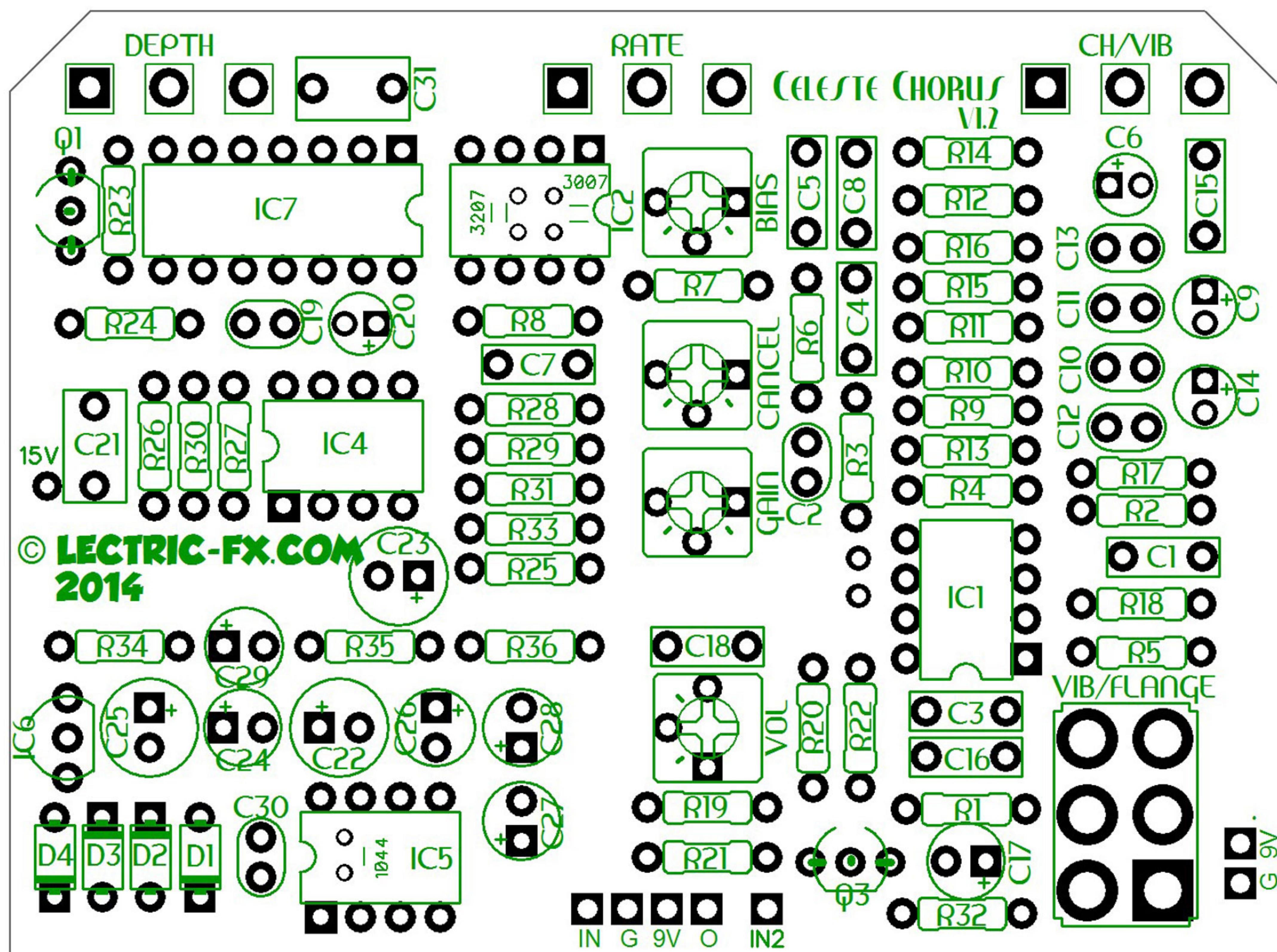


# THE CELESTE CHORUS

© 2014 Lectric-fx

## V1.2



The Celeste Chorus is a direct clone of the 70's EHX Clone Theory (MN3007 edition) traced from original units and corrected against schematics and flawed projects available online. The only additions are extra power filtering, a charge pump & regulator to achieve the required 15V of the original circuit from a standard 9V DC power supply, and an added output booster for the well-documented volume drop of the circuit.

