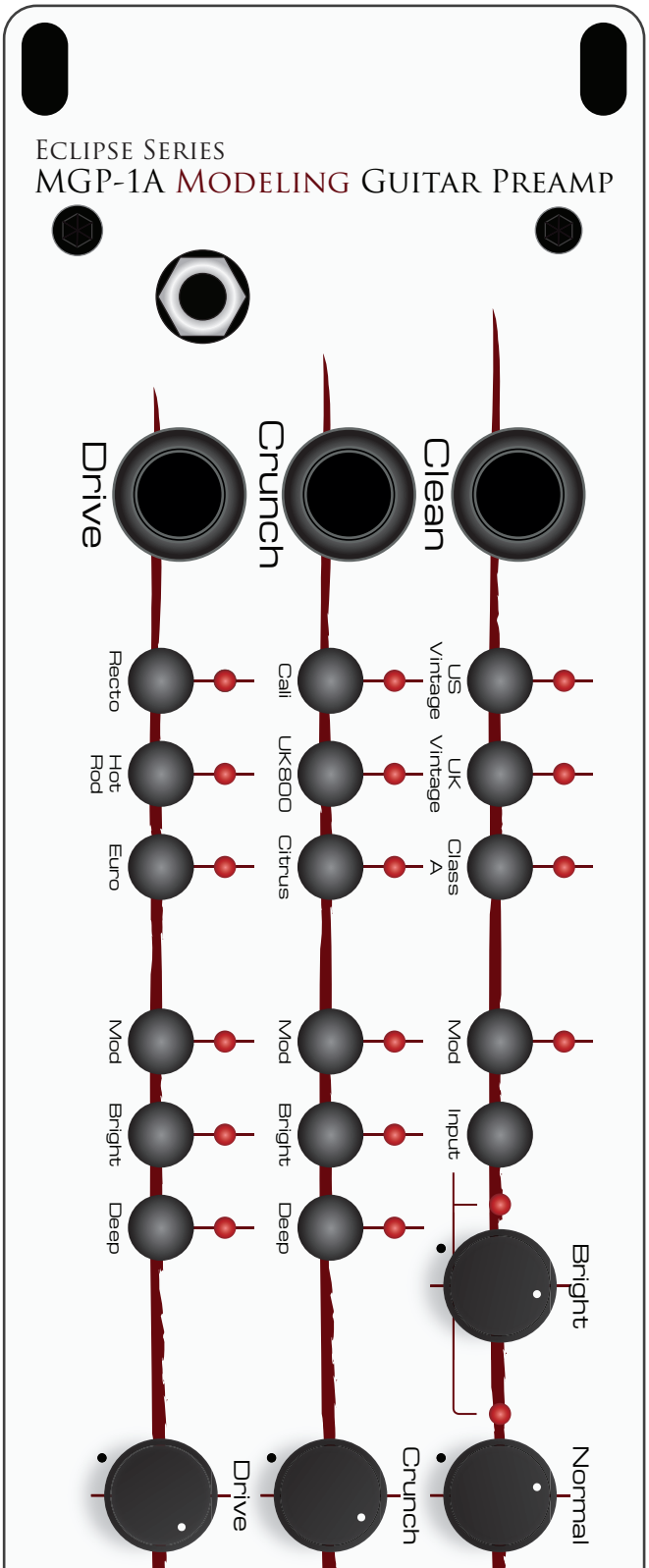
Black Widow Audio Designs

Eclipse Series
MGP-1A Modeling Guitar Preamp
Owner's Manual

March 2018



Contents

Safety Instructions

This symbol warns the user of dangerous voltages levels localized within the enclosure.

This symbol advises the user to read all accompanying literature for safe operation of the unit.

- Read these instructions.
- Keep these instructions.
- Heed all warnings.
- Follow all instructions.
- Do not use this apparatus near water.
- Clean only with dry cloth.
- Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- Only use attachments/accessories specified by the manufacturer.
- Unplug this apparatus during lightning storms or when unused for long periods of time.
- Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
- To insure proper ventilation always make sure there is at minimum four inches (101.6mm) of space behind the rear of the apparatus. The ventilation should not be impeded by covering the ventilation openings with items, such as newspapers, tablecloths, curtains, etc. Do not impede ventilation by placing objects on top of the apparatus which extend past the rear edge of its cabinet.
- No naked flame sources, such as lighted candles, should be placed on the apparatus.
- The apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on the apparatus.
- **WARNING:** To prevent damage, fire or shock hazard, do not expose this unit to rain or moisture.
- The AC plug is the mains disconnect. The plug should remain accessible after installation.
- **WARNING:** EU: permission from the Supply Authority is needed before connection.
- **WARNING:** Always make sure proper load is connected before operating the amplifier. Failure to do so could pose a shock hazard and may result in damage to the amplifier.
- Do not expose amplifier to direct sunlight or extremely high temperatures.
- Always insure the amplifier is properly grounded. Always unplug AC power cord before changing fuse, tubes or removing chassis. Use only same type and rating when replacing fuse.
- Avoid direct contact with heated tubes. Keep amplifier away from children.
- To avoid damaging your speakers and other playback equipment, turn off the power of all related equipment before making the connections.
- Do not use excessive force when handling buttons, switches and controls. Do not use solvents such as benzene or paint thinner to clean the unit.
- Black Widow Audio Designs products are capable of producing very high sound pressure levels which may cause temporary or permanent hearing damage. Use care when setting and adjusting volume levels during use.

Introduction

Thank you for purchasing the MGP-1A Modeling Guitar Preamplifier! The MGP-1A is the world's first All-Tube Modeling Preamplifier offering an extensive collection of the most sought after preamplifiers all in one unit.

Unlike digital devices which use digital signal processing to emulate what a given amplifier would do to your guitar signal, our patent-pending VEnuM™ All-Tube Modeling Technology actually re-configures the internal vacuum tube circuitry to give you authentic tube tone. There are no solid-state or digital devices in the signal path to degrade the quality of sound.

VEnuM® All-Tube Modeling Technology changes the breakup characteristics, harmonic generation, gain and filtering characteristics to ensure the tone is as close to the originals as possible. The only thing we didn't model was the noise, hiss, and hum.

The MGP-1A is a 3 channel preamplifier where each channel has 6 selectable Models that have been chosen as history's best representatives of those channels. Each model has its own unique circuitry and its own tone stack assuring authentic tone.

In addition, each model has a number of unique selectable features which provide further control over the tone of that model. All together, this combines for a total of 264 all-tube, all-analog preamplifier circuits.

Design Philosophy

The primary goal of the MGP-1A Modeling Guitar Preamplifier to combine the best qualities of digital amp modeling and tube circuitry. Digital amp modeling gives you tons of tonal options in small packages, where tubes give you great tone and feel.

We've taken a "product first, no-compromise" approach to the design of the MGP-1A resulting in a performance not typical of traditional tube amplifiers. Every single detail has been well thought out.

Contrary to digital devices, the MGP-1A was designed from the ground up to be extremely effortless to use and to look and feel like a tube preamp. Each knob and switch has a dedicated function (except some MIDI controls) so it is easy to find your way around the unit.

Tube circuits often get knocked for excessive noise, hiss and buzz; however, much of this is due to economics rather than the fault of the tubes themselves. We've designed as much noise out of the MGP-1A as possible. The result is a cleaner, sweeter sound at every setting with far more note articulation than you are probably used to.

Additionally, we've taken many measures to extend tube life; you'll notice the tubes in the MGP-1A will last longer than in other tube devices. Vacuum tubes can be very reliable and long lasting devices. This doesn't seem to be the popular view these days, no doubt thanks (again) to budget tube designs.

We also wanted the MGP-1A to be extremely rugged and reliable, so many design aspects and component choices were made with dependability in mind. However, should anything happen to your unit, rest assured our goal is to have the best customer service in the business.

Finally, a device like this is designed to inspire you. Fantastic sound quality, ease of use, low noise, reliability and a solid feel are all purposely designed to make your guitar playing experience an effortless one. We believe effortlessly sounding your best makes you to play your best.

Whether it's the studio or the stage, the MGP-1A Modeling Guitar Preamp will no doubt be a centerpiece of your rig for years to come.

