



SPECIAL DESIGN THE DRAGON™



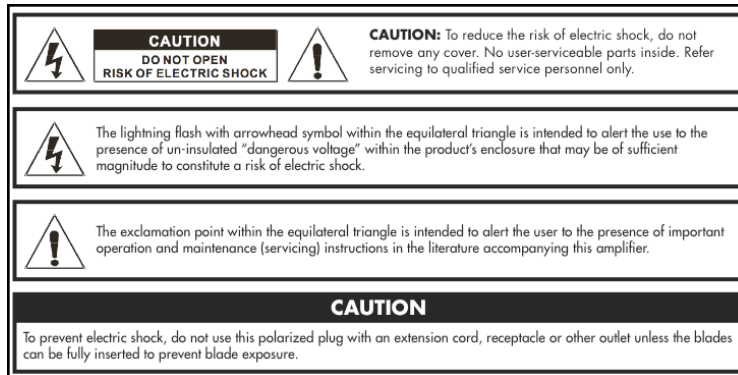
GUITAR AMPLIFIER

USER'S GUIDE

Your 3RD POWER Amplifier is a professional musical instrument amplifier. The information contained herein is current at the time of publication. However, specifications are subject to change without prior notice.

PRECAUTIONS & WARNINGS

- **READ THESE INSTRUCTIONS.**
- **KEEP THESE INSTRUCTIONS.**
- **HEED ALL WARNINGS.**
- **FOLLOW ALL INSTRUCTIONS.**
- **YOUR AMPLIFIER IS LOUD!
EXPOSURE TO HIGH SOUND VOLUMES MAY CAUSE PERMANENT HEARING DAMAGE !
Practice "safe listening."**
- **No user serviceable parts inside. Refer service to qualified personnel. Always unplug AC power before removing chassis.**
- **IF YOU INTEND ON OPERATING THIS EQUIPMENT OUTSIDE OF THE USA: Always insure that unit is wired for proper voltage. Make certain all connections and grounding conforms with local standards. Make certain that you have obtained authorization to operate prior to connecting to power supply.**
- **WARNING: Vacuum tube amplifiers generate heat. To insure proper ventilation always make certain there is at least four inches (100mm) of space behind the rear of the amplifier cabinet.**
- **Keep away from curtains or any flammable objects.**
- **WARNING: Do not block any ventilation openings on the rear or top of the amplifier. Do not impede ventilation by placing objects on top of the amplifier which extend past the rear edge of its cabinet.**
- **WARNING: Do not expose the amplifier to rain, moisture, dripping or splashing water. Do not place objects filled with liquids on or nearby the amplifier.**
- **WARNING: Always make certain 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 that amplifier is properly grounded. Always unplug AC power cord before changing fuse or any tubes. When replacing fuse, use only same type and rating.**
- **Avoid direct contact with heated tubes. Keep amplifier away from children.**
- **Be sure to connect to an AC power supply that meets the power supply specifications listed on the rear of the unit. Remove the power plug from the AC mains socket if the unit is to be stored for an extended period of time. If there is any danger of lightning occurring nearby, remove the power plug from the wall socket in advance.**
- **To avoid damaging your speakers and other music equipment, turn off the power of all related equipment before making the connections.**
- **Do not use excessive force in handling control buttons, switches and controls. Do not use solvents such as benzene or paint thinner to clean the unit. Wipe off the exterior with soft cloth.**



MOVING FORWARD... IN 3D



Thank you for choosing the Special Design, DRAGON by 3RD POWER as an integral component of your musical journey.

Music is a thrilling blend of tone, attitude and technique. When the right combination occurs, magic happens and it's experienced by everyone.

I've had the extraordinary privilege of performing music for over 30 years on stage and in the studio. As the principal designer and visionary of the company, every product we design reflects my energy, attitude and life experiences.

Each amplifier we create is designed to help you tell your musical story - IN 3D!!!

Rock on!

