MESA/BOOGIE®

JP~2C™

Owner's Manual

Hello from the Tone Farm

Congratulations on your choice of the JP-2C™ and welcome to the MESA/Boogie® Family! The instrument you've selected has a deep heritage that combines the best attributes of vintage tube amplification with pioneering innovation that brings high-gain channel switching performance to a new frontier. One look at the thoroughness of the feature set of this amplifier tells you it's loaded with inspiring tools, but underneath the hood, the authenticity of these groundbreaking circuits and features (beware imitators) dates back to our MARK I™ and the very beginning of Modern guitar amplification. So congratulations on your choice… you should feel a sense of pride that you're playing an amp like no other, an original in every way! Just like you!

Our 45+ year commitment to excellence along with our solemn promise to musicians - to treat each of them as we ourselves would wish to be treated - guarantees you an experience that will make you feel truly justified in your choice. We're confident your new amplifier will have you smiling and inspired within minutes of plugging in for the first time...but what's really gratifying is that you will be finding new and inspiring sounds years after the price of admission has faded from memory and the JP-2C continues to unveil it's true worth.

It's with our sincere thanks for trusting us with your TONE and our best wishes for all your musical endeavors that we welcome you home. Should you ever need assistance or guidance we're here to help. You now have in your hands an instrument of limitless expression. Our hope is that it takes you and your playing to new and unimagined places throughout your musical journey. From all of us here at MESA®...Enjoy!

As a teenager growing up on Long Island, NY I was surrounded by music...Zeppelin, Rush, Ozzy and Van Halen cranked over the airwaves, there was a band in every other garage on my block and everyone played guitar. Rock and metal was taken very seriously throughout the east coast suburbs and oftentimes it was the word of an older 'seasoned' player that was taken as scripture. It was, in fact, how I was initially turned on to the players who would ultimately have the most profound influence on me as a young guitarist, such as Steve Morse and Al DiMeola, and it was also how I first heard of MESA/Boogie.

I'll never forget visiting a local music store (where I would eventually end up being employed as a guitar teacher) that one of these respected 'elders' said to me; "If you want to try a real guitar amp, play through a Boogie." I was immediately intrigued by the funky name and just as instantly turned into a Boogie fanatic when I plugged my guitar into one at the store and heard the magic roar of the American-made, all-tube rig in that tiny music store fill every corner of the room. I'll never forget it. What the hell was this thing? Made in Petaluma? Where was that? It might as well have said it was made in the North Pole by Santa's elves. Maybe there were tone elves living in Northern California's wine country who toiled over work-benches covered in tubes and circuit boards and built these life-changing sound machines. Who knows? Regardless of my naïveté, from that moment, I kept having serendipitous encounters with Boogies in so many different settings and circumstances.

Experiences like hearing the God-like tone of a local guitar hero and discovering that he was playing through a Boogie. Or seeing Pat Thrall play with Jack Bruce in a nearby mainstay and being blown away by the cascading tone coming from this little head on stage with the name 'Boogie' across the front. Or the big moment of being completely enveloped in the massive guitar tones on Metallica's 'Master of Puppets' for the first time only to find out that it was none other than the fabled MARK IIC+ that I was hearing.

Needless to say, I became a fanatic of all things Boogie and not only would I end up being somewhat of a collector, but unbeknownst to me, the very style that I developed as a player would be forever entwined and associated with that 'Boogie sound'. I can't begin to describe the impact that this discovery has had on me as a player ever since.

There has always been something magical about getting a new Boogie and cranking it up for the first time. In fact, I still recall after having placed my first substantial order for a Quad Preamp, 295 Power Amp, Midi Matrix, Abacus midi controller and Shock-Mount rack, waiting for the delivery and seeing that Roadway truck pull up to my house. It really was like Christmas!

As it turns out, it wasn't just the awesome MESA/Boogie gear that screamed quality, workmanship and artistic integrity that hooked me, it was also the immediate, and subsequent care and service that the small California company extended to me, even as an unknown and not-yet professional young guitar player. I still remember my first tech call with none other than Doug West, who treated me as if I was in Metallica and not just some kid from Long Island with a new amp. That call and the relationships with Doug, Randy, Jim and the entire Boogie family that would develop far into the future, meant everything to me.

Fast forward to me and Dream Theater being fortunate enough to turn that youthful passion into a full-blown career in music and those moments of kindness, service, loyalty and tonal discovery worked their way into my life as a professional. So much so that you can hear a MESA/Boogie amp on every DT album ever recorded, live or studio, as well as on my 2005 solo album 'Suspended Animation'.

In fact, nothing demonstrates the signature commanding presence of an iconic MARK IIC+ better than the

opening riffs of 'Jaws of Life' or 'Damage Control' or defines the expressive and liquid lead tones I've come to love and rely on as in 'Glasgow Kiss'.

This brings me to my personal discovery of the 'Holy Grail' of Boogie, the MK IIC+ and eventually, to my own signature amp that bears its name. It was my good buddy, rack builder-to-the-stars turned wine mogul Mark Snyder who first turned me on to the now almost mythical amp. I can still picture it clear as day, going to his place in Brooklyn and plugging into my first C+. All I can say, is that the experience was...religious. I just knew that from that moment, my life of tonal pursuit had been forever changed. Now, I've played through the Studio Preamp, Quad preamp, Dual and Triple Rectifier, Road King, Triaxis, Formula Preamp, Lonestar, MK IIB, MK III, MK IV and MK V (to name a few!) which are all sacred tone-monsters in their own rite, but it was the IIC+ that had the most lasting impact.

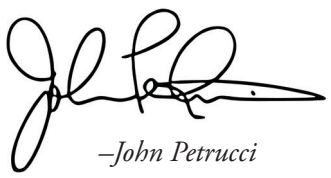
I started doing some research about the different incarnations built in the 80's. The various transformers, power variations, original Sylvania Tubes etc. and started to consider myself somewhat of a C+ connoisseur. I even knew to look on the rear panel for the hidden Mike B. inscription written in black marker that signified whether or not that particular MK IIC amp truly was a "+" version! I ended up gravitating towards a specific sounding version that I would bring on the road and into the studio.

If you were to tell the 16 year-old me that one day there would be a MESA/Boogie IIC+ with my name on it, I would have laughed in utter disbelief and dismissed you as a mean-spirited charlatan. But alas...here we are. The JP-2C has been born! When the reality of doing a signature amp came to be, immediately the emphasis was placed on this being a bonafide and authentic C+ reissue in every sense of the word, from the massive transformer to the circuit and everything in-between. Randy not only vowed to make good on that commitment, but pledged that in anyway we could, we'd even try to surpass the original. Now, this may be hard to swallow for anyone out there reading this who is a C+ purist and tone-junky, but...we have surpassed the Holy Grail!!

For me, once the tonal properties were intact, it was all about improving upon the 'performance' limitations of the original and bringing its feature set into the 21st century. Whether it was including three separate Channels with independent Channel EQ, having 2 Lead Channels with not just one, but two assignable Graphic EQ's, adding midi capability, building in the CabClone DI, or the modernized SHRED feature, the goal was to make one amp that would provide everything I needed for stage and studio. Anything any guitarist would ever need to not only produce the greatest clean, crunch and lead sounds on the planet, but also access them in an instant in any setting thrown at you. There you have it, our challenge and our mission… to create the be-all and end-all of guitar amplification. I think we achieved it and then some… and I hope you agree.

I could not be more proud to have my name on what, in my opinion, may go down in history as the greatest guitar amp ever built! I am forever humbled and grateful beyond expression for the opportunity given to me by this amazing family and team of artists and innovators. Now, you get to enjoy all of the history and hard work that went into creating it!

Here's to your personal Tone Mission™. May the JP-2C bring you years of tonal ecstasy and artistic revelation.



–John Petrucci

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REAR PANEL cont.

MIDI OPERATING INSTRUCTIONS

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.

JP~2C™

Operating Instructions

Introduction (...and a bit of History):

If you know MESA/Boogie, you probably know that, aside from our one-time Limited run of the Carlos Santana King Snake Tribute model to commemorate our first amplifier, we've never done Signature amplifiers or Artist models.

That's not to say we don't value the LONG list of Stars that have continued to make musical history with our instruments over the last four decades… we DO! You may have seen many of the world's most influential guitarists in our Ads and Videos over the years. Those were all our stock amplifiers… the same one you may own. Born from our ideas combined with requests from players just like you and built to our uncompromising specs.

We've always believed it better to create something magic that will work, and provide inspiration for, nearly everyone… Like a really great tool set that can endlessly adapt. That way, each Artist–famous or not–can use it in ways all their own to create a unique and identifiable voice. Plus, we just aren't up for dealing with Managers and the business that comes with endorsement deals and that has caused us to shy away from the whole idea of Signature or Artist models.

Also, time has shown that a great sounding and versatile instrument can last for decades and outlive the fleeting fame of an individual Artist and even whole musical genres. This was the case with our MARK IIC+, Dual Rectifiers, TriAxis, Mark IV and Bass 400+ to name a few. At that point you have an Icon. A Classic. We strive to build Classics… Products that stand the test of time and transcend careers in the turbulent music business.

However, if you play electric guitar, and especially if you've now purchased this amplifier, chances are you've heard of John Petrucci and Dream Theater. You may even know of our 30 Year relationship building his amplifiers–again, the very same amplifiers you might have chosen for your sound.

John exemplifies to us all that defines a true and dedicated Artist. His uncompromising belief in his vision, his goals and what it takes to achieve them. His never-ending search for excellence in both his playing and his sound. His integrity and his endearing, unaffected-by-stardom humility over the decades. His friendship and the feeling of brotherhood we share with him in our common interests and desire to create something of lasting value… something to be proud of far into the future. To put it simply; His Integrity, Passion and Love Of Great Tone.

For all these reasons and many more, we're breaking the mold here at MESA and celebrating his talent, his life-long dedication to his art–and ours–and the long relationship we've enjoyed with John and are proud to introduce a MESA first; The JP-2C. Our first unlimited-build Signature Amplifier.

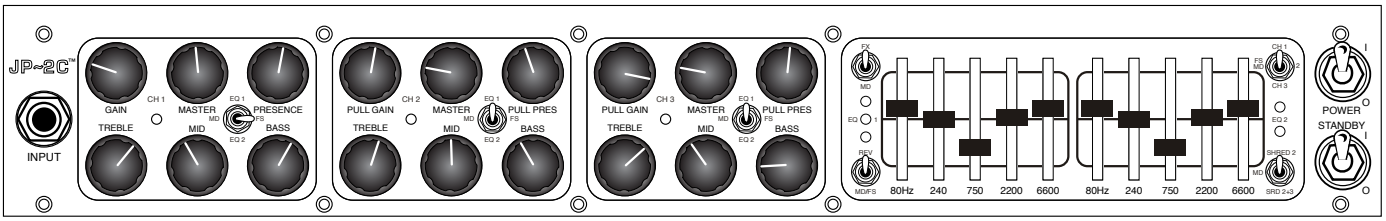
More Incredible Tone, More Features, Simpler to Use, More Control over the Channels and Modes, Midi Channel and Feature Accessibility, Built-In CabClone DI, Three Discreet Channels, No Compromise between the Channels, and most importantly, it includes all the trade secrets and magic tone tricks we've learned over the 30 years since the originals were made. It has an even more fiery attack and focused voice, tighter low end, more liquid gain, more complex layered harmonics and possess the very essence of the burning, ripping, shredding, soaring voice that IS the II-C+.

Overview:

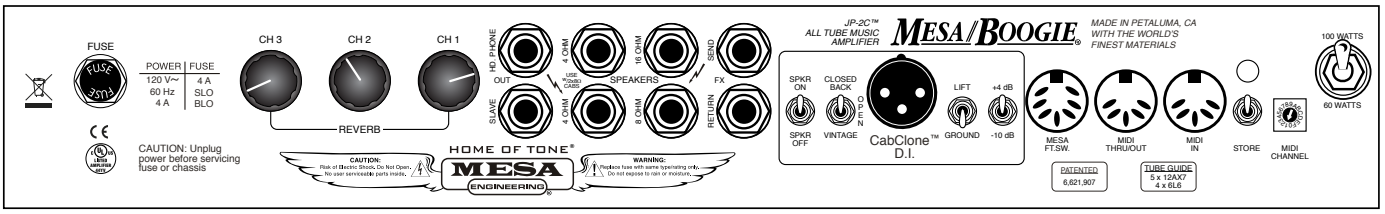
Much like a racecar or a fighter jet, the JP-2C strips it down to bare essentials to get the job done effectively, in the simplest way, and get you from point A (inspiration) to Point B (or should we say "T" for Tone) in the fastest way possible. It's a purpose-built, no compromises rendering that aims at one single goal; deliver the most aggressive, yet purest sounding II-C+ EVER in a package that–while still extremely versatile–delivers the goods for John's Recording and Stage needs. All Things Heavy! But more specifically; the highest headroom Clean sound possible, a Crunch rhythm that has Lead Channel gain available, but is tight, grinding and articulate, and the ultimate Boogie Lead Channel with even more saturation available and the ability to track any technique and speed while also reaching to the stratosphere for single note solos.

In that spirit, unlike other MESA amplifiers, the JP-2C foregoes the concept of Mode Switching for the Channels and instead dedicates each of the three Channels to one of these three musical styles and its requirements. The ONLY switch in each Channel controls the status of Graphic Equalization for that Channel and the choice of which one of the two EQs on board will be applied.

FRONT VIEW: JP-2C™



REAR VIEW: JP-2C™



Overview: Front Panel

CHANNEL 1

Channel 1 is dedicated to Clean sounds and is optimized for the maximum headroom possible in the preamp section. Power section clip may be employed to attain some degree of overdrive in Channel 1, albeit at very high volumes due to the 100 watt rating of the JP-2C power section. Additional "drive" may be sought in the upper region of the MID control (above 12:00 noon) as the MID pot employed here is the same value and taper as our MID/BOOST control found on some of our other amplifiers, but the increased headroom in the preamp reduces the amount of overall drive available as compared to those amplifiers. This fact renders this more powerful mid control as just that… a MID that has increased range and can add more midrange frequencies into the mix with the other rotary Tone controls.

NOTE: *For the MARK II-C+ Aficionado–Re: Channels 2 & 3; We have, in both Channels 2 and 3 of the JP-2C, removed the VOLUME 1 Control and the LEAD MASTER control from the Panel Layout as compared to the LEAD Mode of the original MARK II-C+ in favor of user simplicity. The LEAD MASTER is a largely redundant control here in the JP-2C–as it was in our MARK FIVE™–and its setting has a very minimal role in the sound of the Mode (II-C+)/Channel (JP-2C), mostly affecting how much of the Pull BRIGHT (hardwired ON here) is active and audible. The values chosen for its internal setting were arrived at through the same criteria we always use; Tone and Performance*

The VOLUME 1 is a bit more sensitive and critical and here in the JP-2C it is preset internally with discreet resistors in both Channels (as we did in our MARK FIVE™) for its optimum setting as it applies to application. That setting in Channel 2 is aimed at producing the most urgent, aggressive, thick, high gain Crunch rhythm sound possible. In Channel 3 it is very similar, but tweaked ever so slightly (set slightly higher) for vocal, singing single note Lead sounds. All aspects of the characteristic of that missing (not externally adjustable) VOLUME 1 (Gain) control were considered in the choice of its internally fixed setting. It was measured, scrutinized, re-measured–and then done all over again–literally hundreds of times (as it was on our MARK FIVE project)–to arrive at the ultimate combination of immediacy in attack, harmonic content and spread, fullness of body in Gain and Tone and nuance of explosive, aggressive, envelope in character. The end result for the user is an amplifier that is MUCH easier to dial and arrive at the very best of the MARK II-C+'s most signature and mind-blowing sounds more quickly and with less "neurotic tweaking" required. There is NO compromise of the original's performance and yet a SERIOUS benefit gained in the dial-ability with this modification to the original Control layout.

CHANNEL 2 Channel 2 is the JP-2C's Crunch generator. This Channel is all about aggressive, tight overdriven rhythm sounds delivered with amounts of Gain usually associated with Lead Modes or Channels. It IS in fact a Lead Channel… the LEAD Channel from the MARK II-C+ in its original state circuit-wise. As mentioned in the above NOTE, the setting of the Gain has been optimized for its performance in this category of sounds and though it can definitely be used for Lead sounds of all kinds, it is perhaps the first best choice when dedicating a Channel in the JP-2C to Crunch rhythm work.

To achieve the most famous, now classic MARK II-C+ grinding rhythm sounds in Channel 2, you will likely want to employ one of the 5-Band Graphic Equalizers (usually EQ 1) and set the Sliders to the classic V-Curve (discussed later) to scoop the mids and boost the top and bottom end. This is by far the most widely used application for the Graphic EQ and here in the JP-2C, you have a separate one for each of the high gain Channels! This means greater flexibility and improved accuracy when crafting your sounds and it allows you to arrive at a truly no-compromise set of sounds for both rhythm and lead! This was something that was impossible on the original MARK II-C+, hence the fact that many top Artists of the day used two MARK II-Cs and a Midi switcher (also contained here) in a rack system to call up dedicated amps with different settings for each sound.

CHANNEL 3 Channel 3 is created with soaring lead sounds in mind. It's first priority is to meet and even exceed the incredible explosive attack, blistering sustain and harmonic complexity of the very best of the MARK II-C+. We, along with the amplifier's namesake, feel we have achieved exactly that. Channel 3 boasts all the nuanced performance of the originals and delivers that with unbelievable authority due to the straight 100 watt (versus 90 watt Simul-Class™) power section aboard the JP-2C. This power section difference serves the musical style John plays extremely well and in fact, his absolute favorite amplifier of the many II-C+s he owns is a 100 watt model. The front end preamp gain setting is optimized for single note sounds and the internally preset resistors that handle the role of the (missing) VOLUME 1 control on a II-C+ are, as mentioned above, of slightly higher value to achieve a thicker, rounder single note signature. Channel 3's character is therefor a little warmer, fatter and compressed and this plays well into its intended application for lead work of all styles and gain requirements.

PULL GAIN & PULL PRESENCE In addition to the VOLUME 1 and LEAD MASTER control deletions from the original circuit, we've modified the PULL SHIFT Features layout of the original II-C+ to both simplify and enhance both high gain Channels 2 and 3. All PULL SHIFTS that affected and were possible in the original II-C+ LEAD Mode are permanently activated here in with the exception of the BASS SHIFT found on the original's BASS control. This includes VOLUME 1 PULL BRIGHT, TREBLE SHIFT, PULL DEEP (found on the MASTER control) and LEAD BRIGHT (from the deleted here) LEAD MASTER. This combination is historically the most popular among savvy MARK II-C+ aficionados and was always SHIFTED when customers and Artists were polled, along with the fact that was always the best sounding combination to our own ears and hands.

In addition to these changes to the original circuit, we have added two new PULL SHIFT options on the JP-2C. A PULL GAIN on the GAIN control and a PULL PRES (shift) on the PRESENCE control.

PULL GAIN increases the setting of the (deleted and internally fixed) VOLUME 1 control by approximately one number setting's worth… in other words, just a little bit. This means that it is added to the already preset amount of gain/drive that is in place when the pot is NOT pulled out. This increase is also relative to the Channel's preset gain orientation, in other words, the setting of Channel 3's PULL GAIN when activated will be approximately one number setting higher than that of Channel 2's PULL GAIN activated. In both Channels this PULL GAIN feature allows a little boost of gain for specific parts or musical styles.

The PULL PRES feature located on the PRESENCE control allows two very different Presence frequencies to be selected. When PULLED, the time-honored frequency we have used for 45 years appears, which allows control over a much higher range of top end than that of the TREBLE control. When left PUSHED-IN, the PRESENCE control operates on a lower frequency that is still above the TREBLE, but adds "increased cut and focus" lower than the traditional PRESENCE that in some applications can sound more cohesive for high gain Crunch rhythm sounds.

Because of the different frequencies involved and where they appear in a well blended ratio on the taper of the PRESENCE pots in Channels 2 and 3, there is usually a need for readjustment of settings between the two (Pushed and Pulled) Presence Modes. The deactivated PUSHED-IN Mode will require you to set the PRESENCE control higher to achieve a balanced (open) sound, while the PULLED-OUT Mode will require you to decrease the PRESENCE control to blend in these higher frequencies and achieve a warmer sound. This is because in most cases, the higher a frequency is, the more it can begin to sound detached (buzzy) from the fundamental notes and their related harmonics in the spectrum. The original (higher) PRESENCE frequency aboard "Boogies" has historically found the control set below 11:30 by most players to produce a balanced, warm sound. The new lower frequency option can be introduced in larger amounts since it's closer to the rest of the frequencies in the spectrum and seems less detached.

5-BAND GRAPHIC EQ x 2 As mentioned above, the ONLY switch in each of the three Channels is the assignment switch for the two 5-Band Graphic Equalizers. This 3-position toggle allows assignment of either of the EQs to any of the three Channels, with the upper position engaging EQ 1 and the lower position employing EQ 2. The center position of the EQ switch bypasses the EQ section and the Channel's rotary Tone controls are the only equalization active when the switch is set there.