Getting Acquainted

Before we explain the controls and what they do, there's a couple of things you should know about how the MGP-1A operates. Sure, it looks like a standard 3-channel guitar preamplifier, but there's much more going on behind the scenes to make All-Tube Preamplifier Modeling a reality.

Warm LED

The MGP-1A comes equipped with a Warm LED which notifies you when the tubes have had adequate time to warm up and the unit can be switched out of Standby Mode.

Standby Mode

The Standby Mode of the MGP-1A is not like your average guitar amplifier's Standby Mode. Like most amplifiers, the tube's high voltage is switched off but at the same time the tube heater voltage is reduced. This not only conserves energy but is great for tube health (prevents cathode poisoning). The auxiliary power supplies are also switched off so more energy is conserved, only the front panel power supply is running normally.

NOTE: Even though the tubes aren't seeing high voltage, a portion of the high voltage supply remains active in Standby Mode. **It is not safe to open the unit when the unit is receiving power for ANY reason.**

Auto-Save

You'll notice the MGP-1A automatically saves your last settings per Model. For instance, if you have a tone you love on US Vintage, but want to check out UK Vintage, next time you return to US Vintage the feature settings will all be how you left them. This is so you don't have to remember where that really cool setting was, leaving you free to explore the unit.

Similarly, the unit powers up to its last known state. This includes all Channel and Model settings. We've done this to assure ease of use; even if the power goes out, you can start up right where you left off.

MOSh™ MOSFET Regulated Heaters

On the surface, tube heaters aren't very exciting which is why they are an afterthought in most amps. However, the tube's heaters can be a major source of noise and a determining factor in their life span.

The MGP-1A uses our MOSh™ MOSFET Regulated Heater circuitry to provide the tube heaters with pure, elevated DC power, which drastically reduces noise levels.

In typical amplifiers, the tube's heaters see stresses from inrush current at power on, cathode poisoning in standby, and voltage strains in cathode follower circuitry. MOSh™ protects your tubes against these stresses, increasing tube life and reliability.

Output Levels

Each Model will have different output levels, so the output may jump, sometimes quite drastically, as you are changing settings and Models. This is done for authenticity, as some Models may send higher levels to their respective power amplifiers as part of their sound. However, the Volume controls of the MGP-1A are designed to be extremely transparent, so don't be afraid to use them.

Speaking of levels, its extremely important to set levels correctly in any system. Generally, the first device in the signal chain should do as much of the amplifying as possible, so set the Volume controls of the MGP-1A as high as you can while still respecting the receiving device. This maximizes your signal-to-noise ratio which is essential to getting the most from any audio system.

Included Items

- MGP-1A Modeling Guitar Preamplifier
- MGP-1A Owner's Manual
- Power Cord
- FS-3 Foot Switch
- 5-Pin MIDI Cable

Quick Start

1. Carefully unpack your unit. If there is any damage to the shipping packaging or box, please inspect the unit for damage. Should you find anything, please contact us immediately!

2. Make sure the Voltage Selection Switch is set to the correct mains voltage in your area.

WARNING: Incorrect voltage settings will result in damage to the unit.

3. Carefully fit the unit in your rack and secure with 4 rack mounting screws. For optimum results with all rack mount systems, invest in some rack isolation tabs. Installed correctly, these can make a huge difference in overall system noise performance.

4. Hook up the FS-3 Foot Switch using the supplied 5-Pin MIDI cable from the foot switch to the FS-3 jack on the rear of the unit. If you have a MIDI controller, please use the MIDI IN jack as the FS-3 jack does not receive MIDI data.

5. Connect a 1/4" TS cable into the output jack, and connect the opposite end of this cable to one of the following:

   - A power amplifier (for live and studio use)
   - A speaker simulator (for direct recording)
   - A soundcard/interface input (for direct recording when used with cabinet impulses)
   - An effects processor or anything else that accepts a line level signal

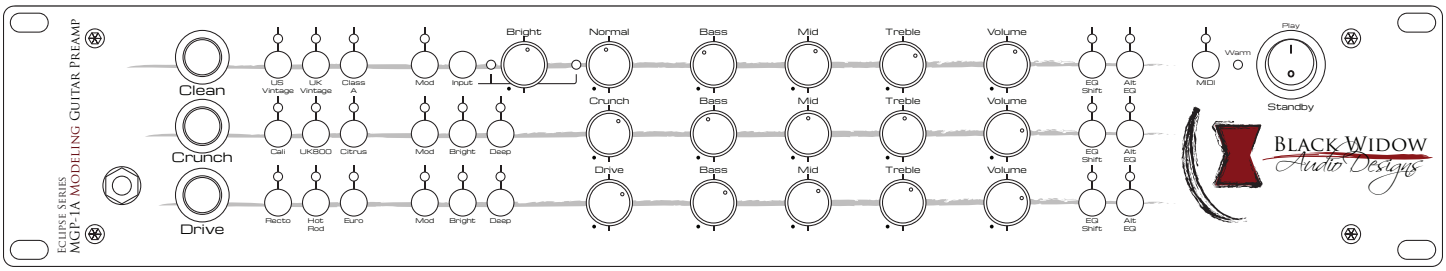
6. Connect a guitar cable to one of the two input jacks. Needless to say, plug your guitar into the other end.

7. Connect the power cord to the AC input on the rear of the unit and to a mains outlet.

8. Turn the Power Switch on. The Black Widow Audio Designs logo will light up indicating the unit is powered on. One minute after the unit is powered on, the front panel "Warm" LED will come on. This LED indicates the tubes have warmed up and the unit is ready to play.

9. Flip the Standby Switch into the "Play" position and enjoy the ride!

WARNING: With the power cord attached, mains voltage is present inside the unit. To change a tube or an internal fuse, check TWICE to ensure the power cable is not attached AND the Black Widow Audio Designs logo is not lit on the front panel. Wait an additional 10 minutes after you've verified the power cord is detached before removing the top cover to allow any capacitors to fully discharge.

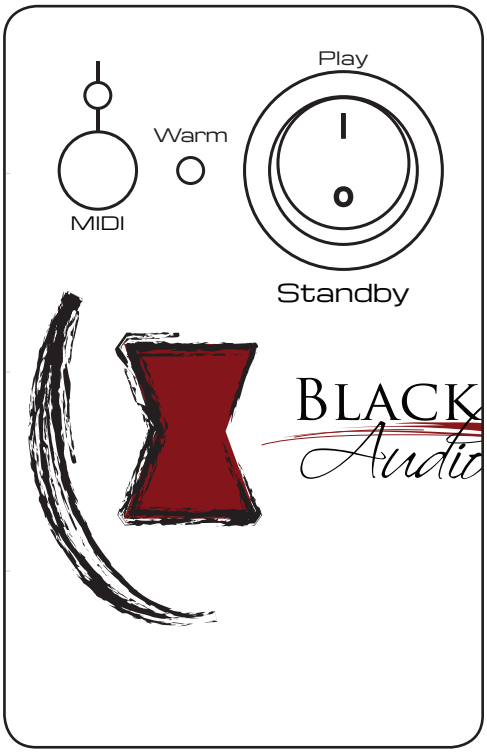


MGP-1A Front Panel

Power Section

Power Indicator

When the Power Switch (rear) is on, the Black Widow Audio Designs hourglass logo will illuminate indicating power is applied to the unit and it is ready for operation.



Standby Switch

The Standby Switch has two purposes. One is to let the tubes heat up before voltage is applied and the other is to conserve power when not in use.

Standby disconnects the high voltage fed to the tubes, turns off the auxiliary switching supply, and reduces the voltage supplied to the heaters to extend their life.

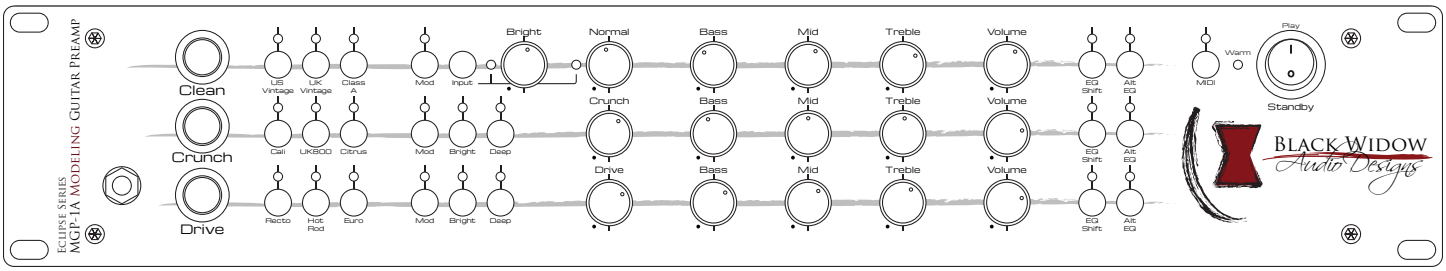
If the MGP-1A will remain inactive for long periods of time, we recommend turning the power off instead of using Standby.

