



**JET CITY AMPLIFICATION  
JCA22H  
OWNER'S MANUAL**



- **DANGER: RISK OF ELECTRIC SHOCK, DO NOT OPEN**
- **ATTENTION: RISQUE DE CHOC ELECTRIQUE!**
- **NE PAS OUVIRIR!**
- **ACHTUNG: STROMSCHLAG GEFÄHRDUNG, NICHT AUFMACHEN!**

**CAUTION:** To reduce the risk of electric shock, do not remove cover or open rear panel. No user serviceable parts inside: refer handling to qualified personnel.

**WARNING:** To reduce the risk of fire or electric shock, do not expose this amplifier to rain or moisture.



This symbol, wherever it appears, alerts you to the presence of uninsulated dangerous voltage inside the enclosure - voltage that may be sufficient to constitute a risk of shock.



This symbol, wherever it appears, alerts you to the important operating and maintenance instructions in the following document.

### **IMPORTANT SAFETY INSTRUCTIONS:**

1. Read and keep these instructions.
2. Heed all warnings and follow all instructions.
3. Do not operate near water.
4. Clean only with a dry cloth.
5. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions
6. Do not install near heat sources such as radiators, heat registers, stoves, or other apparatus that produce heat.
7. Protect the power cable from being walked on or pinched at the plugs, convenience receptacles, and the point where they exit the unit.
8. Do not defeat the safety purposes 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 third prong is provided for your safety. If the provided plug does not fit

into your outlet, consult an electrician for replacement of the outdated/obsolete outlet.

9. Use only attachments/ accessories specified by the manufacturer.
10. Unplug the amplifier during lightning storms or when unused for long periods of time.
11. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power cable or plug damage, 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.

## **CONGRATULATIONS!**

You have just purchased the legendary and mysterious '333' tone that many refer to as the 'voice of god'.

Your JCA22H was designed by the world-renowned tube amp designer Mike Soldano, in SEATTLE, WASHINGTON, and meticulously assembled to assure that it meets the highest quality standards and value.

Whatever your musical taste may be, you will enjoy the versatility, portability, and long-term durability of this kick ass, tube driven, rock tone factory.

*Wait, huh, what?* You didn't buy a Jet City extension cabinet yet? Huh? No stack? What will your new '333' head sit on?

Please go back and buy one; you deserve the whole enchilada, my friend. You've come this far, so we know you can do it. Our cabinets are loaded up with Eminence® Legend speakers, which as we all know, are the preferred speakers of our beloved designer.

Thank you for purchasing a JET CITY AMPLIFICATION product.

## **BEFORE YOU ROCK**

Before operating your JCA22H please make sure of the following:

- First, plug the JCA22H head into a speaker cabinet.
- Plug the power cable into the back panel and plug the cable into a power receptacle. Turn on the power switch on the amplifier and wait about 30 seconds for the tubes to warm up.
- Turn on the standby switch.
- Turn up the volume knob on your guitar and impress your friends with your amazing new tone.



**WARNING:** If a speaker or suitable “dummy load” is not plugged into the speaker jack, output transformer failure will occur. OUCH! This is not good and NOT covered under warranty.

## **WELCOME TO JET CITY**

The Jet City Amplification JCA22H is a 20 watt, 2-channel guitar amp head with independent preamp and master volume controls for each channel.

The tone controls shape the sound of both channels and are interactive which means that each control will affect the others. This gives you the flexibility to dial in all the unique and subtle tones you've been searching for.

The Jet City Amplification JCA22H also has a global presence control that lets you add high-end sparkle to both channels. Other features include a tube-buffered serial effects loop, multiple speaker impedance outputs, and a foot-switch input for switching channels on the fly (foot-switch included).

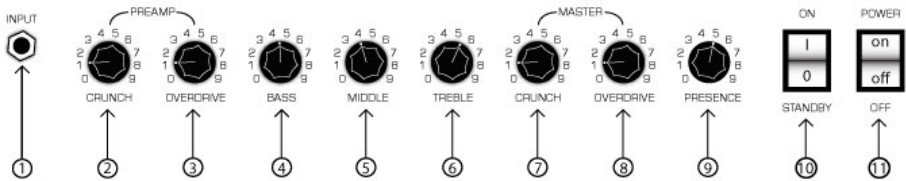
## **GENERAL OPERATION**

The JCA22H's shared EQ controls allow you to dial up the right tone for you and your guitar no matter what your gain and output levels. The two independent preamp and master controls give you great stage versatility by allowing you control over each channel's gain level AND individual output levels.

