MESA/BOOGIE®

KING SNAKE™

Owner's Manual

Hello from the Tone Farm

...You, smart player and intuitive human, have put your trust in us to be your amplifier company. This is something we do not take lightly. By choosing this instrument to be a part of your musical voice, you have become part of the Mesa family...WELCOME!

Our goal is to never let you down. Your reward is that you are the new owner of an amp, bred of fine all tube heritage...benefiting from the many pioneering and patented Mesa circuits that led to the refinement of your new model. We feel confident, this amp will inspire many hours of musical satisfaction and lasting enjoyment. It was built with you in mind, by players who know the value of a fine musical instrument and the commitment it takes to make great music. The same commitment to quality, value and support we make to you...our new friend.

IMPORTANT SAFETY INSTRUCTIONS

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 reduce the risk of fire or electric shock, do not expose this apparatus 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.

Always connect to an AC power supply that meets the power supply specifications listed on the rear of the unit. Export models: always insure unit is wired for proper voltage. Make certain grounding conforms with local standards.

YOUR AMPLIFIER IS LOUD! EXPOSURE TO HIGH SOUND VOLUMES MAY CAUSE PERMANENT HEARING DAMAGE!

Your Mesa/Boogie Amplifier is a professional instrument. Please treat it with respect and operate it properly.

READ AND FOLLOW INSTRUCTIONS OF PROPER USAGE.

KING SNAKE™

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KING SNAKE™

Owner's Manual & Operating Guide

In 1971, at the crossroads of Vintage and Modern amplified guitar sounds, stood two pioneers, Randall Smith and Carlos Santana, and the little amp that could... the Boogie®. The passion, creativity and dedication of these two artists intersecting at that revolutionary time in music history can only be called fate, and the resulting impact on the guitar's voice will be felt forever more. With so many FIRSTS, it set the world's pro guitarists on their collective ear; the Boogie ushered out the old notion of a guitar amp and transformed it once and for all into a legitimate instrument.

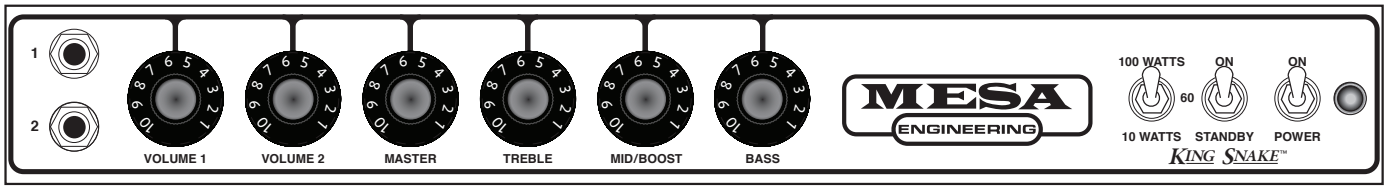
The Compact 100 Watt 1x12 Combo, Tube Cascading High Gain Preamp (SUSTAIN), Half Power Switch (100/60), Pull-Gain Boost, On-Board Graphic EQ, Slave Out, , Custom Hardwood Cabinetry and a Wicker Cane Grille were all innovations seen exclusively on the world's first boutique amplifier by the world's first boutique amp builder, Randall Smith and MESA Engineering®.

The Limited Edition KING SNAKE™ you have chosen is legendary in both sound and story because it is the direct descendant of the original Boogie that stood alone at that intersection so long ago. That amp was the transitional link between the low gain single channel amps of yesteryear and today's high gain, multi-channel footswitching amplifiers.

Before the Boogie® MARK I™, players had to turn an amp up really LOUD to get overdrive and sustain from power section distortion. With the creation of the world's first high gain tube preamp in 1970, found only in the little Boogie by MESA Engineering, players could achieve sustain and singing tube overdrive at any volume. Revolutionary! The rest is history – but it is correct to say that the little high gain, high power 1x12 Boogie Combo changed guitar and popular music forever. But the story doesn't end there!

This model is a tribute to the amp Carlos Santana toured with in 1972/73, right down to the unique chassis size and the aged Snake-embossed leather covering. But it's also been updated to include some of our most secret Tone discoveries uncovered throughout the 43 years since the original's creation. These improvements, some visible and some hidden, increase the performance and versatility while recreating the original voice with full authenticity. They make the King Snake™ more usable across a wider range of musical styles and power requirements, and add exciting new possibilities for expression and enjoyment.

FRONT VIEW: King Snake™



REAR VIEW: King Snake™

OVERVIEW

The KING SNAKE features the original Boogie MARK I single-channel preamp that includes two different Inputs, one for traditional lower gain performance (Input 2) and one for higher gain all-tube overdrive (Input 1). Each of these Inputs has its own dedicated VOLUME Control responsible for the amount of gain at that stage in the preamp. Input 2 gives you access to traditional lower gain Clean sounds and is also the Carlos' preferred Input for his single note solo sounds. His applications are covered below in more detail. Input 1 accesses an extra tube stage in front of Input 2's more traditional gain stages to deliver even higher gain, sustain and saturation.

When plugged into Input 2, its associated VOLUME 2 Control determines the amount of gain available from the preamp. When Input 1 is chosen, an additional tube gain stage is activated and both VOLUME 1 and VOLUME 2 are on line and can be blended to create the preferred amount of overdrive. The best results are usually found with VOLUME 2 set a little higher than VOLUME 1. This scheme produces richer, warmer saturation and reduces excess harmonic content that might create a layer of loosely attached higher frequency sizzle with some instruments. This can be desirable on occasion, but setting VOLUME 2 lower than VOLUME 1 should be reserved for those times when you are looking for a brighter voice with added harmonics.

Original Mark I's were shipped with a harness to achieve rudimentary channel switching with an external A/B box. Modern performance expectations would consider this inadequate, so we've focused instead on optimizing the SNAKE's single channel performance. We don't recommend trying to "channel-switch" the SNAKE with an external A/B box as pot tapers have been altered from Original MARK I spec to achieve this single channel optimization.

The standard array of Tone Controls shapes the KING SNAKE's soulful gain with one new and significant improvement; What was previously a switchable On/Off Gain Boost feature on Carlos' original MARK I appears here on the KING SNAKE as an adjustable MID/BOOST, integrated into the MID Control. From 0 to 5.0 on the MID/BOOST you will find the normal range of a standard MID control in a condensed form. From 5.0 to 10.0 on the MID/BOOST a wonderful graduation of overdrive possibilities unfold that enhance gain over a wide midrange spectrum and saturate with increasing thickness.

This simple but incredibly powerful (and patent applied for) MID/BOOST feature allows you to dial in additional gain into either Input's signal path ranging from subtle enhancement to substantial overdrive. The incremental saturation is perfectly suited for adding extra fur to "edge of clean" sounds, helping them transition smoothly into clip with player-directed dynamics and authenticity. It broadens the stylistic range of Input 2 and for some players, will be all the overdrive they ever need, especially when the upper range of the MID/BOOST is combined with the 10 or 60 WATT Power Modes. For those needing extreme saturation the MID/BOOST may also be applied to Input 1 to thicken and liquefy, but apply the MID/BOOST with care here as it can easily push things beyond reason, compromising both attack and balance.

Another powerful weapon the KING SNAKE wields is our patented Multi-Watt™ Selectable Power. Multi-Watt allows you to perfectly tune the output power to both preamp styles and venue requirements and can add power clip at more usable volume ranges than would otherwise be possible. On the KING SNAKE, the three-position Multi-Watt switch offers a choice of the full 100 watts of Class A/B power produced by all four 6L6s, 60 watts of Class A/B power that runs the inner two 6L6s and 10 watts of Class A Single-Ended power running the two left-most 6L6s for the ultimate in sweet, clip-able power.

The Single-Ended wiring configuration in 10 watts showcases the even-order 2nd Harmonic and adds to the KING SNAKE's vintage character, helping the layers "line up" with old school, low-wattage amp magic. This Multi-Watt setting actually DELIVERS the power expression you've been hearing in your head - you know… that haunting power clip you imagine–but that never seems to be quite as good in reality when you sit down with a coveted vintage gem. In this amp it's the power clip dream fully realized! You've gotta' play the KING SNAKE in 10 Watts to believe it. It really is that good.

Another pioneering and powerful update is the addition of our new Switchable Presence Circuit. This feature, seen here for the first time on the KING SNAKE, allows you to choose between two classic Presence circuits we refer to as TWEED and BLACKFACE. These different Presence schemes offer opposite response curves and re-voice both frequency and dynamic characteristics of the power section.

BLACKFACE produces a warmer, more compressed character that rounds out single notes, giving them more envelope and "pop" on their attack and smoothness on their decay. This is Carlos' preferred setting and the Presence circuit used on his original MARK I Snakeskin. TWEED brings the KING SNAKE's response forward and features lightning fast attack, substantially more top end (higher up) and tightens the low end, allowing it to track better. TWEED showcases upper layers of harmonics that you didn't even know were there before switching out of BLACKFACE and adds the grind and shred needed for more aggressive gain sounds. This switchable re-mapping of both circuit and sound allows the KING SNAKE to command a split personality and excel at both vintage and higher gain sounds. Set for clean or high gain, it pays even further tribute to its original role as a link between the amps of yesteryear and what's happening today.

Of course, what would a re-creation of this iconic amp be without amazing Reverb? Not to fret, the KING SNAKE has 'Verb... miles of it! And it's all about vintage. We've voiced the all-tube, three-spring, long tank Reverb to include just the right amount of old school vibe. Depth, harmonics, decay time and a pinch of mechanical "spring artifact" come together to produce a lush, deep ambience that sounds great as a subtle enhancement or a featured effect. Crack it on for added dimension in a small room or spool it up for a surf holiday. Either way, you'll appreciate the KING SNAKE's retro-inspired Reverb.

A Series Effects Loop is fitted to the Snake's Rear Panel that incorporates an adjustable SEND LEVEL control. This allows fine-tuning of the Send strength so it can be optimized to the Input of either rack-mount or pedal type effects. Start with the SEND LEVEL control all the way down and increase it slowly until the optimum Input signal is reached for your individual effect unit. The KING SNAKE has more than ample SEND strength so don't be surprised if you find an optimal setting in the lower region of the SEND LEVEL control (9:00-11:00). As always, overdrive, compression and wah pedals usually perform better when used between your instrument and the KING SNAKE's Inputs – not in the Effects Loop. And for the purist who prefers to keep it simple and straightforward, the KING SNAKE's Effects Loop remains Hard Bypassed and completely out of the signal path until cables are inserted into the LOOP jacks.

A SLAVE OUT jack and LEVEL Control allow you to capture the entire sound of the preamp and power section for sending it on to additional power amps & cabinets for large venue applications.

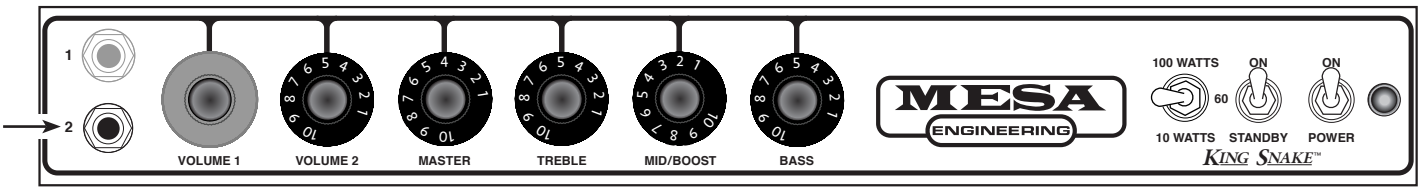
And finally, we are proud to announce the worldwide debut of the Fillmore KS-100 Speaker - the second release in our exciting new line of FILLMORE™ guitar speakers! After working with companies from around the globe for the last 9 years and scrutinizing over 500 prototype samples, our long-time friends at Eminence Ltd. delivered in spades (Go USA)! Our obsession and their diligence have combined to create several new speakers, Handmade in the USA, that rival (and surpass) the best of our golden-era British references. The KING SNAKE's soul and voodoo are greatly enhanced by our new Fillmore KS-100 and it's the perfect compliment to the classic Santana sounds while remaining toneful and versatile for many other styles. We're really excited to share these new speakers with the world and feel we've broken through to a new era in great speaker Tone.

The KING SNAKE is the celebration of the wonderful 40+year relationship we've enjoyed with Carlos Santana as well as the commemoration of a defining moment in electric guitar history. This limited number of amplifiers will stand as testimony to two musical Icons – one in the limelight, one behind the scenes – who REALLY CARED about their art form and their legacy. We sincerely hope you enjoy this special amplifier and get many years of inspiration from its sound and performance. May it carry your playing to new heights and open the doors to opportunity for you as it has done for its namesake.

INSTANT GRATIFICATION

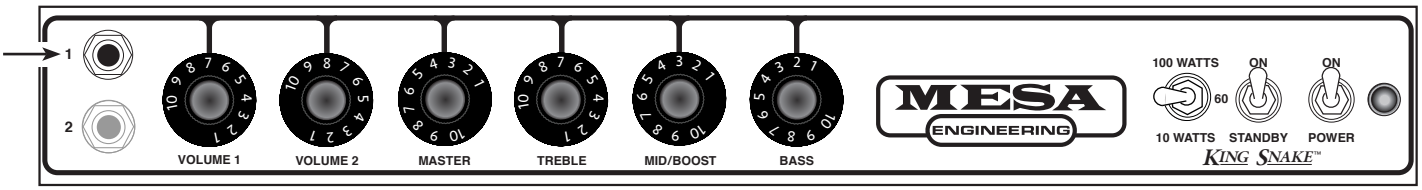
VINTAGE CLEAN

PRESENCE = BLACKFACE @ 2:00



CLASSIC MK I LEAD

PRESENCE = SET TO TASTE



HELPFUL HINTS

CLEAN

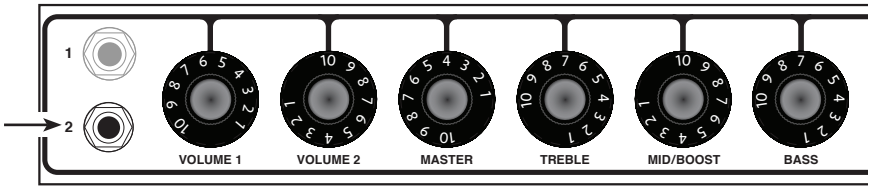
The best performance for Clean sounds will be found in Input 2 with the VOLUME 2 Control set between 4.0–6.75. The lower end of this range (4.0–5.5) will offer greater headroom and more top end brilliance and sparkle. The upper part of this range will provide more (low to medium-mid) punch and richer low end with slightly diminished sparkling clean headroom. Keep this in mind especially when using humbucking or hotter single coil pickups. Below this range there will be a substantial reduction in gain available. Above it you will begin to incrementally saturate the preamp and introduce tube overdrive.

