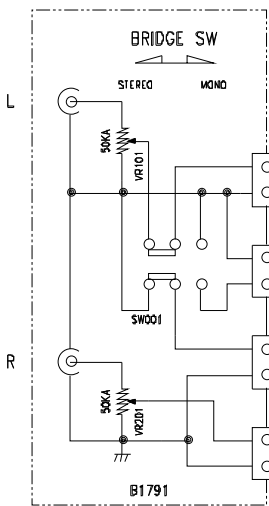


Brand	Parasound
Model	HCA-1500A
Designer	John Curl
Spec Sheet	https://drive.google.com/open?id=1GsMr-3MWMrzFWKYVZ3cSZOOmQKVXv04D
Owners Manual	https://drive.google.com/open?id=1EOXjXntmiO1rRyOnTX0QDmSvmpPdz2Ur
Bias Setting Procedure/Spec	https://drive.google.com/open?id=17_EOCKBDSg6A6XaF1tpHwOpFxZZoR9uq
S/N	235198
Photos	https://photos.app.goo.gl/hy9a4Mfdmgm2ey979
DIY Audio Thread	https://www.diyaudio.com/forums/solid-state/350047-parasound-hca-1500a-repair-upgrades.html
Emitter Resistor Location	https://www.diyaudio.com/forums/solid-state/344211-emitter-resistors-location-parasound-hca-1500a.html
Commentary from DIY Audio members to check	
Bias VR to multi-turn VR	I'm sorry, forget to mention before replace the BIAS VR, we should first measure the old VR resistance. After replace new VR, we first tune VR to the old value before new BIAS set.
Replace Power On/Off relay	
R119 & R120	Remove two resistors and replace with one. See diagram. Change to 47Ω 2W
R219 & R220	Ditto
R112 / R212	Feedback resistors - John Curl on HCA-3500 says to replace with Holco (old non magnetic) 47k 1%
Fuse F003 Blowing	
Check 8 transistors (R channel)	https://audiokarma.org/forums/index.php?threads/parasound-hca-1500a-blowing-left-channel-fuses-tried-all-i-know.697119/#post-13593259
D002 Bridge rectifier was bad	Replace both bridge rectifiers with 35a/600V Vishay rectifiers
	Replace both channel BR's as preventative on the other channel
After Rebuild, on restart	
	Make sure TVR variable resistors are turned down
	Bring up on Dim Bulb Tester for initial power test, F001,F002,F003,F004 pulled
	Upon success, introduce one channel and bring power up again on DBT
	If RY1 relay clicking, not enough juice through DBT. Run on straight power from the wall
	Bring each channel up individually and test, then bring up both channels
	Set TVR's per spec 15mV @ 40-45°C

