the windmiller preamp

USER MANUAL & SAFETY INSTRUCTIONS

Thank you for purchasing The Windmiller Preamp!
Push your amp to its raw power!

aclam

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Overview

Here it is! The Windmiller Preamp: drive your amp even further with Pete Townshend's secret weapon!

It all started on a lazy Sunday, surfing through YouTube looking for some old footage of The Who, when we stumbled on some clips of The Who playing at the Marquee Club in 1967. Despite the raw energy of those four young men, what really caught our attention was a weird device with a flashing light sitting on top of Pete Townshend's Marshall amps.

After some research we found out that between '66 and '67, Pete Townshend had several Grampian 636 Spring Reverb units in his arsenal and he used them as a saturation tool, cranking his Marshall amps to the limit to get his groundbreaking tone.

As it is quoted on an interview in 1967:

"I use a Granpiene [sic] reverb unit for distortion; it gives a kind of clear fuzz dirge. I like a slightly broken guitar sound."

Even though it was intended as a studio reverb unit, Pete used the built-in preamp of the 636 to fatten his tone and boost the guitar signal, bypassing the reverb altogether. Since Pete used it for a short period of time, it ended up forgotten and only the erudite of The Who knew the story of the 636.

With that amazing story on the table, it was clear it could be something for Aclam's team to work on! So, we were really decided to create a pedal version of the 636 preamp but we had a slight problem, we had never tried one. So, in order to recreate it to the finest detail we began our search for an original unit that we could reverse engineer. After many months we managed to get our hands on an original Grampian unit! It was in a great shape and sounded amazing!

As soon as we strummed the first chords with the original 636, we found the combination of Grampian, old Marshall stack and single coils to be pure magic. It enhanced the amp's natural saturation with a fatter, sweeter tone. This unique coloring comes out of its primitive technology and

because of the low input impedance of the 636. This is also quite common on guitar effects of that era, like the Fuzz Face®, Range Master and many other 60's effect units.

However, we felt the vintage 636 was less impressive when used with other types of amps and pickups, specially humbuckers. Because of that, we challenged ourselves to make this preamp sound beautiful no matter what amp or pickup you use, managing to eventually tweak the circuit to extend its frequency range and include eq controls while retaining its unique tone. The treble response has been refined by adding a Hi-Cut control which allows you to add a sweet sparkle to muddy humbuckers or tame brighter single coils, as well as a Lo-Cut knob to control bass content better, so the player can decide the tightness of the resultant tone.

Another thing we achieved was to refine its background noise. The vintage Grampian has a remarkable hiss, especially when the Aux Channel was used (Townshend's choice). Chapter two of the Windmiller designing process was to eliminate that hiss whilst maintaining the character and behavior of the original Grampian 636 preamp. After experimenting with a great variety of components and fine-tuning the circuit to make it as quiet as possible, we finally succeeded!
And finally, in order to pay tribute to the last detail, we've included the overload indicator lamp found on the Grampian 636, which is sensitive to your playing and responsive to your attack, and you may agree with us, looks really cool!

The result is a versatile pedal that can be used as an 'always on' preamp with a beautiful color, a booster for solo parts, or a tool to saturate and enhance the amp's natural overdrive.

Features

FAITHFUL RECREATION OF OUR OWN GRAMPIAN REVERBERATION UNIT TYPE 636 S/N: 1138
We've been lucky enough to find an original unit from the 60's in great shape, so we used it as a reference to make the most accurate replica of its preamp thus far. We traced the original circuit and made our own schematic to ensure you cannot get closer to the real thing!

HEAVILY IMPROVED SIGNAL TO NOISE RATIO AND INCREASED TREBLE RESPONSE:
As part of the circuit's adaptation to a pedal unit, we have put an extra effort to make The Windmiller Preamp as quiet as possible, you almost can't tell it's on even at full gain! In addition, we have made the circuit a bit brighter, so you have a greater frequency spectrum on higher frequencies.

HI. CUT AND LO. CUT TONE SHAPING CONTROLS:
To make The Windmiller Preamp more versatile we have included tone cut controls for high and low frequencies, which are extremely useful when using on different amps and guitars. Single coils, humbuckers, El84's, 6l6's…
It will match any rig!

PREAMP OR CLEAN BOOSTER? IT'S UP TO YOU!:
Due to its low input impedance The Windmiller Preamp will react in different ways depending on the signal source you connect it to. Plug it straight to your guitar before any other device and you will be delighted by its unique coloring. Put it after a buffer and you will get a super transparent and linear booster with the addition of the Lo Cut and Hi Cut controls!

OVERLOAD INDICATOR LAMP:
We couldn't resist ourselves to put this cool feature of the original Grampian 636 thus it will be very useful as a signal monitor!

CIRCUIT TAILORED FOR BOTH BASS AND GUITAR INSTRUMENTS:
Since the Grampian 636 was designed as a studio tool you can use The Windmiller Preamp with any kind of instrument. Guitar, bass, keys... you are the limit!

TRUE BYPASS RELAY SWITCHING:
We have incorporated a soft touch switch activated relay switching system so, even in the quietest situation you won't bother the audience and band-members with click or clack noises. And obviously like all our pedals it is true bypass to ensure signal integrity.

SMART TRACK® FASTENING SYSTEM:
All our pedals use a custom enclosure designed to perfectly match our Smart Track® pedalboards. Using the side thumb screws you'll be able to lock safely the stompbox into one of our pedalboards.

It was also designed to fit the other pedalboard options in the market.

