

Congratulations! You've just purchased the world's first all tube guitar preamp for direct recording. The GT Electronics Studio Tube Preamp for Guitar (STP-G) can plug directly into the recording console and deliver true power tube tone and distortion, drive any slave amp for stage use, or can even hook up to a guitar speaker for small clubs or practice. The purpose of this manual is to acquaint you with the controls and the many possible sounds available to you.

Simply stated, this is a complete 25 watt all tube guitar amp with a classic design that is similar to many of the old Fender amps you already know. We've added an extra stage of gain and a selectable mid-boost section to get that "heavy metal" overdrive sound but you can switch these off to return to a classic "clean 'n crunchy" sound typical of an old Fender or Marshall.

What makes this preamp unique is the additional circuit we've added called the Speaker Emulator (patent pending) which interfaces the 25 watt amp to the mixer input. In other words the Speaker Emulator turns the amp into a preamp. This means you can get the sound and feel of a 25 watt tube power amp directly into the console for recording....without a microphone or an isolation room. The STP-G delivers crystal clear rhythm sounds or searing lead tones, and it gives them directly into your mixer without the typical high volume levels that make recording guitar difficult and impractical. Naturally, the STP-G can be used in live music situations and go directly into the PA mixer. Imagine how well the vocal mics will work without those high volume levels bleeding into every mic on stage, and how good the guitar mix can be when it's totally isolated from the other instruments!

We spent the best part of three years developing this revolutionary product, please take a few minutes to carefully read the following instruction manual. If you still have any questions, please feel free to contact us here at GT Electronics.

Thank-you,

Aspen Pittman
President
GT Electronics

FRONT PANEL FEATURES

INPUT JACK

This input is designed for a standard 1/4" phone plug and the impedance of an ordinary guitar pickup.

GAIN "ON/OFF" SWITCH

This switch activates the additional gain section which is powered by the second GT7025 preamp tube from the left as you face the preamp. There will be a slight loss of highs when in the gain position and you will notice a slightly higher noise level, this is a natural tradeoff if you want the "hot" sounds of overdrive.

GAIN CONTROL

This adjusts the level of the gain stage. There will be lots of additional gain even when this control is in the full counter-clockwise position. As this control is rotated clockwise, the gain will increase.

PREAMP CONTROL

This is the first volume control and is always active. The cleanest tones will be with the gain control off and the preamp control set very low.

TREBLE CONTROL

This is a classic shelving control that is relatively active. This is a good time to mention that we have tailored the sound of the preamp section to sound great with the tone controls set at 12 o'clock. That is not to say that the amp has a flat response at this setting but we like it best here and if you listen to the tone at this setting before you adjust more or less treble you will get the best results.

MIDDLE CONTROL

This adjusts the midrange of the amp, again start at the 12 o'clock position and then adjust to taste. Remember that the midrange control is very interactive with the other tone controls so don't expect the midrange control to be as effective when all the other controls are turned full up. That's why we suggest you start with all the controls in the 12 o'clock position and adjust from there for most effective tone variation.

MIDDLE CONTROL-PULL FOR MID BOOST

Pull this middle control out to activate the mid boost. The mid boost will boost the mid range 20 db and effectively inactivate the middle control. Variation of the mid tones are changed with the next control, the mid boost selector.

MID BOOST SELECTOR

This is a five position selector that is labeled A B C D E. The far left position, "A", will be a bright mid range overtone. The overtones will become progressively darker as you move the selector to the right toward the "E" position. These are very pro-

nounced changes with the gain in the normal position, however when in the heavy overdrive mode the changes will be somewhat less noticeable.

BASS CONTROL

This is a classic shelving bass control and adjusts the overall bass response of the preamp.

PRESENCE CONTROL

You will notice this control is grouped with the output section along with the Master Volume and the Emulator level control. The reason for this is that like a classic Tweed Fender or Marshall the presence is located in the final stage of the power section and allows all the highs to pass regardless of the volume level. This means that the Presence control is most effective when the volume is low and becomes progressively less effective as the volume is increased. This control will give your rhythm tracks a really nice shimmer in the high frequency.