Warm LED

The Warm LED alerts you that the MGP-1A's preamp tubes have had sufficient time to warm up for optimum use. Please wait until the Warm LED is lit to take the unit out of standby.

MIDI Button and LED

When held for 2 seconds, the MIDI button is used to enter and exit the MGP-1A's MIDI programming mode. The MIDI LED will illuminate to provide visual indication that the unit is ready to be programmed. See the MIDI section for an in-depth explanation.



MGP-1A Front Panel

Front Panel Controls

The MGP-1A's channel controls are nearly identical, with the Clean Channel being the exception. We will cover these controls and their function in this section so you know what they do. This will come in handy later in the manual when we reference these controls and their Model-specific functionality.

Front Input

The Front Input allows you to plug your guitar into the front panel. If a cable is inserted here, it will disable the Rear Input. This is great for studio use as it allows players to easily plug into permanent rack fixtures.

Channel Switches

The Channel Switches are the 3 large push button switches labelled, Clean, Crunch and Drive. Use these switches to select the channel you would like to activate. The switch will light up indicating which channel is currently active. Channels can also be changed via the included FS-3 foot switch or with MIDI.

Model Switches

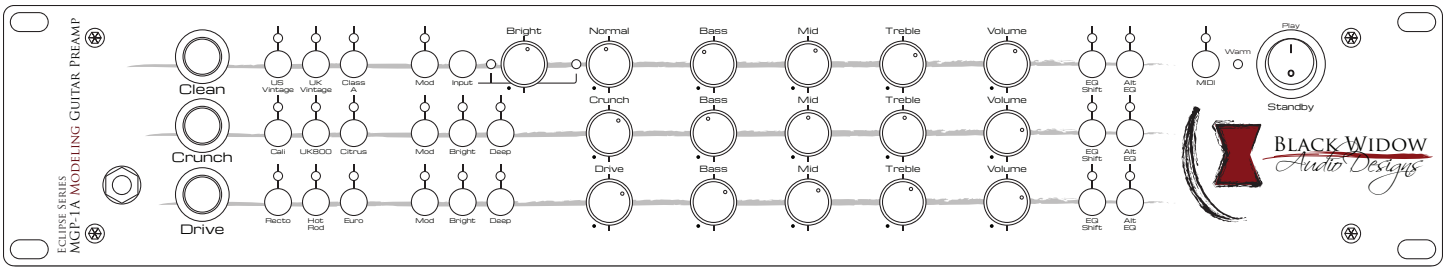
The Model Switches (US Vintage, UK Vintage, Cali, Euro, etc.) select which Model is active for each channel. An LED above each switch will indicate which Model is currently active. When a new Model is selected, you will notice that all or some of the other switch LEDs will change. This is because the MGP-1A stores the last state each Model was in (Mod, EQ Shift, Alt. EQ, etc.) and recalls those settings.

NOTE: Settings on an inactive channel can be changed at any time. This may be useful in a live setting where different songs use different Models and settings and need to be quickly changed.

Mod Switches

The Mod Switch activates the Mod (Short for "Modification") feature. This is essentially a second bank of Models, calling up a Model that is related to the base Model currently selected.

Front Panel Controls (continued)



MGP-1A Front Panel

Input Switch (Clean Channel Only)

The MGP-1A's Clean Channel is unique in that it is a Dual-Input Topology like the classic amplifiers of yesteryear. These amps had two input channels, usually one for guitar and one for bass, each with their own gain control. The output of these controls was mixed together and they shared a common second stage and tone stack.

The Input Switch routes the guitar signal to the selected input channel, Bright, Normal, or Bridged. To change channels on the originals, you would have to physically plug your guitar into the desired input jack. The Input Switch does this for you and an LED will light up telling you which input, Bright or Normal, is active.

When both the Bright and Normal LEDs are lit, the unit is in Bridged mode. In Bridged mode, the inputs are tied together and the input signal is sent to both the Bright and Normal channels simultaneously. This is the old "jumpered input trick", which gives a slight gain boost and allows you to change the character of the tone using the Bright and Normal gain controls, kind of similar to an active EQ (albeit one with distortion!).

Bright and Normal Gain Controls

Bright and Normal control the gain for their respective Clean channel inputs. Like on the originals however, they are interactive with each other and both remain "active" regardless of which input you are using. This is normal and allows for some unique things:

- Use the inactive channel's control as a tone control. For instance, with the Bright channel active, you can add a little bottom to the tone by increasing the Normal control.
- This can also be used as a boost. To compensate for the extra bottom end, reduce the bass control slightly.
- Get the tone of single input amplifiers by setting the inactive control to maximum. Use the Bright Input for an amp with a "Bright" switch engaged, Normal for an amp with the "Bright" switch off.

It goes without saying that in Bridged mode, both controls are fully active. You can use this not just for gain but for changing the balance and character of the overall tone as well.

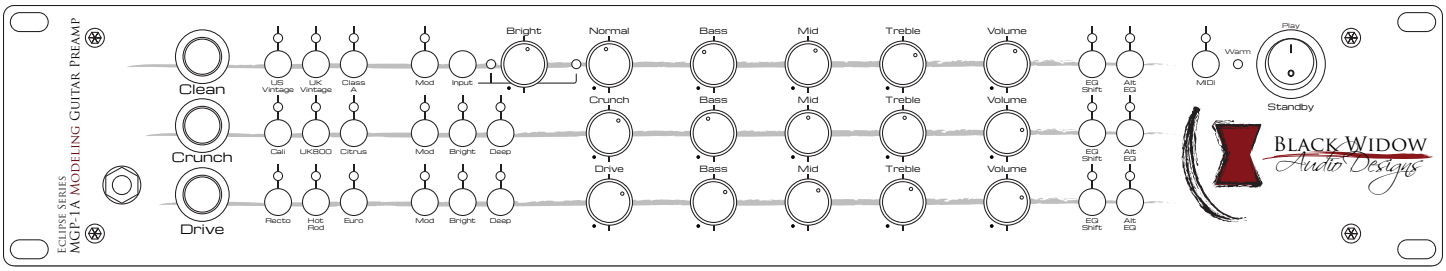
Crunch and Drive Gain Controls

Crunch and Drive are the gain controls for the Crunch and Drive channels, respectively. For the Crunch channel, the Crunch knob will get you anything from clean to heavy distortion tones. The Drive control will take you from overdrive and crunch tones all the way to white hot metal tones.

Bass Controls

Bass adjusts the low frequency level of the corresponding channel.

Front Panel Controls (continued)



MGP-1A Front Panel

Mid Controls

Mid adjusts the midrange frequency level of the corresponding channel.

Treble Controls

Treble adjusts the high frequency level of the corresponding channel.

Volume Controls

Volume adjusts the overall output level of the corresponding channel.

EQ Shift Switches

The EQ Shift feature modifies the tone stack circuit so that it affects a new frequency range. Like every tonal feature of the MGP-1A, it's function is Model dependant, meaning it will do something different for each Model.

This can be useful helping you find your tone or while double tracking to give a slightly different tone, which when combined with little differences in how each take is played will create a huge sound.

Alt EQ Switches

Alt EQ feature rewires the tone stack to be a completely different circuit. We included this feature to help effectively model more amplifiers, and/or to help dial in the exact sound you want to have.

Keep in mind, the EQ Shift works on both the base and Alt EQ tone stacks. This allows for a total of 4 unique tone stacks to be used for each Model.

