



Super-Plexi™ User's Manual



Model 45PS Variable Power Instrument Amplifier

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Introduction

The Soultone Super-Plexi™ HD amplifier is a Class-A/B, all-tube, 32 Watt, two-channel head, with a sophisticated variable power supply derived from *Power Scaling*, a technology developed by Kevin O'Connor, and licensed from London Power, of Ontario, Canada. This manual should be read by all users of the Soultone Super Plexi 45PS head and 45PS bluesbreaker combo, including guitarists, sound engineers, recording engineers, and service technicians, in order to achieve the best possible performance and avoid damaging the amplifier, tubes, speaker cabinets, other equipment, or causing harm to human beings.

The Super Plexi 45PS is a new HD amplifiers for 2008. This manual covers all aspects of both models, including proper usage, routine maintenance, bias adjustment, and warranty service instructions; prior to powering up and plugging in, all owners should read it.

As you can see from its front panel layout, the Super-Plexi™ amps appear outwardly to be a simple British style valve amplifier. The 45PS is a Power Scaled version of the popular British bluesbreaker amplifiers copied from an even earlier American amplifier, which was originally found in the RCA design guides.

A further refinement to all of these models is an all tube effects loop for adding effects between the preamp and power amp stages of the amplifier. This all tube effects loop can be removed completely from the circuit with a True Bypass switch, for the purist to achieve the most vintage style tones. This bypass can be done locally via a rear toggle switch, or on the fly with a remote footswitch, that also controls a fat boost circuit.

On the 45PS there are two channels - Channel I and Channel II - each have two inputs (High and Low sensitivity) and separate Volume controls, while sharing the amplifier's four tone controls: Presence, Bass, Middle and Treble, as well as the Power Scaling "Power" and "Drive" control.

Traditional tube amplifiers sound best when turned up full – yielding aggressive but sweetly distorted, harmonically rich, thick tones resulting from their power tubes being overdriven. Thanks to its Variable Power *Power-Scaling* implementation, the Soultone Super-Plexi™ amps have the astonishing capability to achieve this classic sound at nearly every volume level. By careful adjustment of its controls, the Super-Plexi™ can produce any mixture of distortion, from both the preamplifier, and power amplifier tubes, from subtle nuanced bloom and sparkle, to full blown clipping. Running the amplifier at lower power settings, with the Variable Power controls, can also extend the tube life of your valuable NOS tubes.

Whereas most tube amplifiers are reputed to have issues with noise and hum, the Soultone Super-Plexi™ is surprisingly quiet, thanks to its modern grounding, shielding, high quality components and careful wiring.

We hope that you will enjoy your Soultone Super-Plexi™, and have written this manual to help you master its many features.

Getting Started – The quick path to great tone!

We recommend fully reading the manual first, but if you're in a rush to get started using your amplifier, you can follow these basic steps. Please refer to the appropriate sections of the manual for further detailed information.

1. Connect the amplifier speaker jack (or jacks) to your cabinet. Determine the impedance of your speaker cabinet, and switch the impedance selector to match the total load.
2. Making sure the power and standby switches are off, connect the mains power cord to the amplifier and to the wall. If you are outside the USA, please read the section on the voltage selector, and remove the back panel if you are not sure where the voltage is currently set.
3. Connect the footswitch cable to the foot switch jack on the rear panel, or switch the loop to True Bypass.
4. Set the power and drive controls to the same level – you could start at 5 with both of them.
5. Set the presence and bass to 5 and the middle and treble to 8 – these are good starting points.
6. Connect your guitar to either the normal or bright channel. You may insert a jumper from one channel to the other. Typically, you would connect a humbucking equipped guitar to the normal channel lo input (bottommost) then run a patch cable from its top input (hi) to the lo input of the bright channel. Set both channel volumes on about 5.
7. Turn the amp power to the ON position.
8. After waiting a minute, turn the amplifier Standby switch to the PLAY position.

You may now play and adjust the amp to taste.

NOTE: The power and drive controls should generally be set to about the same levels – however you should tweak these to taste as it will vary across the power range of the amp.

**LETHAL SHOCK DANGER!**

Tube amplifiers are potentially dangerous equipment, having lethal voltages inside, and tubes operating at high temperature ranges. The back cover of your amplifier should always be installed when the power cord is plugged into the power receptacle. The amplifier should only be used with well grounded, three prong (separate ground) power receptacles, and only operated at a safe distance from water, under an overhead covering, to protect you, or the musician playing the amplifier, from the danger of electrical shock.

**NOISE POLLUTION LOSS OF HEARING DANGER!**

Guitar amplifiers operate at high decibel levels. Never place your head next to the speaker cone while adjusting the amplifier or at high volume levels. Use adequate hearing protection when playing at full volume, and do not expose children to high-frequency or high-volume noise. Failure to comply could result in partial or complete loss of hearing.

