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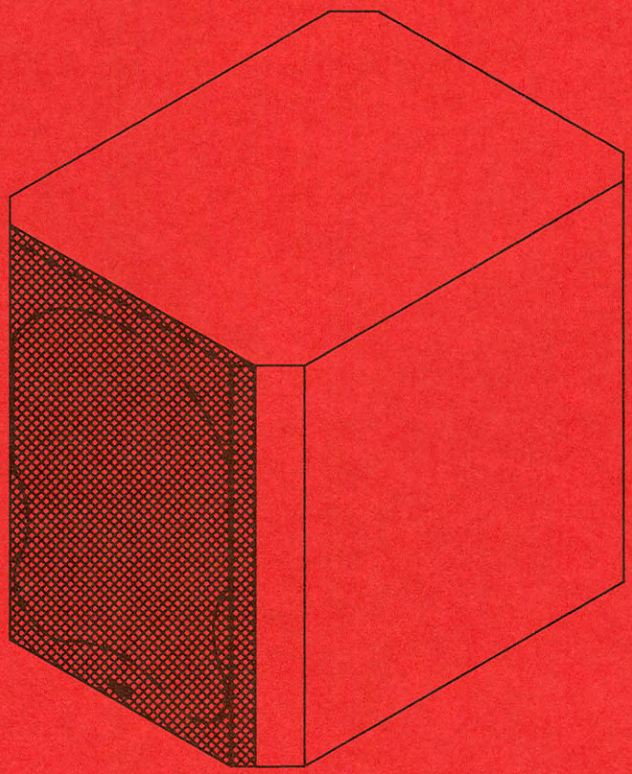

800ASW

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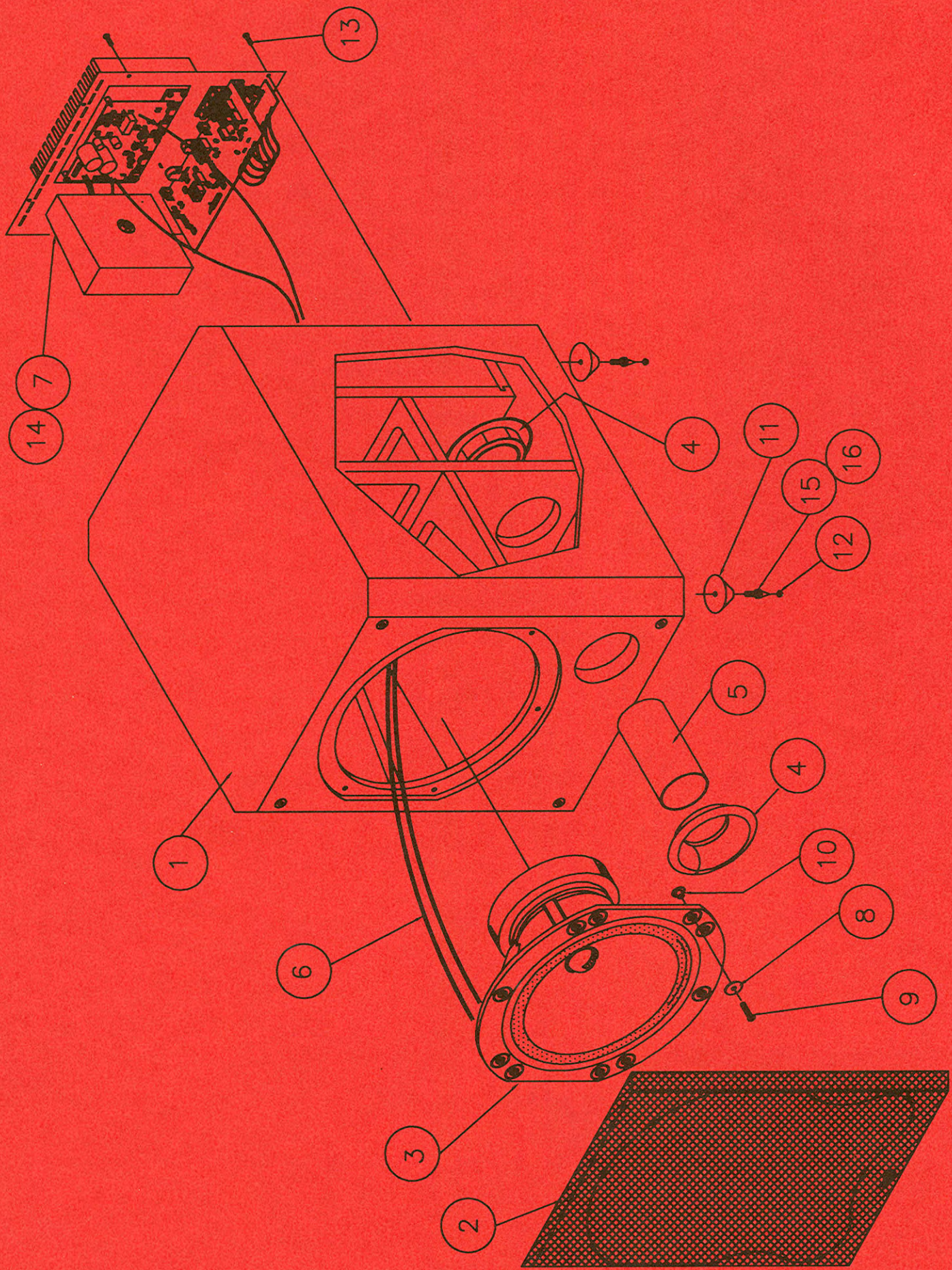
TITLE