The 10 EQ Faders (pots) that make up the two separate 5-Band Graphic Equalizers are housed in the EQ Window section of the Front Panel. Along with them, this section contains control switches for four other Functions/Features. These are the Effects Loop, Reverb, Channel Select and the SHRED Voicing Mode. This convenient placement alongside the EQ Faders in this Window allows you to dial in your individual sounds and selections quickly and in one place, so that when storing the settings you have arrived at for a given sound under a Midi Program number, there isn't the need for a lot of jumping around on the Panel. That is of course after you have chosen a Channel and set the rotary GAIN and Tone controls to your liking.

FX (Effects Loop) This 2-position switch brings on line the Effects Loop the choice of IN all the time or Bypassed.

REV (Reverb) The global REVERB switch in this section of the the JP-2C offers three choices; OFF (Bypassed in All Channels), FS (Footswitchable from the JP-2C Footswitch) and ON all the time (and Midi assignable).

CHANNEL SELECT This 3-position toggle allows manual access of the 3 Channels when the JP-2C Footswitch is not connected or not present. Channel 2 is the "default" Channel for the switching matrix and therefore, when the switch is in the "Center Off" position, Channel 2 is triggered. Move the toggle to the upper position to access Channel 1 and the lower position to access Channel 3.

SHRED The JP-2C incorporates this new voicing feature in the high gain Channels not present in the original MARK II-C+ LEAD Mode that further enhances the harmonic layering of the top end. This 3-position switch located to the lower right of the EQ 2 window affects only Channel's 2 and 3 and adds an additional layer of upper harmonic content in these high gain Modes (Channels). It is especially beneficial for high gain Crunch Rhythm sounds, as it lends aggression and three-dimensionality to the sound and adds a harmonic haze that rides atop the fat, grinding wall of gain nicely.

For single note solo work the SHRED feature adds a smoldering, sizzle and brings the sound forward for some truly fiery lead sounds with supreme urgency. SHRED can be tamed for this application by working with (reducing/balancing) both TREBLE and PRESENCE controls to soften the attack region and take some of the "pointiness" out that SHRED can add to arrive at some really amazing solo textures that have a soaring, boundless quality.

NOTE: *Avoid setting the TREBLE high (above 2:00) when the GAIN is to be set high as this brings about the tendency for a slightly microphonic tube to ring or squeal.*

SHRED is also extremely well suited for instruments built from darker sounding woods such as Mahogany, Basswood, and/or shorter

scale lengths. These guitars can really benefit from the "openness" SHRED can impart on the sound. Even Alder guitars, with their midrange punch and focus and higher bottom end signature, can put the SHRED Mode/Feature to good use.

This new voicing Mode adds even more versatility to the already powerful array of sounds in the Encyclopedia of Heavy that is the JP-2C. And with the ability to have it active on one or both high gain Channels and combine that with your no-compromise EQ choices, you can now craft the ultimate Crunch rhythm and Lead sounds in the same amp and switch instantly between them. Freedom!

Overview: Rear Panel

REVERB The usual MESA array of individual, Channel specific REVERB controls kicks it off to the left side of the Rear Panel. Each Chanel may be set with its own blend of the rich all-tube REVERB and the status stored along with Channel and settings choices under Midi Programs.

HEADPHONE OUT Since the JP-2C contains our CABCLONE™ D.I. Recording Interface, all the elements for a great HEADPHONE Output were available so this is also included. This Cabinet Simulated Stereo ¼" Output captures the entire sound of the amplifier–power section and all–and includes the cabinet simulation circuitry of the CABCLONE's DI Output. This HEADPHONE Output makes for convenient and inspired practicing in environments where the sound of a speaker cabinet cannot be used.

SLAVE A standard ¼" SLAVE Output provides a signal also captured from the SPEAKER Output, but in this case it is the raw, untreated signal. This is not to be confused with a "Shaped, EQ'd, Speaker Compensated or Impulse Response" signal/sound that would be appropriate for interfacing with a Console for either recording or live reinforcement. This signal is intended for adding additional power in live applications or driving processing racks for feed to additional (external) satellite amplifiers and cabs.

SPEAKER The standard array of SPEAKER OUTPUTS is provided for the interfacing of your favorite cabinet. All the common impedance ratings have been provided for and you should be able to accommodate most any reasonable cabinet setup with this combination of jacks.

CABCLONE™ D.I. Here in the JP-2C we've included our popular CABCLONE™ D.I. Recording Interface for convenient Direct recording without the need for mic-ing, although you can do that as well for a blend of live speaker and Direct sounds. The full compliment of Voicing options from our stand-alone CABCLONE has been included here; CLOSED BACK, OPEN BACK and VINTAGE, and this greatly increases the versatility of this feature for different sound styles. Other features aboard here in addition to the balanced XLR Output include Speaker MUTE, an Instrument/Line LEVEL switch and GROUND/LIFT options.

NOTE: *When using the SPKR ON position, make SURE you have a working speaker connected to one of the SPEAKER OUTPUTS. Failure to do so may result in damage to your amplifier that is not covered under Warranty. Using the amplifier in the SPKR ON position without a speaker or external load (resistor, soak, etc) connected will likely cause damage to your output transformer and render your amplifier inoperative. Damage caused in this manner will not be covered under warranty.*

FTSW and MIDI Three DIN jacks, one 7-Pin for the JP-2C Footswitch, and two standard 5-pin DIN jacks for MIDI IN and THRU/OUT are included for true connectivity and a number of ways to access the amazing sounds and pro features in the JP-2C. A STORE toggle switch allows simple one-touch writing of your desired sounds in all the Channels to any of 256 Midi Program Numbers. There is also a Midi Channel mini Rotary Selector for syncing of the Midi Channel to be used by your Controller of choice.

GETTING STARTED

1. After unpacking the amplifier, check to make sure all the tubes are firmly seated in their sockets as some may have loosened a bit during shipping.

2. Connect the A.C. Cord to a grounded (3 pin) A.C. outlet.

3. Unpack the JP-2C Footswitch and connect the 7 pin DIN Footswitch cable to the FOOTSWITCH DIN jack on the right side of the Rear Panel. If you intend to use a Midi Controller to access the Channels and Features, connect your Controller (or Computer) to the Midi IN jack on the JP-2C Rear Panel.

4. Connect your speaker enclosure to the proper matching impedance SPEAKER OUTPUT on the left side of the JP-2C Rear Panel. An 8 Ohm load is preferable for your first experience with an amp this dynamic and explosive as you will hear the full power potential and best Tonal balance. .

5. Flip the POWER Switch to the POWER (up) position while leaving the STANDBY Switch in the STANDBY position for at least 30 seconds. This allows the filaments to warm up in the tubes before being put to use. Following this cold-start procedure every time you power up will increase the toneful life of your tubes.

6. If you intend to connect processing devices to your loop, do so now and look up EFFECTS LOOP for proper connection and operation, although we recommend auditioning the JP-2C without processing for the first time. If the Loop is to be in, check the INPUT levels on your processor to make sure they are in the medium to lower range so you can increase the level slowly once you have lifted STANDBY on the JP-2C and run through the Channels to view the SEND level coming from the amp.

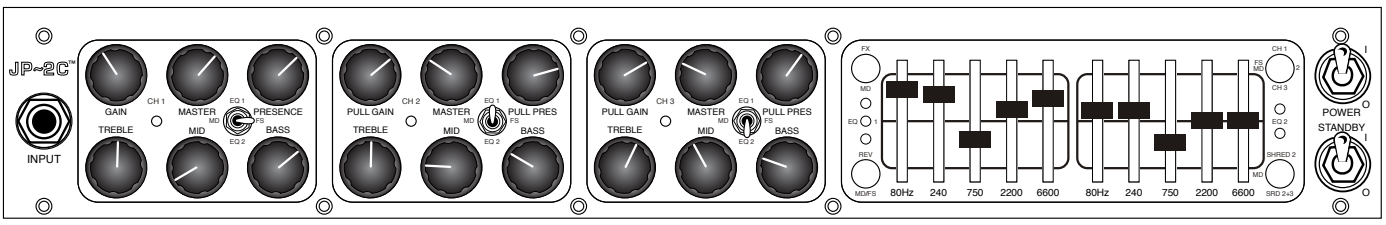
7. Follow the Sample Settings examples below and set the Controls at these approximate settings for a tour through your new world of TONE. Remember these are just a glimpse at the vast possibilities and are meant to give you a taste of one possible way to set up your Channels. Feel free to fine tune the sound as you go...you can't hurt a thing and you will be learning by feel...the best way.

8. Flip the STANDBY to the ON (up) position and enjoy the ride!

INSTANT GRATIFICATION

In case you haven't yet played your new amplifier, below is just one example of the many ways to set up the Channels. This example demonstrates a pristine Clean sound in Channel 1, a heavy Crunch Rhythm in Channel 2, and a burning high gain lead tone in Channel 3. This just happens to be not only the most popular application of the Channels, but also is very close to the set up–and settings–John himself uses in the Channels of his JP-2C.

Instant Gratification Settings



HELPFUL HINTS

NOTE: *REDUNDANT INFORMATION: Throughout this Operating Guide you will encounter redundant information and sections that are repeated for your continued awareness and as reminders. This is done so a person can read only the sections they are interested in, and yet still get the important points they should know or NEED to know about the JP-2C. We apologize if this gets annoying for the cover-to-cover reader (often our most loyal fans and MARK aficionados), but even they may appreciate it some time in the future when referencing this Guide quickly for a specific topic.*

- Beware of high settings on the BASS control in Channels 2 and 3, especially when the GAIN is set high. Too much BASS will produce a flubby, indistinct attack and "slow" the response time. A basic rule regarding the BASS control might be this; As the GAIN goes up...the BASS should come down.
- The GAIN and TREBLE Controls are the most powerful tone shaping controls in each Channel and should be used with taste. They determine much about the attack characteristic and the overall personality of the sound in all the Channels. Many of the great sounds in all the Channels will find these two Controls in their middle ranges.

  NOTE: *Avoid setting the TREBLE high (above 2:00) when the GAIN is to be set high as this brings about the tendency for a slightly microphonic tube to ring or squeal.*
- When using high GAIN settings try the EQ for adding extra top end as it comes later on in the signal chain and will be less stressful on the preamp tubes in many cases. Remember the JP-2C is a high performance amp in every sense. Just like a highly tuned car, you don't need to drive it "wide open" to have fun. You can get amazing performance in the middle ranges of all the controls. Yeah sure, there are times when you are going to run flat out...but just like the car needs special tires to run flat out, it takes a special (and rare) set of preamp tubes to do that without experiencing microphonic problems (ringing, squealing, etc.) .
- For the best clean performance with the sweetest, most balanced sound, we suggest setting the MID in Channel 1 below 11:00, with many players preferring it much lower, say 9:00 or even all the way down. You can also think of it this way; 12:00 on the MID here in Channel 1 is like "10" (or all the way up) on most other amplifiers. So if you usually set your MID control at around 11:00 on most other amps, try setting it at 8:00 - 8:30 here on the JP-2C.
- The PRESENCE, whether the PULL is activated or not–as it affects the sound in much the same way in both Modes–is very powerful at shaping the voicing of high gain sounds in Channels 2 and 3. Set low it fattens and compresses the sound, making for a more voice-like focused note(s). Higher settings "open up" the sound and allow the full spectrum of harmonics to flow through. Use this control to fine-tune the top end overall in your Crunch Rhythm and Lead sounds after you have dialed the rest of the preamp controls to your liking.
- Your JP-2C will sound better and feel better to play if you have at least one speaker cabinet touching the floor you are standing on while you play. The coupling effect and especially the transmission of bass frequencies will cause the amp to sound fatter and the strings to feel more substantial and tangible when the amp (or cab) sits on the floor. Wood floors (like stages) are really great! Let's face it... the guitar can be one of those weird instruments that rarely feels the same way two days in a row, night to night, from room to room... and we can use all the help we can get. This usually helps... with the only exception being a stage filled with too many live mics...sometimes then you are forced to lift the amp to avoid the coupling effect.
- To store amplifier Channel/EQ/Reverb/SHRED and FX LOOP information under a Midi Program number, simply go to the desired Midi Program number location using your Midi Controller or Computer/Sequencer, choose a Channel on the JP-2C, add the desired EQ (or not), Set your Reverb mix, and toggle the STORE mini-toggle located on the right side of the JP-2C Rear Panel. You're done. The Channel and related amplifier information will now come up every time that Midi Program number is selected.
- Use the STANDBY switch every time you power-up (from cold or hot), during set breaks, cable hook-ups and anytime you are not playing for a few minutes. Doing so will increase the toneful life of your tubes.

FRONT PANEL

THE CHANNELS

As mentioned in the OVERVIEW, the JP-2C forgoes the long-standing MESA concept of selectable Modes within its 3 Channels and instead focuses in on three globally accepted necessary sounds with those being Clean Rhythm, Crunch Rhythm and Lead. Therefore, each of the three Channels is optimized for its sole purpose in achieving the ultimate performance in each of these three realms.

CHANNEL 1 This Channel is dedicated to one thing pure and simple; attaining the Cleanest sound possible with the maximum headroom. To achieve this goal some of the "normal" things we strive for and consider in our other amplifiers are left on the table here. The most important of these is the ability to obtain overdrive from the preamp, still keeping in mind the circuitry is basically "vintage architecture" and therefore creates a low gain "mode".

Channel 1 is not meant to obtain overdrive. In fact, quite the opposite, it is designed with the intention of avoiding clipping in the preamp stage. The whole goal here was to give John, and now you, a clean sound that will remain "clean" and devoid of clip past the point where the original MARK II-C+ would begin to clip or overdrive. There is still the potential to clip the output section, but with a massive transformer and 100 watts of power on board, that will be a relatively loud exercise and possibly not one with the desired results. The JP-2C is intended to provide a pristine clean sound for Intros, Breakdowns or any other rhythm part that needs to be really sparkling clean with virtually no hint of clip. Now conversely, there is a limit to how loud a volume can be achieved even with this robust power section, but the PREAMP does feature increased headroom in the early stages and that will keep the signal feeding the driver and power sections cleaner longer than any of its MESA siblings or ancestors.

As far as settings go, there are no real danger points or guardrails to hit… Channel 1 dials up really friendly and fairly obvious. Perhaps start with the GAIN around the 12:00 noon range and increase or decrease from there to find the desired blend of low end richness and top end sparkle. A good rule here is that the lower the GAIN setting (below 12:00), the brighter and thinner the sound will be, whereas higher GAIN settings (above 12:00) will unveil a richer, thicker, warmer mix with less emphasis on top end harmonics and brightness. There are no real bad settings to be worried about for the most part.

Do keep in mind though, that BASS and/or lower frequencies take more power to reproduce cleanly than do treble or upper frequencies. So the more BASS or bottom end from the EQ Sliders you dial in, the sooner the power section will be unable to reproduce them without the potential for clip. So if you are looking for the absolute cleanest response at the highest volume level, dial in lower frequencies with a degree of finesse. This will help you attain the best performance with that criteria in mind.

The only other thing to keep in mind for the best clean performance is that the MID control used within Channel 1 is of the same value as that of our amplifiers that feature the MID/BOOST feature. That means that, while the JP-2C is largely unable to utilize this higher value MID for its purposeful clipping potential, it is nonetheless a very powerful MID control. Higher settings (above 12:00) will dump a very large amount of midrange frequencies into the mix and can cause the sound to become pointed or unbalanced if other compensations and/or considerations aren't made. For the best clean performance with the sweetest, most balanced sound, we suggest setting the MID in Channel 1 below 11:00, with many players preferring it much lower, like 9:00 or even all the way down. You can also think of it this way; 12:00 on the MID here in Channel 1 is like "10" or all the way up on most other amplifiers. This is true on most older amplifiers (ours and other brands) and definitely on original MARK II-C+s.

CHANNEL 2&3 These are the two high gain Channels and they are identical save for one small difference; Channel 3 is ever so slightly higher gain due to a higher value for the internally preset (missing as compared to a MARK II-C+) VOLUME 1 Control. This difference optimizes Channel 3 for single note Lead work and makes the response a little more fat and round sonically and more legato and creamy feel-wise.

Certainly either Channel can be used for any manner of high gain application–or even lower gain application as well–but for John, and many other players that need a high gain Crunch rhythm and a soaring Lead sound, you will most often find that Channel 2 is great for Rhythm and Channel 3 is better tuned for Lead.

The Controls operate exactly the same for both Channels and there is only one tip that we might suggest to save you time and help you arrive at great sounds fast; avoid high Settings of the BASS control. Especially when the GAIN control is above 12:00. In other words, as the GAIN goes up, the BASS should come down. This simple settings "rule" helps you avoid the only real settings pitfall of the MARK Series circuit; the BASS control comes pretty early in the signal chain and large amounts of BASS dialed in there create a flubby indistinct attack and a bloated, unbalanced sound. By avoiding high BASS settings you will ensure a tight, focused attack characteristic and an immediacy in response. With this Tone trap avoided, you'll be in for some of the most aggressive and harmonically layered, musical and rich guitar sounds ever. Again, with an amp that has this much Gain, you have to use taste, make small moves and apply balance in all areas of your settings in the sonic spectrum and the signal path. Let the gain and the controls work for you, not against you. If you follow this line of thinking you'll have no trouble dialing in amazing sounds quickly in these two high gain Channels.

PULL GAIN This feature, along with the PULL voicing on the PRESENCE controls, was not on the original II-C+ amplifiers. We have added both in reponse to John's questions and wish list of features. The PULL GAIN allows a slight BOOST… what amounts to a number more, on the (missing here) VOLUME 1 Control as it applied to the original MARK II-C+. Again, that control is preset internally after MUCH testing and consideration as to John's requirements and our own feelings about the optimum setting of this sensitive part in the circuit.

To describe what occurs in the pushed-in and pulled-out Modes in MARK II-C+ terms, it is basically like having two VOLUME 1 settings; In Channel 2–the slightly lower gain "Crunch Rhythm Channel"–that offers the un-activated, pushed-in setting of about 6.0 (or 1:00) and the activated PULL setting of 7 ¼ (or 2:15) or so.

In Channel 3–the hotter "Lead Channel"–it shakes out like this; an un-activated, pushed-in setting of approximately 7 ½ (or 2:30) and the activated, PULL setting of 9.0 (or 4:00).

The settings are referred to here as "approximately" or "about" because no two pots are ever exactly identical resistance-wise, and there is a fair amount of play in the older MARK II-C+ Pull Pots, so the number settings are general reference points and are approximate. The actual settings here in the JP-2C are achieved with a network of resistors per Mode (internally preset "missing" pot) with values that were arrived at through relentless scrutiny and are very precise.

PULL PRESENCE This feature allows you choice of two different PRESENCE Voicings (both frequency and response) to be applied to the two high gain Channels. This difference can be very useful for tuning the Channels to either Crunch Rhythm sounds or a voice and feel that is silkier sounding and more inviting to play for lead work. Before we go any farther with descriptions though, a quick detour; it is imperative you understand this important operating tip.

NOTE: *The Two PRESENCE Modes Set Up Very Differently! Pushing and Pulling Will Probably NOT Give You Two Great Sounds! You Need To Set The PRESENCE Control Differently For Each Voicing Mode! See Below "Setting"!*

PUSHED-IN: The un-activated, pushed-in Mode is a new sound for the II-C+ circuit and features a circuit that accentuates a lower frequency than our traditional PRESENCE circuit. It hits harder in a zone just above the TREBLE control's region and allows for a more aggressive, tighter attack response. This works well for Rhythm, where you need definitive placement in the time domain and more punch and articulation. The harmonics top out earlier and are a bit more blended in this Mode. This also works well for single note sounds where you don't want a lot of harmonic content and instead prefer a tightly focused, more cohesive sound. This Mode is also the "anti-buzz" or "tightly attached harmonics" Mode. This is opposed to the top end harmonics becoming a bit more detached. There are times when you don't want that separation or its three dimensional characteristics and instead want a focused, chest-kicking voice. It can also have merit for lower to medium gain sounds for both rhythm and single note work. For Classic Rock gut-punch or Blues solo sounds where you really want to jab and punctuate.

SETTING – PUSHED-IN: You will need to set the PRESENCE higher for this Mode. The frequencies are lower and appear darker and more cohesive, especially when switching from PULL Mode. Set the Presence to approximately 1:00 and adjust from there to taste and feel.

