BTB-MMSR 4 Knob 3 Band

MM Style Volume, Bass, Mid Sweep & Treble Preamp

The BTB-MMSR has been designed with characteristics very similar to the original MM Stingray© 2 Band EQ, but is not a copy of the original circuit. The original used a single op-amp chip (single amplifier stage in the form of a chip) for both bass and treble circuits, whereas this unit utilises a more modern dual op-amp chip (two amplifiers stages in a chip). A mid sweep stack is included formuchgreater control flexibility in themidrange.

- **BASS & TREBLE CONTROLS**

  The design of the 2 band EQ in the early Stingray© basses is unusual in that it does not follow the types of topologies around which the majority of equalisers are designed. It would seem that Leo Fender designed it to create a particular sound rather than follow any conventions, such as symmetrical EQ curves. Consequently the figures shown may appear unusual to those familiar with such specifications. In fact it's not easy to portray what this EQ does with a few numbers, but in any case some figures, based around a flat response input signal, are quoted as reference points.

  NOTE: *Like the original, this circuit does not have a flat response when the controls are set midway. This unit is not designed as a clinical tool, where what goes in, comes out at some reference setting.*

- **TREBLE (+20dB / -16dB @ 10 kHz)**

  There is more boost than cut, giving rise the characteristic 'sizzle' associated with the Stingray© style of EQ.

- **BASS (+14dB / -7dB @ 40Hz)**

  The bass control has a little more boost than the original. The boost curve continues to rise towards the lower frequencies, without flattening out at any frequency within the normal bass guitar range. Conversly the cut characteristic is shelving, having an essentially flat response from 30 - 100Hz, when fully cut.

- **MID LEVEL & FREQUENCY**

- **BOOST/CUT (+/-12dB)**

  The upper knob sets the amount of Mid boost or cut at frequencies according to the setting of the Frequency knob. The midway indent is the 'flat' setting.

- **FREQUENCY (100Hz - 1kHz or 200Hz - 2kHz)**

  The lower outer ring sets the continuously variable Mid frequencies for boost or cut. DIL switches on the circuit board allow low or high ranges to be set. Both switch sections should be set to ON for the Low Range and both set to OFF for the High Range.

- **VOLUME**

  Sets the level from the bass and treble section of the preamp feeding the mid section. This means that the pickup feeds the preamp directly, allowing the best possible transfer of signal, and full interraction of the pickup with the preamp. Since the mid section is after the volume control, it feeds the jack directly with a low impedance output.

