BLOODSTONE V.1.2

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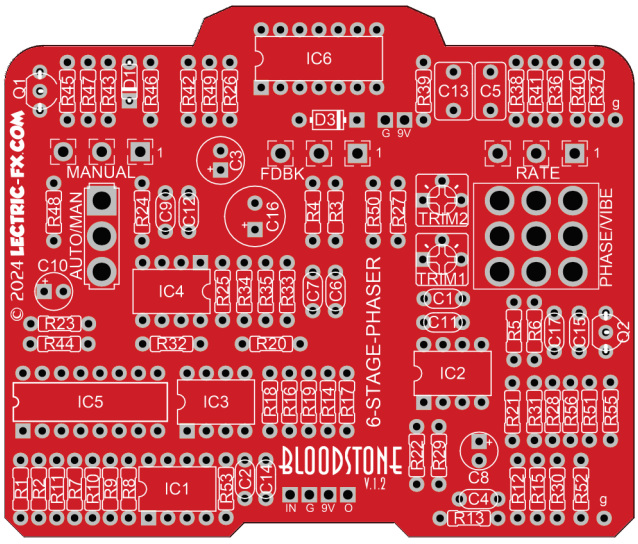
6-Stage Phase Shifter with Vibrato



The Bloodstone project is based on the vintage model EHX Bad Stone™ Phaser. It includes true bypass switching, an auto/manual switch and of course the phase/vibrato switch of the old unit.
We have added a clean boost on the output along with 2 individual internal trimmers so the volume of each mode (Phaser/Vibrato) can be tailored to preference.

So just build it, set & forget your 2 volume trimmers, and start playing. There is nothing to bias, and no JFETs to match.

PLEASE take special care when soldering in the 3pdt Phase/Vibrato switch. It can very easily be installed incorrectly, and it can be difficult to de-solder without damaging the pcb. Both switches should toggle in the same direction, up & down. That means the lugs on each should be going in the same direction (horizontally).

IC5 is a CD4009UBE. These are still available AFAIK, but may not be common in everybody's parts bin. We have tested the CD4049UBE (unbuffered) in its place, and couldn't hear much difference.

CONTROLS:

RATE: Controls the speed of the modulation/sweep.

FEEDBACK: Changes the amount of effected signal from output fed back through the input. At the highest settings it can even sound a bit "peaky" or "edgy"

MANUAL: This control is activated when the SPDT switch is flipped up to manual mode. It allows one to manually control the sweep.

AUTO/MANUAL SWITCH: Toggles from automatic sweep to manual sweep.

PHASE/VIBE (OR "COLOR") SWITCH: Toggles from Phase Shifter to Vibrato mode.

B.O.M.

1/4W RESISTORS	
R1	150R
R2	4k7
R3	10k
R4	82R
R5	4k7
R6	330R
R7	100k
R8	2k7
R9	2k2
R10	4k7
R11	510R
R12	4k7
R13	4k7
R14	4k7
R15	27k
R16	27k
R17	27k
R18	4k7
R19	4k7
R20	4k7
R21	3k3
R22	510R
R23	27k
R24	27k
R25	10k
R26	10k
R27	1k
R28	4k7
R29	470R
R30	4k7
R31	1k
R32	4k7
R33	4k7
R34	4k7
R35	1M
R36	4k7
R37	10k
R38	33k
R39	10k
R40	75k
R41	150k
R42	10k
R43	180k
R44	10k
R45	1M
R46	2M2
R47	200k
R45	1M
R46	2M2
R47	200k
R48	27k
R49	100k
R50	47R
R51	100k
R52	1M
R53	2M2
R55	10k
R56	390R
CAPS	
C1	47n
C2	100n
C3	100u
C4	47n
C5	470n
C6	47n
C7	47n
C8	10u
C9	47n
C10	1u
C11	47n
C12	47n
C13	1u
C14	100n
C15	100n
C16	470u
C17	100n
TRANSISTORS	
Q1	2n5088
Q2	2n5088
DIODES	
D1	1n914
D3	1N5817
ICs	
IC1	NJM4558
IC2	NJM4558
IC3	NJM4558
IC4	NJM4558
IC5	CD4009UBE*
IC6	LM324
SWITCHES	
COLOR	3PDT TOGGLE
AUTO/MAN	SPDT ON/ON
POTS	
RATE	1MC
FDBK	100KB
MANUAL	100KB
TRIMMERS	
TRIM1	100K
TRIM2	100K

