

POWER REQUIREMENTS

*Utilizes standard 9V alkaline battery (not included). NOTE: *Input* jack activates battery. To conserve energy, unplug when not in use. Power Consumption: approx. 50mA, for battery life of approximately 10 hours.

*USE **DC POWER SUPPLY ONLY!** Failure to do so may damage the unit and void warranty. DC Power Supply Specifications:
-9V DC regulated or unregulated, 100mA minimum;
-2.1mm female plug, center negative (-).

Optional factory power supply is available: Tech 21 Model #DC2.

WARNINGS:

* Attempting to repair unit is not recommended and may void warranty.
* Missing or altered serial numbers automatically void warranty. For your own protection: be sure serial number labels on the unit's back plate and exterior box are intact, and return your warranty registration card.

ONE YEAR LIMITED WARRANTY. PROOF OF PURCHASE REQUIRED. Manufacturer warrants unit to be free from defects in materials and workmanship for one (1) year from date of purchase to the original purchaser and is not transferable. This warranty does not include damage resulting from accident, misuse, abuse, alteration, or incorrect current or voltage. If unit becomes defective within warranty period, Tech 21 will repair or replace it free of charge. After expiration, Tech 21 will repair defective unit for a fee.

ALL REPAIRS for residents of U.S. and Canada: Call Tech 21 for **Return Authorization Number**. Manufacturer will **not** accept packages without prior authorization, pre-paid freight (UPS preferred) and proper insurance.

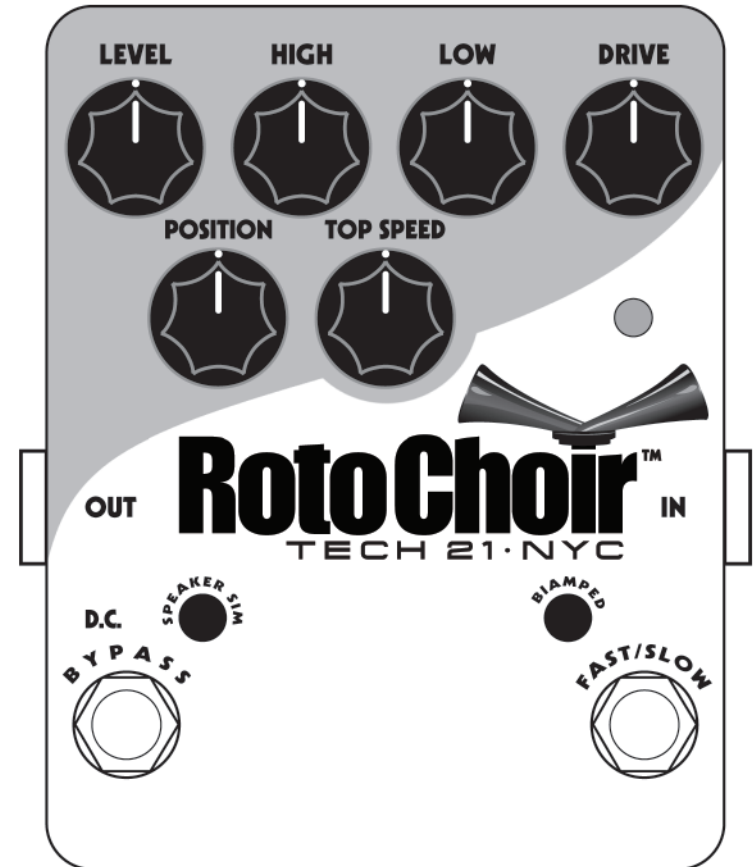
FOR PERSONAL ASSISTANCE & SERVICE:

Contact Tech 21 weekdays from 10:00 AM to 5:00 PM, EST.

MADE IN THE U.S.A.