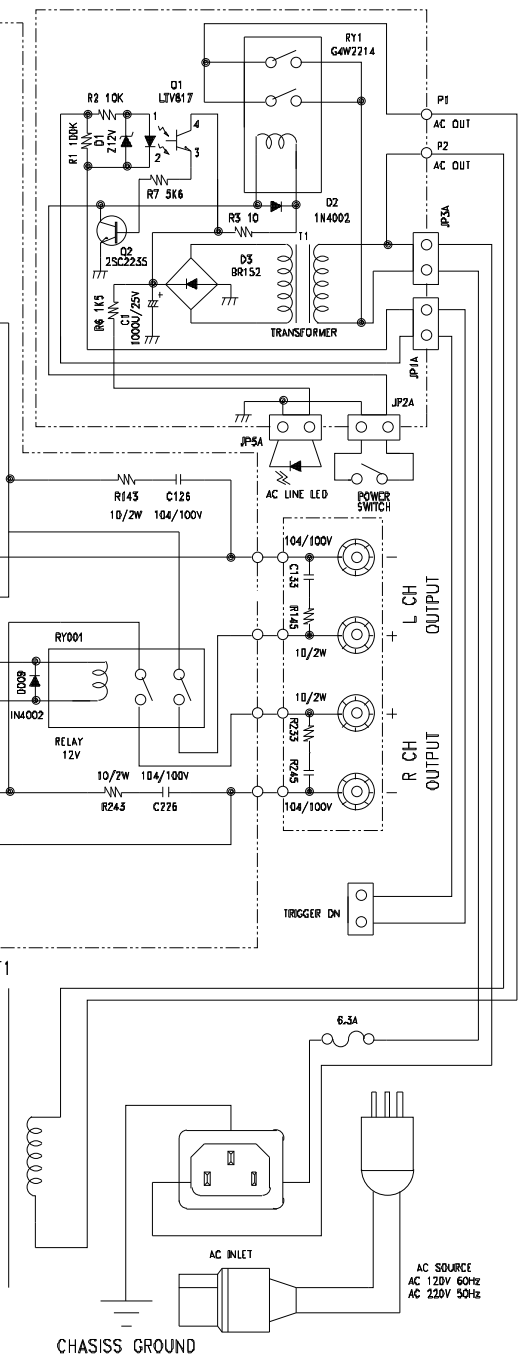
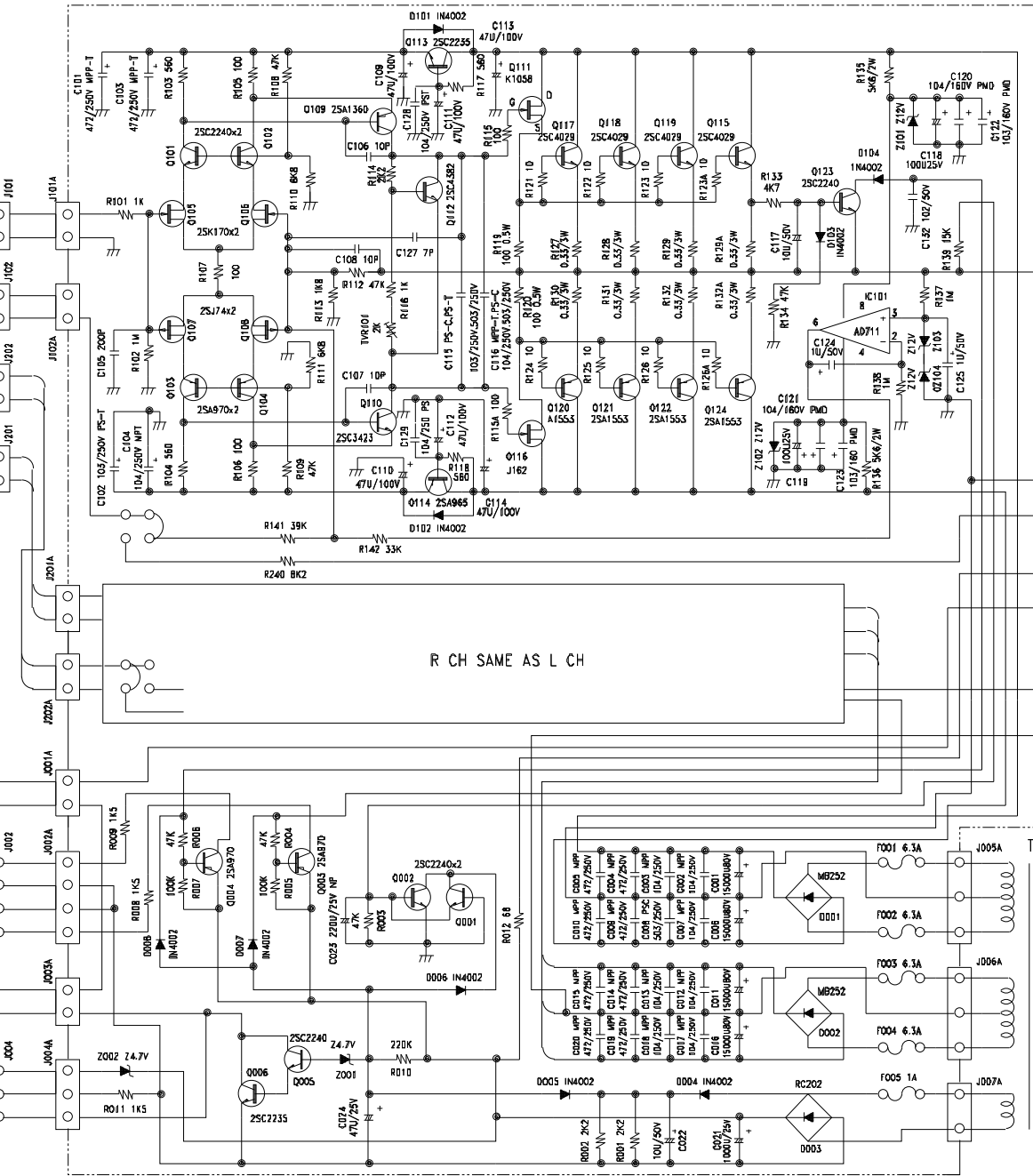
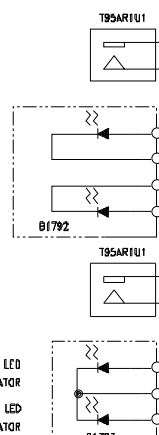
Original											Replacement																					
Location	S/P	Cap (uf)	V	Amp	Tol (%)	Res (Ω)	Watt	Temp (°C)	Brand	Notes	Cap (uf)	V	Amp	Tol (%)	Res (Ω)	Watt	Temp (°C)	Brand	Model	R	I	#	Cost	URL								
Bridge Rectifier																																
D001			200	25							same as D002																					
D002			200	25						Failed causing F003 to blow			600	35					Vishay	GBPC3506-E4/51			2	\$10	https://www.mouser.com/ProductDetail/Vishay-Semiconductors/GBPC3506-E4-51							
ON/OFF Relay																																
RY1									OMRON	G4W-2214P-US-HP								OMRON	G4W-2214P-US-HP	1		1	\$10	https://www.mouser.com/ProductDetail/Omron-Electronics/G4W-2214P-US-HP-F								
RY001		DON'T REPLACE (mono/bridge switching relay)								OMRON	G4W-2214P-US-HP								DON'T REPLACE (mono/bridge)													
Bias Variable Resistors																																
TVR101						2k				T202 2kΩ - replace with multi-turn pot				10	2k	0.5	150	Bourne	3296Y-1-202			2	\$9	https://www.mouser.com/ProductDetail/?qs=VXsgKwKHwpsOz892gK29aA%3D								
TVR201						2k				T202 2kΩ - replace with multi-turn pot	same as TVR101																					
Resistors																																
R112	(left channel)				1	46k				feedback resistor?				1	47k	0.5		Holco (old) / Resista non magnetic				1	\$26	https://www.ebay.com/itm/20pcs-NOS-HOLCO-47k-1-2W-1-EXTREME-HIEND-N								
R212	(right channel)				1	46k				feedback resistor?	same as R112																					
R119	(left channel)				2	100				Replace R119/R120 with 1 resistor!				5	47	2		Vishay	PR02000204709JR500	3		3	\$1	https://www.mouser.com/ProductDetail/594-5083NW47R00J								
R120	(left channel)				2	100					same as R119																					
R219	(right channel)				2	100				Replace R219/R220 with 1 resistor!	same as R119																					
R220	(right channel)				2	100					same as R119																					
Fuses																																
F001			250	6.3									250	6.3				Littlefuse	061806.3MXP	10		10	\$2	https://www.mouser.com/ProductDetail/?qs=aGgFWYEH7m3nM3kXe6RYA%3D								
F002			250	6.3							same as F001																					
F003			250	6.3						blown	same as F001																					
F004			250	6.3							same as F001																					
F005			250	1.0									250	1.0				Littlefuse	0217001.MXBP	2		2	\$2	https://www.mouser.com/ProductDetail/Littelfuse/0217001MXBP?qs=sGAEpiMz								
Power Filters																																
C001		15000	80						85 Nichicon	Type 1 Great Supply Black	15000	100						85 Nichicon	LKG1K153MKZ	4		4	\$122	https://www.mouser.com/ProductDetail/647-LKG1K153MKZ								
