FOR YOUR PROTECTION

VENTILATION:

- The 789 can run warm in use and thus requires free air circulation to the vents and large surfaces on the product. Ensure the 789 surfaces are not covered to restrict airflow. Ensure at least ⅜” (10mm) air gap for convection above and below the 789. Never place the 789 in an enclosed space with restricted air flow, especially one with low vertical clearance.
- Never place the 789 near another source of heat, for example on top of something that is generating significant heat or in a hot cabinet. Excessive heat will shorten the life of the product.

WATER AND MOISTURE:

- NEVER use the 789 near water.
- NEVER handle the 789 while in contact with water.
- NEVER let the 789 come into contact with water.
- NEVER spill water or other liquids into the 789.
- NEVER operate the 789 with wet hands.

POWER SOURCES: The 789 is supplied with a universal power supply unit capable of operating from global universal mains 100-240 V ac at 50/60 Hz. It is supplied with a US plug (Type A), but will work with a plug adapter suitable for your location. Do not use any other power supply unit with the 789.

GROUNDING: The 789 does not receive ground from its power supply unit, and will share the ground of the audio source that it is plugged into. In unusual circumstances, ground noise may occur, depending on the exact grounding of the source equipment. Although RCA unbalanced sources will not introduce ground noise in most circumstances, operating from a balanced source with XLR-3 cables is the most reliable way to avoid ground noise.

POWER AND SIGNAL: Cables should never be connected or disconnected to the 789 with equipment powered up. Failure to heed this warning may damage or destroy equipment.

SERVICING: There are no serviceable parts in the 789. Do not attempt to service the 789. All servicing must be referred to authorized service personnel.

WARRANTY

- In the event that the product purchased experiences defect or failure, please contact Drop Support and provide your transaction ID with a description of the issue (include photos or video, if applicable).
- Drop Support might also ask for additional information such as the product’s serial number, so be sure to have that information available.
- Drop will request for the product to be sent back to a specified return address (which will be provided to you via email).
- Upon receipt of the defective product, Drop will make every effort possible to ensure your satisfaction by shipping you a replacement product.
- You are responsible for the cost of return shipping if a request is submitted after two weeks of receiving the item.
- Drop also reserves the right to refund the purchase price as its exclusive warranty remedy if a replacement cannot be sourced.

DROP

DROP + THX AAA 789 LINEAR AMPLIFIER
USER MANUAL

The Drop + THX AAA 789 Linear Amplifier (789) is an audio amplifier for headphone applications that leverages THX AAA™ architecture for the ultimate listening experience.

The 789 has 3 outputs: 4 Pin XLR balanced, Tip-Ring-Sleeve (TRS) single ended ¼” phone plug, and TRS single ended 3.5mm phone plug. The TRS outputs are provided for compatibility with TRS terminated headphones. (Note that the SE outputs, which come from half of each channel, only delivers roughly ¼ the power of the balanced output.)

The 789 has both balanced (XLR) and single ended (RCA) inputs. The input type is selectable with a 2-position front panel push button switch labeled “INPUT”. For single ended inputs, the 789 uses a differential buffered preamp to minimize ground noise pickup from the source.

The 789 has a 3-position gain knob to match the amp to the entire range of headphone sensitivities, from sensitive IEMs to insensitive planars and high impedance headphones. To maximize signal-to-noise and volume dial usability, a good rule of thumb is to adjust the gain knob to the lowest position counter-clockwise that still achieves your desired SPL from the volume dial. The high gain is +10 dB (3X), the medium gain is 0 dB (1X), and the low gain is -10 dB (0.3X). Using balanced output these gains increase another 6 dB (2X). The 789 circuit allows you to hot switch the gain using the front panel switch. With three selectable gains, extremely low noise, and tremendous output voltage and current, the 789 will graciously drive every headphone imaginable from 16 to 600 Ω.

INITIAL START-UP

1) Turn the volume dial counter-clockwise to zero (minimum) position. Turn the gain knob counter-clockwise to low gain position.
2) Plug the provided 24V/1.8A power supply into the back of the 789.
3) Press and release the power button to turn on the 789.
4) The small LED in the center of the front panel should briefly light red.
5) The LED should change to white in less than 5 seconds, indicating the amp is ON. Proceed to the next section *Using the 789 Amplifier.*
6) If you do not see the white LED, check your power connections, wait 10 seconds, then push the power button again. If you still do not see the white LED within 5 seconds, unplug the power supply and contact Drop (see info below).