Tel: 973-777-6996 / Fax: 973-777-9899
www.tech21nyc.com / info@tech21nyc.com
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OWNER'S MANUAL

TECH 21, THE COMPANY

Tech 21 was formed by a guitarist possessing the unusual combination of a trained ear and electronics expertise. In 1989, B. Andrew Barta made his invention commercially available to players and studios around the world. His highly-acclaimed **SansAmp™** pioneered Tube Amplifier Emulation in professional applications for recording direct and performing live, and created an entirely new category of signal processing. There have since been many entries into this niche, yet SansAmp continues to maintain its reputation as the industry standard.

With a full line of SansAmp models, Tech 21 also offers effect pedals and MIDI products, as well as “traditional” style amplifiers for guitar and bass. Each product is thoughtfully and respectfully designed by B. Andrew Barta himself with the player in mind. Our goal is to provide you with flexible, versatile tools to cultivate, control, refine and redefine your own individual sound. Tech 21 takes great pride in delivering consistent quality sound, studio to studio, club to club, arena to arena.

PRODUCT OVERVIEW

The Roto Choir celebrates the swirling glory of a vintage rotating speaker cabinet. With its specifically formulated SansAmp™ technology, the Roto Choir takes this concept to the next level. It delivers *the entire signal chain*--from the original tube power amp to the low-frequency speaker and high-frequency horn to the microphone used to capture it. This studio-quiet, road-worthy pedal can be used with guitar as well as keyboards, synths and vocals --and to record direct.

The Roto Choir offers an abundance of easy-to-use, intuitive controls in an incredibly compact, battery operable pedal. It features a Fast/Slow foot-switch which allows you to ramp up, slow down, or even stop the rotating speaker. There's a dedicated Top Speed control to custom set the rotor speed and a Position control to adjust the virtual mic closer to or further from the horns. A Biamped switch allows you to change from single speaker mode to Biamped mode, and there's a Speaker Sim switch for direct recording.

The Drive, High, Low and Level controls are 100% analog for warm, organic sounds. Stereo output, buffered bypass, and a silent-switching, custom foot-switch actuator completes the package. You can get lost for days exploring and discovering all the celestial sounds lurking within the Roto Choir.

As with each Tech 21 product, the controls are designed to give you the flexibility to obtain your desired sound. It is our hope that the Roto Choir will be a useful tool for stimulating your creativity and, ultimately, providing the inspiration to play your best.

THE INS AND OUTS

1/4” INPUT: 1megOhm high impedance input, same as traditional tube amps. Also switches battery power on/off. To avoid battery drain, unplug when unit is not in use.

!! WARNING !! DO NOT RUN THE SPEAKER OUTPUT OF ANY AMP directly into the input.

Severe damage to the amp and the Roto Choir will result.

1/4” OUTPUT: 1kOhm low impedance stereo output drives long cables without loss of signal integrity, even in bypass. For mono, simply use a mono cable into your amp. For stereo use a stereo or TRS cable, or stereo splitter cable to split the outputs.

SIGNAL LEVEL TO INPUT/CONNECTIONS

The Roto Choir is designed to accommodate instrument level signals to the *Input*, such as the output of a guitar, the output of distortion pedals, etc. For normal operation, signal level to *Input* should be close to that of a standard electric guitar (approx -10dBm / 250mV). If using with keyboards and the output is too hot, use the volume control on the keyboard to reduce the amount of overdrive.

GUIDE TO CONTROLS

DRIVE

Adjusts the overall amount of gain and overdrive, similar to when the output section of a Leslie® is being pushed. The first half of the rotation increases the volume as well as the overdrive.

LOW and HIGH

On-board pre-EQ section gives you full control. Unlike passive tone controls that only cut, these active controls cut and boost. You can tailor the distortion response, balance the low and high rotor, and shape the top end horn response.

FAST/SLOW and TOP SPEED

Fast/Slow emulates the two modes of a Leslie where Fast = Vibrato and Slow = Chorale. Slow mode is preset to vintage Leslie specs. Fast mode is determined by the setting of the Top Speed knob, which sets the speed of the rotor --from a complete stop at minimum to high speed at maximum.

