

# The Soul-o™ 30

A 30 watt Class A Dual 6L6 tube amp with PREBIAS™ control and tube reverb



S30-15C 15" Combo

**Thank you** for choosing a Groove Tubes amplifier, and welcome to the growing list of artists and friends who share our lust for true tube tone.

We've more than 25 years acquiring the knowledge to design and build your S30 amp....so please just take a few minutes to read this guide to it's operation and learn the theory behind the unique S30 design.

## Construction Details

- 1 - All components are hand soldered, with over 100 hand soldered connections on the tubes sockets alone.
- 2 - All transformers are custom designed and made exclusively for Groove Tubes.
- 3 - GT S30 amps are all tube, Class A circuitry designed specifically for use with the 6L6/KT66 family of power tubes. They come with our own GT6L6GE USA tubes unless otherwise specified.
- 4 - We use only double sided, double thick PC boards with double thick traces. We use chassis mount type power tube sockets hand bolted, hand soldered, and then hand wired to the PCB. PCB and point to point construction, best of both worlds!
- 5 - Each amp is hand built to order. There are more than 18 hours of skilled hand labor in each S30 amp we build!
- 6 - There is no particle board in any of our cabinets, only solid core USA plywood.

Of course all these details cost more, but you can really **hear the difference!**

## The Preamp Stage

The S30 preamp stage design uses five dual triodes in a Class A design, each tube performing multiple functions in the circuitry. The basic preamp controls are PREBIAS, Gain, Pull-Gain +10dB boost, Bass, Middle, Treble, Presence, Reverb and Volume.

Our exclusive and innovative **PREBIAS** control is located *before* the first Gain control, and allows you to literally modify the bias voltage for both the V1 and V2 preamp tube stages. These are the most influential stages to the overall tone and feel of your amp. In all other amps, this voltage is fixed by the designer.

Players have been paying 100's of dollars to "mod" their preamp stage voltages. Now, this "mod" feature is built-in to the S30 preamp. A lower PREBIAS voltage setting will give the preamp stage less output for the same given input signal. Hence, more dynamic headroom for a cleaner tone. The LO PREBIAS setting can also be used to compensate for hotter guitar pickups, making the amp less "touch sensitive" which is better suited for pounding rhythm guitar where "overloading" is not usually desirable.

Likewise, for lower output single coil pickups, switching to a MED or HI PREBIAS position increases gain, expands the frequency bandwidth (more lows and highs) as well as making it more touch sensitive so as to produce a "hotter" lead tone with noticeably more gain. YOU can shape the pramp frothe guitar pickups and style of playing as the need arrises.. an instant "hot-rod mod!"



S30-15 Top + EX212 Cab

## PREBIAS control options:

**LO** offers the most clean headroom, a flatter, more accurate tone and response. Great for calming down those high output Humbucker type pickups.

**MED** increases the voltage, adding gain, fattening tone, and softening attack dynamics. It provides more compression as the the player picks harder.

**HIGH** gives the most voltage for the V1 and V2 preamp gain stages and really makes the overdrive character take off. Thus, more touch, gain and compression. Great for most lead applications or a heavily distorted, yet tight, Metal rhythm tone. Usually this setting will be desired for the lower output, single coil pickups. These 3 very different PREBIAS settings are actually doubled by the possibility to "pull boost" regardless of which PREBIAS setting you are in. This +10dB boost can be achieved by simply pulling the Gain knob or with the optional footswitch.

*NOTE: The V4 and V5 preamp tubes can be altered between using a 12AT7 or 12AX7 tube.*

*Using a 12AT7 in V5 (the power tube drive section) will give a cleaner drive with more dynamics and sparkle. A 12AX7 in V5 adds more drive, a bit fatter and will be louder with more distortion.*

*Much the same attributes and differences can be achieved in V4 by alternating between the 12AX7 and 12AT7 dual triode tubes. The S30 leaves the factory with a 12AX7 in both V4 and V5 for the maximum overdrive and compression. You can safely experiment by trying a 12AT7 in either V4 or V5 position. Your S30 has a 9 pin straightener attached to the side of your cab, which can hold an extra tube and should also be used when changing preamp tubes. This keeps your pins straight and clean and your sockets tight! See tube layout for exact location of V1 thru V5 preamp tubes.*

