Texas Tone® Ranger Owner's Manual

Congratulations!

You are now the proud owner of the Texas Tone® Ranger tube guitar amplifier. This amp packs a dynamic vintage tube sound with two switchable channels into a compact head cabinet – giving you an amp that's easy to operate, easy to transport, and produces those sweet tube amp sounds that we all crave! The voicing of the Texas Tone® Ranger makes it ideal for today's guitarists using humbucker pickups.

Like all Texas Tone Amps products, your Texas Tone Ranger amplifier is designed by musicians and built using the finest components available. Extensive testing confirms that this amplifier is the absolutely best it can be. In order to get the most out of your new amplifier, we strongly urge you to read the information contained in this manual before you begin playing.

Thank you for choosing Texas Tone!

READ, FOLLOW, HEED, AND KEEP ALL INSTRUCTIONS AND WARNINGS.

CAUTION: RISK OF ELECTRIC SHOCK, DO NOT OPEN OR REMOVE CHASSIS!

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT REMOVE REAR COVER. NO USER-SERVICEABLE PARTS INSIDE.

- **WARNING**: THIS UNIT REQUIRES A SAFETY GROUNDED 120VAC 60Hz. ONLY CONNECT POWER CORD TO A POLARIZED, SAFETY GROUNDED OUTLET WIRED TO CURRENT ELECTRICAL CODES AND COMPATIBLE WITH VOLTAGE, POWER, AND FREQUENCY REQUIREMENTS STATED ON THE REAR PANEL OF THE AMPLIFIER.
- **WARNING**: THIS AMPLIFIER PRODUCES HIGH DC VOLTAGE (~400+ VDC). DO NOT REMOVE THE CHASSIS OR OPERATE WITH THE CHASSIS REMOVED.
- SERVICE TO BE PERFORMED BY QUALIFED PERSONNEL ONLY.
- DO NOT OPERATE NEAR ANY HEAT SOURCE AND DO NOT BLOCK ANY VENTILATION OPENINGS ON THIS AMPLIFIER. FOR PROPER OPERATION, THIS UNIT REQUIRES 3" (75mm) OF WELL-VENTILATED SPACE AROUND HEATSINKS AND OTHER AIR FLOW PROVISIONS IN THE CABINET.
- **WARNING**: TO REDUCE THE RISK OF ELECTRIC SHOCK OR FIRE, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE. DO NOT USE THIS AMPLIFIER NEAR SPLASHING, FALLING, SPRAYING, OR STANDING LIQUIDS.
- CLEAN ONLY WITH LINT-FREE DAMP CLOTH AND DO NOT USE CLEANING AGENTS.
- PROTECT THE POWER CORD FROM DAMAGE DUE TO BEING WALKED ON, PINCHED, OR STRAINED.
- UNPLUG THE AMPLIFIER DURING LIGHTNING STORMS OR WHEN UNUSED FOR LONG PERIODS OF TIME.
- ONLY USE ATTACHMENTS, ACCESSORIES, STANDS, OR BRACKETS SPECIFIED BY THE MANUFACTURER FOR SAFE OPERATION AND TO AVOID INJURY.
- OUR AMPLIFIERS ARE CAPABLE OF PRODUCING HIGH SOUND PRESSURE LEVELS. CONTINUED EXPOSURE TO HIGH SPL CAN CAUSE PERMANENT HEARING DAMAGE. USER CAUTION IS ADVISED, AND EAR PROTECTION IS RECOMMENDED IF UNIT IS OPERATED AT HIGH VOLUME.

Contents

The Texas Tone Ranger

While the Texas Tone Ranger is inspired by the dynamic performance of the Marshall 18 Watt, the Ranger has actually very little in common with that great amp besides the chassis and cabinet. We have added some unique touches and modern safety and construction methods.

Vintage tube guitar amplifiers suffer from outdated electrical grounding methods. Texas Tone® guitar amps feature modern grounding techniques and three-prong electrical plugs for safe, low-noise operation. Many amps from the 1950s also have very little clean headroom. Special features allow the Texas Tone Ranger extra headroom when needed, or total tube amp distortion. This allows the guitarist to get that highly sought-after tube distortion, or to tame those vintage sounds, depending upon the control panel settings.

