

## CHAPTER 1 - INTRODUCTION

### a. about the Glasshouse Passive Pre-amplifier No. 1

The Glasshouse Passive Pre-amplifier No. 1 kit is a high quality passive, enclosed within a 2mm black powder coat aluminium chassis, a 6mm silver anodized front plate holding 2 control knobs one for the volume and the other for the selector. It has 6 input pairs, 1 record pair and 2 output pairs of RCAs. Its parts lists boasts the Elma 2 pole 6 way selector switch, Gold plated RCAs and Neotech's SOCT-28 hookup wire and the stepped attenuator of your choice.

### b. requirements of constructor

1. The kit builder needs to be able to solder to a good standard, the majority of problems that occur with kits are down to poor soldering.
2. Be able to read and understand these instructions completely.
3. To have some knowledge of switch circuitry, general electronics and be able to read a circuit diagram.
4. To have a multimeter be able to use the meter properly.
5. Be aware of the precautions necessary to avoid electric shocks from the mains and amplifier power lines.
6. Have patience, if you rush, you will make mistakes.

### c. warantee

Part built kits cannot be returned for a full refund. Defective parts will be replaced, provided they are returned within 60 days of purchase and are confirmed to be defective and not misused. Please note that Hi-fi Collective Ltd will assist in anyway to get your kit up and running. To help you with your inquires, our phones are manned Monday - Friday, 9.00am - 5.00pm, we try to answer e-mails within an hour of them being read. We offer a repair service and will even finish off a part built amplifier for you. Also, we have a "Turn-on" service, where we will check your work, switch her on, test her and play her for 20hrs+. We charge £18.00 an hour for labour.

### d. disclaimer

WARNING: The high voltages can KILL. Observe all precautions and never connect this kit to an electrical supply. You should comply to the requirements of the constructor as listed in c. above. In the action of purchasing this kit you assume total responsibility and liability for the use and operation of this kit both for yourself and people around you.

### e. company details

address: Hi-fi Collective Ltd, 9 Westbury Lane, Newport Pagnell, Bucks, MK16 8JA  
tel/fax: 00 44 (0) 1908 217202  
e-mail: [info@hificollective.co.uk](mailto:info@hificollective.co.uk) website: [www.hificollective.co.uk](http://www.hificollective.co.uk)

## CHAPTER 2 - UNPACKING and PARTS LIST

### a. taking delivery

Your Glasshouse Passive Pre-amplifier will arrive with you via a courier or Poyal Mail Signed for service, they can deliver any time of the day, so it is a good idea to have somebody around to receive collection, contact Hi-fi Collective Ltd for the delivery day. If they attempt to deliver and you are not in, then they will leave a contact card with a number for you to call, to arrange a suitable day. When delivered you will have to sign for it. Have a quick look at the box exterior for any sign of damaged, in the unlikely event of this happening get the driver to write a note describing the damage and get him to sign it. Contact Hi-fi Collective with the details.

The kit will arrive to you in one box.

#### **b. unpacking**

Carefully open the box and remove the items. You will see your receipt for the kit enclosed. Also, enclosed is the parts list and instructions. Remove all packing carefully and lay the items out ready for cross checking. With the parts list in front of you tick off the items. Any shortfall please contact Hi-fi Collective once a complete count is done.

### **CHAPTER 3 - PREPARATION**

#### **a. work place**

Whether in a dedicated workshop, the garage or on the dining room table, an organised work place will save you time and prevent mistakes.

Have your tools close to you & in one place and when you have finished using them put them back. Keep your instructions to hand and try not to rip pages out. It is a good idea to protect you table, an offcut of carpet will work well. You need to have easy access to your soldering iron and solder, always turn it off when not using it especially those of you who have young children. Your work space needs to be well lit with good ventilation to move solder fumes away from you. Above all keep it clean, you don't want to scratch your chassis on a forgotten nut.

#### **b. soldering iron and solder**

Your solder and iron are the most important tools in an electronic constructors tool box, but some people get the combination wrong. A good solder joint is one that is shinny, with an even amount of solder on the joint & without brown flux residue. To get it right, first you must have an iron that gets hot enough to melt your solder properly. Most hobbist soldering irons have a tip temperature of around 370 degree C, for example the 25W Antex iron goes to around 390 degree C. Such irons will work well with solder that change from solid to liquid at around 200 degree C. A higher iron temperature will give good flow to higher temperature solders, these change at 300 degree C. Working with these types with your normal 25W Antex will cause dry joints. We have supplied with this kit 2m of Mundorf 3.8% silver solder this works very well with the Antex 25 watt iron.

#### **c. soldering technique**

Before soldering, make sure the wire is bent around the selector contacts/earth post tags/phono solder tags. When soldering to the phono socket's spigot tin them first with solder. How to solder - place the tip of the soldering iron onto the surface of all parts, hold for 1.5 seconds. Apply the solder to the junction, do not flood the join with solder. The whole process should take about 3 seconds.

#### **d. preparing the wire**

The wire provided to assemble the Passive has to be prepared before soldering, you need to expose 5mm of wire as a rule. The wire is easily stripped. It is teflon coated so it is highly resistance to heating.