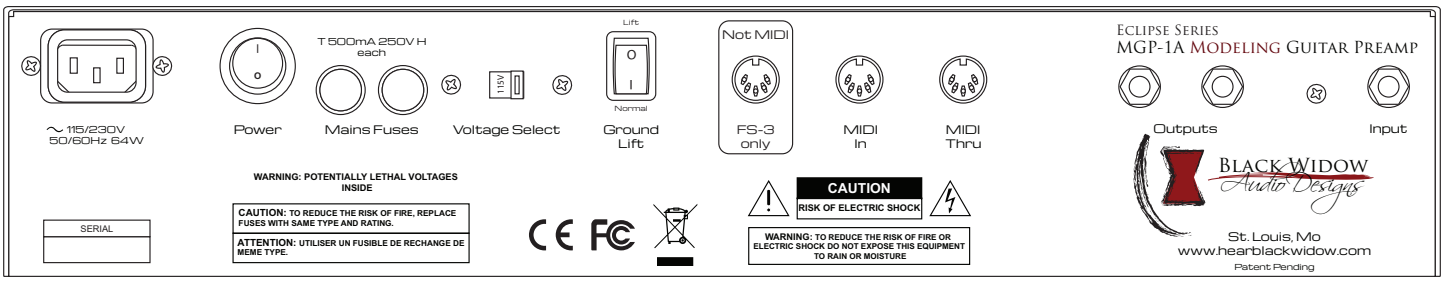
Alt EQ MIDI Functions

You'll notice the Alt EQ labels also have a (+), (-), (esc) next to them. These labels indicate their function when in MIDI Mode.

The Clean Channel's Alt EQ(+) will toggle Omni Mode on or off, or will increase the MIDI channel.

The Crunch Channel's Alt EQ(-) will toggle Omni Mode on or off, or will decrease the MIDI channel.

Holding the Drive Channel's Alt EQ(esc) for 2 seconds will exit MIDI Mode without saving any changes made in case a button was pressed accidentally.



MGP-1A Real Panel

Rear Panel

AC Mains Input

Connect AC Power cord to a grounded mains outlet only.

Only use the supplied power cord or a UL approved type.

Power Switch

Applies power to the MGP-1A when in the 'On' (I) position. The power switch is on the rear of the unit as a rackmount system typically has a power conditioner or a power strip attached.

Mains Fuses

These protect your MGP-1A from electrical faults. Replace only with the same type and rating specified on the rear panel. Failure to do so could result in damage or fire.

WARNING: Replace only with same fuse type and rating!

Voltage Select

Make sure the Voltage selection switch is set to the mains voltage in your region before applying power to the unit. Failure to do so may result in damage or fire.

Ground Lift Switch

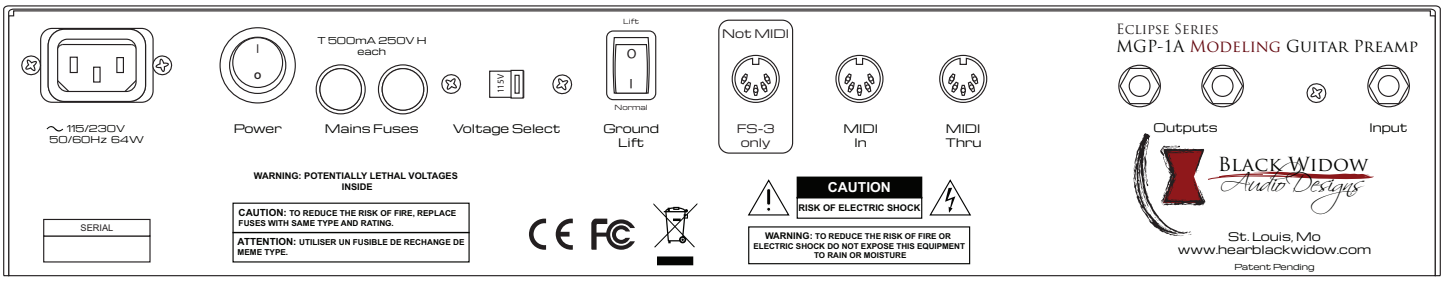
Lifts the signal ground from the chassis ground to potentially eliminate ground loops. If your AC outlet is properly grounded, this switch will likely not be necessary.

FS-3 Jack

Connector for the FS-3 foot switch. The unit will automatically recognize if the FS-3 is attached or not, even if it is plugged in or comes unplugged during a set.

NOTE: This jack does not recognize or send MIDI data so if MIDI isn't working, check here.

Rear Panel (Continued)



MGP-1A Real Panel

MIDI IN

Connect a MIDI foot controller here or a cable from another device's MIDI Thru or Out jack. This jack receives MIDI data so the MGP-1A can be controlled remotely.

MIDI Thru

If you have other MIDI devices in your rig, this jack can be used to daisy chain to other MIDI capable devices. This jack forwards a copy of any MIDI messages received through the MIDI IN jack. Please note that this jack does nothing without a cable connected to MIDI IN.

Outputs

Use these jacks to connect the output signal of the MGP-1A to other devices. The same signal appears on both jacks allowing for some flexible hookup options. Try one or combinations of the following:

- Black Widow Audio Designs MPA-XX Modeling Power Amplifier input.
- Speaker simulator line input.
- FX unit, mixer, sound card or audio interface unbalanced input.

FX Loop

Don't see it? It's there...

The typical FX loop is a patch point inserted between the preamp and power amplifier section of a guitar amp. Since this is a preamp, returning the FX signal back to the unit and then out again requires another tube and adds unnecessary noise. To use effects, simply use one of the outputs as an FX Send, and return the FX output to a power amplifier or the next device in the chain.

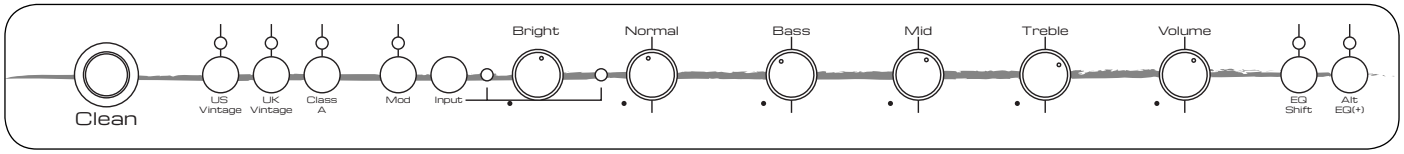
If you are using the MGP-1A with a guitar amplifier head or combo unit with an effects loop and "power amplifier input", try both to see which sounds best. The reason for this is the FX return will normally provide some gain to boost the return signal up from line levels. If power amplifier distortion is part of your sound, then the FX unit itself may not be able to drive the power amplifier hard enough, so it will need some help from the FX return amplifier.

Input (Rear Panel)

This is the MGP-1A's rear input. This input allows for easy integration into professional studios using patchbays or for those who don't like front panel inputs.

NOTE: This input is automatically disconnected when a cable is inserted into the Front Input.

The Clean Channel



The MGP-1A's Clean Channel accurately models many of the most sought after amplifiers of all time. This channel will take you from glassy cleans to raunchy overdrive just like the originals.

These amplifiers all used a Dual-Input Topology which is essentially a two-channel preamplifier. Each "channel" has its own gain control, but share a common EQ and volume control. We've kept this arrangement as it allows you to do some really useful things for both tone and modeling purposes.

The Models

US Vintage

The US Vintage Model is based on the classic Fender® '59 Bassman®. This Model has fat lows and silky smooth highs and just adores single coils. The default tone stack circuit is the "classic Fender®" tone stack which allows for a wide range of tonal control and a slightly scooped midrange.

Mod

When Mod is engaged, we are modeling the tone of the later Fender preamplifiers with 12AX7's in V1. There's more gain on tap, the tone controls are a bit sweeter and the overall touch response is improved.

EQ Shift

In our first designs, US Vintage's EQ Shift was a bass boost like the "Deep" Switch found on the Super Bassman®. However, this model has enough bass as is, so instead we opted for a more useful treble shift, which lowers the treble frequency deeper into the midrange.

Alt EQ

The Alt EQ rewires the tone stack to the original "vintage Fender®" design which is a bit weaker as far as the range of controls are concerned, but it has less insertion loss (higher volume). The frequency ranges are shifted higher and the mids are a bit stronger.

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The Models (continued)

UK Vintage

This model is based on the early Marshall® JTM-45. Marshall's first amplifiers were part for part copies of the Fender amps, but the JTM-45 was the first amplifier with the Marshall "voice".

