

POWER REQUIREMENTS

Utilizes included 9V DC, 100-240V universal auto-switching power supply, 200mA minimum, center negative. **Tech 21 Model #DC9.**
NOTE: See page 3 for instructions how to change the prong assembly for countries outside the US.
 For replacements, contact your local dealer/distributor, or Tech 21. Maximum power consumption of the Fly Rig: approx 150mA.

WARNINGS:

- * There are no user-serviceable parts inside. 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 or register online.



Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

WARRANTY:

ONE YEAR LIMITED. 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.

REPAIRS:

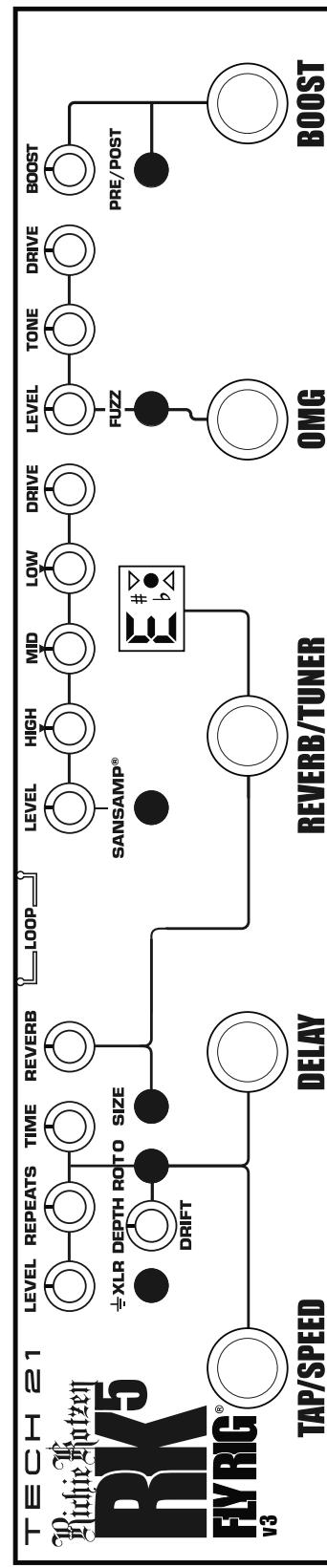
ALL REPAIRS for residents of U.S. and Canada: Call Tech 21 for **Return Authorization Number**. Manufacturer will **not** accept packages without prior authorization, pre-paid freight (UPS preferred) and proper insurance. International residents should contact our local distributor, which can be found on the Support page of our website.

FOR PERSONAL ASSISTANCE & SERVICE:
 Contact Tech 21 weekdays 9:00 AM to 5:00 PM, EST: 973-777-6996.

Hand-built in the U.S.A. using high-quality components sourced domestically and around the globe.



T: 973-777-6996 • E: info@tech21nyc.com
 W: 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 unique 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.

Each product is thoughtfully and respectfully designed by Andrew 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 professional quality sound, studio to studio, club to club, arena to arena.

PRODUCT OVERVIEW

A Tech 21 Fly Rig is much more than a pedalboard. In a single pedal. And no board. Less than 13 inches long and weighing just over 20 oz., this sleek, compact unit embodies an entire rig. At the heart, is the all-analog SansAmp, which makes it possible to go direct to a PA or mixer. For effects, you have all the essentials and some fun stuff, too. What you don't have are crackling patch cables, dying batteries or ground loops. No stinkin' van, heavy flight cases, cable spaghetti, and no dead weight.

With a Tech 21 Fly Rig, you can relax. For fly gigs across the globe, jamming at the local hang, and last minute sessions, you'll be the first one ready to go. You can stop stressing over what to pack and agonizing over what to leave behind. You can stop dreading cheesy backline loaners and overheating at the mere thought of your touring rig going down. Just pop your Fly Rig into your guitar case or backpack and head for the door. (Be sure to wipe that smile off your face when the rest of the band shows up sweating and out of breath.)

RICHIE KOTZEN RK5 v3 SIGNATURE FLY RIG

Since the debut of the original RK5 in 2014, Richie's needs have changed, both on and off the road. Therefore, we've made some changes over the years. The RK5 v3 Fly Rig retains the same SansAmp section, Reverb/Delay/Roto section, and Richie's Signature OMG overdrive. New features include a switchable Pre/Post Boost to beef up drive and distortion or increase the overall volume to punch up fills and solos, along with the addition of an Effect Loop. Additionally, the RK5 v3 is pre-configured to provide phantom power for his Tech 21 Signature RK Killer Wail wah.