#### d. tool list

Multimeter (318)	TOOL01
Economy tool kit (side cutters, snipe nose pliers, wire strippers, flat blade & phillips screwdriver, tool case)	TOOL02
Allen key set	TOOL03
12mm spanner	TOOL06
16 piece 1/4 inch socket set	TOOL08
Antex 25 W soldering iron	TOOL10
M4 nut drivers	TOOL14

All items listed above constitute a list of tools required to construct one of our Passive Kit. They are available from [www.hificollective.co.uk](http://www.hificollective.co.uk)

## CHAPTER 4 - FITTING OF HARDWARE

### a. fitting of phono sockets

Fit the phono sockets as shown on page 8, start from "R" input 6 work your way across then start the next layer with "L" input 6, the next with "R" input 1 and the final one with "L" input 1.etc... Tighten by hand, align the solder tag so they are pointing to its relative other. Use a 12mm spanner internally to hold the phono in place and tighten with the 12mm socket set externally, this way the solder tag will stay in place.



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#### pick list

Red RCA sockets x 9  
Black RCA sockets x 9



#### tools

1. 12mm socket set with extension  
2. 12mm spanner

### b. fitting of earth post

The earth post is located at the rear panel marked "earthpost". Fit as shown on page 4. Make sure you scratch off the paint with a small flat head screw driver where the serrated washer contacts with the chassis internally, this ensures a good chassis earth connection for safety purposes. Splay out the solder tags so they are not lying on top of each other as you will need to solder wires to these later. Tighten by hand, then use a 8mm socket set or nut driver, internally to hold in place and tighten with an 8mm spanner externally. You will need to unscrew the earth post's head to fit. Remember to put the hear back as easily lost.



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#### pick list

earth post x 1  
M4 solder tags x 3



#### tools

1. 8mm socket set with extension or 8mm nut driver  
2. 8mm spanner  
3. small flat head screw driver

<b>c. fitting of the front parts</b>	
Fit the front panel the correct way round. It is held in place by 4 screws that pass through holes in the main chassis front panel and screw into threaded inserts on the anodised front panel. You will need to use the serated washers. Fit the stepped attenuator and selector and the knobs. An M3 hex key is needed	 <b>pick list</b> silver anodised front panel x 1 M4 x 6 black pozi-drive screws x 4
	 <b>tools</b> 1. short phillips screw driver
<b>f. fitting of feet</b>	
The self adhesive feet provided should be positioned in the four corners avoid the recessed part of the underside as the chassis lid slides through here.	 <b>pick list</b> self adhesive feet x 4

**CHAPTER 5 - WIRING UP & TESTING**

<b>a. wiring of the Glasshouse Passive Pre-amplifier No. 1</b>	
<p>To assist in this part of the construction please refer the images shown on this web page <a href="http://www.hificollective.co.uk/kits/glasshouse/passive-pre-amp1.html">www.hificollective.co.uk/kits/glasshouse/passive-pre-amp1.html</a>. The sequence is thus:</p> <ol style="list-style-type: none"> <li>1. For all 6 inputs, 1 record and 2 output RCA pairs join the solder tag together.</li> <li>2. With bare wire, join the bottom RCA pairs together in a line and connect to the earth post with a solder tag.</li> <li>3. With bare wire, join the top RCA pairs together in a line and connect to the earth post with a solder tag.</li> <li>4. Connect the attenuator to ouput.</li> <li>5. attenuator each to earth post solder tag.</li> <li>6. The Elma selector is marked, using the shortest length of wire connect as follows:</li> </ol> <p><b>Right channel RCA signal spigot</b></p> <ol style="list-style-type: none"> <li>a. input 1 to A6 on Elma switch</li> <li>b. input 2 to A5 on Elma switch</li> <li>c. input 3 to A4 on Elma switch</li> <li>d. input 4 to A3 on Elma switch</li> <li>e. input 5 to A2 on Elma switch</li> <li>f. input 6 to A1 on Elma switch</li> <li>h. attenuator input &amp; Record to A on Elma switch</li> </ol> <p><b>Left channel RCA signal spigot</b></p> <ol style="list-style-type: none"> <li>a. input 1 to B6 on Elma switch</li> <li>b. input 2 to B5 on Elma switch</li> <li>c. input 3 to B4 on Elma switch</li> <li>d. input 4 to B3 on Elma switch</li> <li>e. input 5 to B2 on Elma switch</li> <li>f. input 6 to B1 on Elma switch</li> <li>h. attenuator input &amp; Record to B on Elma switch</li> </ol>	 <b>pick list</b> Neotech SOCT-28 x 3m
 <b>page 8</b>	

**b. testing of passive**

For testing you need a multimeter. Set to DC resistance, place one probe on the earth post and systematically go round all the RCA socket earths and the earth ring of the stepped attenuator, they will all measure zero ohms. Again with the same setting, place one probe on the signal spigot of the Tape Out Right channel and place the other probe on the signal spigot of the Right channel "1". With the selector knob set at "1" there will be a zero ohm reading. Do this for all on the 6 inputs and then do the Left channel. Set the knob to "1" and measure the resistance between the Right channel "1" input signal spigot and the Right channel output signal spigot. It should measure the same as the resistance of the stepped attenuator. Now do the same to the other channel. Now you are ready to play. Keep the volume down low and slowly turn it up. Enjoy.



**pick list**

multimeter