This model is more aggressive and much brighter than its US counterpart and has a classic, crunchy tone that is timeless. The default EQ is the "classic Marshall®" tone stack, which is a bit harder sounding than the classic Fender EQ.

Mod

UK Vintage's Mod feature evokes the sound of the classic 1987 "Plexi" Super Lead which has more gain, edge and grind than the JTM-45.

EQ Shift

Marshall® didn't mess with their EQ too much over the years, so we had to come up with something that would be useful. Since the UK Vintage tone is bright, the EQ shift is a mid shift to give add a little more presence.

Alt EQ

The alternate EQ is the "classic Fender®" tone stack which has a scooped tone, targeting lower mids than the default EQ.

Class A

The Class A Model is based on the Vox® AC-30®. This amplifier is known for its chime and sharp overdriven tone and has been used on too many albums to count. The AC-30® never had a midrange control, but we've added one for extra tone shaping. Set the midrange around 11 o'clock for the authentic Vox® EQ.

Mod

The Class A mod switch is based on the original AC-30® Top Boost. It has a harder, glassier tone and more gain.

EQ Shift

The Class A EQ Shift is a mid shift lowering the midrange frequencies but boosting them as well. The classic Vox® EQ scoops the mids quite a bit, so a stronger midrange presence can be welcome for new tones.

Alt EQ

For the Class A Alt EQ, the tone stack rewires itself to the classic Fender® tone stack. This EQ circuit is found in the AC-120® and has a really sweet tone when used with this model.

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Tone Tips

While these Models were primarily designed for "clean" tones, don't be afraid to drive them hard. Many of the best guitar sounds in history came from pushing these amplifiers to their limits. To get the best overdriven tones, remember that the preamplifier sections of these amplifiers contribute very little towards the overdrive sound, most of that happens in the phase splitter and power tubes. Clean amps are unique in this regard.

The power amplifier section is also the major contributor to the touch response of these "clean" amplifiers, caused by the inability of the power supplies to keep the voltage levels constant. This is called 'sag'. When the power supply sags, the amp distorts a little easier and the sound is somewhat compressed. If you don't have a tube power amplifier, you can emulate the power amp "sag" sound by using a compressor after the MGP-1A.

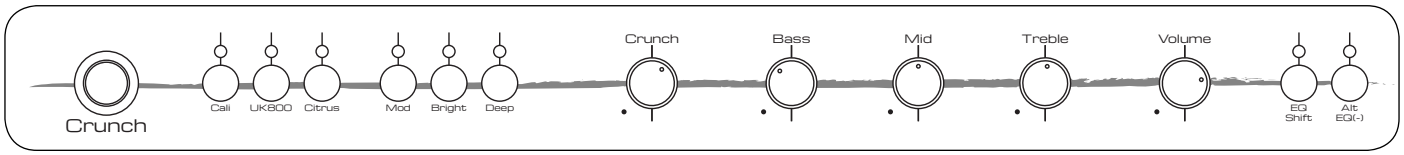
Clean tones don't naturally compress as much as overdriven and distorted tones do anyway, so a compressor can tame the 'attack' (sharp beginning of a plucked note). The 'attack' of a clean tone is usually very high in amplitude relative to the sustain portion of a note, which can be good or bad depending on your playing style.

If using the MGP-1A in conjunction with a power amp simulator and/or cabinet simulator, do not be afraid to experiment with different power tube models, power amplifier topologies, and speaker combinations for modeling purposes or just pure tonal experimentation.

You can successfully model many Fender® amplifiers this way. The tones of the early Fender® Champs, for instance, can be found with US Vintage (Mod off) with a single-ended 6V6 or 6L6 model.

If you are trying to get the tone of an amplifier with a single 'tone' knob EQ, try setting Bass and Treble to 0, and Mid control at 10. Then bring the bass or treble up to give the sound of treble 'cut' or bass 'cut' respectively.

The Crunch Channel



The Crunch Channel gives you classic preamplifier models known for their crunch and overdrive sounds. You can coax anything from clean to distorted tones from this channel; it may be the most versatile of them all.

You'll notice the Crunch Channel looks a bit different than the Clean. That's because this is where we begin to see a movement towards a single input design and we also begin to see some switchable tone shaping options added to the feature set. We've included these options as our Bright and Deep switches.

The Models

Cali

The Cali Model is based on the classic Mesa Boogie® Mark IV®'s Rhythm 1 channel. The Mark IV's Rhythm 1 channel is a direct descendant of Fender's reverb equipped models, so many of those tones can be found here.

An interesting thing about this preamplifier is the EQ is found after the first stage as opposed to most amplifiers which place it after the last stage. This allows you to shape some of the breakup character of the amplifier but can make the EQ weaker at higher gain settings. The default EQ is the classic Fender® EQ circuit.

Mod

When Mod is engaged, the MGP-1A switches to the Mark IV®'s Rhythm 2 channel, which has much more gain and a slightly different voicing. This tone is great from both rhythm and lead tones, and has excellent high gain breakup when pushed.

Bright Switch

The Bright Switch engages the same bright sound as the original "Pull Bright" found on the Mark IV®. Adds a nice sparkle, especially at lower Crunch settings.

Deep Switch

The Deep Switch performs the same low-midrange boost as you get with the "Pull Fat" option on the Mark IV®. Adds a little fatness without being muddy.

EQ Shift

Cali's EQ Shift is the "Treble Shift" feature which lowers the treble into the mids which is great for adding a bit of presence to the tone.

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The Models (Cali)

Alt EQ

The Alt EQ rewires the tone stack to be a Fender® /Marshall® hybrid EQ circuit which has a beefier low end but still has a great range of control.

UK800

The UK800 Model is based on the Marshall® JCM-800 2203/4. It can be thought of as a high gain Plexi, and when people talk about the Marshall® sound, this is it. Bright and crunchy, when pushed it has a very fluid feel about it. Most of the classic tones from this amplifier came from driving the EL-34 based power section hard, so keep this in mind.

The default EQ is the classic Marshall® EQ which has higher gain, more midrange presence but less range than a Fender style tone stack.

Mod

UK800's Mod feature is based on the JCM-900 which has higher preamp gain but a classic Marshall® voice.

Bright Switch

The JCM-800's are very bright, too bright for some. Common modifications remove the bright capacitor across the gain control. We've removed it by default, but the Bright Switch puts it back for authentic JCM-800/900 tone.

Deep Switch

Since Marshall® amplifier's are bright, the Deep Switch adds some extra punch in the low end. This is based on common modifications done to this amplifier to fatten it up.

EQ Shift

UK800's EQ Shift is a 'Mid Boost' which again was a commonly performed modification from the era. This results in a bit more "grind" in the tone which can be very nice for rhythm.

Alt EQ

The alternate EQ is the JCM-800 2205's tone stack which isolates the mids and makes the bass control more powerful.

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The Models (Citrus)

Citrus

Citrus is based on the original Orange® Graphic Mk. II. This is THE Orange® tone, not to be confused with the current modern offerings. This is a great, growly tone that can sound raw or refined depending on how you set it.

Like the Cali Model, the EQ comes early but here the Graphic Series amplifiers use the unique James tone stack. This tone stack has hi-fi origins and can be a bit odd at first to use, so we'll spend a bit of time covering it. The first thing you need to know is that this EQ never had a midrange control, but it still allows for potent midrange shaping. Its response is nearly 'flat' with the Bass and Treble controls set to 5. The mids will stay flat, so turning the Bass and Treble controls up will not only boost bass and treble frequencies, but also 'scoop' the mids, and turning both down will 'boost' the mids.

Since we didn't want a 'dead' control, we modified the tone stack so the Mid control cuts and boosts the midrange frequencies. The Mid control in this tone stack is weaker than you may be used to, so don't forget to adjust the bass and treble for stronger/weaker midrange effect. Set the Mid control all the way up for the authentic James tone stack performance.

Mod

The Citrus Mod is based on the Diezel® VH4 channel 3. Chunky, fat, ballsy and clear are all affectionate terms to describe the tone of this versatile model.

Bright Switch

The Bright Switch behaves differently for each Citrus model. For the default model, the Bright switch simulates the Orange® Graphic Mk. II's F.A.C. at position 4. Turning Bright off is like the F.A.C. at position 2.

