



**IMPORTANT!**  
FOR YOUR PROTECTION, PLEASE READ THE FOLLOWING:  
**WATER AND MOISTURE:** Appliance should not be used near water (near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc). Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.  
**POWER SOURCES:** The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the unit.  
**GROUNDING OR POLARIZATION:** Precautions should be taken so that the grounding or polarization means of an appliance is not defeated.  
**POWER CORD PROTECTION:** Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.  
**SERVICING:** The user should not attempt to service the unit beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.  
**FUSING:** If your unit is equipped with a fuse receptacle, replace only with the same type fuse. Refer to replacement text on the unit for correct fuse type.

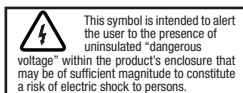
**LIMITED LIFETIME WARRANTY**

Bad Cat Amplifiers warrants our amps and cabs against workmanship or defect for life. The warranty does not cover tubes or cosmetic damage, or wear and tear or abuse. This warranty is transferable. Lifetime transferable warranty is only for North American sales. Please see your local dealer and distributor for warranty information. Modifying or altering the amp in any way voids the warranty. Shipping to and from the warranty repair center is the responsibility of the customer.

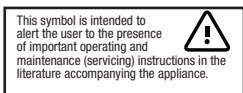
We have a new Lifetime Warranty on all new amps leaving the factory. We are extending the Lifetime Warranty to all of our pre acquisition amps for \$249. Simply send the unit back to us and we will have one of our technicians go through it from the ground up. And to top it all off, we will pay for the shipping back to you. For more information please contact us at sales@badcatamps.com or directly at 800-730-0966. When RETURNING merchandise to the factory, you must call for a return authorization number.

**HELP SECTION**

- 1) **AMP WILL NOT TURN ON**  
Check the power to the amp. Check for tripped circuit breakers, unplugged extension cords or power-strip switches that may be turned off. Check the fuse. If a dark brownish color or no wire can be seen within the glass tube, then replace. The amp may be perfectly fine but occasionally a fuse may blow because of high AC voltage surges. After the fuse has been replaced with the proper Slow Blow value and if the fuse fails again, the amp will require servicing.
- 2) **NO OUTPUT with POWER light ON**  
Tubes damaged in shipping will be the primary reason for your amp to not function properly. Please give us a call to help guide you through this simple repair.
- 3) **KEEP YOUR AMP LOOKING NEW**  
Use a damp cloth to wipe the controls on the front & rear chassis panels. Wipe the black vinyl covering with a damp cloth.



This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.



**REFER SERVICING TO QUALIFIED SERVICE PERSONNEL!  
THIS UNIT CONTAINS HIGH VOLTAGE INSIDE!**

**Bad Cat**  
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**Bad Cat**  
TUBE AMPLIFIERS USA

**Operating Manual**

**CLASSIC CAT 20R**

Congratulations and thank you for purchasing a professional tube amplifier from Bad Cat. As with all Bad Cat products, your amplifier is designed from the ground up to provide the very best tones possible in a rugged, reliable package. Each one of our pro quality models is constructed with Bad Cat's commitment to making the highest quality, hand-built, American-made amplifiers.

**CAUTION**

With a little care and caution, your Bad Cat amplifier should provide you with years of trouble-free operation and enjoyment. Please avoid damp areas and moisture during operation of the amp and in storage. This includes placement of beverages near or on the amp that could spill into the amp's chassis. Liquids can easily damage tubes, switches and other parts. Immediately disconnect the amp from power source should a spill occur and dry the amp thoroughly prior to switching on the amp again. Drying may require the complete removal of the chassis from the cabinet and the removal of the tubes for cleaning. Avoid tipping the amp, using it in unbalanced positions, or lifting it unassisted to awkward heights. A little common sense will go a long way in making sure the amp does what it's supposed to do: provide you with dependable operation and great tone on a consistent basis.

**GROUNDING**

Please check thoroughly that the ground tip on the power cord plug is connected to true ground prior to operation of your Bad Cat amp. Using unfamiliar junction boxes can cause potentially dangerous floating grounds. Please do not cut or defeat the ground tip.