*NOTE: there is also a "secret" gain trim pot located underneath the chassis near the transformer. This screwdriver adjusted internal pot sets the preamp gain for the S30 in the non-boost mode (will not change the Boost position).*

*This can balance the preamp gain to your guitar pickup (more gain for the single coils and less for the humbuckers). We usually set this control in the middle from the factory. If you choose to adjust it further, please turn off the amp and also use an insulated screwdriver for safe operation.*

## "Passive" Tone Controls

The S30 tone controls are the *Passive* type, similar to those used in the Blackface era Fender amps.

Many amps made today use *Active* type tone controls, which have a separate gain section for each tone band which literally "suck tone" from the preamp. That's why we don't use them. Passive controls use a common tube gain stage to boost the entire frequency range, then divide the Bass, Middle, and Treble with passive filters to shape your tone. Passive tone controls are more musical, but are also interactive with one another.

To get the most out of passive tone controls, start listening with all

controls at the 12 o'clock position, where we "pretune" your amp here at the factory. If you want more bass, either: a) Crank up the Bass control; or b) Lower the Treble control then compensate the volume loss (or gain) by increasing (or decreasing) Gain and/or Volume controls. Passive controls share a common gain stage, so turning any one of them fully up (or down!) diminishes the effect of the others. Should you want more "push" or "drive" from the preamp, try setting all 3 tone controls at the 3 o'clock position and adjust the EQ from there. This adds more touch sensitivity to the preamp. Find a drier tone and feel by setting the tone section to 9 o'clock and adding back tone as needed.

*NOTE: The S30 preamp design is like the Fender Blackface era amps and more linear than the Marshall or earlier Fender Tweed designs. We follow this with an early USA style two 6L6 Class A output design common to all amps from the 50's. We added an optional high gain preamp stage typical of the "Metal" amps via the selectable PREBIAS control and Pull-Boost feature. To our knowledge, this is the first time these designs have been combined in one amp.*

### The Presence Control

This control interacts with the S30 power amp stage, changing the high frequency response. It alters the feedback loop of the power tubes. It adds highs to the power stage, making it noticeably brighter. Use more Presence for an acoustically dead room, and less for live rooms.

### The Reverb Control

Our tube driven long spring Accutronics Reverb is deep and harmonically rich and runs in parallel to the signal path so it doesn't sap highs as you crank it up.

## Rear Panel Features

### The Power Amp Stage

Your Soul-o 30 Class A design is "self biasing" and can use any of 8 different matched Duets of 6L6, KT66 or 5881 Power Pentode (or Tetrode) tube types currently available from our GT catalog, and in any of the 1 to 10 power ratings. Changing power tubes (no bias

adjustments needed!) allows you to customize your amp, dramatically changing the power, tone and response.

Unless ordered otherwise, your S30 amp will come equipped with our very best 6L6, a matched Duet of the GT6L6GE tubes, our USA made Power Tetrode.

*NOTE: Always turn your amp off, and let the tubes cool down, before changing tubes.*

### Speaker Impedance Selector and Speaker Output Jacks

The S30 custom wound output transformer has 3 secondary windings for selection between 4, 8, and 16 ohms speaker loads. Always try to exactly match the speaker load with the impedance selector for maximum power. Use the #1 speaker jack for just one speaker (or as a combo amp). The #2 jack is for adding a second speaker.

*NOTE: The #1 jack has shorting circuitry which turns the amp off if there is no speaker connected.*

### GT's Parallel FX Loop w/ Mix

This is the most tonally transparent FX loop possible. When properly set, our loop allows you to use any digital or analog FX unit mixed in parallel with your original preamp signal with no sacrifice of tone! Most oops are the Series type, so the FX unit is placed is between the preamp and power stage...so the sweet, fat, tube preamp signal is changed into a thin, wimpy transistor signal. We call this **"the tone sucking transistor FX loop syndrome"**, and the GT's parallel loop with Mix control is the cure!

