Texas Tone XTM45 Owner's Manual

Congratulations!

You are now the proud owner of the Texas Tone® XTM45 tube guitar amplifier - an extreme performance single-channel amplifier with the heart and soul of a Fender® Super Reverb with the power and drive of a classic Marshall® Lead. At mid-volume levels it's a genuinely nice clean blues amp - but crank up the volume or dial in some Mid Boost and you're instantly in tweed and then Marshall territory, with a combination of tone and dynamics that will rival any classic amps. The result is a dynamic vintage tube sound with enhanced reverb and tremolo – giving you an amp that's easy to operate, easy to transport, and produces those sweet tube amp sounds that we all crave! This circuit easily drive the speak cab of your choice.

Like all Texas Tone Amp products, your Texas Tone XTM45 amplifier is designed by musicians and built using the finest components available. Extensive testing confirms that this amplifier is the absolute best it can be. 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®!



The Heart and Soul of a Fender with the power and drive of a Marshall Lead.

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

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

WARNING: NO USER-SERVICEABLE PARTS INSIDE.

- **WARNING**: THIS UNIT REQUIRES A SAFETY GROUNDED 120VAC 60Hz OUTLET WIRED TO CURRENT ELECTRIC CODES. ONLY CONNECT THE POWER CORD TO A POLARIZED, SAFETY GROUNDED OUTLET WIRED TO CURRENT ELECTRICAL CODES AND COMPATIBLE WITH 120 VOLT 60Hz POWER.
- **WARNING**: THIS AMPLIFIER PRODUCES HIGH DC VOLTAGE (450+ VDC). DO NOT REMOVE THE REAR PANEL OR OPERATE WITH THE REAR PANEL 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 SOUND PRESSURE LEVELS CAN CAUSE PERMANENT HEARING IMPAIRMENT OR LOSS. USER CAUTION IS ADVISED AND EAR PROTECTION IS RECOMMENDED IF THE UNIT IS OPERATED AT HIGH VOLUME.

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The Texas Tone XTM 45

The Texas Tone XTM45 is inspired by the dynamic performance of two famous vintage amps of the 60s - the famous Fender Super Reverb and the Marshall 50W Lead, while adding some unique touches and modern safety and construction methods. The XTM45 rebalances Fender Super Reverb clean sounds with Marshall drive and power, along with re-voiced reverb and tremolo. A Fender reverb amp with Marshall power, and extra drive - the best of both worlds!

Vintage tube guitar amplifiers suffer from outdated electrical grounding methods. Texas Tone® guitar amplifiers feature modern grounding techniques and three-prong electrical plugs for safe, low-noise operation. Shielded internal cables also help to reduce spurious noise. Special features allow the Texas Tone XTM45 a clean Fender-voice preamp section with a Marshall-voice output. This allows the guitarist to get that sweet and creamy tube crunch, or to tame those vintage sounds, depending upon the control panel settings.

The Texas Tone XTM45 dispenses with the traditional Normal channel and re-voices the “Vibrato” channel reverb for less harshness and more control. By disabling the normal channel, we avoid circuit instabilities that arise from power supply feedthrough to parallel channels. This extra reduction in preamp signal loading makes the overall amp levels comparable to a classic Marshall. We also scrap the photo-voltaic tremolo in favor of Texas Tone® output bias modulation tremolo for that vintage Hypnotic Slam Effect™.

This re-voicing opens the overdrive tone and the bottom end and makes the Texas Tone XTM45 very pedal friendly. Prepare to be blown away, especially when using a boost pedal to increase the gain and distortion! From clean to dirty, this amp allows you to remain in control of your sound; you’ll be surprised at the variety of tones you can achieve with this amp.

Specific Features of the Texas Tone XTM 45:

- 16 Gauge (0.064) Galvanneal Steel chassis
- Stainless steel fasteners
- Select tubes, tested and graded.
- Isolated Standby switch.
- MIL-Spec wire
- Low-noise resistors
- Shielded input signal cables.
- High-quality F&T, Sprague, SoZo, Vishay and Mallory Capacitors.
- Hand-wired turret board.
- A “Magic Midrange” control to take you from scooped mids to raw mid overdrive.
- Adjustable fixed bias
- 55 Watts clean output power
- Reverb and Hypnotic Slam Effect Tremolo