800 ASW GENERAL ASSEMBLY

DATE 3:5:94 | © 1994 | DRAWN DS

DRG NO. A2774-12 ISSUE ©



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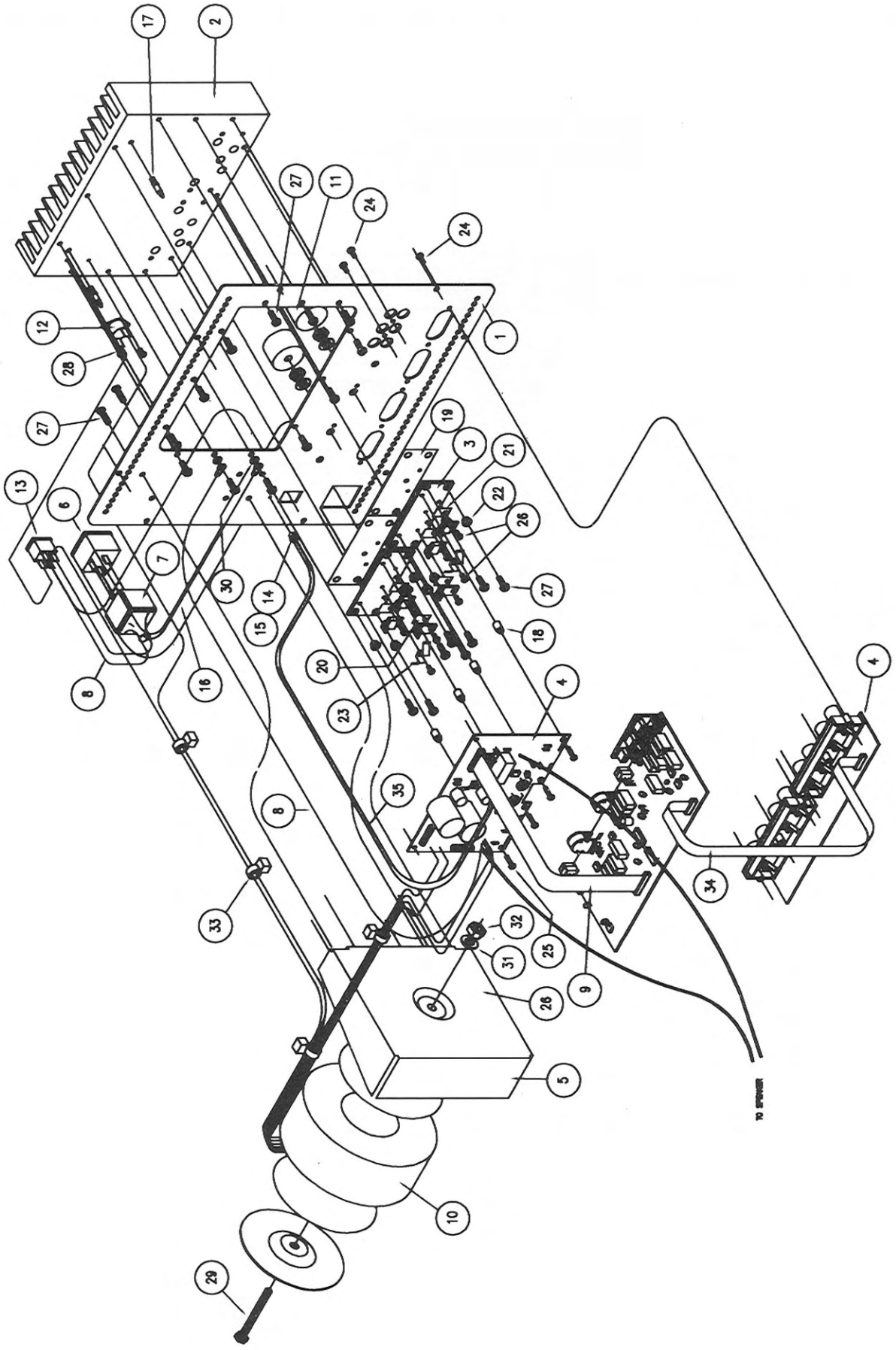
TITLE **800 ASW GENERAL ASSEMBLY PARTS LIST**