Specs &
Material included

THE WINDMILLER PREAMP REF:
AP0030

DIMENSIONS:
13,6 x 8,7 x 5,5cm (5.4” x 3.4” x 2.2”) with knobs

WEIGHT:
450g. (0.99 lbs)

BYPASS:
Relay True Bypass

POWER REQUIREMENTS:
9V DC Center Negative 100mA minimum

CURRENT DRAW:
≈38mA

DECLARATION OF CONFORMITY:
This product complies with the requirements of

MADE IN SPAIN

MATERIAL INCLUDED
1 x The Windmiller Preamp pedal
1 x Anti-sliding rubber pad
1 x Velcro® pad

Power requirements

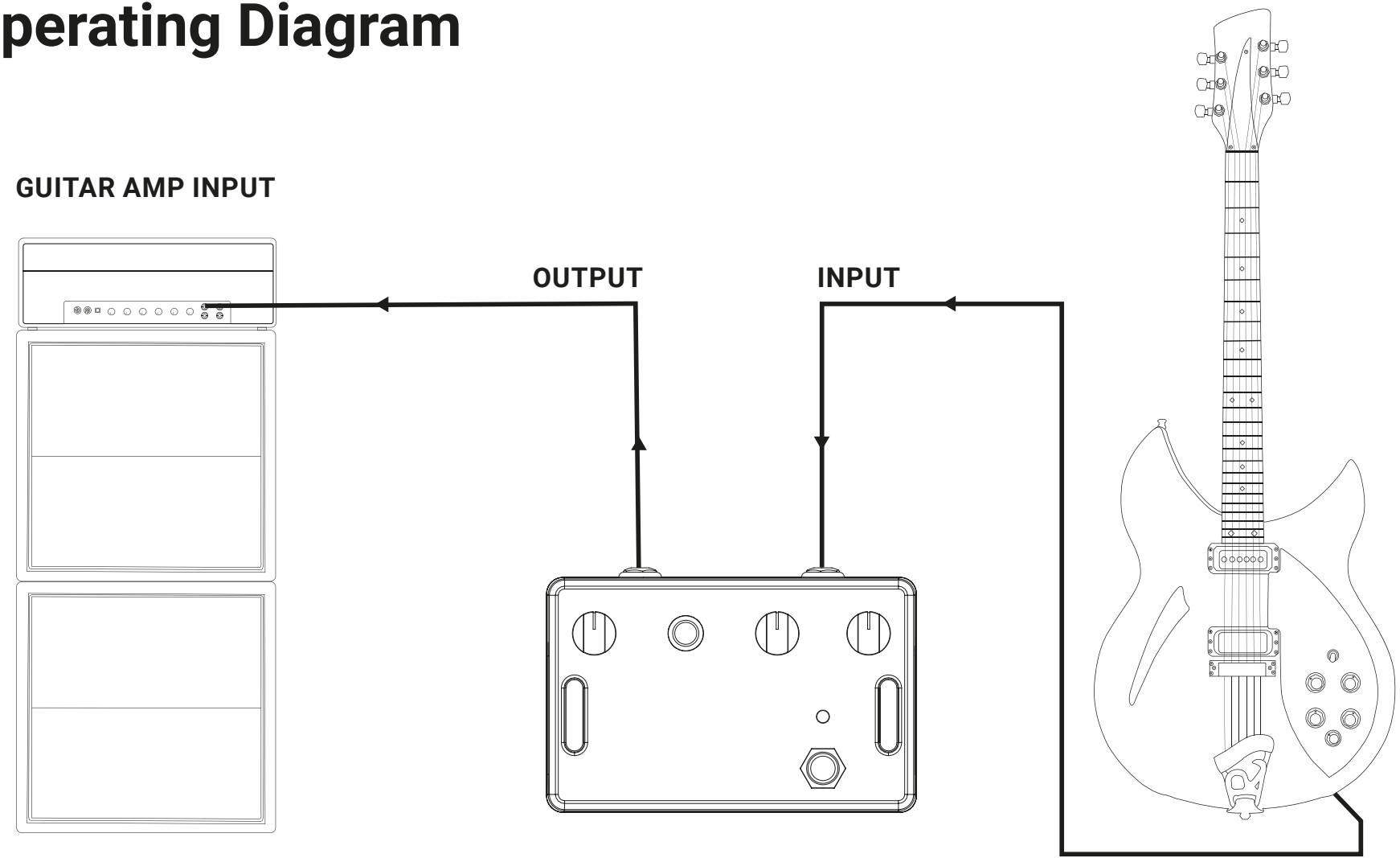
POWER SUPPLY
This unit must be powered with a 9VDC negative tip power supply with the standard Boss type 2.1mm connector.

Current supply should be a minimum of 100 mA just to leave a safety margin for the DC adapter.

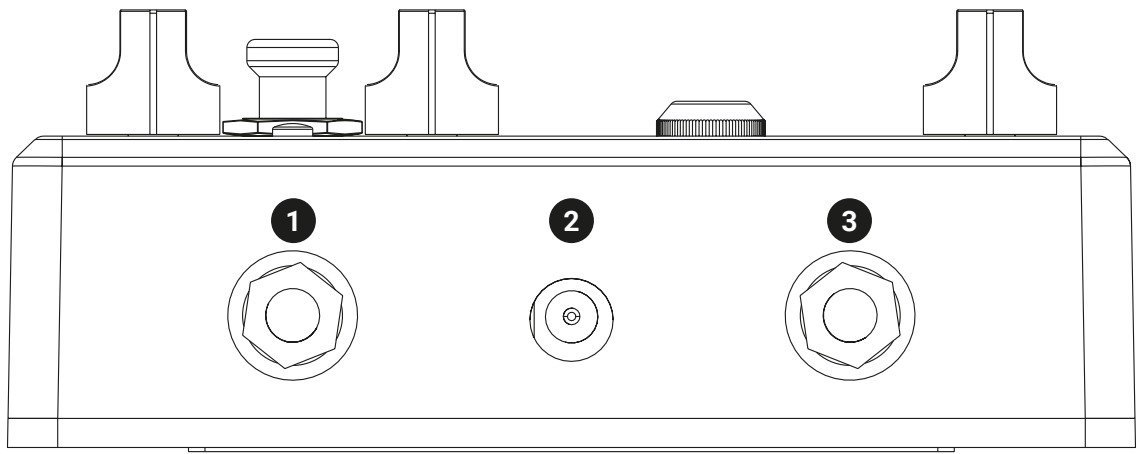
Make sure you use a good quality power supply and avoid using generic SMPS type adapters which can induce high pitched noise to the audio.

CAUTION:
Please note this pedal MUST not be powered with any voltage above 9VDC. It already has an internal DC/DC converter to make it work to the adequate tension for it to work properly and with its max dynamic range. Powering it up with a 12V or 18V power supply will damage its circuit and immediately void the warranty.