The ramp time is also preset to vintage Leslie specs and changes according to the position of the Biamped switch. In Single Speaker mode, the ramp up time is different from the ramp down time. In Biamped mode, you have two different ramp up times and two different ramp down times.

TIP: Frequently stomping on the Fast/Slow footswitch, so the sound never synchs up, is a common method of veteran keyboard players. Not to worry, our custom actuator can handle it.

POSITION

Moves the mic closer to or further from the horns or speaker, depending upon the setting of the Biamped switch. At maximum it is the closest and you get a tremelo-like effect with noticeable volume swells. At minimum, it is the furthest away for more even volume. In Single Speaker mode, the mic is aimed at the speaker. In Biamped mode, the mic is aimed at the horns.

BIAMPED

The up position (off) = Leslie 125-style/Fender® Vibratone-style Single Speaker mode with bottom rotor only. Engaged (pushed in) = Leslie 122-style Biamped mode, where the low and high rotors turn in opposite directions and at different rates for more swirly sounds.

SPEAKER SIM

Speaker simulation is an integral part of the circuitry that completes the full experience of vintage Leslies. It is designed with inherently erratic and irregular peaks, valleys, and notches to give you that familiar, unique raspy grind. To engage, push the switch in.



If desired, you can defeat the speaker simulation by disengaging the speaker switch (up position). This will give you a more neutral sound of the time delay effect only so you can achieve just a spinning speaker effect through your amp. Simply set the EQ flat and Drive at minimum with the Speaker Sim off.

LEVEL

100% analog circuit. Adjusts the overall output level.

BYPASS

Buffered bypass eliminates the shortcomings associated with “true bypass” (pops and clicks, and high-end loss when multiple pedals are connected together), as well as signal loss associated with other types of switching circuits.

APPLICATIONS

As a STOMPBOX with an amp. You can connect the Roto Choir in-line just as you would a standard distortion or overdrive pedal. If the pre-amp of your guitar amplifier is imparting too much of its own character on the pedal, plug into the low level input and set the pre-amp as clean and neutral as possible. Since most amps tend to be on the bright side, you may need to start with High below 12 o'clock and then adjust as necessary.

Equipped with a stereo output, you can get the full rotating speaker effect with the Roto Choir. Simply run your instrument to the input of the Roto Choir and connect a 1/4" stereo output splitter cable to two amplifiers.

For DIRECT RECORDING into a mixer or computer. All of the tone shaping and cabinet emulation needed is already incorporated into the pedal, giving you the perfect sound “right out of the box.” The Roto Choir automatically converts your instrument signal to Low Z allowing you to plug into a variety of inputs that would normally load down your instrument’s signal. You can plug directly into mixers (live and studio), workstation/ recorders, and even directly into the sound card on a computer.

TIP: For stereo, pan the left and right mixer controls at 10:00 and 2:00, respectively.

PLACEMENT NOTES

1) Place the following effects **BEFORE** the Roto Choir:
External distortion/ Overdrive, Compression, Wah

Place the following effects **AFTER** the Roto Choir:
Delay, Reverb

2) **Vocal treatment:** Patch into the insert point in the mixer or auxiliary return.

3) **Keyboards:** Use in-line as you would any other pedal.

NOTEWORTHY NOTES

1) **Interaction with your other gear.** You may need to use radically different settings for each individual way you use the Roto Choir. Do not be discouraged or suspect something is wrong with the unit. If you’ve got your sound, you’ve simply found the right balance to complement each individual type of gear.