**FIRE AND SERIOUS BURN INJURY RISK!**

Tubes operate at high temperature, and can cause burn injuries, or even fire. Never operate your amplifier without the back safety cover installed, never store items in the tube compartment, and always allow tubes to cool to room temperature prior to removal.

**CAUTION!**

The Super-Plexi™ amplifier should only be serviced by qualified tube service repair personnel. Only repair work authorized by Soultone Amplification, Inc., will be qualified for warranty, and unauthorized repairs or modifications may void your warranty, and could compromise the safety features of your amplifier, resulting in shorter tube life, increased risk of electrocution, fire hazard, and possibly even death.

Technical Information

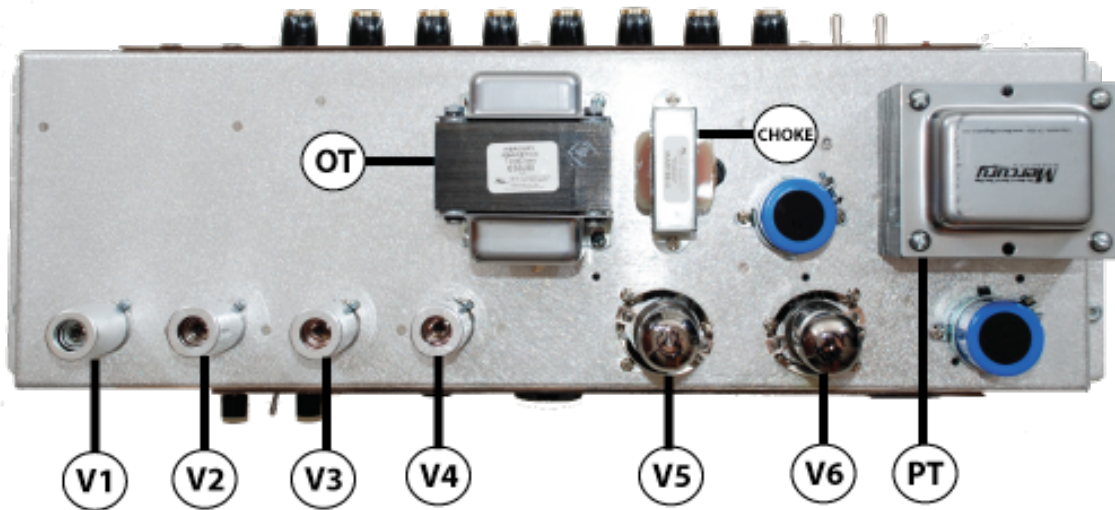


Figure 1. Chassis Layout

Chassis

The high-grade 5052-H32 aluminum corner-welded chassis supports and protects the amplifier components, prevents transformer coupling, and is the main shield. This unit has been tested to withstand functional deformation in a 10 ft. drop with transformers installed, when properly attached to the head cabinet. The chassis has integrated electrical safety features, including isolated grounding posts, fasteners, and mounting studs, and is manufactured with keyed component holes to avoid control slip rotation, or “twist out”. Only personnel or service facilities authorized by Soulstone Amplification, Inc. should remove the amplifier chassis from the cabinet. The chassis should never be drilled, tapped, cut, or modified in any fashion.

Chassis Bottom Cover

The chassis includes a full bottom cover that couples to the chassis for additional noise isolation.

Heat Shield

Your amplifier may include a heat shield – this is standard for all combo amplifiers. It helps protect the amplifier’s expensive transformers, and creates a convection flue, drawing in fresh air through the back of the amplifier, and venting heat out the top vents, extending tube life. It is an essential part of the amplifier.



The Heat shield, **PM**, is a part of the chassis safety and shielding system, and should never be removed, as the ISOTOP MOSFET module has lethal voltages present, and can also be a source of radio frequency interference. Do not operate your amplifier with the chassis removed from the cabinet, or with this shield removed. This shield also protects the transformer set from heat damage, especially important in the combo amplifiers.

OT, PT, & CHOKE - Transformers and Choke

The Super-Plexi™ 45PS utilizes a custom wound set of Mercury Magnetics Tone Clone and Axiom transformers. Mercury transformers are built to modern standards of the best currently available materials, with a sound widely regarded as the best in the industry. The custom wound Mercury JTM45-S output transformer, **OT**, includes 2, 4, 8, and 16 ohm taps for accurate impedance matching to your cabinets with either KT66 or EL34 power tubes. The Mercury **CHOKE** is a true U-Clamp design, and is a true specification replacement part for most 60’s British type amplifiers. The ME3-PS-45 Power Transformer is a custom wound mercury transformer which accurately mimics the original bluesbreaker transformer with Soulstone’s 45PS circuitry. The end result is an astonishing Tone Clone of the originals made famous by Eric Clapton and other artists of the early 1960s.