## FEATURES

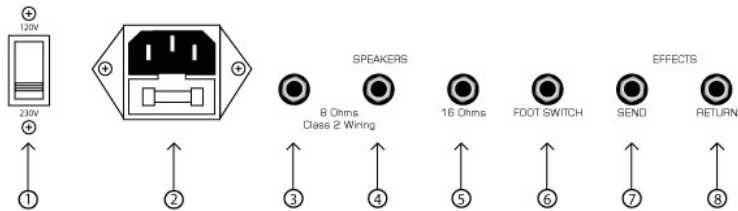
- 2-Channels with independent preamp and master volume controls CRUNCH and OVERDRIVE
- 20 watts of tube power
- Tube-buffered serial effects loop
- Parallel 8 and single 16-ohm speaker outputs
- Foot-switch for channel switching
- CRUNCH Channel Preamp Gain: Adjust the amount of gain (distortion) that the amplifier produces in the CRUNCH Channel.
- OVERDRIVE Preamp Gain: Adjust the amount of gain (distortion) in the OVERDRIVE Channel. The higher the preamp setting the more overdriven the sound will be.
- BASS, MIDDLE and TREBLE: allow you to control the tone.
- CRUNCH Master Volume: will let you adjust how loud the CRUNCH Channel's output will be.
- OVERDRIVE Master Volume: will let you adjust how loud the OVERDRIVE Channel's output will be, independent of the CRUNCH Master Volume.
- PRESENCE: adds an overall brightness, which can be handy when trying to cut through in a 'dead' room.

# FRONT PANEL CONTROLS



1. Input Jack: Guitar cable goes here (the other end should probably be in the guitar)
2. CRUNCH Preamp Gain: Adjust the amount of gain (distortion) that the amplifier produces in the CRUNCH Channel. Keep it low for crystal clear cleans, or dial it up for some tube grit.
3. OVERDRIVE Preamp Gain: Let's be honest here--THIS is why you bought the amp in the first place! Adjust the amount of legendary Soldano gain (distortion) in the OVERDRIVE Channel. The higher the preamp setting the more overdriven the sound will be.
4. BASS: Part of the 3-band EQ for adjusting low frequencies
5. MIDDLE: Part of the 3-band EQ for adjusting middle frequencies
6. TREBLE: Part of the 3-band EQ for adjusting high frequencies
7. CRUNCH Master Volume: will let you adjust how loud the CRUNCH Channel's output will be.
8. OVERDRIVE Master Volume: will let you adjust how loud the OVERDRIVE Channel's output will be, independent of the CRUNCH Master Volume.
9. PRESENCE: adds an overall brightness, which can be handy when trying to cut through in a 'dead' room.
10. STANDBY switch: Used in conjunction with the main POWER switch (item 11). Use the STANDBY to "warm up" your amp's tubes before turning on the POWER switch. Always put the amp in STANDBY before turning the main power switch on or off!
11. POWER switch: This is the main power switch for the entire amp. Be sure that your amp is switched off AND unplugged before moving it!

# REAR PANEL FEATURES



1. 120V/230V operating voltage selection switch
2. AC power input and fuse tray
- 3&4. ¼" 8-ohm speaker outputs - for connecting a single 8-ohm speaker cabinet or (2) 16-ohm speaker cabinets
5. ¼" 16-ohm speaker output - for connecting a single 16-ohm speaker cabinet
6. ¼" foot-switch input - for connecting the included FS-1 foot-switch
7. ¼" Effects send output - for connecting to the input of an external effects processor
8. ¼" Effects return input - for connecting to the output of an external effects processor



## TUBE AMP BASICS

Solid state amplifiers are really not much different from your standard household electronics; you just plug them in and go. Tube amps, however, are significantly different. Let's try to answer some common questions about proper tube amp use.

1. **Can you really die from messing around with the guts of tube amp?**

Yes, you can. Tube amps carry significant voltage, even when turned off. DO NOT mess with the insides of a tube amp unless you are a trained tech.

2. **OK, question 1 scared me. Can I safely change my own tubes?**

Yes, you can. The dangerous voltages are only a problem if you start messing with wires and transformers. It is perfectly safe to change your own tubes.

3. **How often should I change tubes?**

There is no set timeline for changing tubes. If you play every day, a good rule of thumb is to replace your power tubes once a year and your preamp tubes every other year. However, it is entirely possible for tubes, particularly preamp tubes, to last decades.

Here are some signs that you need to change your tubes:

- Excessive noise like squealing, humming, or hiss
- Little or no high end/treble
- Muddy low end or loss of clarity; amp sounds "muddy"
- Mysterious fluctuations in the amp's overall volume
- Amp doesn't work!

4. **What the heck is "biasing" and do I need to do it?**

"Biasing" is a technical term that has to do with things like "voltage applied to the grid" and "moving the operating point into a more linear range." If you didn't understand that, then don't attempt this yourself!