New for V1.2: simple mod for high output pickups. See BOM page for details.

### CONTROLS:

**CH/VIB:** Lets you go from full chorus to full vibe, with lots of sounds in between! (Pot is disengaged in 'Flange' mode.)

**RATE:** Adjusts the rate of the effect modulation.

**DEPTH:** Adjusts the rate of the effect modulation.

**VIB/FLANGE:** Switches between "Chorus/Vibe" and "Vibe/Flange" modes.

**Note:** You **MUST** install 2 jumpers under IC2 (3007/3207). For the 3007 (recommended) jumper horizontally, or if you wish to use a MN3207/BL3207 or V3207 jumper vertically.

There are also 2 pads under the charge pump, IC5. For the LT1054, **DO NOT** install the jumper. If you intend to use a TC1044SPCA, MAX1044 or IC7660SPCA then the jumper will be required.

The LT1054 is recommended due to its higher clock frequency, current output and it's higher maximum input voltage.

# BILL OF MATERIALS

Part#	Value	Part#	Value	Part#	Value
R1	1M	C1	100n	BIAS	100k tr
R2	100k	C2	27p	CANCEL	5k tr
R3	390k	C3	100n	GAIN	100k tr
R4	300k	C4	22n	VOL	100k tr
R5	300k	C5	100n		
R6	10k	C6	4u7	DEPTH	100KB
R7	100k	C7	100n	CH/VIB	10KB
R8	6k8	C8	100n	RATE	1MC
R9	2M2	C9	1u electro		
R10	200k	C10	390p	D1	1n4002
R11	200k	C11	390p	D2	1n5817
R12	100k	C12	22p	D3	1n5817
R13	51k	C13	22p	D4	1n5817
R14	150k	C14	1u electro		
R15	150k	C15	22n	IC1	JRC4558
R16	1k	C16	100n	IC2	MN3007
R17	160k	C17	10u	IC4	LM1458, TL062 or LM358
R18	1k	C18	100n	IC5	LT1054
R19	47k	C19	560p	IC6	78L15 TO-92
R20	470k	C20	1u electro	IC7	CD4047N
R21	3k3	C21	220n		
R22	33k	C23	100u	Q1	2n5457
R23	22k	C22	220u	Q2	2n5088
R24	330k	C24	10u		
R25	62k	C25	100u	VIB/FLANGE	DPDT on on
R26	51k	C26	10u		
R27	68k	C27	22u		
R28	220k	C28	22u		
R29	220k	C29	22u		
R30	12k	C30	5p-20p omit*		
R31	12k	C31	1u film		
R33	120k				
R34	22R				
R35	22R				
R36	22R				

