RED NOTE
MELO
CUSTOM INSTRUMENTS

- **GENERAL CHARACTERISTICS**

Model one is a 50 watt, hard wired twin channel all tube high end amplifier with effects loop, reverb, Triode/Pentode switching and headphone output.

- **SWITCHING THE AMPLIFIER ON AND OFF**

Power Switch – This switch activates the filament circuit.

Standby Switch – This switch activates the high voltages to the tubes (B+)

To operate the amplifier, first switch on the filament circuit, wait for 30 seconds until the tubes warm up and then activate the standby switch. Reverse the sequence for switching the amplifier off. Following this procedure will extend tube life.

Standby switch is also useful during short breaks; using it instead of switching the power off will also extend the tube life.

Please be sure the amplifier is connected to the speaker and the Headphone/Speaker selector located at the rear panel is in speaker position otherwise the signal is muted and routed to the headphone amplifier.

- **FRONT PANEL CONTROLS**

Input jacks

Input jacks give access to both channels. Selection of channels is done through pedal footswitch or front panel switch.

Low input – Low input is an attenuated input for instruments with high output level, although, due to increased grid resistance, it can be used also if a darker, mellower sound is required.

High input – High input is for low output instruments and has no attenuation and a brighter sound.

Channel one

This channel delivers a clean sound even at high settings. It is very transparent and dynamic.

Volume – Volume controls the amount of signal feeding the clean stage. Due to the bypass capacitor in the potentiometer, sound is brighter at low settings and a darker sound is achieved while turning up the potentiometer.

Bright switch – This high quality miniature switch turns the bright on. It is perfect for rhythm passages or to brighten humbuckers.

Treble – Turning up or down the potentiometer controls the amount of treble signal.

Middle - Turning up or down the potentiometer controls the amount of middle and presence.

Bass - Turning up or down the potentiometer controls the amount of bass.

Channel two

This is a highly versatile, classic overdrive channel ranging from a mild overdrive to a full sustained distorted tone. Sound is never harsh but smooth and warm, dynamics are preserved even at high gains. Tone stack is a classic cathode driven as old bassmans

Gain – This controls the amount of signal to the input stage. Very low settings deliver a clean brown sound as you turn the control up sounds begin to overdrive with full and rich harmonic textures. As typical in overdrive channels hearing level is controlled by the volume control

CHN 2 switch – This switch turns channel 2 on. It is obsolete if the footswitch pedal is plugged in at the rear panel input jack

Treble – Turning up or down the potentiometer controls the amount of treble signal.

Middle - Turning up or down the potentiometer controls the amount of middle and presence.

Bass - Turning up or down the potentiometer controls the amount of bass.

Volume – Turning up or down this potentiometer controls the volume of channel 2.

Fat switch – This switch adds low-mids to the sound. It is perfect to fatten melodic lines or to add density to the chords.

Master section

Master volume – This is a power amp input control, It acts as like a balance control for the relative loudness of the two channels. If a cleaner sound in channel one is needed, master has to be fully turned up, then the relative hearing level of channel two can be adjusted by channel two volume control.

Reverb section

Reverb level – This controls the amount of level to the mix stage

- **REAR PANEL CONTROLS**

Mains section

Main Fuse – This fuse protects the power transformer primary and the value is 3A/250V Slow- Blown type. Please it is very important to change the fuse with the same type and value. Failing to do so will invalidate the warranty.

AC Receptacle – Plug the power chord to the receptacle and be sure that the mains has a reliable ground connection. This is imperative for both personal safety and to keep the noise of the amplifier at minimums.

Output section

HT Fuse – HT fuse protects the output transformer and other sensitive components in the event of an output tube short. If a tube fails the fuse will blow thus protecting expensive parts of the circuit. Fuse value is 500mA/250V. Using greater values will invalidate the warranty.

Triode/Pentode – This switch changes the operation of the power amp section. Pentode mode is the “normal” mode, amplifier will deliver the full 50 watt with a bright dynamic and solid tone. Mode Triode cuts the power about half, internal tube capacitances will round the sound and make it warmer. Some dynamics will be lost but tone textures will be darker and more complex.

External speaker – This mono 1/4” jack is for external speaker cabinets. Its parallel connected to 8 Ohm combo internal speaker.

Speaker impedance – This switch selects the output transformer impedance tap.

Note about speaker loads.

Please connect the correct load to the amplifier. The internal and external speaker combination has to be the same as indicated by the speaker selector switch. If you cannot match the impedance try to combine impedances so the total load will always be greater than that indicated by the impedance selector switch; in this case you will have a different response from the amplifier but you will not harm it.

If the external speaker is:

8 Ohm, then the net impedance will be – 4 Ohm - Selector position – 4 Ohm.

16 Ohm, then the net impedance will be – 5,3 Ohm selector position – 4 Ohm.

4 Ohm, then the net impedance will be - 2,6 Ohm WARNING DO NOT CONNECT. Such load combination is too low for both 4 and 8 Ohm position. If you want to use a 4 Ohm external speaker system please disconnect the internal speaker and switch the selector to 4 Ohm.