MASTER VOLUME

This control is needed when using the STP-G to power a speaker cabinet and your looking to get distortion at low audio output levels. I do not recommend using this control in the recording mode thru the Emulator output because it reduces the distortion from the power tube which is what makes the STP-G special and unique. In the recording position, leave the Master all the way up and reduce the output level with the Emulator output control.

EMULATOR CONTROL

This controls the output level of the Emulator and allows the Emulator to interface to any console or power amp. There are two parts to the Emulator in the STP-G. The first is mechanical and is located on top of the chassis. This first part is the device that reacts to the tube power stage just like an old Celestion speaker would. A speaker has alot to do with how a tube amp distorts. It acts much like a springboard for the output tubes. The speaker only uses a portion of the energy from the power tubes to make sound and it feedsback the balance of this energy into the power section. This feedback of energy from the speaker makes the power tube distort relative to the intensity of the feedback. In other words, the harder you "push" a speaker when playing your guitar, the harder it pushes back and the more distortion you get. That's why guitar players love the "feel" of tube guitar amps because of the way they respond to their touch. Our Emulator "reacts" like an early Celestion 12" guitar speaker, the speaker we found had the best of this interactive quality. The second part of our Speaker Emulator is a complex electronic circuit that tailors the signal for a mixing console. This allows the output level of the processed guitar signal to be raised or lowered to fit the input sensitivity of the mixer. The output level of the Speaker Emulator is a high impedance signal that varies from a low mic level to a hot line level.

REAR PANEL FEATURES

EMULATOR OUTPUT

This is the output from the emulator circuit. The signal from this output is after the preamp section, after the power section and is controlled by the Emulator level control on the front panel. This is the output designed to connect directly to a mixer for recording or to a PA for live playing. The signal is processed in such a way to sound best through a full range system like a studio monitor or stage vocal monitor.

LINE OUTPUT/LINE OUTPUT LEVEL

This is the output of just the preamp section of the STP-G and is before the power tube section. This should be used to "slave" an additional guitar amp system like a Marshall or Fender. The signal here will be to clean and sterile sounding for direct input to a mixing console. The signal from this output should be connected to an amp driving guitar speakers like Celestion or Electro Voice.

SPEAKER OUTPUT

This output will deliver 25 watts RMS into an 8 ohm guitar speaker. Do not connect to a speaker load below 4 ohms or above 16 ohms. If at all possible, try to connect it to an 8 ohms speaker for best results.

FUSE HOLDER

This is the fuse holder. Please use a 2 amp slo-blo fuse.

THE STP-G TUBE COMPLIMENT

Your STP-G is an all tube amp/preamp and is thereby completely dependent on the quality of it's tubes. We have designed and built your STP-G using the highest quality tubes available anywhere, Groove Tubes. When the time comes to change your tubes, we strongly recommend using Groove Tubes as they are the only performed tested tubes available. Although there are many other types of "Name Brand" tubes available on the market (for example Mesa Boogie tubes), these simply are not good enough and will result in lowering your preamps performance. Also, use of other tubes such as Mesa Boogie tubes will void your warranty. We are commonly asked how often you should change tubes. There is no exact answer to this question because it depends on how often and how hard you play. A Country player who plays occasionally will wear tubes out far slower than a Heavy Metal player who plays six hours a day. Some stages of the STP-G will wear out before others. The higher wear sections are V-4, V-5 & V-6. These are the tubes of the power section and do the most work in amplifying. Depending on how hard you play, the power tubes should last somewhere between six months and two years. The best indicator of worn power tubes will be mushy bass and the degrading of the signal to noise ratio. The other stages of the preamp (V-1, V-2 & V-3) should last several years before needing replacement.

THE PREAMP SECTION

V-1 (GT-7025)

This is the first preamp tube on the left as you are facing the front panel. It is also the first tube in the gain stage and so is very important to the signal quality. We recommend a GT-7025 in this position to keep the STP-G operating at top performance. It may also be substituted with a GT-12AX7 or GT-ECC83.