DATE 3:5:94 | © 1994 | DRAWN DS

DRG NO. A2774-22 ISSUE ©

ITEM	QTY	Code No	DESCRIPTION	Drg No
		AS8-BA	Complete assembly black ash	A2774-12
1	1	Y7489-BA	Cabinet assembly Black Ash	C2574
2	1	ZZ3824	Grille ass'y	C2842
3	1	ZZ7447	Bass unit	A2431-12
4	2	P7943	Port trim	A2720
5	1	P7854	Port tube 215mm	A1317
6	1	ZX0914	Harness (Bass to amp)	A2841
7	1	A5002	Back panel amp module ass'y	A2783-12
8	4	H1163	Screw M6x30 skt hd button	
9	4	H5142	Washer M6	
10	4	H9110	Step washer (Bass unit)	A2007
11	4	S4073	Foot	A2785
12	4	P7951	Rubber pad	
13	1	H1147	Screw M4x20 pan hd pozi	
14	1	S4081	Serial label	A2840
15	4	S3840	Floor spike	A1247
16	4	H4073	M6 Full nut	
17				
18				

B&W	TITLE	800 ASW BACK PANEL GENERAL ASSEMBLY		DRG NO.	ISSUE
	DATE 12:5:94	© 1996	DRAWN KW	A2783-12	E



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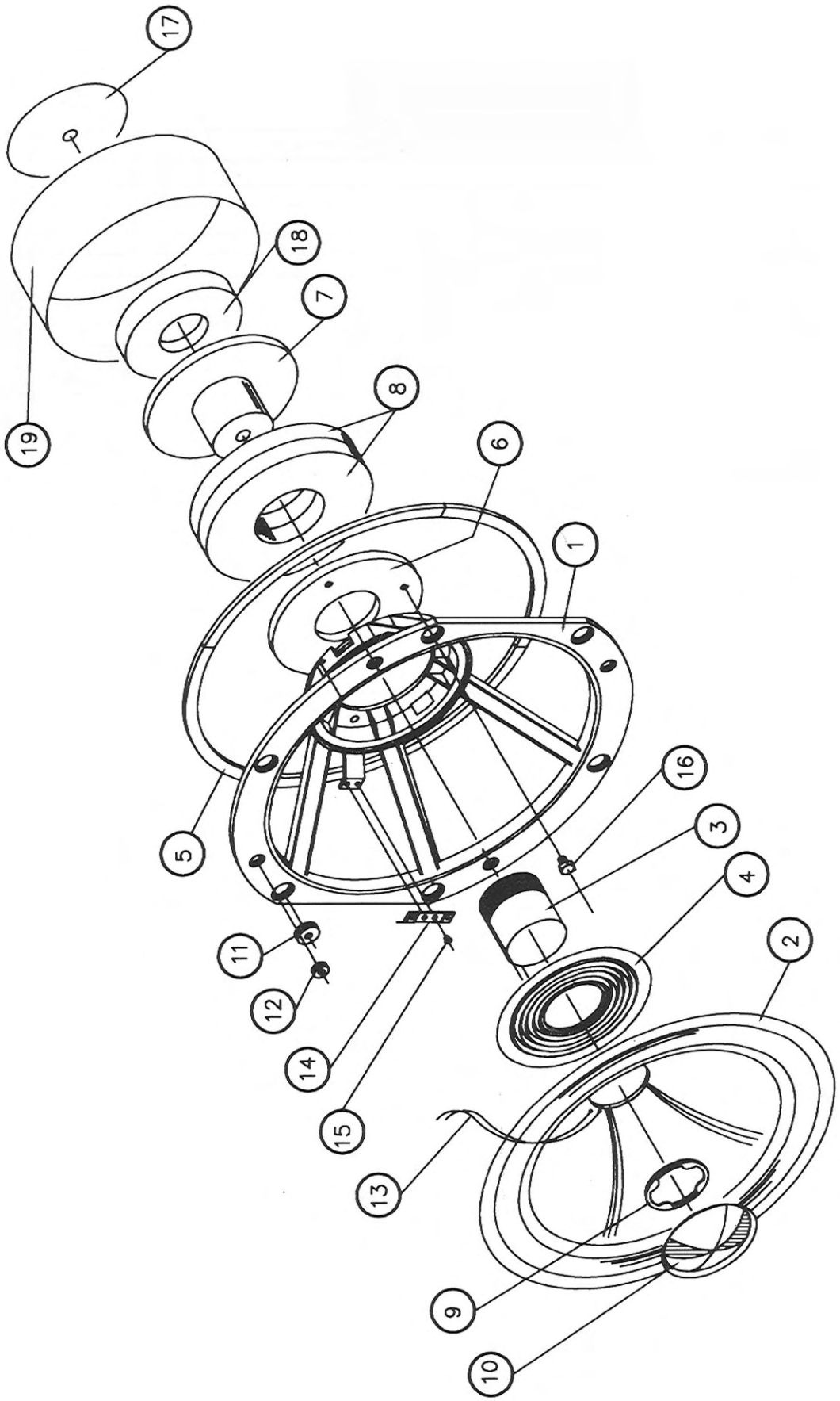
TITLE **800 ASW BACK PANEL G.A. PARTS LIST**

