Issue date: Feb 2016
version 1.0

CAMBRIDGE

Service Manual

CP1
MOVING MAGNET PHONO PREAMPLIFIER

CP2
MOVING MAGNET & MOVING COIL PHONO PREAMPLIFIER

CP1 Specifications

CP1 Technical specifications

Max Power consumption	5W
Nominal output	300mV
THD 20Hz-20KHz	<0.009%
Signal to noise ratio using Audio Precision RIAA-1 with grounded inputs	>85dB
Input capacitance	220pF
Crosstalk @ 20KHz	>76dB
Gain @ 1KHz	39dB
Sensitivity for norminal output	3.35mV
RIAA curve accuracy	<+/- 0.65dB 25hz-20KHz
Input imprdance	47k Ohm
Overload margin	>30dB
Dimensions(H x W x D)	46 x 215 x 133 (1.8 x 8.5 x 5.2”)
Weight	0.8kg (1.8lbs)

CP2 Specifications

CP2 Technical specifications

Max Power consumption	5W
Nominal output	300mV
THD 20Hz-20KHz	<0.009%
Signal to noise ratio using Audio Precision RIAA-1 with grounded inputs	>86dB
Input capacitance	220pF
Crosstalk @ 20KHz	>83dB
Gain @ 1KHz	39dB
Sensitivity for norminal output	3.35mV
RIAA curve accuracy	<+/- 0.3dB
Input imprdance	47k Ohm
Overload margin	>30dB
Dimensions(H x W x D)	46 x 215 x 133 (1.8 x 8.5 x 5.2”)
Weight	0.9kg (2.0lbs)

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Contents

This guide is designed to make installing and using this product as easy as possible. Information in this document has been carefully checked for accuracy at the time of printing; however, Cambridge Audio's policy is one of continuous improvement, therefore design and specifications are subject to change without prior notice.

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Important safety instructions

For your own safety please read the following important safety instructions carefully before attempting to connect this unit to the mains power supply. They will also enable you to get the best performance from and prolong the life of the unit:

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with a dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Unplug this apparatus during lightning storms or when unused for long periods of time.
13. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as the power-supply cord or plug having been damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE AND OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, SHOULD NOT BE PLACED ON THIS APPARATUS.

Batteries (battery pack or batteries installed) shall not be exposed to excessive heat such as sunshine, fire or the like.

TO COMPLETELY DISCONNECT THIS APPARATUS FROM THE AC MAINS, DISCONNECT THE POWER SUPPLY CORD PLUG FROM THE AC RECEPTACLE. POUR DECONNECTER COMPLETEMENT L'APPAREIL DU RESEAU D'ALIMENTATION, DECONNECTER LE CORDON D'ALIMENTATION DE LA PRISE MURALE.

THE MAINS PLUG OF THE POWER SUPPLY CORD SHALL REMAIN READILY ACCESSIBLE. LA PRISE DU RESEAU D'ALIMENTATION DOIT DEMEURER AISEMENT ACCESSIBLE".

The lightning flash with the arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of un-insulated 'dangerous voltage' within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance instructions in the service literature relevant to this appliance.

WEEE symbol

The crossed-out wheeled bin is the European Union symbol for indicating separate collection for electrical and electronic equipment. This product contains electrical and electronic equipment which should be reused, recycled or recovered and should not be disposed of with unsorted regular waste. Please return the unit or contact the authorised dealer from whom you purchased this product for more information.

CE mark

This product complies with European Low Voltage (2006/95/EC), Electromagnetic Compatibility (2004/108/EC) and Environmentally-friendly design of Energy-related Products (2009/125/EC) Directives when used and installed according to this instruction manual. For continued compliance only Cambridge Audio accessories should be used with this product and servicing must be referred to qualified service personnel.

RCM (Regulatory Compliance Mark)

This product meets the Safety, EMC and Radio Communications requirements of the ERAC and ACMA.

CU-TR Mark

This product meets Russia, Byelorussia and Kazakhstan electronic safety approvals.

FCC regulations

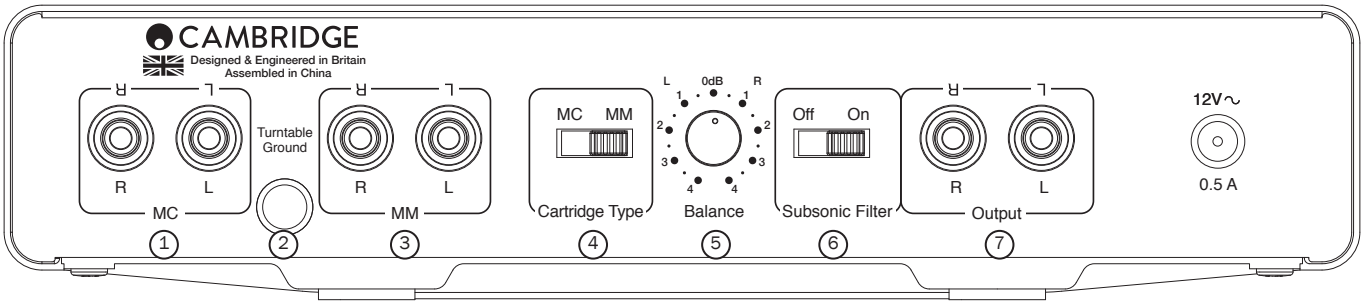
NOTE: THE MANUFACTURER IS NOT RESPONSIBLE FOR ANY RADIO OR TV INTERFERENCE CAUSED BY UNAUTHORIZED MODIFICATIONS TO THIS EQUIPMENT. SUCH MODIFICATIONS COULD VOID THE USER AUTHORITY TO OPERATE THE EQUIPMENT.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Re-orient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Rear panel connections



1. MC input sockets (CP2 only)

If your turntable uses a moving coil cartridge, connect outputs here (0.5-1mV, with 100 ohm, 220pF loading).

2. Turntable ground

If your turntable has a separate grounding lead then connect here. This provides shielding to the arm and the sensitive circuitry in the turntable.

3. MM input sockets

If your turntable uses a moving magnet cartridge, connect outputs here (3-5mV, with 47k ohm, 220pF loading).

4. Cartridge Type selector switch (CP2 only)

Match this switch to the cartridge type that your tunrtable uses. MM for a moving magnet cartridge or MC for a moving coil cartridge.

5. Balance

This control allows you to make fine adjustments to the relative output levels of the left and right channels. In the central position the output from each channel is equal.

6. Subsonic Filter (CP2 only)

The subsonic filter cuts out very low frequency 'rumble', caused by vinyl imperfections, which can affect your system's performance.

7. Output sockets

Use phono cables to connect to any line level input on your amplifier, such as Aux.

NB. Do not connect to a phono level input.

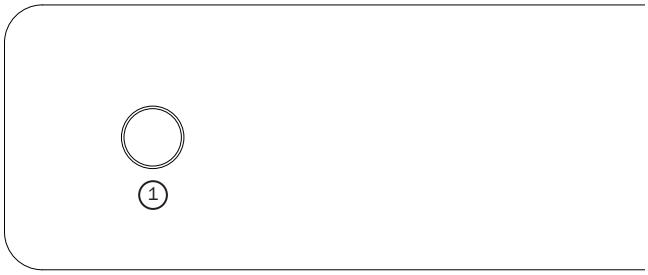
8. PSU socket

Once you have completed all connections to the amplifier and turntable, plug the PSU power cable into an appropriate mains socket and switch the unit on via its front panel On/Off button. The LED on the front panel will indicate that the power is on.