Fixed-bias amps, like your new JCA22H, allow you to “plug and play” matched power tubes of the same type/model without needing a bias adjustment. Switching tube types, will probably require modification to the amp’s circuitry and this type of “tweaking” will void your warranty.

## **SPEAKERS AND IMPEDANCE**

Every guitar amplifier actually consists of two primary parts: amp and speaker. In combos, the speaker has already been matched to the amp. Since the JCA22H is only the amp, you will need to connect it to suitable speakers. There are some basic ground rules for this.

- 1. What are the best speaker cabinets for my JCA22H?**  
Why, Jet City cabinets, of course! The single speaker JCA12S, dual speaker JCA24S, and quad speaker JCA48S were all designed to get maximum tone out of our amps.
- 2. What is “impedance” and why is it important?**  
Every speaker cabinet has an impedance rating listed in ohms. Think of the impedance as the speaker cabinet’s resistance to an amp’s power. The higher the cabinet’s impedance, the more the amp has to work to push power through it. The goal in any amp/cabinet configuration is the match the amp’s speaker output impedance with a speaker’s impedance (sometimes called “load”).
- 3. OK, how does that relate to my JCA22H?**  
Your amp has outputs on the back marked “16 ohm” and “8 ohm.” You need to pick the correct output for your speaker configuration. To be specific, if your speaker cabinet is listed as “16 ohms” then use the “16 ohm” output on your JCA22H.

Things get a bit more complicated when you want to use more than one speaker cabinet. Speaker cabinets often have a set of  $\frac{1}{4}$ ” jacks labeled “series” or “parallel.” This allows you to run a speaker from your head to one cabinet and then from that cabinet to another one. When you use the “series” output, the load increases so you add each cabinet’s impedance to determine the overall load (two 8-ohm cabs in series = 16-ohm load).

When you use the “parallel” output, the load decreases. If all cabinets have the same impedance, then divide that impedance by the number of cabinets (two 8-ohm cabs in parallel = 4-ohm load). If the cabinets are of different impedance, then multiply the impedances together and divide this by the sum of the cabinet impedances (one 8-ohm cab and one 16-ohm cab in parallel = 5.33-ohm load). In case of an awkward number, default to the impedance closest to, but lower than, the number (for a 5.33-ohm load, use the 4-ohm output).

4. **Um...could you make that a little easier?**

Sure! Just read the chart below to find what your speaker configuration.

Connect your JCA22H to:

**Single JCA24S** amp’s 8-ohm out to cab’s 8-ohm (mono mode) input

**Single JCA48S** amp’s 16-ohm out to cab’s 16-ohm (mono mode) input

**Dual JCA48S** amp’s 8-ohm out to cab 1’s 16-ohm (mono) input

amp’s 2nd 8-oh out to 2nd cab’s 16-ohm (mono) input

## **QUICK SETTINGS FOR SELECTED TONES**

- **CLEAN SETTINGS:** Set the CRUNCH Master to about 6 to maximize the amplifiers extended headroom. Now simply use the CRUNCH Preamp control to achieve the desired tone and volume.
- **HIGH GAIN SETTINGS:** Switch to the OVERDRIVE channel. Initially, the OVERDRIVE Master should be set to a low level (somewhere between 1-3) and the OVERDRIVE Preamp turned up to give the desired gain and distortion. Then return to the MASTER control to set the desired loudness.
- **REMEMBER TO EXPERIMENT:** This is how you will get the most out of your new amplifier.

## **WARRANTY**

### **1 Register Your Product Online**

Please visit [www.jetcityamplification.com](http://www.jetcityamplification.com) within 30 days from the date of purchase as listed on the buyer's receipt to register your product. Doing so will enable you to receive the most current information about our company and products, directly from Jet City.

### **2 Warranty**

- Jet City Amplification warrants the mechanical and electronic components of this product to be free of defects in material and workmanship for a period of one (1) year from the original date of purchase, in accordance with the warranty regulations described below. If this product shows any defects within the specified warranty period that are not excluded under this warranty as described in section 4, Jet City Amplification shall, at its discretion, either replace or repair the product using suitable new or reconditioned parts. In the case in which other parts are used which constitutes an improvement, Jet City Amplification may, at its discretion, charge the customer for these parts.
- If the warranty claim proves to be justified, the product will be returned to the customer freight prepaid.
- Warranty claims other than those indicated above are expressly excluded.

