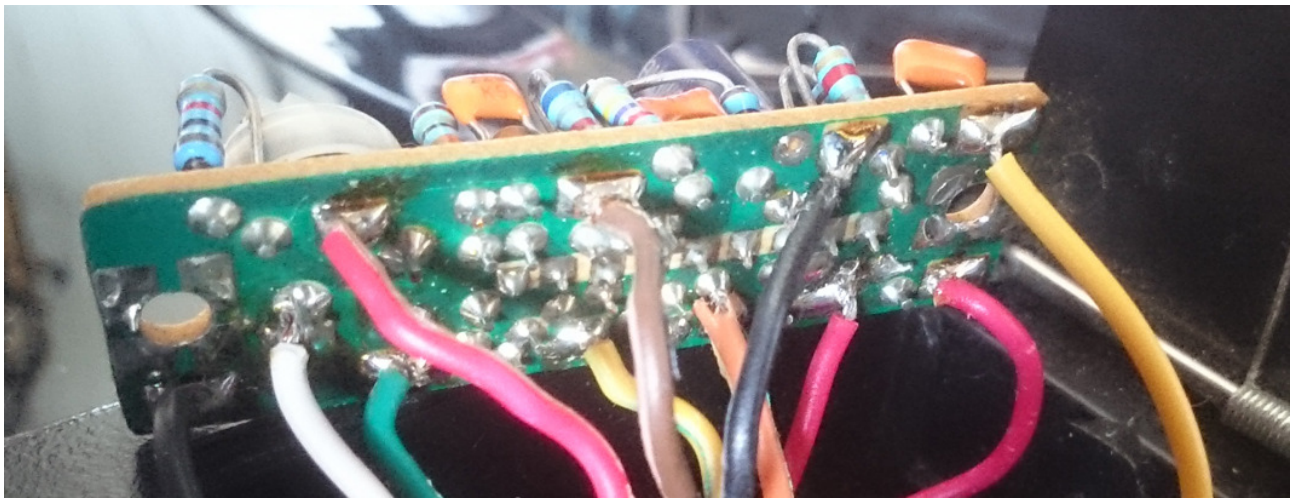
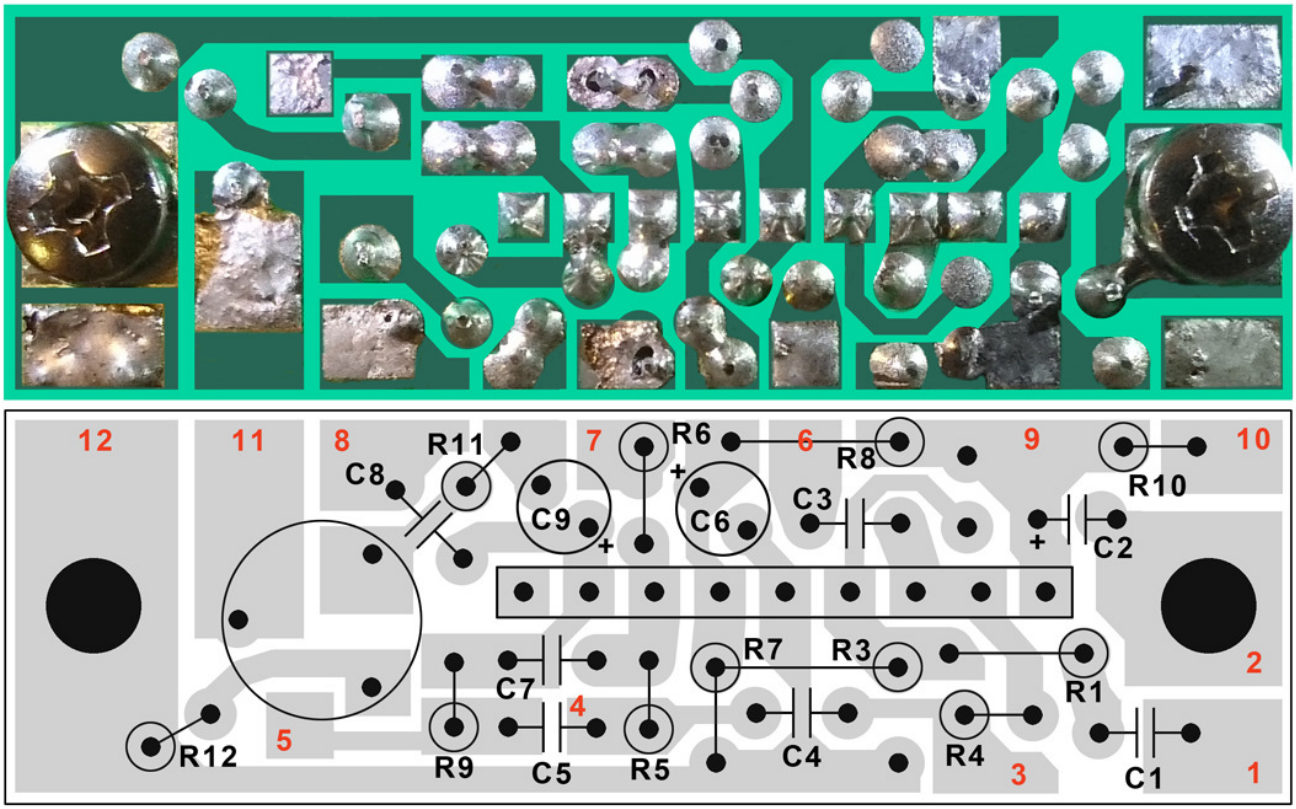
HOHNER B-Bass / Jack Bass Onboard Preamplifier