Please note the CP2 has an output relay, which after power on takes 15 seconds to come out of mute.

NB. Only use supplied power supply.

Front panel control



1. On/Off

Switches the unit between on and off.

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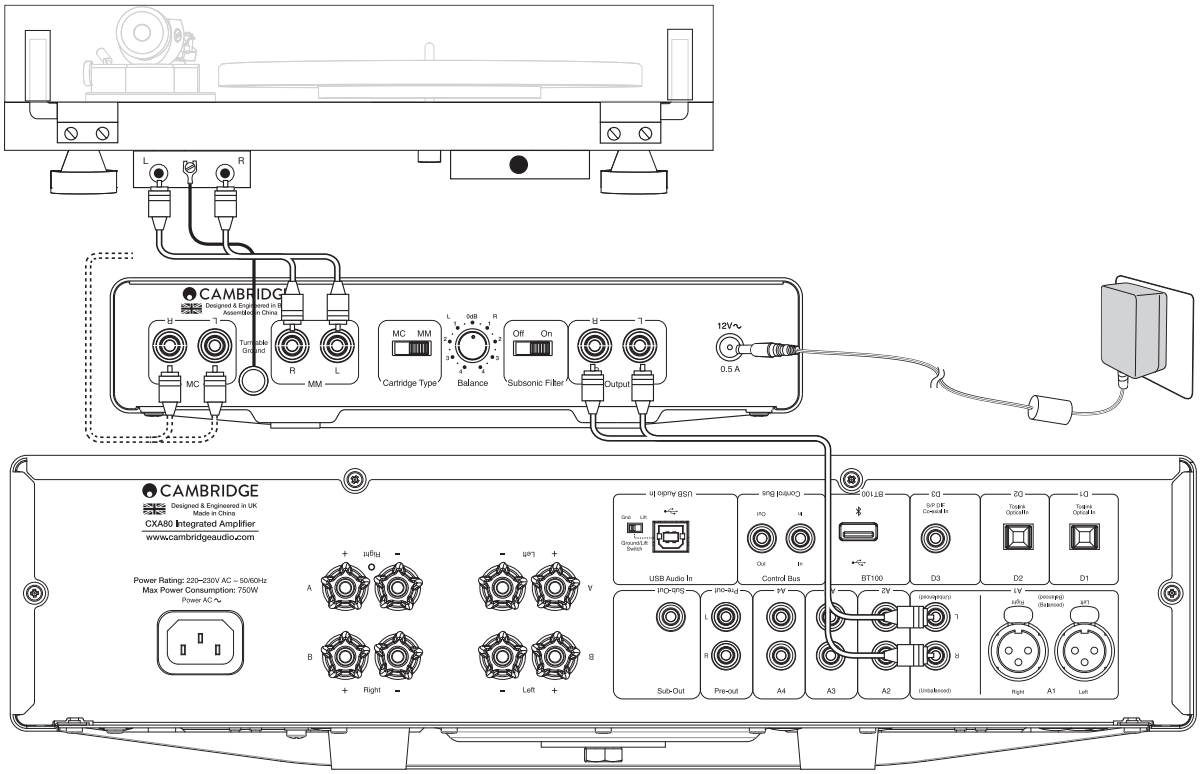
Connections



Troubleshooting

There is no power

Ensure the power supply is connected securely to the unit.

Ensure the power supply is fully inserted into the mains socket and is switched on.

There is no sound

Make sure the unit is plugged in.

Check that your turntable is properly connected.

Check that your speakers are properly connected.

Check all connections are secure and correct amplifier input is selected.

Ensure correct cartridge type has been selected (MM or MC).

There is no sound on one channel

Check that your speakers are properly connected.

Check all connections are secure.

There is a loud buzz or hum

Check turntable or tone arm for ground and connection lead fault.

Ensure no connections are loose or defective.

Ensure that your turntable is not too close to the amplifier.

Volume is too loud/quiet

Check cartridge type matches input type. If a MC cartridge is connected through the MM inputs, volume will be very quiet (and vice versa). Note that it is possible to obtain high level MC cartridges which are designed for an MM input.

In the event that the above solutions do not remedy your problem, please consult our frequently asked questions (FAQ) section on our website:

techsupport.cambridgeaudio.com

For all servicing, in or out of warranty, please contact your dealer.