- Dylana Scott



Special Features of the Special Design, DRAGON™:

- Designed in collaboration with 3P's Dylana Scott and Joe Satriani
- British Voiced Plexi & Cascaded Preamp Section (switchable)
- All tube, Cathode-follower, 3-Band EQ
- Tube Buffered FX Loop
- Preamp Gain Boost (foot-switchable)
- Preamp Mode Selector (2 position switch from Plexi to Cascade Mode)
- Unique 400Hz Frequency Boost (fatter sound on unwound treble strings)
- HybridMaster Volume Knob (a 3P patented technology)
- Quad EL34 for 100W Output Power
- Back-panel Bias Test Points and Adjustment Pot
- Vintage Spec paper-wound Power and Output Transformers
- Hand-wired and Hand Built in the USA
- Limited Lifetime Warranty

Unique HF Mastering Presence Circuitry:

Plexi style amps typically employ a negative feedback presence circuit with a fixed frequency shelf-style HF EQ (1.7, 3.7, 4.3 and 5.2kHz corner frequencies). The Dragon 100 enhances this circuit with a 4 position rotary switch for selecting the high-frequency shelf EQ that best matches your speakers and the room that you're in.

Accessories:

4-Button Foot Switch is included.

Dimensions & Weights:

Subject to change anytime. Please measure your amp carefully if a custom case is being made. These measurements do not include handle and rubber feet.

Head: 29" x 10.75" x 8.375"

Weight: 45 lb.

Front Panel (Section One - Main Controls):



Preparing to Operate your Special Design, DRAGON Amplifier

Make certain that all connections are made prior to operating your amplifier including power cable, speaker connection, instrument cable and instrument connection. Make certain that all tubes are installed.

Input Jack (1)

The INPUT jack is where you connect instrument level signals.

Gain Control (2)

The GAIN control allows you to adjust the signal gain level as well as the temperament and overall character of your instrument's sound. Preamp saturation, distortion and compression increase as you go higher on the dial.

POST PRE LEVEL Control (3)

The POST PRE LEVEL control allows you to adjust the signal level that feeds the FX Loop circuitry. With the GAIN control at lower settings, you will tend to run this control higher up (1 to 2 o'clock). With the GAIN control at higher settings, you might pull this back just a little bit.

Treble Control (4)

The TREBLE control allows you to adjust the character of the higher frequency range.

Middle Control (5)

The MIDDLE control allows you to adjust the emphasis of the mid-range frequencies.

Bass Control (6)

The BASS control allows you to adjust the depth of your lower frequencies.

NOTE:

Start with the tone controls at NOON and adjust each frequency band to taste.

Front Panel (Section Two - Master Controls):



Presence Control (7)

The PRESENCE control lets you adjust the amount of boost or cut of the overall high frequency response. Low settings create ‘darker’ tones, whereas higher settings create a ‘brilliant’ or crisp sound.

Corner Frequency Switch (8)

The four-position KHz Band switch allows you to select the perfect corner frequency of the high frequency shelf. Use this control to optimally set your high frequency response to match your tone to any given speaker.

- Bright speakers may benefit from raising the shelf higher than the freq. peak of the speaker.
- Darker speakers may benefit by lowering the corner frequency to kick in and lift your presence right where the speaker’s high-freq. drop-off occurs.

Focus Mode (9)

The unique FOCUS MODE switch alters the response of the middle frequencies of the power amp section. In the MODERN setting, your mid frequency response is forward and more vocal. In the VINTAGE setting, your mid frequencies are more traditional and somewhat scooped in comparison.

Push Control (10)

The global PUSH control allows you to optimize the low frequencies of your tone. Lower settings help keep the low frequencies tight and focused. Higher settings will make your pant-legs shake! Adjust to taste in the studio while tracking guitars. Higher settings are great when playing at lower volume levels. Similar to the ‘loudness’ button on an old stereo, these higher settings will really make your tone thump as if you were blasting your guitar at full volume in a stadium.

Front Panel (Section Two - Master Controls Cont.):



Hybrid-MASTER™ Control (11)

The proprietary HYBRID-MASTER control allows you to set the overall volume level of the amplifier independent of the volume and tone settings established on the front panel. The MAIN control is always active and sets the minimum volume of the amplifier (rhythm volume).