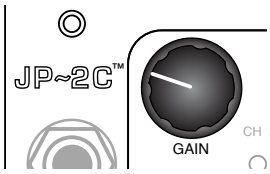
PULL: This Mode utilizes the standard time-tested PRESENCE circuit used on MESA MARK amplifiers for decades. It produces a higher PRESENCE frequency and because of that, a softer more elastic feel. It features for many the more inviting, easier to play response of the two PRESENCE Modes as the higher harmonics "lay on top" of the notes played creating a haze or slurry (depending on your analogy) that makes the MARK II-C+ Mode, and in fact most high gain Modes, more creamy, vocal and singing. There is definitely more harmonic content in this Mode and therefore, it is usually preferable to reduce the PRESENCE control to its lower range when using the PULL Mode. Ignoring that approach will likely produce thin, pointed, shrill sounds that aren't pleasing… especially for single note playing. There may be times for heavily saturated Crunch Rhythm sounds that a higher setting of the PULL PRESENCE Mode is appropriate, but they will likely be few and far between. This Mode is instrumental in all the classic recordings associated with the MARK II-C+ Lead Mode. It is directly and faithfully taken from that amplifier and has been used on most MESA models since the first MARK I's in the early '70s. Spend time working with the TREBLE and PRESENCE in the PULL Mode as many "colors" of top end are available to you just within the range of these two rotary controls. May we suggest starting there and moving to the Graphic Equalizers for fine tuning once you've got a basic sound you're happy with here.

SETTING – PULL (Pulled-Out): Set the PRESENCE control lower for this Mode as the frequencies are higher and become more easily detached from the notes played. Try settings between 7:00 – 10:00 for the most cohesive and vocal single note Lead sounds. Settings up to 12:00 may be appropriate for Crunch Rhythm styles where more aggression and harmonic layering is desired.

This switchable PRESENCE Feature is just one of the many improvements made to the original II-C+ Lead circuit and together with the PULL GAIN, they create an amplifier that has legendary Tone combined with modern adaptability. Between the two Channels and their GAIN and PRESENCE options, you can create virtually anything you can dream in the realm of overdriven and/or high gain guitar. Any amount of drive, any voice, any feel, it's all here for your discovery. The fun part–the exploration–is up to you and your imagination.

THE CONTROLS

GAIN This is, by far, the most powerful control in the JP-2C and its setting determines the style and personality in each of the Channels. It meters the gain in different tube stages depending on the Channel called up and it sets Input Stage headroom, which determines whether the sound will be more or less saturated. It also acts as a subtle Tone control as the tube stages' gain is increased and decreased and imparts its own "color" on the sound.



In all the Channels, there are three regions of the GAIN control; a low gain zone between 9:00 - 11:30, a warmer, more saturated zone from 12:00 - 2:00 and a higher gain zone from 2:30 – 5:30. Each of these zones can be used for many different applications and all can be used for both chording and single note solo work. As the GAIN control is swept throughout its range it imparts different textures and tonal characteristics.

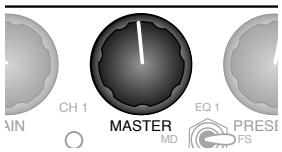
Generally speaking, the lower end of the control (9:30 – 11:30) in all Channels produces a brighter, more open character that has more dynamic content available. This region is great for clean, sparkling chording in Channel 1, where the maximum headroom is available, the top end harmonics are bubbly and the attack is lightning fast. Channel 2 and 3 offer some nice threshold sounds in this zone where the gain is warm and furry, but there is still plenty of the guitar's personality intact. This zone is great for Channel 2 sounds used for clipped chording as there is plenty of dynamics intact that have not yet been compressed by too much saturation. Channel 3 also responds well in this lower region and similar chording and solo sounds await you here. You will be pleasantly surprised that the same Channel that can sound so vintage-approved and agile when set low can be such a ferocious high gain beast when cranked.

The middle region of the GAIN control (12:00 – 2:00) is where the most balanced sounds live and you will find this region delivers warm, full sound, detailed attack and good dynamics and the Tone controls still have a powerful effect on the signal. Channel 1 delivers great chording response and sounds richer and has more body here. Depending on pickup style and strength you will have to watch for clipping as you are nearing the crossover point gain-wise and some clip may start to appear as you pass 2:00. Some of Channel 2's best sounds are to be found here, as things start "smearing" nicely and you start getting into delicious tube overdrive. This region in Channel 3 offers the greatest flexibility, focus and detail. As these sounds are all higher gain than their Channel 1 and 2 counterparts, the best dynamic response and attack characteristics are in this window. As you approach 2:00 there will be an abundance of saturation to keep chords grinding and single notes hanging – but not yet too much to start compressing the life out of the sound.

The highest region of the GAIN (2:30 – 5:30) is all about saturation. Up here the signal gets much fatter in the low end and the top end begins to recede to create a round, compressed sound. Dynamics become slower with lower peaks and a more legato, creamier feel is produced. Channel 3 is absolutely over the top when the GAIN is run this high. Up here you will notice the Tone controls have a diminished effect on the sound as the notes are so saturated and their character has been pre-determined by the way each Mode is voiced and how it reacts to this level of gain.

NOTE: *Using the upper range of the GAIN control invites possible microphonic or other gain related issues to become more of a possibility. Avoid setting all the Controls–GAIN and TONE–in their highest regions as the combination of all of them pushes both circuit and tubes to the edge of their stable region. Applying the SHRED Mode can exacerbate these tendencies further and it is near impossible to use all the Controls in their highest ranges with SHRED activated. Doing so will likely cause a high pitched squealing or feedback that is easily remedied by reducing one or more controls, especially the GAIN and TREBLE.*

MASTER This control determines the overall output level of each Channel and it is located at the very end of the preamp. By using it in combination with the GAIN control, any amount of preamp signal strength, gain, (within a Modes' parameters) can be achieved at any playing volume. Once you have dedicated the Channels to their respective sounds with the Controls, you can then balance the volume levels (output) of the Channels using the MASTER controls.



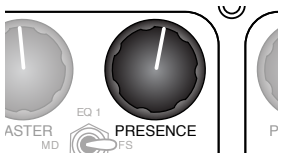
For general applications and to get the best performance out of all the Modes we recommend MASTER settings in the 9:00 – 12:00 range with most people settling in around 10:30 for average playing volumes.

Some purists like to run a MASTER all the way up and raise the GAIN until they reach their desired sound – thinking that this achieves the purest sound. In theory, they believe this resembles removing the control altogether from the signal path, and in a way it does. However most all the "vintage non-master" amplifiers they are seeking to emulate have discrete resistors at that place in the circuit anyway to adjust or "tune" the output of the preamp to the power section's individual sensitivity.

The MASTER is nothing more than a variable resistor that offers an infinite range of settings possibilities and makes the amplifier many times more versatile with no sonic penalty. If you prescribe to this old school approach, then by all means, use the JP-2C this way... it won't hurt the amplifier. However you will be severely limiting the potential sounds you can achieve by removing the limitless great sounding combinations of GAIN and MASTER settings.

Unlike many other MESA amplifiers where the Channel MASTER also acts as an EFFECTS SEND control, the JP-2C required a different layout to ensure the authenticity of the MARK II-C+ circuit. Here Channel 1 uses that scheme (Channel MASTER doubling as a SEND Level control), but the two high gain Channels (2 and 3) see the GAIN control doubling as the EFFECTS SEND control. The reason for this has to do with the fact that it is really the LEAD DRIVE control on a MARK II-C+, which WAS responsible for the SEND strength in a II-C+. Regardless, despite this difference in both origination of the signal and control placement, the Channels balance out quite nicely and you should have no problem with signal levels at your processor(s).

PRESENCE This control adjusts high frequencies above those of the TREBLE and is located in the power section, farther downstream in the signal path, and not in the preamp. The PRESENCE adjusts a specific zone of frequencies in the negative feedback circuit of the power section that best suit the needs of each individual Channel.



You can think of the PRESENCE as a control that allows you to either clamp the power amp down, compressing it and darkening the sound, or open it up and let the full spectrum of upper harmonics come blazing through. It also has a great deal to do with how dynamic the signal is and how a sound will cut through the mix in an ensemble environment.

At low settings (7:30 – 10:30) the sound will be warm and round with a more compressed feel and dynamic fluctuation will be limited. As the PRESENCE is increased (11:00 – 2:30), the top end starts to become more dominant and that compression gives way to "cut" and dynamic peaks jump out with startling speed and accuracy. At the top end of the control (2:30 – 5:30), a super aggressive blend of upper harmonics dominate the sound and this region can be somewhat dangerous if it's not applied in the right musical environ-

ment. Higher notes will slice and dice even the bravest set of ears and we suggest using this region mostly in the studio for recording heavy crunch rhythm parts and even then, mostly on parts that feature the lower strings. This region, especially when coupled with the inherent curve of many of the microphones typically used in P.A. (sound reinforcement) applications, can be truly punishing.

PULL PRESENCE *(Repeated From Overview)* This feature allows you choice of two different PRESENCE Voicings (both frequency and response) to be applied to the two high gain Channels. This difference can be very useful for tuning the Channels to either Crunch Rhythm sounds or a voice and feel that is silkier sounding and more inviting to play for lead work. Before we go any farther with descriptions though, a quick detour; to achieve the best performance and dial-ability in this switchable PRESENCE circuit, it is imperative you understand this important operating tip.

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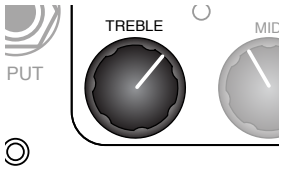
TREBLE If the GAIN control is the most powerful control in the Channels of the JP-2C, the TREBLE comes in a close second. The TREBLE is responsible for shaping the character of the entire Channel. It can overpower the rest of the Tone controls easily and therefore its setting is crucial to a rich and balanced sound in all three Channels.

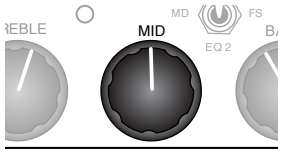
When the TREBLE is set in its higher regions (2:00 – 5:30) the dominant character will be one of very bright, TREBLE-heavy frequencies and the BASS and MID controls will seem less effective. Conversely, a very low setting on the TREBLE will produce sounds that are perhaps a little BASS heavy and overly dark and the BASS and MID will appear as the dominant controls. So you can see that setting the TREBLE with care and taste in mind is critical for the Tone control string to work in harmony.



In all the Channels, the middle region of the TREBLE delivers the best balance and creates sounds that are plenty bright enough , yet still rich and warm. We suggest that you start with the TREBLE at 12:00 and adjust up or down slightly until the desired blend is achieved. Remember that you can use the PRESENCE to add additional (and slightly higher) top end with no penalty in regards to the effectiveness of the other Tone controls as the PRESENCE works in a part of the circuit that is much farther down the line in the signal path and has no direct effect on the preamp controls.

NOTE: *High settings of the TREBLE (2:30 – 5:30) can put extra stress on (even borderline) microphonic preamp tubes (ones that are susceptible to high pitched ringing and noise) and cause them to begin ringing or show other signs of instability. Many tests were run on the set of tubes that shipped in your amplifier to ensure they were stable at the time of construction. However, tubes are not perfect devices–much like light bulbs–and can change over time and become more microphonic or increasingly unstable. Luckily you can remedy most tube problems with a simple tube swap. Avoid these settings (especially in Combo amplifiers – where the added sympathetic and vibrational forces put even more stress on the tubes) to ensure trouble free performance.*

MID The MID control acts much more like a standard tone control and doesn't have quite the massive global shaping power of the VOLUME and TREBLE controls, yet its setting does impart a strong character on the sound. It brings in and out a broad band of midrange frequencies and along with these rides a fair amount of higher "low treble" range frequencies. These highs are lower than that of the TREBLE or PRESENCE, but they are important for the punch and cut of the amplifier in a mix.



The middle region (10:00 – 1:00) is where the punch and attack begin to come on with more urgency and this is where mahogany guitars really like to see the MID set for adding the cut and definition. Here the top end begins to creep into the mix of the MID controls' spectrum and chording sounds start to chime and slash with a more forward and very present character.

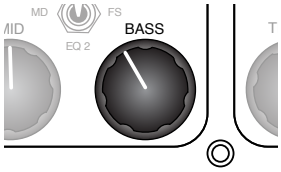
From here on up (1:00 – 5:30) the MID introduces an aggressive range of sounds that are both full and quite forward as the dominant frequencies become those present under control of the MID. In this range you will likely have to increase the BASS to add back in the richness and warmth that gets overshadowed when the MID control is set high. If you like the attack and urgency found in this range of the MID, all the other controls (except maybe the MASTER, which you may have to back down as the sound gets more forward) may have to be set higher to keep up with the MID dominant curve. This is fine, although there will reach a point of diminishing return as the headroom in the preamp gets eaten up by this tonal arms race and you begin to clip the preamp with the high signal from the Tone control string.

For gain sounds in Channel 2 and 3 a similar story unfolds as the MID is increased. Lower settings (7:30 – 10:30) will produce wider sounding, more elastic feeling chordal sounds and the single notes will have a more creamy, smooth character. High harmonics created by the gain circuit and controlled largely with the TREBLE and PRESENCE will add a layer of three-dimensional haze on the sound that smears nicely because the midrange is relatively scooped by this lower setting. As the MID is increased past this region, more thick "gut punch" and low-Treble region attack creeps in and the sound becomes more forward.

NOTE: *Channel 1's MID control is of a higher than normal value to allow more punch and cut for Clean sounds. Because of this, midrange settings (sounds) you may be used to on other amps, including MESA's, may be found at lower settings here in Channel 1 of the JP-2C. The frequencies carried in the preamp are identical, there is just more amplitude (more mid) available. You might think of it this way; if you are used to a MID setting of 11:00 on other amplifier's Clean Channels or Modes, an equivalent setting may be found here at 8:30. The entire range from what would be 0 to 10 on a "normal" MID control is spread across a tighter region here and is available from 7:00 - 1:00 (0 to about 6.0 if there were numbers on the control).*

BASS Much like the MID, the BASS control responds like a typical Tone control and blends in a fairly wide slice of rich bottom end to round out the sound. Internal switching that occurs when the different Channels are selected re-voices the shape of bass a bit to help it sound more cohesive for the sound style. This difference is crucial to the sounds and a big part of their character.

As mentioned earlier in the Helpful Hints Section of this Manual, the BASS control can easily introduce too much low frequency into the mix and overwhelm the sound, especially in the two high gain Channels (2 and 3). We recommend starting with the BASS control set at approximately 10:00 in Channels 2 and 3 and work with the sound from there to determine your optimum blend of low frequencies. Don't be afraid to run the BASS very low in Channels 2 and 3 for higher GAIN settings, as the tracking of your pick attack will be tighter and faster if you follow this scheme. Remember that you can add low end with the two lowest bands of the Graphic EQ to obtain more bottom end late in the signal chain that won't be as detrimental to the attack characteristics.



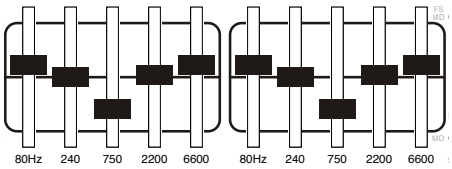
Conversely, lower GAIN settings, as might be used for Blues or Roots sounds can accommodate higher settings of the BASS control and may benefit from such settings. With the GAIN set below 11:00, you may be able to run the BASS as high as 1:00 before the attack starts to become compromised.

When in doubt, the tried and true MARK Series rule will serve you in good stead; As the GAIN goes up, the BASS should come down. Applying this logic will usually get you in the ball park of a great sound pretty quickly. Honestly, this idiosyncrasy with the BASS control is really the only thing to watch out for in the entire preamp as far as tricky settings. Keeping this rule in mind will help you avoid its pitfalls.

The only other trap many players fall into is not really unique to MARK Series, or even MESA amplifiers… its common on almost every amplifier these days. Since we invented preamp gain more than 45 years ago, players have been applying too much of it. If there was one word of advice we might lend, it is to use enough gain to get the job done and no more.

Excessive GAIN settings, along with increasing the likelihood of microphonic tube issues, tend to make the controls work less effectively and compromise the fundamental attack of the notes. This can be an addictive and escalating habit until eventually, the sound becomes all gain and no Tone. Granted, optimum GAIN settings depend on everything from Guitar woods to string gauge, pickups to picks, fingers to frets. But addictive as the feel of liquid creamy gain can be, try to remember that the sound is important as well. You don't want to dial in so much gain that the sound becomes mushy and indistinct. We suggest getting into the habit of exploring the lower settings of the GAIN control frequently, just so you are continually referencing what the sound and feel is like when there isn't so much saturation present in the mix. It will keep your technique "honest" and your sound more pure and exciting… guaranteed.

5-BAND GRAPHIC EQ x 2 All MARK Series amps going all the way back to the MARK I have included a powerful shaping tool that was in a groundbreaking feature back then and continues to be one of the trademark components of the MARK Series sound... the 5 Band Graphic EQ. Many of the MARK Series sounds that have become classics were achieved by applying the Graphic EQ and radically altering the mid-pronounced voice they inherently have in favor of a more "scooped" midrange voice. The most popular of these altered sounds by far, is the dropped-mid "V" curve that makes everything sound huge and three dimensional. Here in the JP-2C, we've doubled the fun!



Welcome to EQ Hollow… your Five-Band Graphic Paradise! Seriously though, the JP-2C is the only other MESA besides the QUAD PREAMP ever to incorporate TWO Graphic Equalizers and provide independent Five-Band equalization control for any two of the three Channels–or all three if you can use the same EQ SLIDER setting on one of the EQs to create sounds that work for you in two Channels. These EQs are identical and provide the same adjustable frequencies, cut/boost gain range, and shaping potential. Both EQs can be applied to any of the 3 Channels and this is done with the single EQ SELECT mini-toggle riding within each of the Channels. The center position labeled MD/FS bypasses both EQ's, while the upper and lower positions select which EQ is to be assigned to a given Channel. EQ 1 is to the Left and EQ 2 is to the Right, when facing the Front Panel.

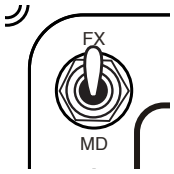
The EQ assignment within a Channel (all the Channels) is stored under the Channel bus in the JP's processor used for Midi control, so once you have decided how you want to apply the Graphic EQs to your three footswitchable Channels, all you have to do is choose a Midi Program number on your controller of choice, go to the Channel/EQ combination of your choosing and trigger the

STORE toggle located on the right side of the Rear Panel. That Channel and its selected EQ status will now come up in the Midi Program number you just stored information under. Or, if you're using the JP-2C Footswitch, you can simply toggle on or off either of the EQs at any time. Regardless of how the EQs are activated, the EQ Status LEDs will be on (illuminated) whenever its adjoining EQ is active and in the signal path.

When using the JP-2C Footswitch or the Channel EQ SELECT mini toggles to control the EQs, you will notice that whichever way you trigger the EQs, (EQ SELECT mini toggle in the Channels or the JP-2C Footswitch), the current one being used overrides the other. In other words, if you turn one of the EQs on with the mini toggle in say Channel 1, you can turn it OFF with the Footswitch. And conversely, if you turn one of the EQs off with the Footswitch, you can turn it back ON with the EQ SELECT mini toggle in the Channel.

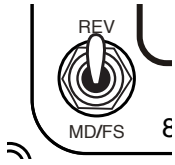
Once Channel/EQ combinations are stored under a Midi Program Number, the EQ status must be reset with the Channel EQ SELECT mini toggle by turning it first to OFF and then selecting the EQ you want (EQ 1 or EQ 2) back ON in that Channel. However, unless new information is stored by toggling the STORE mini toggle on the Rear Panel, the next time that same Midi Program Number is called up, the original previously STORED Channel/EQ combination will be called up again. The MESA JP-2C Footswitch will not override Midi commands sent via a Midi controller. NOTE: DO NOT connect both the JP-2C Footswitch and a Midi Footcontroller to their dedicated (7-Pin and 5-Pin) DIN jacks at the same time.

LOOP SELECT: FX/MD This toggle, while housed in the EQ Window, has nothing to do with the Graphic Equalizers. It is the LOOP SELECT switch and it controls the status of the Effects Loop and its associated SEND and RETURN jacks on the Rear Panel. The Effects Loop is wired in Series with the main dry signal, with the SEND signal coming from the preamp and the RETURN signal feeding a buffered stage directly in front of the power section. The Effects loop is buffered to aid in preventing signal loss from mismatches in Input / Output impedance with processors and also to prevent compromised sound with longer cable lengths, however it is still advisable to use the shortest lengths of the highest quality cable possible when interfacing processors to the JP-2C.



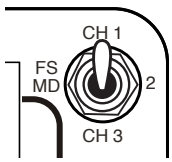
The two ways to engage the Effects Loop are as follows; FX (switch up) engages the Loop and it will remain on all the time, unless a Midi Program Change message is sent. In that case, whatever has been stored for an individual Channel, will determine the status of the Effects Loop. MD (switch down) BYPASSES the Effects Loop all the time regardless of Channel selected with the Front Panel Channel Select switch or the JP-2C Footswitch, and provides the necessary "reset" conditions in the switching buss for storing the Loop status under Midi Program locations. To Store the Effects Loop under a specific Midi Program number, simply turn the Loop Off (switch down) with the Front Panel LOOP SELECT, select the desired Channel you wish to call up under a specific Midi Program number location, switch the LOOP SELECT mini toggle to FX (Loop On) and toggle the Rear Panel STORE switch. Every time you return to that Midi Program number, the Effects Loop will be activated. The Yellow Loop Status LED indicates when the Effects Loop is ON and in the signal path regardless of how it is engaged.