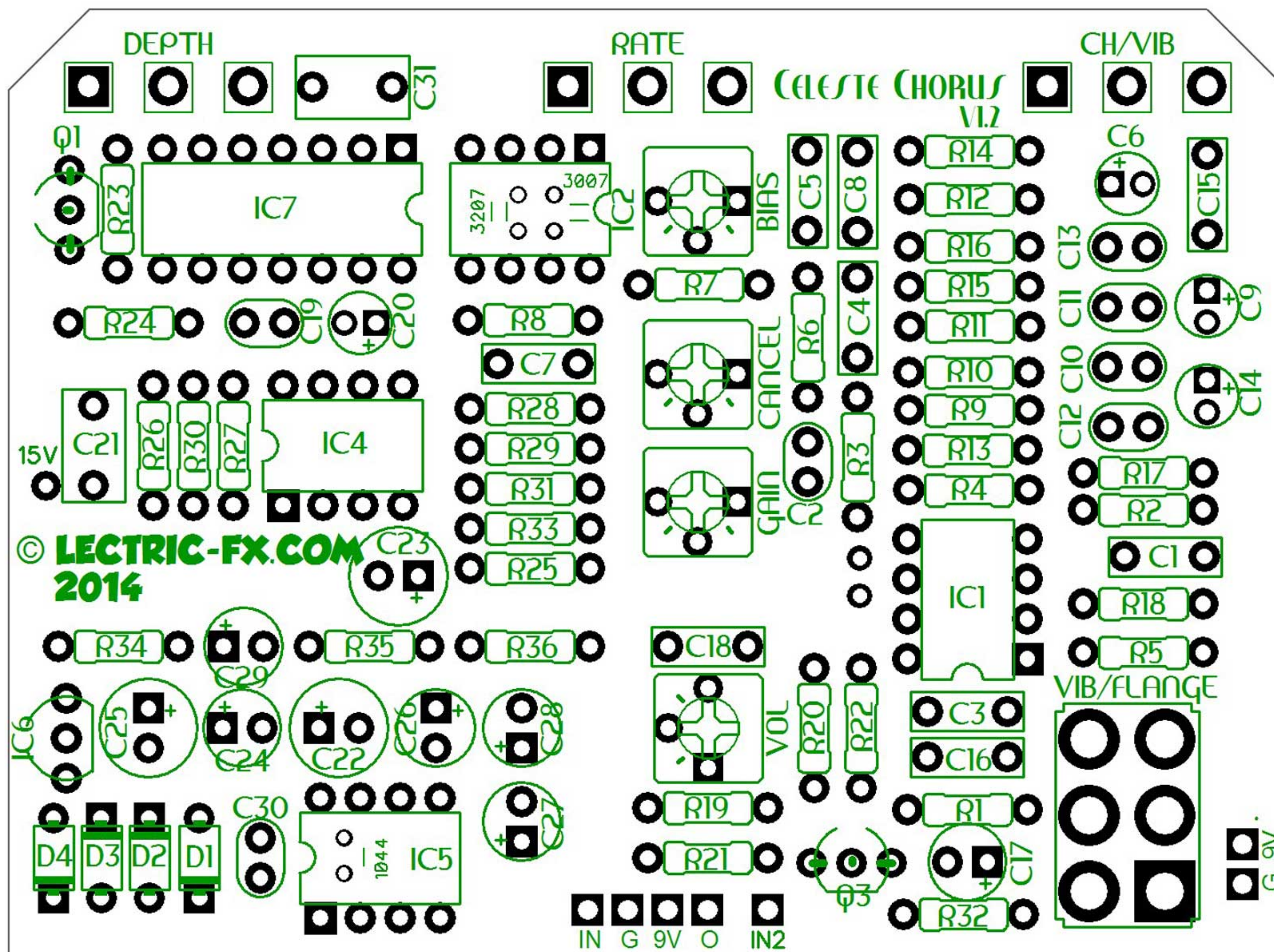
\* use only when there is undesirable heterodyning (noise) between the charge pump and clock.

\*\* **mod for high output pickups:** R1 change to 470K. Install a 68K (or to taste) for R32 (R32 is only used for this mod) and install your input wire to IN2 instead of IN. That's it! -all credit to marauder (Cleggy) for the H.O. pup mod! :)

# SHOPPING LIST

Value	Quantity	Value	Quantity
22r	3	22p	2
1k	2	27p	1
3k3	1	390p	2
6k8	1	560p	1
10k	1	22n	2
12k	2	100n	7
22k	1	220n	1
33k	1	1u electro	3
47k	1	4u7	1
51k	2	10u	3
62k	1	22u	3
68k	1	100u	1
100k	3	220u	1
120k	2	1u film	1
150k	2		
160k	1		
200k	2		
220k	2		
300k	2		
330k	1		
390k	1		
470k	1		
1M	1		
2M2	1		

A very special "thank you" to pinkjimiphoton for his invaluable help confirming the values found in this bill of materials.



## Setting up the Celeste by ear:

Set all trimmers to the half way position, depth to full and rate to 50% and the switch in the 'Chorus/Vibe' position. Set the Ch/Vib pot to the VIB position and engage the effect.