Tube compliment:

All four of the SuperPlexi amplifiers utilize three 12AX7/ECC83 tubes in the pre-amp, and a duet of octal power valves in the push-pull power amplifier. The four tubes in the pre-amp are utilized as follows:

V1 acts as the pre-amp gain stage for the Bright (Volume 1) and Normal (Volume 2) channels - each half of the tube Super-Plexi™ acting as a dedicated gain stage for each channel (the 12AX7/ECC83 is a dual triode tube). In the 45ps both triodes share a common cathode (unless split cathode is special ordered).

V2 is common to both channels, which are passively summed before reaching this valve. V2a, the first half of V2 acts as a gain stage, common to both channels, boosting the signal, and then driving the second half of the valve, V2b, which is designed as a cathode follower. The cathode follower is a unity gain device acting as a buffer, yielding a low impedance signal with which to optimally drive the tone stack.

V3 acts as an effects loop buffer tube, adjusting the level of the signal down to effects unit level, matching the impedance of effects units, with variable send and return level controls. Return instrument feeds are then boosted back up with another cathode follower, and fed to the coupling cap for the phase inverter stage. T

Special Note 2: The FX loop can be bypassed with the mode set to "True Bypass" effectively putting the output of the tone stack directly to the coupling cap for V4. It can also be used with any 12A_7 tube, with a guitar cable connecting the SEND to RETURN jacks, for an additional gain stage.

V4 acts as the amplifier's phase-splitter. This device splits the signal into two halved components, that are 180 degree out-of-phase with each other, which then feeds the SuperPlexi's push-pull output stage.

V5 & V6 The power amplifier tubes are composed of V5 and V6, working in a type AB push-pull amplifier design. These tubes can be either KT66 (standard) or EL34 or functional equivalents. The tubes are individually biased through a scaled bias control, and have plate voltages controlled through a scaled power control, giving a variable power range from 200mW to 50W maximum power. At full volumes the player is recommended to use proper hearing equipment. Soulstone Amplification, inc, will not be accountable or responsible for use of this device resulting in the loss of hearing. Wear your ear-plugs!

Construction Details and Components

Construction:

Soulstone amplifiers are made of the highest grade materials and components available, and meticulously hand-wired with Teflon coated, silver-alloy-plated (red-plague corrosion resistant alloy), MilSpec wire (actual certification level of the wire we use is for aircraft control systems wiring), and soldered using silver bearing solder (with RoHS compliance by request).

High grade components are used, including MilSpec RV4 potentiometers, filter and supply capacitors by F&T, a mixture of resistors including carbon film, metal film, metal oxide, and, where appropriate for vintage tone, actual Allen Bradley NOS carbon composite resistors. With their high quality MEB, Sozo, and MKT ERO caps, a combination of micalex and ceramic tube sockets, the impressive component line up of the Super-Plexi™ is among the very best production amplifiers made.

As favored by the aerospace industry for reliability, durability, and serviceability, all amplifier controls are hand-wired to the front panel.

NASA spec'd Circuit Boards: The 0.1250" FR4 main Circuit Board is constructed to rigorous NASA specifications, with the added durability and tone of 4oz copper traces, shields, and high quality solder masking. This PCB includes a ruggedized implementation of London Power's Power Scaling circuit, referenced as Variable Power by London Power, but nevertheless derived and licensed from their own Power Scaling technology.

DC FILAMENT SUPPLY: The source of guitar amplifier hum is the AC voltage 60hz usually used for the tube heaters. The Superplexi line utilizes a DC filament supply board, that rectifies and filters the heater voltages. Furthermore, the preamp voltages operate at 12.6VDC, with a 52V standoff, for further noise isolation.

Variable Power MOSFET: The Super-Plexi™, like all Soulstone HD Variable Power amplifiers, use the most robust MOSFET solution of any current power scaled amplifier. The ISOTOP MOSFET power module of the Super-Plexi™ was adapted from welding equipment, and can dissipate over 600watts of continuous power. Due to its integrated shielded mounting solution, and extremely high temperature and wattage ratings, this module needs NO active cooling. It's footprint is ten times the size (lower density) than a standard MOSFET device, so overall the device cools more rapidly and dissipates less heat per sq centimeter.