Operating Diagram



Controls



1 **INPUT JACK** **2** **POWER JACK** **3** **OUTPUT JACK**

4 **BYPASS SWITCH:** Engages the unit allowing the signal to flow through The Windmiller Preamp circuit. It also lights up the LED above it.

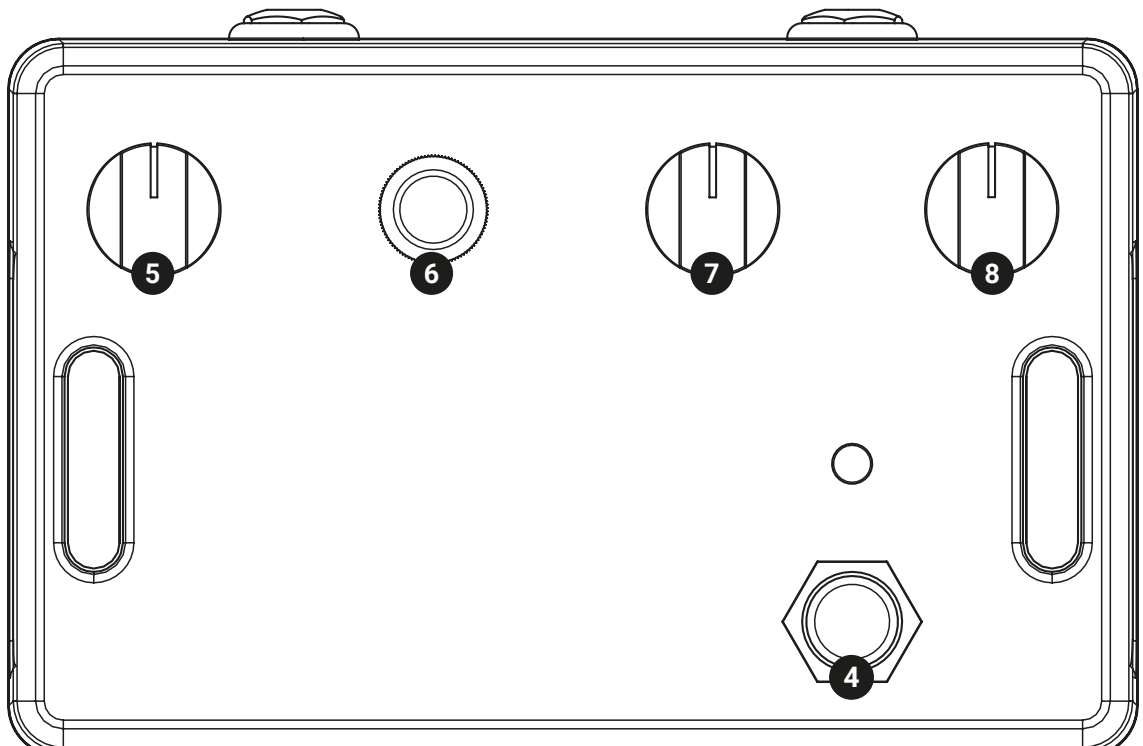
5 **GAIN:** This control lets you set the amount of signal boost of the instrument you plug into it. At counterclockwise position will increase around 3dB's (depending on the settings of the Lo. Cut and Hi. Cut knobs) compared to the bypassed signal. As you start to turn the Gain up, it'll build up more volume just like a regular preamp or booster. Please bear in mind this is a "clean" preamp meaning it doesn't add saturation per se (a little bit of asymmetrical clipping with the Gain fully clockwise though) but will clip any following device after it like an overdrive pedal or the amp.

6 **OVERLOAD LIGHT:** We felt we needed to pay tribute to the vintage Grampian 636 by including the Overload indicator light! In this pedal version it only serves as a "signal in" indicator, although the higher the gain and the harder you play, the brighter it will glow as it reacts with the signal dynamics.

7 **LO.CUT:** When using The Windmiller Preamp a la Townshend style (to saturate your amp) you may find the resultant overdrive is a bit fuzzy. This is not necessarily a bad thing, but we have found useful to include this Lo. Cut control to reduce bass content and make mid frequencies pop out a bit more. When it is fully counterclockwise it will reproduce the entire bass frequency spectrum (like the vintage Grampian 636) and as you start turning it clockwise, low frequencies will drop. This control is meant to be a fine tune, so it doesn't have a drastic effect like many eq's found on other pedals or amps.

8 **HI.CUT:** The vintage 636 tone is perfect for single coils because it tames its high end and makes it sound slightly round and mellow, just the perfect amount. But on the other side, we found that humbuckers were a bit unhappy with that. For this reason, we made The Windmiller Preamp brighter than the 636 and included this Hi. Cut control so it is more versatile with any kind of guitar and pickup. Fully counterclockwise is the brightest position, ideal

for darker pickups and as you move the knob it will remove highs until the fully clockwise position where it is enough to tame the brightest pickup.



Where to put The Windmiller Preamp on the effects chain?

Due to its low input impedance, the location of The Windmiller Preamp on the effects chain is crucial to get the desired functionality.

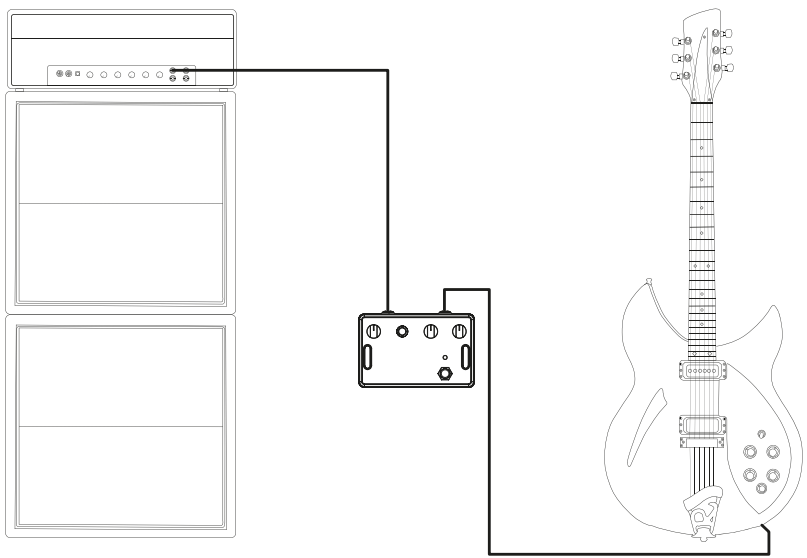
We will not extend ourselves on technical stuff (see page 19 to read a more in depth explanation of what impedance is and how affects The Windmiller Preamp's tone) though it's important for you to know how it will behave depending on the position on your pedalboard.