DATE 12:5:94 | © 1994 | DRAWN PLB

DRG NO. A2783-22 ISSUE E

ITEM	QTY	CODE NO	DESCRIPTION		DWG,NO/PART,NO
		A5002	COMPLETE ASSEMBLY		A2783-12
1	1	Q0485	REAR PANEL		C2757
2	1	Q0493	HEAT SINK		B2760
3	2		MOUNTING PLATE		A2765
4	1	Q0523/Q0515	PCB ASSEMBLY		C2754
5	1	Q0549	MOUNTING BRACKET (TRANSFORMER)		B2759
6	1		FUSED IEC-CHASSIS PLUG	TREMIVER	CM-0039
7	1		BOOT	TREMIVER	HW-0011
8	1		CABLE HARNESS		B2784
9	1		RIBBON CABLE 2.5mm 24AWG 8 WAY		A2857
10	1	Q0531	TRANSFORMER 300VA		NUVOTEM
11	2	32MMKNOB	CONTROL KNOB		AURA
12	1		THERMAL SWITCH	MICROTHERM FARNELL	151-646
13	1		MAINS SWITCH		
14	1		LED BEZEL		AURA
15	1		LED	TELEFUNKEN	TLUV5300
16	1	EARTH-HARNESS	CABLE 18AWG	AURA	A3A3G15
17	2		PCB SUPPORT	RICHCO	BHL-7-01
18	4		PCB SUPPORT	RICHCO	SRS4-5-01
19	2		THERMAL WASHER	BERGQUIST	A2846
20	2		THERMAL WASHER TO126	FARNELL	170-017
21	4		CONDUCTIVE THERMAL WASHER TO220	FARNELL	151-086
22	8		SHOULDER WASHER	HEYCO	015-0958
23	2		SPRING MOUNTING CLIP	FARNELL	279-936
24	8	N04X5/16S/TAPPAN	N04 X 5/16 PANRECS/TAPTYPE		
25	4		M3 X 16 PAN TAPTITE ZINC AND PASSIVATE		
26	8		M3 X 8 PAN TAPTITE ZINC AND PASSIVATE		
27	27		M4 X 8 PAN TAPTITE ZINC AND BLACK		
28	2		M3 X 6 PAN TAPTITE ZINC AND PASSIVATE		
29	1		M6 X 60 HEX ZINC AND PASSIVATE		
30	2		M4 STAR WASHER		
31	1		M6 STAR WASHER		
32	1		M6 NUT FULL ZINC AND PASSIVATE		
33	A/R		CABLE TIE		
34	1		RIBBON CABLE 5 WAY		A2884
35	1		RIBBON CABLE 3 WAY		A2883
36					