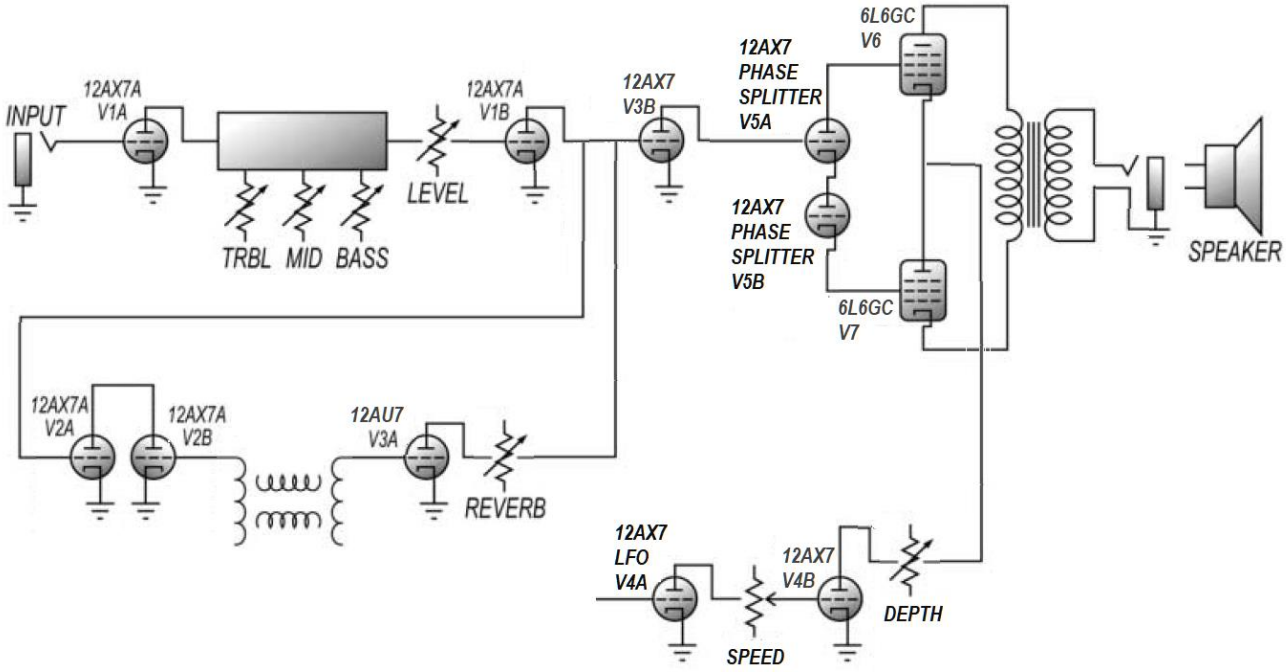


Figure 1: Block Diagram

The Front Panel:



1. **INPUTS**: Texas Tone XTM 45 has two guitar inputs, "HIGH" and "LOW."
    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.
2. **VOLUME:** Use the volume control to vary the amplifier sensitivity and overall volume level.
   Note: A good practice is to set the Volume control around "6" and then use the guitar volume control to clean up or overdrive the signal. If you always run the guitar volume control wide open, then a lower amp Volume setting may work better. Electric guitar pickup output levels vary widely.
3. **Tone Controls –** Treble, Mid/Boost, Bass.
   NOTE: The tone controls are *interactive* by design. The "Magic Mid" control is also a Boost control.
    a. A "flat" frequency response curve would have the Treble on "3", the Mid/Boost at "2", and the Bass at "1", and a -12dB overall signal loss.
    b. Having all controls at "5" would still be flat, with a slight dip at 500-1000 Hz, and only a -7dB signal drop, *significantly louder* than the example in 3.a. above.
    c. For traditional Fender black panel amp scooped mid tones, run the Treble at "7", the Mid/Boost at "0" or "1", and the Bass at "4" or less.
    d. For a raw overdrive sound, run the Treble at "10", the Mid/Boost at "10", and the Bass at "2", resulting in a Treble peaking flat sound with only a -5dB signal loss.
4. **TREBLE**: Turning the Treble control clockwise from "1" produces a brighter tone. Counter-clockwise reduces the high frequency response. Frequencies from 1kHz to 10kHz and above ±20dB with the Mid/Boost at "1".
5. **MID/BOOST**: Mid/Boost control affects frequencies from 200Hz to 1kHz (±18dB). Setting the Mid/Boost from "1" to "2" allows a more 'blackface' scooped mid tone, especially with the Treble and Bass turned up. Cranking up the Mid/Boost control provides 12dB of boost for a significantly thicker, louder, and more distorted tone. Dial up the amount of drive and distortion desired.
6. **BASS**: The Bass knob controls the response of the lower frequencies, allowing ±20dB range with the Mid/Boost at "1". Clockwise for more bass, counterclockwise for less.
7. **REVERB**: Controls the amount of reverb signal blended in with the original signal. Slightly tamed from the usual Fender-type reverb.
8. **SPEED**: Controls the speed of the Low Frequency Oscillator (LFO). With the tremolo "on", the red LED will flash in sync with tremolo speed, ~2.4cps to ~7cps.