The Richie Kotzen RK5 Signature Fly Rig was developed in close collaboration with Richie, whose input was invaluable. Meticulous about every facet of his playing, singing, songwriting and tone, Richie's attention to the details of his RK5 is nothing less.

APPLICATIONS

As a PRE-AMP or STOMPBOX with a guitar amp. You can connect the RK5 in-line just as you would a standard distortion pedal. If the pre-amp of your 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. As most amps tend to be on the bright side, you may need to start with High in the SansAmp section below 12 o'clock and adjust as necessary.

Also, be aware that most tube amps have a tone stack. When everything is on max, they tend to cut the mid range. So don't be surprised to find that the flattest sound is achieved with bass and treble at minimum, and mid at max. Since most tube amp passive tone stacks work in a similar fashion, we recommend this as a good starting point and adjusting to taste.

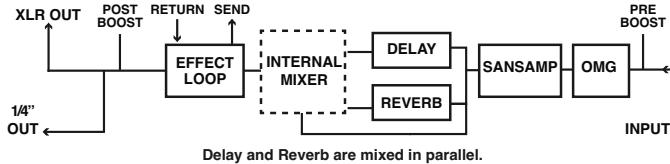
You can also plug into the effects loop return of your amp (if the amp has one). This will disable the entire pre-amp of the amp for a truer representation of the pedal's sound.

For DIRECT RECORDING or DIRECT to PA. All of the tone shaping and cabinet emulation needed is already incorporated into the SansAmp section of the pedal. It can be plugged into mixers (live and studio), workstation/recorders, and even directly into the sound card on a computer.

GOOD TO KNOW BEFORE YOU START

SIGNAL FLOW OF THE RICHIE KOTZEN RK5 v3 FLY RIG

ALL ANALOG IN-LINE SIGNAL PATH



SET THE SANSAMP LEVEL CONTROL FOR UNITY GAIN

Set the Level control of the SansAmp section so you have the same volume coming from your speaker/monitor whether the pedal is active or in bypass. This ensures the next device in the signal chain won't get slammed by a much hotter signal than what would normally come from the instrument. Similarly, you wouldn't want a drop in volume either, which would force the next device to struggle for enough signal.

NOTE: When running the RK5 Output directly to the PA, set the SansAmp Level fairly high to achieve the best signal-to-noise ratio.

SET ALL OTHER CONTROLS AT NOON, just to get started.

CLIP WARNING

The Level control in the Delay section has a built-in clip warning. Like a VU meter, it will flash red to warn you if the Fly Rig is being overloaded.

You can then trim the corresponding control accordingly: Boost, OMG Level or SansAmp Level. Bear in mind that occasional blinks (peaks) are okay and can be expected when you dig into your strings, but it should not be continuously lit.

RELATIONSHIP OF THE LEVEL CONTROLS

Signal flow is right to left, from the input to the output. Therefore, the Level controls follow in the same order, from Boost to OMG Level to SansAmp Level.

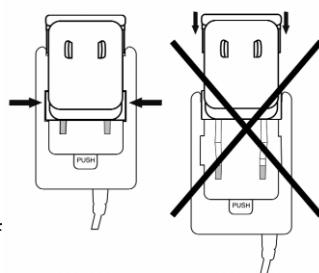
Be aware that the “last” level in the signal path will determine the overall output level. For instance, when the OMG and SansAmp sections are engaged, the SansAmp Level determines the overall output level of the unit. If only the Boost and OMG are engaged, the OMG Level determines the overall output level of the unit.

The Delay Level control only affects the mix level of the delay, not the overall output level.

UNIVERSAL POWER SUPPLY

The included power supply is provided with a U.S. prong assembly installed. To change the prong assembly to one of the included European, UK or Australia/New Zealand styles, be sure the power supply is unplugged and follow these instructions:

Press the PUSH switch to release the prong assembly. Slide the assembly up (about halfway) to align the side tabs of the prong assembly with the slots of the power supply housing. Then pull up to remove the assembly. Choose the new prong assembly, align the side tabs with the slot of the housing and slide down until it clicks into position. **NOTE: You cannot slide the prong assembly all the way out.**



THE INS AND OUTS

1/4" INPUT: 1megOhm instrument level. For normal operation, signal level to *Input* should be close to that of a standard electric guitar (approx -10dBm / 250mV). The input is designed with the same sensitivity and loading characteristic as a tube amp.