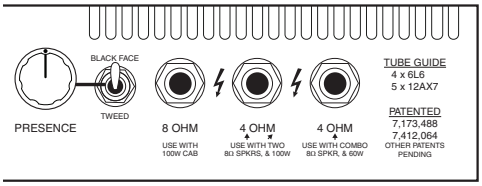
OVERDRIVE: INPUT 2 (Clipped Clean/Carlos Santana Lead)

For Overdrive sounds in Input 2, set the VOLUME 2 control between 7.0–10 and the TREBLE control between 7.0 and 7.5 (or slightly above). This will introduce more gain and focus to the "clean" circuit of Input 2 and provide the best overdrive characteristics. Use the PRESENCE control in either Mode (BLACKFACE or TWEED) to reduce brightness if necessary. The MID/BOOST is designed to augment Input 2's overdrive performance and may be used in the 5.0–10.0 range to add additional gain across a broad midrange spectrum and more evenly saturate the notes.

One of the sounds Carlos Santana has made so famous with MARK I's exists here in Input 2 with the controls set this way: VOLUME 2 -10.0, TREBLE = 7.0, MID/BOOST = 10.0, BASS = 7.0, MASTER = 3.0–5.0, PRESENCE (Set To BLACKFACE) = 5.0–8.0.

CARLOS SANTANA LEAD TONE





NOTE: *Carlos uses a BASS setting that is very high–it works for him in his set-up–but can produce a bloated sound on the lower (E and A) strings if you don't use a fairly light touch down in that register. Try using the BASS below 5.0 to avoid this.*

OVERDRIVE: INPUT 1

Input 1 accesses an additional tube stage in front of Input 2's "vintage" gain structure responsible for additional Drive capability. When your instrument is connected here, both VOLUME 1 and VOLUME 2 are active. This drive sound is a blend of gain from these cascad-

ing stages and it's important to note; SETTINGS ON BOTH VOLUME CONTROLS SHAPES THE RESPONSE. The best overdrive performance for high gain applications will be found with the VOLUME 2 control set slightly higher than VOLUME 1. This scheme rounds out the notes and they saturate with an even, balanced response. Doing the opposite and setting VOLUME 1 higher than VOLUME 2 produces a brighter sound with more harmonics that are more loosely attached to the notes. This can be a nice effect for some things, but we prefer the richness and balanced blend found when VOLUME 2 is set higher than VOLUME 1.

TREBLE adds some additional gain and focus above 7.0, so if your looking to saturate things just a bit more in either Input 1 or 2, try somewhere between 7.0–8.0 and then set the PRESENCE lower to warm things back up a bit. It's not the same frequency, but it will allow you to take advantage of the boost in gain in the preamp from higher TREBLE settings and still have your sound be warm, round and not too bright.

THE **MID/BOOST** control functions as a normal Middle control in the lower half of its range from 0–5.0. Above 5.0, additional gain and harmonics are incrementally added and when fully maxed at 10.0, single notes are saturated almost completely. This is especially useful in Input 2 when searching for "edge of clean" or pushed sounds for chordal work. It also works well in Input 2 for adding purring overdrive to single note solo sounds for Blues, Classic Rock and Roots styles where you want the dynamic response of a clean channel, but want to apply a fair amount of overdrive. This upper range can be a little over-the-top when used in Input 1 (with the VOLUME Controls set high) and can over-saturate and compromise the attack characteristics. Use the MID/BOOST sparingly and with taste here.

The **BASS** control is VERY powerful. When searching for higher gain sounds in both Input 1 and Input 2, or, any time the VOLUME controls are set above 6.0–7.0, you may need to set the BASS control very low (2.0–3.5) to keep the attack focused, tracking tight, and to avoid flubby bass. You will usually have better results following this simple suggestion; As The VOLUME (1 & 2) Goes Up, The BASS Should Come Down. Following this simple advice results in a more balanced sound, response and feel.

The **EFFECTS SEND** level can be on the hotter side depending on the settings of the two VOLUME controls, the MID/BOOST and the Tone controls (to a lesser degree). It is wise to begin your Effects interfacing routine by zero-ing out the SEND LEVEL control on the KING SNAKE's Rear Panel and increasing it very slowly until reaching the desired SEND LEVEL strength.

Some players will attempt to use an external A/B box and two cables connected to both Inputs to achieve rudimentary Channel Switching with the KING SNAKE. The original Mark I and the KING SNAKE were never designed as channel switching amplifiers and while A/B switching can work in a small window of settings, there are MANY more settings and tonal options you'll likely want to access where channel switching won't work well. While this is possible at certain settings, the KING SNAKE is not set-up for Channel Switching operation due to its optimization for a single channel platform. Unlike original MARK I amplifiers, the KING SNAKE will actually be quieter in Input 1 at most great sounding settings than Input 2. This is due to a dual-element pot on the MASTER that "follows" your Input choices and uses different elements to achieve a balance in demo settings. Should you insist on attempting a Channel Switching scenario, using a "clean boost" pedal such as our TONE BURST™ into Input 1 can help to increase the volume level and achieve a balance between the two Inputs.

PRESENCE: BLACKFACE = WARM, ROUND & LAID BACK

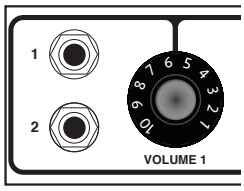
Use the BLACKFACE PRESENCE Mode for a rounder attack with morphing envelope characteristics. BLACKFACE provides a darker, fatter response with a more breathing low end and substantially less-emphasized top end. This is often the best choice for single note work that has a vocal quality. It softens and smears the transition to clip and breaks up more smoothly while keeping the gain tightly focused around the notes and minimizing "buzz".

PRESENCE: TWEED = BRIGHT, TIGHT & FAST

The TWEED PRESENCE Mode delivers the transient peaks with greater speed and accuracy and is much brighter in character. This Mode works well for cutting through a mix and showcases an unveiled region of upper harmonics that is not present in the BLACKFACE Mode. It lends a chime-y, sparkling character to clean chording and gives the impression of increased headroom since bright sounds always travel faster. This upper harmonic region emphasis is critical to achieving more modern high gain sounds and the speed and forward aggression in the top end of the TWEED Mode should be employed when dialing for sounds in the Heavy realm. TWEED also keeps the low end tight and focused for high gain work, especially when de-tuned.

FRONT PANEL CONTROLS & FEATURES

VOLUME 1: This control adjusts the gain for Input 1's tube overdrive stage, which comes ahead of the Input 2 jack and its tube stage, architecture-wise. Much like the way an overdrive pedal boosts the gain and saturates the input stage of an amp, the VOLUME 1 control increases the signal strength many times with an additional tube stage "in front of" Input 2's classic gain (which can also be cranked up) to create a thick complex overdrive.



You can think of the KING SNAKE's preamp like this; Input 2 accesses a vintage amp that produces traditional gain that is clean below 6.0 and reaches mild clipping and singing drive when maxed out at 10. For those who prefer the urgency of a "Clean-amp-cranked", this "vintage gain" can be greatly enhanced by using the upper range of the MID/BOOST (5.0–10.0) to achieve true all-tube overdrive. Input 1 accesses an additional high gain tube stage in front of this "traditional amp" accessed by Input 2 and produces anything from a purring "threshold clip" up to completely saturated overdrive, depending on the setting of the two VOLUME controls. As VOLUME 1 only affects the tube stage for Input 1, it can be ignored when plugging into Input 2.

As mentioned earlier in the Helpful Hints section, we prefer to run the VOLUME 1 control either equal to, or a little below, the setting of Input 2 (Example; 5.0 on V1 & 7.0 on V2). For maximum saturation try 8.0 on Volume 1 and 10.0 on Volume 2.

To our ears (and hands) this scenario produces a more focused, smoothly sculpted overdrive that is warm and round and free of detached harmonic artifacts.

The MID/BOOST is effective for adding additional gain to either Input as it comes later downstream in the signal path, but its main intended use is for adding additional drive when using Input 2.

NOTE: *Using the upper range of the MID/BOOST with higher settings of Input 1/ VOLUME 1 will likely oversaturate the notes and result in a compromised attack characteristic. Extreme settings may also push the preamp tubes past their limit and can cause microphonic tube noise (a whistle or a high pitched squeal). Avoid excess tube noise and microphonics by using common sense and apply the MID/BOOST in tasteful amounts when using Input 1.*

IMPORTANT! *The VOLUME control shapes the Tone of whichever Input you are using and while you should spend some time learning the nuances for yourself, this general rule applies; lower GAIN settings produce less drive and thinner, brighter, more-scooped sounds. Higher GAIN settings produce more drive and thicker, warmer sounds that have a rounded and more compressed attack. Using this knowledge and different combinations of the VOLUME controls (1 set low/2 set high, both set equal or 1 set high/2 set low) and the two Rear Panel PRESENCE choices, you will be able to achieve almost any style and tonal characteristic you wish.*

NOTE: *The King Snake has SUBSTANTIAL BASS. One other important rule or scheme to follow is this; As the VOLUME (1 & 2) goes up, the BASS should come down. Adding substantial gain to bass-heavy sounds (or vice-versa) is rarely a recipe for great Tone and will compromise your attack and the ability of the preamp–and power section to "track" your playing. Do yourself a favor and avoid the flub... reduce the BASS control as you increase the VOLUME 1 (and/or VOLUME 2). DON'T BE SURPRISED IF THE TIGHTEST TRACKING AND MOST BALANCED TONE IS DELIVERED AT "LOWER THAN NORMAL" BASS SETTINGS. This can also apply to the upper region of the MID/BOOST control in both Inputs as it increases the preamp gain substantially.*

VOLUME 2: This Input and Gain control allows adjustment of the second stage of gain when you are connected to INPUT 1, and the first stage (Input Tube) if your instrument is feeding INPUT 2. When in INPUT 2 the control works exactly like it does on all (vintage) amps—it cranks up the preamp.

Lower settings (3.5–5.5) produce a brighter, more scooped sound with increased headroom and a bell-like harmonic chime on the top end. Higher settings (5.5–7.0) bring in gradual tube saturation and adds girth, low end "air", breath and dimensionality. Above 7.0 on VOLUME 2, tube saturation becomes the dominant trait and clean response is only possible with extremely weak pickup output – by design or by your application. In this fashion, many traditionalist Blues and Roots aficionados live full-time in this area and achieve their "clean" sounds by backing off the guitar's Volume control when they are not soloing.

Put simply, Jazz, Funk, Classic Country, Reggae, Ska and Rock Ballad Intros would all be served well in INPUT 2 with the VOLUME 2 set between 4.5 and 6.0. Blues, Classic Rock, New Country and Lead work that needs a quick response and mild to medium overdrive will want to see the VOLUME 2 in the 7.0–10.0 range.

Remember that VOLUME 2 is active when you are using INPUT 1 and the sound is usually better (more focused, warmer, round attack, less detached buzz) when VOLUME 2 is set slightly higher than VOLUME 1. As you venture up the gain scale, try keeping VOLUME 2 a couple numbers higher than the setting of VOLUME 1. For most solo work you might try leaving VOLUME 2 at 8.0. This will produce a smooth overdrive sound with lots of warmth and character and an explosive attack. When you need extreme gain, just max out the VOLUME 2 and bring VOLUME 1 up to the desired level... even 10.0, as well, for extreme gain sounds. You can also add gain here via the upper region of the MID/BOOST control if need be to achieve thicker saturation. Just mind your attack when using the MID/BOOST... you don't want so much gain that it turns to "mush".

MASTER: This control determines the overall output of the KING SNAKE's power section and ultimately the playing volume. In terms of signal path, the MASTER comes after the two VOLUME controls (Input 1 & 2), Tone Controls and the EFFECTS LOOP, but before the driver stage to the Power Section, so adjustments here will not affect your SEND Level strength at the EFFECTS LOOP. This is the control that will push the Power Section—whatever your wattage setting may be—toward clip. If you have low settings on the two VOLUME controls and a high setting on the MASTER, chances are any distortion (overdrive) you hear will likely be from power tubes saturating.

Remember that the KING SNAKE is a LOUD amplifier, especially in the 60 WATT and 100 WATT Power Modes. It is wise to begin your playing session with the MASTER set at 0 (or very low) BEFORE THE STANDBY IS FLIPPED TO ON, and increase it SLOWLY to the desired playing volume. This will help you avoid damage to speakers and your ears or the ears of bystanders.

TREBLE: The TREBLE is the dominant control for voicing the KING SNAKE and its setting will determine not only the character of the entire sound, but also how much signal the BASS and MID/BOOST are fed. The TREBLE can overpower the other Tone controls and therefore its setting is crucial for a rich, balanced sound.

On this amplifier the TREBLE can be used to add a bit of additional gain and focus to the overdriven sounds and therefore, the settings may be higher than on other MESA amps—except for it's cousin, the LONE STAR—which shares some resemblance in circuitry architecture in this part of the preamp.

For clean chording and sparkling rhythm work, it works well to set VOLUME 2 around 4.5–6.0 and set the TREBLE in the same region. Going below this region on the TREBLE will produce warmer sounds that are great for traditional Jazz or darker sounds overall (or balancing bright guitars), but lack the chime in the top end to be appropriate for most other styles. Settings above the 5.0–6.0 range will provide more brightness and a sharper attack, but can become harsh and unforgiving for clean work when set too high.