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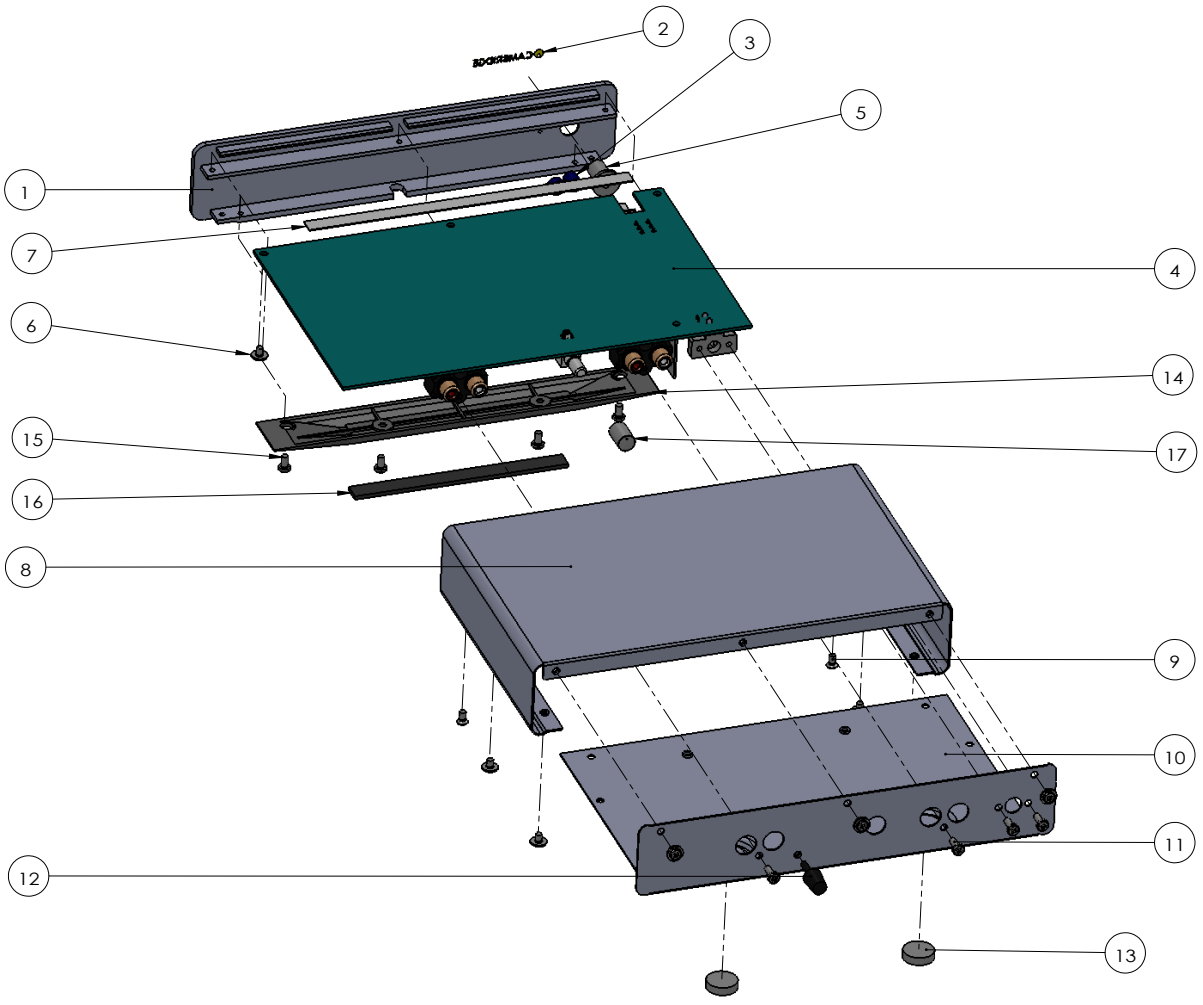
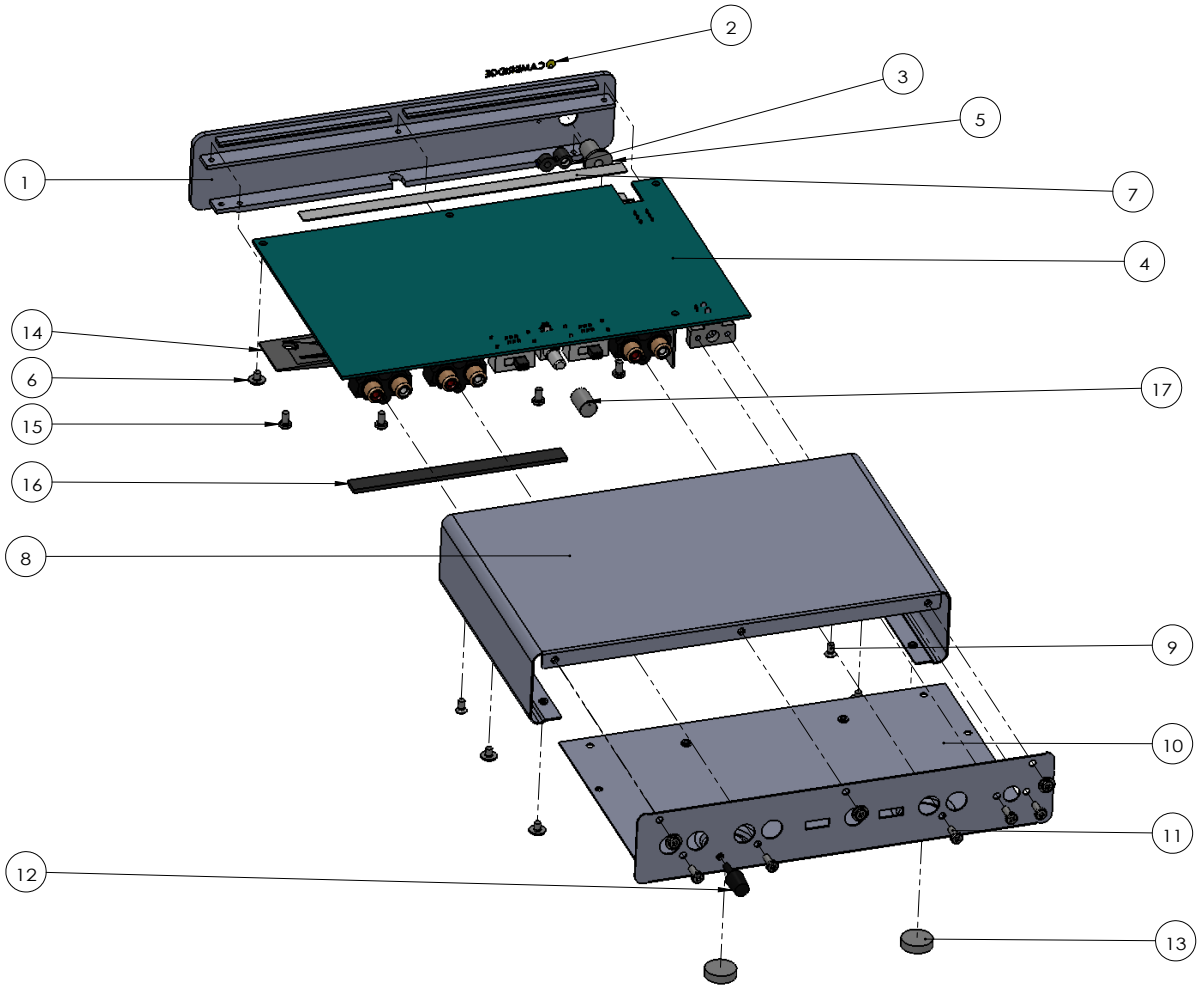
CP1 main assembly

Exploded drawing view ref	Description	Service part (order ref)
1 + 2	front panel and CA foil badge	
3	Azur range lightguide for 1 LED	
4	CP1 Main PCBA	PHT001
5	9mm push switch button in aluminum	
6	screw M3 X 4 pozi pan washer mc	
7	lidding tape	
8	top casework part	
9	screw m3 x6 pozi cs mc	
10	bottom case part	
11	screw m3 x 8 pozi pan plastite - self tapping	
12	grounding threaded pin	
13	azur phono stage rubber foot	
14	front plastic foot	
15	screw m3 x 6 pozi pan m/c	
16	front foot pad	
17	9mm knob push and turn type	



CP2 main assembly

Exploded drawing view ref	Description	Service part (order ref)
1 + 2	front panel and CA foil badge	
3	Azur range lightguide for 1 LED	
4	CP2 Main PCBA	PHT002
5	9mm push switch button in aluminum	
6	screw M3 X 4 pozi pan washer mc	
7	lidding tape	
8	top casework part	
9	screw m3 x6 pozi cs mc	
10	phono preamp bottom case part	
11	screw m3 x 8 pozi pan plastite - self tapping	
12	grounding threaded pin	
13	azur phono stage rubber foot	
14	front plastic foot	
15	screw m3 x 6 pozi pan m/c	
16	front foot pad	
17	9mm knob push and turn type	