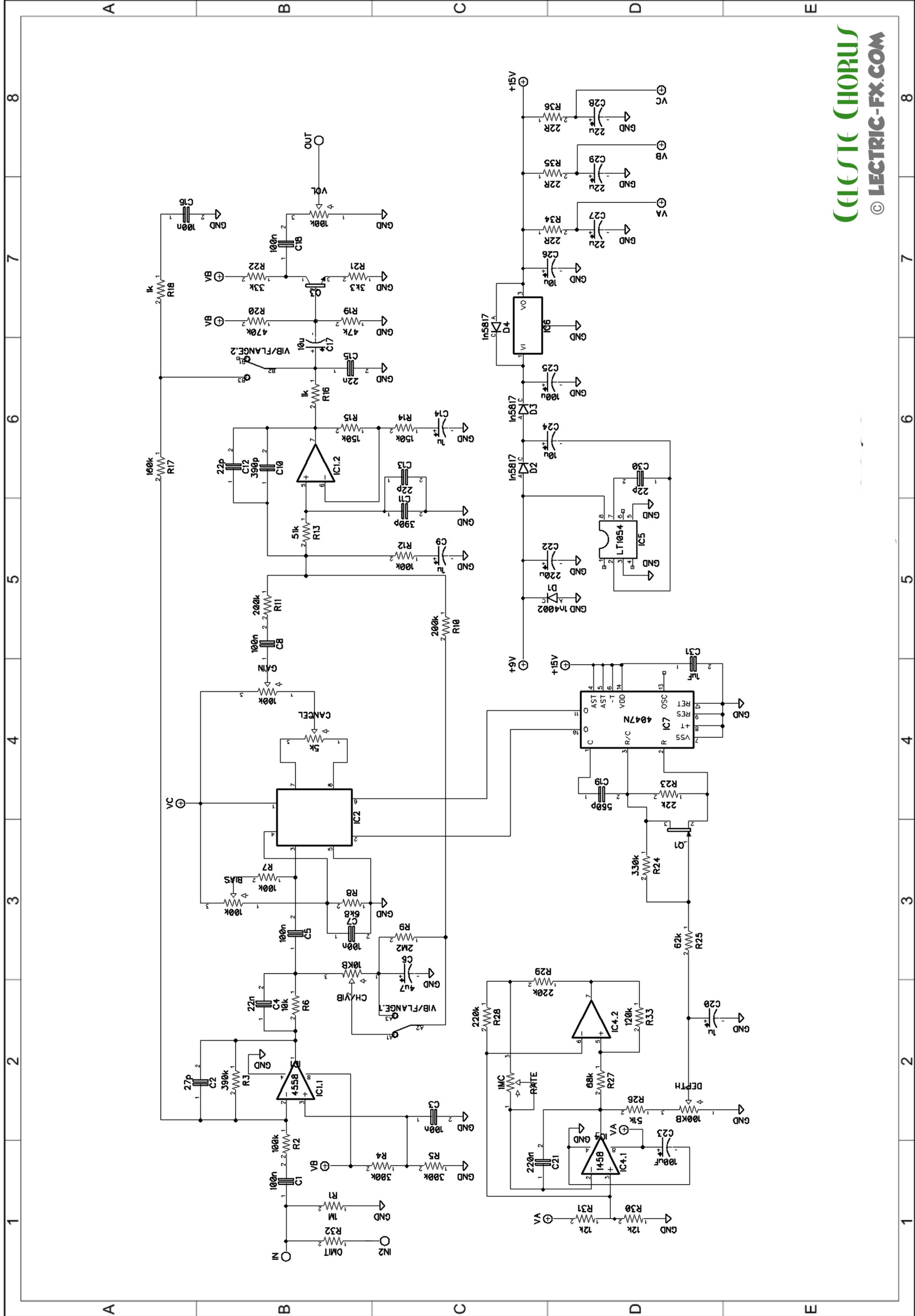
**'Bias Trim'** - At first the effect may not be heard, slowly adjust the bias trimmer until the vibrato is heard, at this point you may wish to adjust the volume trim slightly depending on its level and then return to the bias trimmer and carefully adjust it while playing your guitar/bass until the signal is as clean as you can get it.

**'Gain Trim'** After you have the bias set to where you feel it is best, you can begin to adjust the 'gain' trimmer, this step can take some time. The aim is to adjust the gain trimmer so that the level between the Ch/Vib pot fully clockwise and counter clockwise is equal. Turn the Ch/Vib pot fully to the chorus side, adjust the gain, back to the vibe side and so forth until you reach an equal balance.

**'Cancel Trim'** For most builds this trimmer can be set and forgot in the center position, in the unlikely event you experience any 'clock whine' in the audio signal you can adjust this to help try and remove it.