To keep things simple, we will say The Windmiller Preamp will add color to the tone when it's able to "see" the high impedance signal coming from the guitar or bass pickups. On the other hand, when a low impedance signal source is plugged, like the one that comes out after a buffer, engaged effect pedal or active pickups, will make The Windmiller Preamp behave in a more transparent and linear fashion. Almost no coloring besides the eq controls.

Having this in mind here's some practical examples that will help you out to find the best setup for your beloved The Windmiller Preamp.

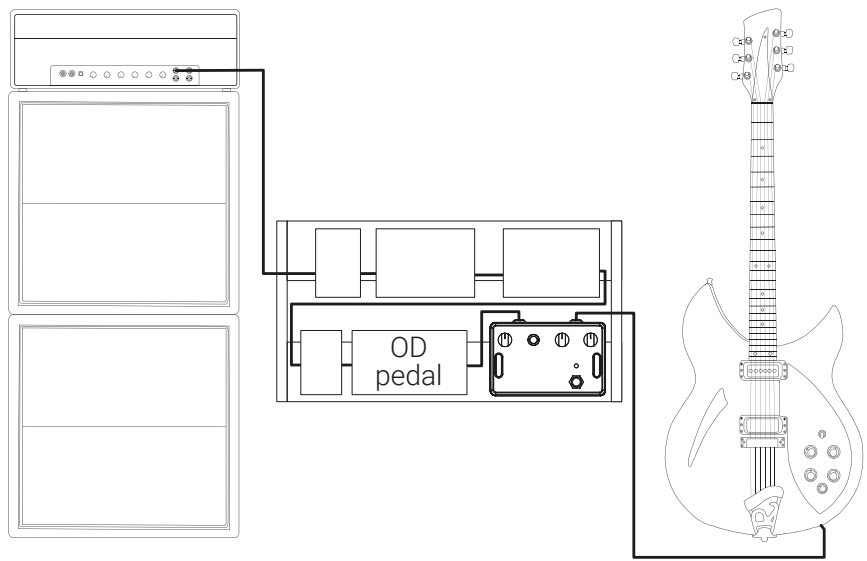
TOWNSHEND SETUP

In this example The Windmiller Preamp receives the signal directly from the guitar output jack, so the scenario is a high impedance signal into a low input impedance circuit. The result is the same as Townshend's rig. Tone coloring and as you turn the Gain knob up drives the amp's preamp to increase saturation.



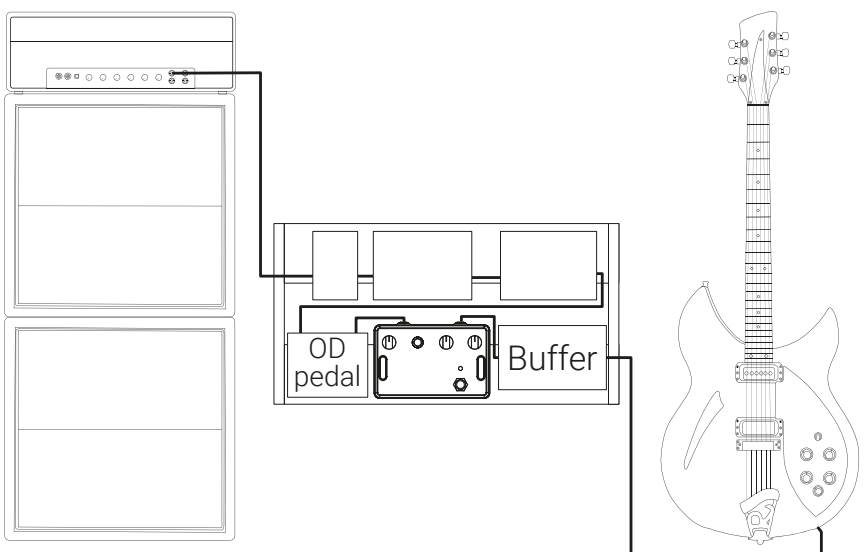
PREAMP WITH TONE COLORING

When placed in a pedalboard, the location of The Windmiller Preamp pedal within the effects chain is crucial to get the desired functionality. In this case the guitar/pedal interaction stays the same, the player gets the 636 tone coloring but the signal boost can overload the following pedals before the amp. This is really interesting for overdrive pedals, in order to get new textures from them.



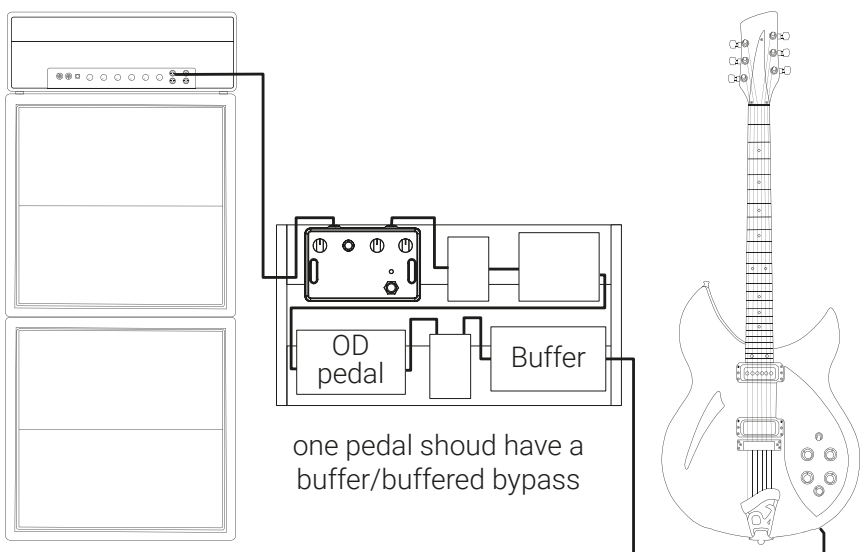
PREAMP WITH NO COLORING

When the The Windmiller Preamp pedal gets the signal from a buffered pedal (like a Boss, Ibanez etc) it changes its behavior, becoming a transparent preamp. You can use it again to add gain to the following overdrive pedals but bear in mind the tone will not be “colored” anymore but just a louder version of the bypassed signal. Still, you can use the eq controls to shape and fine tune your tone.