For higher gain sounds in both Input 1 and Input 2, the KING SNAKE allows a little more room for experimentation with the TREBLE than most of our other circuits. Here the TREBLE can add a nice touch of additional gain and put the finishing touch on saturated lead sounds. It can give you just that "little bit more" you sometimes need when set somewhere between 7.0–8.0 for higher VOLUME 2 settings in Input 2. If you like the additional gain and focus produced by the TREBLE here but find it's too bright, simply reduce the PRESENCE (in either setting) to fatten things back up again.

Set between 7.0–8.0 for gain sounds in Input 1, the TREBLE can help tighten things up and keep the BASS tracking tight while at the same time adding a touch more "searing" or harmonic gain. Much above 8.0 on the TREBLE though you are tempting more piercing frequencies as well as all but the most well behaved preamp tubes to show their vulnerability to noise, whether it's "tube hiss" or microphonic tendencies. This is especially true when combined with very high settings of VOLUME 1, VOLUME 2, the TREBLE and the MID/BOOST.

NOTE: *May we suggest avoiding very high settings of these four controls (both VOLUMES, TREBLE and MID/BOOST) simultaneously and instead do a little give and take. If you need really high gain from both VOLUME controls, back down on the TREBLE and*

MID/BOOST and bump up the PRESENCE to compensate for brightness sacrificed. If you need a really bright TREBLE setting, try to back down one or both VOLUME controls and possibly the MID/BOOST a bit. You get the idea… Just avoid extreme gain settings on the VOLUMES with a really bright setting of the TREBLE... it's a lot for the (any) 12AX7s to handle.

We suggest spending some time with the two VOLUMES, MID/BOOST and TREBLE so you learn to identify the different frequencies of gain these four controls offer you. They can be subtle, but musically speaking, they all have their place and offer some great fine-tuning possibilities from which to craft your signature Tone.

MID/BOOST: This is actually two controls in one, hence the two names. One big improvement from the original Snakeskin MARK I that Carlos toured with in 1972/73 is the addition of an adjustable pot where there once was a two-position On/Off switch.

This produced a huge increase in gain achieved by lifting the Tone Controls and allowing the entire signal available in the Rotary Tone Control string to "run free". It was a great and innovative feature, especially for its time, but it had two shortcomings; 1)it was all or nothing (normal or boosted) and these two were wildly different sounding due to the saturation that occurred in BOOST position. 2) once the whole signal was unleashed by the BOOST, there was nothing much left gain-wise in the Tone Control string for the Tone controls to work on, and there was little-to-no shaping power available in BOOST Mode.

Back then everyone was so mesmerized by the newfound gain available, this trade-off seemed a small price to pay for SUSTAIN! But Here at MESA/Boogie, Tone never sleeps so we've endowed this model with an adjustable BOOST found here on the upper half of the MID control! It doesn't completely solve these issues, but it does provide a middle region previously unavailable that allows incrementally added gain WITH incrementally decreasing Tone-shaping power in the Tone control string. When the MID/BOOST is maxed (set at 10.0), there is still very little gain left for the Tone Controls to utilize and hence, they do less at this extreme setting. But this scheme allows YOU to choose the desired balance between gain and Tone-shaping power on the Tone Control string and there are some truly magic sounds in this new range of incremental gain.

From 0–5.0 the MID/BOOST works like a normal MID control, albeit with a little more condensed taper. A general settings tip for this narrower taper might be to set the MID two or three numbers below where you think your sound might be with a traditional style MID control.

Above 5.0 the MID morphs into an adjustable BOOST control that incrementally lifts the Tone controls and allows their full signal strength to come through, unbridled. Some players will opt for the maximum gain possible here and for those folks, there will be the same limited power in the Tone Controls as found in the original MARK I's BOOST Mode available. But for those players who may not the need the maximum gain BOOST there is a really usable range of enhanced gain over a broad, warm sounding region of mids.

We are extremely pleased with the Tonal possibilities this simple but powerful improvement has made in both sound and dial-ability and have applied for a patent to claim its obvious benefits as a MESA Exclusive. The simplest ideas are often the best... and easiest to walk right by for 40 years. If only the folks at the patent office played guitar... we'll cross our fingers.

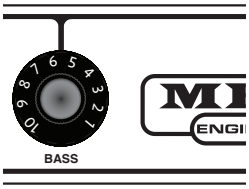
Use this valuable enhancement at-will in either INPUT to craft some amazing threshold of clip chording or Blues solo voices or apply it to already overdriven sounds to thicken them up or put them over the top. Just be aware that there is more gain here than can feasibly be applied and still retain a balanced sound with a coherent attack characteristic. In other words... don't dial yourself into mush by adding so much gain there is no Tone left. A simple but often ignored concept.

NOTE: *THE MID/BOOST control functions as a normal Middle control in the lower half of its range from 0.0–5.0. In its upper range, gain is incrementally added–until fully maxed at 10.0–it saturates the notes almost completely. This upper range may be over-the-top when used in Input 1 with the VOLUME CONTROLS set high, as it can over-saturate and compromise the attack characteristics. Use the MID/BOOST sparingly and with taste.*

NOTE: *Again, avoid very high settings of these four controls; both VOLUME 1 & 2, TREBLE and MID/BOOST simultaneously, and instead try a little give and take. If you need the gain really high from both VOLUME controls, back down on the TREBLE and MID/BOOST and use the PRESENCE to compensate for brightness sacrificed. If you like the frequency of the MID/BOOST and want*

the maximum gain available there, back down one or both of the VOLUME controls and/or the TREBLE control. Again, the idea is to avoid max settings on all four of these gain-producing controls at once, in order to preserve your attack characteristics and avoid noise issues.

BASS: As mentioned in the HELPFUL HINTS section earlier in this manual, the KING SNAKE has more than ample low end available and even low BASS settings can cause an unbalanced, bloated sound if used without discretion. By following the simple suggestion mentioned earlier in the VOLUME 1 section; As The VOLUME Goes Up, The BASS Should Come Down, you can stay out of trouble and ensure your attack characteristics remain tight and focused.



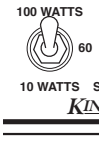
For clean work in Input 2 you can be a little more adventurous and set the BASS a little higher without adverse results. If the VOLUME 2 Control is set below 6.0 (which is best for a great clean sound anyway), you can run the BASS as high as 5.0–6.0 before you start to overwhelm the attack and introduce flub. This, of course, is dependent on the instrument, pickups and your technique. Fat hollow body guitars might do better with 5.0 as a ceiling, where as a solid body/Maple neck guitar might allow a bit of leeway on the up side of 6.0 before you run into a compromised attack and tubby low end.

For overdrive sounds in Input 2, however, you will want to bring the BASS down quite substantially as you approach higher settings of VOLUME 2, which dumps more gain into the signal path early. In this scenario you could see your BASS as low as 1.5–3.5 to achieve a nice attack and still have ample and balanced low end.

For VOLUME 1 the same rule applies, in varying degrees, depending again on your settings, instrument, pickups and hands. At the low end of the gain scale (remember that VOLUME 2 is also adding gain) with VOLUME 1 set at 3.5–5.0, you may be able to run the BASS up in the 4.0–5.0 range. As the VOLUME 1 (and/or VOLUME 2) is increased, you will need to turn the BASS down to keep things tracking tight. As you approach maximum gain (VOLUME 1 & 2 maxed), don't be surprised if you need to run the BASS at 1.0 or even off altogether to achieve a tight, coherent attack.

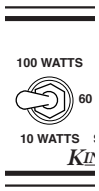
The KING SNAKE is one of the world's warmest, fattest sounding amps and we encourage you to spend some time to learning the "give and take" skills needed to arrive at a well blended Tone with this huge sounding little amp. Once you spend some time, it will become second nature and you'll be able to radically shape your sound, swap instruments, switch musical styles and craft truly inspiring Tone within mere seconds. Though a single channel amp, the KING SNAKE is capable of going in many directions musically. All that's needed is your fresh ideas and a few minutes to learn the controls and their interaction and you'll be off and running with some of the most soulful sounds you've ever experienced. Like any high power, finely tuned vehicle, the ride is worth the seat time to learn the ultimate potential.

MULTI-WATT™ POWER: The KING SNAKE is equipped with our patented Multi-Watt™ Power that allows selection of Wattage, Operating Class and Wiring Configuration across three user-selectable output tube harnesses. They can be used simply to tune the amp to the venue size or can be selected with Tone and clip-ability range in mind. Each of the three choices sound and feel different and produce their own unique blend of sonic characteristics that can further authenticate your preamp settings and the sound style you are seeking.



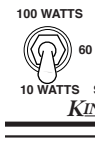
100 WATTS: The highest output option on the KING SNAKE is wired in CLASS AB Pentode. This is the most efficient, yet musical, wiring style for a quartet of 6L6 power tubes, and delivers bold, warm Tone at very high volume levels. It would be the choice any time you need low end girth and accuracy and maximum punch. It would not be the first choice for styles that rely on power section clipping as a dominant part of their character.

100 WATTS can sound very warm and sweet for clean styles, especially Jazz, where its headroom is near limitless. It's great for high gain solo sounds as well, where it produces round, fat notes with authority and dynamic punch. To experience the ferocious side of the KING SNAKE, connect a 4x12 Closed-Back cabinet and crank both VOLUME 1 and 2, set the Rear Panel PRESENCE switch to TWEED, set the PRESENCE control between 3.0–5.0 for a truly menacing and LOUD Heavy Rock sound.



60 WATTS: This should be your go-to choice for all around great performance with the Combo. 60 WATTS produces the best blend of power, headroom and Tone while still providing some level of clip-ability as you get near the loud playing threshold. It is also wired in Class AB Pentode that produces substantial volume and headroom while still maintaining a sweet, vintage character and musical clip.

Sonically, the 60 WATT setting is a bit brighter, bubbly and more chiming. The feel is bouncy and elastic due to its mid-power tube compliment running off a supply capable of delivering much more current. We feel it's the all-around best sounding, best feeling setting of the three Power Modes and it also happens to be the favorite choice of Carlos Santana.

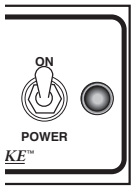


10 WATTS: This is the choice any time you need sweet power clip at reasonable volumes. This power section pays tribute to the vintage gems of yesteryear and is wired in Class A, Single Ended to produce the smoothest transition into clip and warm musical power section overdrive. Single Ended wiring styles emphasize the even-order harmonics–especially the 2nd Harmonic (an octave above the note played)–which imparts a lush patina of old school magic and a "smile" on the top end that is silky and smooth. Notes purr when pushed into clip here and the transition is almost seamless and exquisitely musical. And even when you aren't using it for power-drive, but rather just practicing at home or at quiet volumes, the 10 WATT setting is supremely rewarding to play with it's naturally "lined up" harmonic content. It's also incredible in the studio when you're searching for sounds that rely on power-clip and not running the preamp too hot.

10 WATTS is not the best choice for extreme gain settings on the VOLUME 1 and 2 controls, especially when combined with higher MASTER and/or BASS settings. The low end won't track as accurately at extreme VOLUME (1 & 2) settings in this Single Ended Power Mode and this combination may result in unwanted flub or a loose bass response. But… when you're looking for the ultimate old timey, little-amp-turned-up vibe, the 10 WATT Power Mode is really hard to beat.

STANDBY: Perfect for set breaks, this toggle switch also serves an even more important purpose. From cold-start, the STANDBY position allows you to warm up the tubes – especially power tubes – before applying the high voltage by switching the STANDBY to the ON position. Before POWER is switched to ON, make sure the STANDBY switch is in the STANDBY position. Wait at least 30 seconds and then flip the STANDBY switch to the ON position. This prevents the shock of high voltage hitting cold tubes and reduces the likelihood of tube problems and increases their toneful life substantially.

POWER: This switch delivers the A.C. power to the KING SNAKE. Make sure the unit is grounded (all three terminals of the A.C. power cord must be connected to avoid injury to the user as well as to the unit) and that the proper voltage is present.



Always follow the cold-start procedure described in the STANDBY section above when powering up your amplifier. This will reduce the likelihood of tube problems and increase their musical life.

NOTE: *For the best response and a "more correct" impedance match, when using 60 WATTS with the 8 Ohm internal Combo speaker (or any 8 Ohm load), connect it to one of the 4 OHM SPEAKER OUTPUTS. This will give you the maximum headroom and a bubbly, fast,, punchy response. It is not mandatory, but most players seem to prefer this combination for its more exciting Tone and feel.*

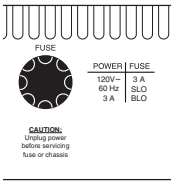
Well, that covers the Front Panel features and Controls. Now let's go to the Rear Panel and see what resides there to help you get your Tone.

REAR PANEL

NOTE: *As the knobs used on the Rear Panel of the KING SNAKE are not numbered like those used on the Front Panel and use instead a white line as a pointer/indicator, throughout the Rear Panel Section of this guide we will use Clock Face settings (9:00–12:00, etc.) instead of numbers (9.0–12.0, etc.) to describe settings.*

FUSE:

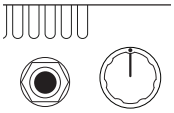
This is the AC MAINS FUSE and it protects your amplifier from both fluctuations that might occur in the A.C. Line and from those caused by power tube shorts or failures—should one ever occur. The FUSE is a Slo-Blo type and should ALWAYS be replaced with the same type and rating as printed on the back of your amplifier should it ever blow. The USA/North America Version KING SNAKE utilizes a 3 Amp Slo-Blo Fuse. Import Versions: please check the screenprinting on the amp next to the fuse holder and/or consult your Dealer/Distributor for the proper FUSE Rating.