For the Mod, the Bright switch acts like a normal bright switch. The VH4 never had a bright switch for this channel, so turn it off for authenticity.

Deep Switch

Both Citrus models have great low end already, so we've made its default state a bit brighter. Engaging the Deep Switch puts the low end back to it's normal, dominant position.

EQ Shift

The Citrus EQ Shift is a mid shift control, shifting the midrange lower. This also makes the 'scoop' a bit less strong, but the 'boost' a bit stronger. If Alt EQ is off, then EQ Shift models the tone stack found in the "Pics and Text" model.

Alt EQ

The Alt EQ for the Citrus Model is the classic Marshall tone stack. This is the default tone stack in the Diezel® VH4, so don't forget to engage it with this model.

Tone Tips

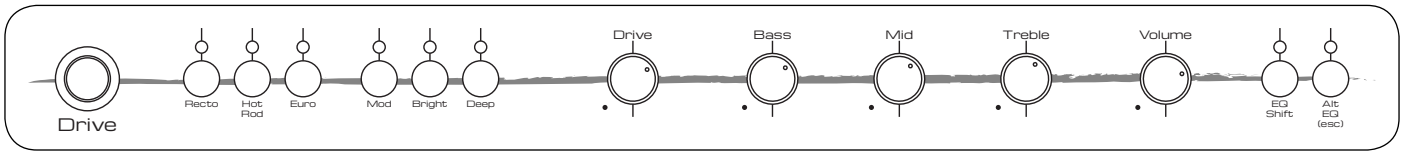
Just like the Clean Channel, using a tube power amplifier or power amp simulator can be put to good use on this channel. This is especially true for the UK800 and Citrus Models, as most of the best distorted tones coming from those amplifiers relied on power amplifier distortion.

This channel is perhaps the most versatile of the three, as you can get anything from clean to overdrive to lead tones. A distortion pedal in front of this channel can give you another layer of versatility, as these amplifiers saw fuzz and overdrive pedals really come into their own around the same time period. You can bet many great guitar tones over the years were from a combination of a dirt pedal and amplifier distortion.

With the higher gains in this channel, speaker choice can have a huge tonal impact since overdrive produces far more harmonics than clean sounds. Speaker simulators can be put to great use here for both live and studio purposes.

This is also the point where double tracking a rhythm part and panning one left and the other right can really make the recorded guitar tone “pop” (sound huge). Make sure you record two separate takes, simply copying a single take to a new track doesn’t have the same effect.

The Drive Channel



The Drive Channel conjures up the most coveted hi-gain sounds. Here you'll find everything from mild overdrive, chunky riffage and white hot lead tones. This channel is perfect for solos, rock and metal and anything else you decide to do with massive amounts of all-tube distortion.

The Models

Recto

Recto is based on the Red Channel of the early Mesa Boogie® Dual Rectifier®. For the longest time, this was THE hi-gain sound. It has a rather chainsaw-ish quality to it's breakup, with massive low end and a liquid high end. This tone has been heard on countless records and is very versatile in what it does well.

This circuit originally was developed by Soldano® in the form of the SLO-100, X Series Preamps and others. Since then, other manufacturers have used this preamp circuit like Peavey®, Framus® and more. Expect those tones to be available from this Model as well.

Mod

When Mod is engaged, the MGP-1A calls up the tone of the Splawn Nitro. The Nitro has some similarities with the Dual Rectifier but tonally it is a different beast. You'll notice this especially in the character of the distortion and tonality.

Bright Switch

The Dual Rectifier's® bright cap is hardwired, so we have removed it by default. Similarly, the Nitro never had a bright switch, but it has plenty of high frequency emphasis, so we removed some of this in the default setting. For accurate tone, Bright should be engaged on both of these models.

Deep Switch

The Deep Switch never was a feature in the Mesa Boogie® Rectifier® Series but one of the refinements made to the preamplifier circuitry over the years by Mesa Boogie® was to reduce the low end emphasis. We've used the reduced low end as our default setting, but engage the Deep Switch for authentic early Rectifier® tone.

EQ Shift

We've made the default EQ for the Recto the classic Marshall® EQ, which was used in the Orange Channel of the Dual Rectifier® and the Nitro. The EQ Shift changes this to the Dual Rectifier's® Red Channel's EQ, which lowers the treble and mids slightly.

Alt EQ

The Alt EQ rewires the tone stack to the classic Fender® EQ. We really love this EQ with this model, as it digs into the mids a bit more, resulting in a smoother tone.

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The Models (Hot Rod)

Hot Rod

The Marshall® JCM-800 is Marshall's most iconic amplifier, but it also one of the most modified. Most of these modifications were done to add more gain. Laney®, Bogner®, and Lee Jackson, to name a few, all did amplifiers based on this platform. Even Marshall themselves got into the game.

We've based our Hot Rod Model on the Marshall® JCM-900 SL-X. This Model does a little of everything, from lead to rhythm to riffs to metal.

Mod

Hot Rod's Mod conjures up the Bogner® Ecstasy's® Red channel. This has a very complex tone which is rich in harmonics, full and gorgeous mids, and tons of body.

Bright Switch

Just like the UK800, we've voiced these Models darker by default. Engage the Bright Switch for the tone of the original amplifiers.

Deep Switch

Hot Rod's Deep Switch boosts the bass to bring it out a bit more. These preamps still retain the brighter tone of the JCM-800, so a little extra low end doesn't hurt.

EQ Shift

The default EQ is the classic Marshall® tone stack. EQ Shift scoops the mids a tad and lowers the treble frequency to highlight the upper midrange a bit more.

Alt EQ

The Alt EQ isolates the Bass and Mid controls for a little extra range with a little less interaction between the controls. This is very welcome for higher gain sounds to sculpt your sound as you see fit.

Euro

Euro is based on the 3rd channel of the Diezel® Herbert®. It's mean with tons of gain on tap and a modern tone. While great for metal, it's by no means a one trick pony. Leads are extremely fluid through this Model and rhythm tone can benefit from it's tight low end. Don't be afraid to crank the Mid control on these Models, they are some of the best in the business.

Mod

The Euro Mod conjures up the ENGL® Powerball® channel 4. This Model is just as agressive, but is a bit smoother and less saturated.

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The Models (Euro)

Bright Switch

The Bright Switch adds a little more highs. Unlike other bright switches, this one will still brighten your tone even with the gain setting at 10. The Diezel Herbert doesn't have a bright switch, so leave it off for authenticity.

Deep Switch

The Deep Switch is the same as the Powerball's® "Bottom" feature. This is a wonderful sounding bass boost and is great for modern styles.

EQ Shift

The default EQ can best be described as a bit Marshall® and a bit Fender®. When EQ Shift is selected, it is the same as the ENGL® E530 Preamp's Contour feature. This acts as a mid boost and works very well with these tones.

Alt EQ

The Alt EQ rewires the tone stack to that of a classic Fender® tone stack. This will give you a nice scooped tone with great bass and highs at the expense of some gain, which is unlikely to be a problem.

Tone Tips

When you have this much gain, the power amplifier becomes less of a part of the tone and is free to concentrate more on its primary job: providing power to the speaker cabinet. High gain preamps were an attempt to get sound of a cranked amp at reasonable sound levels after all.

'Sag' isn't a part of high gain amp sounds either since these amps typically use much larger power supplies and the sound is naturally more compressed than clean and crunch tones due to tube clipping.

The amount of harmonics generated by all this gain means the EQ will sound much more powerful, and thus small changes can make a huge difference. Don't be afraid to try some radical settings, you just might like them.

These extra harmonics also mean a different speaker model can drastically change the sound of the MGP-1A, so if you are using an IR speaker simulator, try something different!

When double tracking high gain parts, you will get a much better tone by dialing in a sound you like and then backing off the gain knob slightly. When played with the second track, the parts will sound like they have more gain than they actually do.