V-2 (GT-7025)

This is the second preamp tube from the left as you face the front panel. It is the tube that powers the overdrive gain stage and is turned on with the gain switch on the front panel. This tube is driven very hard when the gain and preamp levels are turned up high. The result is that this tube may be subject to a shorter lifespan. The STP-G comes stock with a GT-7025 in this position however some of our friends prefer a GT-ECC83 for a smoother overdrive tone. Either tube is acceptable.

V-3 (GT-ECC83)

This is the third preamp tube from the left as you face the front panel. One half of this tube is used for the line out and the other half is the Master mixer tube. We recommend a GT-ECC83 tube in this position however a GT-7025 or GT12AX7 can be used.

THE POWER SECTION

V-4 (GT-ECC83)

This is the fourth and last preamp tube from the left as you face the front panel. It is the phase splitter or also called the driver tube because it drives the power tube section. This tube should be considered a part of the power section and changed as often as the power tubes are changed. We recommend using a GT-ECC83 in this position however a GT-7025 or GT-12AX7 will work.

V-5 & V-6 (GT-6V6 Matched Duet #4-7)

These are the power tubes and they are employed in a traditional Class A/B circuit design. This is often called a push/pull circuit and its optimum performance is very dependent on properly matching the power tubes. We recommend only using Groove Tubes 6V6 matched Duets. The matched Duet that comes stock with your STP-G will have a rating number somewhere between 4 & 7 but you may replace them with any performance rating number on the Groove Tubes scale between 1 & 10 if you are careful to readjust the internal bias control located on the main circuit board.

CONTROL PANEL SETTINGS

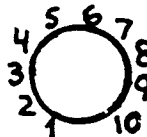
The following sample settings for the control panel will vary with the type of guitar you are using. These settings have been made with either a stock 1963 Fender Stratocaster or a 1968 Gibson Les Paul with stock Gibson Humbucking pickups. They are labeled accordingly. If you use a hotter custom pickup you may want to reduce the preamp and gain levels to get a cleaner sound, then again if you are using hot pickup...you probably like more distortion anyway so go for it!

For recording direct, using the Emulator output to control level into the mixer. Start with the preamp set for a clean rhythm setting, Emulator level up full and proceed to set the input trim of the mixer to a level that isn't clipping the front end of the mixing console. The STP-G is very capable of overloading the input stage of a mixing console and this will produce a raspy harsh distortion that sounds a little like torn speakers. You may avoid this by lowering the STP-G output level with the Emulator level control or padding down the mixer input stage. There will usually be an LED clip indicator to show when too much signal is present at the front end of the channel, you do not want to see this light at any time.

Higher levels of preamp and gain boost will drastically increase output levels as you change their level to get a overdrive distortion. This might cause an overload of signal to the mixer and may be indicated by the channel LED clip light in the mixer. Simply turn down the Emulator output level control until the light goes out. We do not recommend using the Master Volume control to lower the STP-G output level since this control lowers the signal to the power stage and reduces power amp distortion. Power amp distortion is far better sounding and more responsive than common preamp distortion and that is after all what the STP-G is all about. The Master Volume control is only there to be used when the STP-G is connected to a speaker for club playing and practicing, in other words, when using the STP-G in the straight guitar amp mode.

Our control panels are not numbered. However, here is an example of a 1 to 10 control knob to help explain the following settings.