PHANTOM POWER: Utilizing a stereo (not mono) cable, this Fly Rig is pre-configured to provide phantom power for Richie's Tech 21 Signature RK Killer Wail wah.

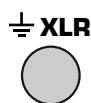
NOTE/WARNING: We cannot be responsible for the viability or potential damage if attempting to use the phantom power with any other products.

!! WARNING !! DO NOT RUN THE SPEAKER OUTPUT OF ANY AMP directly into a Fly Rig/SansAmp input. Severe damage will result.

1/4" UNIVERSAL OUTPUT: Unbalanced 1kOhm Low Z instrument level output. This output can be connected to High Z guitar amplifiers (or effects) as well as Low Z mixer and computer inputs. Output level is unity gain when pedal is in bypass mode. It also drives long cables without loss of signal integrity, even in bypass.

BALANCED XLR OUTPUT & GROUND

CONNECT SWITCH: Balanced low Z output. When the Ground Connect switch is engaged, the ground connects. Disengaged, the ground of your stage system and other interconnected gear is lifted (isolated) from the ground of the mixing console.



NOTE: Both outputs can be used simultaneously. For example, 1/4" Out to your amp and XLR Out to PA mixer, which is one instance where the Ground might need to be disengaged.

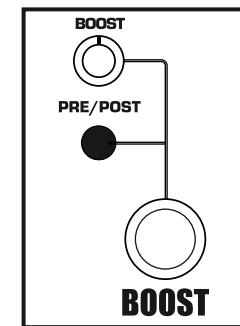
GUIDE TO FUNCTIONS and CONTROLS

(in order of signal flow)

PRE/POST BOOST

Switchable Pre/Post Boost to beef up drive and distortion or increase the overall volume to punch up fills and solos.

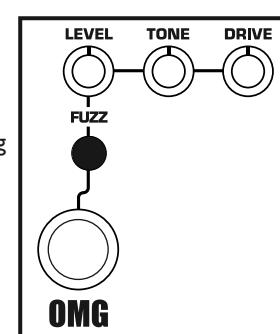
Out position = Pre-Boost up to 20dB
In position = Post-Boost up to 20dB



OMG Overdrive Section

Based upon the Richie Kotzen Signature OMG pedal, this section provides a wide range of overdrive, from clean to aggressive. You can add personality to a clean amp or use it for extra punch with a dirty amp tone.

DRIVE: Adjusts the overall amount of gain and overdrive, similar to when the output section of a tube amp is being pushed. Highly interactive with the level of your guitar. For instance, you can clean up the amount of distortion by decreasing the guitar's volume (except in very extreme settings) without having to change the setting on the pedal. Conversely, you can increase the amount of distortion by simply increasing the guitar's volume.



TONE: Specialized voicing for adjusting the high-end and mid-range of the OMG section. As you reduce the setting, it will decrease the high-end without losing mids or getting muddy. At max, it's flat.

LEVEL: Adjusts the output level of the OMG section.

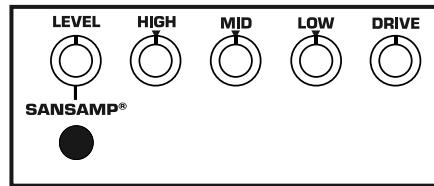
FUZZ Switch: Changes the character and attack of the overdrive to a fuzz-style tone, making it thicker and woolier.

NOTE: The OMG section is an effect. It has no speaker emulation incorporated into the circuitry and is not designed or intended to be used alone going direct to a mixer or PA.

SANSAMP Section

The SansAmp technology enables the RK5 to run directly into mixers of recording desks and PA systems, as well as augment your existing amplifier set-up. It can also be used to record directly and enhance previously recorded tracks. The SansAmp section of the RK5, focuses on clean tones within the tube amplifier sound spectrum. To dirty things up, you have the flexibility of using the Drive control, the Boost function, or you can add overdrive from the OMG section. Or all three. Each method achieves different tones.