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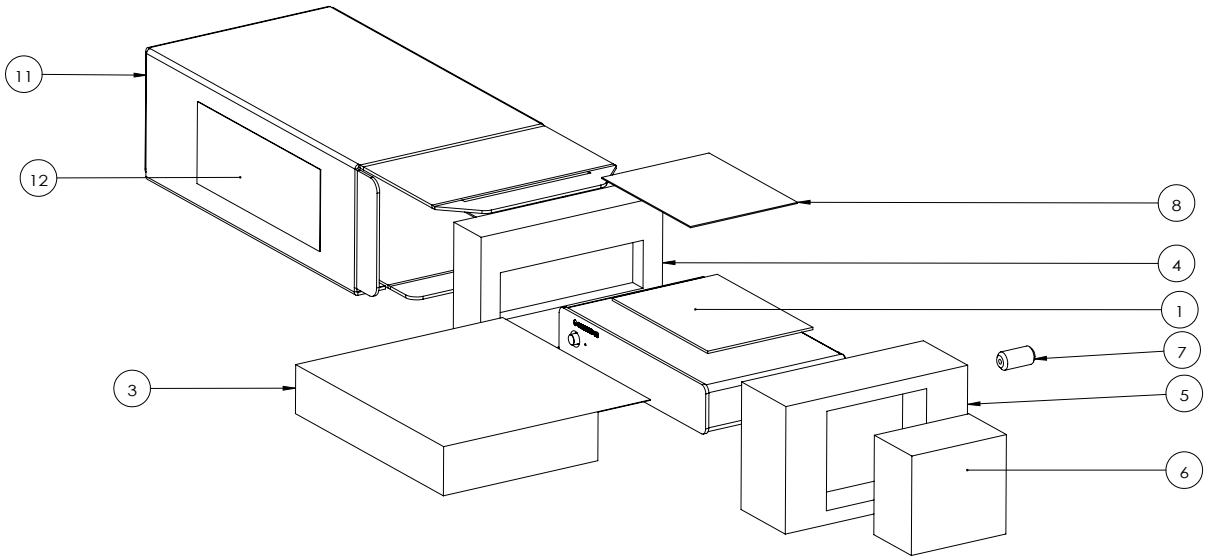
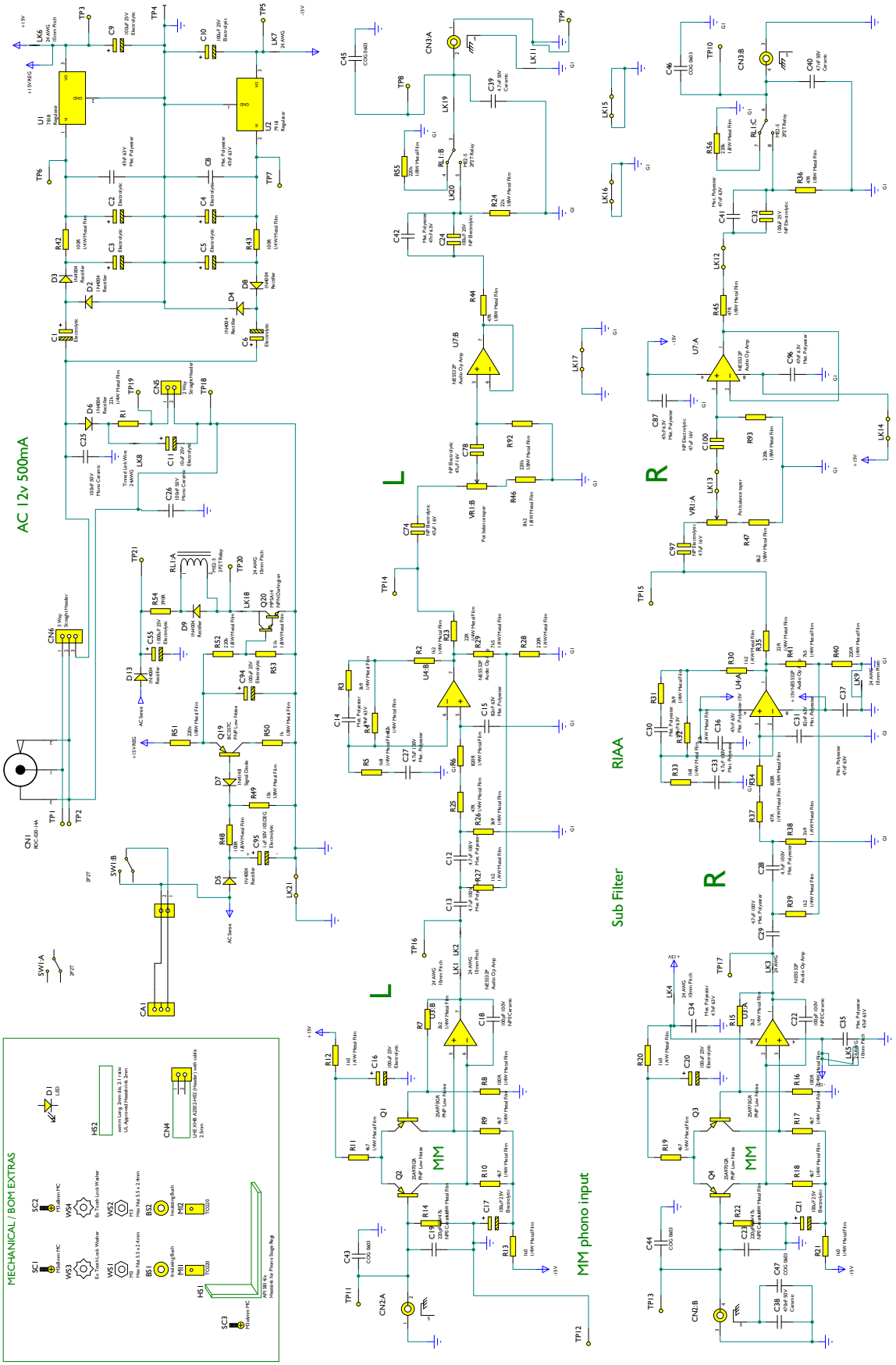
CP package assembly

Exploded drawing view ref	Description	Service part (order ref)
1	main assembly	
3	black woven bag packaging	
4 + 5	CP1/2 EPE End Left & Right	PHT004
6+7	UK PSU with ferrite	PY867
	EU PSU with ferrite	PY912
	CU PSU with ferrite	PY1538
	AU PSU with ferrite	PY1063
10	Poly bag 173 x 260mm	
11	CP1/2 Gift Box	PHT003