The Texas Tone Ranger features two independent channels and controls. Both channels are augmented by shielded inputs and a shock-mounted first-stage preamp tube. The left-side low-gain vintage channel features the unique Texas Tone® Hi-pass/Low-pass Tone control that provides tone enhancements without affecting the volume control. This channel provides a single gain stage with a traditional mid 1960's tube amp "clean" sound that can be cranked for tube amp crunch without being too loud for smaller venues, studio use, or practicing at home, and is very pedal friendly.

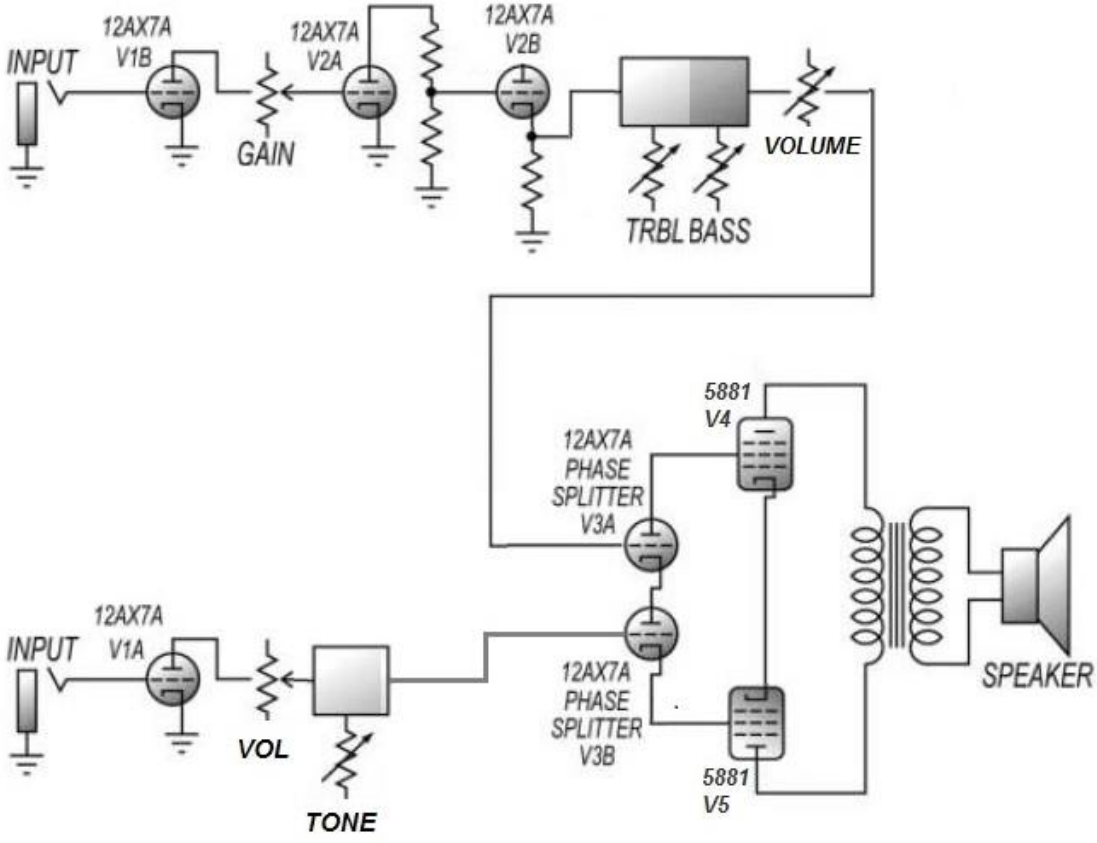
This right-side high-gain channel's gain stage is controlled by a Gain control driving the unique tone stack that is responsive and low loss, with Treble and Bass controls, followed by a Volume control before the phase splitter. By adjusting the Gain and Volume controls, the guitarist can get anything from clean at to distortion, from minimal to maximum volume.

From clean to dirty, this amp allows you to remain in control of your sound; you will be surprised at the variety of tones you can achieve with this amp!

