

# CAZ-45 Manual

Model: ZA-51

[www.drzamps.com](http://www.drzamps.com)



This symbol warns the user of dangerous voltage levels localized within the enclosure.



This symbol advises the user to read all accompanying literature for safely operating the unit

### **Important Safety Instructions**

- 1) Read these instructions.
  - 2) Keep these instructions.
  - 3) Heed all warnings.
  - 4) Follow all instructions.
  - 5) Do not use this apparatus near water.
  - 6) Clean only with dry cloth.
  - 7) Do not block any ventilation openings. Maintain at least 3 feet of distance around all sides of amplifier. Do not block any ventilation openings with items such as newspapers, tablecloths, curtains, etc.
  - 8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
  - 9) 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.
  - 10) Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
  - 11) Only use attachments/accessories specified by the manufacturer.
  - 12) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
  - 13) Unplug this apparatus during lightning storms or when unused for long periods of time.
  - 14) 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.
  - 15) Avoid placing any liquids on or near the amplifier that may splash or drip such as those contained in bottles, cans, glasses, etc.
- \*Dr Z amplifiers are capable of producing very high sound pressure levels which can cause temporary or permanent hearing damage.
- \*If any screw that is actually on the amp chassis needs to be replaced contact Dr Z Amps for the proper size. Screw size is critical for inner chassis clearances.

## General Information

The CAZ-45 is the first true, modern-voiced high gain amplifier available from Dr. Z. To measure up to the task of creating a high gain amp without sacrificing the touch dynamics, tonal versatility, and hand-wired craftsmanship that Dr. Z has built his reputation on, he enlisted his friend, Alan Phillips, the owner-engineer of Carol Ann Amps, to draw up a circuit from scratch. From this collaboration, a full year of prototyping, meticulous tweaking, sampling, and nearly a half dozen prototypes were sent back and forth between the two builders, striving for an amplifier that wasn't just loaded with gain, but also exceptionally responsive to dynamics and fun to play at any volume level.

Uninterested in building a hot-rodged Marshall or supped-up Fender design, they started with a clean drawing board, and Alan and Dr. Z zeroed in on a single channel design that could be controlled by the player's hands, pick attack, and guitar volume knob, which is the secret weapon in a seasoned player's arsenal; an old school approach to a modern sounding amplifier. A unique set of controls straight from both builders' cookbooks are featured on the CAZ. Beyond the gain knob and the ubiquitous EQ section, there's the variable Sensitivity control, as seen on many Carol Ann designs, to tailor the amp's front end to the player's choice of guitar and pickup. Dialed lower, this control ensures clarity with hot-wound or active pickups, and set higher it increases input signal to beef up low wound single coils found in Strats and Teles to maximize thickness and sustain.

Further down the CAZ-45's control panel, the Aggression control is a satisfyingly versatile feature that introduces overdrive in the unique cathode-biased, 6L6-based power section. It creates new harmonic textures and tightens the low-end while focusing the high end to cut through a dense mix like a surgical blade. Set this control lower for warm and smooth classic overdrive as preferred by Alan or dial it up to induce percussive grind, as suggested by Dr. Z, when you just need more, more, and more gain! By utilizing the Gain, Sensitivity, and Aggression controls on the CAZ, you will find that regardless of how much distortion you pile on, balancing these controls will allow you to clean up the amplifier to crystalline, harmonic-rich chime with just the roll back of the guitar volume knob.

Packing this much gain into a hand-wired amplifier was no small task, and to address the concerns of the modern guitarist, Alan included his tube-driven effects loop into the CAZ-45 to integrate the large palette of effects units available on the market. Similarly, Dr. Z wired in his lauded Level control to serve as the answer to loudness concerns. The Level is a volume scaling control, as seen on the popular CURE and JETTA amplifiers, that acts as a master fader on the amplifier to adjust to whatever situation the player finds themselves in. Be it at home practicing with the family within earshot, or on stage where you need enough volume to let all your playing nuances shine, you will not find any lack of singing sustain and crushing gain, nor experience any loss of tone regardless of where the volume is dialed.

Available as a head or head/cab set, Dr. Z suggests pairing the CAZ-45 with our ported Z Best 2x12, configured in a horizontal position for maximum thump and low-end extension. Dr. Z recommends his special speaker blend of the tried and true Celestion V30 and new favorite Celestion Creamback 65 for a pleasingly smooth response without fizz or icepick, a clear, articulate midrange, and extended response in the lows.