Front and Rear Panels: Extra thick, gold colored, rear LASER engraved, acrylic. Specific details pertaining to the front panel features can be found in this manual

Cabinet Construction: High-grade, flawless (void-free) Baltic birch-ply with dovetailed joints for maximum strength. The sides, top and bottom are .75" ply, while the front baffle is constructed from .5" ply and the back of the cabinet is .25" ply. The cabinet is covered standard in a heavy-duty Black Levant vinyl

Front Panel Control Layout

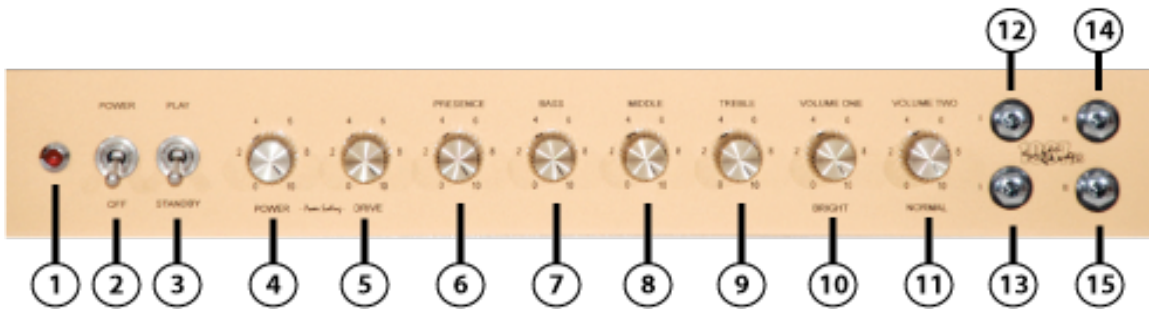


Figure 2. Front panel controls

1. INDICATOR

This indicator will light up when your amplifier is receiving the correct mains power and is switched on. It will not be lit when the amplifier is switched off and/or is not receiving mains power. It is a rugged milspec LED device, powered off of the 6.3VAC tube heater filaments.

2. POWER SWITCH

This is the On/Off switch for mains power to the amplifier. Make sure that the amplifier is switched off and the appliance cord is unplugged from the electrical outlet prior to relocation.

3. STANDBY SWITCH

The SuperPlexi 45ps is equipped with a three-way Standby and Rectifier selector switch and the middle position is Standby. The Standby position is used in combination with the Power Switch (1) to 'warm up' the tubes before use, prolonging tube life. When powering up the amplifier, always engage the Power Switch first, being careful to leave the Standby switch on 'Standby'. This provides the voltage required to heat the valves to their correct operating temperature.

After a short period (about 60 seconds) the tubes will be warm enough to prevent damage, and the Standby Switch can be moved to either the SS position, to use the solid state rectifier diodes, or the tube position, to use the tube rectifier. The selection can be flipped without pausing on the standby position.

In order to prolong tube life, the "Standby" switch alone should also be used to turn the amplifier on and off during short breaks. When switching off your Soulitone Super-Plexi™, always put the Standby switch on the Standby position prior to switching the main Power Switch to Off.

4. Power Scaling POWER

The Power Scaling Variable Power Control changes the power output of the Super-Plexi™, from 10mw at its fully counter-clockwise position, to 50 watts at its fully clockwise position, by changing the voltages supplied. The amplifier effectively becomes "smaller", hence the terminology "power scaling", by which it is referred to. By using this control, power tube distortion can be achieved at any appropriate volume level.

Special Note: This control must be fully clockwise when performing the bias procedure.

5. Power Scaling DRIVE

As the size of the power amplifier is reduced with the POWER CONTROL, the signal being fed into it by the preamplifier appears larger in proportion to the power tubes, and can cause excessive distortion. The DRIVE limit control in the 45ps is an improved Master Volume control, consisting of dual ganged MILSPEC plastic conductive 2 watt potentiometers, which replace the grid resistors on the phase inverter, and are grounded to the junction of the tail resistor and cathode bypass resistor. Turning the pot reduces the signal to the phase inverter proportionally, including the Negative Feedback.

Special Note: As the power scaled output tubes become smaller than 60%, having the Master limit control set too high can give even undesirable levels of distortion. Generally this control will never be used more than a few notches higher than the POWER control. Experimentation is again advised. The best usage is gained by setting the power level, and then adjusting the drive for the same sound as at the higher volume.

6. PRESENCE

This control operates in the amplifier's power section and adds high frequencies to your sound by altering the power amplifier's negative feedback. Turning this control clockwise adds more edge and 'sparkle', for a crisper, cutting sound. At its highest settings this could introduce a harsh or buzzing sound, depending upon gain settings, and will enhance the

hiss from the carbon composition resistor components. Experimentation and moderation is advised!

Special Note: The presence control is also affected by the Fat Boost circuit, which modifies the amount of negative feedback. Check your presence adjustment with the Fat disengaged, then engaged, using the remote footswitch.

7. BASS

This adjusts the bottom end of your amplifier; turning the control clockwise increases low frequencies.

8. MIDDLE

This adjusts the level of those all-important mid-range frequencies. Turning it clockwise increases the mids and fattens your sound, giving it more punch. Turning it counter-clockwise reduces the mids, producing a more 'scooped' tone.