C006		15000	80						85 Nichicon	Type 1 Great Supply Black	same as C001																					
C010		15000	80						85 Nichicon	Type 1 Great Supply Black	same as C001																					
C011		15000	80						85 Nichicon	Type 1 Great Supply Black	same as C001																					
Electrolytic Capacitors																																
C1		1000	25						105 YEC		1000	35		20 (slightly wider)				85 Nichicon	UFG1V102MHM	2		2	\$3	https://www.mouser.com/ProductDetail/Nichicon/UFG1V102MHM?qs=sGAEpiMz								
C021		1000	25						105 YEC	Leaked - consider higher voltage	same as C1																					
C022		10	50						Rubycon		10	50		20				85 Nichicon	UFG1H100MDM	4		4	\$1	https://www.mouser.com/ProductDetail/Nichicon/UFG1H100MDM?qs=sGAEpiMz								
C023		220	25						85 Rubycon		220	25		20				85 Nichicon	UFG1E221MPM	2		2	\$2	<a ;"="" href="https://www.mouser.com/ProductDetail/?qs=kArNe9LFxXiwhduXWzEcA%3D%">https://www.mouser.com/ProductDetail/?qs=kArNe9LFxXiwhduXWzEcA%3D%";								
C024		47	25						85 Rubycon		47	35		20 (slightly wider)				85 Nichicon	UFG1V470MPM	2		2	\$1	https://www.mouser.com/ProductDetail/Nichicon/UFG1V470MPM?qs=sGAEpiMz								
C109		47	100						85 Rubycon		47	100		20				85 Nichicon	UFG2A470MPM	13		14	\$9	https://www.mouser.com/ProductDetail/?qs=kArNe9LFxXnIAz7aTx%2Fk8Q%3D								
C110		47	100						85 Rubycon		same C209																					
C111		47	100						85 Rubycon		same C209																					
C112		47	100						85 Rubycon		same C209																					
C113		47	100						85 Rubycon		same C209																					
C114		47	100						85 Rubycon		same C209																					
C117		10	50						85 YEC		same as C022																					
C118		100	25						85 Rubycon		100	25						85 Nichicon	UFG1E101MPM	5		5	\$2	<a ;"="" href="https://www.mouser.com/ProductDetail/?qs=kArNe9LFxXndTu8I7waUwQ%3D%">https://www.mouser.com/ProductDetail/?qs=kArNe9LFxXndTu8I7waUwQ%3D%";								
C119		100	25						85 Rubycon		same as C118																					
C209		47	100						85 Rubycon		same C209																					
C210		47	100						85 Rubycon		same C209																					
C211		47	100						85 Rubycon		same C209																					
C212		47	100						85 Rubycon		same C209																					
C213		47	100						85 Rubycon		same C209																					
C214		47	100						85 Rubycon		same C209																					
C217		10	50						85 YEC		same as C022																					
C218		100	25						85 Chemi-con		same as C118																					
C219		100	25						85 Chemi-con		same as C118																					