CP1 PHONO STAGE MAIN PCB - Schematic



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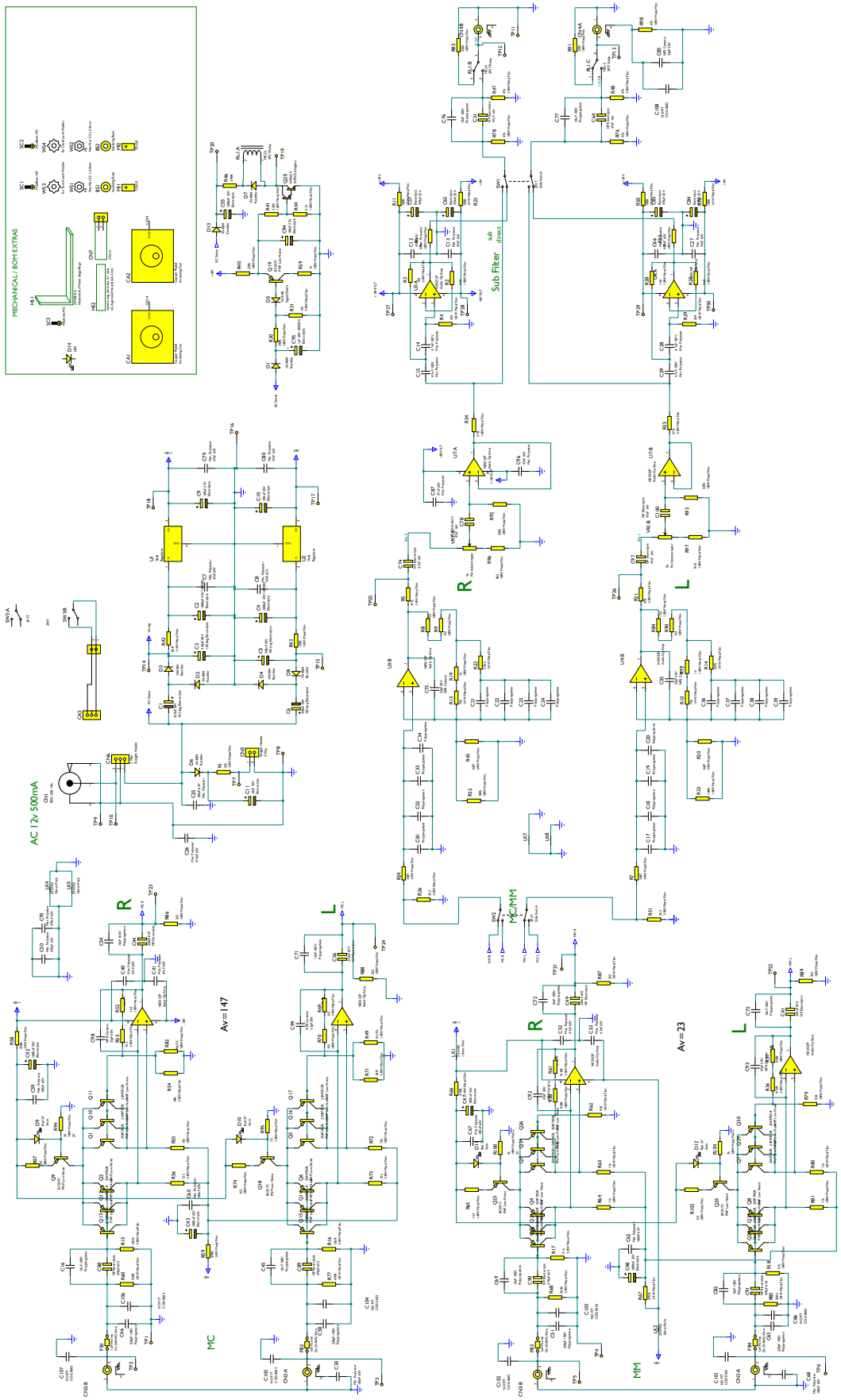
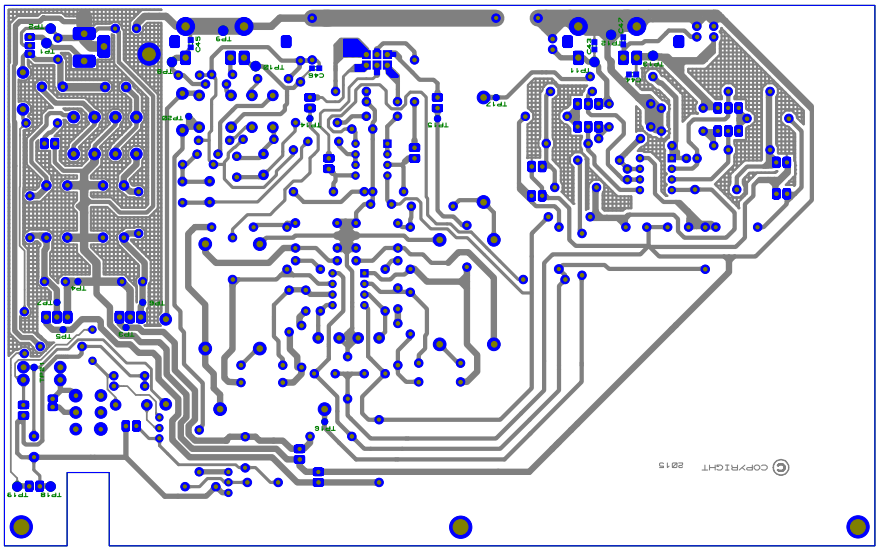
CP2 PHONO STAGE MAIN PCB - Schematic



CP1 PCB Bottom layer - Gerber



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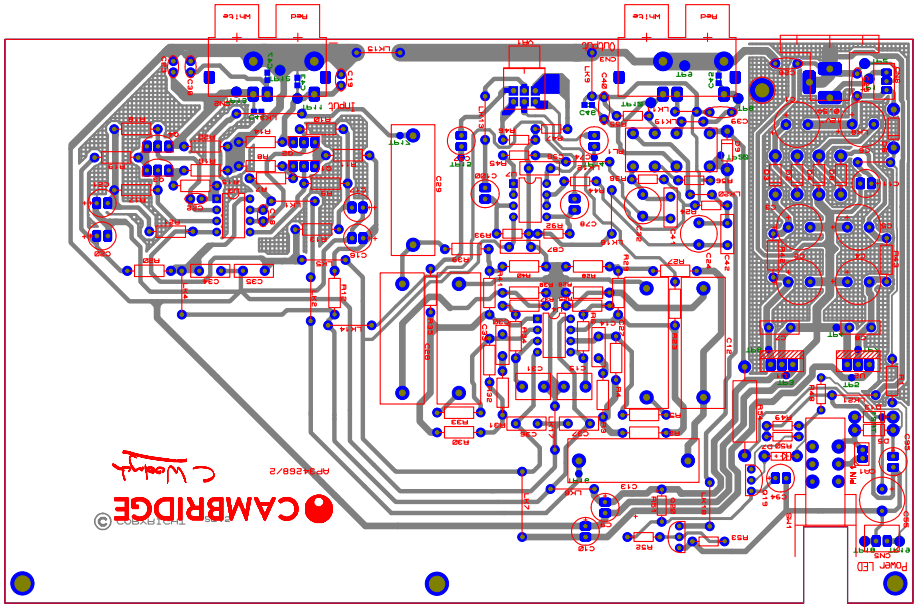
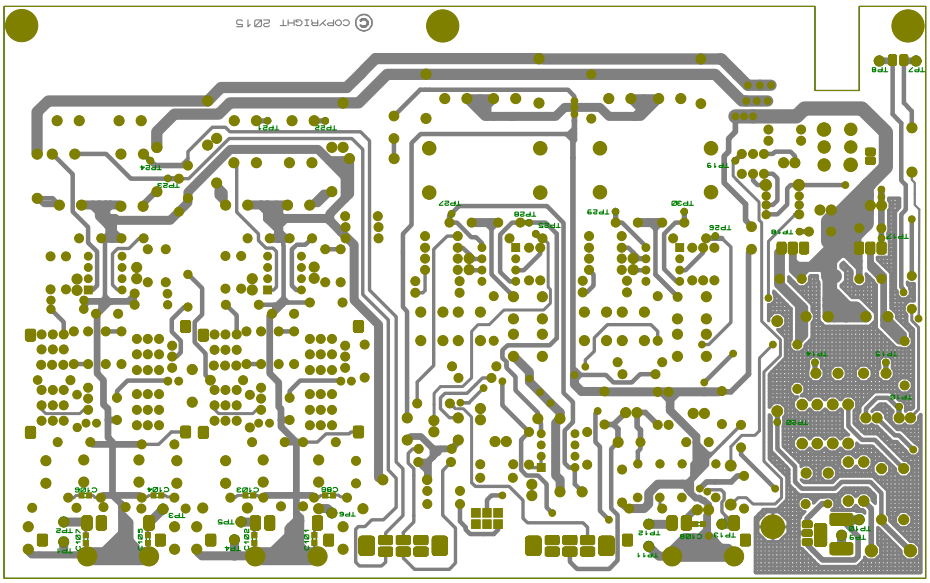
CP1 PCB Top layer - Gerber