TRANSPARENT AND LINEAR BOOST

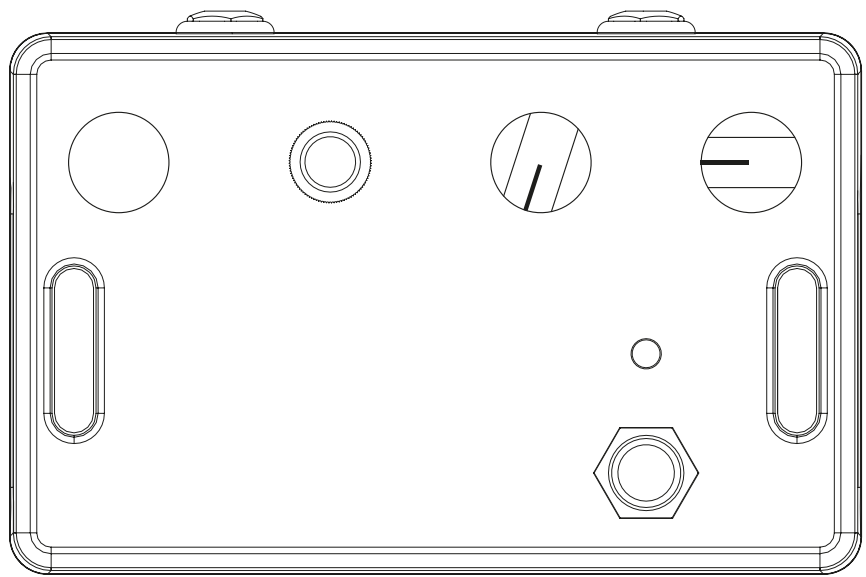
To use it like a regular booster (louder signal with the less tone coloration possible) without overloading the following pedals, you should put it at the end of the effects chain. By doing this there are a lot of chances some buffer or effect circuit will be placed before the Windmiller Preamp, isolating the pickups and, at the end, converting the signal to low impedance. The Windmiller Preamp will react as a transparent booster without adding its color. We found this ideal for solo parts or to recover some gain after all the effects chain.



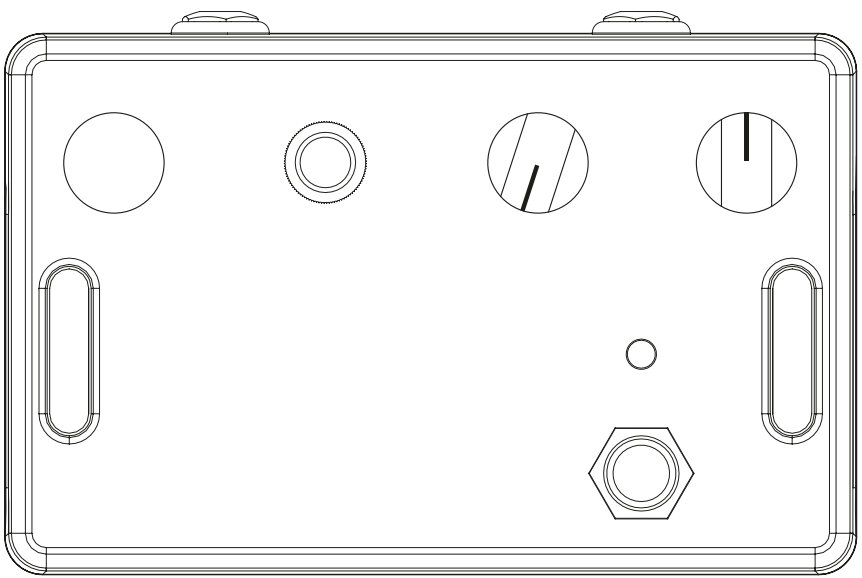
EQ Setting suggestions

There’s not a particular way to set the The Windmiller Preamp’s controls to get a certain The Who’s song tone. It depends on your amp, guitar and obviously your hands! But since the The Windmiller Preamp has more features than the vintage Grampian 636, we can suggest you some basic settings to start from so you can fine tune them to match your current setup.

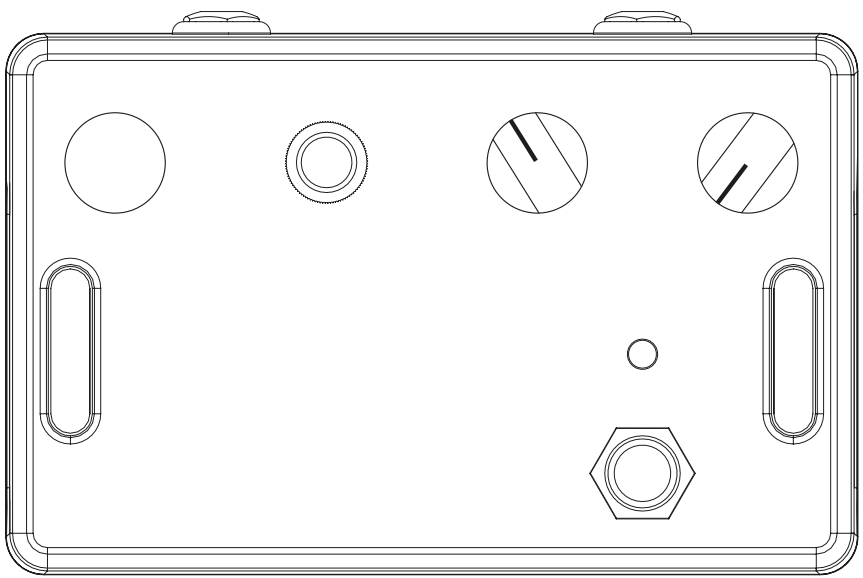
The gain control is not represented because it will depend on how you want to use The Windmiller Preamp, either as preamp, or a booster to saturate your amp or overdrive pedal.