B&W	TITLE **BASS UNIT GENERAL ASSEMBLY**	DRG NO.	ISSUE
	DATE 2:3:93 | © 1993 | DRAWN DS	A2431–12	4



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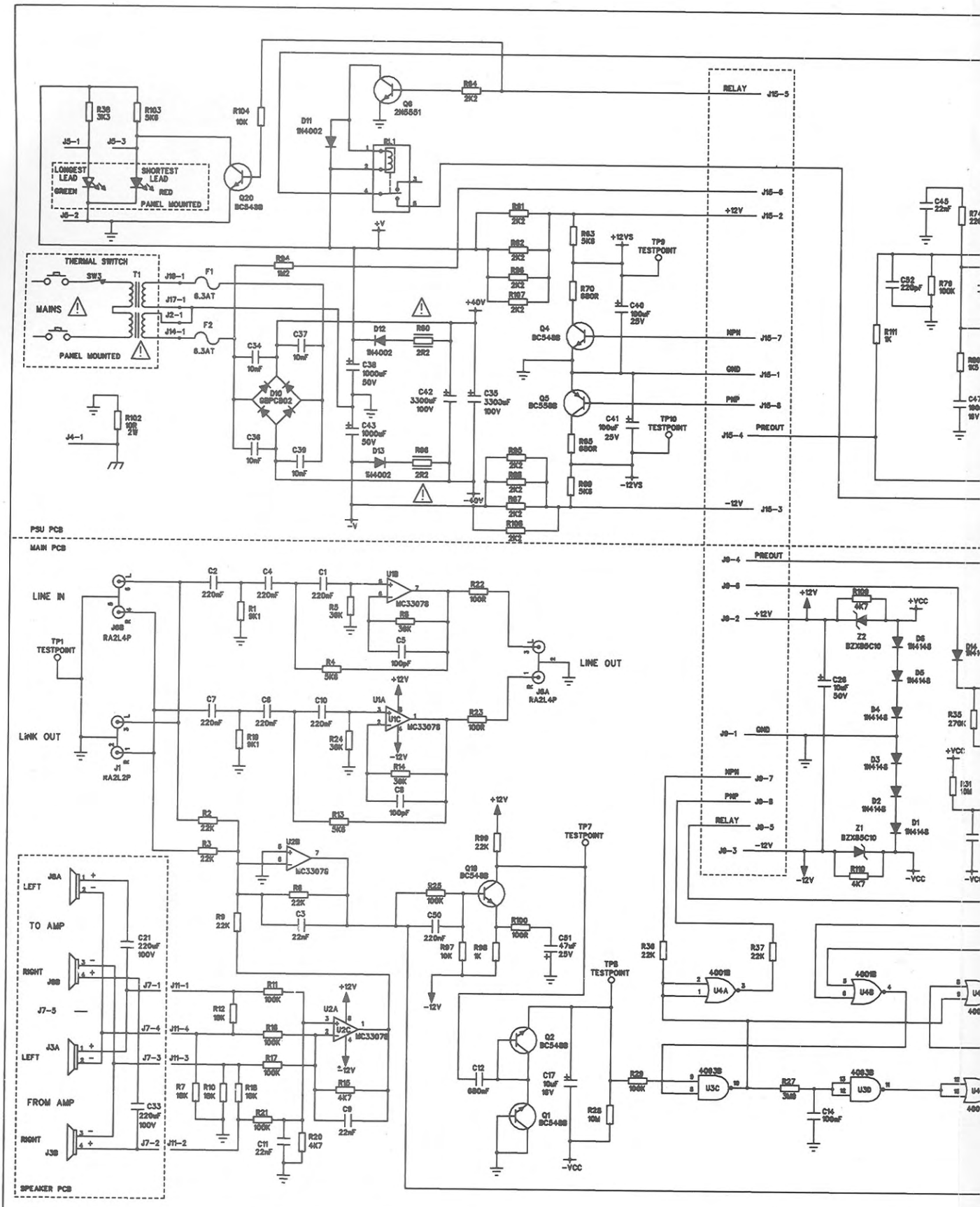
TITLE
BASS UNIT GENERAL ASSEMBLY PARTS LIST