Special Note: The shared tone network of the Super-Plexi™ is post gain, passive and interactive – this means that the settings of the Treble and Bass control the range of the Middle control.

9. TREBLE

This adjusts the top-end. Turning it clockwise increases the amount of high frequencies (treble) present in the sound, making your instrument's tone brighter.

Special Note: The PRESENCE (6), BASS (7), MIDDLE (9) & TREBLE (10) tone controls are shared by Channel 1 and 2. They are very interactive (the changing of one control will change the way the others behave), so experimentation is highly recommended.

10. VOLUME ONE

Turning this control clockwise increases the overall output level of Channel One.

11. VOLUME TWO

Turning this control clockwise increases the overall output level of Channel Two. This channel is voiced for a flatter response than Channel One.

12. HI SENSITIVITY INPUT FOR CHANNEL ONE

This is the 'Hi sensitivity' guitar input for Channel 1 (the bright channel controlled by Volume One) - and is the input usually used for a variety of guitars. Best results are attained using high-quality guitar cables.

13. LO SENSITIVITY INPUT FOR CHANNEL ONE

This is the LO SENSITIVITY guitar input for Channel One (the Normal channel controlled by Volume Two). It is a full 6dB lower in volume than the Hi Sensitivity input, and has a darker sound, caused by a lower input impedance.

Special Note: On vintage amplifiers of the late Fifties and Sixties, it was recommended to plug single coil pickups into the Hi Sensitivity inputs, and use the Lo Sensitivity inputs for instruments equipped with higher-output humbucking pickups. After guitarists of the mid to late Sixties began using the Hi Sensitivity input of the amplifiers with their humbucking pickup guitars, the sound of the guitar was morphed into what we now recognize as the signature of rock-and-roll.

14. HI SENSITIVITY INPUT FOR CHANNEL TWO

This is the 'Hi sensitivity' guitar input for Channel Two (the channel that is controlled by Volume Two) - and is the input usually used for a variety of guitars. Best results are attained using high-quality guitar cables.

15. LO SENSITIVITY INPUT FOR CHANNEL TWO

This is the LO SENSITIVITY guitar input for Channel Two. It is a full 6dB lower in volume than the Hi Sensitivity input, and has a darker sound, caused by a lower input impedance.

Special Note: Bridging Channels:

Because both Channels of the Super-Plexi™ have the same number of gain stages (two) and are therefore in phase, you can bridge them together, and use both channels at the same time. By mixing the two channels together, you can further expand the amp's tonal possibilities. This is referred to commonly as "input jumping".

The most common way of doing this is by plugging your guitar into the top input of Channel One and then running a short guitar effects cable from Channel One's bottom input to the top input of Channel Two.

There is also a less commonly used method, which is plugging your guitar into Channel Two's top input and then running the cable from Channel Two's bottom input to Channel One's top input. Experimentation is again advised!

Rear Panel Control Layout

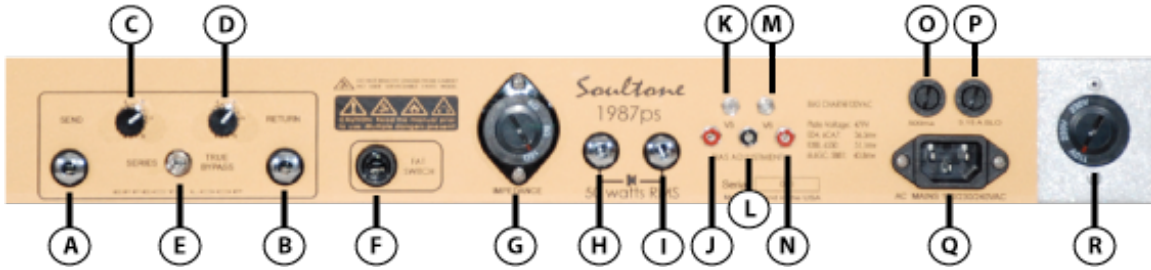


Figure 3. Rear panel layout

A. Effects Send Jack

This jack sends a signal of -10db from the preamp, and should be connected to the input of the first effects unit.

B. Effects Return Jack

This jack is used to return a signal from the last effects unit in the effects chain.

Special Note: Alternatively, a completely separate preamplifier can drive the Super-Plexi™ power amplifier, either another amplifier's send unit, or a complete stand alone preamp, by inserting the signal into this jack. By doing this the only controls functional will be the Presence, Power-Scaling Power, and Power Scaling Master. The Effects Switch must be set to Series for this to function.

C. Effects Send Level

Use this control to adjust the level being sent to the effects unit from the Effects Send Jack.