VINTAGE GRAMPIAN TONE



SINGLE COILS



HUMBUCKERS

What impedance is and how it affects The Windmiller Preamp's tone.

Impedance is a really complex concept that requires deep electronics and math knowledge to fully understand, so to stay simple we'll say its resistance over frequency.
Resistance is the concept of electronic components (usually resistors) force against a current flow, commonly known as electricity, through it. In direct current (the one that powers most effects pedals for example) this value is linear as DC has no frequency, it's a steady source of voltage with no variations.

On the other hand, the guitar signal is swinging voltage, more commonly known as alternating current and is a combination of a lot of frequencies.
Because of how the pickups are made, most of them create high impedance circuits and this means they have inherent resistance to certain frequencies. Those frequencies will have difficult times traveling through the guitar cable and ultimately getting into the circuit of the effect pedal.
And here's the second actor of this game! The input impedance of the effect pedal.

When we talk about a high input impedance circuit we mean it won't suck (or load) the signal source of the device connected to it. Its inherent resistance will help the guitar signal stay strong and all the frequencies will make its way to the circuit with no difficulties.

On the other hand, when a circuit has a low input impedance it will mean it will load the signal source trying to suck more energy out of it and here's when certain frequencies will struggle.
So, this is the case of The Windmiller Preamp pedal!
Its low input impedance creates a unique interaction with the instrument pickups circuit and shapes its particular tone.
Otherwise when a low impedance signal gets into its input, the coloring is far less noticeable since no frequency has tough times traveling to The Windmiller Preamp input circuit and there's also much less loading.

Setting up on a pedalboard

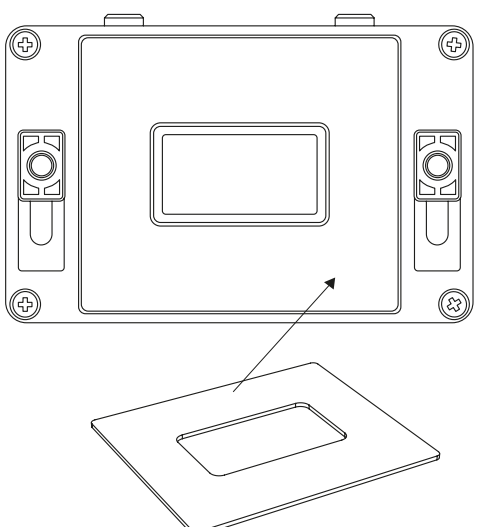
All our effect pedals use a custom light aluminum enclosure specially designed to fit our Smart Track® pedalboards. We incorporated a proprietary locking system which allows the user to fasten the pedal without the need of using the typical hook and loop method. This custom fastening system follows the same philosophy behind the Smart Track® fasteners but integrated in the enclosure reducing the space occupied by each pedal.

That translates into more pedal density for the same space, and who doesn't want that?

We strongly recommend you to take a look at our line of pedalboards, which are the best complement to our pedals!

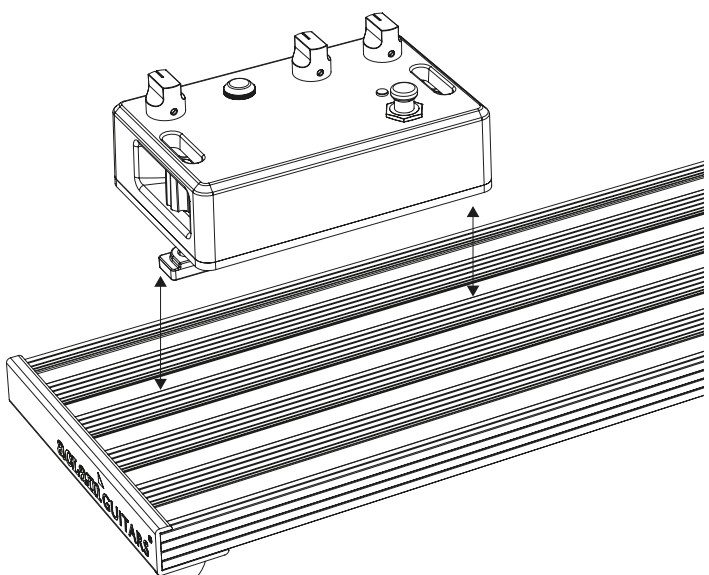
HOW TO MOUNT IT ON A SMART TRACK® PEDALBOARD:

1. Add the anti-sliding rubber pad at the bottom of your pedal, specially shaped for this unit.
   (!) Surface must be clean and dry before applying adhesive pad.