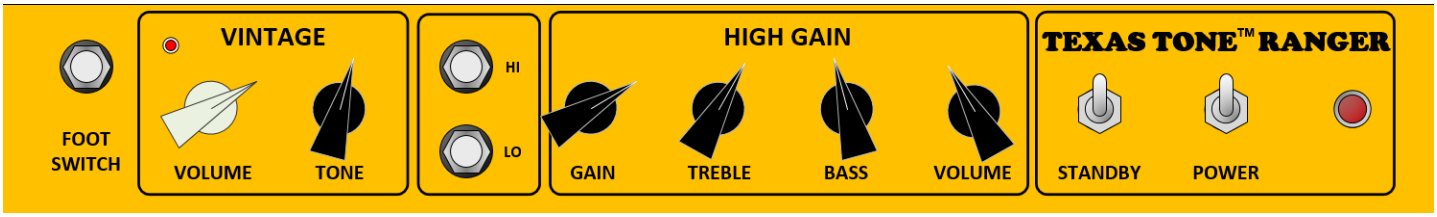
Specific Features of the Texas Tone Ranger:

- Shock-mounted first stage preamp tube.
- North American made transformers.
- MIL-Spec wire
- Low-noise resistors
- Shielded signal cables.
- High quality F&T, JJ, SoZo, and Sprague Capacitors
- Hand-wired turret board
- Rugged aluminum chassis.
- Two independent, differently voiced channels
- Texas Tone® unique Tone control and Tone Stack

Block Diagram



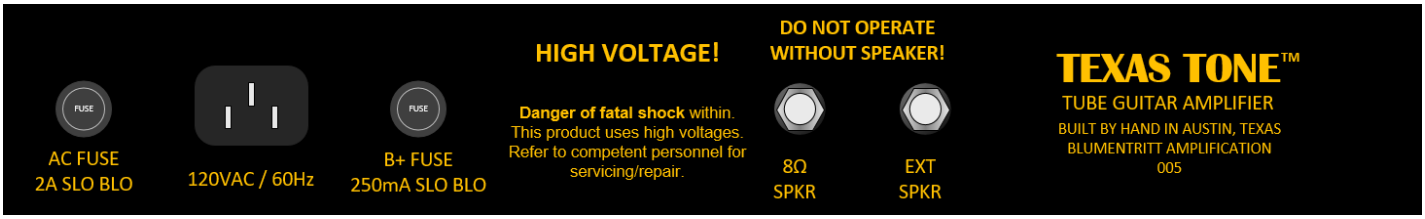
The Front Panel:



1. **FOOT SWITCH:** Plug an external SPST foot switch (included) into the ¼" phone jack. This allows instant channel change between the Vintage and High Gain channels with the press of a button.
2. **"VINTAGE" CHANNEL (with LED).** The LED is lit whenever the Vintage channel is active.
    a. **VOLUME w/Push-Pull switch):** Use this control to adjust the input gain and overall volume level. With the control towards the counterclockwise position, the gain is low, and very little distortion is produced. As you rotate the control clockwise the gain increases, producing more overdrive distortion and a higher volume level output. *I like to run it wide open*!
        i. The push-pull switch can also be used for channel switching, in lieu of a footswitch.
        ii. The Vintage channel is the default active channel at amplifier power on.
    b. **TONE:** The unique Tone control on the Texas Tone Ranger offers less interaction with the volume control than a typical vintage amplifier tone control circuit. It's subtle and yet offers a wide range of tone control. If you're used to vintage-type tone control circuits that interact with the volume control, you may be surprised and pleased that this tone control circuit doesn't raise or lower the volume as you rotate the tone control. As the control knob is rotated clockwise, more treble frequencies are emphasized.
3. **INPUTS**: Texas Tone Ranger has two independent channels, foot-switchable, with common High and Low input jacks.
    a. **HIGH Input**: This is the normal, high gain, high impedance (1MegΩ) input. Connect your guitar here by means of a shielded signal cable.
    b. **LOW Input**: The "Low" input features a -6dB attenuation compared to the "High" Input. Use the low input for lower gain and quieter performance, or when using very high-gain pickups to gain more headroom before the onset of distortion. When both inputs are used at the same time, they offer the same gain characteristics.
4. **"HIGH GAIN" CHANNEL**
    a. **GAIN:** Use this control to adjust the input gain driving the tone stack. The Gain knob controls the amount of preamp distortion. For the cleanest tone, set the Volume on maximum and run the Gain control at a lower setting.
    NOTE: Due to the high gain/low loss structure of the Texas Tone Ranger, we do not recommend running the gain at the maximum setting, above the 3 O'clock position. Set at your own discretion.
    b. **TREBLE**: Turning the Treble control clockwise from the mid-point (straight up) produces a brighter tone. Counter-clockwise reduces the high frequency response.
    c. **BASS**: The Bass knob controls the response of the lower frequencies. Clockwise for more bass, counterclockwise for less.
    d. **VOLUME**: Use this control to set the overall volume driving the output section of the Texas Tone Ranger. The Volume knob controls the loudness of the High Gain channel. For the cleanest tone, run this control at maximum. Most guitarists seem to like a mix of Gain and Volume to get a pleasant tube breakup.
5. **Standby switch**: The isolated Standby switch controls the high voltage to the tubes of the Texas Tone Ranger. The Standby switch may also be used to quiet the amplifier for short periods.