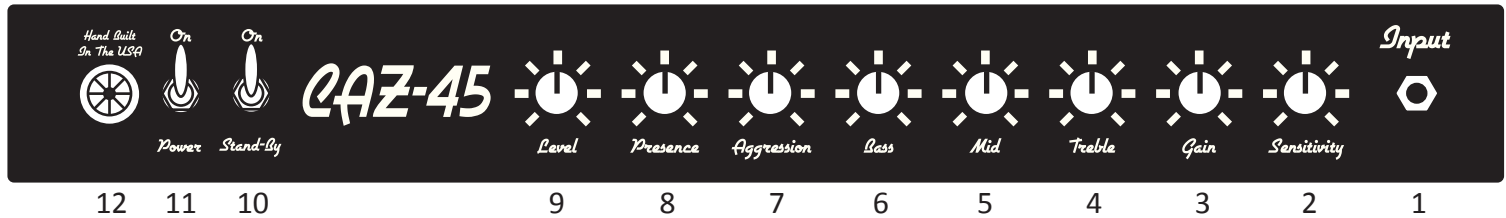
## Specifications:

<b>Power Output</b>	45 watts
<b>Output Tubes</b>	2- 6L6 STR (cathode biased)
<b>Preamp Tubes</b>	3- 12AX7, 1- 12DW7
<b>Rectifier</b>	Solid State
<b>Controls</b>	Sensitivity, Gain, Treble, Middle, Bass, Aggression, Presence, Level
<b>Speaker Outputs</b>	4, 8, 16 Ohm Outputs
<b>Configurations</b>	Head
<b>Dimensions &amp; Weight</b>	Head: 22 3/4"W x 9 3/4"D x 10"H, 35 lbs.

The CAZ -45 is a very unique and original amp design. It has a few controls that may not be familiar to some players.

Take special care to read the intentions of the Sensitivity, Gain, and Aggression controls to unlock this amp's uncanny voice. This will help explain all the controls, their interactions, as well as good starting points for initial operation of this fine all-tube, hand-wired amplifier.

## FRONT PANEL



**1. Input:** Input jack for your guitar.

**2. Sensitivity:** Approach this control like an onboard clean boost pedal. Adjustment of this control will interact with your touch dynamics and your use of your guitar volume adjustments for cleaning up an overdriven sound. The best starting position for sensitivity is at 12:00.

**3. Gain:** This controls the cascaded dual amplification circuit gain. It will add sustain and distortion to your signal. A good starting point is 12:00.

**Tone Stack Controls:** These controls (treble, mid, bass) operate the tone stack which is driven by a single amplification stage, then recovered or re-amplified after the tone control adjustments. If you are familiar with a typical Marshall tone stack, which is what is most commonly used in high gain amplifiers, there is a wide band of frequencies that the user sculpts by subtracting unwanted frequencies when setting up their sound. In the CAZ-45 tone stack, this process is additive, so if you want more of any one frequency you can simply add it via these controls. Start with the three controls at 12:00 then tweak to taste.

**4. Treble:** Adds to the overall high frequency response.

**5. Mid:** Adds to the overall midrange frequency response.

**6. Bass:** Adds to the overall low frequency response.

**7. Aggression:** Controls the amount of power stage distortion. Turn this up for a tighter, brighter, and more aggressive distortion loaded with upper frequency harmonics great for fast rhythm playing. Lower this control for a more open and broad response for smooth lead playing and massive sounding open chords. This control will increase the perceived volume level when the Level control is past 12:00. Start with this control at 1:00.

**8. Presence:** Presence is used to make your amp sound closer to you without it being louder. It effects the upper midrange frequencies. The presence control uses the signal at the 4 ohm tap of the output transformer as its modifying signal. You must have the amp moderately loud with the Level control past 10:00 for it to work noticeably. The control's effect will be diminished the higher the Aggression is set, as this control interacts with the same frequency spectrum as the Aggression effects, but it does not increase distortion like the Aggression control will. 12:00 is a good starting point.

**9. Level:** Controls the overall volume (loudness) of the amp. Think of this as the slider on a mixer board. It is a Post Phase Inverter Master Volume circuit that works much like a built-in attenuator. Start at 11:00 and adjust to your needs.

**10. Stand-By:** Leave in off position for 1 minute when powering up the amp. Turn on for play. Place in off position for extended break periods.

**11. Power:** Switch up to turn on amplifier. Switch down to turn off amplifier.

**12. Power Indicator:** Lights up when power is switched on. If LED fails replace with a 6.3 volt #44 Bayonet Base(BA9S).

## REAR PANEL



CAUTION: CHASSIS SURFACE HOT  
WARNING: TO REDUCE THE RISK OF  
FIRE OR ELECTRICAL SHOCK, DO NOT  
EXPOSE THIS EQUIPMENT TO RAIN  
OR MOISTURE.

DATE OF MFG: \_\_\_\_\_



Send



Return



16 Ohm



8 Ohm



4 Ohm

### Speakers Out



WARNING:  
MAINTAIN 6"  
CLEARANCE FOR  
VENTILATION



Fuse  
2 AMP SLO BLO  
250 VAC



Input Power  
120V-60Hz  
112 WATTS

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**13. Send Jack:** This will send the signal from the amp to the “in” of your effects chain.