D. Effects Return Level

Use this control to adjust the level being inserted to the Super-Plexi™ power amplifier, from either an effects unit, or separate preamplifier.

E. Effects Bypass Switch

The Series position inserts the Effects Loop between the preamplifier output and the power amplifier input. Moving this switch to the True Bypass position, completely removes the loop, directly connecting the two sections of the amplifier together.

F. Foot Switch Jack

Connecting the Dual LED footswitch to this jack allows remote control of the FX bypass switch (E) and the Fat Boost functionality. While the switch is inserted the FX bypass switch is overridden by the player selection on the footswitch. The Fat Boost circuit is only enabled by the footswitch (there is no panel control for this).

G. IMPEDANCE SELECTOR

The impedance selector matches the amplifier's output transformer to the speaker impedance.



CAUTION

Your amplifier should be in the Standby Mode before the Output Impedance Selector is turned. The amplifier must be 1) connected to a load while in either Tube or SS Mode, and 2) the impedance selected must match the impedance of the speakers being powered, as discussed below. Failure to follow these simple measures can damage the output transformer of your amplifier.

Examine the table, in Figure 4, to determine the correct impedance matching for the tubes you are operating and the extension cabinets you will be powering. If you are using the tube compliment your amplifier shipped with, you need only set your impedance selector to match the total impedance of your speaker load (traditional settings).

Cabinet(s)	Speaker Output(s)	KT66 Tubes	EL34 Tubes
		Selector is set to:	
1x16 ohm	either	16	Once click past 16
2x16 ohm	both	8	16
1x8 ohm	either	8	16

2x8 ohm	both	4	8
1x4 ohm	either	4	8

Figure 4. Impedance Selector Settings

Never use the amplifier without a load attached! Always put the amplifier on Standby, or Power Off, when changing speaker connections.

CAUTION

H & I. SPEAKER OUTPUTS

There are two parallel loudspeaker output jacks provided for connection to speaker extension cabinet(s). Please always ensure that the amplifier's output impedance selector is set correctly (see item 2) and ALWAYS ensure you use good quality speaker (unshielded) cables. NEVER use guitar (shielded) cables. Always use a non-screened Marshall approved speaker lead when connecting an extension cabinet to these units.



CAUTION

Prior to attempting to bias your amplifier, read the sections of this manual titled "Front Panel Control Layout", and "Rear Panel Control Layout", taking the time to acquaint yourself with the name and location of the appropriate controls and measurement points, and then completely read the section titled "Bias Procedure", following this section.

J. V5 BIAS MEASUREMENT JACK

Inserting the positive lead (usually a RED colored test lead) of the customer supplied Voltage Meter here will read the bias of the V5 tube, in millivolts where one millivolt (mV) is equal to one milliamp (mA).

K. V5 BIAS CONTROL

The potentiometer at this position adjusts the bias level for the V5 power tube. A clockwise motion will increase the bias supply to the tube, and a counter-clockwise motion will decrease it.

L. BIAS MEASUREMENT COMMON JACK

The common lead of the Voltage Meter (usually a BLACK colored test lead) will be attached here when measuring the bias.

M. V6 BIAS CONTROL

This potentiometer adjusts the bias level for the V6 power tube. A clockwise motion will increase the bias supply to the tube, and a counter-clockwise motion will decrease it.

N. V6 BIAS MEASUREMENT JACK

Inserting the positive lead (usually a RED colored test lead) of the customer supplied Voltage Meter here will read the bias of the V6 tube, in millivolts where one millivolt (mV) is equal to one milliamp (mA).

O. HIGH TENSION FUSE

The value of the HIGH TENSION FUSE is 500mA SLO for all countries. Never replace this fuse with any other value.

P. MAIN POWER FUSE

Always use the correct value fuse. For USA 120V the correct value fuse is 3.15A SLO.



CAUTION

If the either fuse blows again shortly after replacement, having used the power on instructions in this manual, under "Front Panel Control Layout", either immediately after powering on the amplifier, or after switching the amplifier from Standby to Play, contact Soultone for technical assistance (toll free USA 1-87 SOULTONE, international dial USA 1-602-904-2414 (technical assistance only)).

Q. MAINS INPUT

The amplifier is equipped with an industry standard IEC power receptacle, for use with a detachable 18ga appliance cord. Before connecting to the local power for the first time, please ensure that your amplifier is compatible with the AC voltage supplied, by adjusting R, the Mains Voltage Selector.

R. VOLTAGE SELECTOR

The voltage selector allows you to adjust the voltage to your locale. 100V is unmarked, 1 click before 110V, and 240V is unmarked, one click past 230V. Set this to the correct voltage for your country – contact Soultone if there is any question.



Dual-LED Footswitch Functions

A basic Super-Plexi™ Dual-LED footswitch is included with each amplifier.