Note: Richie keeps the SansAmp section on when going direct and typically turns it off when using an amp.



DRIVE: Adjusts the overall amount of gain and overdrive, similar to when the output section of a tube amp is being pushed. The first half of the rotation will increase the volume as well as the overdrive.

LOW, MID, HIGH: On-board post-EQ section gives you full control, like having a studio mixing board at your fingertips. Unlike passive tone controls that only cut, these active controls cut and boost. At 12 o'clock, they are flat.

LOW is tuned to $\pm 12\text{dB}$ @ 120 Hz.

MID is tuned to $\pm 12\text{dB}$ @ 500 Hz.

HIGH is tuned to $\pm 12\text{dB}$ @ 3.3 kHz.

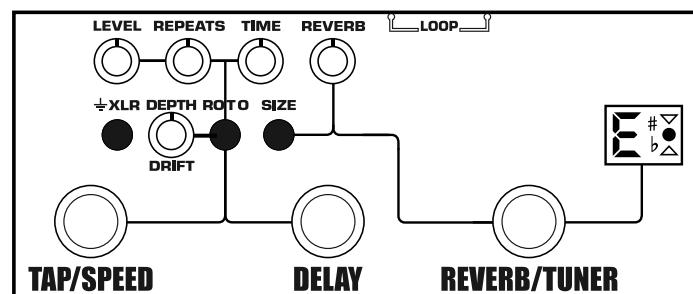
LEVEL: Adjusts the output level of the unit when the SansAmp section is engaged. This control has an exceptionally wide range for maximum compatibility with a variety of equipment.

Level Tip: When running the RK5 Output directly to the PA, set the SansAmp Level fairly high to achieve the best signal-to-noise ratio.

SPEAKER SIMULATION

An integral part of the 100% analog SansAmp Tube Amplifier Emulation circuitry, it will complement any type of speaker cabinet system. The speaker simulation works in tandem with the EQ controls to custom tailor the overall sound. You can place an external IR after any SansAmp to give additional flavor if you so desire. The SansAmp speaker sim is specifically designed and individually tailored for a smooth, even response as would be achieved by a multiply-miked cabinet --without the peaks, valleys, and notches associated with single miking and many IRs.

REVERB and DELAY Sections



REVERB

Independent footswitchable reverb features a single, continuously-variable control. It provides a smooth, full sweep to easily dial-in the amount of reverb desired. Choose between "rooms" via the Size switch:

Out position = Small room. In position = Large room.

DELAY and ROTO

DELAY MODE
The delay is voiced for the sounds of a vintage tape echo.

TIME: Controls the amount of delay. This single, continuously-variable control provides a smooth, full sweep, ranging from 28 milliseconds up to 1,000 milliseconds. At 12 o'clock, Time is approx 300 milliseconds. You can easily dial in the exact amount of delay desired with one turn of the knob. Turning the Time control while playing will transpose the pitch of your guitar note, just like a vintage analog delay.

DRIFT: Rather than evenly modulating the delayed signal, Drift adds a random, unpredictable element to the modulation that is more true to a vintage tape echo. At minimum (7 o'clock), there is no effect. At maximum, there will be a drastic shifting of the pitch, which can be used for special effects.

REPEATS: Feeds back the delayed signal to the input of the delay circuit to generate the number of repeats. At minimum (7 o'clock), you will hear one repeat. As you increase the setting, the repeats will follow accordingly until they are almost infinite. At max, it will self-oscillate.

Repeats Tip: When using the Delay in front of an amp, the amp will compress the signal and the repeats will become more pronounced. Therefore, you will most likely need to have the setting lower than you would when running through an effects loop. For instance, you may find a Repeats setting at 10 o'clock through an effects loop will yield 3 repeats. However, through the front of an amp, you may find a setting of 8 o'clock will give you the same results.

LEVEL: Adjusts the output level of the Delay section only. Also functions as a clip warning (see page 2).

TAP/SPEED: Dedicated footswitch for tap tempo when Delay is engaged. Makes it easy to just tap in the delay tempo you want during your performance. Tap tempo will override the Time setting (and conversely, turning the Time knob will override the tap tempo). The Tap Tempo works in Bypass so you can set it ahead of time. A special feature of the Tech 2 | Tap Tempo is that it will not change the pitch of your guitar when you change the pace from faster to slower or slower to faster. This provides a seamless transition for on-the-fly adjustments if your drummer drifts.