LINE INPUT



Parasound
HIGH CURRENT
POWER AMPLIFIER
HCA-1500A
DATE : JAN.14.1997

L CH OVERLOAD INDICATOR
R CH OVERLOAD INDICATOR
OPERATION LED INDICATOR
STANDBY LED INDICATOR



Adjustment Procedures for Parasound Amplifiers

The only adjustment necessary for Parasound amplifiers is for bias voltage. Since all Parasound amplifiers are DC servo controlled, there is no DC offset adjustment.

1. With the amplifier off, connect a DC voltmeter across any of the emitter resistors connected to the output devices.
2. Set the voltmeter to the millivolt range.
3. Refer to specific amplifier schematic to locate the bias potentiometer.
4. Turn on the amplifier with no signal applied or load connected.
5. Use a small trim screwdriver to adjust the potentiometer.
6. Turn the potentiometer to adjust bias voltage for each channel. **USE CAUTION-DO NOT ALLOW BIAS VOLTAGE TO EXCEED 50% OF LISTED SETTING DURING ADJUSTMENT.**
7. Make the initial bias setting from the table below.
8. Let the amplifier warm up for 30 minutes to confirm the bias is within tolerance.
9. Readjust the bias as necessary.

Bias Settings for Parasound Amplifiers

Model Number	Heatsink Temperature	Bias Voltage	Tolerance
HCA-3500	40-45 C	22 mV	+/- 2 mV
HCA-2200II	40-45 C	20 mV	+/- 2 mV
HCA-2205A	40-45 C	15 mV	+/- 2 mV
HCA-1500A	40-45 C	15 mV	+/- 2 mV
HCA-1206	40-45 C	8 mV	+/- 2 mV
HCA-1205A	40-45 C	10 mV	+/- 2 mV
HCA-1203A	40-45 C	10 mV	+/- 2 mV
HCA-1200II	40-45 C	10 mV	+/- 2 mV
HCA-1000(A)	40-45 C	10 mV	+/- 2 mV
HCA-806	40-45 C	10 mV	+/- 2 mV
HCA-750A	40-45 C	10 mV	+/- 2 mV
HCA-600	40-45 C	10 mV	+/- 2 mV
Zamp	40-45 C	3 mV	+/- 1 mV

Special Bias Adjustment Procedures for the Parasound HCA-3500

The bias tracking circuit of the HCA-3500 requires being set with no signal applied and again with a signal applied. When the HCA-3500 has an input signal connected, The bias rises to its high level setting.

1. Connect a DV voltmeter (in the millivolt range) across any of the emitter resistors.
2. With no signal applied, adjust TVR 1 until the bias level is 3 mV +/- 1 mV
3. Apply a 1 kHz sine wave to both inputs of the HCA-3500 Do not connect a load to the output.
4. Adjust TVR 3 until the bias level is 20 mV +/- 2 mV.
5. Confirm that the bias has remained at 20 mV +/- 2 mV.