6. **Power switch**: To turn on the amplifier, make sure that the Standby switch is in the "STANDBY" position, and then turn on the power switch. After sufficient time for the tubes to warm up, for about 15 seconds, turn on the Standby switch. To turn off the amplifier, place the Standby switch back to the STANDBY position to allow the high voltage to dissipate, and switch off the Power switch.
7. **Indicator lamp**: The lamp will illuminate whenever the amplifier is plugged in to a 120VAC/60Hz power source and the Power switch is turned on.

The Rear Panel:



1. **120 VAC Fuse Holder**: Use only a **3AG type Slow Blow 2 Amp** rated fuse. If the fuse blows, or the amplifier will not power on, consult a qualified tube amp technician.
2. **Line Cord**: The grounded power cord should only be plugged into a grounded power outlet that meets all applicable electrical codes and is compatible with 120 Volts AC, 60 Hz power. Do not attempt to defeat the safety ground connection.
3. **High Voltage Fuse Holder:** Use only a **3AG type Slow Blow 250mA** (1/4 Amp) rated fuse for the high voltage (~400V DC). If the fuse blows, or the amplifier will not power on, consult a qualified tube amp technician.
4. **Speaker connector**: The Texas Tone Ranger speaker out connects to a 1/4" 8Ω speaker output jack. There is an additional speaker output jack for a 2nd external speaker – the total impedance should be 8Ω!. Connect an 8Ω speaker cabinet with a high-quality speaker cable; do not use a guitar cable!

NOTE: Do not power on or operate the amplifier without a speaker plugged in! Damage will result.

5. **Tube sockets** (from left to right – not shown):
    a. **V4 & V5**: Power output tubes. Use only a matched pair of high-quality 5881 tubes. A Premium Matched pair of JJ Electronic 5881 tubes is standard due to their ability to handle higher voltages. The power tubes use a cathode bias (self-bias). To maintain performance, any replacement tubes should be similar to 5881 styles.
    b. **V3**: Phase splitter. The phase splitter circuit in the Texas Tone Ranger is specially designed to use a 12AX7 type tube for maximum bandwidth and drive. Use a high quality 12AX7/ECC83/7025 type vacuum tube. A JJ Electronic ECC83S (12AX7) tube is standard. A 12AY7 tube may be used, resulting in less drive to the power tubes.
    c. **V2**: Tone stack driver. Use only a high quality 12AX7/ECC83/7025 type vacuum tube. JJ Electronic ECC83S (12AX7) is standard for its outstanding low noise characteristics.
    d. **V1**: First stage preamplifier tube. Use only a high quality 12AX7/ECC83/7025 or E83CC type vacuum tube. A JJ Electronic ECC83S (12AX7) is standard. The V1 tube socket is shock-mounted to aid in reducing noise.

Important Information about Guitar Amp Vacuum Tubes (Valves):

The sound produced by a tube-powered amplifier is significantly different from that produced by a solid-state amplifier with similar design specifications. When pushed past their limits, solid-state devices tend to go immediately into distortion.

Tubes, on the other hand, are non-linear devices that transition more smoothly into distortion, and produce a more musical set of harmonics, the intensity of which can be controlled by the player. This characteristic adds warmth and definition to the sound, which has become the hallmark of tube amplifiers. When tubes are driven into clipping, the harmonic overtones can be both sweet and pleasing, or intense and penetrating, depending on the musician's musical taste and playing technique.

Modern application engineers have designed several outstanding solid-state amplifiers that sound quite good. Some use modeling circuitry that enables them to simulate the distortion characteristics of a tube amplifier. Since the response of tubes is both dynamic and non-linear, the true range of characteristics of tube amplifiers can only be approximated. Modern tube amplifiers such as Texas Tone amps, offer that classic, dynamic vintage sound in today's contemporary market.

