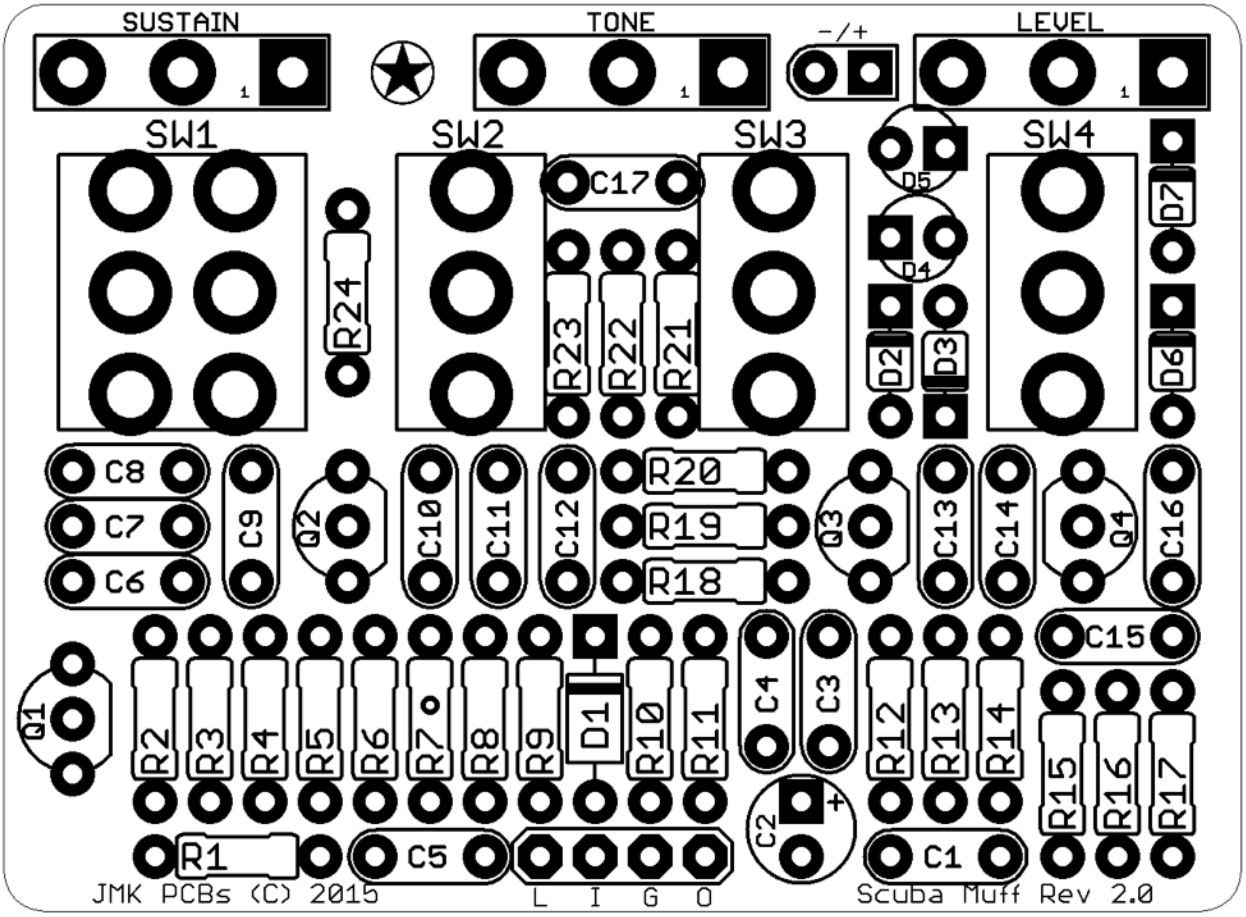
JMK PCBS PRESENTS...