CP2 PCB Bottom layer - Gerber



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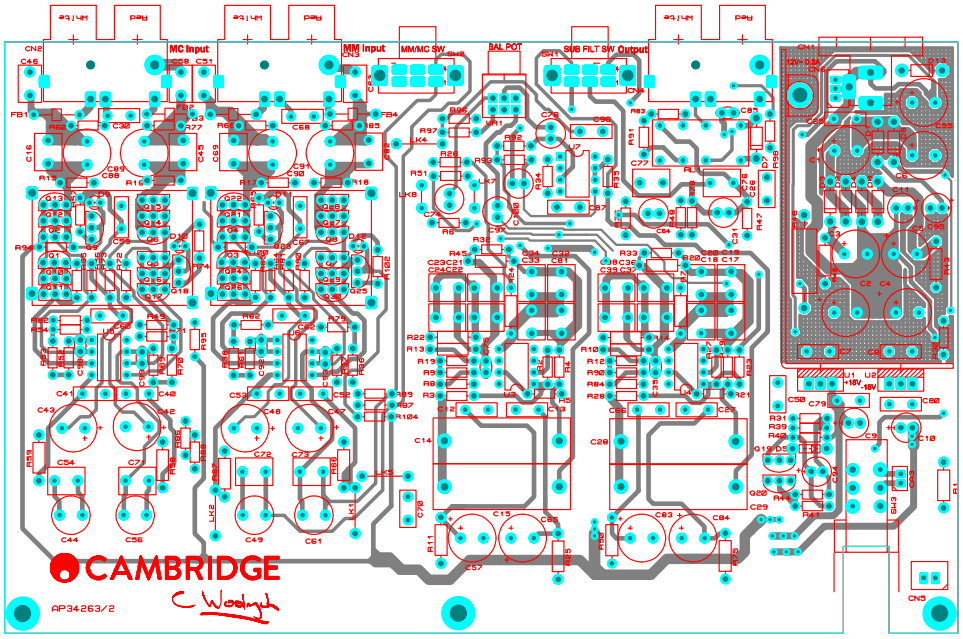
CP2 PCB Top layer - Gerber



CP1 Bom

Value	Description/Type	Qty	Component Ident	ManPN	Tolerance	PackageInfo	NOTES	Service part (order ref)
RESISTORS								
22R	1/4W Metal Film	2	R23, R35		1%	10mm Pitch		use local source
47R	1/4W Metal Film	2	R25, R37		1%	10mm Pitch		use local source
47R	1/8W Metal Film	1	R36		1%	7.5mm Pitch		use local source
47R	1/8W Metal Film	2	R44-R45		1%	7.5mm Pitch		use local source
100R	1/4W Metal Film	4	R8, R16, R42-R43		1%	10mm Pitch		use local source
100R	1/8W Metal Film	1	R48		1%	7.5mm Pitch		use local source
220R	1/4W Metal Film	2	R28, R40		1.00%	10mm Pitch		use local source
390R	2W MOF type	1	R54		10%	20mm Pitch		use local source
820R	1/4W Metal Film	2	R6, R34		1%	10mm Pitch		use local source
1k0	1/4W Metal Film	4	R12-R13, R20-R21		1.00%	10mm Pitch		use local source
1k	1/8W Metal Film	1	R50		1%	7.5mm Pitch		use local source
1k2	1/4W Metal Film	4	R2, R27, R30, R39		1%	10mm Pitch		use local source
1k8	1/4W Metal Film	2	R5, R33		1.00%	10mm Pitch		use local source
2k2	1/4W Metal Film	2	R7, R15		1%	10mm Pitch		use local source
3k9	1/4W Metal Film	4	R3, R26, R31, R38		1%	10mm Pitch		use local source
4k7	1/4W Metal Film	6	R9-R11, R17-R19		1%	10mm Pitch		use local source
7k5	1/4W Metal Film	2	R29, R41		1%	10mm Pitch		use local source
8k2	1/8W Metal Film	2	R46-R47		1%	7.5mm Pitch		use local source
15k	1/8W Metal Film	1	R49		1%	7.5mm Pitch		use local source
22k	1/4W Metal Film	1	R1		1%	10mm Pitch		use local source
22k	1/8W Metal Film	1	R24		1%	7.5mm Pitch		use local source
47k	1/4W Metal Film	2	R14, R22		1%	10mm Pitch		use local source
51k	1/8W Metal Film	1	R53		1%	7.5mm Pitch		use local source
82k	1/4W Metal Film	2	R4, R32		1%	10mm Pitch		use local source
220k	1/8W Metal Film	6	R51-R52, R55-R56, R92-R93		1%	7.5mm Pitch		use local source
RESISTORS VARIABLE								
5k	Pot balance taper	1	VR1	RD902F-20-15F-MN5K-0C	20%	9mm Body	MN' balance taper Add glue around part	
CAPACITORS								
NO FIT		5	C43-C47					
100pF 100V	NP0 Ceramic	2	C18, C22		5%	3mm Pitch		use local source
220pF 50V	NP0 Ceramic	2	C19, C23		5%	2.5mm Pitch		use local source
4.7nF 50V	Ceramic	2	C39-C40		10%	5mm Pitch		use local source
39nF 63V	Met. Polyester	2	C14, C30		10%	5mm Pitch Box		use local source
47nF 63V	Met. Polyester	8	C7-C8, C34-C37, C41-C42		10%	5mm Pitch Box		use local source
47nF 63V	Met. Polyester	2	C87, C96		10%	5mm Pitch Box		use local source
82nF 63V	Met. Polyester	2	C15, C31		5%	5mm Pitch Box		use local source
100nF 50V	Mono Ceramic	2	C25-C26		20%	5mm Pitch		use local source
470nF 50V	Ceramic	1	C38		10%	2.5mm Pitch		use local source
1uF 50V 105DEG	Electrolytic	1	C95	RK series	20%	5mm Dia	105DEG	use local source
4.7uF 100V	Met. Polyester	6	C12-C13, C27-C29, C33		5%	25mm Pitch Box		use local source
10uF 25V	Electrolytic	1	C11	RK series	20%	5mm Dia	105 DEG	use local source
47uF 16V	NP Electrolytic	4	C74, C78, C97, C100	NP series	20%	6mm Dia	105 DEG	use local source
100uF 25V	Electrolytic	6	C9-C10, C16-C17, C20-C21	RK series	20%	6mm Dia	105 DEG	use local source
100uF 25V	NP Electrolytic	2	C24, C32	NP series	20%	8mm Dia	105 DEG	use local source
100uF 25V	Electrolytic	1	C94	RK series	20%	6mm Dia	105DEG	use local source
220uF 50V	Electrolytic	6	C1-C6	RK series	20%	10mm Dia	105 DEG	use local source
1000uF 25V	Electrolytic	1	C55	YHA-1EM102-1020	20%	10mm dia		use local source
CONNECTORS								
	DC Jack	1	CN1	RDC-020-14A				PY874
2 Way	Horizontal RCA	2	CN2-CN3			Through Hole	Gold plated, From data sheet 'A' socket WHITE 'B' socket RED inserts	
	2.5mm	1	CN4	LHE XHB A2502-H02 (Header) with cable				
2 Way	Straight Header	1	CN5	LHE XHB A2502-WV02		2.5mm Pitch		