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Model Summary

Clean Channel					
Model	Based on:	Mod	Default EQ	EQ Shift	Alt. EQ
US Vintage	Fender® Bassman®	Fender® Deluxe®	Classic Fender®	Treble Shift	Vintage Fender®
UK Vintage	Marshall® JTM-45	Marshall® "Plexi"	Classic Marshall®	Treble Shift	Classic Fender®
Class A	Vox® AC-30®	Vox® AC-30® Top Boost	Classic Vox® w/ Midrange	Treble Shift	Classic Fender®

Crunch Channel					
Model	Based on:	Mod	Default EQ	EQ Shift	Alt. EQ
Cali	Mesa Boogie® Mark IV® Rhythm 1	Mesa Boogie® Mark IV® Rhythm 2	Classic Fender®	Treble Shift	Fender®/ Marshall® hybrid
UK800	Marshall® JCM-800	Marshall JCM-900	Classic Marshall®	Mid Boost	Marshall® 2205
Citrus	Orange® Graphic Mk II (Pics Only)	Diezel VH4 Ch. 3	Orange® James	Treble Shift	Classic Marshall®

Drive Channel					
Model	Based on:	Mod	Default EQ	EQ Shift	Alt. EQ
Recto	Mesa Boogie® Dual Rectifier® Red	Splawn® Nitro	Classic Marshall®/ Orange Ch. EQ	Red Channel EQ	Classic Fender®
Hot Rod	Marshall® JCM-900 SL-X	Bogner® Ecstasy® Red	Classic Marshall®	Treble Shift	Isolated Treble
Euro	Diezel® Herbert® Ch.3	ENGL® Powerball® Ch.4	ENGL® EQ	ENGL® Contour	Classic Fender®

There are two ways to approach the MGP-1A Modeling Guitar Preamplifier. One is to just appreciate the shear number of tones available and just find the settings that you like without caring about accurate modeling. The above Model Summary is designed to quickly help guide you in the right direction, especially when first getting familiar with the unit.

The second approach is to model specific amplifiers. Our choice to give each channel the models and features we did was to maximize the number of specific amplifiers we can accurately model. Based on extensive research, we've created the "MGP-1A Advanced Modeling Guide" which will show you the exact settings to use to model the tones of your favorite amplifiers along with power tube and speaker settings so you don't have to do any research.

Which approach you take is entirely up to you, but we recommend trying both. Accurately modeling some amplifiers requires some pretty extreme control settings, ones you may not stumble on normally. This can open up new sound possibilities for you.

And even with many specific models highlighted in the Advanced Modeling Guide, the MGP-1A is capable of creating many sounds that aren't attributable to any known amplifier, so some combinations of settings will be your own amplifier design.

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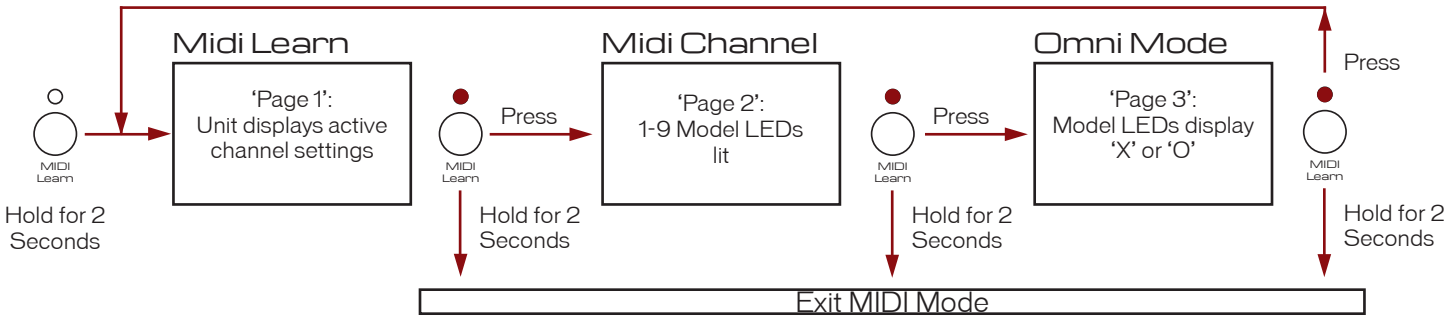
The MGP-1A Modeling Guitar Preamplifier is MIDI equipped allowing it to be controlled from either a MIDI foot-controller, keyboard or DAW. Any of the switchable features can be triggered remotely, and up to 128 program settings can be stored internally.

MIDI can be complicated but we've designed the unit's MIDI capabilities to be extremely easy to use. The MGP-1A has 3 basic MIDI functions: MIDI Learn, MIDI Channel Assignment and MIDI Omni mode On/Off.

MIDI Mode

All MIDI functions are accessed by putting the unit into MIDI Mode. To do this, simply hold the MIDI button for 2 seconds until the MIDI LED flashes twice. The MGP-1A's outputs will mute, the MIDI LED will stay lit and from here you can access and change the MIDI settings.

MIDI Mode is divided up into 3 virtual 'pages' corresponding to the 3 basic MIDI functions. Every time you enter MIDI Mode, you start on page 1, or MIDI Learn, where the unit will listen for a program change message and store it to memory. You can see which 'page' you are on by looking at the unit's front panel LEDs.



MIDI Mode Flow Chart

On the MIDI Learn page, the front panel LEDs will display the settings of the active channel only, indicating this is the setting that will be stored when a program change is recieved. Inactive channels will have all LED's off.

To advance to page two, hit the MIDI button once. Now we are on the MIDI Channel Assignment page, and the only LEDs that will be active are the Model LEDs. The number of LED's lit up indicate the MIDI channel the MGP-1A is listening to for a program change message.

To advance to page 3, the hit MIDI button a second time. Now you will see either a 'O' or an 'X' drawn by the Model LED's indicating Omni mode On ('O') or Omni mode Off ('X').

Hitting the MIDI button again will advance back to page 1.

You can exit MIDI Mode from any MIDI page by simply holding the MIDI button for 2 seconds. Again the MIDI LED will blink 2 times then turn off. All MIDI changes made will be stored at this time. The unit will then resume normal operation.

If, for whatever reason, you wish to exit MIDI Mode without storing any changes made, simply hold the Drive channel's Alt EQ (esc) for two seconds. The MIDI LED will flash twice, turn off, and the MGP-1A will resume normal operation.

Assigning a Program

To store a program, first set the MGP-1A to the desired state you wish to save. For example, let's say we want to store US Vintage with the Input set to Bright, and all other features turned off in Program 1. We set the MGP-1A this way, then enter MIDI Mode.

When in MIDI Mode, we simply send program change 1 from the foot controller. The MGP-1A will flash the MIDI LED briefly indicating it received a valid program change message. Exit MIDI Mode and the program is then saved as Program 1. Now every time the unit receives program change message 1, it will recall our US Vintage program example. That's all there is to it.

If the MIDI LED doesn't blink, it means it doesn't recognize the program change message or is not set to listen to the MIDI channel we are sending our message on. Be sure you aren't sending the unit a control change message and that the channel is set correctly.

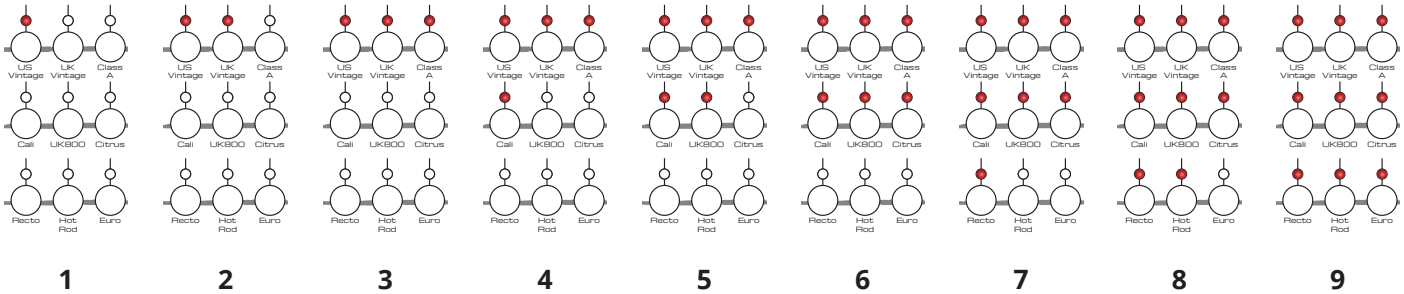
Changing the MIDI Channel

By default, the MGP-1A ships with the MIDI channel assigned to Channel 1. Sometimes this will work fine, but other MIDI channels may be desirable.

The MGP-1A can be set to MIDI channel 1-9, meaning it will only respond to a program change message addressed to that MIDI channel and will ignore messages addressed to other channels.