ROTO MODE

Alters the Delay function to a rotating speaker effect. To engage, push the Roto button in.

Tap/Speed: In Roto mode, it controls the speed from slow to fast. It ramps up like the real thing to gradually reach a new speed.

Drift functions as Depth and changes from blue to purple to indicate you're in Roto mode. It then controls the distance of the virtual mic to the rotating speaker:

At minimum, there is no effect.

At maximum, it adds a tremolo-like effect by modulating the volume in sync with the tonal modulation.

Note: in Roto mode, Level, Repeats and Time are disabled.

OTHER GOODIES

CHROMATIC TUNER

The REVERB/TUNER footswitch engages the chromatic tuner. Simply hold the footswitch down for one second to engage the tuner, which will simultaneously mute the signal path. The LED in the tuner window will then light up. If the green light is on, you're in tune. If you're not, the red arrows serve as indicators:



Arrow points up = Flat. Raise the pitch.
Arrow points down = Sharp. Lower the pitch.

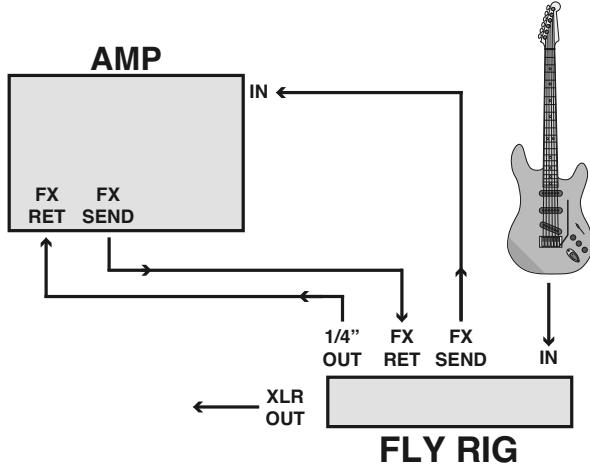
As you get closer to being in tune, the arrow will blink faster and turn off when you are in tune. The green light then comes on and you're good to go.

When you're finished tuning, simply hit the footswitch to disengage.

EFFECT LOOP

Post-SansAmp, post Fly Rig effects (mixed internally) to patch in external effect pedals. Connect the input of your effect to Send; output of your effect to Return.

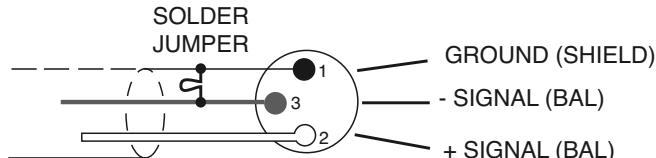
Hookup diagram utilizing the 4-cable method:



NOTEWORTHY NOTES

1) Using the RK5 with a Power Engine 60. Simply connect the 1/4" output of the RK5 to the 1/4" input of the Power Engine 60. Be aware the Power Engine 60 utilizes a ground independent transformer, which may pick up hum from the auto-switching power supply. Therefore, the XLR input of the Power Engine 60 should be grounded. You can make your own grounding plug by modifying a male XLR connector by soldering Pin 1 to Pin 3 and inserting into the XLR input of the Power Engine 60 per the diagram below.

NOTE: If you're not into soldering, a Tech 21 grounding plug is available for purchase. Please see our website Accessories page for details.



2) Using the RK5 with a Power Engine Deuce Deluxe. Simply connect the 1/4" output of the RK5 to the 1/4" input of the Power Engine Deuce Deluxe.

3) Tech 21 controls are unusually sensitive and tend to perform well beyond what would be considered "normal." So you need not set everything at max to get maximum results. For instance, to brighten your sound, rather than automatically boosting High all the way up, try cutting back on Low first.

4) To find the best settings for interacting with your other gear, you may need to use radically different settings for each individual way you use it. You need 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 piece of gear. We recommend you start with the tone controls at 12 o'clock and cut or boost as necessary.

5) Tech 21 pedals have exceptionally low noise levels.