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3 Way	Straight Header	1	CN6	LHE PHB A2005-WV03		2mm Pitch		
DIODES								
White	LED	1	D1	L-132X-CW896		3mm	For Cable Assembly.	
400V 1A	Rectifier	8	D2-D6, D8-D9, D13	1N4004		DO41		use local source
75V 150mA	Signal Diode	1	D7	1N4148		D035		use local source
INTEGRATED CIRCUITS								
18V 1A	Regulator	1	U1	7818		Through Hole		
-18V 1A	Regulator	1	U2	7918		Through Hole		
Dual	Audio Op Amp	3	U3-U4, U7	NE5532P		DIL08		PY108
RELAY								
5V 2A	2P2T Relay	1	RL1	ME2-5		Through Hole		PY584
SWITCHES								
2P2T	Pushbutton Switch	1	SW1	T18 Z 08 PAA004				PY645
TRANSISTORS								
-120V -100mA	PNP Low Noise	4	Q1-Q4	2SA970GR		TO92		PF075
-45V -100mA	PNP Low Noise	1	Q19	BC557C		TO92		
30V 500mA	NPN Darlington	1	Q20	MPSA14		TO92		PY1211
MISCELLANEOUS								
M3 Nylon	Insulating Bush	2	BS1-BS2			TO220		
2 Way SAN	Solder in Cable assembly	1	CA1	AP34397/X		2mm Pitch	2 way power cable	
~23mm Height	Heatsink for Phono Stage Regs	1	HS1	AP15814/x			AP Vendor	
xxmm Long, 2mm dia, 2:1 ratio	UL Approved Heatshrink 2mm	1	HS2				0.015M	
24 AWG	Tinned Link Wire	7	LK1-LK2, LK4-LK6, LK9, LK18			10mm Pitch		
24 AWG	Tinned Link Wire	2	LK3, LK7			15mm Pitch		
24AWG	Tinned Link Wire	1	LK8			7.5m Pitch		
24 AWG	Tinned Link Wire	3	LK11, LK19-LK20			5mm Pitch		
24 AWG	Tinned Link Wire	7	LK12-LK17, LK21			10mm Pitch		
	Mica Washer with Thermal Compound	2	MI1-MI2					
M3x8mm MC	P/H Black Screw	2	SC1-SC2					
M3x6mm MC	P/H Black Screw	1	SC3					
M3	Hex Nut 5.5 x 2.4mm	2	WS1-WS2					
	Ex Tooth Lock Washer	2	WS3-WS4					

CP2 Bom

Value	Description/Type	Qty	Component Ident	ManPN	Tolerance	PackageInfo	NOTES	Service part (order ref)
RESISTORS								
47R	1/8W Metal Film	6	R5-R6, R21, R23, R34-R35		1%	7.5mm Pitch		use local source
82R	1/4W Metal Film	1	R42		1%	10mm Pitch		use local source
100R	1/4W Metal Film	4	R11, R25, R50, R75		1%	10mm Pitch		use local source
100R	1/8W Metal Film	1	R30		1%	7.5mm Pitch		use local source
130R	1/8W Metal Film	2	R15-R16		1%	7.5mm Pitch		use local source
150R	1/4W Metal Film	1	R43		1%	10mm Pitch		use local source
390R	2W MOF type	1	R46		10%	20mm Pitch		use local source
910R	1/8W Metal Film	4	R36-R38, R61		1%	7.5mm Pitch		use local source
3.92k	1/4W Metal Film	1	R22		0.10%	10mm Pitch		use local source
No Fit		2	R49, R82					use local source
18R	1/8W Metal Film	2	R54, R71		1%	7.5mm Pitch		use local source
91R	1/8W Metal Film	2	R62, R79		1%	7.5mm Pitch		use local source
470R	1/4W Metal Film	4	R58-R59, R66-R67		1%	10mm Pitch		use local source
470R	1/8W Metal Film	2	R60, R77		1%	7.5mm Pitch		use local source
1k87	1/4W Metal Film	4	R7, R20, R24, R45		0.10%	10mm Pitch		use local source
1k	1/8W Metal Film	3	R12, R19, R39		1%	7.5mm Pitch		use local source
1k2	1/8W Metal Film	4	R8-R9, R84, R90		1%	7.5mm Pitch		use local source
1k3	1/8W Metal Film	8	R52-R53, R57, R65, R69-R70, R74, R102		1%	7.5mm Pitch		use local source
1k6	1/8W Metal Film	2	R3, R28		1%	7.5mm Pitch		use local source
2k2	1/8W Metal Film	6	R26, R51, R86-R89		1%	7.5mm Pitch		use local source
3k92	1/4W Metal Film	1	R14		0.10%	10mm Pitch		use local source
3k	1/8W Metal Film	4	R94-R95, R100, R104		1%	7.5mm Pitch		use local source
3k9	1/8W Metal Film	4	R2, R4, R27, R29		1%	7.5mm Pitch		use local source
8k2	1/8W Metal Film	2	R96-R97		1%	7.5mm Pitch		use local source
11k	1/8W Metal Film	4	R63-R64, R80-R81		1%	7.5mm Pitch		use local source
15k	1/8W Metal Film	5	R31, R55-R56, R72-R73		1%	7.5mm Pitch		use local source
22k	1/4W Metal Film	1	R1		1%	10mm Pitch		use local source
47k	1/8W Metal Film	5	R47-R48, R76, R78, R98		1%	7.5mm Pitch		use local source
51k	1/8W Metal Film	3	R17-R18, R44		1%	7.5mm Pitch		use local source
75k	1/4W Metal Film	2	R10, R13		0.10%	10mm Pitch		use local source
180k	1/8W Metal Film	2	R32-R33		1%	7.5mm Pitch		use local source
220k	1/8W Metal Film	6	R40-R41, R83, R91-R93		1%	7.5mm Pitch		use local source
560k	1/8W Metal Film	2	R68, R85		1%	7.5mm Pitch		use local source
RESISTORS VARIABLE								
5k	Pot balance taper	1	VR1	RD902F-20-15F-MN5K-0C	20%	9mm Body	MN' balance taper	
CAPACITORS								
NO FIT		9	C86, C101-C108					
22pF 50V	NP0 Ceramic	2	C35, C75		5%	2.5mm Pitch	Manufacturer not critical	use local source
33pF 50V	NP0 Ceramic	3	C85, C98-C99		5%	2.5mm Pitch	Manufacturer not critical	use local source
47pF 50V	NP0 Ceramic	2	C92-C93		5%	2.5mm Pitch	Manufacturer not critical	use local source
220pF 100V	Polypropylene	4	C46, C51, C58, C63		5%			use local source
10nF 100V	Polypropylene	10	C16, C45, C54, C69, C71-C73, C76-C77, C82		5%			use local source
10nF 160V 1%	Polypropylene	16	C17-C24, C32-C34, C36-C39, C81		1%	5mm Pitch Box		use local source
47nF 63V	Met. Polyester	14	C7-C8, C12-C13, C27, C40-C41, C52-C53, C66, C79-C80, C87, C96		10%	5mm Pitch Box		use local source
100nF 63V	Met. Polyester	7	C25, C30, C59-C60, C62, C67-C68		10%	5mm Pitch Box		use local source
470nF 63V	Met. Polyester	3	C26, C50, C70		10%	5mm Pitch Box		use local source
1uF 50V 105DEG	Electrolytic	1	C95	RK series	20%	5mm Dia	105DEG	use local source
4.7uF 100V	Met. Polyester	4	C14-C15, C28-C29		10%			use local source
10uF 25V	Electrolytic	1	C11	RK series	20%	5mm Dia	105 DEG	use local source
47uF 16V	NP Electrolytic	6	C31, C64, C74, C78, C97, C100	NP series	20%	6mm Dia	105DEG	use local source
100uF 25V	Electrolytic	3	C9-C10, C94	RK series	20%	6mm Dia	105DEG	use local source
220uF 6V3	NP Electrolytic	4	C44, C49, C56, C61	NP series	20%	8mm Dia	105DEG	use local source
330uF 50V	105 deg Electrolytic	4	C1, C3, C5-C6	RK series	20%	10mm Dia	105DEG	use local source
470uF 25V	Electrolytic	4	C57, C65, C83-C84	RK series	20%	8mm Dia	105DEG	use local source
470uF 6V3	NP Electrolytic	4	C88-C91	NP series	20%	10mm Dia	105DEG	use local source
1000uF 35V 105DEG	Electrolytic	2	C2, C4	YEM low ESR type	20%		105DEG Low ESR type	use local source
1000uF 25V	Electrolytic	5	C42-C43, C47-C48, C55	YHA-1EM102-1020	20%	10mm dia		use local source
CONNECTORS								