NOTE: In order for this to work, Omni must be first be turned off.

To change the MIDI Channel, we first enter MIDI mode and press the MIDI button once to go to MIDI "page" 2. The Model LEDs will light up showing which channel we are assigned to. If only US Vintage it lit up, it means the MGP-1A is set to channel 1. If US and UK Vintage are lit up, the MGP-1A is set to channel 2 and so on. For visual reference, see below.



MIDI Channel Indication

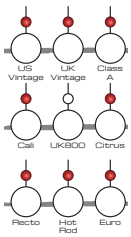
We change the MIDI channel by using the Clean and Crunch channel's Alt EQ buttons. If you wish to increase the MIDI channel, hit the Clean channel's Alt Eq(+). If you wish to decrease it, use the Crunch channel's Alt EQ(-) button.

If you try to increase the channel when it is currently set to 9, it will start back over on channel 1. The same goes for decrementing the channel when set to 1, it will jump to 9. This makes it faster to change to distant MIDI channel numbers.

Omni Mode

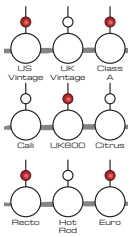
By default, the MGP-1A ships with Omni Mode on, which means the unit will respond to any program change message. This can be desirable, but more complex systems may want the MGP-1A to respond to a message sent only on a specific channel. In this case, we need to turn Omni Mode Off and assign the MGP-1A a MIDI Channel.

To turn Omni Mode on or off, we enter MIDI Mode and hit the MIDI button twice. The Model LED's will show either an 'O' or an 'X' indicating we are on the correct page. Here's what you will see:



Omni On (O)

or



Omni Off (X)

Omni Mode Indication

To change the mode, hit either the Clean channel's Alt. EQ(+) button or the Crunch Channel's Alt. EQ(-) button to toggle Omni on or off. When you have the correct setting shown, either hit the MIDI button to edit another MIDI parameter or hold the MIDI button to save your changes and exit.

MIDI Notes

The MGP-1A will mute the outputs and the buttons will not respond in MIDI Mode. We did this so you don't accidentally store settings, thinking the unit is in operating normally. If you hit a wrong button or for whatever reason you want to exit MIDI Mode without saving, hold the Drive channel's Alt EQ(esc) button for 2 seconds until the MIDI LED blinks twice. Changes made in MIDI Mode are only saved on exiting, so don't worry if you screw something up.

For this same reason, you can only store one program each time you enter MIDI Mode. If you send the unit more than one program change, only the **last** one will be stored.

Tubes

The MGP-1A ships with premium Tung-Sol 12AX7's in all 4 tube positions. These tubes have a very complex, rich tone that we find works well for just about anything.

The MGP-1A has a lot of behind the scenes circuitry that will extend the life of the tubes, but inevitably, they will eventually need to be replaced.

When replacing the tubes please follow the procedures below. This device uses high internal voltages that can be lethal. If you do not feel comfortable or have any doubts about what you doing, please do not attempt and find someone qualified to assist.

1. Turn off the unit and unplug the power connector.

2. Wait 10 minutes for the capacitors to fully discharge.

WARNING: There are circuits in place that remove latent high voltages from the chassis. However, do not assume the inside of the chassis is "Safe" as things can come loose or fail under certain conditions. Always assume there are high voltages present!!

3. Remove the unit from the rack if rack mounted.

4. Remove the screws from the top and sides of the unit.

5. Remove the top cover.

6. Place your wrist/arm on the top of the front panel and grab the tube near the top with your fingers and hand to the sides of the tube.

7. Gently rock the tube back and forth while also gently pulling upwards until tube is removed.

8. Orient the replacement tube's pins with the tube socket. While grabbing it again near the top, slowly push the replacement tube into place. Again, a slight rocking motion may help. DO NOT force the tube as you may damage the pins and socket.

9. Repeat for remaining tubes.

10. Visually inspect that the tubes are all seated nicely and there are no bent pins.

11. Replace top cover and reinstall the unit.

The MGP-1A uses 12 VDC to power the tubes inside the unit. Feel free to use any 12--7 type tube such as the 12AT7, 12AY7, 12AU7, 12BH7, or 12DW7 tube types. **Any tube with 6 volt heaters will likely be damaged and cause damage to the MGP-1A. This will void your warranty.**

Please note that best results come from using 12AX7 variants (ECC83, ECC803, 7025, etc).

Warranty and Repair

Subject to the exclusions found below, this product is warranted by Black Widow Audio Designs, against manufacturing defects in materials and workmanship for the period of One (1) Year from the date of purchase, with the exception of tubes and fuses where applicable, which carry a Ninety (90) Day warranty.

The warranty period commences on the date of purchase by the original user only. During the warranty period, Black Widow Audio Designs shall, at its sole option, either repair or replace any product that proves to be defective upon inspection by Black Widow Audio Designs.

This is your sole warranty. Black Widow Audio Designs does not authorize any third party, including any dealer or sales representative, to assume any liability on behalf of Black Widow Audio Designs or to make any warranty for Black Widow Audio Designs. Black Widow Audio Designs may, at its option, require proof of original purchase date in the form of a dated copy of the original authorized dealer's invoice or sales receipt.

Performance under this warranty must be obtained at only the Black Widow Audio Designs factory or a Black Widow Audio Designs authorized service center. Black Widow Audio Designs may require advanced authorization of repairs to authorized service centers. Unauthorized service, repair or modification will void this warranty.

Exclusions

- This warranty shall not cover adjustment of consumer-operated controls as explained in the appropriate instruction manual.
- This warranty shall not cover products with missing or defaced serial numbers.
- This warranty shall not apply to the appearance of accessory items including but not limited to chassis, chassis parts or knobs.
- This warranty does not apply to unboxing or uncrating, setup, installation or the removal or reinstallation of products for repair.
- This warranty shall not apply to repair or replacements necessitated by any cause beyond Black Widow Audio Design's control. This includes, but is not limited to, any malfunction, defects, or failure caused by or resulting from unauthorized service, parts, or modification, damaged or broken tubes, incorrect line voltage, improper maintenance or care, repair or modification by the user, abuse, misuse, neglect, accident, fire, flood, or any other Acts of God.

Black Widow Audio Designs shall in no event be liable for any special, incidental or consequential damages suffered by the purchaser or any third party, including without limitation, damages for loss of profits or business, or damages resulting from the use or performance of this product. Black Widow Audio Designs shall not be liable for expenses, claims, or suits arising out of or relating to any of the foregoing.

Some states do not allow the exclusion or limitation of implied warranties so some of the above limitations and exclusions may not apply to you. This warranty gives you specific legal rights, and you may have other rights, which vary, from state to state. This warranty only applies to products sold and used in the USA and Canada. Black Widow Audio Designs shall not be liable for damages or loss resulting from the negligent or intentional acts of the shipper or its contracted affiliates. You should contact the shipper for proper claims procedures in the event of damage or loss resulting from shipment.

Repair

Unfortunately, although rare, repairs are necessary from time to time for various reasons. Here at Black Widow Audio Designs, we seek to make the repair process as painless as possible for you as our customer.

It's unlikely your product will need repair anytime soon, but know that we view your purchase of the MGP-1A as an investment in our company and future.

If you suspect your MGP-1A is in need of servicing, please contact us so we can help. Even if the MGP-1A's warranty has expired, or you are not the original owner, please contact us. Nobody knows these products better and nobody cares about your experience more than we do. We're here to help.

Certificates of Compliance

Declaration of Conformity

Manufacturer's Name: **Black Widow Audio Designs, LLC**
Manufacturer's Address: **550 Axminister Drive, Fenton, MO 63026 USA**

Declares that the product:

Product name: **MGP-1A** Product option: **None**

Conforms to the following Product Specifications:

Safety: **EN60065:2014**
EMC: **EN55013:2013**
EN55020:2007+A11:2011
EN55024:2010
EN61000-3-2:2014
EN61000-3-3:2013

Supplementary Information:
The product herewith complies with the requirements of the
Low Voltage Directive 2006/95/EC
and the
EMC Directive 2004/108/EC

Brian Rois
Owner
27 October, 2016

EMC / EMI

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 residential installations. 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. 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 to 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.**

Eclipse Series

MGP-1A Modeling Guitar Preamp

Owner's Manual

March 2018