**SINGLE CHANNEL, 20 WATT, 6V6**

This is the Bad Cat take on the famous 5E3 tweed style circuit that came out of California in the 1950's. Simple, yet very versatile. Dime the volume and roll back your guitar volume for sweet cleans that spank and bounce. Even with double coils the Classic Cat provides plenty of twang. Push up your volume and discover why so many great albums were recorded with tweed amps. Crunch tones with tons of sweet sustain.

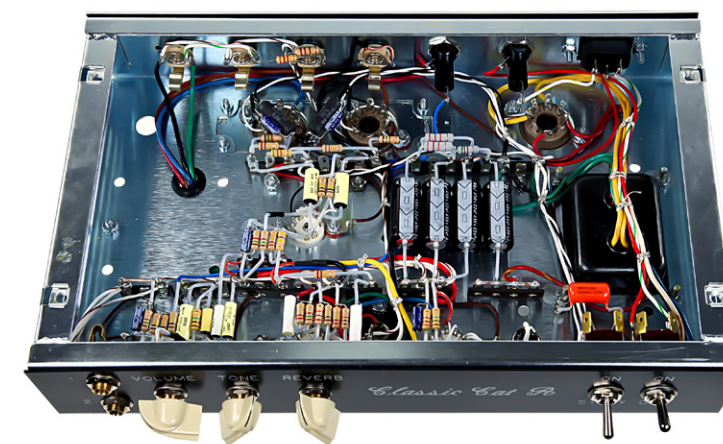
At a conservative 20 watts it works well in a live stage setting. just enough power to get over a drummer. It is amazing what can be had from the pairing of a well designed circuit and a simple volume knob. Whether it be Blues, country or classic rock this is amp is well suited to not only deliver but to excel. **Available with or without reverb.**

**ELECTRONICS**

Power: 20-Watt Class A  
Channels: 1  
Controls: Volume, Tone, Reverb (Optional)

**HARDWARE**

Available Configuration: Head or 1x12 Combo  
Cabinet Material: Head - Italian Poplar, Combos - 13 Ply Baltic Birch  
Speaker Description: 12" Proprietary Bad Cat Celestion Speaker  
Impedance: 8 ohms  
Power Tubes: 2 - 6V6's  
Pre-Amp Tubes: 1 - 12AY7, 1 - 12AX7  
w/Reverb: 3 - 12AX7's  
Rectifier Tube: 1 - 6Z34



FOR

SERIAL NO. \_\_\_\_\_ INVOICE DATE \_\_\_\_\_

Last updated: July 30, 2013



## Front & Rear Panel Controls

### CLASSIC CAT 20R

#### OPERATION

If this is your first all-tube amplifier, please become familiar with a few issues that differentiate your amp from solid-state or hybrid amp products. Only a few precautions are required but they will insure that you will get the most of your new all-tube amplifier. Vacuum tubes are “old world” thermal devices that require more attention than transistors, but that’s the reason they sound so much sweeter and more musical than integrated circuits and other solid-state components. A little heads-up on the following points will ensure maximum performance from your Bad Cat amp.

1. Place the amp at least 6 inches away from any wall or obstacle to provide adequate ventilation around the amp. Good airflow around the amp will go a long way in preventing the amp from overheating, especially the tubes. Do not place covers, clothing, or any other materials on or in the amp that can obstruct the free venting of the chassis to the outside air. Trapped heat in the chassis may cause a condition known as thermal runaway. To put it simply, to warm or cook the tubes is good, to heat-cycle or fry the tubes is extremely dangerous and will also shorten the life of the tubes considerably.