Sample control knob:



1. Clean rhythm for Country (Strat-Neck PU):

GAIN	GAIN	PREAMP	TREBLE	MIDDLE	MID-BOOST	BASS	PRESENCE
off	off	5	4	2	off	10	1

2. Clean rhythm or lead tone for Jazz (Less Paul-neck PU):

GAIN	GAIN	PREAMP	TREBLE	MIDDLE	MID-BOOST	BASS	PRESENCE
off	off	5	4	2	off	10	6

3. Crunchy rhythm, slight distortion (Strat-Bridge PU):

GAIN	GAIN	PREAMP	TREBLE	MIDDLE	MID-BOOST	BASS	PRESENCE
off	off	6	8	8	off	4	6

Note: Raise and lower preamp level to increase distortion,

4. Smooth Blues tone with mid-boost, ala Stevie Ray Vaughn, (Strat-Neck PU):






GAIN	GAIN	PREAMP	TREBLE	MIDDLE	MID-BOOST	BASS	PRESENCE
on	1	2	6	10	on "D"	10	8

Note: Mid-boost will have brighter overtones on A and progressively lower overtones as you rotate to E. Adjust preamp level to get more or less distortion.

5. Smooth Blues tone ala B.B. King (Les Paul-Neck):






GAIN	GAIN	PREAMP	TREBLE	MIDDLE	MID-BOOST	BASS	PRESENCE
off	off	2	5	6	off	10	7

6. Bright crunchy rhythm, ala George Harrison, (Strat-Bridge PU):

GAIN	GAIN	PREAMP	TREBLE	MIDDLE	MID-BOOST	BASS	PRESENCE
							
off	off	9	9	7	off	6	7






Note: Raise or lower Treble control to taste.

7. Bright crunchy rhythm (Les Paul-Bridge PU):

GAIN	GAIN	PREAMP	TREBLE	MIDDLE	MID-BOOST	BASS	PRESENCE
							
off	off	2	7	4	off	4	6






Note: Raise or lower Treble to taste.

8. Bright funky solo tone with slight compression ala Dire Straights (Strat-out of phase Bridge/Middle PU):

GAIN	GAIN	PREAMP	TREBLE	MIDDLE	MID-BOOST	BASS	PRESENCE
							
off	off	10	5	6	off	4	6



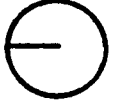


Note: Lower Preamp to reduce distortion

9. Bright crunchy solo tone ala Eric Clapton (Strat-Bridge):

GAIN	GAIN	PREAMP	TREBLE	MIDDLE	MID-BOOST	BASS	PRESENCE
							
off	off	10	6	6	off	4	6









Note: Lower Preamp to reduce distortion

10. Bright solo tone with slight compression ala Chuck Berry (Les Paul-Bridge PU)

GAIN	GAIN	PREAMP	TREBLE	MIDDLE	MID-BOOST	BASS	PRESENCE
							
off	off	6	8	3	off	3	8









Note: Raise Preamp level to get more distortion.

11. Smoother overdrive solo tone with more compression ala Jeff Beck (Strat-Bridge PU)

GAIN	GAIN	PREAMP	TREBLE	MIDDLE	MID-BOOST	BASS	PRESENCE
							
on	2	6	6	10	on "A"	3	7


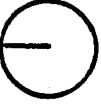






Note: Mid-Boost will have brightest overtones on "A" and progressively darker toward "D".

12. Smoother overdrive solo tone with compression ala Jimmy Page (Les Paul-Bridge PU):

GAIN	GAIN	PREAMP	TREBLE	MIDDLE	MID-BOOST	BASS	PRESENCE
							
off	off	10	9	6	on "D"	4	9






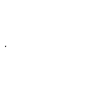


Note: Mid-boost selector will alter the overtones on this setting from bright (A) to dark(D).

13. Heavy Rock solo tone ala Edward Van Halen, Jake E. Lee and Steve Vai (Les Paul-Bridge PU).

GAIN	GAIN	PREAMP	TREBLE	MIDDLE	MID-BOOST	BASS	PRESENCE
							
on	3	3	10	1	on "C"	1	10

Note: Change Mid-Boost selection to taste or turn off for more edge.

14. Heavy Metal power chords ala Billy Gibbons (Les Paul-Bridge):

GAIN	GAIN	PREAMP	TREBLE	MIDDLE	MID-BOOST	BASS	PRESENCE
							
on	6	6	8	6	off	1	10

Note: Lower Gain and Preamp levels to reduce distortion and improve definition.