REVERB/MD/FS This toggle determines whether the rich tube REVERB circuit is in the mix. While each Channel has a dedicated REVERB MIX control located on the Rear Panel, these do nothing until the REVERB circuitry is activated by this Front Panel toggle switch. The two choices here on the Front Panel are REVERB (switch up), which engages the circuit and allows an individual blend of the REVERB in each Channel, or MD/FS (switch down), which both BYPASSES the REVERB and also allows instant engagement of it from the JP-2C Footswitch. As with the EQs, the Green REVERB Status LED follows the status of the REVERB circuit and will be illuminated whenever the REVERB is in the signal path.



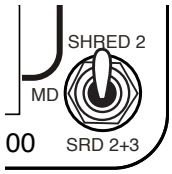
As with most of the other Front Panel mini toggles on the JP-2C, the MD/FS position provides a "reset" condition from which the processor used in the switching buss can write and respond to Midi Program Change information. Unlike the individual EQs, the REVERB is stored as a global setting, circuit-wise. There remains the ability to have separate REVERB MIX settings for the Channels, but the circuit status is stored as a global condition (in the signal path all the time or bypassed in all the Channels). As with the EQs, the current mode of activation (Front Panel REVERB toggle or JP-2C Footswitch REVERB button), overrides the position/status of the other. So if you turn the REVERB Circuit ON with the Front Panel mini toggle, you can turn it off with the JP-2C Footswitch, or trigger it ON from the JP-2C Footswitch, you can turn it OFF with the Front Panel mini toggle. The Green REVERB LED will follow the status of the REVERB regardless of how you trigger it.

CHANNEL SELECT: CH 1 FS/MD/CH 2 CH 3 This mini toggle allows convenient selection of the Channels when there is either no other means of selection (no Footswitch), or you purposefully don't want the JP-2C Footswitch or Midi Footcontroller attached for perhaps a studio engagement or even just living room enjoyment without cables on the floor.



Channel 1 (switch up) engages the Clean Channel, FS/2 (switch middle) allows selection of the middle LEAD (or Crunch) Channel and also allows selection of any of the Channels when the JP-2C Footswitch is connected, and CH 3 (switch down) calls up the 2nd (Right) high gain Lead Channel (Channel 3).

SHRED This new-to-the-II-C+ voicing switch (Mode) adds upper harmonic content and a layer of more extended top end or "z's"–as we sometimes refer to them–to the two high gain Channels (2 and 3) only. It sounds and feels to the player as if the SHRED Mode has more gain, and in fact it does, but it's gain in a narrow and specific region aimed at adding more cut and edge for truly aggressive Chording sounds. It can also be applied to single note Lead sounds, but in that application SHRED will likely be coupled with lower PRESENCE and/or TREBLE settings to achieve the best blend of frequencies.



NOTE: *Avoid high settings of both GAIN and TREBLE contorls when SHRED is activated. Ignoring thisa will increase microphonic tendancies and may cause high pitched squaling.*

Selecting the upper position SHRED 2 (switch up), engages the SHRED voicing mode in Channel 2 only. Selecting the lower position "SRD 2+3" (switch down) activates SHRED in both Channels 2 and 3. As mentioned above, SHRED is not available in Channel 1. As with the other features controlled via a mini toggle switch, when storing settings under a Midi Program number, you must "reset" the SHRED mode before storing it with the Rear Panel STORE toggle by turning SHRED OFF (switch in the middle) and then back ON (switch up or down) while in the desired Lead Channel (2 or 3).

To store the SHRED voicing status of a Channel (2 or 3 Only) under a Midi Program, (as with all the Feature mini toggles on the JP-2C) you must first reset the switching buss. Follow these simple steps;

1. Go to the desired Midi Program Number on your Midi controller of choice.
2. Call up the desired JP-2C Channel with the Front Panel Channel Select mini toggle located in the upper right corner of the EQ Window.
3. Set the SHRED mini toggle located in the lower right corner of the EQ window to the "MD" (switch center) position.
4. Move the SHRED mini toggle to the corresponding (for the Channel you are storing) SHRED assignment position; " SHRED 2" or "SRD 2+3".
5. Toggle the STORE switch on the far left (when viewing from front of amp) of the Rear Panel of the JP-2C one time. The current Channel and SHRED voicing mode status has been written to the currently displayed Midi program location on the Midi controller.

The Channel and SHRED voicing status is now saved under the current Midi Program Number displayed on your Midi controller and should be called up again when next you return to that Program Number. If it is not, repeat steps 1 – 5 and check again. Whether adding this layer of harmonic edge to your Crunch Rhythm sounds for more tight-tracking aggression, or blending it with the other controls responsible for top end shaping in Lead applications, SHRED adds a new dimension to the classic MARK II-C+ character. This upper extension combined with the Graphic EQ and the powerful Tone controls, updates the C+ legacy, making it even more menacing and bringing it front and center in today's race for the ultimate Heavy sound.

POWER This switch controls the AC power Mains in your amplifier. Always make sure the (supplied) IEC Power Cable is connected to a grounded Outlet delivering the proper AC voltage –117v USA. Never alter the Power Cable as doing so may cause damage to the amplifier, increase the risk of electric shock for you, and will void your Warranty. Always follow the Cold Start Procedure below and allow the tubes to warm up before turning the STANDBY on (switch up) as this will help the tubes and all other components in your amplifier to provide years of reliable service.

STANDBY This large toggle controls the high voltage to the power tubes and from cold start, helps minimize the inrush of current and reduces the "shock" on them, which ultimately helps increase their useful life. Just like a light bulb, much of the wear on tubes happens at the instant of power up. Minimizing this shock and allowing them to warm up more slowly ensures they will give you the longest life possible. Before Power is switched on, make sure the STANDBY switch is in the "0" (switch down) position. Wait at least 30 seconds and then flip the STANDBY switch to the "I" position. STANDBY is also very useful as a MUTE for either short interruptions–like changing instruments or patching cables–as well as longer intervals such as Set Breaks or other extended periods. While you can leave the amplifier in STANDBY mode for hours with no harm, it is probably wise to power down if you know you won't be playing for an hour or two. Why waste the electricity? Just remember to follow the Cold Start procedure mentioned above when you power back up, even if the amp is still "warm". The filaments in the tubes cool much more quickly than even the glass they are encased in, and they return to their "cold" state even after a short time with the power off. This procedure, when followed religiously, will help prevent tube problems and extend their useful life substantially.

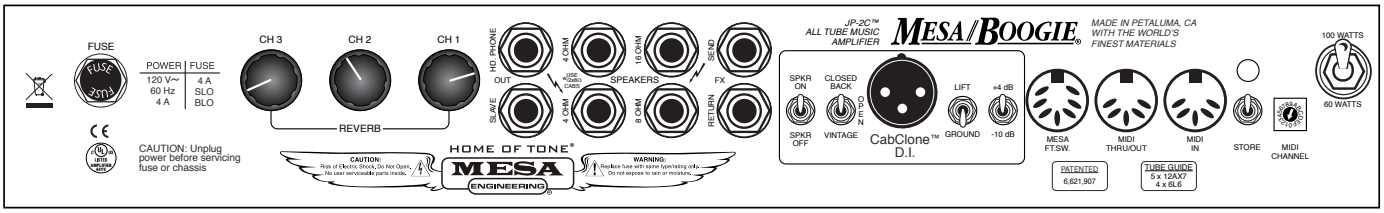
COLD START PROCEDURE:

(Use every time amplifier has been switched off for more than 3 minutes)

1. Flip STANDBY down to "0".
2. Turn POWER to "I" – ON (switch up).
3. Wait AT LEAST 30 Seconds, preferably longer, for tubes to warm up.
4. Turn STANDBY to "I" – ON (switch up)

Enjoy!

NOTE: *This Cold Start Procedure is an important part of ensuring maximum tube life and reliability. Like a light bulb, the most wear occurs in the instant (short period, first few seconds) voltage is first applied. Like a light bulb, if a dimmer is used to reduce the volt -age for the first few seconds or so of use, increased longevity is the result. The STANDBY is the amp's equivalent to a dimmer and using it in the above described method will ensure the longest life and best performance from a set of tubes (especially Output tubes).*



REAR PANEL

AC MAINS SOCKET: Underneath Rear Panel (Quick Disconnect Style) This is the AC MAINS Power Cord Socket. The standardized removable power cable supplied with your amp can only be plugged in one way. Always connect the male end to a grounded (3-Hole) wall socket with the proper voltage present (117 Volts on U.S.A. Models). To Avoid The Risk Of Shock, Never Alter The Power Cable in any way. Altering the Power Cable will void your warranty and put you at risk while leaving your amplifier open to the possibility of damage.

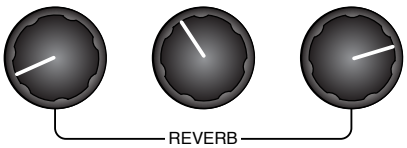
FUSE This is the A.C.'s (Alternating Current) main fuse and provides protection from outside A .C. fluctuations as well as power tube failure damage. Should the FUSE blow, replace it with the same rating in a Slo-Blo type package. The Domestic 117V and Japanese 100V versions requires a 4 amp Slo-Blo fuse. A power tube short or failure is often the cause of a blown fuse. Follow the cold start procedure mentioned in the STANDBY switch section and watch the power tubes as you flip the STANDBY to the ON position. If a power tube is going bad or is arcing, you will see it! Flip the STANDBY switch down immediately and replace the faulty power tube and the FUSE if necessary.

If you see nothing abnormal as you move the STANDBY switch to ON, it is possible that a power tube shorted 'temporarily' and caused the blown Fuse. Occasionally, whether from just luck or from cooling down, a short in a power tube 'reconnects' itself temporarily and can operate normally again for a time… but this tube should be considered faulty and replaced as soon as possible to ensure uninterrupted performance. If you can identify a tube that is arcing or shorting by the method mentioned above and the tubes have minimal use, consider replacing the obviously faulty or failed tube and leaving the others installed.

If you haven't changed tubes for a while after heavier use, a failure may be telling you it's time to change all your power tubes. Save any working but used tubes as spares.

Spare fuses (of the proper type and rating) are a must for the fabled cord bag along with at least one set of spare tubes. Always have both on hand—at the gig or at home—since tubes decide, not you, when it's time to stop working. Spare tubes and fuses can be worth their weight in gold should you ever experience a tube failure, especially on a gig. We STRONGLY recommend making them a permanent fixture in your gig bag.

REVERB These three controls determine the REVERB Mix for each of the three JP-2C Channels. They are laid out such that you can reach over the top of the Cabinet and adjust the controls at the far right of the Rear Panel (when facing the front of the amplifier) with the Mix for each of the Channels following the layout they appear to you in (when viewing the Front Panel). The rich all tube REVERB is fed from different places in the circuit depending on whether you are in Channel 1 or the two high gain Channels (2 and 3) with the send strength adjusted accordingly. It is normal for Clean sounds in Channel 1 to have a deeper, more drenched character similar in response to a "vintage" amplifier as compared with the two high gain Channels (2 and 3) in which the saturation dictates less depth.



Remember that to have REVERB work well across Channels with such differing extremes in gain is a VERY difficult challenge, especially when it involves staying true to circuit architecture as critical for the MARK II-C+ high gain performance, as this model does. Therefore, it is not sensible to compare REVERB performance with amplifiers that don't provide such a vast spectrum of gain available across multiple Channels. There are limits to both saturation and the available mix in terms of stability in a package this comprehensive and this small physically. Rest assured we have exhausted all possible scenarios to arrive at what is excellent REVERB performance across all the available sounds in an amplifier capable of these extremes in gain.

To employ the REVERB, simply turn it on (switch up) on the Front Panel in the lower left corner of the EQ Window and set the desired REVERB Mix with the control associated with the Channel you wish to play in. Once you have activated the REVERB, you may mute the REVERB (turn it on and off) via the MESA JP-2C Footswitch. The REVERB Indicator LED on the Front Panel will track the status of the REVERB.

To store the REVERB status (on or off only, not Mix setting) of a Channel under a Midi Program, (as with all Feature mini toggles on the JP-2C) you must "reset" the switching buss first by turning it off.

1. Go to the desired Midi Program Number on your controller of choice.
2. Call up the desired JP-2C Channel with the Front Panel Channel Select mini toggle located in the upper right corner of the EQ Window.
3. Set the REVERB mini toggle located in the lower left corner of the EQ window to "MD/FS" (switch down).
4. Move the REVERB mini toggle to "REV" (switch up).
5. Toggle the STORE switch on the far left (when viewing from front) of the Rear Panel of the JP-2C one time. The current Channel and REVERB status has been written to the currently displayed Midi program location in the JP-2C's processor.

The Channel and REVERB status is now saved under the current Midi Program Number displayed on you Midi controller and should be called up again when next you return to that Program Number. If it is not, repeat steps 1 – 5 and check again.

HEADPHONE The JP-2C features a HEADPHONE Output for personal enjoyment of the amplifier when it is not possible—or you don't want to—play through a speaker. This stereo ¼" jack derives its "speaker simulated" signal from the on-board CABCLONE™ D.I. feature circuitry and delivers a surprisingly good rendering of the JP-2C's sound and feel to your headphone set of choice.

The CABCLONE circuitry is able to produce this great representation of the amplifier's sound because it starts with a signal taken right off the SPEAKER OUTPUT. This means you have the entire amp—including the output transformer and tubes—imparting all the Tone, nuance, natural tube compression and bouncy feel you are used to hearing through your cabinet.

Granted, the speaker cabinet shapes a lot of what you hear when playing your amp live, but the CABCLONE circuitry does an impressive job of retaining much of the experience of playing live through a cabinet and in trade, allows you to skip the hours and sometimes frustrating chore of mic-ing up your rig. One cable and you're up and running. And the fact that you get this good sounding HEADPHONE Output for personal practicing anytime is a real bonus.

The volume of the HEADPHONE Output is determined by the Channel MASTER controls and you will need to adjust the HEADPHONES volume there as this circuit is passive and therefor has no op-amp driven volume control.

NOTE: *Headphones can vary greatly in both sound and efficiency (volume) and therefore the performance of the HEADPHONE jack can be optimized or compromised by the headphones connected to it. We recommend trying a few sets of different types and manufacturers with the JP-2C before choosing headphones for this application*

NOTE: *Headphones and their proximity to your ears are vastly different from that of your favorite speaker cabinet, therefore, it is important to note that the settings of your amplifier will more than likely require adjustment to get the best results to match the inherent qualities of your headphones.*

NOTE: *Introducing a bit of internal REVERB into the mix or even an outboard processor into the FX Loop set to a Delay Preset can help the HEADPHONE Output sound more alive and natural, as it helps compensate for the air and "expansion" present when using a speaker cabinet in a live room.*

The JP-2C is the third, and probably not the last, MESA amplifier to include the CabClone D.I. circuitry and associated HEADPHONE Output. This comprehensive direct recording and private monitoring feature greatly enhances the value, versatility and convenience of the amplifier and will provide you with new options for quick, hassle-free, direct recording options as well as late night (or any time) personal enjoyment of the JP-2C's inspiring sound and feel.

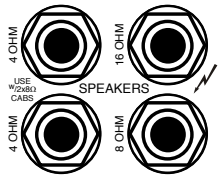
NOTE: *Plugging into the HEADPHONES jack defeats the CABCLONE D.I. XLR BALANCED Output. It is not possible to use the HEADPHONE and D.I. OUT simultaneously as the headphones would load down the circuitry further and compromise the sound.*

NOTE: *As there is no HEADPHONE Volume Control in the CABCLONE™ passive circuit, you will need to use the Channel MASTER Controls to determine the volume of the HEADPHONE output.*

NOTE: *When using the SPKR ON position in the CABCLONE section, make SURE you have a working speaker connected to one of the SPEAKER OUTPUTS. Failure to do so may result in damage to your amplifier that is not covered under Warranty. Using the amplifier in the SPKR ON position without a speaker or external load (resistor, soak, etc.) will likely cause damage to your output transformer and render your amplifier inoperative.*

SLAVE This SLAVE signal is best applied when connecting additional "guitar amp voiced" power amplifiers for additional coverage in large venues. It may also be used to capture the "dry" sound of the main JP-2C head and send a signal first to an Effects Rack for processing, and then on to a pair of amplifiers to reproduce a stereo (or one amp for mono) "wet" setup. This setup is often referred to as a "Dry/Wet/Wet Rig" or a "3 Amp Stereo Rig". Either way, the sound of the main JP-2C amplifier you are playing will be reproduced at the SLAVE with a fixed "performance oriented" level setting of the sounds you have dialed up. Keep in mind that once a signal has been taken from the SLAVE, it CANNOT be fed back into the Effects RETURN jack. Doing so will produce a feedback loop and a loud squeal will occur.

SPEAKERS The full compliment of SPEAKER Outputs provided here in the JP-2C ensures you can always get the best performance from your amplifier, regardless of Cabinet requirements. Two 4 Ohm, One 8 Ohm and One 16 Ohm jacks are provided covering the widest variety of impedance needs in the fewest amount of jacks, important for an amplifier that is this powerful and yet this compact.



The most common MESA cabinet setup by far remains one 8 Ohm Cabinet connected to the 8 Ohm SPEAKER Output. We have found–and still feel–the best response in terms of frequency blend, punch, balance and power is achieved with this nominal impedance. Most MESA 1x12, 2x12 and 4x12 Speaker Enclosures are wired for 8 Ohms for this very reason. However there are some nice differences available in deviating from this scheme as well and you are encouraged to experiment until you find the cabinet setup and sound that best suits your tastes. The one thing you must ALWAYS DO, is make sure that you HAVE A CORRESPONDING LOAD CONNECTED AT ALL TIMES TO ONE OF THE SPEAKER OUTPUTS!!!

The ONLY time it is safe (but NOT RECOMMENDED), to run the amplifier with no Load connected to a SPEAKER Output is when you are using the CABCLONE D.I. to record Direct and the SPKR ON/OFF switch in the CABCLONE Section is set to SPKR OFF (switch down). Even THEN, we HIGHLY RECOMMEND keeping a cabinet connected at all times… just in case someone ELSE (Tech, Recording Engineer, etc.) starts flipping switches on the Rear Panel of your amplifier.

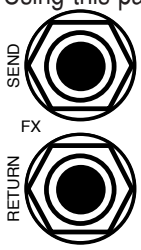
Below are some common and correct SPEAKER Output Connection Examples;

- One 8 Ohm Cabinet – To 8 Ohm SPEAKER Output (One MESA 8 Ohm Cabinet).
- Two 8 Ohm Cabinets – Each to a separate 4 Ohm SPEAKER Output or One Cabinet to PARALLEL Input on MESA Speaker Cabinet and 2nd Cabinet to other PARALLEL jack On MESA Cabinet.
- One 4 Ohm Cabinet – To 4 Ohm speaker output. (Any 4 Ohm Cabinet)
- Two 4 Ohm Cabinets – NOT RECOMMENDED! Output Transformer NOT setup to run on 2 Ohm Load.
- One 16 Ohm Cabinet – To 16 Ohm SPEAKER Output.
- Two 16 Ohm Cabinets – Uses Parallel box or “Y” connector to 8 Ohm SPEAKER Output.

These common Cabinet connection scenarios will cover most of the widely used setups you will run into. There are likely others less common that we have not identified here, and some may also be safe and unique sounding. Feel free to call us if you are concerned as it is always better to be safe than sorry when it comes to ensuring proper loading of an expensive amplifier/ piece of equipment like the JP-2C. Our Product Specialists will be happy to guide you and/or get you the proper information regarding this important topic.

FX (LOOP – SERIES) These two ¼” jacks provide the interfacing patch points for your processing needs. The Effects Loop is basically a circuit bridge from the end of the preamp to the Driver stage, with the SEND interrupting the signal at the preamp’s end and the RETURN feeding the power section just before the Driver tube.

Using this patch point usually ensures the best sonic performance as well as signal to noise ratio with your outboard processors. That said, it is important to point out that this is a critical junction in the JP-2C’s circuit path and whatever is inserted here can have an effect on the overall performance of the amplifier.



The Effects Loop is a Series Loop, meaning that the entire signal goes through it, unlike a Parallel Loop where a percentage of the unaffected pure signal is taken around the Loop. Therefore, the quality of the devices used in the Loop and their performance is critical to achieving the best sound and performance from your amplifier. We recommend auditioning any processor with your JP-2C BEFORE buying it to ensure it delivers a good match in performance. One clue is price. Like in any segment of the marketplace, you get what you pay for most times and there is a wide range of quality in regards to both build and sonic performance. While technology has raced ahead at a frightening pace and features are at an all time pinnacle, it is sound and feel you’ve likely chosen your amplifier for, and therefore we recommend a similar degree of discretion when it comes to choosing your processing devices and ultimately,… what you will insert in the middle of your pure analog tube amplifier.

The Yellow FX (Loop) Status Indicator LED will track the status of your Effects Loop settings. When using the JP-2C Footswitch and/or controlling the Channels with the Front Panel Channel Select mini toggle, the status of the FX (Loop) will be determined GLOBALLY by the setting of the FX mini toggle in the EQ Window. When using Midi to control the JP-2C, the FX (Loop) status will be determined by either the Factory-burned settings in the JP-2C's processor or whatever was last stored at a given Midi Program Number location (as is possible as a result of a prior demo at a MESA Dealership).