However, they may amplify noise emanating from the input source. To minimize noise, we recommend active electronic instruments have the volume set so that the clip light barely comes on when in Bypass, and have the tone controls positioned flat. If you need to boost, do so slowly and sparingly. Also check for pickup interference by moving your guitar or turning the volume off. Be aware single coil pickups are more likely to generate noise.

6) Placement notes: The Fly Rig can be treated as an amplifier or pre-amp when it comes to setting up your signal chain:

Place the following effects BEFORE the Fly Rig:
Phaser/Vibe, Overdrive, Wah.

Place the following effects AFTER the Fly Rig:
Delay, EQ, Flanger, Phaser (yes, after is good, too), Pitch Shifter, Reverb.

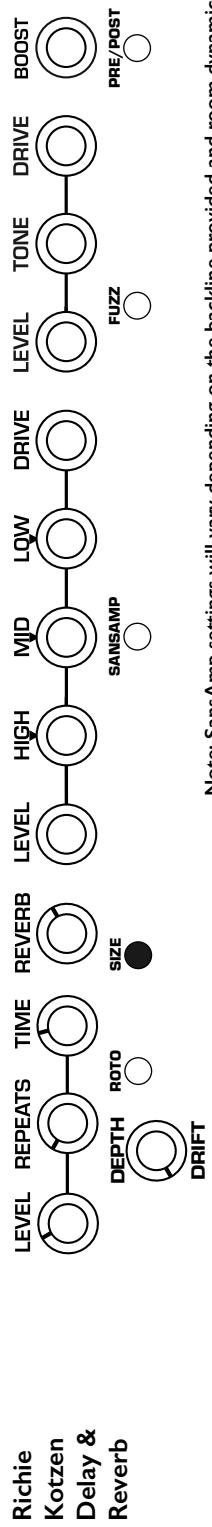
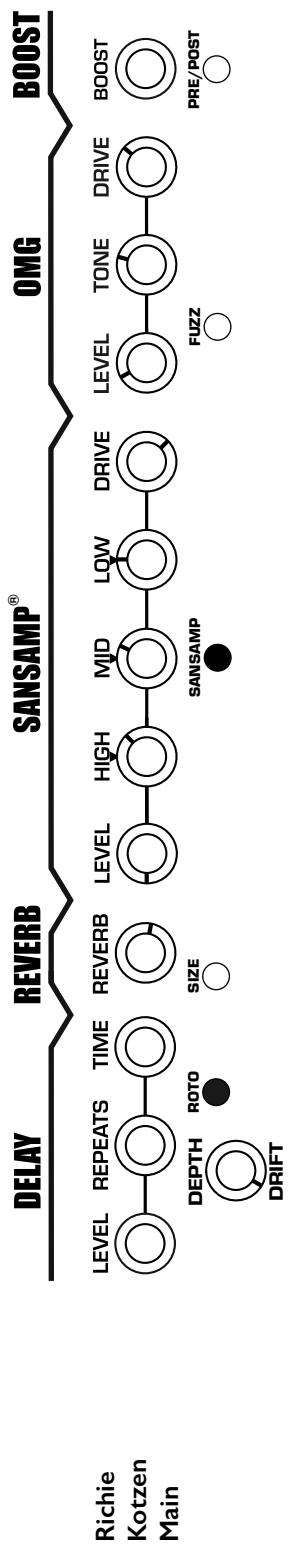
7) Buffered bypass eliminates the shortcomings associated with "true bypass" (pops and clicks, and high-end loss when multiple pedals are connected together), as well as signal loss associated with other types of switching circuits.

8) Custom actuators. All Tech 21 pedals feature smooth, custom, silent-switching actuators.

9) With on-going product development and improvements, specifications and/or the cosmetic appearance of this unit may change without prior notice.