HM Bypass BOOST Control (12)

The HM bypass is permanently connected to the FS Bus circuit (button located on the far right of the foot-switch). Should you wish to disable the boost, simply turn the Bypass control to zero (fully counter-clockwise). When setting up this feature, start with the Bypass control on zero. Dial in the perfect rhythm volume via the Hybrid-Master control (start with a setting of 11 o'clock), and then engage the HM Bypass feature on the foot switch. Slowly turn the HM Bypass control clockwise until the perfect lead volume is achieved. Now you can toggle back and forth for a rhythm preset and a lead boosted preset.

Standby Switch (13)

The STANDBY switch, when placed in the UP position, puts the amplifier in 'standby mode' allowing the tubes to warm up. When this switch is placed in the DOWN position, the tube circuitry is fully functional and ready to amplify your guitar signal.

Power Switch (14)

The POWER switch, when placed in the UP position, provides AC wall power to the amplifier.

7 Front Panel (Section Three - Preamp Tone Switches):



400Hz Bass Boost (15)

This switch engages a 400Hz boost that fattens up your treble (unwound) strings without making your lower (wound) strings sound tubby. This is a profoundly useable feature for soloists and guitarists in general wanting to fatten up their guitar tone. The result is similar to adding a touch of outboard studio EQ and compression. This switch is more apparent when the speaker cabinet is a large format device such as our Dragon 212 or 412 speaker cabinet.

Cascade/Plexi Switch (16)

This switch sets the window of gain, sustain and saturation on tap and controlled by the Gain knob. In Plexi Mode, you'll enjoy classic Plexi clean and crunch tones. In Cascade Mode, you'll find an abundance of gain, saturation and sustain that remains clear and articulate.

+Gain Switch (17)

This switch allows you to setup two levels of gain and then toggling between the two via remote foot switch. Your rhythm gain setting is found on the Gain knob. Your solo setting is identical to turning the Gain knob on 10!

Tone Stack Selector (18)

The TONE STACK SELECTOR switch allows you to adjust the response and feel of the EQ section. The associated circuitry is selecting from different tone stack circuits to help capture the tone and feel of different rock guitar eras.

- Vintage: Classic 'bassman' or '65 'plexi JTM' EQ curve. The mids are scooped giving way to an exciting emphasis of low and high frequencies. This is often referenced as a "smooth" tone.
- Modern: Classic '68 plexi 'super-lead' EQ curve. The mids are punchy and woody with that classic growl you'd expect from this style of amplifier.

7 Front Panel (Section Four - LED Indicators):



System Mute Indicator (19)

The foot-switchable MUSICAL SILENT MUTE allows you to temporarily silence the amplifier while performing or recording. On stage, help keep stage noise down in between songs and especially during guitar changes or while tuning. The musical aspect of this feature is that any DSP effects you have inserted into the on-board FX Loop will be allowed to ‘dump’ their signal before being silenced. In other words, FX tails finish their cycle before amp goes silent).

+Gain Indicator (20)

The +Gain indicator shows you the status of the +Gain circuitry. When lit, you have the maximum amount of gain added to the second gain stage of the preamp.

Loop Status Indicator (21)

The Loop Status indicator shows you that the FX loop is currently engaged when lit.

Foot-switch Bus/Boost Indicator (22)

The Foot-switch Bus indicator shows you that the Foot-switch Bus is engaged making the HM Bypass control active. Additionally, any remaining foot switchable features that have been assigned to the Foot Switch Bus now become controlled by the Foot Switch Bus command switch (4th button on the right of the included foot switch).

NOTE:

Please see the separate foot switching features section for operational use explained in greater detail.

Back Panel (Section One):



Mains Fuse (23)

The MAINS FUSE requires a 4 AMP slow blow fuse. This fuse protects your amplifier from voltage peaks from your power outlet or other events that may cause your amplifier to draw more than 4 AMPS of current.

H.T. Fuse (24)

The H.T. FUSE requires a 0.6 AMP (600 milliamp) slow-blow fuse. The H.T. FUSE usually blows if your power tubes fail. This fuse can help protect the amplifier circuitry from being damaged.

AC Inlet (25)

The AC INPUT socket (TYPE IEC Grounded) is a required connection for operating your DRAGON 100 at 120V. This connection requires a standard IEC connector (included with amplifier) in order to plug into USA standard 120V household electrical power.