**14. Return Jack:** Plug the “out” of your effects chain to return the signal back to the amp.

**15. 16 Ohm Speaker Jack:** Plug in an external 16 Ohm speaker here. Use only one output at a time. Always have a load connected to your amp.

**16. 8 Ohm Speaker Jack:** Plug in an external 8 Ohm speaker here. Use only one output at a time. Always have a load connected to your amp.

**17. 4 Ohm Speaker Jack:** Plug in an external 4 Ohm speaker here. Use only one output at a time. Always have a load connected to your amp.

**18. Fuse:** The fuse protects the amp from electrical faults. Replace only with the same rating and type stated below fuse holder (2A 250v SLO BLO). If the amp repeatedly blows the fuse contact your dealer or Dr. Z Amps.

**19. AC Inlet:** (Class I Wiring). This device is used for disconnection from power mains and must remain readily operable. The power indicator light does not indicate connection to power mains. The power cord must be disconnected to disconnect amplifier from power mains.

## SUGGESTED SETTINGS\*

**QAZ-45**



Level



Presence



Aggression



Bass



Mid



Treble



Gain



Sensitivity

**Fat Single Coil Overdrive:** \*set level to desired volume. Utilize a higher sensitivity setting to fatten up tele and strat pickups. Setting aggression lower will give a smooth texture to single note runs. Set the gain to your preferred Amount of sustain and overdrive. Warm clean tones are available by just a twist of the guitar volume knob.

**QAZ-45**



Level



Presence



Aggression



Bass



Mid



Treble



Gain



Sensitivity

**Vintage Humbucker Crunch:** \*set level to desired volume. Sensitivity settings around 10-11:00 will prevent the pickups from overdriving too soon, and still allow you to get pristine clean from your guitar volume. Mid set past noon will give you a satisfying “British-style” cut and bite. Aggression set before noon maintains a classic vibe.

**QAZ-45**



Level



Presence



Aggression



Bass



Mid



Treble



Gain



Sensitivity

**80's Thrash Zone:** \*set level to desired volume. Turn the aggression up for bite and attitude, yet keep the low end tight. Mid set past noon imitates a hot-rodded Marshall-style amp, try it rolled back for a darker Mesa-type voicing.

**QAZ-45**



Level



Presence



Aggression



Bass



Mid



Treble



Gain



Sensitivity

**Downtuned Meltdown Mode:** \*set level to desired volume. Turn the aggression up to keep things tight and cutting, bass rolled back and treble up. Sensitivity will increase or decrease compression. Mids past noon will give a more pushed, compressed, “in-your-face” sound, while mids rolled back will sound broad and open with lots of articulation.



## EC/EU Declaration of Conformity

Document: CE – ZA-51

Manufacturer: Dr. Z Amplification  
17011 Broadway Ave.  
Maple Heights, OH 44137 -3407  
USA

We declare that the designated product (s)  
DR. Z CAZ-45  
is/are in conformity with the European Directives:

2014/30/EU EMC Directive of 26 February 2014

2011/65/EU RoHS Directive of 8 June 2011

2014/35/EU Electrical equipment designed for use within certain voltage limits

This declaration certifies compliance with the indicated directives but implies no warranty of properties. The safety instructions of the accompanying documentation shall be observed. This declaration of conformity is issued under the sole responsibility of the manufacturer.

Issuer: Dr. Z Amplification  
17011 Broadway Ave.  
Maple Heights, OH 44137 -3407  
USA

Place, date: Maple Heights, OH USA , 01.NOVEMBER.2020

Legally binding signature:

M.D. Zaite, General Manager, Dr. Z Amps



Dr. Z Amps 17011 Broadway Ave. Maple Heights, OH 44137 USA



## DECLARATION OF CONFORMITY

We, Dr. Z Amps, declare, taking this declaration under our total responsibility, that guitar amplifier model CAZ-45 (ZA-51) is in conformity with EN 55013, EN 61000-3-2, EN 61000-3-3, and EN 55020 in accordance with the Directive 2006/95/EC of 12 December 2006, even more declaring that the CE marking was affixed in the year 2001.

11-1-2020

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Michael Zaite, General Manager Dr Z Amps

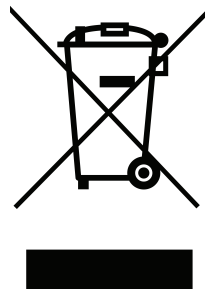




MODEL: \_\_\_\_\_

SERIAL NUMBER: \_\_\_\_\_

INPUT VOLTAGE: \_\_\_\_\_



MADE IN USA