NOTE: *Always use quality (low capacitance) cables of the shortest possible length in the Effects Loop when connecting your processors. Doing so will help avoid any sonic degradation due to capacitance and help maintain optimum performance when the Loop is in use.*

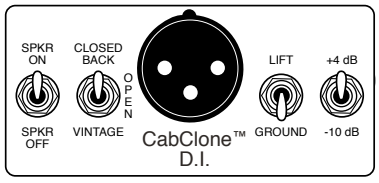
To Store the Effects Loop status in a Channel under a Midi Program location, as with all the other features, you must first "reset" its location in the JP-2C's switching buss.

Follow these steps to store the FX (Loop) Status in a Channel under a Midi Program location;

1. Go to the desired Midi Program number on your Midi controller of choice.
2. Call up the desired JP-2C Channel with the Front Panel Channel Select mini toggle located in the upper right corner of the EQ Window.
3. Set the FX mini toggle located in the upper left corner of the EQ window to "MD" (switch down).
4. Move the FX mini toggle to "FX" (switch up).
5. Toggle the STORE switch on the far left (when viewing from front) of the Rear Panel of the JP-2C one time. The current Channel and FX (Loop) status has been written to the currently displayed Midi Program Number location in the JP-2C's processor.

The Channel and FX (Loop) status is now saved under the current Midi Program Number displayed on your Midi controller and should be called up again when next you return to that Program Number. If it is not, repeat steps 1 – 5 and check again.

CABCLONE™ D.I. As mentioned in the OVERVIEW in the Front of this Manual, the JP-2C features one of—if not the—coolest feature ever to grace a MESA Rear Panel, the on-board CABCLONE D.I. and Cabinet Simulation feature. This built-in direct recording solution allows you to capture a wonderful representation of the JP-2C's inspiring sound and feed it direct to a Console, Converter or even direct to a Recorder without the need to mic up a speaker. Impossible you say… a long list of well known producers, engineers and players would beg to differ with you.



Taken directly from our acclaimed stand-alone CABCLONE™ D.I. unit, this speaker-compensated D.I. XLR Balanced Output (and HEADPHONE Output) does an incredible job of capturing the signal from the SPEAKER OUTPUT and turning it into direct-injection gold. The five elements here in this section of the Rear Panel allow for use with a live speaker or without, so you can blend the direct signal and a mic'd speaker cabinet if you so desire.

The CabClone™ Section features include:

- **SPKR ON/SPKR OFF** – SPEAKER Status
- **CLOSED BACK/OPEN BACK/VINTAGE** – CABINET Style
- **CabClone™ D.I.** – XLR BALANCED D.I. Output
- **LIFT/GROUND** – XLR Pin 1 Float .
- **+4/-10** – OUTPUT LEVEL Switch

This array of controls and Output comprises perhaps one of the most valuable and welcome feature set on any MESA amp, expanding both the functionality and enjoyment potential many fold. The JP-2C is the third of our amplifiers to include this powerful tool built right in for speedy and convenient recording applications without sacrificing authenticity and Tone. It's sure to increase the professional potential of this MARK model and help this compact package usher in a new era of MESA high power performance combined with Studio ready convenience.

SPKR ON/SPKR OFF This mini toggle mutes the SPEAKER Output for when you want to record "silently" with the CabClone D.I. (direct with no speaker sound from the amplifier). This switch allows you to decide if you'd like to utilize both a live speaker cabinet AND the CabClone's XLR Direct Out, or just the XLR D.I. OUT. Also, while it's not needed as you have the STANDBY on the Front Panel for this purpose, this switch may be used as a Mute switch, though with its Rear Panel location this is a less desirable way to achieve that function.

NOTE: *IMPORTANT! The SPKR OFF switch position automatically connects a Load Resistor to the SPEAKER Outputs to prevent damage to the output tubes and transformer and allow silent (no cabinet connected) direct recording with the XLR D.I. OUT. Selecting SPKR ON defeats the internal Load and connects the signal to the SPEAKER Outputs. DO NOT USE THE AMPLIFIER IN THE SPKR ON SWITCH POSITION WITHOUT A CABINET (LOAD) CONNECTED! Damage to the amplifier will likely occur and this is not covered under the Warranty! For this reason, we recommend keeping a cabinet or Load connected even when you are using the SPKR OFF position as an extra measure of safety in case someone other than you (Tech or Sound Engineer) was ever to switch to SPKR ON in a "Silent" session. It won't hurt anything and only add a degree of safety.*

NOTE: *REMINDER! If you have everything ON... POWER, STANDBY, GAIN and MASTER (as well as Input and Output Volume Controls on any Effects in the FX Loop) and get no sound; Check the SPKR OFF/SPKR ON switch in the CabClone™ Section at the right of the Rear Panel (when looking at the back of the amplifier) to make sure the toggle switch is set to SPKR ON. This may have been bumped during shipping, transport or set up.*

CLOSED BACK/OPEN BACK/VINTAGE Here in the JP-2C, the on-board CabClone™ D.I. feature offers three classic "cabinet simulated" VOICING Modes and gives you the full feature set of the stand-alone CabClone DI minus the OUTPUT control. The simulations are an analog representation achieved through passive means (without op-amps to add gain for shaping) and were created using our 45 years of experience co-designing custom speakers with the world's top makers and designing cabinets to load them in.

These CabClone "virtual-cabinet" options allow you to tailor the Direct circuit's EQ response for different cabinet styles, gain regions and/or different instruments and pickups. The choices range from bright and open with enhanced top end for buffed clean sounds in OPEN BACK, to a more compressed voice with the upper harmonics shelved for warm, singing single note sounds and thick high gain rhythm work in VINTAGE Mode, to a scooped mids and boosted top and bottom response curve in the CLOSED BACK setting that excels at heavy Crunch rhythm and high gain Lead work..

Because clean and overdriven sounds really need these different cabinet types to sound authentic, you will need to experiment with the three voicing options with your range of sounds for increased accuracy when employing the CabClone for direct recording.

The lower VINTAGE Mode position rolls off the upper harmonics and compresses the sound to create a warm, round voicing that's perfect for Jazz Cleans, Blues and Rock soloing—and most especially—high gain single note work for Fusion, Rock and Metal styles. This mode allows greater freedom with the controls on the amp, enabling you to dial in more TREBLE and PRESENCE (and the top two SLIDERS on one of the GRAPHIC EQs to add top end focus and cut.

The middle OPEN (BACK) position takes the lid off the top end so the upper harmonics can shine through and provide a more open, three-dimensional sound with accentuated brightness. This position works well for clean work and overdriven rhythm applications where a brighter, "faster", more urgent response is in order.

The upper CLOSED BACK Mode is voiced to deliver a similar response to a closed back 4x12 with British-style 60 watt speakers and

pays tribute to our Rectifier® Traditional cabinet. Here the mids are scooped and the top end is, for the most part, intact to create a huge, wide sound. This position shines for overdrive and crunch rhythm work where you need big "tuned" lows and smooth vintage-inspired lead sounds. The CLOSED BACK mode is the first thing to try for high gain sounds, especially when using a combination of live speaker and CABCLONE DI direct. The added top end a reactive load (live mic'd speaker) may impart on the sound is nicely balanced by the fatter, tuned response of the CLOSED BACK mode.

When blending a live cabinet mic'd and the CabClone direct, you can also try selecting the Cabinet Voicing option that has an opposite (or different) response to that of the cabinet you are mic-ing for a blend-able difference later when mixing.

Within these three selectable Cabinet Style Voicing Options, you'll find the ability to tune the CabClone D.I.'s response to work well for almost any sound style. Keep in mind that adding the live speaker may affect the sound of these VOICING choices... making things more reactive dynamically and perhaps brighter as well, depending on the inherent characteristics of the speaker and/or cabinet that you have chosen.

NOTE: *Remember that the CabClone circuit gets its feed from the SPEAKER Output and whatever cabinet (Load) you are using "reflects backwards" and has an effect on the characteristics (both in regards to dynamics and frequency response) of the amplifier's power section.*

CABCLONE™ D.I. (XLR OUTPUT) This male 3-pin XLR Output provides a balanced signal for direct interface to a Console, Preamp or possibly even a Recorder. Use a standard 3-Pin XLR mic cable (of any reasonable length) to connect to your direct interface destination of choice. Next choose whether you wish to record with the CabClone speaker compensated signal alone, or whether you wish to blend a live speaker cabinet with this Direct signal using the SPKR OFF/SPKR ON mini toggle to the left.

As the CabClone circuit is passive, there is no dedicated Output Level Control, so the Channel MASTERS and the Power Select (100/60) switch will determine your send level strength at the CabClone D.I. Output.

NOTE: *It is a wise practice to get in the habit of beginning every Direct session with the JP-2C's Channel MASTER Controls set to "0" and the STANDBY switch set to "0" (switch down). This will help avoid unpleasant and/or embarrassing level surges through the Console and/or Playback Monitors should the Faders (INPUT Attenuator) be up already or set too high.*

It is ALSO wise to "zero-out" the Console or Preamp/Recorder INPUT Trim to help avoid similar unpleasant surprises.

LIFT/GROUND This switch allows you to lift the CABCLONE BALANCED D.I. Output's XLR jack (PIN 1) GROUND, from Circuit and Chassis GROUND and in many cases (but not all) remove hum caused by a ground loop. In silent recording environments every little noise stands out and ground loops can produce one of the more common (and annoying) sources of hum and/or buzz. It is not a cure-all to this common problem by any means, but it can often make a positive impact on the noise floor and at least help you rule out one common source of "hum".

+4/-10 (LEVEL) This switch provides the two "industry standard" choices for output level strength, -10dB and +4dB. The -10 position (switch down) provides an Instrument Level signal which is an industry accepted lower signal level that works well with many home recording Consoles and systems, as well as the Input stages of some Effects Processors. The +4 setting (switch up) is a Line Level signal strength used in professional recording environments and provides a much stronger signal strength for a given amplifier setting.

You can use the TRIM/INPUT ATTENUATOR in the channels on your Console to allow acceptance of either setting (signal strength), with the prevailing ideology leaning toward using no PAD on the Console's Input and the least amount of attenuation possible at the TRIM/INPUT. This almost always creates the best signal to noise ratio and the cleanest, purest signal. In other words, use the -10 setting if you are running a Home level system, unless, because of lower output settings on the amplifier, you are forced to turn the Input TRIM all the way up to achieve a good signal strength (which on lower priced Consoles can mean adding noise from the Console's op-amps). In that case, you could try the +4 setting and reduce the Input TRIM on the Console to arrive at a better signal to noise ratio

where less gain would be required from the Console's Input TRIM control. Use the +4 setting for all pro recording and live reinforcement applications unless otherwise asked by a Engineer to provide a lower level signal. However, even in a pro environment, it is wise to start with the MASTER controls in the Channels zero-ed out (all the way down) or if that is not possible due to critical stage levels or acheiving a balance between the Channels, the STANDBY in the "0" position (switch down) to avoid surprising signal level accidents.

MESA FTSW This 7-Pin DIN jack accepts the MESA JP-2C Custom Footswitch cable or any other standard 7-Pin DIN style Cable should you misplace the included cable. The JP-2C Footswitch allows instant access to the three Channels, the two Graphic EQs and the REVERB. It comes in very handy for those players who don't use Midi to control their stage or studio set up and also provides easy demonstration of the sounds and Features of the amplifier in Dealership environments.

MESA FT.SW.

NOTE: *DO NOT connect any Midi devices to the Midi INPUT jack when using the MESA FT.SW. jack!!*

To use the JP-2C Footswitch; Connect the 7-Pin Din Cable to the MESA FTSW jack on the Rear Panel (left most DIN jack when facing Rear Panel) making sure to line the pins up correctly with the guide on top and the pins on the bottom. Do NOT force the cable into the jack! When the pins are aligned it will fit easily though snugly, into the jack.

Connect the other end of the 7-Pin DIN cable to the similar jack on the JP-2C Footswitch. The STORE LED will illuminate briefly and at least one of the footswitch LEDs should light up upon connection of the JP-2C Footswitch. If not, unplug the cable and try connecting it again making sure the pins are properly aligned. Check the amplifier connection as well to be sure the cable is seated all the way home there also.

Use the JP-2C Footswitch to access the Channels, EQs and REVERB.

NOTE: *You cannot use the JP-2C Footswitch and a Midi controller at the same time. Choose one or the other to control your amplifier and DO NOT CONNECT THE JACK that corresponds to the switching method YOU DO NOT INTEND TO USE.*

MIDI THRU/OUT This 5-pin standard Midi jack is the THRU/OUT for the Midi control portion of the JP-2C. As you might guess, any standard 5-Pin DIN cable will connect to this jack, though albeit, some fit more snugly (with difficulty at times) than others due to the thickness of the plastic housing surrounding the Pin area of the cable.

MIDI THRU/OUT

Depending on your set up and whether the JP-2C is the first (only) device receiving Midi commands from a controller in your system, or the one of many "downstream" in a chain of devices receiving Midi commands, the information will either be from the master unit or a slave passing information on to the next in the chain. Either way, the JP-2C sends all pertinent Midi information on as either THRU or OUT via this jack.

MIDI IN This 5-Pin female DIN jack accepts standard 5-Pin Midi cables and passes all incoming Midi commands to the JP-2C's processor for interpretation. Whether from a Midi Footcontroller, Sequencer, Librarian Software or DAW, all Midi messages sent to the JP-2C will be received here and, if pertinent, appropriate action will be taken by its processor. The JP-2C can respond to Midi Program Change, Control Change and SysEx messages, but all Midi messages and/or commands will be passed on via the THRU/OUT jack.

MIDI IN

NOTE: *DO NOT connect a footswitch to the MESA FT.SW. jack when using the Midi INPUT jack!!*

MIDI CHANNEL This mini detent pot allows selection of a specific Midi Channel among the 16 Standard Midi Channels. Set the Midi CHANNEL pot so that it receives on the same Midi Channel as that which your Controller is set to send on. If it is a guitar specific rig using Midi commands only for calling up Channels and Features on the amplifier, often players will only ever use Channel 1 or Channel 16. This is easy to remember and stays out of the way for them, while leaving ample room to grow a system that might get more complex sometime in the future. If it is to be used in a more expanded Midi set up, you may have need for a specific higher Midi Channel number to isolate the data stream used to control different instruments or a Computer used as a sequencer

MIDI CHANNEL

The JP-2C Midi Channel pot detents correlate to the Midi Channels in this manner; Pot Detent Position (Rotating Clockwise From 0) = Midi CHANNEL

MIDI CHANNEL SELECTION

Rotary DIP Switch Position	Selected MIDI Channel	Rotary DIP Switch Position	Selected MIDI Channel
0	1	**8**	9
1	2	**9**	10
2	3	**A**	11
3	4	**B**	12
4	5	**C**	13
5	6	**D**	14
6	7	**E**	15
7	8	**F**	16

100 WATTS/60 WATTS (Half Power Switch) This switch allows you to cut the Power from the output section from the full 100 WATTS (switch up) to approximately half power, 60 WATTS (switch down), for lower volume, increased clip or smaller venue applications. This is accomplished by putting two of the power tubes in a "standby" mode where the filaments are still on and kept warm, but high voltage is prevented from getting to them. This reduces overall power by approximately half, resulting in a total (RMS) power rating of approximately 60 watts.

Don't expect huge changes in volume when selecting the 60 WATT position… remember the output tubes are still being shoveled current quickly by the massive output transformer. So even though the wattage is less by nearly half, the urgent attack and bold punch delivered in this power mode is still quite impressive. The biggest difference you notice may be in the form of slightly earlier onset of clip in Channel 1 for Clean sounds, an increase in overall brightness and a slight scoop in the lower midrange fullness.. In other words, brighter, easier to push, elastic/bouncy feeling and a little more stripped sounding.

If you prefer the sound and feel of the 60 WATT mode, by all means, leave it set there. It won't hurt the amplifier and you can even swap the tubes, rotating the two pairs in and out of service to increase the interval between re-tubing (power tubes).

NOTE: *To achieve the full 60 WATTS of power and a better overall sound, move the Speaker from the 8 Ohm SPEAKER Output jack to the 4 Ohm SPEAKER Output jack. This scenario sounds bolder and punchier and puts a more correct load on the Output transformer when in the 60 WATT power mode. If you prefer the sound with the Speaker still connected to the 8 Ohm SPEAKER Output, feel free to leave it there, but realize your overall power will be lower and the sound may be a bit "slower and looser", have less punch in the midrange and be a bit darker on the top end. Some players prefer this mismatch, especially for more vintage inspired sounds and it is acceptable to use the amplifier this way.*

That pretty much wraps up our tutorial of the JP-2C's features. Now it's your turn to take this powerful tool into your musical world and put it to use exploring uncharted frontiers. We sincerely hope it takes you places you've never been and allows you to express in new and exciting ways. Learning it's Controls and Features will make you fluent in the language of TONE and enable you to roam wherever you feel inclined stylistically with confidence.

From all of us here at MESA/Boogie, welcome to the Family and we wish you many years of inspiration and enjoyment from your new instrument.

MIDI OPERATING INSTRUCTIONS

FEATURES

- Intelligent Footswitch control
- Works with all Midi Footcontrollers
- Up to 256 presets can be saved in memory
- Quick and easy User Preset Dump and Load
- Painless programming via amp toggle switches
- Immediate Midi channel selection via rotary switch
- Responds to Midi Program & Control Change messages
- Midi software updates and software version identification

POWER-UP When the amp is turned on, the default channel (CH2) is selected, all other functions are off, as is the STORE LED. After half a second, the channel and other functions will be selected as per the toggle switch settings, and the STORE LED will illuminate briefly.

MESA FTSW ***NOTE:*** *DO NOT connect any Midi devices to the Midi INPUT jack when using the MESA FT.SW. jack!*

MESA FT.SW.: 7-pin female DIN jack accepts a male DIN cable, connect the Footswitch here.

When a JP-2C Footswitch is first connected, the amp's STORE LED and all of the Footswitch LEDs will illuminate briefly.

When a button on the JP-2C Footswitch is pressed, the STORE LED will flash quickly, indicating a button has been pressed.

The JP-2C Footswitch has a built-in cable check feature which is activated when the Midi Channel rotary DIP switch is set to Channel 1 (position '0'). So, if the JP-2C Footswitch cable is damaged at anytime, or there's a communications failure with the amp, all of the JP-2C Footswitch LEDs will blink steadily, assuming it is still receiving power from the amp of course.

NOTE: EMERGENCY FAILSAFE FOR LOST JP-2C FOOTSWITCH CABLE!!! If the supplied 7-pin DIN FTSW cable is lost, a temporary (for emergencies only) solution is to use a standard Midi cable, which must have all 5-pins connected as per the Midi specification. The JP-2C Footswitch LEDs will blink five times when the JP-2C Footswitch is first connected to the amp, indicating there's a cable issue, and the LEDs will remain off, but the buttons will still operate normally, allowing channel and other functions to be selected.

CONTROLLING MULTIPLE JP-2Cs: Controlling multiple amps with a single JP-2C Footswitch is easily accomplished by connecting the JP-2C Footswitch to the MESA FT.SW. jack on one amp, and connecting the Midi THRU/OUT from this amp to the Midi INPUT on a second amp. For a third amp, connect the Midi THRU/OUT from the second amp to the Midi INPUT on the third amp, and so on…

When controlling multiple amps as indicated above, only the amp with the JP-2C Footswitch connected should be set for Midi Channel 1, all the other amps should be set to any other Midi Channel. Additionally, the Front Panel toggle switches should be positioned identically, from one amp to another.

MIDI INPUT ***NOTE:*** *DO NOT connect a JP-2C Footswitch to the MESA FT.SW. jack when using the Midi INPUT jack!*

Midi INPUT: Standard 5-pin Midi DIN jack. Connect a Midi Footcontroller output or the Midi OUTPUT of another device to send Midi commands to the amp, here. Phantom power for a Midi Footcontroller or any other device is not provided.

MIDI THRU/OUT Midi THRU/OUT: Standard 5-pin Midi DIN jack. Any Midi commands received at the Midi INPUT are passed through this jack, unchanged, and can be sent to other Midi devices. It also acts as a Midi OUTPUT when sending a User Preset Dump.

MIDI CHANNEL A rear-panel rotary DIP switch is used to select which Midi Channel the amp will receive Midi messages on. Changing the Midi Channel will briefly illuminate the STORE LED as a confirmation that a change has been made.

MIDI CHANNEL SELECTION

Rotary DIP Switch Position	Selected MIDI Channel	Rotary DIP Switch Position	Selected MIDI Channel
0	1	**8**	9
1	2	**9**	10
2	3	**A**	11
3	4	**B**	12
4	5	**C**	13
5	6	**D**	14
6	7	**E**	15
7	8	**F**	16

USER PRESET The amp can receive Midi messages from any Midi Footcontroller. By saving different presets, or "patches" for different Midi Program Change Numbers, you can automatically recall a saved preset by sending the correct Midi Program Change Number from your Midi Footcontroller. You can assign which channel and other functions are on or off, for each and every preset. The amp allows saving up to 256 presets, using Midi Program Change Numbers 1 through 128, in two banks.