SAFETY NOTES:

- Always plug your amp into a properly grounded 3 prong AC outlet.
- Never plug your amp into an ungrounded outlet.
- Never remove or break off the 3rd prong safety ground pin from the power cord.
- Never use a damaged or ungrounded power cord.
- Always use the proper value and type fuse according to the rear-panel markings.
- Never attempt to replace the fuse while the amplifier is still plugged into the power source. The fuse should only be replaced when the power cord has been disconnected from its power source.

Back Panel (Section Two - Power Amp Bias):



CAUTION:

Read all of the information and procedures in this section before attempting to modify the factory bias settings of your amplifier.

V5 through V8+ Voltage Reading Red Terminals (26)

These terminals are internally connected to a one-ohm resistor on the output tube cathode of V5 through V8 (power tubes mounted left to right when viewing from the back of the amplifier). When monitoring the current here, you will be reading millivolts on your portable multimeter. You will need to connect your positive (+) test lead (typically red) to this terminal.

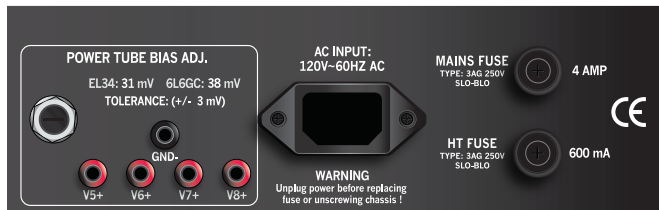
GND- Terminal (27)

This terminal is internally connected to chassis ground. When monitoring the current of either output tube, you will need to connect the negative (typically black) test lead here.

Power Tube Bias Adjustment Control (28)

Controls the amount of negative DC bias voltage being fed into both output tube input grids. Insert a mini flathead screw driver into control port and rotate counter-clockwise to lower the idle current setting (operate cooler). Rotate clockwise to increase the idle current setting (operate hotter).

Back Panel (Power Tube Biasing):



CAUTION:

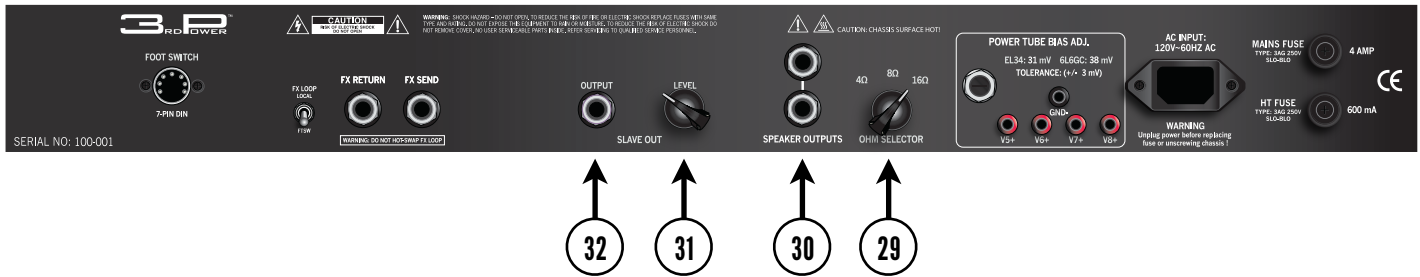
NEVER touch hot tubes!!! Temperatures can exceed 500°F and cause severe burns!

Biasing your tube amplifier need not be a scary endeavor as the process is pretty straightforward. Heed all warnings, cautions and instructions and you should do fine. If you're unsure or unclear on the process, do not attempt to manipulate the bias from factory settings. If, during the biasing process, you hear a loud "pop" or see a tube "flash" immediately power down the unit and seek a qualified tube amplifier repair/service technician.

OPERATION NOTES:

- Monitor your output tube bias at idle current. To achieve idle current, your amp must be turned on and operating at idle (no audio signal being fed into the input or the FX loop return). Make sure that your speaker is plugged in.
- Attach the negative test lead from your multimeter to the GND- terminal (black) on the back panel of the amp.
- One at a time, attach the red (positive) test lead from your multimeter to either V8+ or V9+ terminals (red) and note the reading on your meter. Then read the voltage on the other tube. The resulting numbers should be within 6mv of each other. Note that your maximum bias setting must be based off of the higher number.
- To optimize your output tube bias, adjust the control screw by inserting a mini flathead screw driver into control port (see diagram and description for item number (28)). Turn clockwise to bias your tubes 'hotter' (increasing the idle current) and counter-clockwise to bias your tubes 'cooler' (decreasing the idle current).
- Cooler settings (lower idle current) can increase the life of your tubes. Too cool and the sound will tend to be brash and one dimensional.
- Optimal tone and feel can be found when the bias range is around 60% - 70% of your tube's maximum operating range. This will vary between the types of tubes you choose to operate your amp with.
- Should you wish to swap to the other set of tubes, you must do so in like-kind pairs as mixed tubes will not operate correctly and may be hazardous to your amplifier. You can safely substitute either rectifier tube. Again, use caution to mount the correct tubes in the appropriate tube sockets.

Back Panel (Section Three - Speaker Output, Slave Output):



Impedance Selector (29)

The 16-OHM SPEAKER position is provided for connecting your amplifier to standard 16 OHM speaker cabinet. The 8-OHM SPEAKER position is provided for connecting your amplifier to a single 8-OHM, or two 16-OHM speaker cabinets. The 4-OHM SPEAKER position is provided for connecting your amplifier to a single 4-OHM, or two 8-OHM speaker cabinets.

Speaker Jacks (30)

The SPEAKER OUTPUTS are wired in parallel.

SAFETY NOTES:

- Never operate your amplifier without a connected speaker cabinet. This will damage your tubes or transformers - or both.
- Always operate your amplifier with the proper impedance output that matches your speaker cabinet(s).
- In all cases, always use a good quality heavy gauge speaker cable (not a shielded instrument cable) to connect your Special Design DRAGON to the speaker cabinet(s).

Slave Out Level Control (31)

Controls the signal level of the slave output. Start at zero and adjust clock-wise to optimize your signal level feeding the next piece of audio equipment in your signal chain. The audio signal for the Line/Slave Output originates from the output transformer of your amplifier. When you adjust your amp's volume, you may need to readjust your Line/Slave Out level too.

Slave Output Jack (32)

Use the Slave Out jack to feed the amplifier audio signal to your outboard FX devices or downstream power amplifiers.

Back Panel (Section Four - FX Loop):



Tube Effects Loop

Experience STUDIO QUALITY TONE from your pedals or multi-effects units by running them through the loop. The loop on your Special Design DRAGON can also be placed under foot switch control.

FX Send Jack (33)

This 1/4" mono Tip/Sleeve jack feeds signal to your effects device.

FX Return Jack (34)

This 1/4" mono Tip/Sleeve jack accepts the return signal from your effects device.

FX Loop Operation Switch (35)

Choose LOCAL to retain the loop in the signal chain at all times. Choose FTSW to place the loop under command of your foot switch controller (either the included foot switch or a 3rd party switching system).

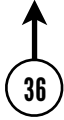
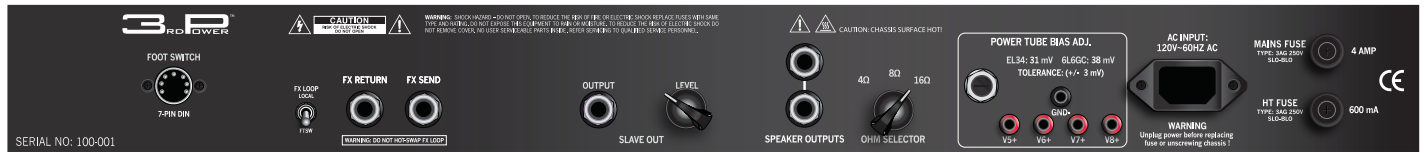
OPERATION NOTES:

- Signal levels at the FX SEND jack are a nominal -10dBV (just under 1V p-p) matching the levels most vintage and modern effect pedals want to see.
- The FX RETURN path brings your signal back into the amplifier with a tremendous amount of head-room (accepting signals as low as -10dBV and as high as +4dBu before the onset of compression).
- It can also be a gig-saver too. If your pedal board ever goes down during a performance, you can plug your guitar straight into the FX RETURN jack and get through a song with quality tone.

CAUTION:

Avoid "hot swap" any cables connected to the loop while the amplifier is operational. Before breaking any connections, make sure that your amp is on Standby. Failure to do so may result in a loud pop, hum or buzz that could potentially damage your speaker.