*Can substitute CD4049UBE

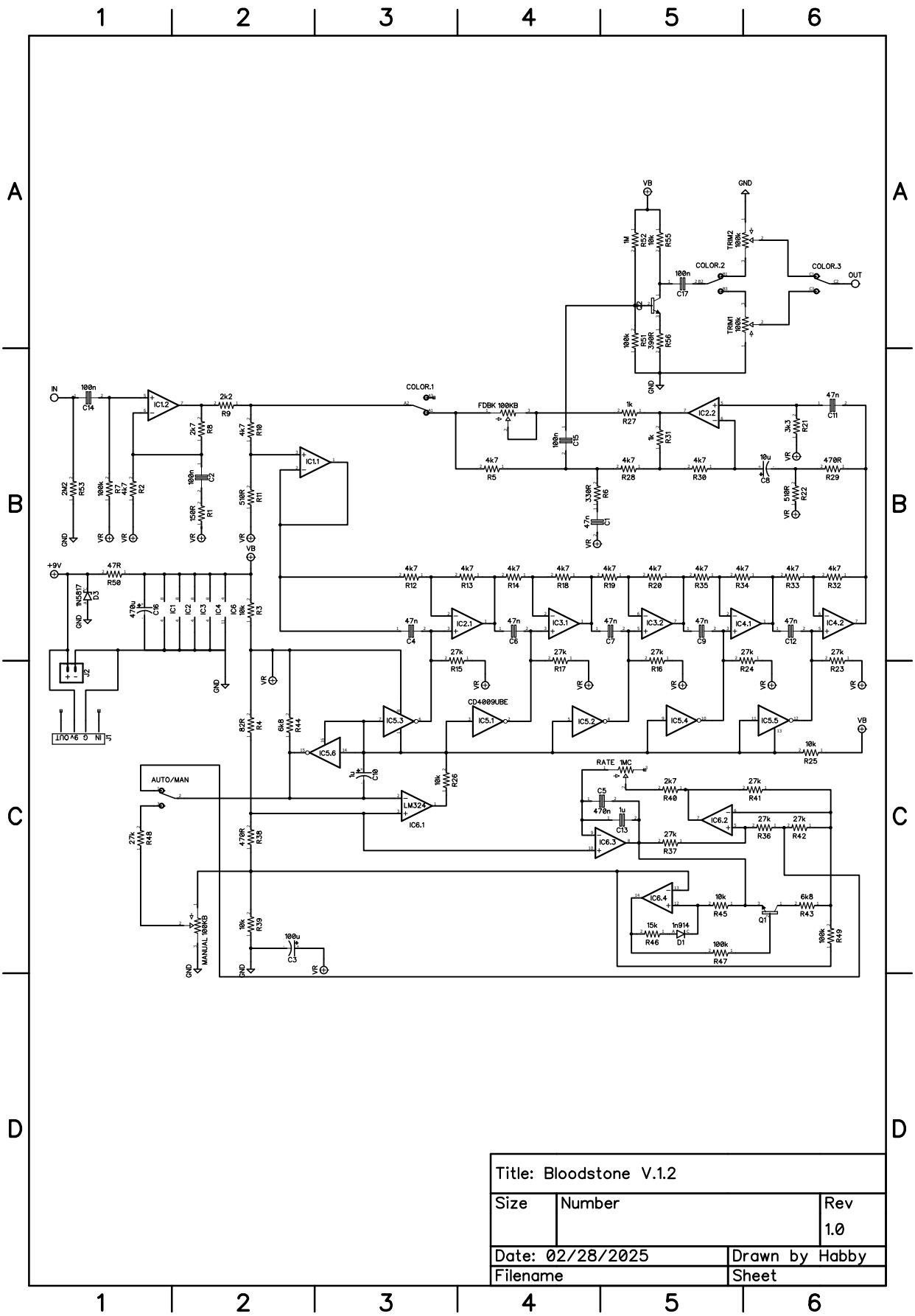
Please note that a current limiting resistor (CLR) for LED protection is not shown on this bill of materials, but you will need one. A value of 4k7 is generally accepted as standard for diffused LED types.

