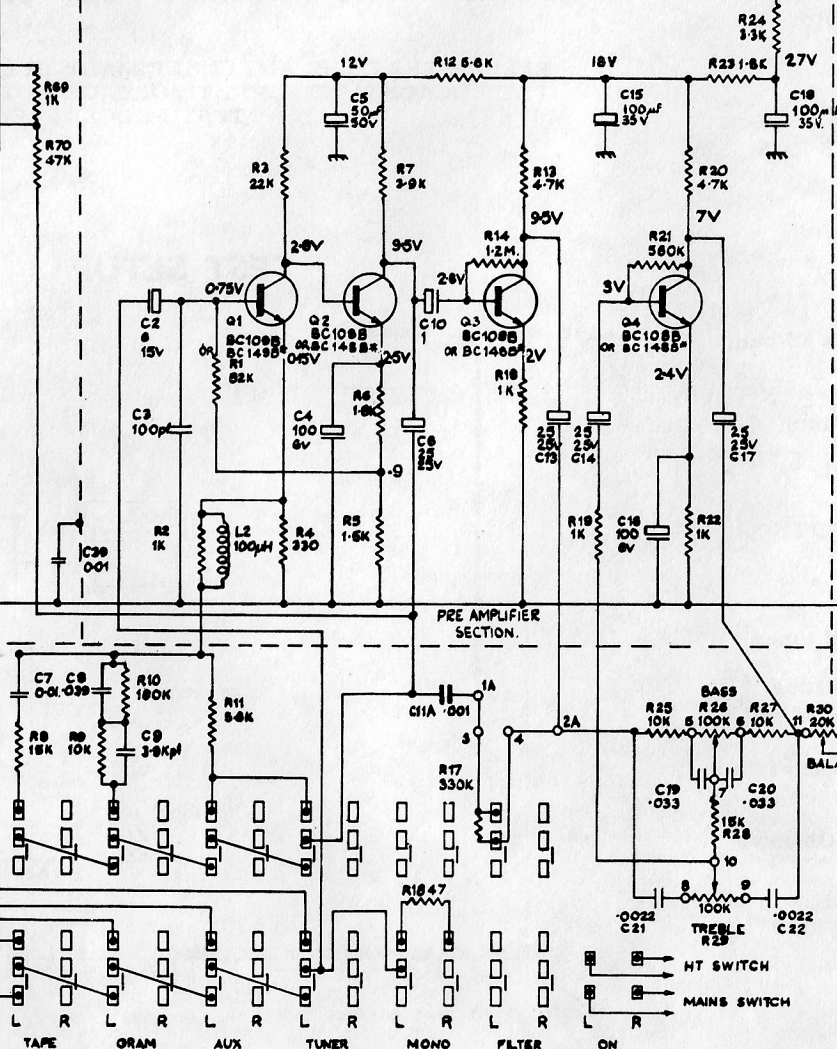


CIRCUIT DIAGRAM

BOTTOM VIEW OF SOCKETS



NOTES
 1. UNLESS OTHERWISE STATED
 ALL RESISTANCE IN OHMS
 CAPACITY IN MICROFARADS
 2# DENOTES TRANSISTOR TYPE NO
 AFTER SERIAL NO 704.
 3# C41 68μF
 R71 10Ω } fitted after S/No's 765