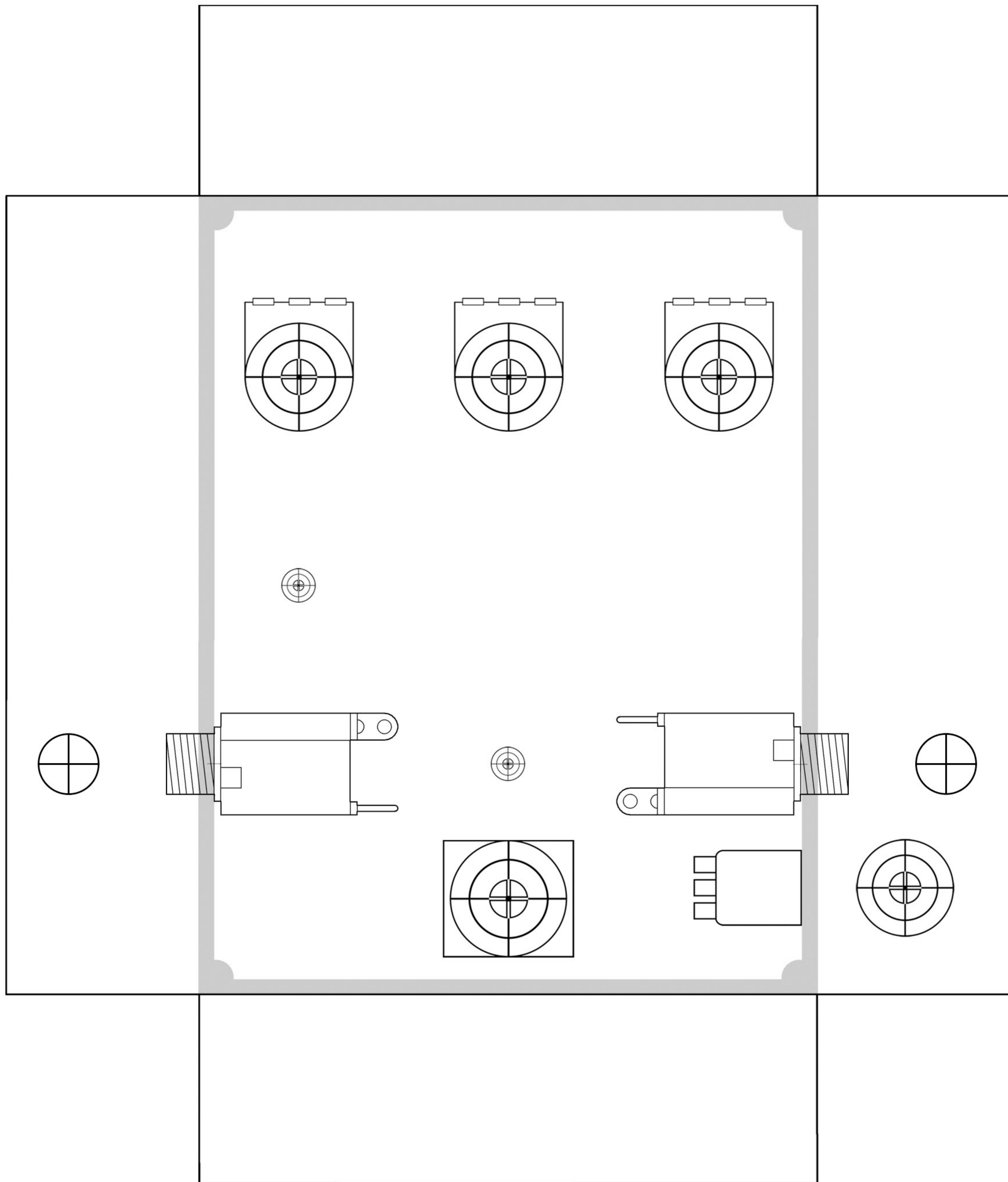
**'Volume Trim'** Self explanatory, use to set the pedals engaged volume level to match your bypass level. After this you may wish to revisit the bias trimmer to further fine tune it for minimum distortion

(NOTE: This is a vintage analog BBD effect with minimal filtering and no companding, if you use high output pickups or are using the 3207 line of BBD chips you may not be able to get the effect totally clean).



# Portrait Layout

Please realize this is only a guideline and you should measure carefully yourself before drilling.



# Landscape Layout

Please realize this is only a guideline and you should measure carefully yourself before drilling.