IMPORTANT NOTE: *NEVER attempt to "bypass" your FUSE by replacing it with "tin-foil" or anything other than a Slo-Blo Fuse of the same type and rating printed next to the fuseholder. If the FUSE fails, it is usually for a good reason and it has failed to protect your amplifier. Disregarding this warning will likely result in damage to your amplifier that WILL NOT be covered under the Warranty.*

REV. FT.SW:

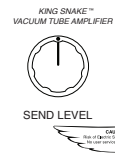
This ¼" jack accepts a standard tip/sleeve ¼" male plug and will allow you to use a remote footswitch to toggle the REVERB on and off. It responds to standard tip-to-ground latching type switching common among both Rackmount Master Switching units and standalone On/Off Footswitches. You can contact us Direct or your Dealer to order one for nominal charge.



NOTE: *The REVERB On/Off footswitch requires a SHIELDED cable to work properly. Using a non-shielded (speaker) cable will produce an unwanted hum. Always make sure the REVERB Remote Footswitch Cable is a shielded cable. If you order one Direct from us or your local dealer or distributor, please inform the Product Specialist that it is for a KING SNAKE and they will make sure to provide the correct shielded cable with your order.*

SEND LEVEL (EFFECTS LOOP):

This pot adjusts the signal level present at the Effects Loop SEND jack and allows for compensation both above and below the levels produced by the settings on the VOLUMES (1 & 2) and the Tone Controls. The MASTER is after the SEND stage and this SEND LEVEL pot, so the MASTER setting has no bearing on the SEND strength.



While there is no "right" level or setting for every processor, we've found that 9:00–10:00 produces "close to unity gain" signal strength and should be a good "ballpark" setting for the Input Stage of most effects of decent quality. Use this 9:00–10:00 setting as a fairly safe starting point and adjust from there. There is a healthy amount of signal available here in the KING SNAKE, so don't be surprised if you find an optimum amount of signal for your processor below 12:00 on the SEND LEVEL control.

SEND/RETURN (EFFECTS LOOP):

The EFFECTS LOOP SEND and RETURN provides an interface for effects processing between the preamp and the power section of the KING SNAKE. The jacks are switching type, meaning that when no plugs are inserted, the EFFECTS LOOP is bypassed. The Loop is wired in SERIES with the dry signal and therefor you will need to control the mix level (wet/dry blend) from your processor/effect(s).

Remember that the Loop is a sensitive junction between the preamp and the power section and anything you insert here becomes a "Tone part". With that in mind, try to choose processing of the best possible quality and sonic integrity. Also, use shielded instrument cables of the shortest length and of good quality, as a portion of your signal is travelling through them at all times when they are connected to the Loop.

The Loop is optimized for professional quality processors and though it can accept both pedal and rack-mount style units, it is better suited for certain things than others. Delay, Reverb, Chorus, Flange and Harmonizers tend to work well in the Effects Loop, whether they are pedal type or rack style formats with rackmount effects usually offering more control over the parameters, should you need that. Overdrive, Distortion, Boost, Wah, Envelope, and Octavers tend to favor connection in the Front End (Input) to achieve a great sound.

Whatever you are using and wherever you are connecting it, try to keep the cable lengths as short as possible to avoid signal degradation (high-frequency loss) due to increased cable capacitance.

NOTE: *To access the KING SNAKE power section ONLY (for use as a SLAVE amp for additional power), use the RETURN as the INPUT. You may have to insert a "dummy" shorted plug into the SEND to allow signal to pass the LOOP junction.*

SLAVE LEVEL AND OUTPUT:

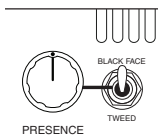
The **SLAVE** Output and its accompanying Level control provide an output for capturing the sound of both preamp and power section. This feature may be used to drive additional slave power amplifiers for big venue applications or to drive a string of outboard processors when using the EFFECTS LOOP is not desirable. It is not a direct recording output as it derives its signal from the speaker jacks and is much too strong a signal to connect to the input of a console. Also there is no roll off of high frequencies or shaping, as the speaker does this, so the sound would be less than desirable for recording applications. Should you need a direct recording sound, check out one of our Rectifier Recording Preamp's which are designed specifically for this application and has the necessary circuitry to achieve this difficult task with stunning results.

NOTE: *The signal from the* **SLAVE** *Output is powerful. Always start with the LEVEL control set to its lowest position (7:00) when connecting to anything and bring the level up slowly to avoid damaging gear (and ears) downstream of the KING SNAKE.*

NOTE: *Once a signal has been taken from the* **SLAVE** *Output, it can not be routed back into the amplifier (INPUT or EFFECTS LOOP RETURN). Doing so will produce a feedback loop resulting in a high pitched squeal much like holding a microphone up to a monitor.*

PRESENCE:

The KING SNAKE hosts one of the most exciting and dramatic NEW Tone options we've ever found in our four decades of Tone Sleuthing; The Switchable PRESENCE STYLE. Ironic that we had to go so far back into our own history to be reminded of the potential here, but regardless, it's on your amp today!



This ingenious circuit gives you a choice of the two most classic PRESENCE circuits that are part of almost every amplifier—vintage or modern—and creates for you a whole new level of Tone-shaping possibilities. Not only that, the two choices found here on the PRESENCE STYLE switch allow the KING SNAKE's single channel architecture to roam wildly different genres of music with authentic accuracy.

While each of the PRESENCE circuits have their obvious strengths and attributes, by no means should you shy away from experimenting with them to find new and exciting ways to shape your sound. This is a new (and Patent Applied For) feature and will likely find its way onto other MESA products in the very near future. It adds a level of flexibility never before offered and will surely help you find you own unique and inspiring sounds.

BLACKFACE is a roll-off type control located at the end of the preamp and produces a warmer, more compressed character that rounds out single notes, giving them more envelope and "pop" on their attack and smoothness on their decay. The power section does not have an adjustable point in this PRESENCE scheme and instead uses a fixed set of parts to tune that location in the circuit. This is Carlos Santana's favorite setting and the same PRESENCE circuit used on his original MARK I Snakeskin. This Mode shines for Clean sounds that are vintage in nature with a round attack and a bloom in the low end. It's got more "juice and forgiveness" in comparison to TWEED and you can "dig-in" more for expressive passages without ever sounding harsh or brittle.

BLACKFACE also excels at vocal single note work regardless of how much overdrive is dialed in. It has a smoother, more "envelope-y" attack and the natural compression here is perfect for memorable melodies with a wide signature in any gain range or Input choice. Make sure you audition the Input 2 response with the VOLUME 2 cranked-up high and the PRESENCE between 11:00–3:00 for soulful Blues Lead work. Magic awaits!

TO SUM IT UP, BLACKFACE offers reduced brightness and more natural compression while still maintaining detailed resolution over a wide range of lower frequencies.

TWEED is a true "power section PRESENCE" that works on negative feedback in a selected range of frequencies. Sonically it brings the KING SNAKE's response forward and features lightning fast attack, substantially more top end (higher up) and tightens the low end, allowing it to track better, especially during complex rhythmic passages. TWEED showcases upper layers of harmonics and adds the grind and shred needed for more modern aggressive gain sounds.

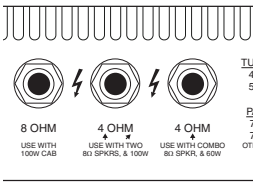
TWEED excels for Clean sounds as well, and offers flavors that have more cut and slice than BLACKFACE. It's perfect when you need to define the guitar in a complex mix. Watch the TREBLE here though, as TWEED is rich with harmonics and instantaneous in its delivery of the attack when compared to BLACKFACE. This can be dangerous when combined with high settings of the PRESENCE.

There is a nice "threshold-zone" at the lower end of the PRESENCE control in TWEED that works well for single note overdriven sounds. Somewhere between 9.00–11.00 (depending on the rest of your settings), there is a point where the sound transitions from dark and more compressed to open and brighter. In this zone there are many subtle shades of attack and envelope characteristics and spending some time exploring here should reward your search for solo sounds. Much above 1:00–1:30 on the PRESENCE in TWEED Mode and the top end really starts getting forward. You may want to reserve this region for heavily overdriven chording or crunch sounds where the ample layers of harmonics are style-appropriate.

TO SUM IT UP, TWEED provides increased attack and urgency while offering greater resolution across an unrestricted region of harmonic cut and brightness. It provides control over almost two octaves of harmonics above those present in the BLACKFACE PRESENCE Mode.

This switchable re-mapping of both circuit and sound regarding PRESENCE allows you to command a split personality in the KING SNAKE and excel at both true vintage and more modern styles with this one amp. Set for clean or high gain, it pays even further tribute to its original role as a link between the amps of yesteryear and the high gain footswitching amps of the modern era.

SPEAKER OUTPUT:



These three ¼" jacks provide the power output to speakers, whether it be the internal 1x12 Combo speaker or an extension cabinet(s) of your choice. While the KING SNAKE is capable of tolerating mismatches in the high direction (i.e. 16 Ohm Speaker/Load on the 8 Ohm jack of the KING SNAKE), it is not able to drive a 2 Ohm load without stressing the Tubes and Transformer. 2 Ohm Loads should not be used.

To use the internal Combo speaker with an additional 8 Ohm Extension cabinet, connect both 8 Ohm Speakers/Loads to the two 4 OHM SPEAKER jacks. This will produce a correct impedance match and provide you with the full power for clean headroom.

To use a single external 4 Ohm cabinet, connect it to the 4 Ohm Speaker jack.

To use two external 16 Ohm cabinets (i.e. two 4x12 cabinets–each with 4x16 Ohm speakers wired Series Parallel), connect them to a “Y” cable or box and connect the “Y” to the 8 OHM Speaker jack. This scheme will provide a good impedance match as well.

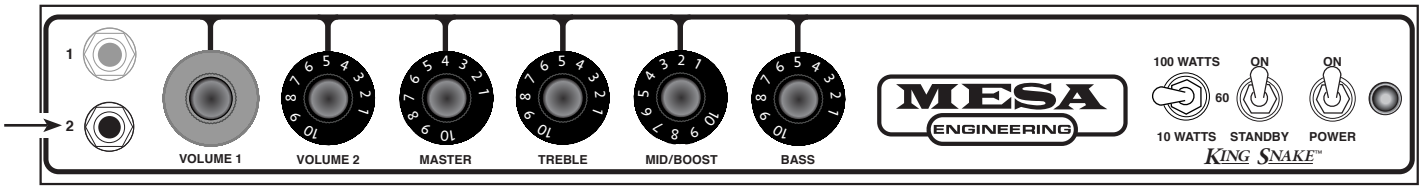
Consult the Speaker Impedance Matching & Hook-Up Guide at the end of this manual for other common speaker connection options and feel free to contact MESA Customer Service with any questions you may have regarding proper speaker impedance connections. Always make sure your speaker is correctly and securely connected. If you’re not sure of the correct connection, consult the Matching & Hook-up Guide to make sure your connections are correct. The reliability and longevity of your tubes, tone and the amplifier, in general, depends on your speaker(s) being connected properly.