Tube Types and Usage:

Preamp tube circuits amplify the signal from your instrument and shape the sound, and they can sometimes become microphonic (mechanically pick up and transmit external noises). Since these tubes are used in the critical first stages of a tube amplifier's circuitry, it is very important to use high quality, low noise/low microphonic tubes for this application. Although tubes of this quality may typically cost more than standard tubes, the improvement in performance is worth the investment, and in some cases, critical. Texas Tone Amps performs extensive testing and works with tube suppliers to determine the best tube for each position in the amplifier.

Preamplifier tubes are also used to drive the power tubes. The power tubes convert the low-level, conditioned signal from the preamplifier into a level that is sufficient to drive the speakers. There are several types of power tubes available, each of which offers a different performance/sound characteristic. The JJ Electronic 5881 tubes used in the Texas Tone Ranger produce a full range, rich and creamy sound with nice distortion. Some tubes are available in matched sets. These tubes are extensively tested for optimum performance and longevity. Matched sets of power tubes are highly recommended. A Premium Matched pair of performance tested JJ Electronic 5881 tubes is standard on the Texas Tone Ranger.

Tubes: Why (And When) To Replace Them:

Tubes are made of several fragile mechanical components that are vacuum sealed in a glass envelope. The longevity of a tube depends upon several factors, including how hard and often the amplifier is played, vibration from the speakers, road travel, repeated set up and tear down, etc. Any time you notice a change in your amplifier's performance, check the tubes first.

If it has been a while since the tubes were replaced and the sound from your amplifier lacks punch, fades in and out, loses highs or lows or produces unusual sounds, the power tubes may need replacing. If your amplifier squeals, makes noise, loses gain, starts to hum, lacks dynamic sensitivity, or feels as if it is working against you, the preamplifier tubes may need replacement.

The power tubes are subjected to considerably more stress than the preamplifier tubes. Consequently, they usually fail/degrade first. If deteriorating power tubes are not replaced, they will ultimately fail. Depending on the failure mode, they may even cause severe damage to the audio output transformer and/or other components in the amplifier. Replacing the tubes before they fail completely has the potential to save you time, money and unwanted trouble. Since power tubes work together in an amplifier, it is crucial that they are replaced by a matched set. If you are on the road a lot, we recommend that you carry a spare matched set of replacement power tubes and their associated driver tubes.

After turning off the power and disconnecting the amplifier from the power source, carefully check the tubes (in bright light) for cracks or white spots inside the glass or any other apparent damage. Then, with the power on, view the tubes in a dark room. Look for preamplifier tubes that do not glow at all or power tubes that glow excessively red.

Whenever you replace the power tubes:

The output tubes of the Texas Tone Ranger are self-biased. When changing the output tubes, it is important to use a matched pair of high-quality, 5881 tubes. The new JJ Electronic 5881 “23” is the recommended power tube. It is not necessary to adjust the bias if the recommended tube is used. The output section of the Texas Tone Ranger is designed for long tube life. When the output tubes are replaced, we recommend that you replace the phase inverter tube as well. The phase inverter tube determines the shape and amplitude of the signal applied to the power tubes and must work almost as hard as the power tubes. The phase inverter on the Texas Tone Ranger is a special design that yields wide bandwidth and gain characteristics when used with a 12AX7 tube.

You can check your preamplifier tubes for microphonics by turning the amplifier on, turning up the gain and tapping lightly on each tube with a chopstick or other light wooden dowel. You will be able to hear the tapping through your speakers, which is normal. It is not normal for a tube to ring like a bell after it is tapped. If it does ring, then it is microphonic and should be replaced. The first stage preamp tube in shock-mounted to reduce noise and microphonics. Remember to use only high quality, low microphonic tubes in the preamplifier section. Even though power tubes are rarely microphonic, you should check them anyway. The power tubes can be checked for microphonics just like pre-amp tubes.

Changing Tubes – Qualified Personnel Only!

NOTE: Do not touch any internal components of the amplifier. Tube amplifiers contain lethal voltages, *even when powered off and unplugged*. **YOU COULD BE KILLED!**

CAUTION: Tube replacement should be performed only by qualified service personnel who are familiar with the dangers of hazardous voltages that are typically present in tube circuitry.