- Bank 1 is the power-on default, and Midi Program Change Numbers will recall presets in this bank.
- Bank 2 is accessible using the Midi Bank Select Message, which is Midi Control Change Number CC#0.
- Sending the amp Midi Control Change Number CC#0 with a Control Value of 0 from your Midi Footcontroller, will select Bank 1.
- Sending the amp Midi Control Change Number CC#0 with a Control Value of 1 (or greater) from your Midi Footcontroller, will select Bank 2.
- Bank selection on the amp is semi-permanent, meaning any subsequent Midi Program Change Numbers received, will recall a preset in the selected bank. For example; after selecting Bank 2, all subsequent Midi Program Change Numbers will recall presets (129 through 256, which are) in Bank 2. After selecting Bank 1, all subsequent Midi Program Change Numbers will recall presets (1 thru 128, which are) in Bank 1.

To save a preset for a Midi Program Change Number;

- Select the Midi Program Change Number on your Midi Footcontroller.
- Manually select the JP-2C Channel and other functions you would like on or off in the preset, using the amp's toggle switches.
- Engage the STORE SWITCH, and the STORE LED will illuminate briefly as an indication that the preset has been saved.

PRE-STORE "Reset" Required: Continuing with the Mesa/Boogie tradition of robust toggle switches to select the amp's channel, and on/off functions, instead of the ever so common momentary push-button switch, requires sophisticated software algorithms that allow Midi to control the amp at the same time. The mix of these control methods requires that toggle switches be double-actuated before it will have an effect (be allowed to be STORED). For example; if the amp's Channel Select toggle switch has CH1 selected, but CH2 is active (ON) as a result of a Midi preset or command, and you would like to change the channel to CH1, the amp's channel toggle switch will need to be moved to the CH2 position, then back to the CH1 position, in order to activate it. All Features must also be reset in this manner before the STORE toggle will commit (write) them to a Midi Program Number.

Whenever a Midi Bank Select Message or Midi Program Change Number is received on the same Midi Channel as selected by the

Midi Channel rotary DIP switch, the STORE LED will flash quickly, indicating a valid Midi message has been received.

A preset cannot be saved under the following conditions;

- The JP-2C Footswitch is connected to the MESA FT.SW. jack.
- On power-up and/or when the amp has not yet received a Midi Program Change Number.
- A User Preset Dump was received, whether successful or not, and the amp has not received a subsequent Midi Program Change Number.

USER PRESET DUMP & LOAD A User Preset Dump will send a Midi SysEx (System Exclusive) file with the amp's 256 presets out through the Midi THRU/OUT jack. This User Preset Dump File includes CRC (Cyclic Redundancy Check) bytes for error detection.

To dump the presets from one amp, and load them into another, connect its Midi INPUT jack to the Midi THRU/OUT jack of the amp with the presets to be copied.

The User Preset Dump File can also be saved to a computer, as a backup or to load the presets into another amp. In addition to the computer, you'll also need a Midi/USB Interface and a Midi app/utility capable of sending and receiving Midi SysEx files (there are many free ones available, we recommend SysEx Librarian by www.snoize.com for Mac users and for Windows users, Midi-OX via www.Midiox.com).

A User Preset Dump can be performed after;

- The amp is first turned on, and prior to receiving any Midi messages.
- The amp has received a User Preset Dump (whether successful or not).

  NOTE: The Midi INPUT and MESA FT.SW. jacks, should be left unconnected when performing a User Preset Dump.

- To perform a User Preset Dump, connect the Midi THRU/OUT jack to the Midi INPUT jack of another amp or Midi/USB Interface.
- Press the STORE SWITCH, the STORE LED will illuminate briefly and the User Preset Dump File will be sent via the Midi THRU/OUT jack.
- The STORE LED will briefly illuminate again after the amp has finished sending the User Preset Dump File - it should only take a second or two.

A User Preset Load can be performed anytime!

The Midi THRU/OUT and MESA FT.SW. jacks, should be left unconnected when performing a User Preset Load.

- To perform a User Preset Load, connect the Midi INPUT jack to the Midi THRU/OUT jack of another amp or the Midi OUT jack of a Midi/USB Interface.
- Send the User Preset Dump File, the STORE LED will illuminate briefly as soon as the amp starts receiving it, via the Midi INPUT jack.
- The STORE LED will briefly illuminate again after the amp has finished receiving the User Preset Dump File - it should only take a few seconds.

When receiving a User Preset Dump File, it is first saved in the JP-2C's RAM memory, and does NOT overwrite the existing presets saved in the non-volatile EEPROM memory. The existing presets will ONLY be overwritten after the entire User Preset Dump File has been completely and successfully received, without errors!

If a User Preset Load fails, the STORE LED will remain illuminated until the amp begins receiving a User Preset Dump File again, or any other process occurs that turns the STORE LED on and/or off. Any failures could ONLY be due to a corrupted file, and the amp's built-in CRC error detection will prevent a corrupted file from overwriting existing presets.

MIDI CONTROL CHANGE NUMBERS

In addition to supporting Midi Program Change Numbers, the amp also accepts Midi Control Change Numbers (messages... also known as Midi Continuous Controllers or CC messages).

When using a Midi Footcontroller capable of sending CC messages, you can assign buttons on the Footcontroller for direct-control or instant-access to individual functions on the amp, which allows any Midi Footcontroller to act as a dedicated JP-2C Footswitch.

Typically you would control the amplifier using either Midi Control Change Numbers or Midi Program Change Numbers, but not both, though it is possible. Using Midi Program Change Numbers saves presets in the amp's memory, but does not allow instant-access to the JP-2C's Channels and Features (EQ, Reverb, Loop) from a Midi Footcontroller. Using Midi Control Change Numbers saves preset combinations in the Midi Footcontroller's memory, and does provide instant-access to the amp's channels and on/off functions.

Whenever a Midi Control Change Number is received on the same Midi Channel as selected by the Midi Channel rotary DIP switch, the STORE LED will flash quickly, indicating a valid Midi message has been received.

NOTE: *If you experience any odd or unexpected Midi behaviour, it is more than likely a result of the JP-2C receiving both Midi Control Change and Program Change Numbers at the same time, ensure this is not the case before contacting us for supp*ort.

JP2C MIDI CONTROL CHANGE NUMBER ASSIGNMENT

Amp Function	MIDI CC Number	Control Values	Comments
CH1	20	64 - 127 (ON)	CH2 and CH3 will turn off automatically
CH2	21	64 - 127 (ON)	CH1 and CH3 will turn off automatically
CH3	22	64 - 127 (ON)	CH1 and CH2 will turn off automatically
EQ1	23	0 - 63 (OFF) 64 - 127 (ON)	
EQ2	24	0 - 63 (OFF) 64 - 127 (ON)	
FXLP	25	0 - 63 (OFF) 64 - 127 (ON)	
RVRB	26	0 - 63 (OFF) 64 - 127 (ON)	
SHRD	27	0 - 63 (OFF) 64 - 127 (ON)	
CH1 & EQ	28	64 - 127 (ON)	CH2 and CH3 will turn off automatically EQ1 & EQ2 will turn on/off per the toggle
CH2, EQ & SHRD	29	64 - 127 (ON)	CH1 and CH3 will turn off automatically EQ1/EQ2, & SHRD will turn on/off per the toggles
CH3, EQ & SHRD	30	64 - 127 (ON)	CH1 and CH2 will turn off automatically EQ1/EQ2, & SHRD will turn on/off per the toggles

Notes:
(1) CC#20-#24 & CC#27 should not be sent if using CC#28-#30.
(2) CC#20-#22 are mutually exclusive, most recent received takes priority.
(3) CC#23-#24 are mutually exclusive, most recent received takes priority.
(4) CC#28-#30 are mutually exclusive, most recent received takes priority.

SOFTWARE UPDATES

Software updates should be performed with the amp in STANDBY, and the Midi THRU/OUT and MESA FT.SW. jacks, left unconnected.

To perform a software update, you'll require a firmware update file (which can be obtained from us via the web or e-mail), a computer, a Midi/USB Interface, and a Midi app/utility capable of sending and receiving Midi SysEx files (the two free ones that we recommend are SysEx Librarian by www.snoize.com for Mac users and Midi-OX via www.Midiox.com for Windows).

IMPORTANT!!! Midi app/utility settings are below for Software updates:

Mac - SysEx Librarian

Menu > Preferences

Transmit Speed = 50% max.

Windows - Midi-OX

Main Menu > View > SysEx

SysEx Window Menu > SysEx > Configure

Low Level Output Buffers, Size = 256 & Num = 64
Output Timing & Delay Between Buffers = 192ms min.
Auto-Adjust Buffer Delays If Necessary = Off/Unchecked

As with any piece of modern gear, it's always a very good idea to BACKUP YOUR PRESETS BEFORE PERFORMING A SOFTWARE UPDATE!

To perform a Software update, the amp MUST be powered-up with the STORE SWITCH engaged AND the CHANNEL SWITCH set to CH#1. The STORE LED will remain on, indicating the software update mode.

Changing the amp's Channel prior to sending the firmware update file will abort the Software update process, the STORE LED will turn off, and the amplifier will return to its normal mode of operation.

Upon receiving a firmware update file, the STORE LED will begin to blink steadily, and will continue to blink during the update.

Software updates will take about 30 seconds to complete.

After performing a successful software update, the STORE LED will stop blinking, and the amplifier will return to its normal mode of operation.

If a software update fails, the STORE LED will remain illuminated until the amp begins receiving a firmware update file again. Any failures could only be due to either a corrupted file, or because the file is being sent to the amp faster than it can be processed.
Midi app/utility settings have been provided (above) which will prevent the firmware update file from being sent to the amp faster than it can be processed, avoiding any speed related failures.

If, after a failed software attempt due to a speed related failure, the STORE LED does not blink when another firmware file has been sent, simply turn off the amp, then power-up again with the STORE SWITCH engaged and the CHANNEL SWITCH set to CH#1 (as before).

The SysEx Librarian app/utility includes two different methods of calculating the checksum of a file. You should check one or both of these against the checksums we've published to ensure your file has not been corrupted.
Unfortunately Midi-OX does not provide a checksum feature, but Microsoft does offer a free utility called "Microsoft File Checksum Integrity Verifier".

SOFTWARE VERSION SysEx MESSAGE A short Midi SysEx message will follow every User Preset Dump, as a simple means of ID'ing the amp's Midi interface software version.

To view this message, you'll need a computer, a Midi/USB Interface, and a Midi app/utility capable of sending and receiving multiple Midi SysEx messages in succession (the two free ones that we recommend are SysEx Librarian by www.snoize.com for Mac users and Midi-OX via www.Midiox.com for Windows users).

Software Version Number = x.y

JP2C Software Version SysEx Message = F0 00 01 4B 02 68 x y F7

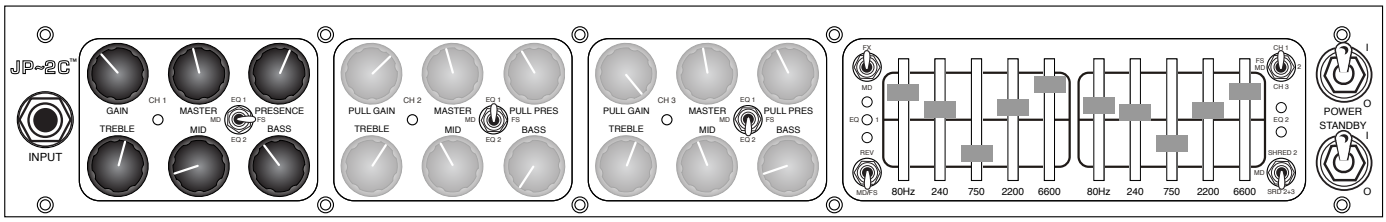
JP2C FACTORY PRESETS

USER MEMORY / PRESET NUMBER	CH1	CH2	CH3	EQ1	EQ2	FXLP	RVRB	SHRD
1, 16, 31, 46, 61, 76, 91, 106, 121, 136, 151, 166, 181, 196, 211, 226, 241, 256	O							
2, 17, 32, 47, 62, 77, 92, 107, 122, 137, 152, 167, 182, 197, 212, 227, 242	O			O				
3, 18, 33, 48, 63, 78, 93, 108, 123, 138, 153, 168, 183, 198, 213, 228, 243	O				O			
4, 19, 34, 49, 64, 79, 94, 109, 124, 139, 154, 169, 184, 199, 214, 229, 244		O						O
5, 20, 35, 50, 65, 80, 95, 110, 125, 140, 155, 170, 185, 200, 215, 230, 245		O		O				O
6, 21, 36, 51, 66, 81, 96, 111, 126, 141, 156, 171, 186, 201, 216, 231, 246		O			O			O
7, 22, 37, 52, 67, 82, 97, 112, 127, 142, 157, 172, 187, 202, 217, 232, 247		O						
8, 23, 38, 53, 68, 83, 98, 113, 128, 143, 158, 173, 188, 203, 218, 233, 248		O		O				
9, 24, 39, 54, 69, 84, 99, 114, 129, 144, 159, 174, 189, 204, 219, 234, 249		O			O			
10, 25, 40, 55, 70, 85, 100, 115, 130, 145, 160, 175, 190, 205, 220, 235, 250			O					O
11, 26, 41, 56, 71, 86, 101, 116, 131, 146, 161, 176, 191, 206, 221, 236, 251			O	O				O
12, 27, 42, 57, 72, 87, 102, 117, 132, 147, 162, 177, 192, 207, 222, 237, 252			O		O			O
13, 28, 43, 58, 73, 88, 103, 118, 133, 148, 163, 178, 193, 208, 223, 238, 253			O					
14, 29, 44, 59, 74, 89, 104, 119, 134, 149, 164, 179, 194, 209, 224, 239, 254			O	O				
15, 30, 45, 60, 75, 90, 105, 120, 135, 150, 165, 180, 195, 210, 225, 240, 255			O		O			

NOTES

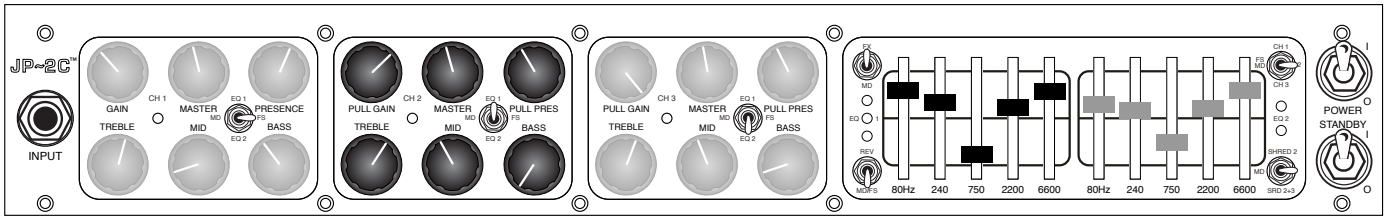
JOHN PETRUCCI SAMPLE SETTINGS

JP – CLEAN



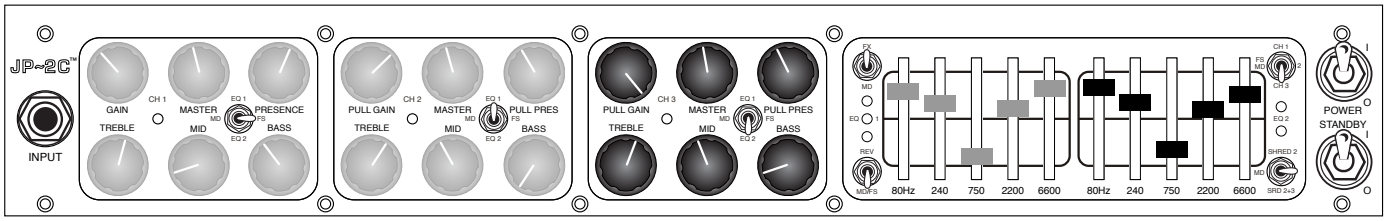
JP – CRUNCH

NOTE: Channel 2 **PULL PRES** Pulled Out with **SHRED** On or Off as needed.



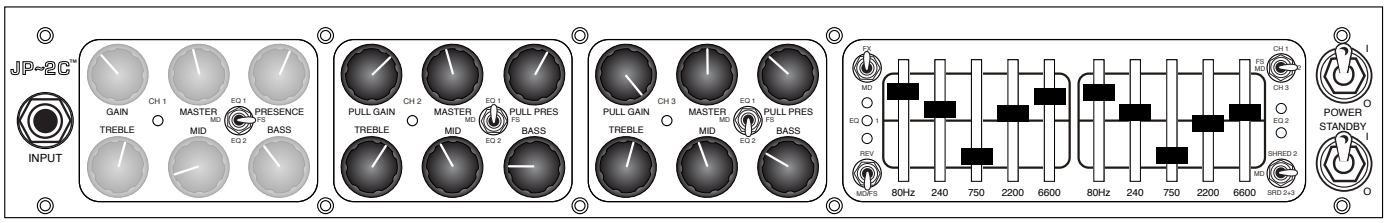
JP – LEAD

NOTE: Channel 3 **PULL PRES** Pulled Out with **SHRED** On or Off as needed.



JP – ALTERNATE CRUNCH/LEAD

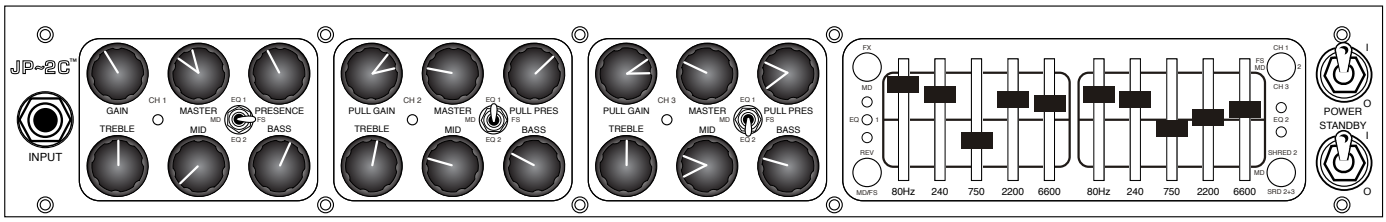
NOTE: Channel 2 **PULL PRES** Pushed In, **PULL GAIN** Pulled Out with **SHRED** Off.
Channel 3 **PULL PRES** Pulled Out, **PULL GAIN** Pushed In with **SHRED** Off.



FACTORY SAMPLE SETTINGS

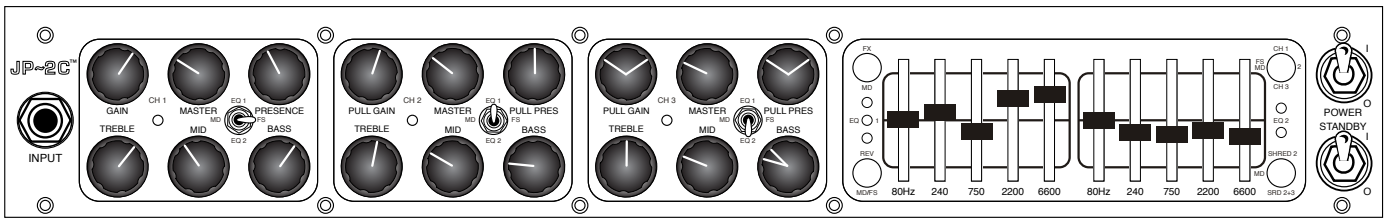
HEADROOM, GRIND & SOAR

NOTE: Channel 3 **PULL PRES** Pulled Out.



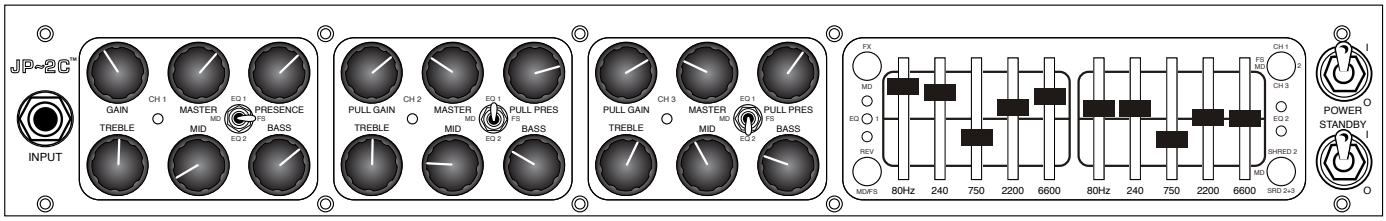
PUNCH, CLASSIC & SOLO

NOTE: Channel 2 and 3 **PULL PRES** Pulled Out.