NOTES

FACTORY SAMPLE SETTINGS

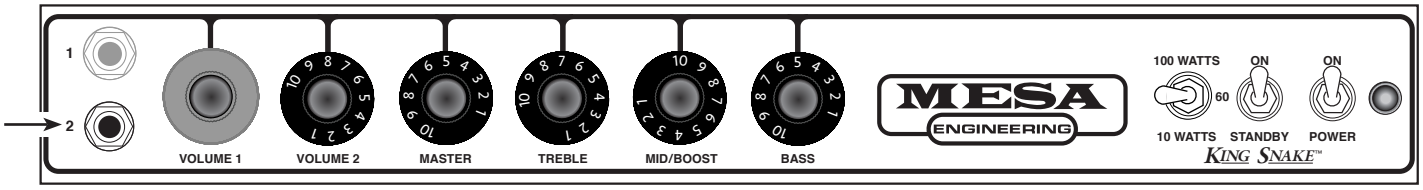
VINTAGE CLEAN

PRESENCE = BLACKFACE @ 2:00



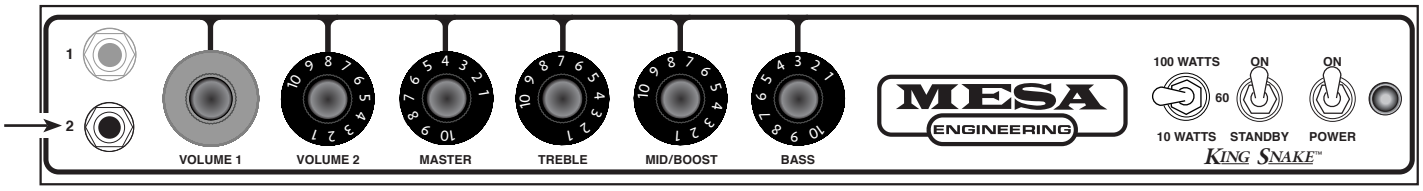
CARLOS SANTANA LEAD TONE

PRESENCE = BLACKFACE @ 3:00



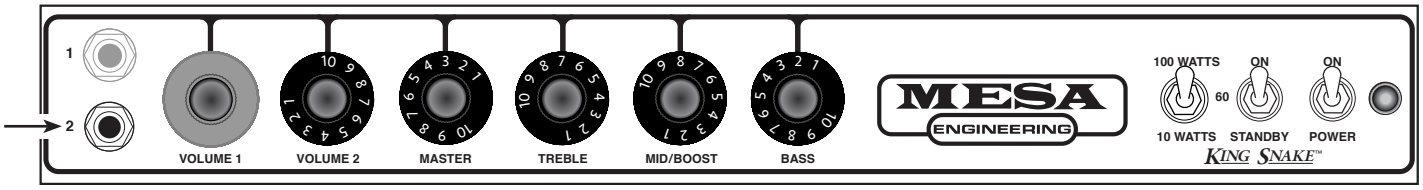
STINGING BLUES

PRESENCE = TWEED @ 12:00



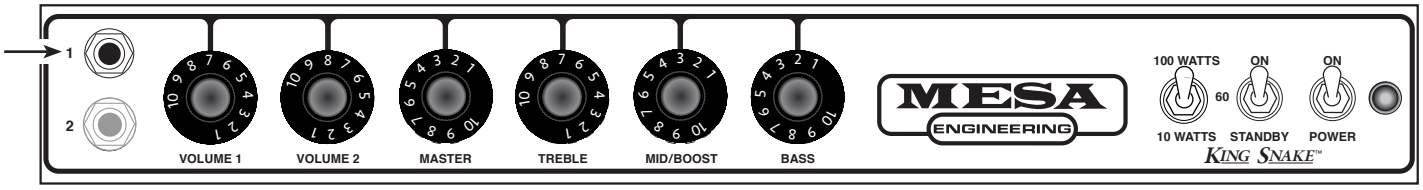
TIGHT CRUNCH

PRESENCE = TWEED @ 10:30



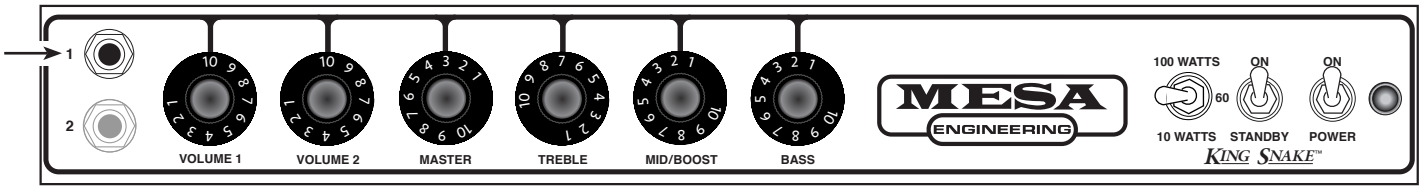
CLASSIC MK I LEAD

PRESENCE = SET TO TASTE

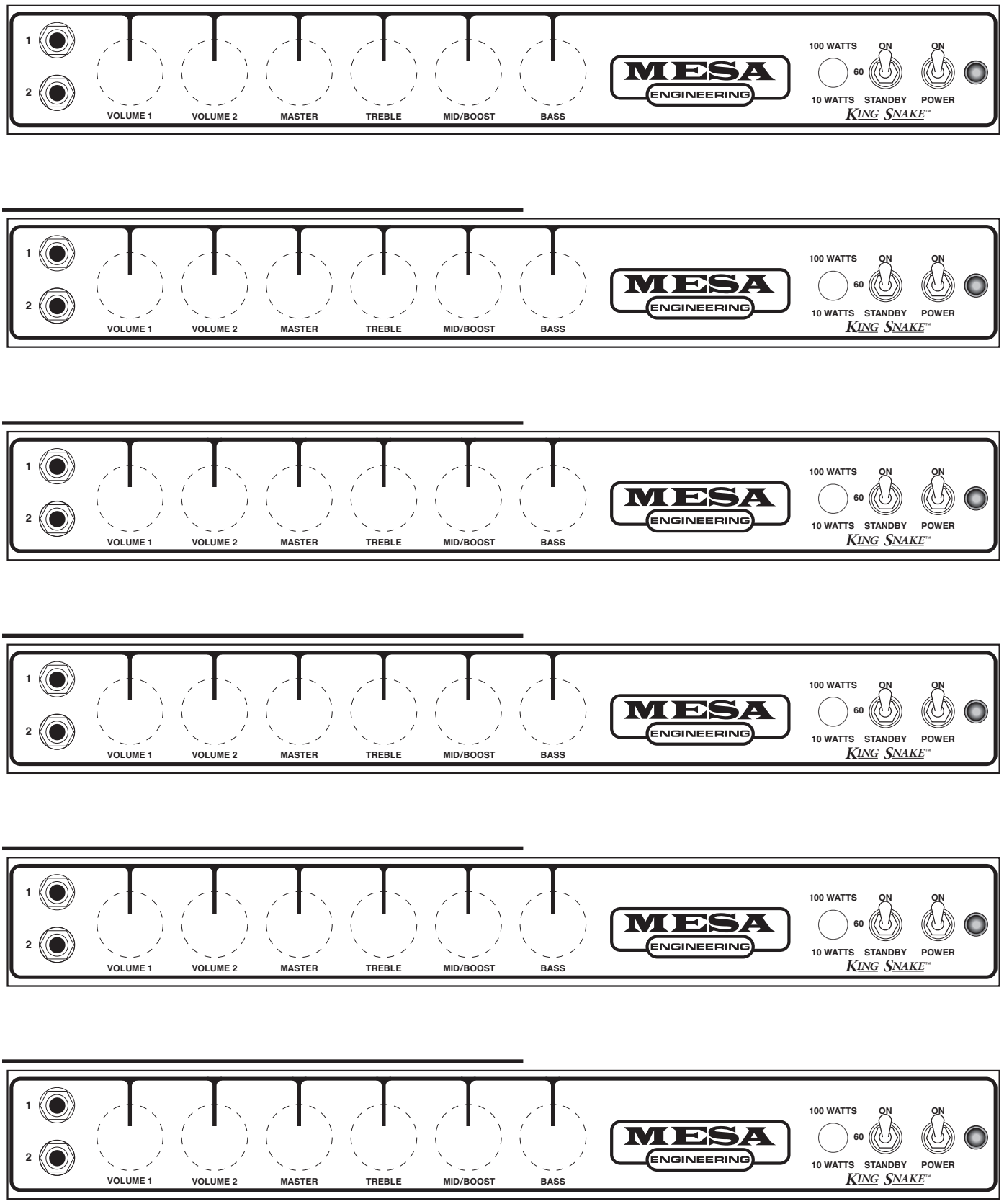


MOLTEN MK I

PRESENCE = TWEED @ 9:00-11:00



PERSONAL SETTINGS



TUBE NOISE & MICROPHONICS: You may occasionally experience some form of tube noise or microphonics. Certainly no cause for alarm, this quirky behavior comes with the territory and the Tone. Much like changing a light bulb, you don't need a technician to cure these types of minor user serviceable annoyances and in fact, you'll be amazed at how easy it is to cure tube problems...by simply swapping out a pre-amp or power tube!

First may we suggest that you set the amplifier up on something so that you can get to the tubes comfortably without having to bend down. It also helps to have adequate lighting as you will need to see the tube sockets clearly to swap tubes. **Use caution and common sense when touching the tubes after the amplifier has been on as they may be extremely hot!** If they are hot and you don't want to wait for them to cool off, try grasping them with a rag and also note that the glass down around the bulbous silvery tip is considerably less hot which makes it easier to handle. Gently rock the tube back and forth as you pull it away from its socket.

DIAGNOSING POWER TUBE FAILURE: There are two main types of tube faults: shorts and noise. Both large and small tubes may fall prey to either of these problems but diagnosis and remedy is usually simple.

If a fuse blows, the problem is most likely a shorted power tube and shorts can either be mild or severe. In a mildly shorted tube the electron flow has overcome the control grid and excess current flows to the plate. You will usually hear the amp become distorted and begin to hum slightly. If this occurs, quickly look at the power tubes as you switch the amp to STANDBY and try to identify one as glowing red hot. It is likely that two of a pair will be glowing since the "shorted" tube will pull down the bias for its adjacent mates, but one tube may be glowing hotter — and that one is the culprit. The other two are often fine — unless they've been glowing bright red for several minutes.

Because there is no physical short inside the tube (just electrons rioting out of control) merely switching to STANDBY for a few moments then back to ON will usually cure the problem...at least temporarily. Watch the tubes carefully now. Should the problem recur, the intermittent tube will visibly start to over heat before the others and thus it can be identified. It should be replaced with one from the same color batch, shown on its label. Call us and we will send one out to you.

The severe short is not nearly so benign. In the worst cases, a major arcing short occurs between the plate and the cathode with visible lightning inside the glass and a major noise through the speaker. If this is seen to happen, IMMEDIATELY turn the amp to STANDBY. By this time the fuse probably will have blown. Such a short is usually caused by a physical breakdown inside the tube including contaminate coming loose or physical contact (or near contact) between the elements. Replace it and the fuse with the proper slo-blo type and power up the amp using the power up procedure as we described earlier in this manual.

TUBE NOISE: Often caused by contamination within in a tube, the culprit can usually be identified, and by lightly tapping on the glass, you will probably hear the noise change. Hearing some noise through the speakers while tapping on the 12AX7's is normal however. And the one nearer the INPUT will always sound louder because its output is being further amplified by the second 12AX7.

The power tubes should be all but quiet when they are tapped. If crackling or hissing changes with the tapping, you have probably found the problem. To confirm a noisy power tube, merely put the amplifier on Standby, remove it from its socket and turn it back on. It will cause no damage to run the amplifier briefly with one power tube missing. You may notice a slight background hum, however, as the push-pull becomes unbalanced. Whenever you are trying to diagnose a suspect tube, keep your other hand on the POWER and STANDBY switches ready to shut them off instantly in the unlikely case you provoke a major short.

If you think you've located a problem tube but aren't sure, we recommend substituting the suspect with a new one just to be sure of your diagnoses. You will be doing yourself and us a big favor by just following the simple guidelines previously mentioned regarding tube replacement. You'll probably be successful with much less effort than is required to disconnect everything and haul the unit to a technician who will basically perform the same simple tests. If the tubes are still within their six-month warranty period, we will happily send you a replacement. Just note the color designation on the tube label so that we can send you the appropriate match.

DIAGNOSING PRE-AMP TUBE PROBLEMS: Because your amplifier is an all tube design, it is quite possible that you will at some point experience minor pre-amp tube noise. Rest assured - this is no cause for alarm and you can take care of the problem yourself in a matter of minutes by simply swapping tubes.

Let us begin by saying; It is a "very good" idea to keep at least a couple of spare pre-amp tubes on hand at all times to insure uninterrupted performance. These minor pre-amp tube problems can take many forms but can generally be described in two categories: Noise and Microphonics. Noise can be in the form of crackling, sputtering, white noise/hiss and/or hum. Microphonic problems usually appear in the form of a ringing or high pitched squealing that gets worse as the gain or volume is increased thus are more noticeable in the higher gain "HI" modes. Microphonic problems are easily identified because the problem is still present even with the instruments' volume off or unplugged altogether - unlike pick-up feedback which ceases as the instrument is turned down. Microphonic noise is caused by mechanical vibration and shock: think of banging a microphone around and you'll understand where the word came from.

The best way to approach a pre-amp tube problem is to see if it occurs only in one specific mode or channel. This should lead you to the tube needing replacement. Then all that remains is to swap the suspect tube for a known good performer. If you cannot narrow down the trouble to a specific mode or channel, the problem may be the small tube that drives the power tubes which is operational in all modes and channels. Though rare, a problem with the driver tube would show up in all aspects of performance - so if you can't narrow the problem down to being mode or channel specific, you may want to try replacing the driver tube. Driver problems generally show themselves in the form of crackling or hum in all modes of performance and/or weak overall output from the amplifier. Occasionally an anemic driver tube will cause the amplifier to sound flat and lifeless, but this is somewhat uncommon, as worn power tubes are a more likely suspect for this type of problem.

Sometimes making the diagnosis is more trouble than it's worth and it's faster and easier to merely replace the small pre-amp tubes ONE AT A TIME with a replacement known to be good. But MAKE SURE you keep returning the tubes to their original socket until you hit the one that cures the problem. You'll notice that tubes located nearer to the INPUT jack always sound noisier...but this is because they are at the start of the chain and their noise gets amplified over and over by the tubes that follow. The tube that goes into this "input socket" (usually labeled V1) needs to be the least noisy of the bunch. The tube that goes at the end of the preamp chain - just ahead of the power tubes - can be quite noisy without causing any problem at all. The tubes in your amp have already been located in the most appropriate sockets and this is why you should NEVER pull them all out at once and ALWAYS swap them one at a time. ALWAYS return a perfectly good tube to its original socket. Also it's a good idea to put the amp on STANDBY when swapping tubes to reduce the heat build up in the tubes themselves and to prevent explosive noises (which can still occur even if you are pulling the tubes away from their sockets gently) from coming through the speaker.

Remember, take your time, be patient and chances are real good that you can fix your amp yourself by finding and replacing the bad tube. It kills us to see someone who has shipped their amp back to us...and all it needed was a simple tube replacement! If you must send back your amp, remove the chassis from the cabinet by unscrewing the four mounting bolts on the bottom top. The chassis then slides back like a drawer and comes out from the back. Remove the big power tubes and mark them according to their location from left to right 1, 2 etc. They need to be wrapped separately with plenty of wadded up newspaper around them and put in a smaller box within the larger carton. Remove the Rectifier tubes and wrap them also. You can leave the preamp tubes in or remove them and wrap them separately being sure to label their location. (See Tube Task Chart.)

To wrap the chassis, use plenty of tightly wadded up newspaper so there is at least six inches of "crush space" between the chassis and the cardboard box. Bubble wrap also works well, but please DON'T use styrene peanuts - they will shift during transit and get lodged inside your electronics as well as allowing your amp to end up at the bottom of the box unprotected and possibly damaged.

Pre-amp tubes don't normally wear out as a rule. Therefore, it is not a good idea to change them just for the sake of changing them. If there isn't a problem - don't fix it. If there is no result from your substitutions, it may be possible that you have more than one problematic tube. Though rare, this does happen and though it makes the troubleshooting process a little more intimidating, it is still possible to cure the problem yourself.