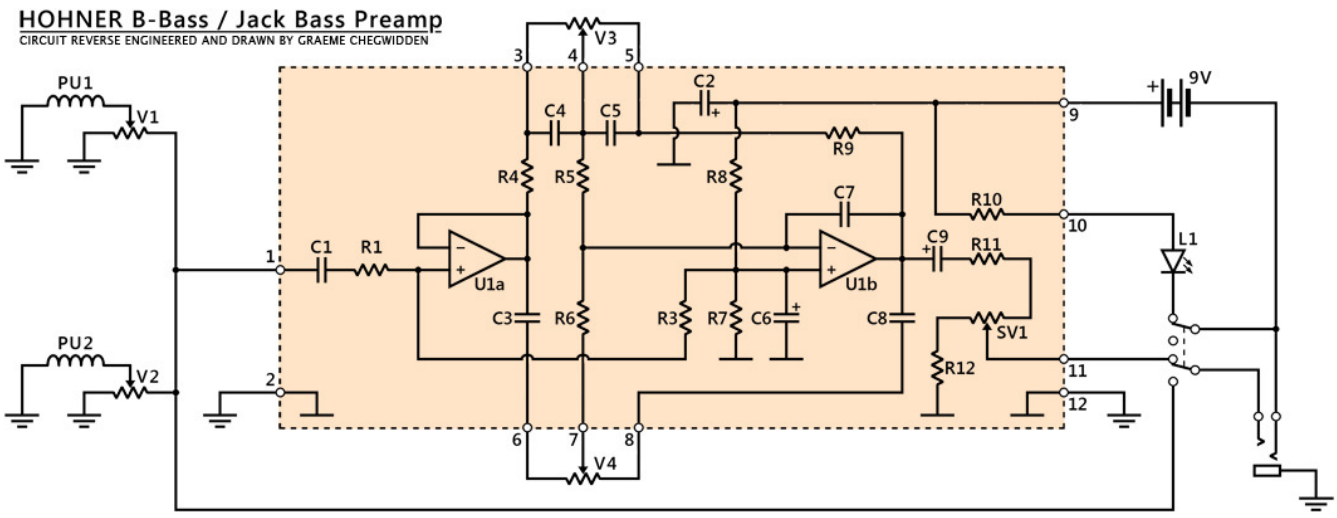
There is virtually no information available about this board which was faulty when I removed it from the instrument. Hohner sells complete kits for this unit including pots, switch, led etc, but the new one they sent me did not work. In order to install it in the Jack Bass it was necessary to unsolder all the wires from the board and make use of the longer, existing ones which run through a bore in the body. As a result Hohner had no interest in replacing it with a new one. No circuit diagram or documents are available and I was informed that the person who designed and organised the manufacture of the board was no longer with the company and therefore no tech help was available from them. Thus I would need to reverse engineer it if I was to repair it.



Here is my cleaned-up image of the underside of the board that clearly shows all the traces, plus a drawing of the top side of the board, as printed, showing the components. There are two modifications to the drawing, reflecting differences between the graphic on the board and the actual wiring:



The grey areas on the lower drawing were not printed on the PCB. They are a ghost image of the traces on the underside of the board above. From this it was possible to draw the circuit diagram on the next page.



The following component list was compiled mainly from reading the values off the existing components, but also measuring components where this information was not available:

PU1	Neck Pickup	R1	10K	C1	0,1µF
PU2	Bridge Pickup	R3	1M	C2	220µF 85° 16V Electrolytic
V1	B500K Neck Vol	R4	6.5K	C3	0,015µF / 15nF
V2	B500K Bridge Vol	R5	6.5K	C4	0.033µF / 33nF
V3	B100K Bass	R6	3.3K	C5	0,022µF / 22nF
V4	B100K Treble	R7	270K	C6	10µF 85° 16v Electrolytic
SV1	B10K Gain Pot	R8	270K	C7	470pF 0.1pF
U1	NJM072S OpAmp	R9	10K	C8	0.01µF / 10nF
L1	Red LED	R10	65K	C9	10µF 85° 16v Electrolytic
		R11	100Ω		
		R12	1K		

With this information it was then possible to follow the signal path and establish that the opamp had failed at U1a. I believe this was due to the battery shorting to ground with the guitar jack unplugged, which in turn was caused by poor design of the battery compartment and subsequent damage to the contacts. You have to look at the actual construction to see how this is possible.

Repair then involved changing the way the battery is connected and replacement of the opamp.

Although this was a huge amount of work, it was a fascinating learning curve and resulted in a properly functional instrument.

A brief note about the NJM072S OpAmp. This IC is symmetrical and can be put in either way round. Both pins 1 and 9 are power inputs, only one needing to be connected. Pin 5 is the ground. Pins 4 and 6 are +ve inputs. Pins 3 and 7 are the -ve inputs and pins 2 and 8 are the outputs.

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