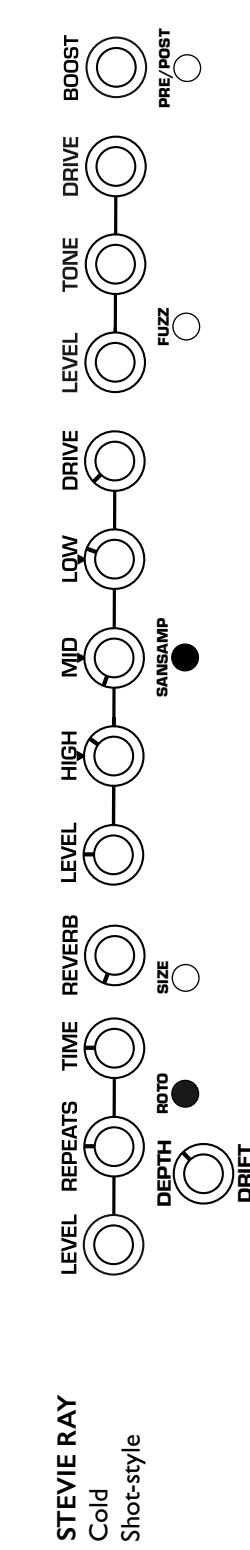
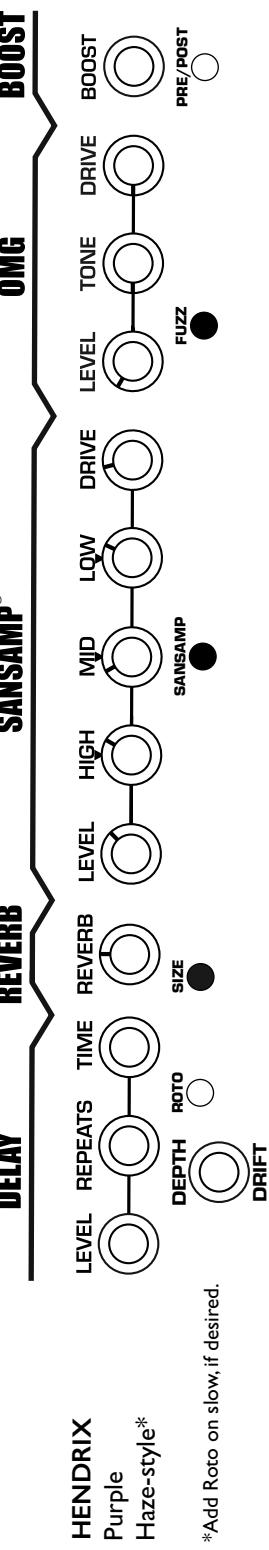
ON (in) OFF (out) NOTE: When there are no knob indicators present, that function or section is not engaged.

SAMPLE SETTINGS



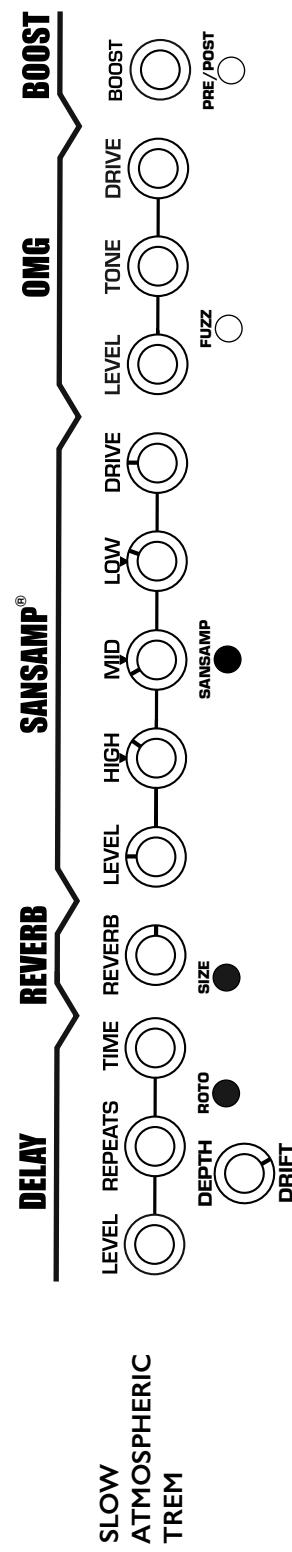
Note: SansAmp settings will vary depending on the backline provided and room dynamics.

SAMPLE SETTINGS



  NOTE: When there are no knob indicators present, that function or section is not engaged.