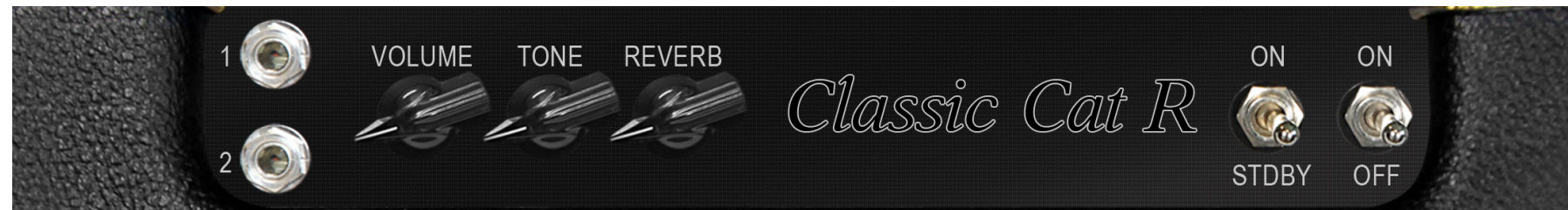
2. Vacuum tubes will last longer and sound more musical when they are allowed to warm up prior to introducing an input signal from your guitar. A full flow of electrons from the cathode can only be achieved when the tube is heated. This requires some time. Please allow at least one minute of warm-up time before playing through the amp.

3. Avoid long idle periods with no input signal. The vacuum tubes prefer to see a signal present. When taking a break between practice sessions or in between sets of a performance, use the standby switch or turn off the amp.

4. Avoid unverified impedance loads. In other words, do not clip on or otherwise attach additional speakers unless you know the system impedance. Tube amplifiers are very sensitive to speaker impedance matching. This is due to the relationship between the internal resistances of the output transformer, the output power tubes and the load that is required to drive them. Unbalanced loads can cause destructive arcing; the transformer and the tubes may actually burn themselves out. This is not covered by our warranty.

With proper impedance matching, multiple speaker configurations will work fine. If you are not familiar with “Ohm’s Law”, please consult with a dealer or a qualified amplifier technician. Do not attempt to operate the amp if you cannot verify system impedance after connecting the speakers. Never operate your Bad Cat amp at 2 ohms or less.

5. Avoid unapproved “Power Soak” devices or attenuators that are not recommended by Bad Cat as they can shorten the life of your power tubes considerably. Attenuators burn out tubes prematurely because they require the power tubes to overwork continuously. Also, please note that power tubes are best replaced as a matched full set whenever any of them fail.



#### Front Panel Controls



#### Rear Panel Controls

#### FRONT PANEL

##### Input Jacks

Input jack 1 is the normal input. Input jack 2 is padded down 3 decibels and is recommended for more headroom when using high-output pickups. But if you want more gain at low volume levels, high-output pickups through the input jack 1 will allow the amp to overdrive “faster” (i.e., the volume level lower). It is also possible to switch between the two inputs or use both inputs concurrently using a “Y” cable or an A/B/Y box to extend the tonal possibilities of the amp, but in most cases you will find that either input will work fine depending on the type of pickups you are using. It’s best to experiment with both inputs to find out which sounds best to your ears with your guitar(s) and pickups.

##### Volume

The first knob on the left when you face the amp’s front panel is the volume control. This is the input stage where the preamp tube first sees the guitar signal and goes through the first phase of amplification.

##### Tone

This is a knob used for instant access to your favorite sounds. Turn it counterclockwise for increasingly darker, thicker tones. Turning the knob clockwise gives you more treble and bite.

##### Reverb

The reverb circuit is a completely new Bad Cat design that adds spatial dimension to the tone produced by the amp. Incorporating the very best 3-spring reverb tank with newly designed reverb tone circuit, the reverb can go from subtle classic spring reverb effects to rollicking surf reverb to cavernous hall-like setting with a simple twist of this knob. This reverb circuit was carefully designed to be useful across the entire sweep of the reverb range. It adds a wide range of spatial effects that you just can’t duplicate with pedals and digital effects processors.

##### Standby Switch

Leave this switch off when turning on the amp and let the amp warm up for a full minute before turning this switch on. It’s best to let tubes warm up before playing. Place amp in the Standby mode when you will not be playing for awhile (for example, breaks in between sets of your performances, etc.).

##### On/Off Switch

This switch turns the amp on or off.

#### BACK PANEL

##### A/C Plug

Plug your amp’s power cord in here first, then to the wall.

##### Fuse Holder

This is the main fuse holder. Please only use the fuse as specified on the amp.