NOTE: *It is normal to hear a slight metallic ringing sound when tapping on the preamp tubes. As long as the tube does not break into oscillation or start crackling or any other form of bizarre noise, it is considered normal and functional.*

SPEAKER IMPEDANCE MATCHING & HOOK-UP GUIDE:

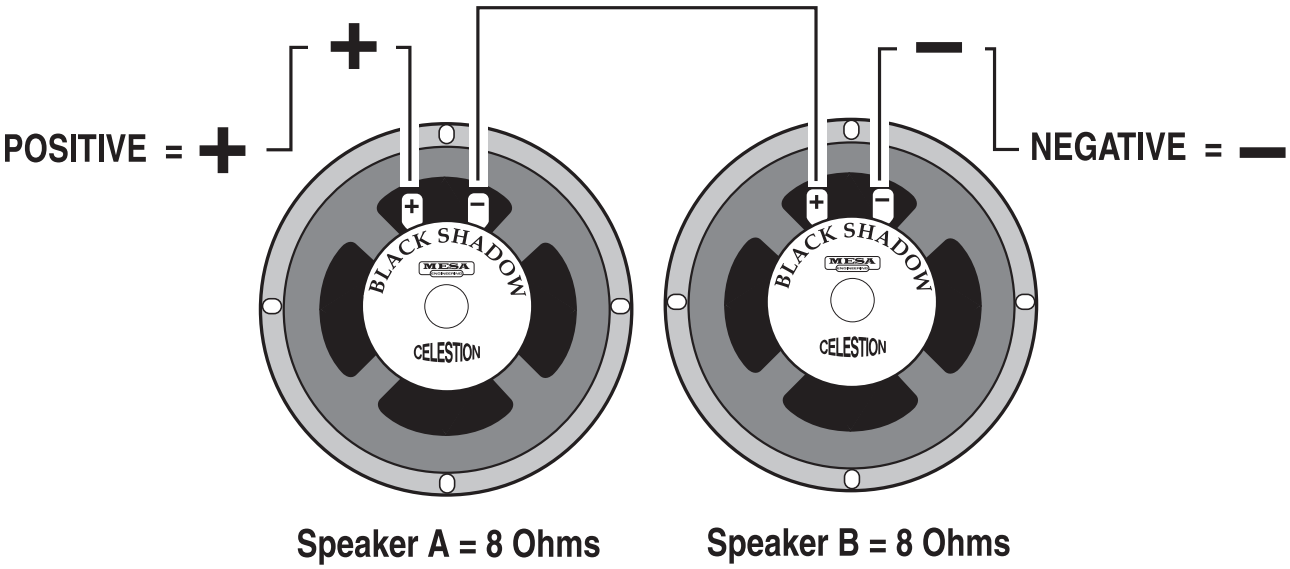
IMPEDANCE: Wiring up speakers to provide the most effective load and making sure that all of them are in phase will help in creating the best sound possible. This is not too difficult, as long as you understand a few things about loading and how to connect your speakers to provide an optimal resistive load.

MESA/Boogie amplifiers can handle 4 and 8 ohms effectively. Never run below 4 ohms in a tube amplifier unless you are absolutely certain that the system can handle it properly; this can cause damage to the Output transformer. A few amplifiers can handle 2 ohms effectively without damaging them (for example the ***MESA'S Bass 400+***). You can always have a higher resistance (16 ohms, for example) without damaging results, but too low of a resistance will likely cause problems.

MIS-MATCHING: When running a higher resistance (for example: 8 ohm output into 16 ohm cabinet), a slightly different feel and response will be eminent. A slight mismatch can provide a darker smoother tone with a little less output and attack. This response is a result of the amplifier running a bit cooler. Sometimes when using more than one cabinet a mismatch will be the only option.

WHAT IS MY CABINETS IMPEDANCE: If you have only a single speaker, you just match that single speakers impedance to the amplifier, and you are done. In many cases, you will have a number of speakers, and then you must calculate the "load" that the amplifier will need to support. There are generally three ways to wire multiple speakers together. They are as follows:

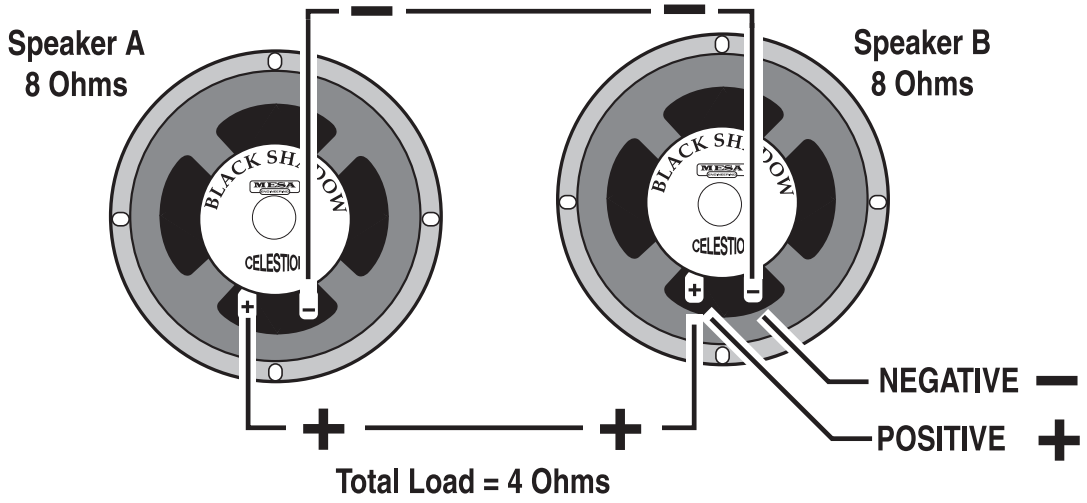
SERIES: When you wire (hook-up) speakers in Series, the speakers resistance (as measured in ohms) is additive - i.e. putting two 8 ohm speakers in Series results in a 16 ohm load.



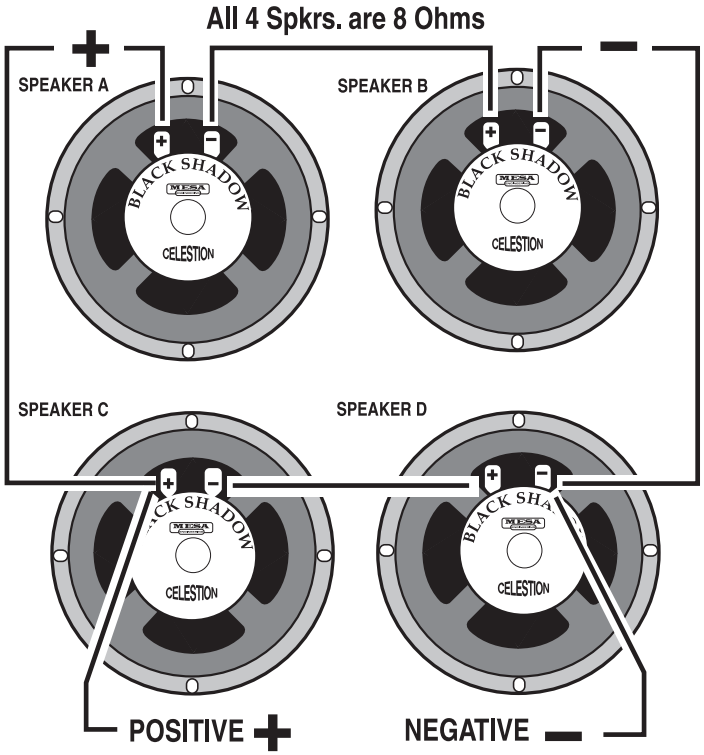
SERIES: Connect the Negative side of Speaker A to the Positive side of Speaker B

SPEAKER IMPEDANCE MATCHING & HOOK-UP GUIDE: *(Continued)*

PARALLEL: When wiring in parallel, the resistance of the speakers decreases. Two 8 ohm speakers wired in (hooked-up) Parallel results in a 4 ohm load. It's easy to calculate the effect of a resistive load when all the speakers are all the same resistance. It is really not suggested to wire different resistive load values in Parallel (8 and 4, 16 and 8 etc.) The formula for figuring the total impedance in Parallel is the multiplication of the two loads divided by the sum of the two loads - i.e. putting two 8 ohm speakers in Parallel results in a 4 ohm load. Connect the Positive side of Speaker A to the Positive side of Speaker B - Connect the Negative side of Speaker A to the Negative side of Speaker B.



COMBINATION OF SERIES & PARALLEL: This is really just two sets of Series wired speakers connected in Parallel. This is how you maintain a consistent load with multiple speakers. The importance of this is more evident when you have more than one cabinet to connect to your amplifier. This is when you need to figure out the loads and how to wire them up without applying too low of a resistance on the amplifier.



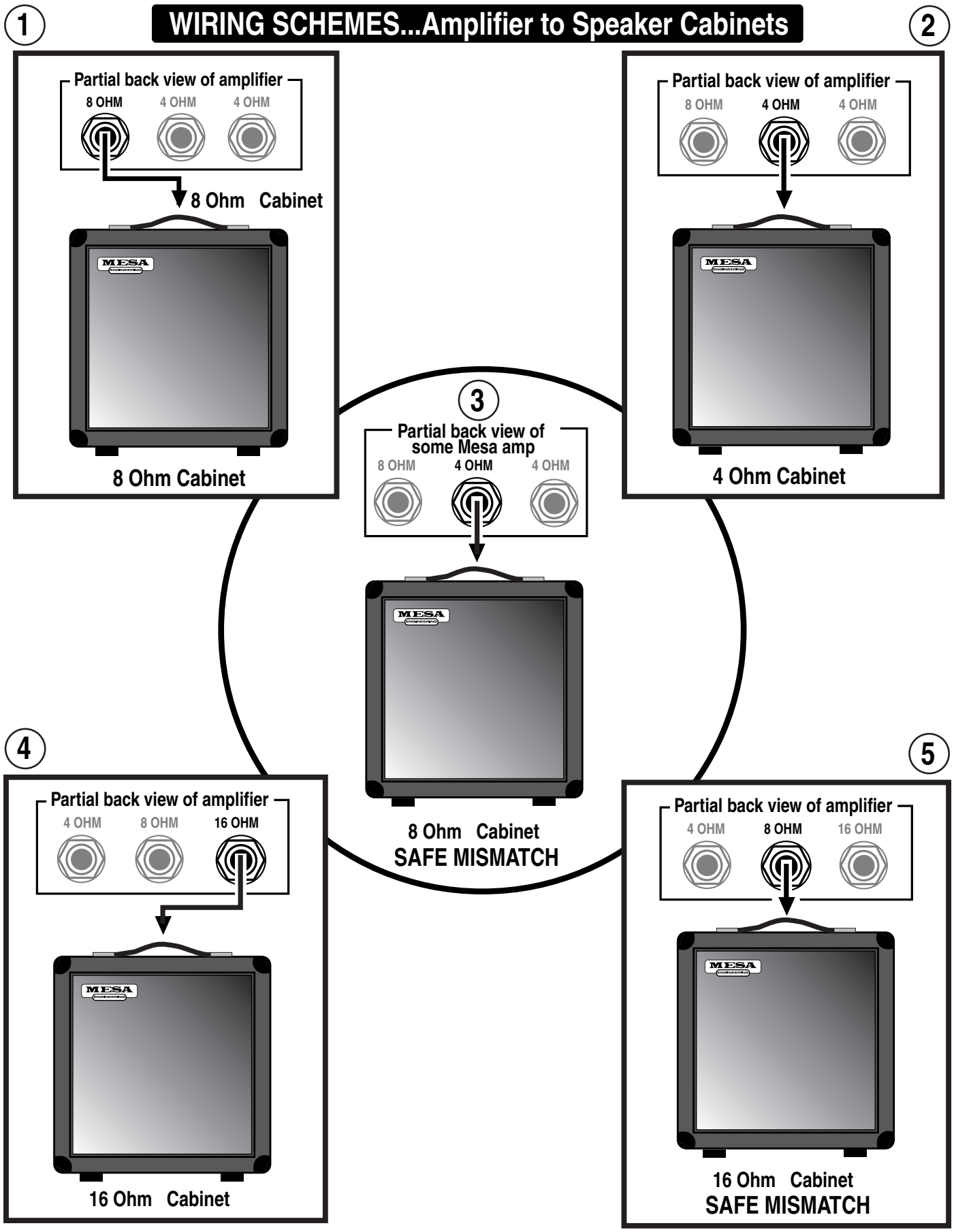
Simply connect the Positive side of Speaker A to the Positive side of Speaker C.

Connect the Negative side of Speaker A to the Positive side of Speaker B. Next, connect the Negative side of Speaker C to the Positive side of Speaker D.

And lastly, connect the Negative side of Speaker B to the Negative side of Speaker D.

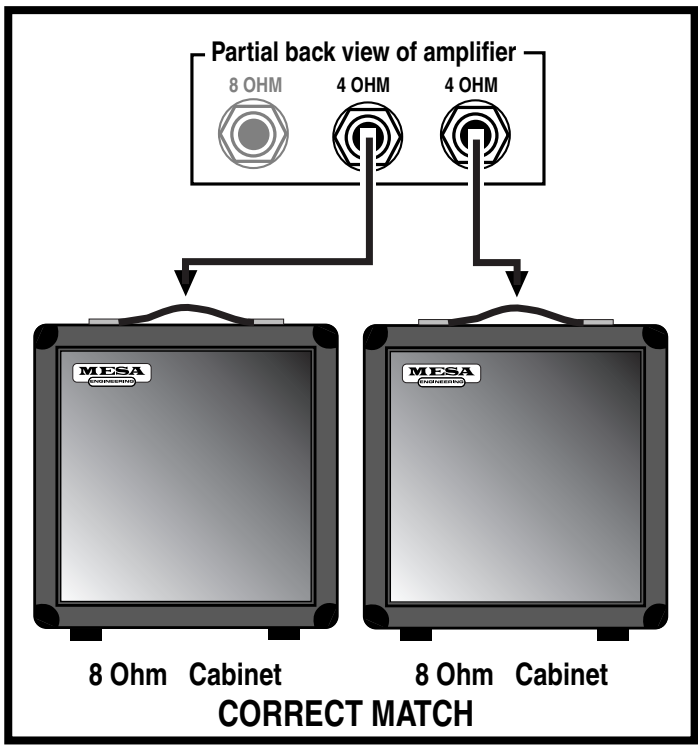
4 Eight (8) Ohm speakers wired in Series Parallel = a Total Load of 8 Ohms.