### **3 Return Authorization Number**

- To obtain warranty service, the buyer (or his authorized dealer) must call Jet City Amplification or Authorized Jet City Amplification Distributor (current list and contact information can be found at [www.jetcityamplification.com](http://www.jetcityamplification.com)) during normal business hours before returning the product.
- All inquiries must be accompanied by a description of the problem. Jet City Amplification will then issue a Return Authorization Number (RA Number).
- Once the RA Number has been obtained, the product must be returned in its original shipping carton. The return Authorization Number must be printed clearly on the shipping label on the outside of the box, and included with

the returned product. Both the product in its original package and the Return Authorization Number must be shipped to the address indicated by Jet City Amplification at the time the call is made.

- Shipments without prepaid freight will not be accepted.

#### **4 Warranty Regulation / Exclusions**

- Warranty services will not be furnished if the product is not returned with the original sales receipt.
- Tubes and loudspeaker drivers are considered maintenance items and are excluded from all warranty claims.
- If the product needs to be modified or adapted in order to comply with technical or safety standards on a national or local level, in any country which is not the country for which the product was not originally developed and manufactured, this modification/adaptation shall not be considered a defect in materials or workmanship. This warranty does not cover any such modification/adaptation, irrespective of whether it was executed properly or not. Under the terms of this warranty Jet City Amplification shall not be held responsible for any cost resulting from such a modification/adaptation.
- Free inspections and maintenance/ repair work are expressly excluded from this warranty, in particular, if caused by improper handling of the product by the user. This applies to defects caused by normal wear and tear of items such as knobs, tolex and similar parts.
- Damages caused by the following conditions are not covered by warranty:
- Improper handling, neglect or failure to operate the unit in compliance with the instructions given in the Jet City Amplification user manual.
- Connection or operation of the unit in any way that does not comply with the technical or safety regulations applicable in the country where the product is used.
- Damages/defects caused by force majeure or any other condition that is beyond the control of Jet City Amplification
- Any repair or opening of the unit by unauthorized personnel (user included) will void the warranty.
- In an inspection of the product by Jet City Amplification shows that the defect in question is not covered by warranty, the inspection costs are payable by the customer.

- Products, which do not meet the terms of the warranty, shall be repaired exclusively at the buyer's expense. Jet City Amplification will inform the buyer of any such circumstance. If the buyer fails to submit a written repair order within six (6) weeks, Jet City Amplification shall return the unit to the customer C.O.D with an invoice that will include charges for the inspection and a separate additional charge for freight and packing costs. Such costs will also be billed separately when a customer has sent in a unit for repair with a written repair order form.

## **5 Warranty Transferability**

This warranty is extended exclusively to the original buyer (customer of the retailer) and is not transferable to anyone who may subsequently purchase the product. No other person (retailer, consumer, etc) shall be entitled to give any warranty promise on the behalf of Jet City Amplification.

## **6 Claims for Damages**

Failure of Jet City Amplification to provide proper warranty service shall not entitle the buyer to claim (consequential) damages. In no event shall the liability of Jet City Amplification exceed the invoiced value of the product.

## **7 Other Warranty Rights And National Law**

The warranty does not exclude or limit the buyer's statutory rights provided by national law, in particular, any such rights against the seller that arise from a legally effective purchase contract.

The warranty regulations mentioned herein are applicable unless they constitute an infringement of national warranty law.

## **Protect Your Hearing**

The US Government's Occupational Safety and Health Administration (OSHA) has specified the following permissible noise level exposures:

Duration Per Day In					
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Hours			Sound Level dBA	
8				90
6				92
4				95
3				97
2				100
1.5				102
1.0				105
0.5				110
0.25				115

According to OSHA, any exposure in excess of the above permissible limits could result in hearing loss. Ear plug protectors in the ear canals or over the ears must be worn when operating this amplification system in order to prevent a permanent hearing loss if exposure is in excess of the limits set forth above. To ensure against potentially dangerous exposure to high sound pressure levels, it is recommended that all persons exposed to equipment capable of producing high pressure sound levels such as this amplification system be protected by hearing protection while this unit is in operation.



## Specifications

### Pre-amp

- 5 x 12AX7

### Power Amp

- 20 watts Output,
- Class A/B, Fixed Bias (Internally Adjustable)
- 2 x EL84

### Controls

- Pre-amp (gain) - Crunch
- Pre-amp (gain) - Overdrive
- EQ - Bass, Middle, Treble
- Master Volume - Crunch
- Master Volume - Overdrive
- Presence
- Stand-by switch - Toggle
- Power Switch - Toggle

### Foot-switch

- FS-1 included for channel switching

### Power Transformer

- Input Voltage - 100v/120v/230v/240v

### Dimensions

- Unit - 19.5"W x 9"H x 9"D

### Construction Material

- Multi-ply void-free plywood

### Chassis Material -

- 16-gauge Rolled Steel

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