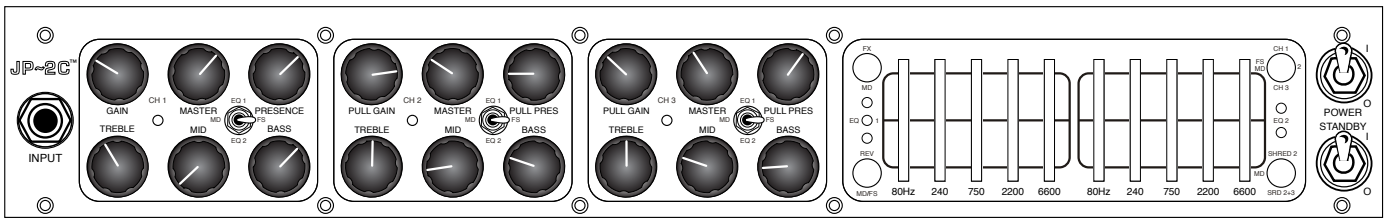
CLEAN, GAIN & MORE GAIN

NOTE: Channel 2 and 3 **PULL GAIN** Pulled Out.

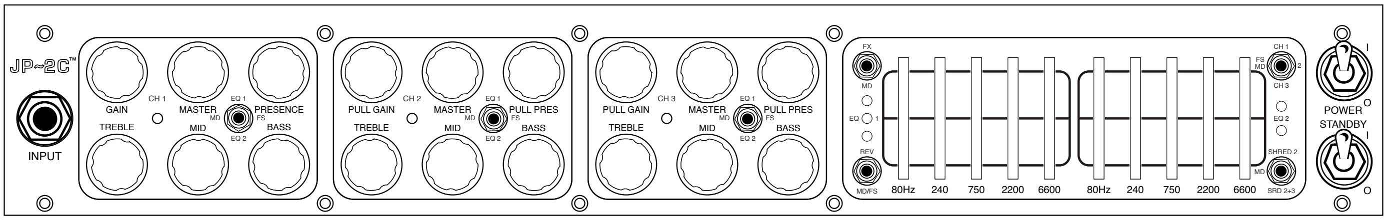


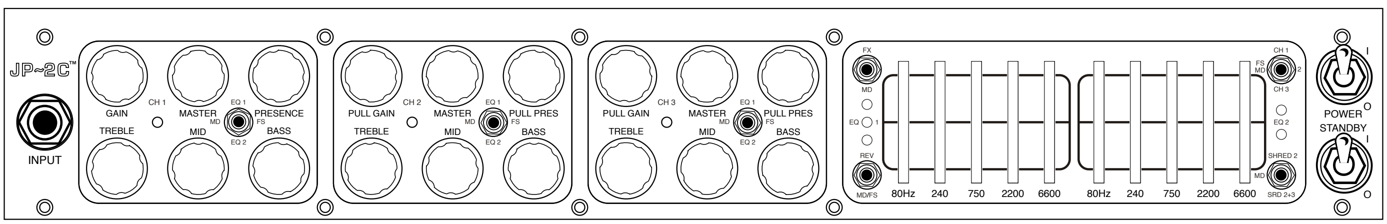
PRISTINE, SING & STING

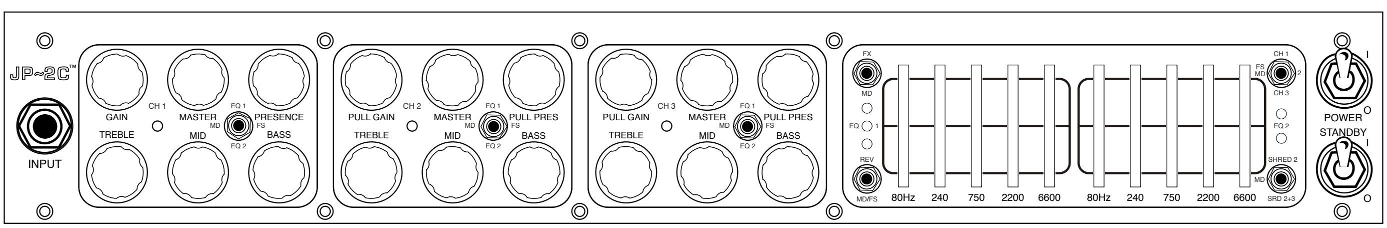
NOTE: Channel 2 **PULL PRES** Pulled Out. Graphic EQ Optional.

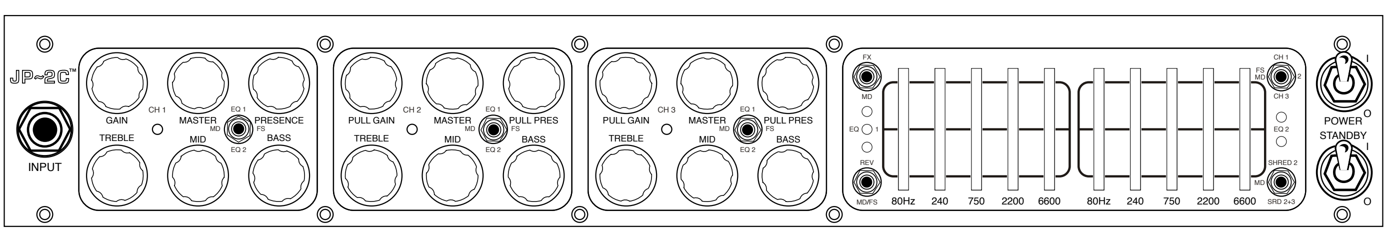


USER SETTINGS









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:

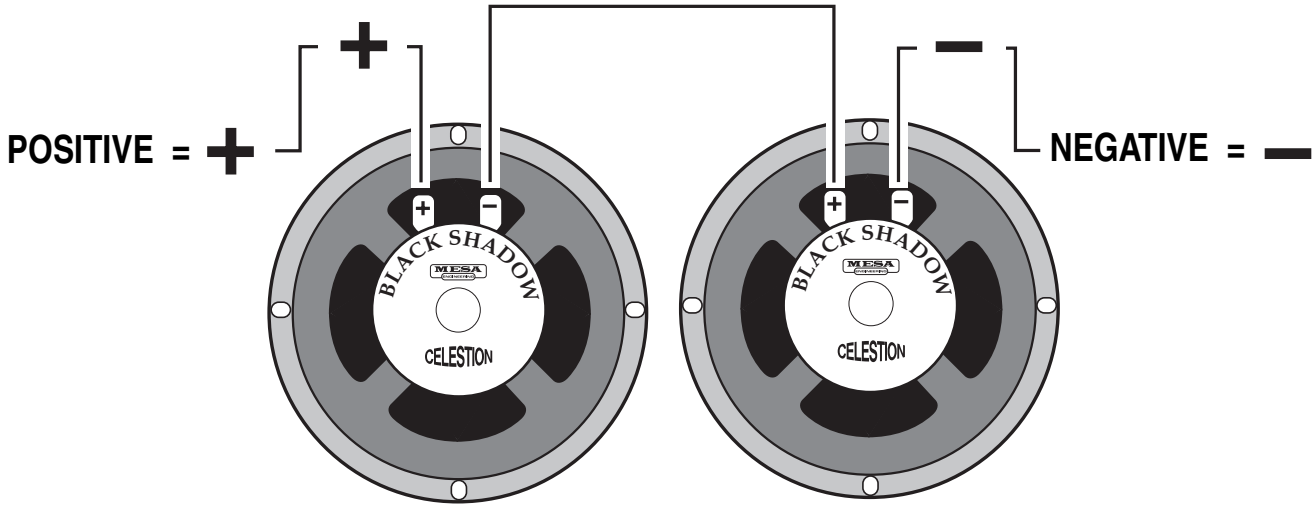
IMPEDANCE: Wiring up speakers to provide the most effective load and making sure that all of them are in phase will help in creating the best sound possible. This is not too difficult, as long as you understand a few things about loading and how to connect your speakers to provide an optimal resistive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

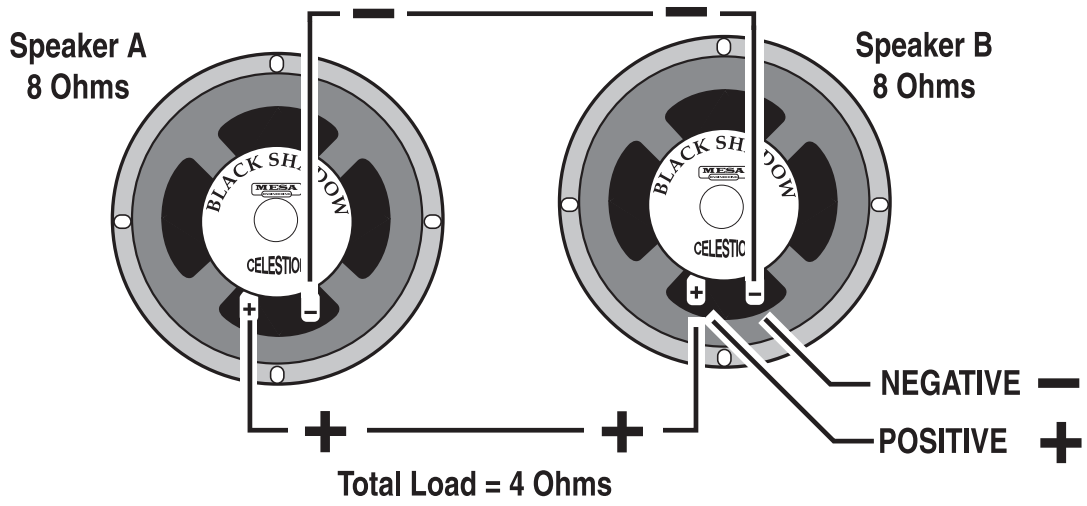


Speaker A = 8 Ohms **Speaker B = 8 Ohms**

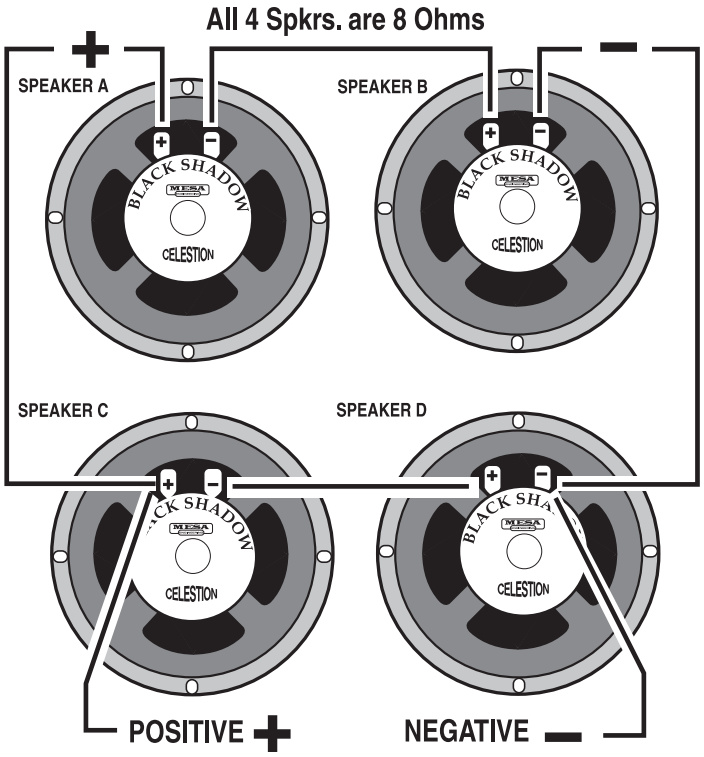
SERIES: Connect the Negative side of Speaker A to the Positive side of Speaker B

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

1

Partial back view of amplifier

8 OHM 4 OHM 4 OHM

8 Ohm Cabinet

8 Ohm Cabinet

2

Partial back view of amplifier

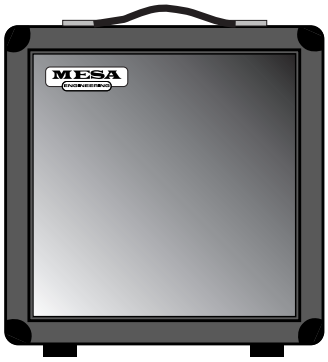
8 OHM 4 OHM 4 OHM

4 Ohm Cabinet

3

Partial back view of some Mesa amp

8 OHM 4 OHM 4 OHM

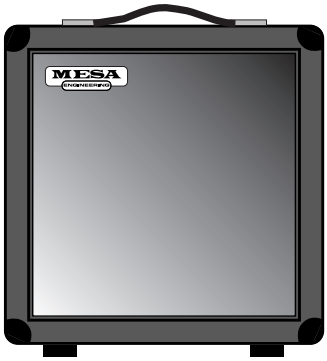


8 Ohm Cabinet
SAFE MISMATCH

4

Partial back view of amplifier

4 OHM 8 OHM 16 OHM



16 Ohm Cabinet

5

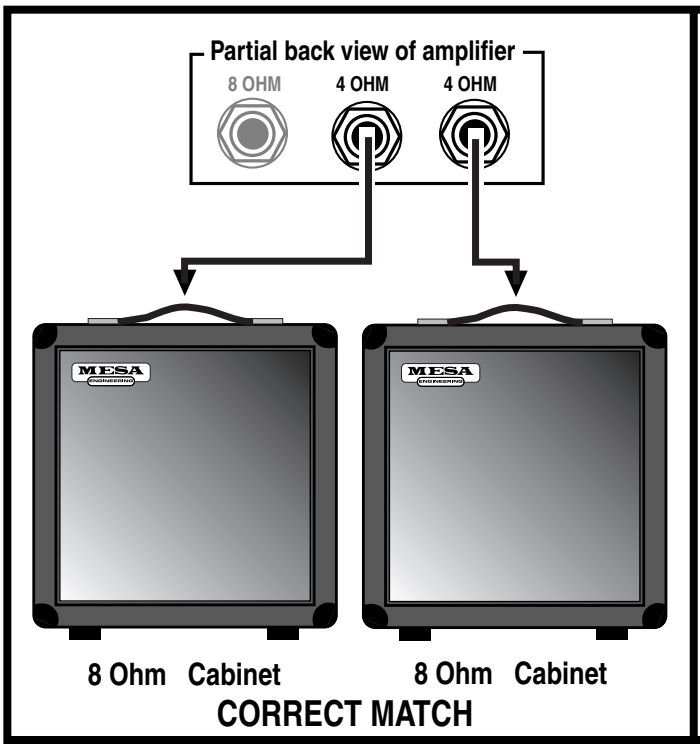
Partial back view of amplifier

4 OHM 8 OHM 16 OHM

16 Ohm Cabinet
SAFE MISMATCH

WIRING SCHEMES...Amplifier to Speaker Cabinets

6



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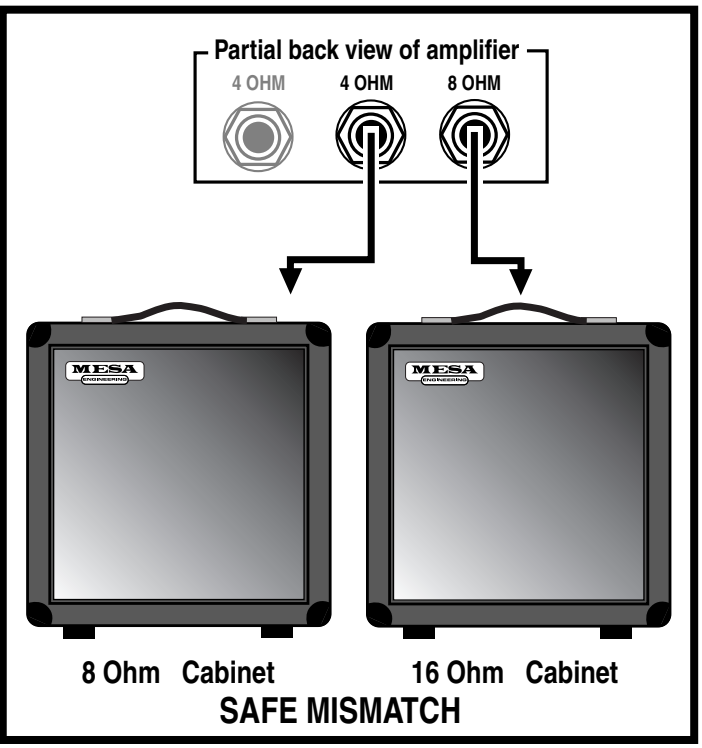

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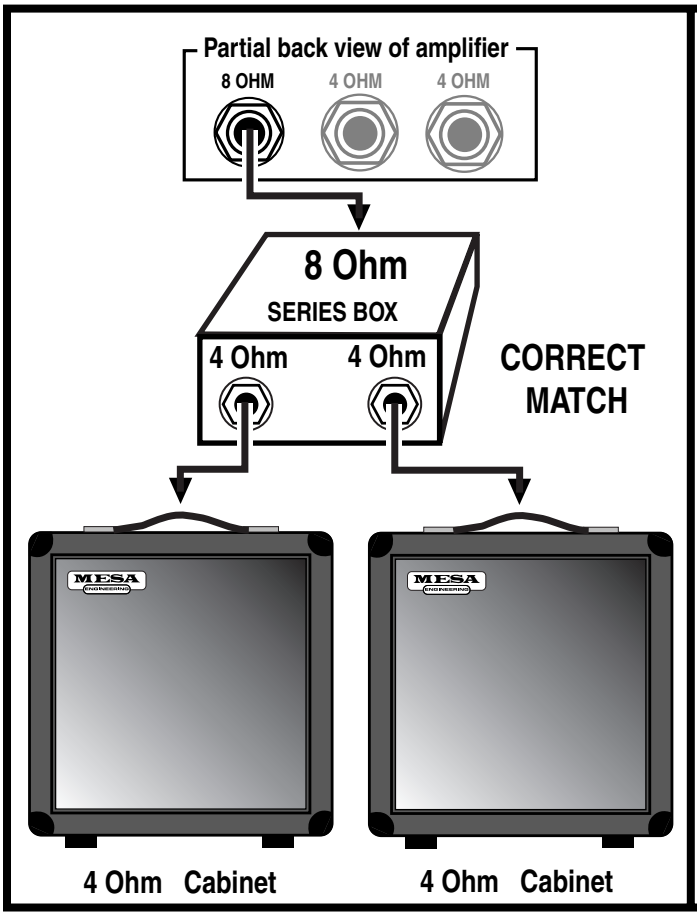