WIRING SCHEMES...Amplifier to Speaker Cabinets



WIRING SCHEMES...Amplifier to Speaker Cabinets

6



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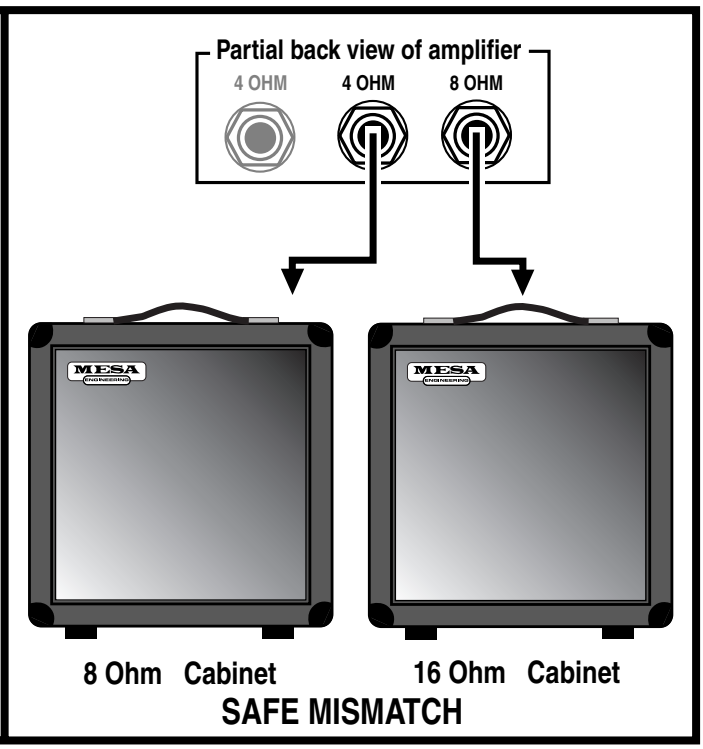

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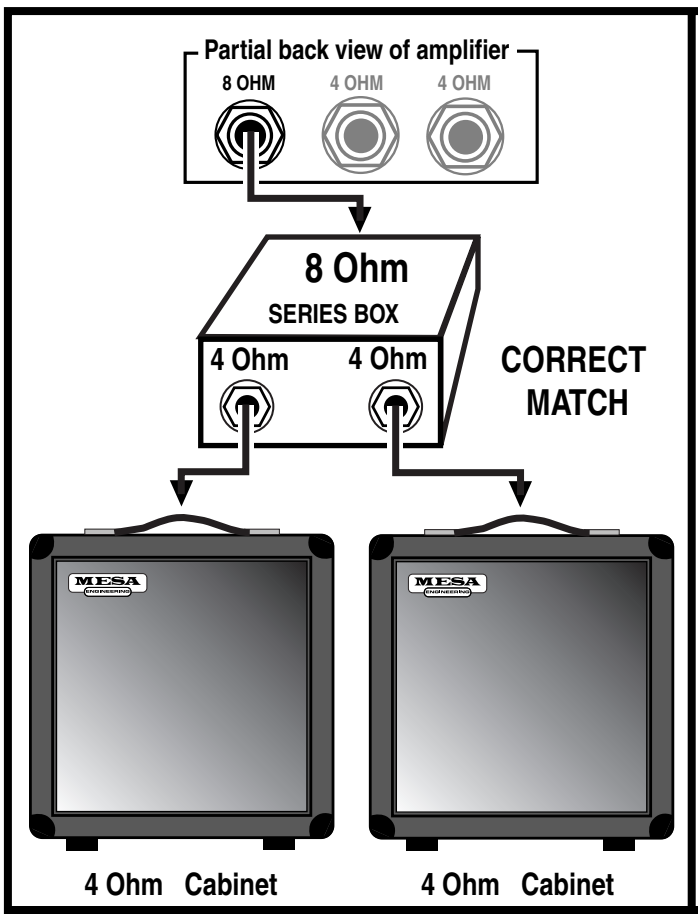

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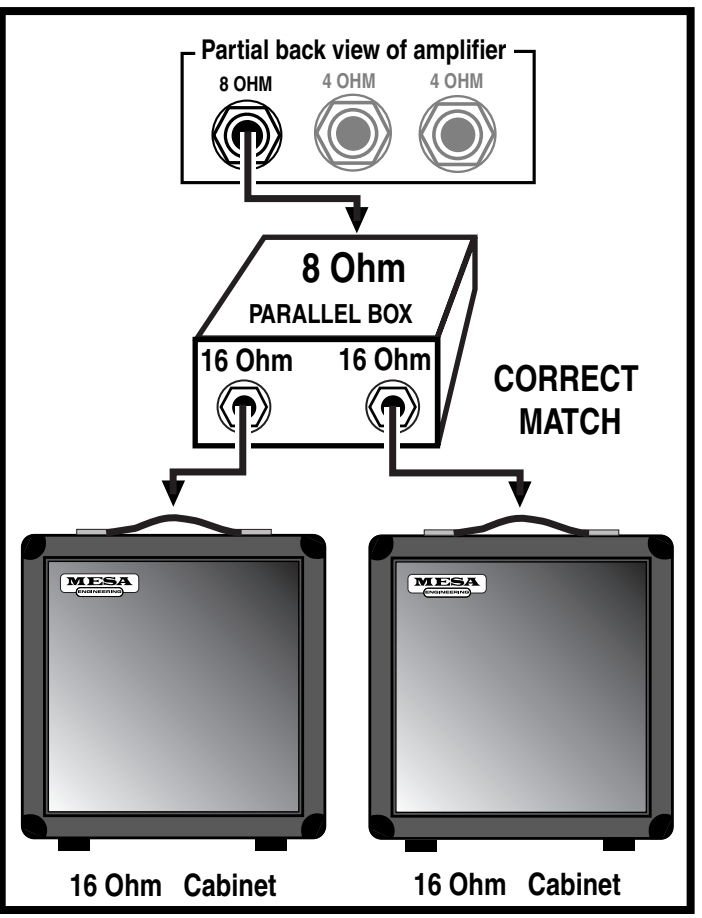

WIRING SCHEMES...Amplifier to Speaker Cabinets

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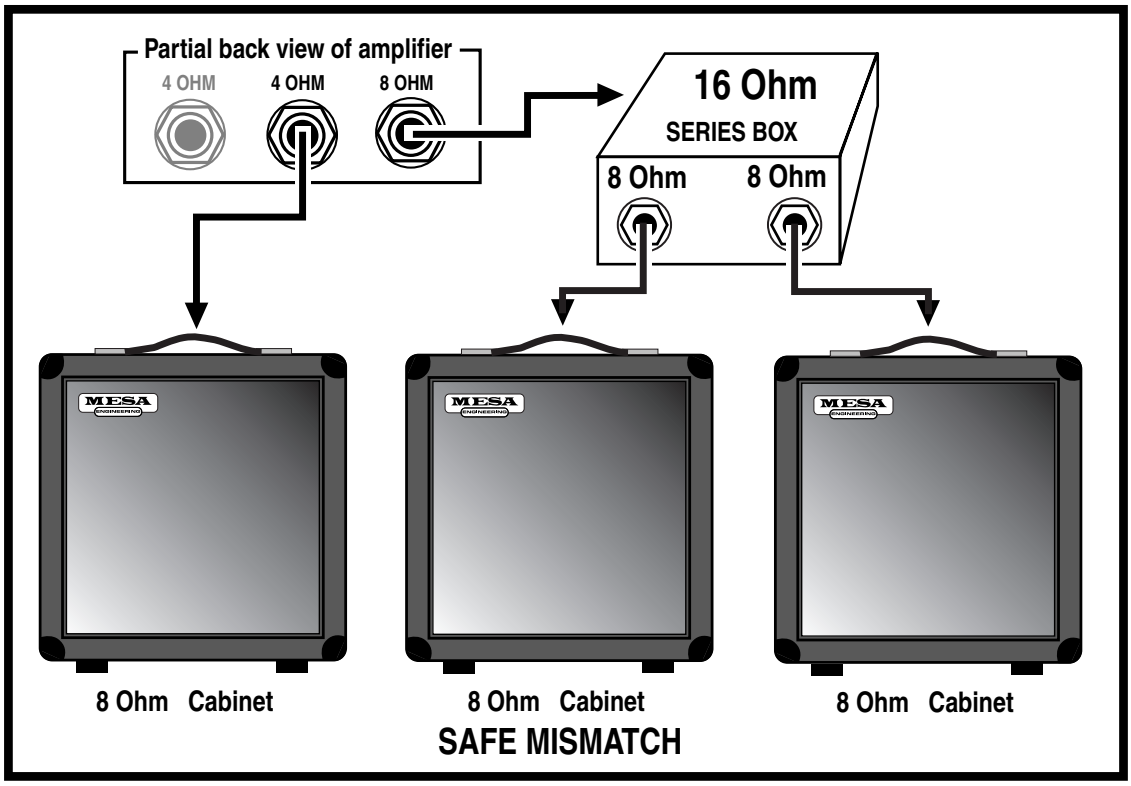

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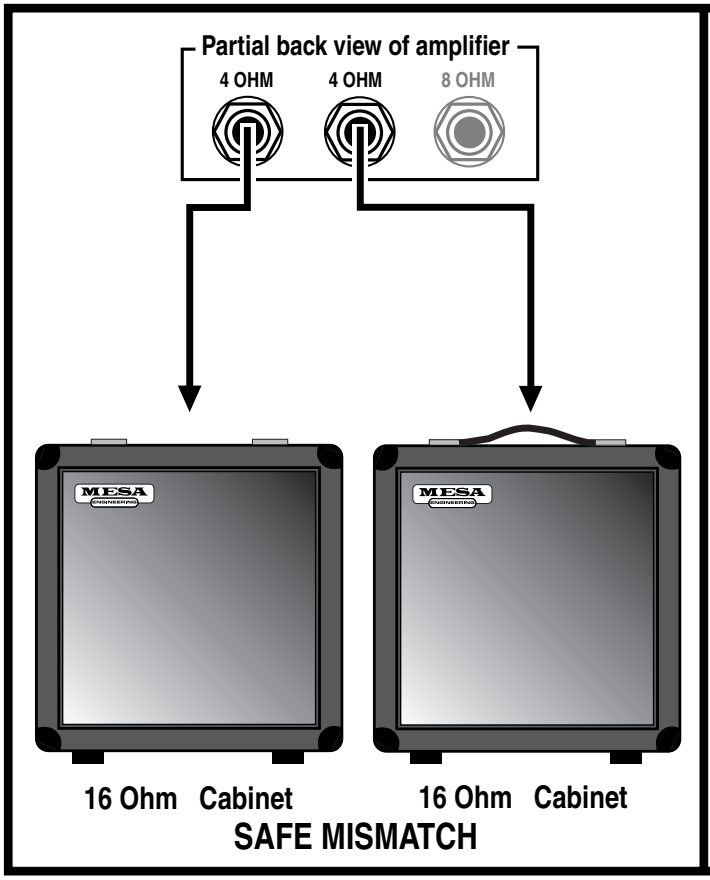

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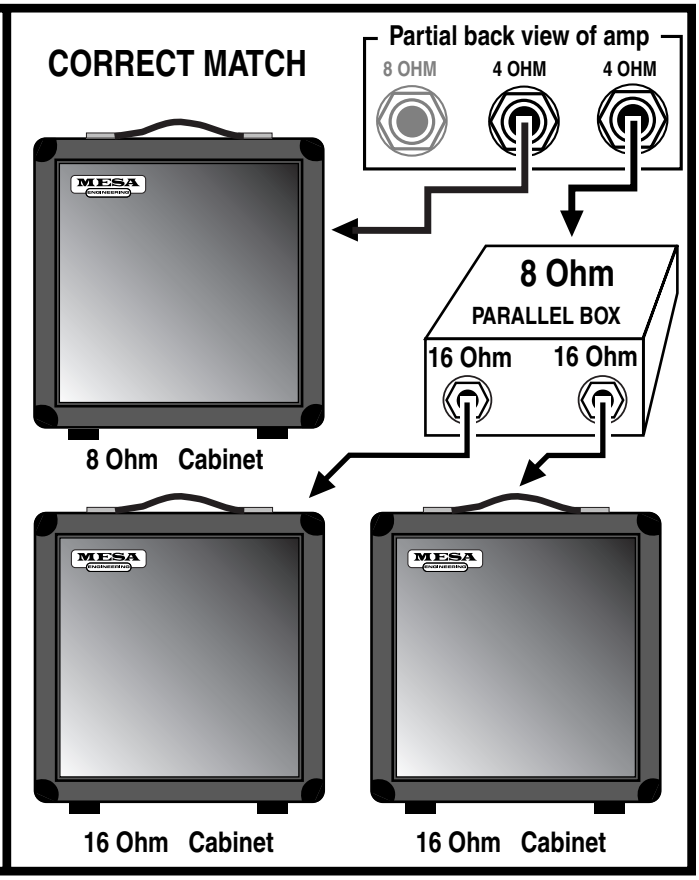