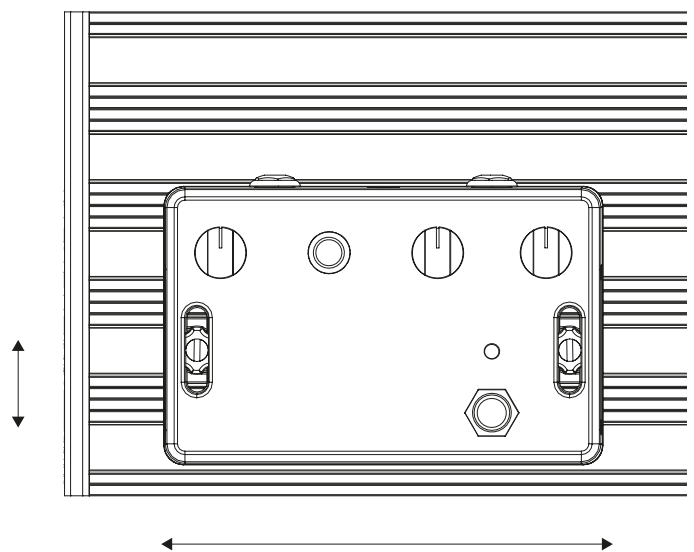


2. Loosen the 2 thumb screws to unlock the bottom pieces out of the pedal.

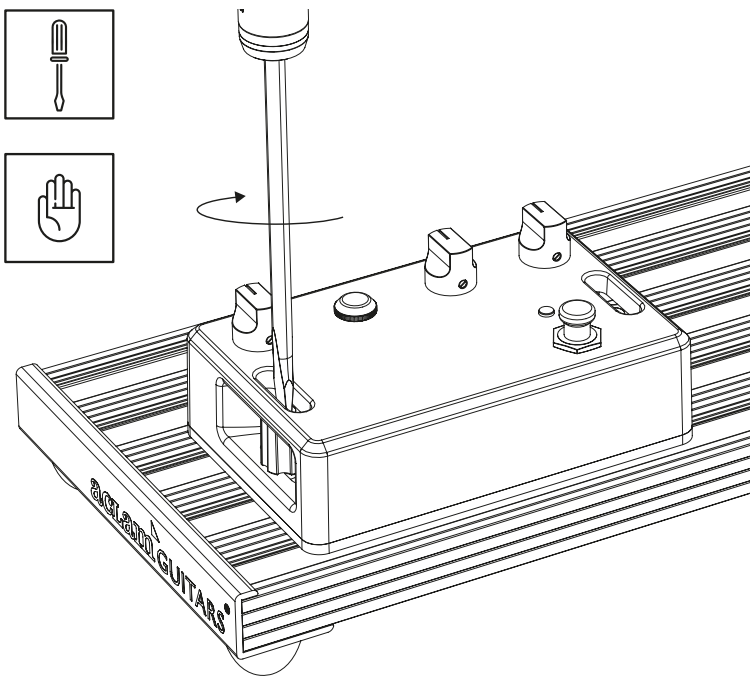
3. Place the pedal, inserting the bottom pieces inside the grooves.



4. Move the pedal to its final position.



5 Tighten the two thumb screws with your hands or with a screwdriver.



USING OTHER PEDALBOARDS:

Hook and Loop: Take the included super strong Velcro® pad and stick it on the base plate.
Again, make sure the base is clean of dirt and dust.

Pre-drilled pedalboard: Fix it with a bolt and a nut you could find at any hardware store or instead of passing the zip tie over the pedal you can take advantage of the Smart Track® enclosure and put the zip ties over the holes.

DIY woodboard: You can screw the pedal directly with wood bolts through the enclosure side holes.

No board: If you use the pedals standalone make sure you place the included anti-sliding rubber pad on the baseplate.

Trouble Shooting

SIGNAL PASSES THROUGH IN BYPASS BUT NOT WHEN ENGAGED:
Make sure you´ve connected the input and output jacks correctly.

PEDAL DOES NOT WORK WITH THE POWER SUPPLY:
Take a look at your power supply output voltage and polarity. Make sure it's 9V DC negative tip with a minimum output of 100 mA.

I CAN'T NOTICE THE MENTIONED TONE COLORATION:
1. Check out your guitar has an internal preamp! Even some vintage style guitars can have one and possibly make the signal impedance to drop. This will make The Windmiller Preamp pedal unable to interact with the pickups.

2. Make sure there's no pedal between the guitar and The Windmiller Preamp. Even though a pedal is true bypass, when it's on it isolates the pickups and changes the signal impedance.

THERE'S NO SIGNAL BOOST WHEN THE WINDMILLER PREAMP IS ON:
Probably the pedal (or amp) next to it doesn't have enough headroom to handle it! Try to lower the gain on your amp and check if there's an overdrive pedal engaged.

Security Instructions

- Read these instructions carefully.

- Keep them for future reference.

- Heed all warnings.

- Aclam Guitars shall not be held liable for any damage to persons or property caused by incorrect operation or installation.

- Use the product in accordance with the assembly instructions. Do not modify or operate the product incorrectly.

- Incorrect installation could result in serious damage to persons and property.

- Open the package and check that the assembly instructions and all the parts of the product are there. Check that none of the parts are defective.

- Keep out of reach of children. This product contains small parts that represent a choking hazard if swallowed.

- If you do not understand these safety instructions, or if you have any queries regarding the safety of the installation, please contact Aclam Guitars: support@aclam.cat

- If you wish to contact Customer Services at Aclam Guitars, please write to guitars@aclam.cat

Warranty Terms

This product is covered by a two-year warranty from the purchase date, under the conditions and supporting evidence regulated by current Spanish Legislation.
The product warranty will only be applicable by presenting the proof of purchase (which is the invoice or the receipt) and serial number.
A product is covered under warranty if it presents lack of conformity because it does not correspond to the specified product characteristics, is defective which prevents its normal use according to its purpose, or does not function as described. The purchaser has the right to have the article repaired or replaced (either the product or the faulty component, at the discretion of the manufacturer.)

<u>The warranty is not transferable and won't cover the following issues:</u>

· Attempts of modifications or repairs by an unauthorized service center.
· Unsuitable use
· Incorrect storage
· Explosions or burns caused by incorrect power supplies.
· Other causes not attributable to the manufacturer.