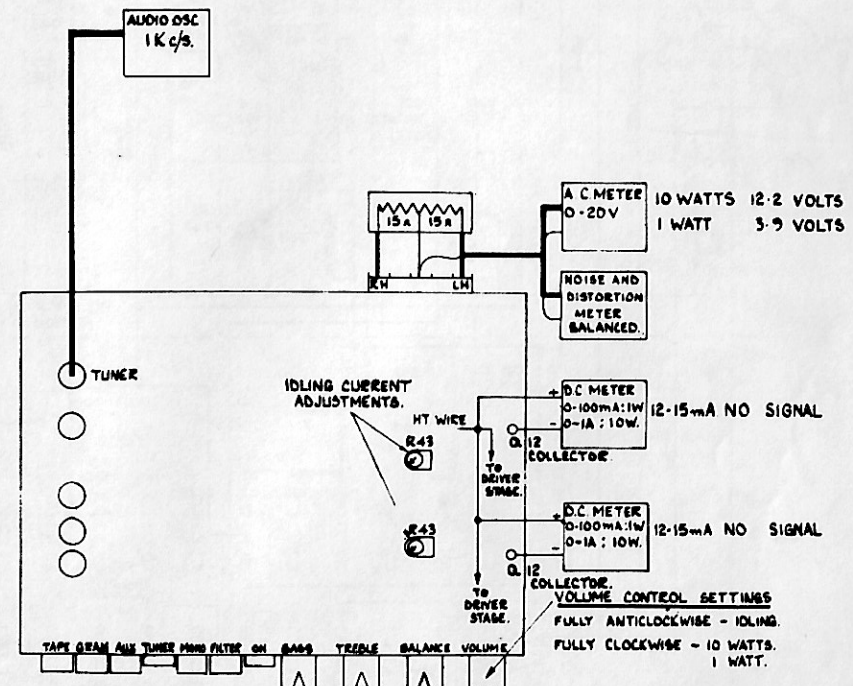


- 5.3 Balance OUTPUT levels by equalising voltage output readings on both LH and RH CHANNELS.
- 5.4 Release the MONO button, disconnect input from LH CHANNEL, adjust output voltage to 12.2 RMS across the 15 ohm load on RH CHANNEL.
- 6.0 Measure DISTORTION which shall be less than 0.1%. Optimum is obtained by trimming of R48 by selecting the shunt resistor R49. Value of R49 will vary between 1.8K and 10K.
Repeat Step 2.5 each time R49 is changed.
- 7.0 Repeat 6.0 on LH Channel.
- 8.0 On LH Channel reduce VOLUME control to give 3.9 VOLTS RMS (1W) across the 15 ohm load.
- 9.0 Measure DISTORTION which shall be less than 0.1%.
- 10.0 Repeat 8.0 and 9.0 on RH channel.
- 11.0 Recheck IDLING CURRENT and adjust for 12mA - 15mA if necessary.
- 12.0 Calibrate N & D METER at 0 dB with 12.2 volts across the 15 ohm LOAD for NOISE measurement.
- 13.0 Switch off ST40B, disconnect signal generator and solder Q12 collector leads to lugs. Plug 100 OHM termination plugs into magnetic input, select gram button.
13.1 Switch on ST40B and measure NOISE in both channels. The level should be less than -55dB.
- 14.0 Check the SENSIVITY of all channels by measuring the INPUT VOLTAGE for RATED POWER output, VOLUME control at maximum clockwise. Figures should be those quoted in the Technical Specification section of this handbook.
- 15.0 Connect a SQUARE WAVE generator set at 1 KHz to the RH tuner input and select the TUNER button.
15.1 With VOLUME control at maximum clockwise, adjust the output LEVEL of the GENERATOR to the 4 VOLT RMS calibration on the OUTPUT meter.
- 16.0 Adjust the BASS and the TREBLE controls for a FLAT response on the oscilloscope trace, referring to Flat Response Graph.
- 17.0 Adjust TREBLE control to the maximum clockwise and compare the oscilloscope waveform with the Treble Boost Graph. Observe both the channels
- 18.0 Now adjust TREBLE control to maximum anticlockwise and compare the output waveform with Treble Cut Graph. Observe both channels.
18.1 Return TREBLE to 0.

- 19.0 Adjust the BASS control to maximum clockwise and compare the output waveform with Bass Boost Graph. Observe both channels.
- 20.0 Now adjust the BASS control to maximum anticlockwise and compare output waveform with Bass Cut Graph. Observe both channels.

ENSURE THAT THE AMPLIFIER MAINS SELECTOR IS SET TO SUIT THE LOCAL MAINS SUPPLY VOLTAGE AFTER COMPLETING THIS TEST PROCEDURE.

TEST SETUP



TECHNICAL DATA

<u>Music Power Output IHFM</u> (Both Channels)	40 watts
<u>Power Output RMS</u> (@ 1KHz each channel)	16 watts 8 ohm load 10 watts 15 ohm load
<u>Total Harmonic Distortion and Noise Overall</u> (15 ohm load)	@ 1 KHz:less than 0.1% at 100 mWatts output @ 1KHz:less than 0.1% at 10 Watts output @ 25 Hz:less than 0.5% at 10 watts output @ 20KHz:less than 0.25% at 10 watts output
<u>Intermodulation Distortion:</u>	less than .1% at 1 watt less than .1% at 5 watts CCIR method 5KHz and 5.2KHz
<u>Pulse Response:</u>	2.5 usec Rise Time
<u>Frequency Response:</u>	12-100,000 Hz + 3 dB @ 5 watts 20-60,000 Hz \pm 1 dB @ 5 watts

Input Sensitivity for Rated Output

	<u>High</u>	<u>Low</u>
Tuner	8 mV	120 mV flat
Magnetic PU	4 mV	- Equalised RIAA
Auxiliary	8 mV	100 mV flat
Tape amplifier	100 mV	600 mV flat
Tape Head	2.5 mV	- Equalised CCIR
Output for tape recorder	8 mV	-flat