WIRING SCHEMES...Amplifier to Speaker Cabinets

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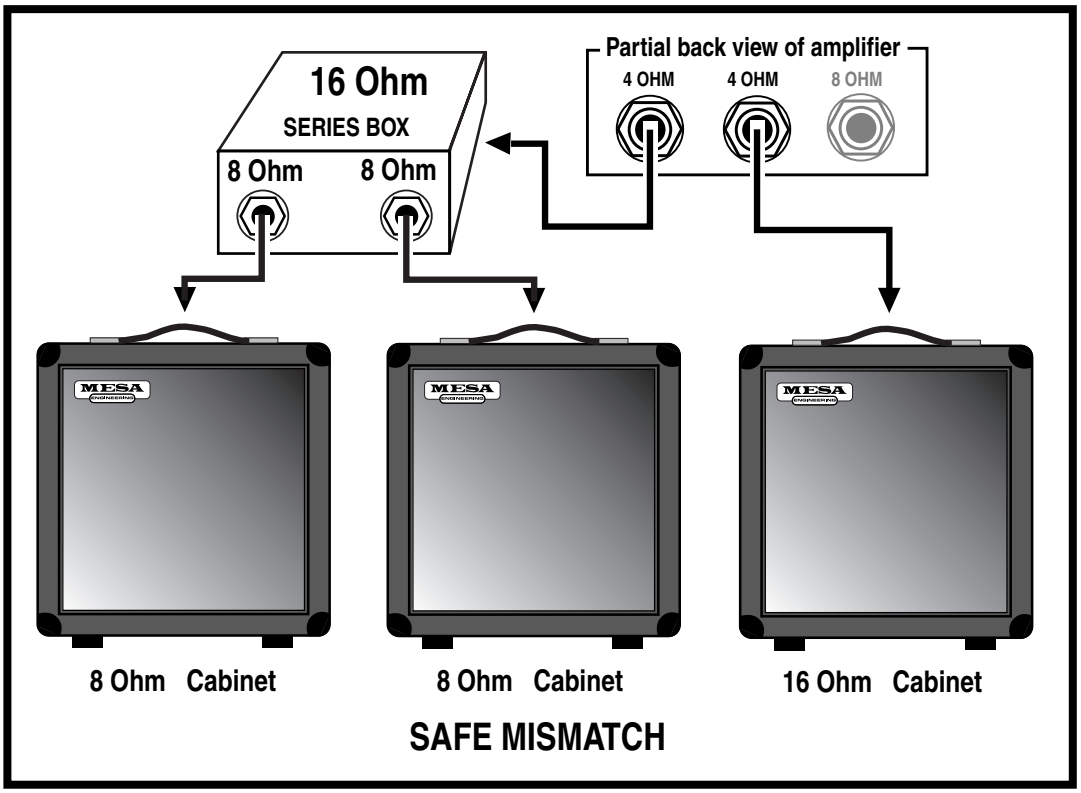

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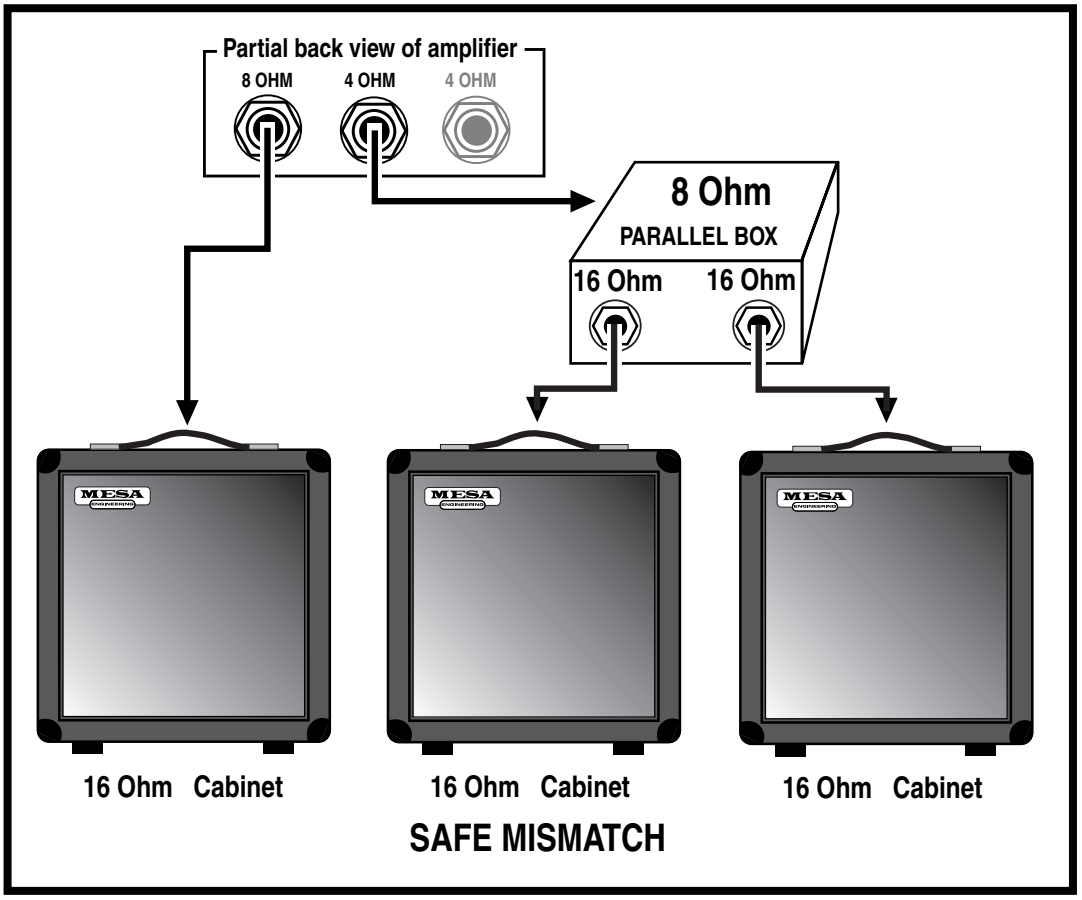
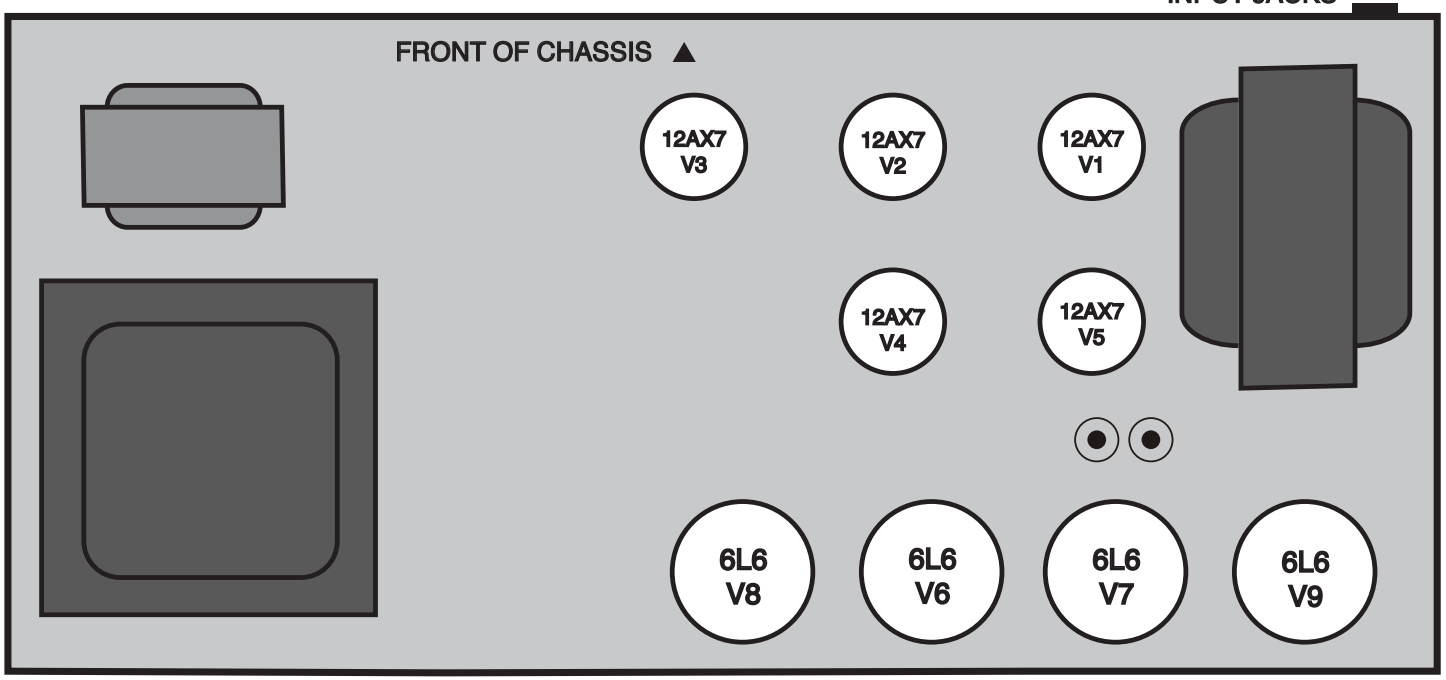


BEFORE CHANGING TUBES FLIP POWER & STANDBY SWITCH TO OFF

King Snake COMBO

TUBE REPLACEMENT



INPUT 1 PREAMP TUBE TASK CHART

V1A- 1st Gain Stage
V1B- 1st Gain Stage

V2A- 3rd Gain Stage
V2B- 2nd Gain Stage

V3A- 4th Gain Stage/FX Loop Send Stage
V3B- FX Loop Return Stage

V4A- Reverb Drive Stage
V4B- Reverb Recovery Stage

V5A- Driver Stage
V5B- Driver Stage

INPUT 2 PREAMP TUBE TASK CHART

V1A- Not Used
V1B- Not Used

V2A- 2nd Gain Stage
V2B- 1st Gain Stage

V3A- 3rd Gain Stage/FX Loop Send Stage
V3B- FX Loop Return Stage

V4A- Reverb Drive Stage
V4B- Reverb Recovery Stage

V5A- Driver Stage
V5B- Driver Stage

POWER TUBES

100 Watts = V6, V7, V8, V9

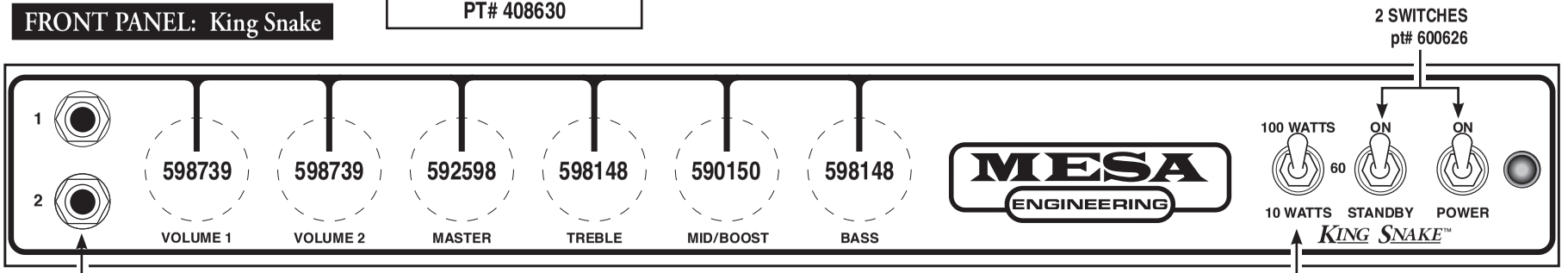
60 Watts = V6, V7

10 Watts = V6, V8

TO MAINTAIN WARRANTY, USE MESA/BOOGIE TUBES WHEN REPLACEMENT IS NECESSARY
FOR CUSTOMER SUPPORT, PLEASE CALL 707-778-6565 MONDAY-THURSDAY 9-5 PST, OR EMAIL US AT INFO@MESABOOGIE.COM

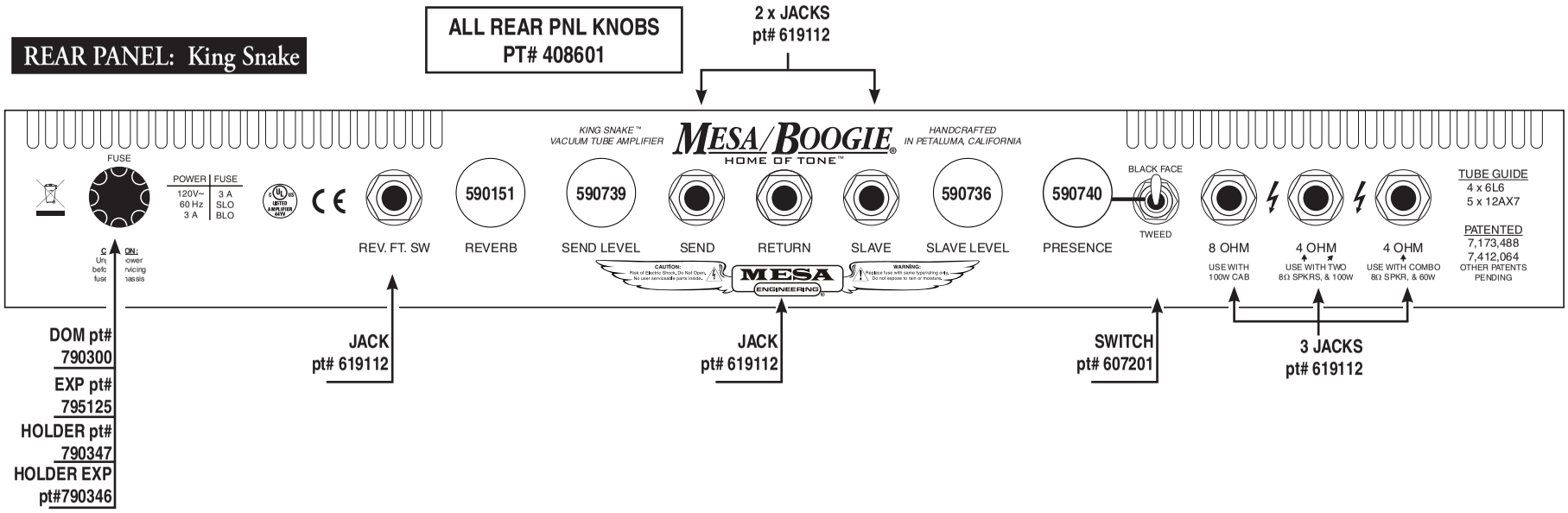
FRONT PANEL: King Snake

ALL FRONT PNL KNOBS
PT# 408630



REAR PANEL: King Snake

ALL REAR PNL KNOBS
PT# 408601



NOTES

MESA/BOOGIE®

The Spirit of Art in Technology

***Thank you** for trusting MESA/Boogie to be your amplifier company and we wish you many years of toneful enjoyment from this handbuilt all tube instrument.*

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14/02/14