QTY's

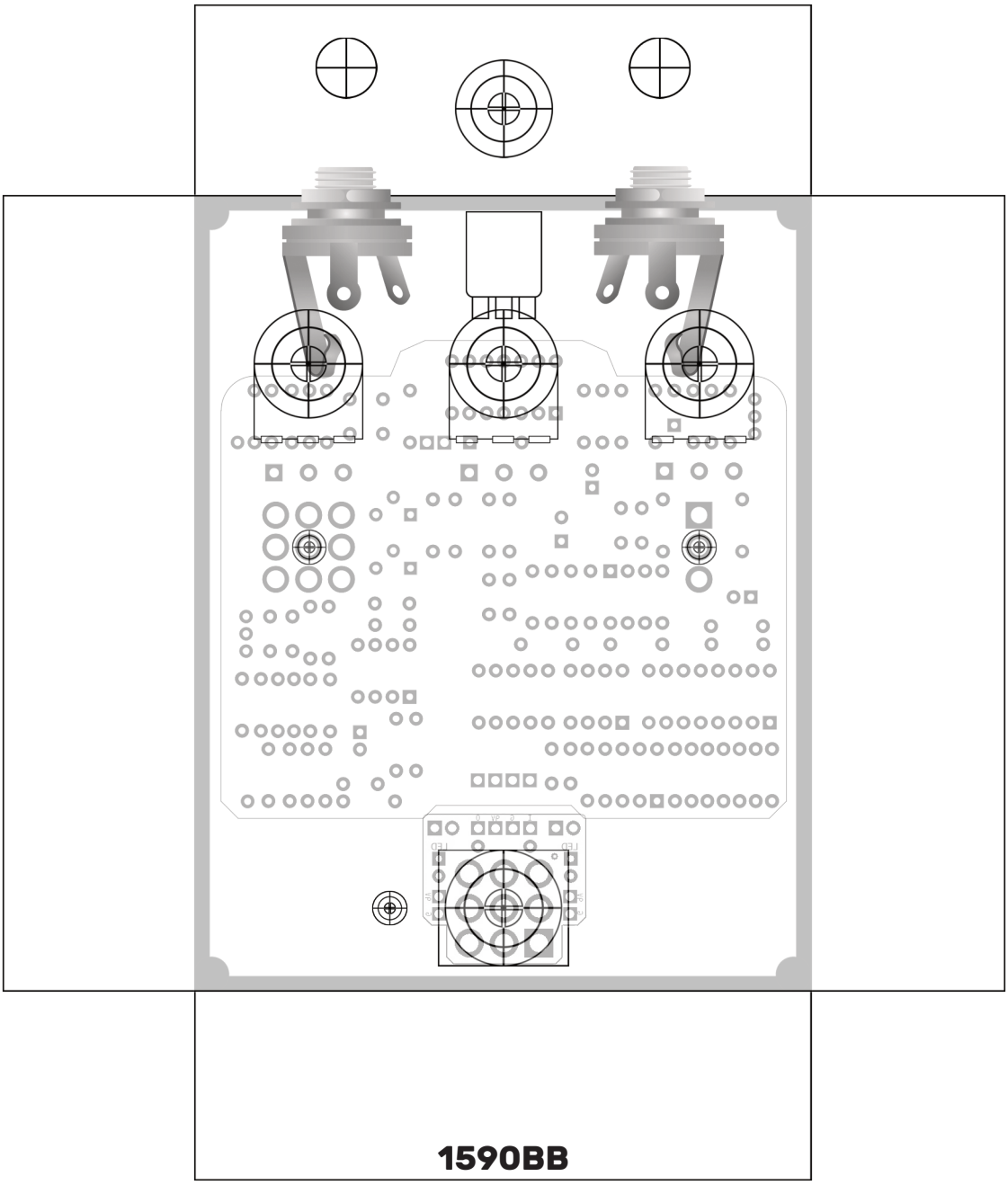
RESISTORS	
1	47R
1	82R
1	150R
1	330R
1	390R
2	470R
2	510R
2	1k
1	2k2
1	2k7
1	3k3
16	4k7
2	6k8
6	10k
1	15k
10	27k
4	100k
1	1M
1	2M2
Add in a CLR for your LED	

CAPS	
7	47n
4	100n
1	1u FILM
1	1u Electro
1	10u
1	100u
1	470u

DIODES	
1	1n914
1	1n5817
TRANSISTORS	
2	2N5088
IC's	
4	NJM4558
1	CD4009UBE
1	LM324
SWITCHES	
1	SPDT ON/ON
1	3PDT TOGGLE
POTS	
2	100KB
1	1MC
TRIMMERS	
2	100K (6mm)