##### High Tension Fuse

High Tension is just another way of saying High Voltage. Voltages at this point can be anywhere from 350-500 volts depending on the model so it is always a good idea to make sure the amp is “off” when installing or removing the fuse. Do not stick anything inside the fuse holder other than a fuse. Do not attempt to defeat the fuse with a metallic gum wrapper or nail. This fuse is in series with the output transformer. Its function is to prevent collateral damage to the amplifier in the amplifier in the event of tube failure. If you replace the tubes and the fuse blows again, seek qualified technical help.

##### Reverb Footswitch Jack

This is the footswitch jack to turn the reverb on or off. You can use any conventional shielded cable latching on/off footswitch with this jack.

##### Lineout

This is a line-level output which can be used directly into a processor or effect unit, thereby making your amp the preamp or tone-shaper of a larger “rack” rig. This can also be used for direct recording, although typically clean sounds work best for this purpose as the distorted sounds tend to suffer from the lack of the positive coloration a speaker brings to a distorted guitar tone.

##### Speaker Jacks

On a combo amp, this jack is for adding an extension speaker cabinet to be used with the internal speaker of the amp. The internal speaker runs at 8 ohms for a single 12. Or 2-10” 16 ohm speakers running in parallel.

On a head, this jack is for connection to your speaker cabinet. Please be sure to select the proper ohms to match your cab.

#### Send and Return Jacks

Connect the output of the send jack to the input of your effects device. Connect the output of your effect and to the Return jack of the loop. The Send can also serve as a Line Out to drive external processors in a wet/dry/wet rig.

#### TROUBLESHOOTING

Your new Bad Cat amplifier is designed for many years of professional trouble free operation. Common sense will tell you that if you notice any severe abnormalities in operation like burning smell, smoke, etc.; you need to shut down the amp immediately. Always consult your Bad Cat dealer if you are unsure of the problems that you are dealing with; i.e., take your amp to where you purchased it.

##### No Power

Check the power source from the wall first. Make sure the power cord is properly seated at both ends. If there is still no power, check the fuse and replace if necessary with the correct rating.

##### Weak Output Level

Verify the signal output from your instrument first. Check guitar’s controls and that the cables are working properly. Also, check any effects pedals that may be connected in between the guitar and the amplifier.

#### Adverse Sounds-Hum, Whistle, Loss of Dynamics, Feedback, Howling

Check loudspeaker cones, frayed guitar cables, controls on your instrument, the guitar’s pickups and any other devices that may be connected to your amplifier such as effects pedals or rack processors. Some of these devices are “amplifiers” in their own right with gain and boosted volume levels and they may cause hissing and unwanted feedback if set too high in front of the amp. Shut down the amp and check the tubes. Wait for the amp to cool down. Remove the back panel of the amplifier. Avoid handling hot tubes as they can cause severe burns. Check the larger output power tubes first by carefully removing the tube shields or loosening the clamps, and then unseat the tubes from their sockets but note from which sockets you removed the tubes. Inspect the integrity of the filaments in the tubes. If one or more of these tubes are bad, you will need to replace the entire set of the power tubes. If all the tubes are OK, you can eliminate the adverse sounds by swapping the location of these tubes. If this fails to fix the problem, you may need to replace the entire set of power tubes with a new matched set. Use of inferior quality (unrated) tubes may cause damage to your amplifier. You should also check the preamp tubes, especially the first input stage tube (far right if you’re looking at the amp from the back). Microphonics (feedback noise that cannot be controlled by turning down the volume pot on your guitar) indicates a bad preamp tube(s). You may want to swap the position of preamp tubes to see if this will fix the microphonics problem. Preamp tubes can go bad without warning but can also last many years without any problem whatsoever. As you can see when handling tubes, they are sensitive, fragile and somewhat prone to inconsistencies. Please handle your amp with care when transporting it. Although your Bad Cat amp is sturdily built and designed to take years of rugged use, the tubes are not. It’s always a good idea to keep extra tubes (both preamp and output power tubes) handy, especially for performance situations. An overwhelming majority of minor problems on tube amps are tube-related and it’s just a matter of swapping one or more out to have your amp performing like brand new again.