Residual Hum and Noise:

Tape Head:
unweighted - better than - 50 dB
weighted - better than - 65 dB

Magnetic Pickup:

unweighted - better than - 55 dB
weighted - better than - 65 dB

Tape Amplifier:

unweighted - better than - 55 dB
weighted - better than - 65 dB

Tuner:

unweighted - better than - 55 dB
weighted - better than - 65 dB

Auxiliary:

unweighted - better than - 55 dB
weighted - better than - 65 dB

Channel Crosstalk:

Better than - 60 dB

Tone Control Range:

Bass Boost + 15 dB at 20 Hz
Bass Cut - 15 dB at 20 Hz
Treble Boost + 10 dB at 10 KHz
Treble Cut - 15 dB at 10 KHz

Speaker Impedance:

8 ohm to 16 ohm

Controls:

Treble, Bass, Balance, Volume

Press Button Functions:

1. Tape	-	Tape Head
2. Gram	-	Magnetic Pick-up
3. Auxiliary	-	Tape Amplifier, Crystal pick-up or Microphone
4. Tuner	-	Radio tuner
5. Mono	-	Mono/Stereo
6. Filter	-	Treble Filter
7. On	-	Power ON/OFF

Dimensions:13 $\frac{1}{4}$ " long x 4 $\frac{1}{2}$ " high x 9 $\frac{3}{4}$ " deepWeight:13 $\frac{1}{2}$ lbPower Source

230V, 240V or 250V A.C. 50 Hz

Power Consumption

46 watts at full output
16 watts at average listening level

Modification incorporated after S/No's 765
R71 and C41 added, (see circuit diagram)

DO'S AND DON'T'S

1. DO read the instructions thoroughly before operating your amplifier.
2. DON'T plug or unplug auxiliary equipment into the ST40B while the power lead is live, first unplug the amplifier from the wall socket.
3. DON'T increase the fuse rating beyond that specified.
4. DON'T connect transformerless receivers, tape recorders, or TV receivers to the ST40B, the result could be disastrous.
5. DO allow at least 2" clearance all round the cover when fitting into a cabinet, for adequate ventilation.
6. DON'T parallel the speaker connections in the hope of obtaining more power into one speaker.
7. DON'T operate the unit with the cover removed.

TEST PROCEDURE

- 1.0 The following equipment will be required:
 - 1.1 2 DC current meters 0-1 Amp (Avo 8 or equivalent)
 - 1.2 2 15 ohm dummy loads
 - 1.3 1 Low distortion AF oscillator (Marconi TF2100 or equivalent)
 - 1.4 1 Noise and Distortion Factor meter (Marconi TF2331 or equivalent)
 - 1.5 1 Oscilloscope
 - 1.6 1 VTVM (RCA WV98B or equivalent)
 - 1.7 1 Variac
- 2.0 On ST40B
 - 2.1 Set MAINS VOLTAGE SELECTOR on rear panel to 230 volts
 - 2.2 Set all PRESET POTENTIOMETERS in accordance with the Test Set Up drawing.
 - 2.3 Connect a 15 ohm dummy load to the OUTPUT of each channel.
 - 2.4 Connect IDLING CURRENT meters in series with the COLLECTOR lead of Q12 in each channel, so that the output stage current only is measured and not that of its driver stages. The driver HT feed wire has to be removed from the collector terminal of Q12 and directly connected to the HT.
 - 2.5 With all CONTROLS AT 0, INPUT LEVEL SWITCHES HI, switch unit ON and INCREASE the VARIAC voltage from 0V to 230V ensuring that the IDLING CURRENT is 12-15mA in either channel by adjustment of the appropriate R43 potentiometer. If commencing tests from "cold" the idling current may initially be set at 3mA which will quickly rise and stabilise at 12-15mA.
- 3.0 Set signal GENERATOR to 1Kc/s and output LEVEL approx 10mV
 - 3.1 Connect signal GENERATOR to RH and LH TUNER input sockets, and select TUNER button.
- 4.0 Connect N & D METER, VTVM and OSCILLOSCOPE across the RH OUTPUT.
- 5.0 Increase VOLUME to maximum clockwise and adjust output LEVEL on GENERATOR to give 12.2 VOLTS RMS across the 15 ohm LOAD.
 - 5.1 Switch to MONO, output voltage may fall slightly.
 - 5.2 Check operation of BALANCE control by observing OUTPUT voltage variation when control is turned from left to right and then right to left.

RESPONSE GRAPHS