To change tubes:

1. Ensure that the amp is at room temperature and unplugged. Do not attempt to handle warm tubes!
2. On a padded surface, carefully lay the amp face down.
3. Carefully unplug the power cord from the power cord receptacle, and the speaker cable plug from the chassis rear panel. Lay those aside, away from the chassis.
4. Unscrew the Phillips head screws holding the rear panel to the cabinet.
5. Keeping one hand on the chassis, carefully unscrew the four large ¼" screws on the bottom of the amp chassis, starting with the two closest to the front panel. Do not hold the tubes or allow the chassis to fall.
6. Carefully pull the chassis out of the cabinet, and set it, tubes up, on a padded surface.
7. The power tubes are secured with spring retainers, with a silicone ring between the top of the tube and the retainer.
8. The preamp tubes are secured with spring-loaded shields. Carefully push down the shield along its axis and turn slightly counterclockwise. Then lift the shield from off the tube.
9. Do not attempt to turn or rotate the tubes!
10. The tubes are keyed to only fit one way into the sockets. Using a silicone jar lid grabber, carefully pull the tube straight out. Avoid rocking the tube and getting fingerprints on the glass envelope.
11. Only replace tubes with approved types. (See the section titled "Whenever you replace the power tubes" above).
12. Pay careful attention to the orientation of the tubes. The preamp tubes are 9-pin and only fit one way. The power and rectifier tubes are 8-pin and are keyed to only fit one way. The power tubes are keyed 180 degrees apart.
13. Only replace preamp tubes with approved 12AX7/ECC83 types. (See the section titled "Whenever you replace the power tubes" above).
14. Only use premium 5881 power tubes, as the amp is designed to self-bias.
15. Using a soft cloth or other carrier, carefully insert the proper tube into the correct socket, pushing firmly and straight until the tube is fully seated. Avoid rocking the tube and getting fingerprints on the glass envelope.
16. Carefully replace the retainers and shields, ensuring that the silicone rings are properly seated on the rectifier and output tubes.
17. Carefully place the chassis/panel assembly back onto the chassis and secure with the four top of amp M6 Phillips-head screws. So not use a power screwdriver to start the screws! Use hand driven screwdriver only.
18. Re-install the rear panel .

Survival Tips for Tube Amplifiers:

To prolong the tube life, observe these tips and recommendations:

- Make sure the speaker(s) are properly connected prior to turning on the amplifier. DO NOT OPERATE THE AMPLIFIER WITHOUT A SPEAKER OR PROPER DUMMY LOAD ATTACHED. TO DO SO WILL DAMAGE THE AMPLIFIER.
- Allow the amplifier to warm up to room temperature before turning it on. The heat generated by the tube elements can crack the cold glass housing.
- After playing the amplifier, allow sufficient time for it to properly cool down prior to moving it. A properly cooled amplifier prolongs tube life due to the internal components being less susceptible to the damage caused by vibration.
- Match the impedance of your speaker cabinet(s) to your amplifier. Improper impedance matching will contribute to early tube degradation and may cause premature tube failure.
- Replace the output tube(s) before the performance degrades or the tubes fail completely. Check the tube(s) when you notice degraded performance.
- If the locating notch on the base of a power tube breaks off, replace the tube. This significantly reduces the risk of damaging your amplifier by incorrectly inserting the tube.
- Protect the amplifier from dust and moisture. If liquid gets into the amplifier proper, or if the amplifier is dropped or otherwise mechanically abused, have it checked out at an authorized service technician before using it.
- Proper maintenance and cleaning in combination with routine checkups by an authorized technician will insure the best performance and longest life from your amplifier.

CAUTION: Tube replacement should be performed only by qualified service personnel who are familiar with the dangers of hazardous voltages that are typically present in tube circuitry.

Texas Tone Ranger TECHNICAL SPECIFICATIONS:

Output Power Rating	25W RMS into an 8Ω load
Gain:	65Db Typical
Tone Controls	Treble ± 18 dB @ 1.2 kHz Bass ± 17 dB @ 100 Hz
Internal Speaker	N/A
Speaker jacks	2 x 8 Ohm external speaker jack
Preamp Tubes	3 x ECC83s JJ (12AX7)
Power Tubes	2 x 5881 “23” JJ Electronic Matched Pair
Rectifier Tube	N/A
Power Requirements	120VAC, 60Hz
Size and Weight	(H) 8" x (W) 20" x (D) 8.5", 16 lbs.

The Texas Tone Ranger is covered with a durable Tolex material: wipe it clean with a lint-free cloth. Never spray cleaning agents onto the cabinet. Avoid abrasive cleansers, which would damage the finish.

Specifications and information in this manual are subject to change without notice.

Texas Tone® is a registered trademark of Texas Tone Amps for tube guitar amplifiers.