Headphone jack – This stereo 1/4” jack output is for dynamic headphones, impedance is 150 Ohm. Instead of a cheap transistor amp the headphone circuitry uses a full double ECC82 tube triode and a cathode coupled output transformer. Headphone out is tapped after the master volume and is post-reverb, it is perfectly feasible

to use this output as a recording/send post reverb out. To do that, you have to use a stereo cable with the RING DISCONNECTED. We can provide this cable upon request.

Headphone/speaker switch – This high quality mini switch mutes the power amp so you can use the amplifier with your headphones. This mute function serves also for other purposes which will be explained later on in this manual.

Loop section

Brief description:

Loop section is a full tube circuitry. Send is a low impedance output using a ECC81 triode section, send level of the signal is controlled by a potentiometer. The second triode of the ECC81 serves as a mix stage for the dry and wet signals. Loop is in parallel and is absolutely transparent.

Notes about series/parallel loops

When an effects loop is in series, the original signal is processed by the effect device and then returned to the power amplifier. This procedure affects tone and it is not recommended. The correct way to add effects to your sound is doubling the signal and sending the copy to the device and then adding the processed signal to your original sound. This is what is called a parallel effects loop and although it is expensive to implement it, is the only guarantee to preserve the quality of your tube amp sound.

Send – Use this 1/4" output jack to send the signal to an effects device or any other destination like another power amplifier, a computer sound card, a recorder etc.… Although send is line level you can connect high sensitivity inputs (like the input of another amp/preamp) without overdriving the stage using the send level control. If you want to mute the amplifier while you are recording directly from send output use the headphone/speaker mute switch. Send output is pre-reverb

Send level – Controls the amount of signal sent

Return – This 1/4” jack is a power amplifier input. When used as effect return the amount of signal should be controlled by the output control of the effect device

Pedal control

Connect your footswitch pedal through a stereo cable. Front panel channel switch is disabled when the pedal is used

- **MAINTENANCE MANUAL (all models)**

Although not complicated maintenance in tube amplifiers is not completely free:

1) Tube replacement

2) Bias adjustment

Tube replacement

Tubes wear, that is the price you have to pay for great tone.

There are 10 tubes in your amplifier.

Position, type and function are as follows:

V1 – ECC83 - Clean channel tube, first stage overdrive channel

V2 – ECC83 – Second and third stage for the overdrive channel

V3 – ECC83 – Phase inverter/driver (this tube is part of the power amplifier)

V4 – ECC83 – Fourth stage overdrive channel

V5 – ECC81 – Reverb tank driver

V6 – ECC83 – Reverb recovery/mix amplifier

V7 – ECC81 – Loop send / loop mix amp

V8 – ECC82 – Headphone amp

V9 – 6L6GC – Power amp positive cycle (matched pair)

V10- 6L6GC – Power amp negative cycle (matched pair)

- **MINIATURE DUAL TRIODES**

V1,V2,V3,V4,V5,V6,V7,V8 – Are miniature dual triodes, No adjustment is necessary when changing any of these tubes. All dual triode are self bias

Miniature dual triodes have to be substituted when:

Having more than 2.000 hours of use.

Evident malfunction of the tube such as microphonic noise or other problems.

- **POWER AMP PENTODES**

V9,V10 are power pentodes. Power pentodes in model one need bias adjustment when substituted. ALWAYS USE MATCHED TUBES of the same type

What is bias?

Bias is the most critic voltage in the amplifier.

It is a negative voltage applied to the tube. This negative voltage controls current flow through the tube and sets his operating point. Bias set incorrectly with too much negative voltage applied to the grid can degrade sound quality delivering lots of crossover distortion (non musical distortion). The inverse situation is even worse: making the grid voltage less negative tube draws too much current and can damage the amplifier.

- **BIAS ADJUSTEMENT**

WARNING! Setting bias incorrectly can damage the amplifier and it is not covered by the warranty.

Who can set the bias?

Setting the bias can be done if:

1) You are a qualified technician.

2) You are an advanced user with a good knowledge about tube amplifiers.

If you don't know anything about amplifiers, please refer to a qualified technician. Remember that a wrong set bias can make your amplifier sound bad and/or damage it.

The bias has to be checked when:

1) New power tubes are installed.

2) A change in sound is perceived due to tube wear.

Tools needed:

Special bias adjustment cable (supplied)

Digital multi-meter

Screwdriver

Procedure:

- **MATCHED TUBES ARE IMPERATIVE**

Connect amplifier

Triode/Pentode switch in Pentode mode.

No input signal.

Insert jack in the bias monitor jack located underneath the chassis between main input and main fuse.

Connect Digital multi-meter.

Set the voltmeter to read DC mV.

Adjust bias potentiometer until you read 800mV +/- 5%.