DATE 2:3:93 | © 1993 | DRAWN DS

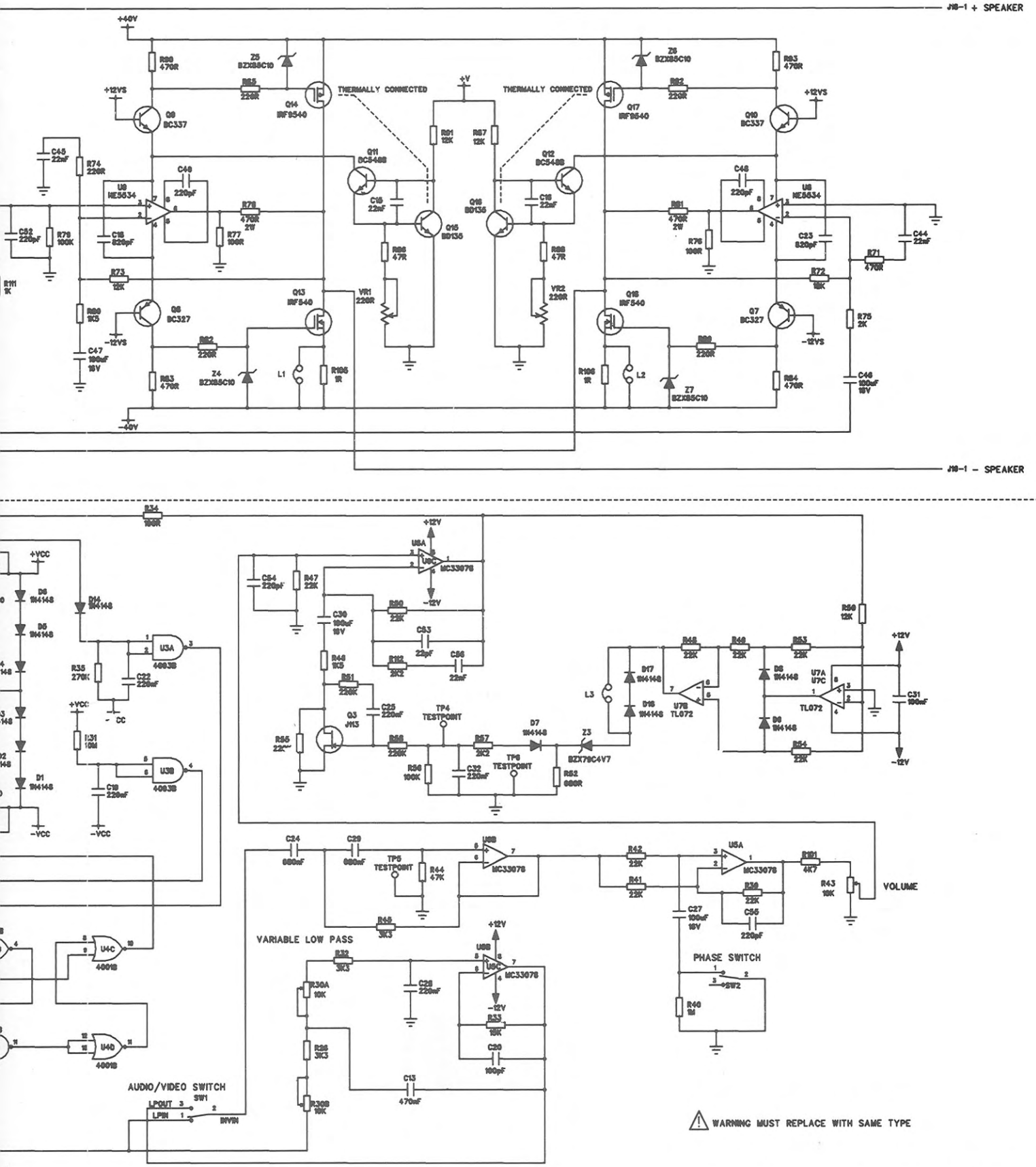
DRG NO. A2431-22 ISSUE 4

ZZ7447

ITEM	QTY	Code No	DESCRIPTION	REMARKS	Drg No
		ZZ7447	COMPLETE BASS ASSEMBLY		A2431-22
1	1	C5150	Chassis		C689
2	1	ZC7447	Cone and surround ass'y	Cone C8000 Sur'd S1333	
3	1	ZV0302	Coil assembly		A1566
4	1	S0795	Rear suspension		
5	4	G0094	Gasket		A705
6	1	P0719	Front plate		A694
7	1	P0728	Pole piece		A1345
8	2	M0376	Magnet ceramic	300 FM2	A3242
9	1	R3026	Stiffening ring		A373
10	1	D0191	Dust cap		A1833
11	6	G2151	Grommet		
12	4	G2127	Grommet		
13	2	T1767	Tinsel		
14	1	T0892	Terminal panel ass'y		
15	1	R3972	Pop rivet		
16	3	H1104	Screw M6x8 Hex hd		
17	1	L7218	Label		A2432
18	1	M?????	Magnet ceramic		
19	1	P1049	Screening cup		A2383



USED ON		MATERIAL
B&W LOUDSPEAKERS LIMITED WORTHING ENGLAND	DIMENSIONS IN mm TOLERANCES 0. ± 0.5 0.0 ± 0.3 0.00 ± 0.1 UNLESS OTHERWISE STATED	SCALE DO NOT SCALE	FINISH



ISS	AMENDMENT	ECN	DATE
2	EXCLAMATION MARKS ADDED		24-6-96
1	INITIAL ISSUE		31-3-94

DRAWN PLB | DATE 31-3-94

PART NO.

TITLE

800 ACTIVE SUBWOOFER SCHEMATIC

DRG. NO. C2754-20 ISS 2

B&W LOUDSPEAKERS STEYNING RESEARCH ESTABLISHMENT

TEST SPECIFICATION FOR 800ASW ELECTRONICS 10.10.94

Attn: Joe, Service Dept. Richard Dudley. Revision A.
PCB Revision D

SUBJECT TO AMENDMENT FROM AURA'S WORKING TEST SPEC

Description :

The 800ASW is an active subwoofer that will extend the bass response of a hi-fi system and boost its overall power handling. It consists of a 200W bridged mode amplifier and power supply attached to a heatsink, together with crossover filtering and user controls mounted on a separate PCB on the back panel. The finished module fits into the rear of a ported cabinet containing a 12" foam-surround 8Ω drive unit.

Equipment :

Tektronix audio signal generator and analyser