Back Panel (Section Five - Foot Switching):



Foot Switch Connector (36)

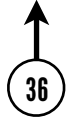
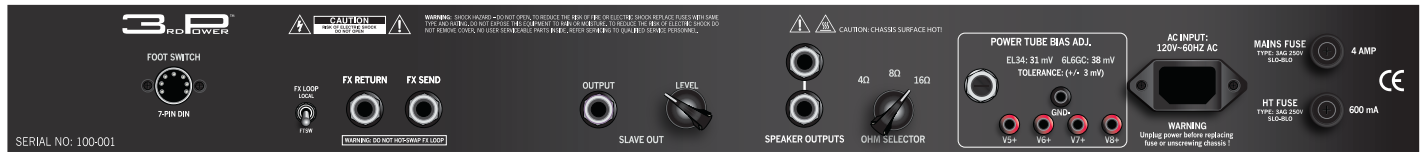
To remotely control channel selection, preamp gain boost, FX loop on/off and Hybrid-Master bypass (lead boost), connect the foot pedal with the 7-pin DIN cable (both the pedal and cable are included with purchase).



4 Button Dragon Foot Switch

The Dragon 100 comes with a 4 Button Foot Switch. It gives you total command over operational features such as System Mute, Preamp Gain, FX Loop Bypass and Solo Boost with a single button assigned to each feature. Should you feel the urge to stack features on one button, the on-board toggle switches let you assign those parameters over to the FS Bus button (far right button labeled Vol. Boost).

Back Panel (Section Five - Foot Switching Cont.):



OPERATION NOTES:

The remote foot-switch allows you to put the DRAGON 100's advanced features under foot control. The unit includes a high quality 20' 7-Pin DIN cable with a straight plug for the back of the amp and a right angle plug for use at the pedal. The amplifier provides phantom power through the cable to drive the LEDs.

- **+GAIN:** Select FTSW on the +GAIN mini toggle switch located in between the Gain and Volume control on the front panel of the amplifier. You may now remotely control your channel extra gain function.
- **Hybrid-MASTER Bypass (Boost):** The Hybrid-Master bypass is permanently connected to the FS Bus circuit. Should you wish to disable the boost, simply turn the Bypass control to zero (fully counter-clockwise). When setting up this feature, start with the Bypass control on zero. Dial in the perfect rhythm volume via the Hybrid-Master control (start with a setting of 11 o'clock), and then engage the HM Bypass feature on the foot switch. Slowly turn the HM Bypass control clockwise until the perfect lead volume is achieved. Now you can toggle back and forth for a rhythm preset and a lead boosted preset.
- **FX Loop On/Off:** On the back panel of the amp, place the mini toggle switch in the FTSW position. This assigns the loop on/off to the FS Bus. With both +Gain and FX Loop assigned, an excellent lead solo preset is created where additional gain and sustain come from the preamp, any effect (such as digital delay) engages, and the volume increases to your specified preset level - all with the stomp of a single button on your foot switch.

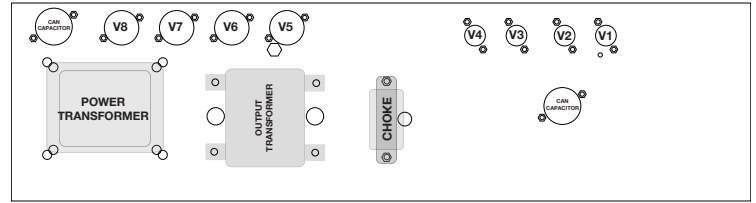
WARNING:

The DRAGON 100 foot switching system cannot share an electrical ground with any other device. Care should be used when placing your 4 Button foot switch with other devices on a pedal board or metal tray so as to keep the unit isolated from metal to metal connection.

Tube Layout/Socket Location:

Tube Layout and Requirements:

- V1: JJ 12AX7 (Preamp)
- V2: Sovtek 12AX7LPS (Tone Stack)
- V3: Sovtek 12AX7LPS (FX Loop)
- V4: Sovtek 12AX7LPS (Phase Inverter)
- V5 through V8: Svetlana EL34 Output tubes



Swapping Tubes and Bias Adjustment

Your Special Design DRAGON comes from the factory biased for safe operation of the factory provided tubes. Limited bias adjustments are available to the user via the back panel bias terminals. Follow the recommended procedures and bias settings at all times and note the highlighted warning and caution alerts as your safety as well as the safe operation of your amplifier depend on it.