FAT SWITCH – controls the gain/boost section of the amplifier. This is a very basic but effective relay controlled circuit; when activated the LED will glow red, and the activated circuitry adds a 330uF bypass capacitor (Ck) to the 2nd gain stage, and decreases the overall NFB by increasing the feedback resistor value. The result is a slight increase in gain, bass frequencies, volume, and output stage gain. This is more effective for lower channel volume settings. When deactivated the LED will be off

Experimentation is recommended – depending upon your other EQ and volume settings this can be very subtle, or very pronounced!

FX SWITCH – controls the True Bypass relay of the FX loop. When activated the LED will glow red and the FX loop is patched in between the preamp and power amp. When deactivated the LED will be off, and the FX loop will be lifted out with a True Bypass relay.

This can also be used as a switchable Gain Stage by using a patch cable. You can insert an EQ for more flexibility – once again experimentation is recommended.

Tour duty option – A rugged “tour duty” model, with a separate TRS cable will be offered through the Soultone website as an upgrade in early 2009.

Biasing the Power Amplifier Tubes

Thanks to its back panel bias control and measurement cluster with separate bias controls for each power tube, the bias procedure for the Soultone Super-Plexi™ is relatively simple. Nevertheless, care should be taken when performing this bias procedure, with respect to the following cautions.



Do not attempt to bias the amplifier in an uncovered area, a wet area, or while standing in water. Take care to not touch any metal parts when performing the bias. Always allow the tubes to cool off before removing or replacing tubes.

Bias Table

The rear panel of the Super-Plexi™ has a voltage bias chart etched with each tube type. Please adjust V5 or V6 for the specified voltages shown on this chart for the given tube types.

Special Note: Matched tubes are necessary in the Super-Plexi™ as you can bias mismatched pairs. Furthermore, matched sets drift after as little as 10 hours playing – so use this procedure often to get the best sound from your Super-Plexi.

Actual Bias Procedure

This bias procedure assumes you have changed tubes to the desired tube types, following the procedures in “Changing your Amplifier Tubes”, or that you already have the desired tube types installed, and are merely re-biasing your amplifier.

In order to perform this procedure, you will need a digital or analog Voltage Meter, capable of reading mili-volts from 1mV to 100mV, and a small screwdriver, preferably plastic, or metal with an insulated plastic handle.

V5 Bias:

Step One: With the amplifier powered completely off, connect your amplifier to a properly matched speaker load, using the settings located in this manual in “Figure 4. Impedance Selector Settings”.

Step Two: Locate the power tube type inserted in V5 on the bias chart etched next to the bias controls. Take note of the recommended setting.

Step Three: Turn the Power Scaling POWER control fully clockwise. Turn the Power Scaling MASTER control fully counter-clockwise.

Step Four: Connect your Voltage Meter's positive (RED) test lead to the V5 BIAS MEASUREMENT JACK (the leftmost RED test jack), and the Voltage Meter's negative (BLACK) test lead to the BIAS MEASUREMENT COMMON JACK (the center black jack). If your meter is not auto-ranging, set it to a range for 1-100mv, and turn the meter on. Remember you must be set for VOLTAGE not AMPERES. Setting and adjusting your amp using amperage readings will damage your transformers.

Step Five: Turn on the power switch, and after waiting a suitable time for the tubes to warm up, turn the standby switch to the PLAY position.

Step Six: Adjust the V5 BIAS CONTROL so the meter displays the specified readout in mili-volts.

V6 Bias:

Step One: Switch the amplifier Standby Switch to STANDBY, and move the Voltage Meter's positive test lead (red) to the V6 BIAS MEASUREMENT JACK (the rightmost red jack).

Step Two: Locate the power tube type inserted in V6 on the bias chart etched next to the bias controls. Take note of the recommended setting.

Step Three: Switch the Amplifier Standby Switch to PLAY.

Step Four: Adjust the V6 BIAS CONTROL so the meter displays the specified readout in mili-volts.

Step Five: Disconnect the meter leads, and store your meter. You may now audition the amplifier sound with the tube types you have selected.

Changing Tubes

Your Super-Plexi™ amplifier shipped with specially selected tubes from Soultone, however replacing these tubes with modern production and valuable New Old Stock (NOS) can give you a great variety of tonal variation.

When changing tubes on the Super-Plexi™ line, you may use mis-matched pairs of tubes of the same type. Do not mix tube types (use only a pair of EL34, 6CA7, KT77 or 6550 tubes).

All tube types for this amplifier are keyed by their pins, on preamplifier tubes, or by a keyed insertion base, on the power tubes. Be sure to only attempt insertion of tubes with them keyed in the proper orientation.