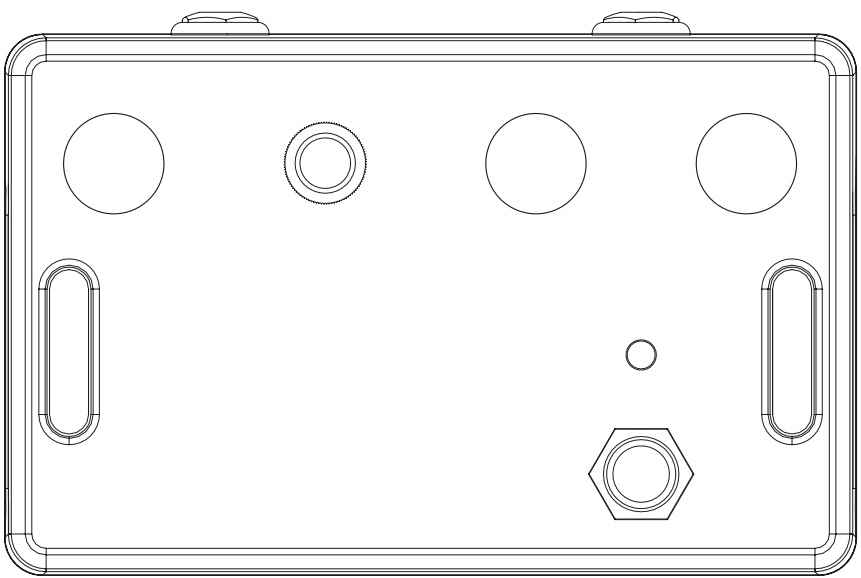
To make a claim, the purchaser must return the product to the store where it was purchased within one month from discovering the fault, and report the nature of the problem, the time and the circumstances under which it occurred.

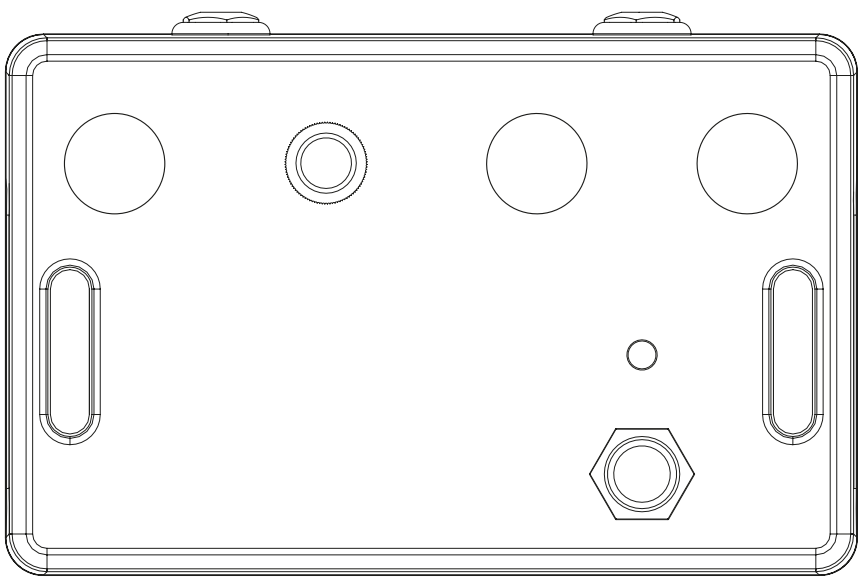
If the product was purchased through our website, the purchaser must refer to www.aclamguitars.com and complete a RMA (Return to Manufacturer Authorization) form before returning the unit.

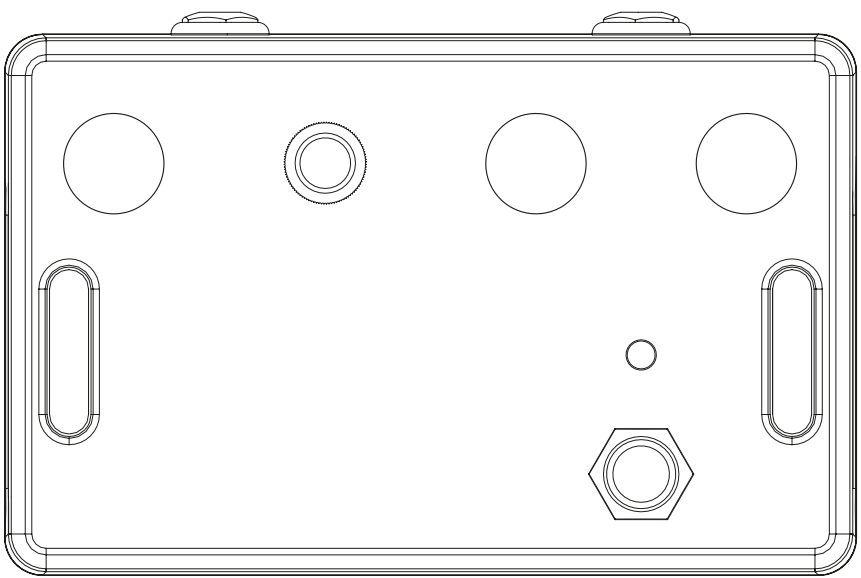
We strongly recommend looking at the "Troubleshooting" section of the manual before panicking!!

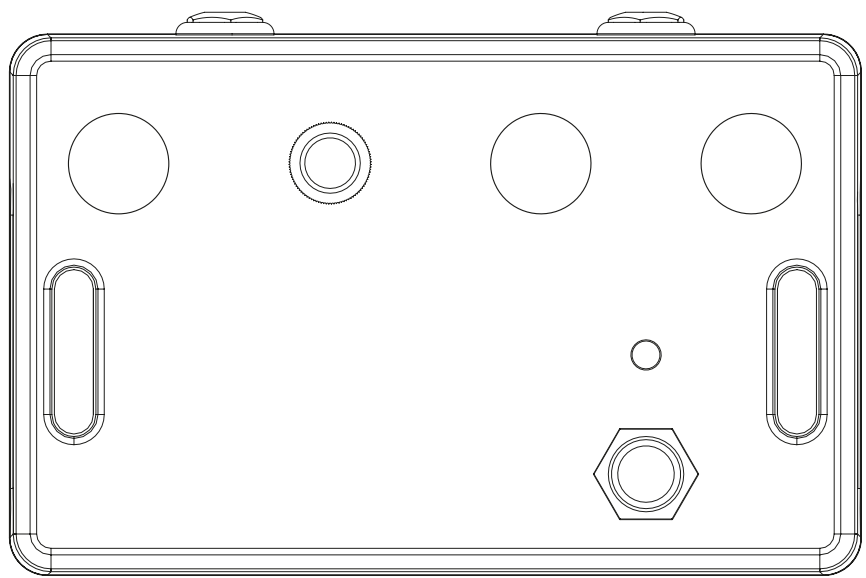
Your own settings

Use this space to save your best setting samples and share them on your social media using **#aclamguitars**









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