9. **DEPTH**: Controls the strength of the tremolo signal. The tremolo signal may be turned off with the included footswitch (Red LED steady on), or by turning the Depth control to “0” (Red LED still flashes in sync with the LFO).
10. **Indicator lamp**: The lamp will illuminate whenever the amplifier is plugged in to a 120V 60 Hz power source, and the Power switch is turned on.

The Rear Panel:



1. **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.
2. **120 VAC Fuse Holder**: Use only a **3AG Slow Blow 3 Amp** rated fuse. If the fuse blows, or the amplifier will not power on, consult a qualified tube amp technician.
3. **High Voltage Fuse Holder:** Use only a **3AG 500mA** rated fuse for the high voltage. If the fuse blows, or the amplifier will not power on, consult a qualified tube amp technician.
4. **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, and switch off the Power switch.
5. **Standby switch**: The isolated Standby switch controls the high voltage to the tubes of the Texas Tone XTM 45. The Standby switch may also be used to quiet the amplifier for short periods.
6. **Speaker connector**: The Texas Tone XTM45 provides two 1/4" speaker output jacks, one 8Ω and one 4Ω. *Do not use both at the same time*!
   NOTE: Do not power on or operate the amplifier without a speaker plugged in! Damage will result and void the warranty.
7. **Tremolo and Reverb Jacks.** Plug the included footswitch jacks into these jacks – **Red** for **R**everb.
8. **Reverb Return and Send jacks.** These are connected to the internal reverb tank. **Red** for **R**eturn.
   NOTE: Texas Tone Amplifiers does not support running the XTM45 without the reverb tank or footswitch connected, as damage may occur.
9. **Tube sockets** (from left to right – not shown):
   a. **V6 & V7**: JJ Electronic 6L6GC Power output tubes. Use only a matched pair of high-quality 6L6GC tubes. A The power tubes use fixed bias (adjustable). Always check the bias adjustment when changing power tubes for long tube life and great tone.
   b. V5: Phase splitter. The phase splitter circuit in the Texas Tone XTM45 is specially designed to use a high-quality ECC83 S /12AX7 type tube for maximum bandwidth and drive. If a 12AT7 tube is used, there will be less bandwidth to the power tubes as a result.
   c. **V4**: Tremolo low frequency oscillator/driver. JJ Electronic ECC83 S (12AX7).
   d. **V3**: Reverb recovery / output driver. A JJ Electronic Gold Pin 12AY7 is specified for the reverb recovery and output driver tube.
   e. **V2**. Reverb driver. A ECC82 (12AU7) is specified as a reverb driver.
   f. **V1**: First stage preamplifier tube. A JJ Electronic frame grid E83CC (12AX7) is standard for its outstanding low noise and gain characteristics.

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 especially 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 Amplifiers 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 6L6GC tubes used in the Texas Tone XTM45 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 6L6GC tubes is standard on the Texas Tone XTM45.

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 many 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 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 XTM45 are biased with an adjustable fixed bias. When changing the output tubes, it is important to validate and adjust the negative bias voltage. The output section of the Texas Tone XTM45 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 XTM45 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. 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.

Survival Tips for Tube Amplifiers:

To prolong 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, 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 ensure the best performance and longest life from your amplifier.
- The XTM45 comes standard with a Custom Amp Covers amplifier cover.

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 XTM45 TECHNICAL SPECIFICATIONS:

Output Power Rating	55W RMS (Push-Pull Class AB) into an 8Ω load
Gain:	65Db Typical
Tone Controls	Treble +/- 20 dB @ 10k Hz Middle +/- 24 dB @ 500 Hz Bass +/- 12 dB @ 100 Hz
Speaker Outputs	2 x ¼" phone jack, 1 x 8Ω, and 1 x 4Ω
Preamp Tubes	1 x E83CC JJ Electronic by Eurotubes 1 x ECC82 tested Electro-Harmonix 1 x 12AY7 Gold Pin JJ Electronic by Eurotubes 2 x ECC83s JJ Electronic by Eurotubes
Power Tubes	6L6GC Matched Pair JJ Electronic by Eurotubes
Rectifier	4 x 1N5408 solid state diodes.
Power Requirements	120VAC, 60Hz
Size and Weight (Head)	(H) 9-1/2" x (W) 25-1/8" x (D) 9-1/2", 26 lbs.

The Texas Tone XTM45 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.