

**RED NOTE amplification**

**MODEL PSI ( $\Psi$ )<sub>v</sub> 3.0**

**OWNERS MANUAL**



## **GENERAL CHARACTERISTICS**

Model PSI is a 50 watt, twin channel all tube high end amplifier, point to point wired, with reverb, Cathode/Fixed bias 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 channels, additionally Channel 2 input jack could be used for switching remote channel operation if the option is installed

### Channel one

This channel delivers a clean classic BF sound using an octal double 6SL7 double triode with the two sections connected in parallel. Sound is very transparent and dynamic with the ubiquitous mid scoop interactive tone stack

Volume – This potentiometer controls the CH1 Volume feeding the mix stage

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 channel, built also around the octal 6SL7/6188 triode, it's a derivation from the 1949 James circuit founded in other non Fender amps such Ampeg, Orange etc..The circuit leaves the midrange untouched and has only bass and treble controls, the vocal quality of the sound and the dynamics are outstanding, it complements very well the channel one and gives a useful and alternative clean sound, perfect for any style, from rock to jazz

Volume – This potentiometer controls the CH2 Volume feeding the mix stage

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

Bass – Turning up or down the potentiometer controls the amount of bass

## **Power Amp section**

Output control – This potentiometer controls the signal feeding the power amp and it balances the channels relative volume

## **Reverb section**

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

### Fixed/Cathode Bias Switch

This switch changes the bias operation of the power amp section, Fixed bias gives the full 50 watt output and has a brighter sound with big dynamics, cathode bias cuts the volume to 35 watt and has a browner and more complex sound. The effect is very subtle at low volumes but evident at high ones

### **REAR PANEL CONTROLS**



### Mains

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 that 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 protection

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 protecting expensive parts of the circuit. Fuse value is 500mA/250V. Using greater values will invalidate the warranty

**Power Switch (on/off)** – This switch activates the filament circuit.

**Standby Switch (Standby/operate)** – 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

**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 be always greater than the 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,

Headphone/speaker switch – This high quality mini switch mutes the power amp so you can use the amplifier with your headphones.

## **MAINTENANCE MANUAL**

Although not complicated, maintenance in tube amplifiers it 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 8 tubes in your amplifier.

Position, type and function are as follows:

V1 6SL7 – channel 1 tube, first gain stage  
V3 6SL7 – channel 2 tube, first gain stage  
V2 6SL7 – Mix amp/recovery stage  
V4 6SL7 – Phase inverter  
V5 – ECC81 – Reverb tank driver  
V6 – ECC83 – Reverb recovery/mix amplifier  
V7 – 6L6GC – Power amp positive cycle (matched pair)  
V8 – 6L6GC – Power amp negative cycle (matched pair)

#### MINIATURE DUAL TRIODES

V1,V2,V3,V4,V5,V6 – Are noval and octal voltage amp dual triodes, No adjustment is necessary when changing any of these tubes. All dual triode are self bias

Dual triodes had to be substituted when:

Having more than 2.000 hours of use

Evident malfunction of the tube such microphonic noise or other problems

#### POWER AMP PENTODES

V7,V8 are power pentodes. Power pentodes 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 worst: 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 nothing 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

Fixed / cathode switch in Fixed mode

No input signal

Insert jack in the TESTER monitor jack located I rear panel next to headphones jack

Connect Digital multi-meter trough special cable supplied

Set the voltmeter to read DC mV in 2V range

Adjust bias potentiometer until you read 800mV +/- 5% (0,8V DC)