SAMPLE SETTINGS

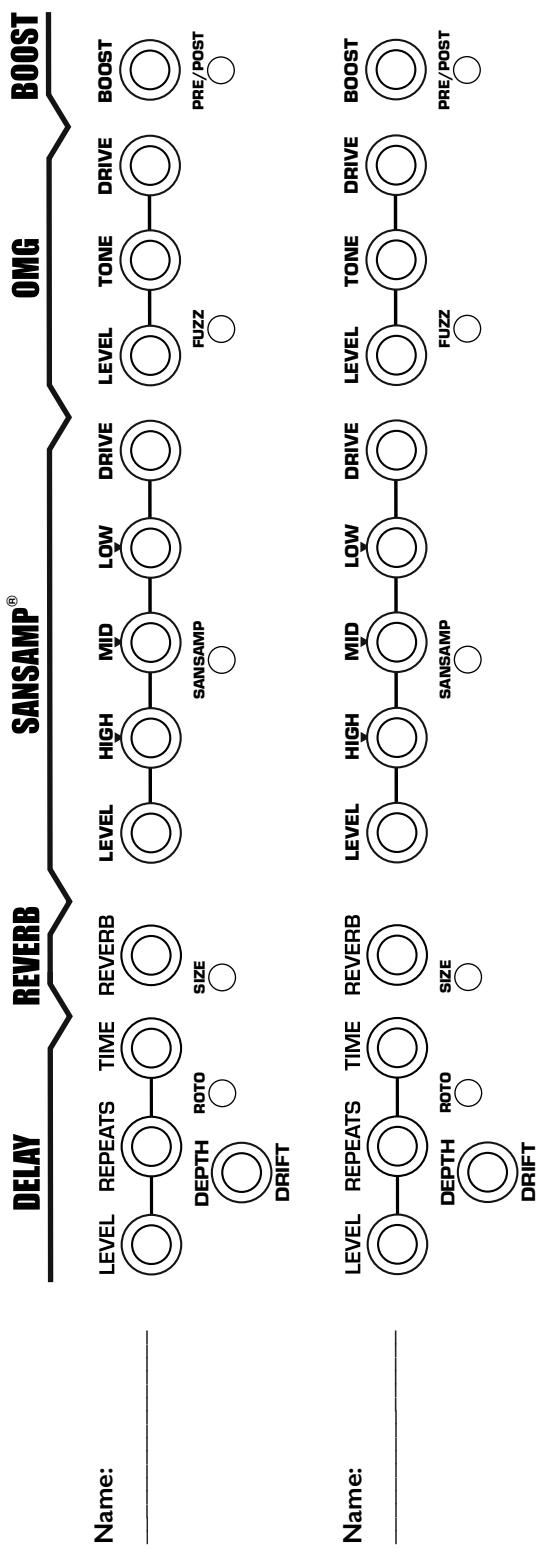


Names of sample settings are intended for descriptive purposes only

and should not be construed as an endorsement or affiliation with the artists or songs named, except, of course, Richie Kotzen.

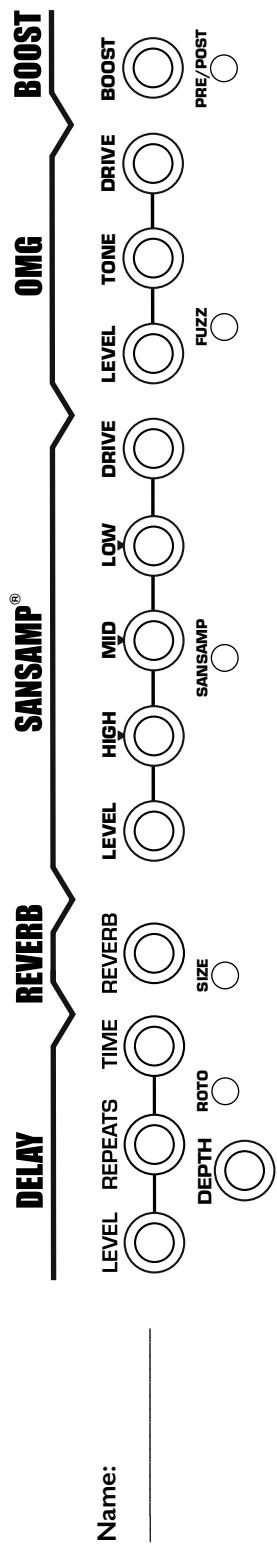
ON  OFF 

CUSTOM SETTINGS



CUSTOM SETTINGS

ON  (In) OFF  (Out)

**CUSTOM SETTINGS**

ON  (In) OFF  (Out)