CAUTION: Please remember to turn down the volume completely (or power down) before plugging or unplugging any sources or headphones to/from your 789.

USING THE 789 AMPLIFIER

1) With the amp OFF, connect the DAC, or other audio source, to one red and one white RCA jack (Single Ended Source) or to the two 3-pin XLRs (Balanced Source).
2) Set the Input selector to the appropriate input (extended is SE RCA and depressed is Balanced XLR).
3) Be sure the Volume is set to zero (turn fully counter-clockwise).
4) Connect headphones to output jack.
5) Press the power button to turn on the 789.
6) When the LED switches from red to white, the amp is ready for listening.

CAUTION: Do not modify a single-ended 3-wire headphone cable to connect to the 789 4-Pin XLR output. This will void the warranty. The common ground connection in such a modified cable will short the 789's balanced output, repeatedly tripping the short circuit protection, possibly causing damage. Use only fully balanced 4-wire headphone cables that separate signal pairs for right and left channels. Balanced cables supplied by commercial manufacturers will operate properly.

AUTO OFF

An optional Auto-Off feature is included with the amplifier to reduce its carbon footprint. Set the "AUTO OFF" switch UP to have the 789 to shut down after approximately 2 hours without audio. Set this switch DOWN ("BYPASS") to prevent this automatic shut down.

SE PASS

"SE PASS" connectors are provided to daisy chain an RCA source to both the 789 and another piece of equipment. The 789 SE INPUT and SE PASS connectors are hard wired together, are isolated from the XLR-3 inputs by a relay at all times, and are isolated from the 789 input and its ESD clamps when the 789 is turned OFF. This permits the RCA SE PASS to function regardless of whether the 789 is powered ON or whether a balanced source is present. Please note, pass through only works for SE sources coming in the RCA input connector. There is no pass-through capability of signals from XLR-3 balanced sources.

PROTECTIVE CIRCUITS

The 789 has a DC offset protection circuit to protect the headphones from overheat damage in the event of amplifier malfunction. This protective circuit is triggered if either or both channels exhibit an average DC voltage above +/- 0.5 V.

The 789 also has thermal overheat, overcurrent, and short circuit protections.

If any of these protections are tripped, the output relay will disconnect the amplifier from the headphones and the front panel LED will turn red. The output relay will remain disconnected for a few seconds at minimum, and then automatically reconnect if the unsafe condition has ceased.

GENERAL BEST PRACTICES

- Turn the volume all the way down before plugging/unplugging headphones.
- Turn the volume all the way down before putting on headphones.
- Turn the 789 OFF before plugging/unplugging sources.

NO BREAK-IN NECESSARY

- Some amplifiers specify a break-in period to reach full potential.
- **It is not necessary to break-in the 789.** The AAA architecture maintains stellar linearity and low noise from the moment it is put together. The electronics are designed to run cool. In fact AAA separates the warmest high current amplifier stages from the feed-forward and feedback circuitry that determine overall linearity, thereby minimizing aging and maintaining consistent linear performance for years of heavy daily use.

BALANCED VS. SINGLE ENDED

The TRS SE outputs will perform quite well with TRS terminated headphones. But to get the absolute best performance from your 789 use a balanced DAC with XLR-3 cables to drive the balanced inputs, and use a 4-wire headphone connected to the balanced XLR-4 jack. This balanced in/out configuration eliminates several potential pathways for ground noise and crosstalk.

PERMISSIBLE INPUT SOURCE VOLTAGE

- When using a DAC or source with < 2.1 V output, any gain position may be used.
- When using a DAC or source with > 2.1 V output, only use Low and Medium gain positions. Else the 789 preamp may clip internally.
- Maximum DAC or source voltage is 7 V rms (+19.1 dBu) to avoid 789 preamp clipping. If using a higher voltage DAC or source, apply a small amount of digital attenuation (e.g. in the media player) to reduce the maximum source voltage to 7 V / +19 dBu maximum.

PERMISSIBLE HEADPHONE IMPEDANCE

- The 789 balanced and unbalanced outputs are designed for headphone loads with a minimum 12 Ω impedance. The 789 can tolerate loads between 8 Ω and 12 Ω if the amplifier is driven to no higher than 4 V peak across the load. Usage outside of these parameters may void the warranty. Do not use the 789 to drive loudspeakers.