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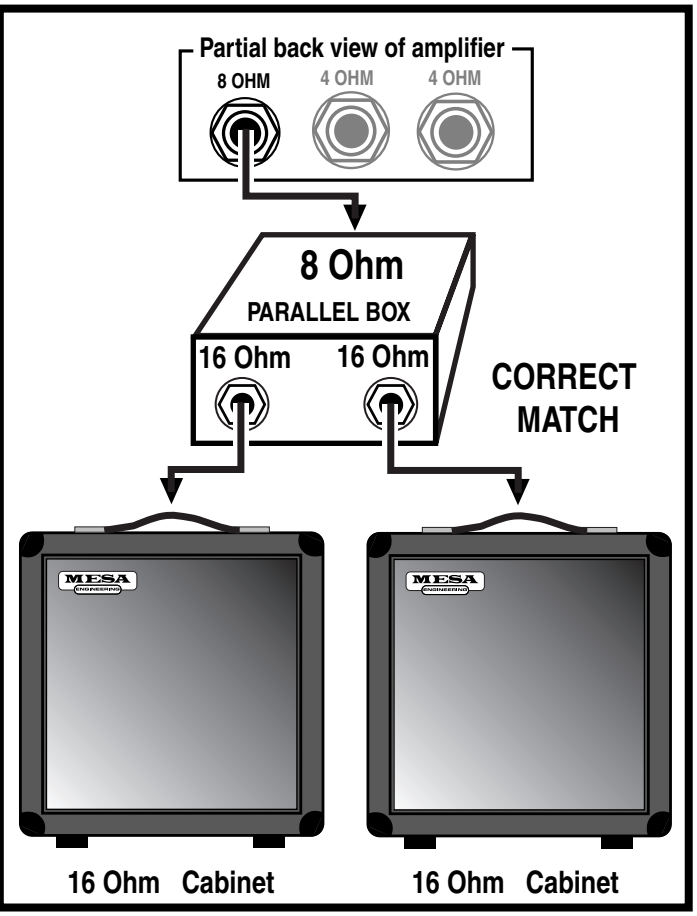
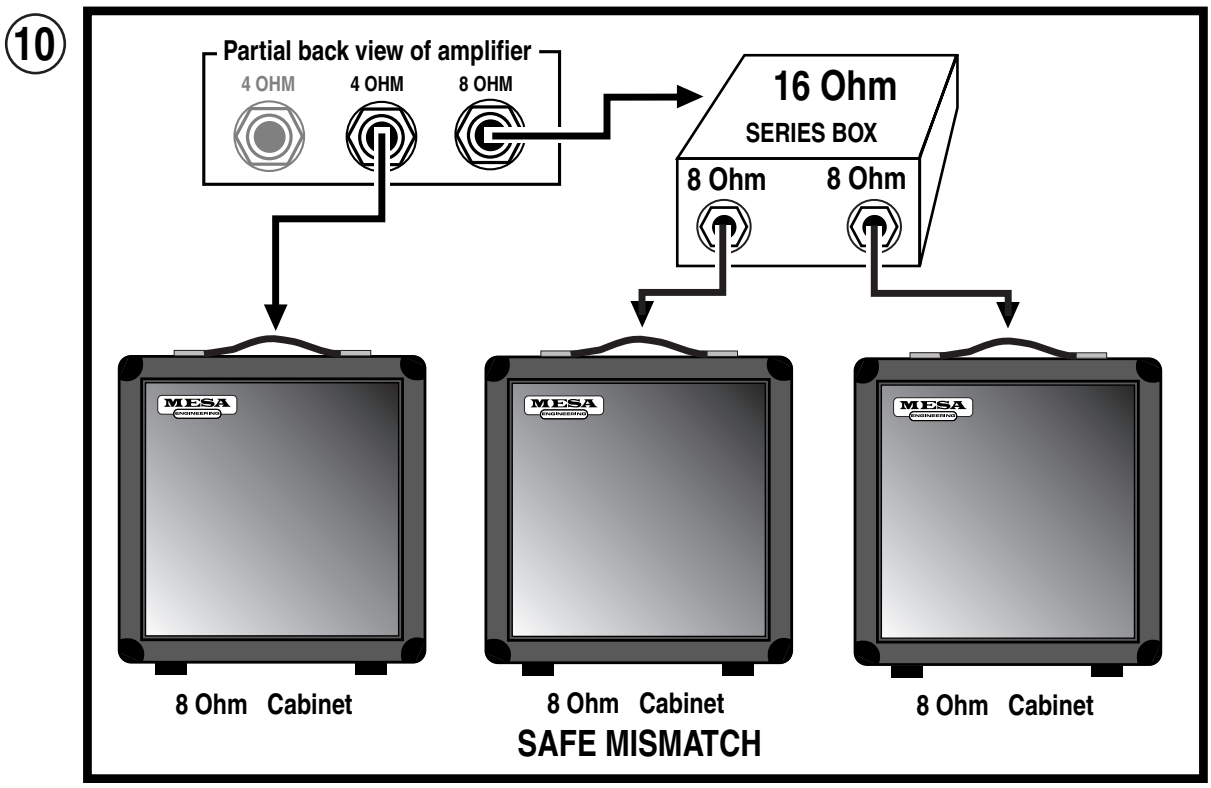
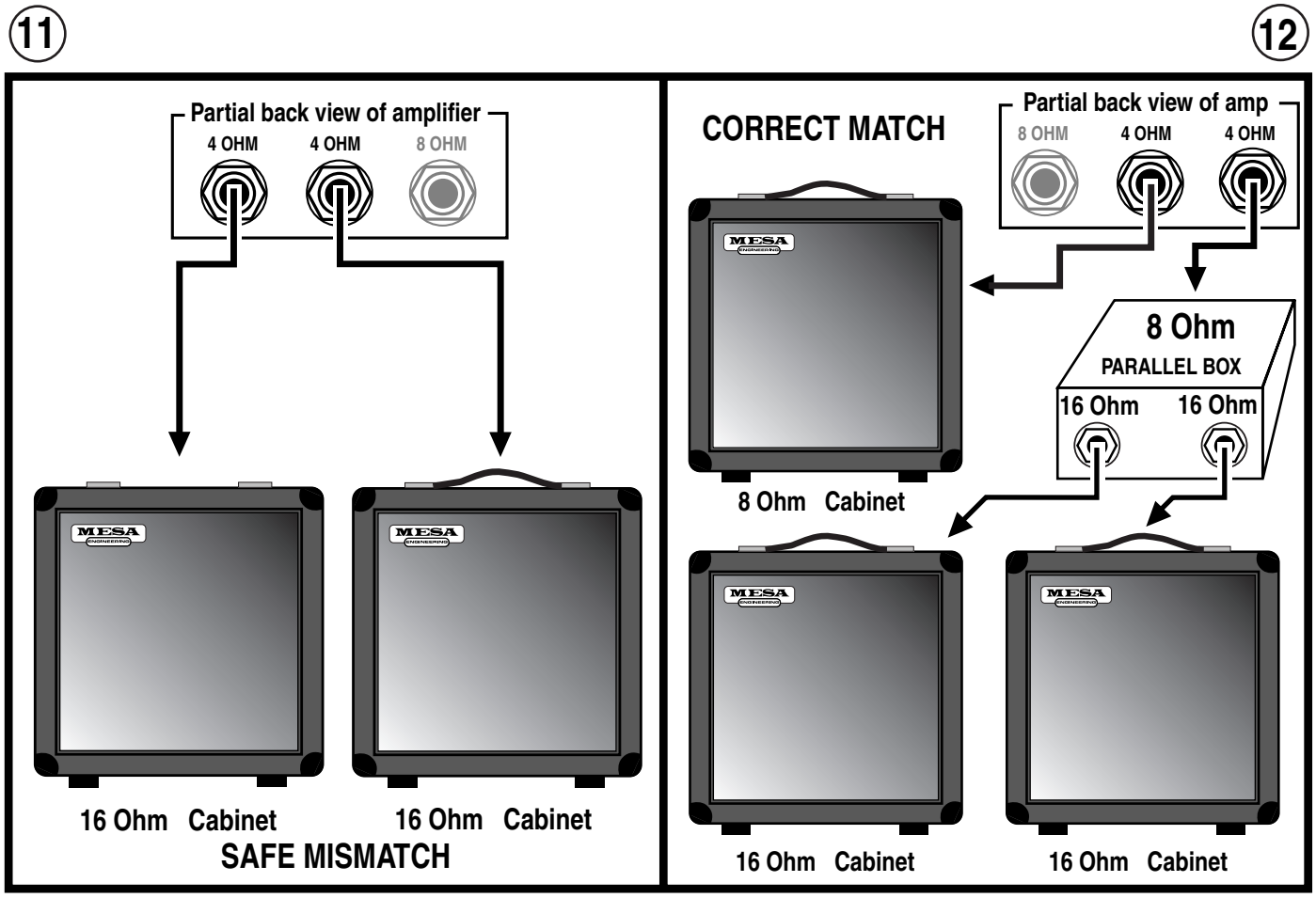


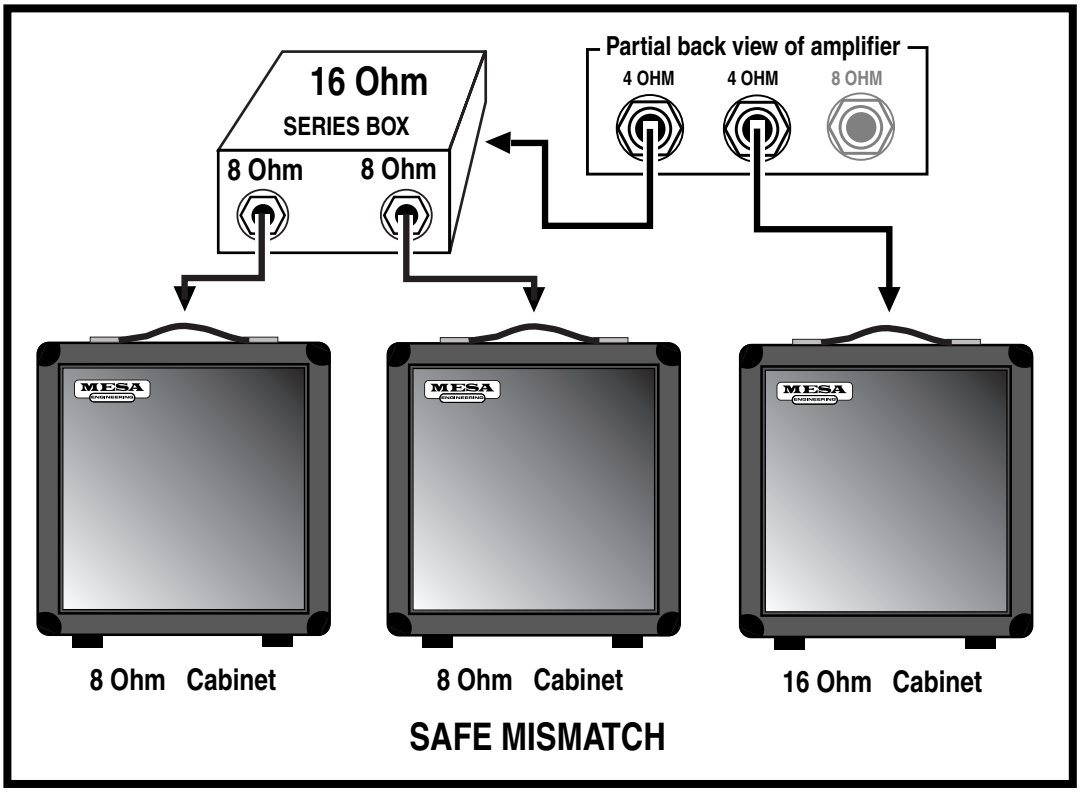
WIRING SCHEMES...Amplifier to Speaker Cabinets



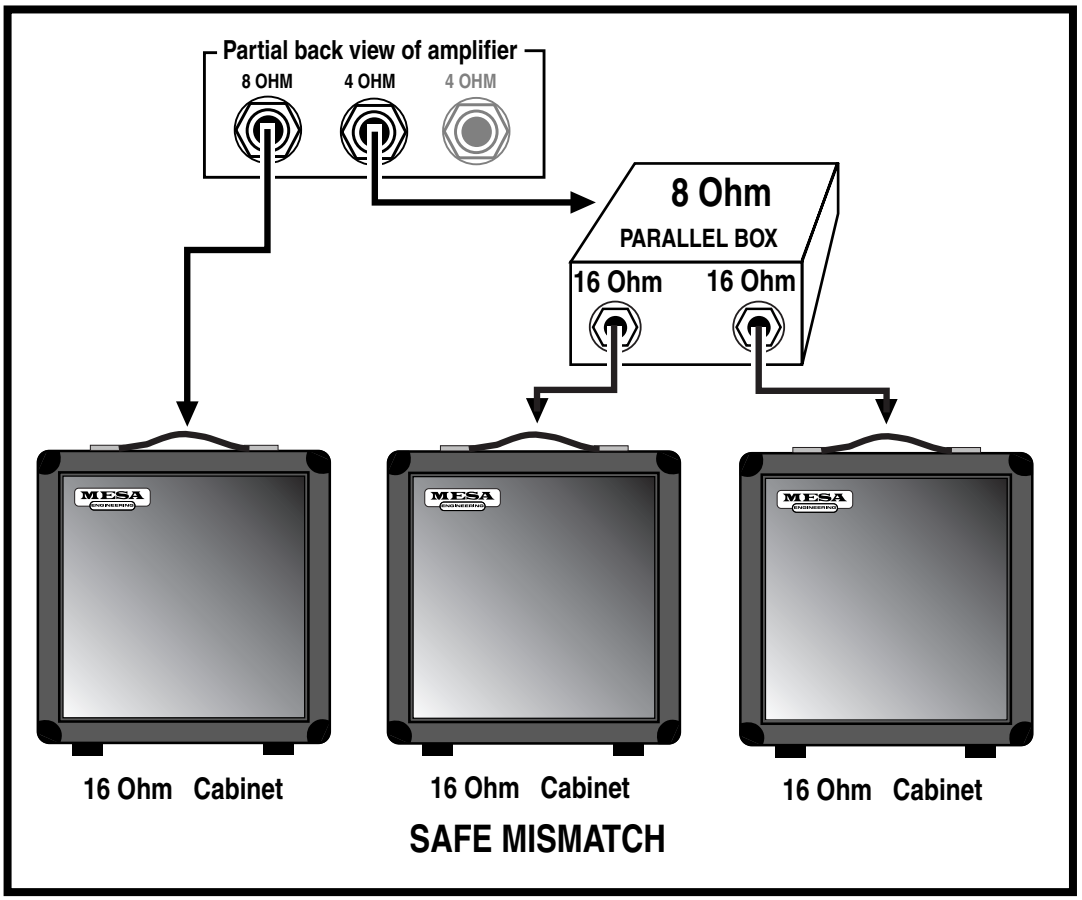


WIRING SCHEMES...Amplifier to Speaker Cabinets

13

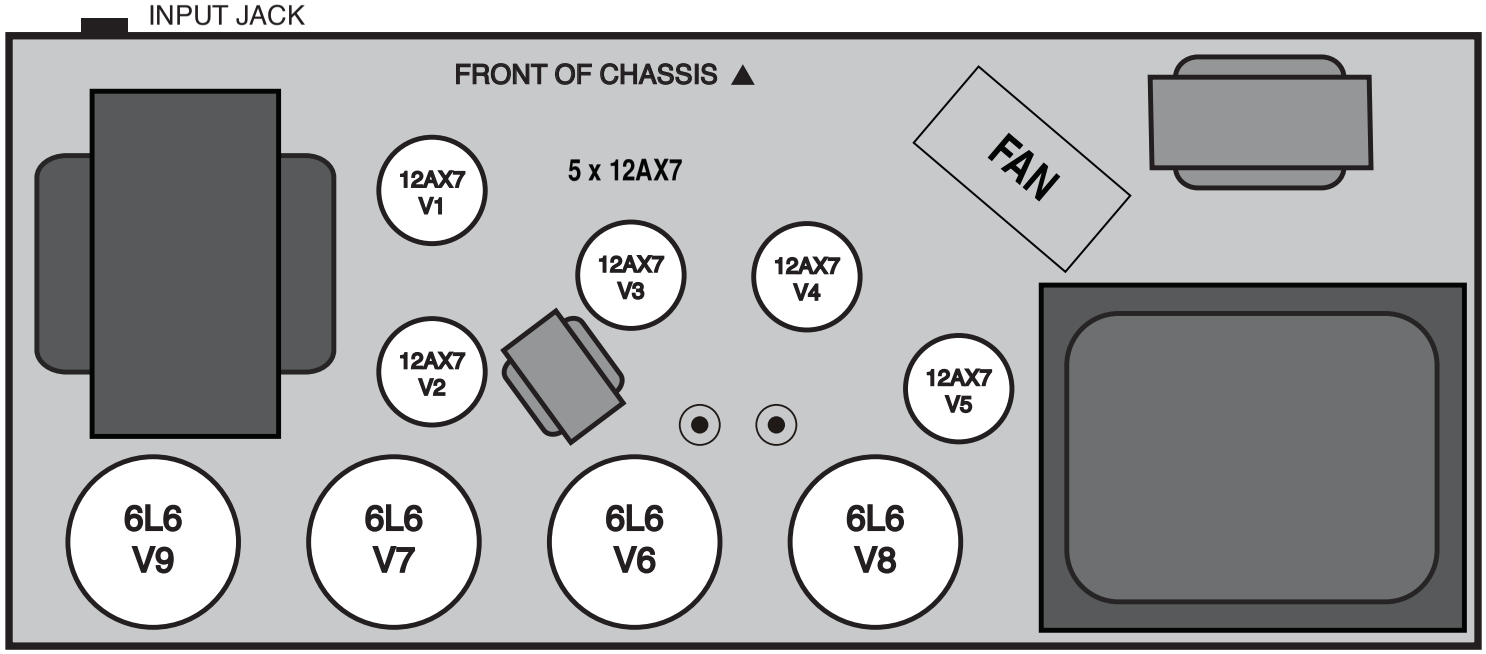


14



BEFORE CHANGING TUBES FLIP POWER & STANDBY SWITCH TO OFF

JP-2C™ TUBE REPLACEMENT DIAGRAM



PREAMP TUBES

V1A - INPUT STAGE ALL CHANNELS
V1B - 2ND GAIN STAGE ALL CHANNELS

V2A - FX LOOP RETURN ALL CHANNELS
V2B - 3RD GAIN STAGE CHANNEL 1
5TH GAIN STAGE CHANNELS 2&3

V3A - REVERB RETURN STAGE
V3B - 3RD GAIN STAGE CHANNELS 2&3

V4A - 4TH GAIN STAGE CHANNELS 2&3
V4B - REVERB DRIVE STAGE

V5A&B - DRIVER/PHASE INVERTER

POWER TUBES

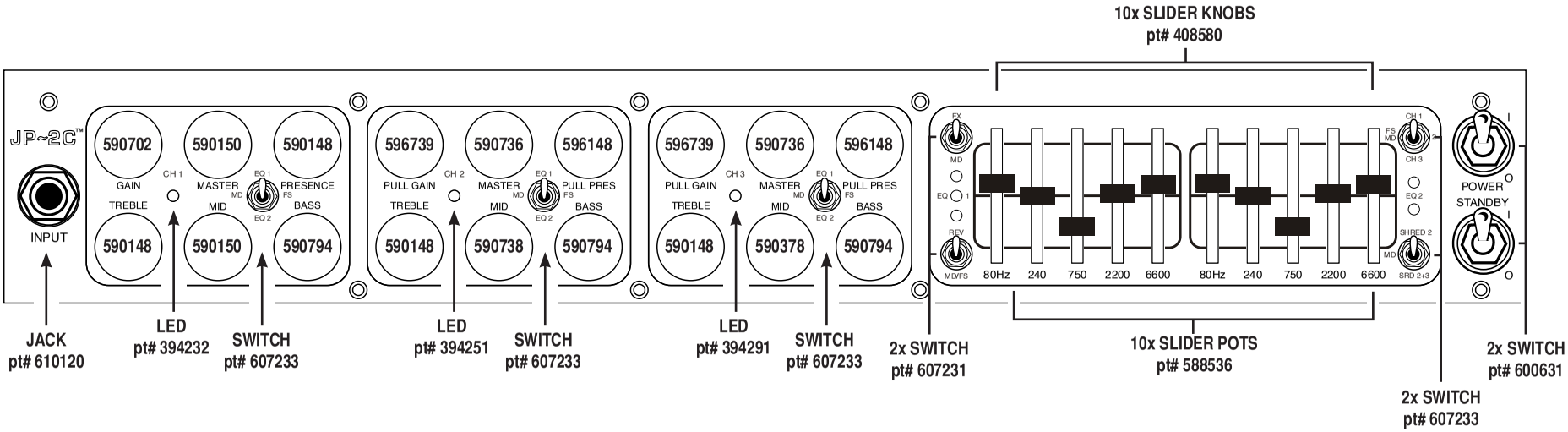
100 Watts = V6, V7, V8, V9

60 Watts = V8 & V9

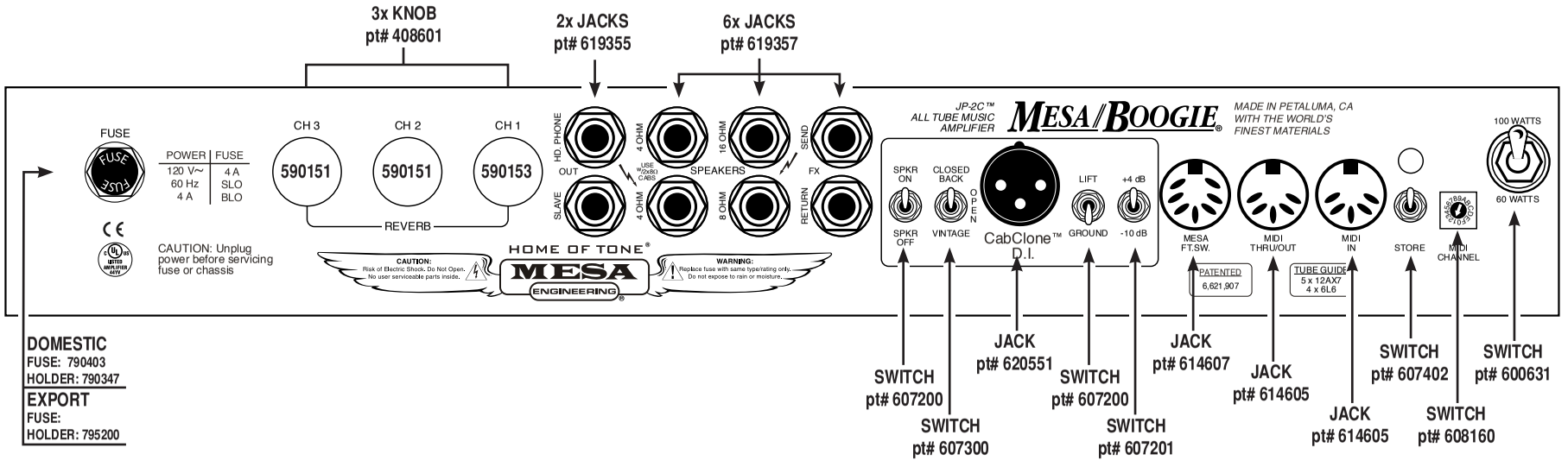
TO MAINTAIN WARRANTY, USE MESA/BOOGIE® TUBES WHEN REPLACEMENT IS NECESSARY
FOR CUSTOMER SUPPORT, PLEASE CALL 707-778-6565 MONDAY-THURSDAY 9-5 PST, OR EMAIL US AT INFO@MESABOOGIE.COM

FRONT PANEL: JP-2C

ALL FRONT PANEL KNOBS
PT# 408601



REAR PANEL: JP-2C



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 handcrafted instrument.*

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