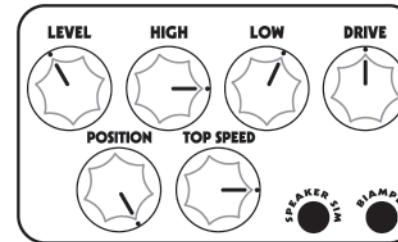
2) **The Roto Choir is very responsive.** Our controls are unusually sensitive and tend to perform beyond what would be considered “normal.”

3) **LED indicator light.** When battery runs low, the LED becomes noticeably dim. Power consumption is 50mA. With a fresh battery, you can expect approx. 10 hours of continuous use --more than enough for a full gig. To conserve battery life, unplug unit during breaks and other times when not in use. We recommend opting for a power supply, as it is environmentally-friendlier, will ensure operation, save money, and relieve stress trying to remember when you last changed the battery.

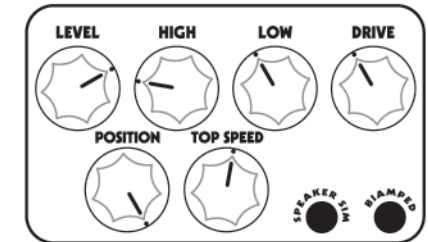
ROTO CHOIR SAMPLE SETTINGS

○ = OFF ● = ON

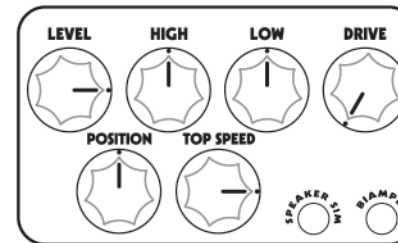
Badge® (select Slow)



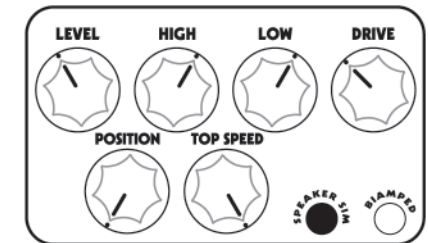
Angel® (select Slow)



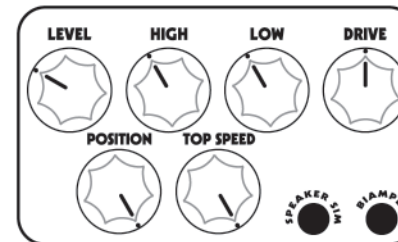
Neutral Spin (Slow or Fast)



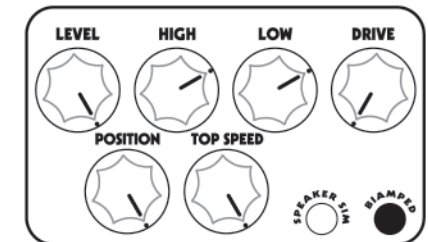
Cold Shot® (select Fast)



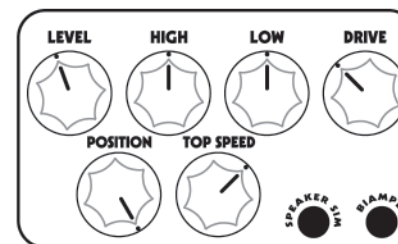
Organ Sim-Guitar (select Fast)



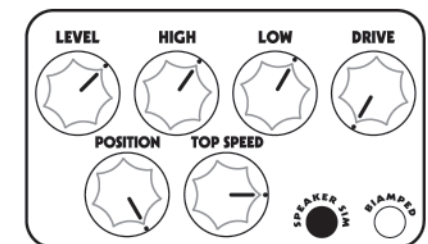
Clean Swirl (Fast or Slow)



Standard Leslie® (Fast or Slow)



Ultra Wide Pan/Trem (Fast or Slow)



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ROTO CHOIR CUSTOM SETTINGS

○ = OFF ● = ON

LEVEL	HIGH	LOW	DRIVE
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
POSITION	TOP SPEED		
<input type="checkbox"/>	<input type="checkbox"/>	SPEAKER SIM	BIAMPED
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