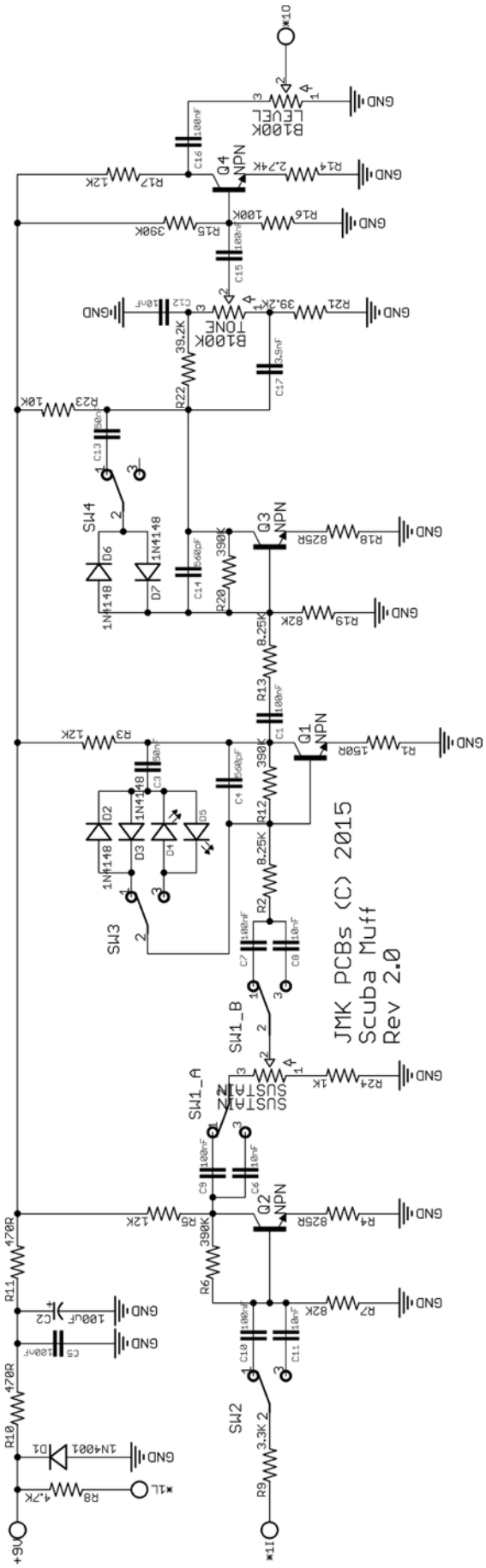
SCUBA MUFF

PCB AND SCHEMATIC ARTWORK (C) 2015 JMK PEDALS

VERSION 2.0: 7/26/2015



Resistors						Capactitors				Semi Conductors	
R1	150R	R9	3.3K	R17	12K	C1	100n	C10	100n	Q1-Q4	BC550
R2	8.25K	R10	470R	R18	825R	C2	100u	C11	10n	D1	1N4001
R3	12K	R11	470R	R19	82K	C3	50n	C12	10n	D2, D3, D6, D7	1N4148
R4	825R	R12	390K	R20	390K	C4	560p	C13	50n	D4, D5	3mm LED
R5	12K	R13	8.25K	R21	39.2K	C5	100n	C14	560p	Potentiometer	
R6	390K	R14	2.7K	R22	39.2K	C6	10n	C15	100n	LEVEL, TONE, GAIN	B100K
R7	82K	R15	390K	R23	10K	C7	100n	C16	100n	Switches	
R8	4.7K	R16	100K	R24	1K	C8	10n	C17	3.9n	SW1	2PDT SW2-4 SPDT
						C9	100n				



Build Notes

• The Scuba Muff is a variation of the classic Big Muff circuit, and features several modifications that give a lot of variety to the sound you'd expect from a Big Muff.

• Because the Scuba Muff is a variation of the muff, just about any 'version' of the Muff can be built using this PCB, including but not limited to: New York, Civil War, Ram's Head, and Triangle. The BOM above is generally taken from the now out of production Muff Diver, a popular boutique Muff. If you want to use another Muff's BOM, simply compare the schematics and ensure you're using the values for the circuit you're lookin.

• Hooking up the PCB is pretty simple, but to clarify: L = the connection for the + end of an LED (CLR is R7); I = PCB Input; S = Ground for the Switch; O = PCB Output; + = 9V input; - = Ground for DC Jack; G = Extra Ground for 1/4" Jack

• It should be noted that there are several odd parts in the BOM for this project. Below are some common substitutes for these parts. You can find precise parts if you would like, but in most cases the common values are going to give the same tonal response.

Part Number	Original Value	Common Substitute
R4, R18	825R	820R
R2, R13	8.25K	8.2K
R21, R22	39.2K	39K
C3, C13	50nF	47nF

- Like with most Big Muff Pedals, the Transistors are an integral part of the sound. Pretty much any NPN BiPolar Silicon transistor can be used. Keep in mind that the pinout of the transistor needs to be considered when installing. **We highly recommend socketing your transistors!** Socketing allows you to switch your transistors easily if you have installed them backwards, and also allows you to swap out and try other transistors to see which you like the best. Options to try include, but is not limited to: 2N5088, 2N5089, BC549, BC550, BC560, 2N5113, BC239.
- There are modifications that are applied to this circuit that include four toggle switches:
  - SW1 is a DPDT that switches the caps in the first two gain stages between the 'typical muff' value of 100nF, and the 'cornish' value of 10nF.
  - SW2 is a SPDT that switches the input cap between the standard Muff 100nF and the 'cornish' value of 10nF.
  - SW3 is a SPDT switch that chooses between two options for clipping diodes in the second gain stage. Your options for clipping diodes are limited only by your own imagination, but the BOM values are 1n4148 and 3mm diffused LEDs.
  - SW4 is a SPST switch which removes the clipping diodes from the third gain stage. This creates a unique, definitely 'non-muff' like fuzz sound. This is typically called the 'supa-bender' mod.

True Bypass Wiring Diagram