The operating range of the user bias circuit has been limited as a precaution while retaining enough adjustment potential in order to provide the necessary flexibility to operate a wide range of compatible tubes available on the market.

Under no circumstances should you open your amplifier and attempt to modify the circuitry in order to increase operating range. Attempting to do so will potentially expose you to very dangerous high-voltage electricity that can kill you. **DO NOT ATTEMPT TO DO THIS YOURSELF.**

Tube Replacement

THE SAFEST WAY TO CHANGE YOUR TUBES WOULD BE TO TAKE YOUR AMPLIFIER TO A QUALIFIED TECHNICIAN FOR SERVICING. To safely change your own tubes at home: Make certain the amplifier is turned off and has been allowed ample time to cool down.

WARNING:

Never touch the tubes while the amplifier is turned on or has recently been turned ON. You can severely burn your fingers and hands. Tubes are made of glass and can break if mishandled.

WARNING:

Do not touch the tube pins as you remove the tube. Even after turning your amp off and unplugging it from the power outlet there could be enough voltage stored in the capacitors to give you a lethal electrical shock.

LIMITED LIFETIME WARRANTY

Thank you for choosing 3RD POWER Amplification. 3RD POWER takes great pride in producing high-quality tube amplifiers and speaker cabinets. Each product is thoroughly tested prior to shipment.

Your amplifier is warranted to the original purchaser to be free from defects in material and workmanship for as long as you own it. An original sales receipt will establish coverage under this warranty. This warranty does not cover service or parts to repair damage caused by accident, neglect, abuse, normal wear, disaster, misuse, over-powering, negligence, inadequate packing or shipping procedures and service, repair or modifications to the product which have not been authorized by 3RD POWER. If this product is defective in materials or workmanship as warranted above, your sole remedy shall be repair or replacement as provided below.

Tubes: 3RD POWER warrants the original purchaser that the tubes used in the unit will be free from defects in material and workmanship for a period of 30 days from the original purchase date. A dated sales receipt will establish coverage under this warranty. This warranty is in lieu of all other expressed warranties. If tubes fail within the initial 30 day period your sole remedy shall be the replacement of tubes as provided below.

Return Procedures: In the unlikely event that a defect should occur, follow the procedure outlined below. Defective products must be shipped, together with proof of purchase, freight pre-paid and insured directly to 3RD POWER. A Return Authorization Number must be obtained prior to shipping the product. Contact 3RD POWER to obtain this RA number. Products must be shipped in their original packaging or equivalent. IN any case, the risk of loss or damage in transit is borne by the purchaser. The RA number must appear in large print directly below the shipping address. Always include a brief description of the defect, along with your correct return address and telephone number.

When calling to inquire about a returned product, always refer to the RA number. If 3RD POWER determines that the unit was defective in materials or workmanship at any time during the warranty period, 3RD POWER has the option of repairing or replacing the product at no additional charge, except as set forth below. All replaced parts become property of 3RD POWER. Products replaced or repaired under this warranty will be returned via ground shipping within the United States, freight prepaid. 3RD POWER is not responsible for costs associated with expedited shipping, either to 3RD POWER or returned of the product to the customer.

Incidental or Consequential Damage: In no event will 3RD POWER be liable for any incidental or consequential damages arising out of the use or inability to use any 3RD POWER product, even if a 3RD POWER dealer has been advised of the possibility of such damages or any other claim by any other party. Some states do not allow the exclusion or limitation of consequential damages, so the above limitation and exclusion may not apply to you. This warranty gives you specific legal rights and you may also have other rights which may vary from state to state.

For your protection: Please complete and mail the Purchase Information Card within (10) ten days of the date of purchase so that we may contact you directly in the event a safety notification issued in the accordance with the 1972 Consumer Product Safety Act.

Customer Support: Our dedicated staff is ready to assist you should you have any questions with regard to your product. Please call: (615) 945-3393 (9:00 AM to 5:00 PM Monday through Friday, Central Standard Time).



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