### To Operate:

**Set the FX unit 100% Wet and 0% Dry.** Now, you can use the Mix control on the S30 rear panel to adjust the desired level of the FX box. Usually, best results happen with a Dry:Wet ratio of 98%:2%. Another cool trick is to insert an ordinary foot controlled volume pedal in the signal path returning from the FX to the "INPUT" of your S30 FX loop. This allows you to gradually increase or decrease the FX level without changing the amps volume!

### Soul-o Speaker Cabinets

GT cabinets are "tuned" for guitar playing. They are fundamentally different than most other guitar cabinets on the market today. We use 3/4" solid core plywood for the top, bottom, back and sides but a lightweight 5/8" plywood speaker baffle board. We slant the baffle board upwards for better projection, and "tune" it's resonance to optimize the tone for guitar. This design produces tighter bass notes avoiding the common "Big E String Mush" syndrome.

GT guitar cabs come with our exclusive "Classic Clone", USA made speakers. These are made to our specifications, inspired by our favorite 60's era speakers.

### Technical Specs:

**Input:** 1/4 " phone jack  
**Input Level:** -10 dB nominally  
**FX Input level:** +4dB dB nominally

### Preamp Tube Section

V1 - 12AX7  
 V2 - 12AX7  
 V3 - 12AU7  
 V4 - 12AX7 or 12AT7  
 V5 - 12AX7 or 12AT7  
 V6 & V7 - 6L6/KT66

### Power Section:

30 watts RMS Class A type @ 4, 8, 16 Ohms  
 Optional 6L6 Family types:  
 GT5881, GT6L6R, GT6L6R2, GT6L6C, GT6L6CB, GT6L6GE, GT6L6S, GTKT66HP and GTKT66C

**AC requirement:** 117 VAC Standard  
 100 VAC (special order), 230 VAC (special order)

**H.T Fuse:** 1 Amp Slo-Blo

**AC Fuse:** 100-120VAC@3A Slo-Blo  
 230 VAC = 1.5A Slo-Blo

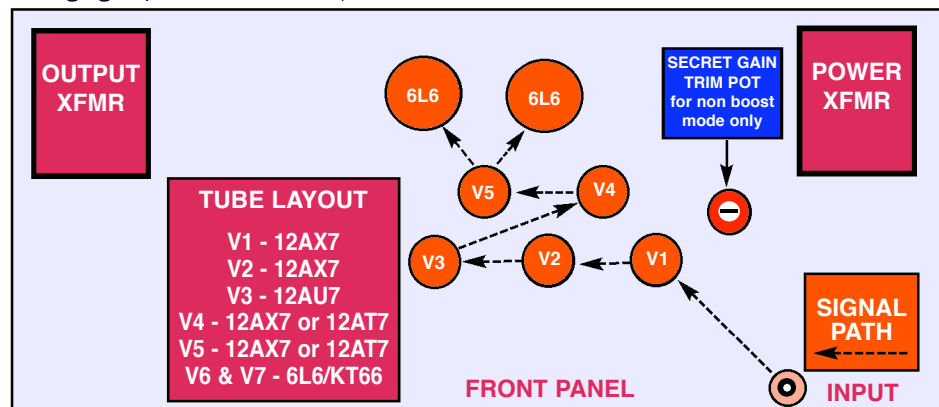
**Weight:** S30-12C Combo 42 lbs.  
 S30-15C Combo 44 lbs.  
 S30 Top 32 lbs.

### Options:

Footswitch (Boost & Reverb) with 25' cord  
 Slip Cover with pocket for footswitch and cables

### Speaker Cabinet Options

S30-12C - 1 x 12" speaker  
 S30-15C - 1 x 15" speaker  
 EX112 - 1 x 12" speaker  
 EX212 - 2 x 12" speakers  
 EX410 - 4 x 10" speakers  
 EX115 - 1 x 15" speaker



## Groove Tubes LLC - Custom Shop Products

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