1. Turn off the amplifier, and remove the power cord.
2. Remove the back panel by removing the four Philips head screws, gently pulling it off, and carefully setting it aside.
3. Remove the tube shield of the preamp tube you are replacing, and carefully set it aside.
4. If you are removing a preamp tube, gently pull in an upward motion on the tube. Sometimes a slight wiggle will help free it from the base.
5. If you are removing a power tube, you will need to spread open the retaining clamp with one hand and, by grabbing the base of the tube with the other, pull slowly upward on the tube. DO NOT wiggle these tubes, or lean them side to side, as the delicate keying mechanism can be sheared off in your amplifier.
6. Carefully examine the tube socket, studying the orientation of the pin holes, or the keyhole for the power tube.
7. Remove any debris from the tube socket prior to inserting tubes.
8. If you are inserting a power tube, you will need to use one hand to spread open the retaining device.
9. Holding the tube in the proper orientation to the base, by studying the pins on the preamplifier tube, or the key device on the power tube base, and carefully insert the tube into the base.
10. Reinstall the tube shields, where appropriate.
11. Reinstall the back cover.
12. If you have only changed a preamplifier tube, you do not need to check your bias, prior to powering on the amplifier.
13. Regardless of whether or not you changed tube types, if you have replaced either power tube, you must complete the Bias Procedure outlined in this manual.

Care and Maintenance

By following the instructions laid forth in this manual, your amplifier should become a family heirloom. The only additional steps to take are in regards to its physical appearance.

Always switch the Power Switch to the OFF position, and disconnect the AC MAINS cord, prior to cleaning your amp.

The vinyl covering on your amp should be dusted with a dry, soft, cloth. Tougher stains should be cleaned using only a slightly damp, well-wrung, cloth. Stains that are difficult to remove may be treated by a solution of 1 teaspoon non-scented liquid soap to ½ gallon water, and then rinsed with a separate damp, well-wrung, cloth.

WARNING: Never use car-care products, solvents, or abrasives, on your amplifier.

Warranty and Information

Should you experience a problem with your amplifier, other than tubes or fuses, switch it off immediately and contact Soultone Amplification, Inc., to arrange service.

Soultone HD Amplifiers carry a Limited Lifetime Warranty, protecting the original owner from manufacturing defects. This warranty does not cover damage resulting from abuse, improper use. If your amplifier is under warranty, be sure to contact Soultone to arrange for authorized service. In the event that you own a Soultone amplifier not covered by a warranty, we will help you get your amplifier repaired at a reasonable price by authorized service personnel. Soultone will not be responsible for any repairs done to products without prior authorization.

NOTE: You must save the original double boxed shipping containers that your amplifier was shipped with.

Amplifiers shipped for service that needs to be performed by Soultone, such as transformer replacement, or feature modification, that are shipped in any other shipping solution not provided by Soultone, will not be covered for damage if damaged during shipment.

The full details on your Soultone amplifier's warranty can be found online, or in the paperwork your amplifier shipped with.

Manufacturer Liability

Soultone Amplification, Inc., will not be liable for any losses incurred due to the misuse of its products, failure of said products to operate, or premature failure of products, and Soultone Amplification's liability in the result of damage or losses caused by a defective or inoperable amplifier shall be limited to the replacement, or value, of said amplifier. Use of this product constitutes acceptance of this manufacturer's statement of liability.

Return Merchandise Authorization

If your instrument amplifier needs repair, obtain a Return Merchandise Authorization Number (RMA) from Soultone, by contacting service@soultoneamps.com. When you receive your RMA Number, you will be told if your amp can be locally repaired where the service facility is that has been authorized to perform the repairs.

If the repair will require factory services, you will need to return your amplifier to Soultone. Power off your amplifier, then remove the power cords, speaker cable, and all tubes, then pack only the amplifier, with the bubble wrap protecting your amplifier in the inside smaller box, which is to be sealed with packing tape, and placed in the outer shipping container with peanuts surrounding, and once again sealed with packing tape. If your amp is covered by warranty, you will be sent a shipping label, with all information needed. You will merely attach this label to the shipping container, and take the amplifier to the nearest shipping center, as instructed by Soultone.

You can contact Soultone by dialing toll free 1-87-SOULTONE for Return Merchandise Authorization.

Specifications

POWER:	32W RMS Maximum, continuously variable to 200mW
VARIABLE POWER:	Pure-DC Power Scaling, licensed from London Power, Thunder Bay, Canada
TUBES:	KT66 power tubes standard, or EL34 tubes
BIAS CONTROL:	Variable independent output tube adjustment and measurement
HEATER SUPPLY PREAMP:	12.6 VDC potential raised to 50V standoff
HEATER SUPPLY POWER:	6.3 VAC
EQ:	3 Band EQ interactive
SIZE:	26" wide by 9" high by 8.5" deep
WEIGHT:	32 lbs