8 Ω dummy load (simulated loudspeaker), 200W rating
Digital multimeter
1 kVA variac
Bias measurement connector lead

Before applying power - visual checks :

- Ensure ribbon cable is securely connected between control and amplifier boards. Power should **never** be applied with this cable unconnected.
- Check for possible shorts between the heatsink and the transistor mounting plates with the multimeter.
- Check for possible shorts from Q15 & Q16 collectors to output mounting plates
- Ensure the carbon loaded washers are visible around all four sides of each of the MOSFETs and Q15 & Q16 have their correct washers and are properly fixed. They all should be at right angles to the PCB edge, not at an angle.
- Ensure the aluminium plates are well screwed down to the heatsink and the transistors are well secured to the plates.
- Check that none of the leads to the transistors mounted on the plate are likely to short to it.
- VR1 and VR2 must be fully anticlockwise
- Links L1 and L2 should not be fitted at this stage.
- No load to be connected to J18, J19
- Status LED to be connected to 3-pin molex on amplifier PCB
- Connect nothing to the inputs or the speaker terminals

Note : there are two versions of the amplifier for different mains voltages, 230V and 115V. They can be distinguished by the colour of the primary leads on the transformer. Blue = 230V, Brown = 115V. Mains voltages given are for the 230V model, figures in [square brackets] refer to the 115V variant.

a) **Basic operational test**

Set the variac to 0V and connect the mains input to its output. Bring up the variac output to 40VAC [20V] (+/- 0.5V) monitoring at the IEC mains inlet with the DVM. The status LED should be glowing a dim yellow (red & green combined) - if not there is a PCB fault somewhere.

Check the rectified secondary rails are + & - 6.2V (+/- 0.2V).