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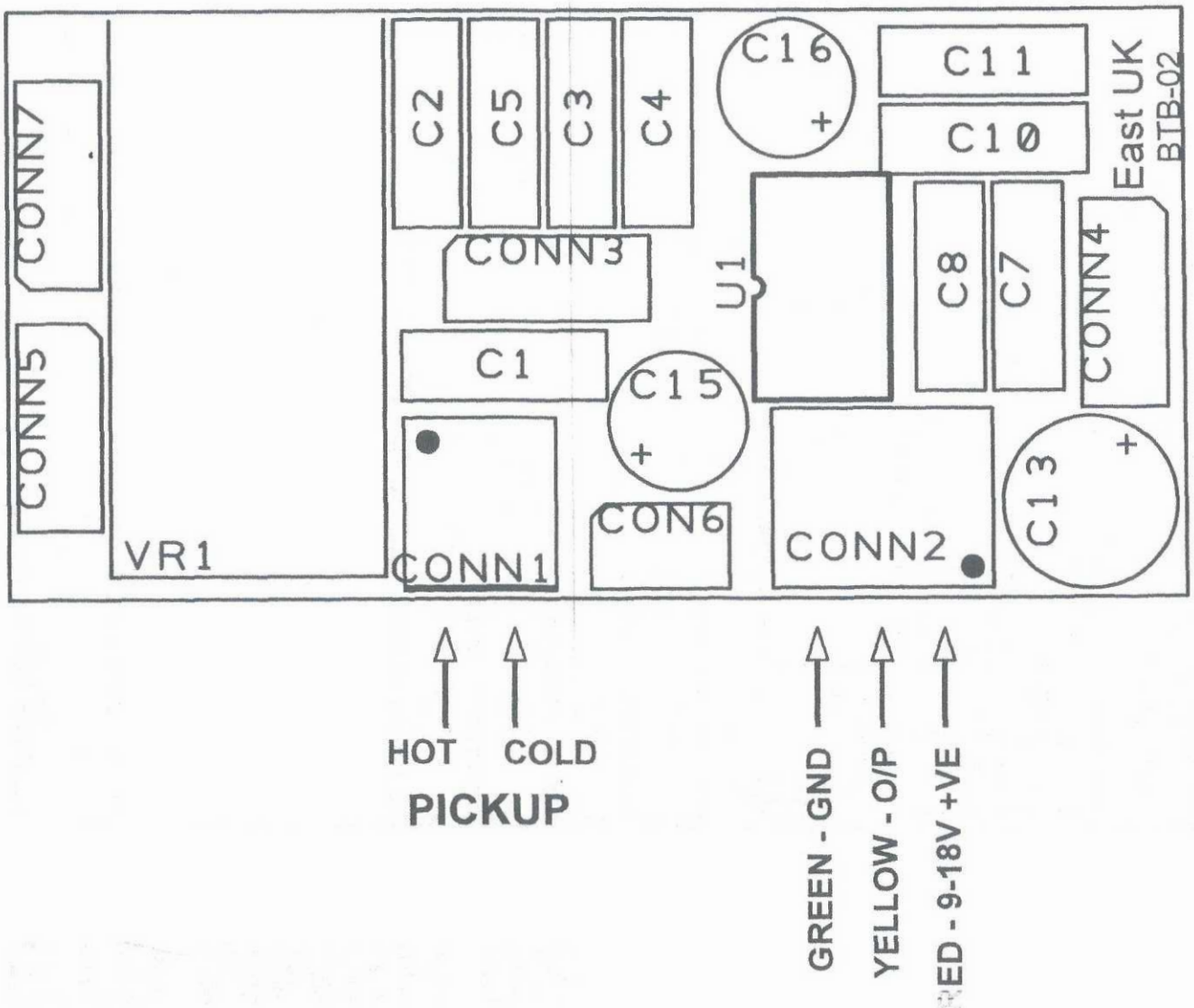
POWER

This unit can be powered from 9 - 18 Volts DC.

INSTALLATION

- If necessary, remove the old electronics leaving the pickup wires, and any others, such as ground and battery wires, with plenty of length.
- The single pots aremarked: V = Volume, B = Bass, T = Treble
- The pot threads are 7.0mm size. Fit them into their holes leaving the rubber spacer rings in place if the holes are the original larger size. Tighten them once they are in place.
- The bass/treble circuit board can be left floating. Or, depending on the installation, it may be fixed to an appropriate surface, using the the sticky foam pads. It may be possible to fix it to the reverse side of the mid sweep circuit board, once installed.
- Mount themidsweepstackintheholeusedpreviouslyforthemidpot.
- Mount the pre-wired jack on its plate or swap the wires to the original jack, making sure they are in the correct sequence.
- Connect the pickups wires to the bass/treble circuit board, according the the BTB-MM diagram.
- A battery clip is provided with the preamp allowing it to be powered directly. But most basses will have a separate battery compartment. In which case, cut of the battery clip and join the red and black wires from the the preamp to those in the bass. Before joining the wires, slip the heatshrink sleeves over the wires. After the joints have been made, the sleeving should be slid over the joints and heated with a hot soldering iron, or other localised heat source, held in close proximity. (The heatshrink sleeves can be found threaded on the black ground wire)
- Connect the black ground wire from the jack to any ground wires in the bass, such as the one to the bridge.
- Once all is proven to be working correctly, fit the knobs to their appropriate shafts, and refit plate.

BTB MMSR 02


CONN7
CONN5
VR1
C2
C5
C3
C4
C16
C11
C10
East UK
BTB-02
CONN3
U1
C8
C7
CONN4
C1
C15
C13
CON6
CONN1
CONN2
HOT
COLD
PICKUP
GREEN - GND
YELLOW - O/P
ED - 9-18V +VE