CAMBRIDGE

	DC Jack	1	CN1	RDC-020-14A				PY874
2 Way	Horizontal RCA	3	CN2-CN4			Through Hole	Gold plated, From data sheet 'A' socket WHITE 'B' socket RED inserts	
2 Way	Straight Header	1	CN5	LHE XHB A2502-WV02		2.5mm Pitch		
3 Way	Straight Header	1	CN6	LHE PHB A2005-WV03		2mm Pitch		
	2.5mm	1	CN7	LHE XHB A2502-H02 (Header) with cable				
DIODES								
400V 1A	Rectifier	8	D1-D4, D6-D8, D13	1N4004		DO41		use local source
75V 150mA	Signal Diode	1	D5	1N4148		D035		use local source
Red 2V		4	D9-D12	TBD		3mm		use local source
White	LED	1	D14	L-132X-CW896		3mm	For Cable Assembly.	
INDUCTORS								
1uH Ferrite	On 24AWG Wire	4	FB1-FB4	TBD		10mm Pitch		
INTEGRATED CIRCUITS								
18V 1A	Regulator	1	U1	7818		Through Hole		
-18V 1A	Regulator	1	U2	7918		Through Hole		
Dual	Audio Op Amp	5	U3-U7	NE5532P		DIL08		PY108
RELAY								
5V 2A	2P2T Relay	1	RL1	ME2-5		Through Hole		PY584
SWITCHES								
2P2T	Slide Switch	2	SW1-SW2	HS2264DN7DI-96B		PCB Mount		
2P2T	Pushbutton Switch	1	SW3	T18 Z 08 PAA004				PY645
TRANSISTORS								
-120V -100mA	PNP Low Noise	24	Q1-Q8, Q10-Q17, Q21-Q22, Q24, Q26-Q30	2SA970GR		TO92		PF075
-45V -100mA	PNP Low Noise	5	Q9, Q18-Q19, Q23, Q25	BC557C		TO92		
30V 500mA	NPN Darlington	1	Q20	MPSA14		TO92		PY1211
MISCELLANEOUS								
M3 Nylon	Insulating Bush	2	BS1-BS2			TO220		
Copper Plated	Screening Can	2	CA1-CA2	AP16603/1				
2 Way SAN	Solder in Cable assembly	1	CA3	AP34397/X		2mm Pitch	2 way power cable	
~23mm Height	Heatsink for Phono Stage Regs	1	HS1	AP15814/x			AP Vendor	
xxmm Long, 2mm dia, 2:1 ratio	UL Approved Heatshrink 2mm	1	HS2				0.015M	
24 AWG	Tinned Link Wire	4	LK1-LK2, LK4-LK5			10mm Pitch		
24 AWG	Tinned Copper Wire(None)	2	LK7-LK8			5mm Pitch		
	Mica Washer with Thermal Compound	2	MI1-MI2					
M3x8mm MC	P/H Black Screw	2	SC1-SC2					
M3x6mm MC	P/H Black Screw	1	SC3					
M3	Hex Nut 5.5 x 2.4mm	2	WS1-WS2					
	Ex Tooth Lock Washer	2	WS3-WS4					

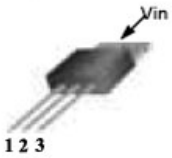
IC PINS

Main PCB

CP1 / CP2 - 7818 (U1)

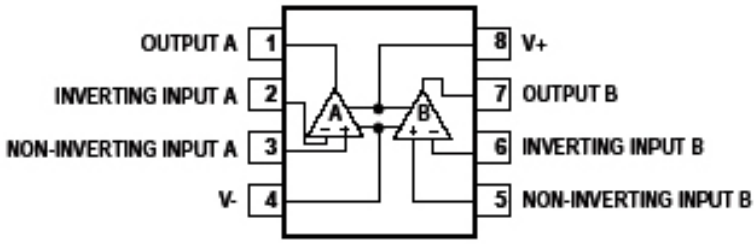
1. Input 2. GND 3. Output

CP1 / CP2 - 7918 (U2)

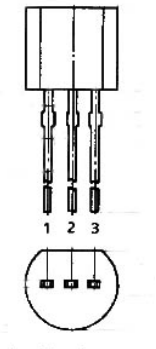


1. GND 2. Input 3. Output

CP1 - NE5532 (U3 & U4 & U7)
CP2 - NE5532 (U3, U4, U5 & U6 & U7)



CP1 - 2SA970GR (Q1, 2, 3, 4)
CP2 - 2SA970GR (Q1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 14, 15, 16, 17, 21, 22, 24, 26, 27, 28, 29, 30)



1. EMITTER
2. COLLECTOR
3. BASE