These can be measured at : wire link by C42 (+ve)

wire link by C35 (-ve) and J4 (ground)

If there is a significant imbalance between positive and negative readings (more than 0.2V), or both voltages are too low, there will be a fault on the PCB. ***Do not proceed further with testing if this is the case or the amplifier may be destroyed***. Only if this check is OK increase variac volts to 230VAC [115V] - visually check the relay has not energised and that the LED still indicates standby (yellow).

b) **Power amplifier bias setting**

Before any signal is passed through the amplifier, its standing bias must be set up. This is accomplished by applying a 1kHz signal, 1VRMS to the line input with the volume control set at 0 (fully anticlockwise). The relay should immediately click in and the LED should change to green. If not, ***proceed no further***. Bias can only be set up when there is a signal present. The DVM should be connected across the two pins of link L1, using the connector cable to prevent inadvertent short circuits by the probes. Preset VR1 is adjusted gradually in a clockwise direction until the DVM shows between 60 and 80mV. (This adjustment may be quite sensitive, which is why there is a range of acceptable values). Fit link L1 and repeat the procedure, measuring across L2 and adjusting VR2. Fit L2. Having found the right settings for VR1 and VR2 ***on no account should they be changed again***. Use some kind of sealing compound preferably. In order to gain some idea of production spreads, please measure and record the voltages across the four zener diodes Z4 - Z7 inclusive. Use care when wielding probes in this region - one slip could easily destroy two or more MOSFETs ! Remember - the mounting screws through the PCB are connected to the outputs.

VOLTAGES Z4 : Z5 : Z6 : Z7 :

c) **Checking the line level high pass filter**

With the previous test's input signal still present, check the line output is 900mVRMS (+/- 20mV). Change measurement units on voltmeter to dBr. Make sure the 400Hz high pass filter on the test set is switched out. Set dBr reference. Change frequency to 40Hz - check output level is -12dB (+/- 0.4dB)

d) **Checking line level low pass filter**

Attach balanced input AC voltmeter to amplifier output terminals. (NB no load to be attached at this stage) Check mode switch is set to 'audio' and low pass control is set to 40Hz (fully anticlockwise). Increase volume control until voltmeter reads 10VRMS. Change oscillator frequency to 20Hz and check reading is 20VRMS (+/- 1V). Increase frequency to 200Hz and check level is 340mVRMS (+/- 50mV). Operate mode switch to video position and check the output level increases to 9V (+/- 0.5V). Set mode back

to audio. Now adjust low pass control to fully clockwise (135Hz) and check level increases to 4VRMS (+/- 0.5V).

e) **Compressor**

Change oscillator frequency back to 40Hz and the output level to 200mVRMS. Set the volume to maximum and check amplifier output level is 35VRMS. Increase the sig-gen output to 500mVRMS and verify amplifier output level is now 60VRMS (+/- 4V). Note that this measurement must be made with a true RMS sensing meter. Observe the waveform isn't hard clipped but it should be distorted with a sharper leading edge than falling.

f) **Power amplifier auto switch-off level**

Turn the volume down to minimum and gradually reduce the variac voltage - the relay should drop-out and the LED return to standby indication by 140VAC [70V]. Tolerance on this value is yet to be determined. Return to nominal mains 230V [115V]

g) **Power amplifier distortion and power output**

With the power off, attach the 8Ω load between J18 and J19 and the distortion meter (differential input) across the load. Volume remains at minimum, set mode to video. With the signal generator output still at 500mV, but now at 80Hz, switch on. Bring up the volume to get an output of 10VRMS (12.5W) - and check there are no signs of high-frequency oscillation. Select the 80kHz low pass filter on the analyser and read the distortion - it should be <0.1%. Increase volume to give 28VRMS - distortion should be < 1%. Record both distortion measurements. Reduce volume to 20VRMS (50W) and leave at this power level for 60s. This is to check the MOSFETs are properly mounted to the heatsink. If there are signs of the MOSFETs overheating (such as smoke, blackening or a cooking smell !), switch off immediately and check the fixings. If the MOSFETs have got too hot, they will need to be changed. If the heatsinking is OK you should be able to touch the pressure clips (at the end of the 60s test) momentarily without getting burnt. Turn off the power and re-check the tightness of all the fixings to the heatsink.

DISTORTION - at 10V : **%** **at 28V :** **%**

h) **High level inputs**

Remove the sig-gen from the line level input and connect to both pairs of speaker terminals (marked ' from amplifier left ' and ' from amplifier right ') in parallel (red - red and black - black). The load should still be connected, set sig-gen level to 1VRMS (frequency still 80Hz). Mode switch should be on video. Turn power on and check amplifier output level is 14VRMS (+/- 1V) with the volume control set at maximum.

i) **Auto switch-off**

Disconnect the sig-gen and check that the relay clicks out and the LED returns to the yellow standby indication after no less than 120 seconds. Switch off and disconnect the test leads and 8Ω load.