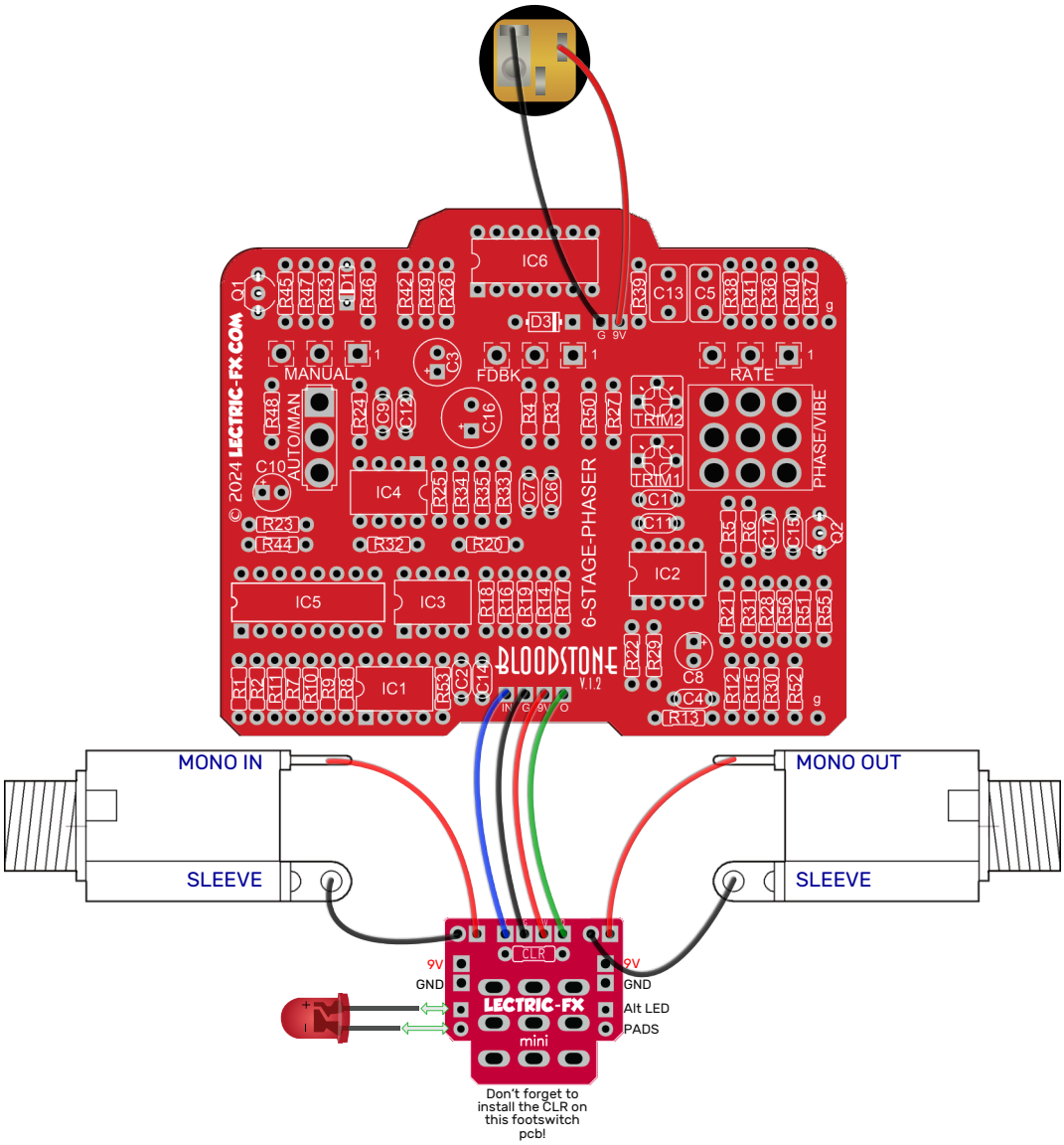

1
2
3
4
5
6
A
B
C
D
VB
GND
IN
OUT
COLOR.1
COLOR.2
COLOR.3
FDBK 100KB
AUTO/MAN
MANUAL 100KB
RATE 1MC
CD4009UBE
LM324
IC1.1
IC1.2
IC2.1
IC2.2
IC3.1
IC3.2
IC4.1
IC4.2
IC5.1
IC5.2
IC5.3
IC5.4
IC5.5
IC5.6
IC6.1
IC6.2
IC6.3
IC6.4
Q1
D1
D3
J1
J2
Title: Bloodstone V.1.2
Size
Number
Rev
1.0
Date: 02/28/2025
Drawn by Habby
Filename
Sheet

TOP MOUNT DRILL SUGGESTION



Side mounted in/out jacks should also be possible if that's what you want. Just move drill marks for the 3 pots & 2 switches up a bit for some more room if you think it's necessary.

WIRING



"Mini" 3pdt product page