

THD BiValve-30



INSTRUCTION MANUAL

Thank you for your purchase of the THD BiValve-30 amplifier! The big brother of the THD UniValve, the BiValve-30 is a Single-Ended Class-A amplifier head with dual output tubes that can be switched at will among many octal-based power tubes, including 6L6, EL-34, 6550, 6CA7, 6V6, 6K6, KT-90, KT-88, KT-77 and KT-66, for different tones without re-biasing the amp. The two output tubes do not need to be matched in any way—you are free to experiment with any combination you want! Likewise, the two preamp tubes can be any combination of 12AX7, 12AT7, 12AU7, 12AY7 or 12AZ7. The BiValve-30 delivers tones from smooth and clear to very aggressive overdrive, like the UniValve, but with more power and a much more compliant output transformer for thicker lows. It is easily capable of driving a 4x12" cabinet, yet quite small and relatively light. Finally, it has a built-in Hot Plate® Power Attenuator that allows for full output distortion at almost any volume. The unique combination of our touch-sensitive input circuit and the wonderfully active and reactive tone control section (that we slaved a year to perfect) make for a front-end that really responds to subtle and not-so-subtle changes in the signal being fed into the amplifier either by the guitar or any effect that may be between the guitar and the amplifier.

TABLE OF CONTENTS

Instruction Manual	1
What Does “Class-A” Mean?	3
BiValve-30 Controls.....	4
Front Panel.....	4
Back Panel	6
Switching Tubes in the BiValve-30.....	7
Power Tubes	7
Preamp Tubes	7
THD Electronics Contact Information.....	8

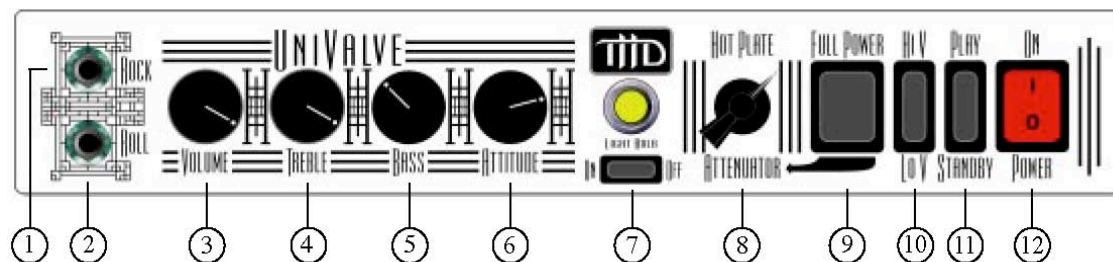
What Does “Class-A” Mean?

At the beginning of this manual, we explained that the BiValve-30 is a “Single-Ended Class-A” amplifier—but what does that mean? “Class-A” is a term given to an amp that runs its tubes at full current all the time, unlike most tube amps that alternate between running one set of tubes and the other set, each for one half of the wave. The set not in use is turned off by a positive swing of the grid voltage. Single-ended out-put stages always operate in Class-A. Most guitar amplifiers over 5 watts operate in Class-AB Push-Pull. The upshot is that Class-A operation has its own unique tone characteristics that set it apart from other tube amp classes. Class-A amps sound great at low volumes, and even better as you turn them up. There is no point at which you will be waiting for the tube to receive its full current for the best sound—it always will.

BiValve-30 Controls

Front Panel

The various control options on the BiValve-30 front panel are identical to that of the UniValve:



1. MORE Input: This jack fits a standard 1/4" mono shielded instrument cable. If you use a stereo cable, the sleeve signal will be ignored. Do not use speaker cable into this input. The MORE input is the high gain input, meaning that both preamp gain stages will be engaged in order to pass the hottest possible signal to the power section.

2. LESS Input: This jack fits a standard 1/4" mono shielded instrument cable. If you use a stereo cable, the sleeve signal will be ignored. Do not use speaker cable into this input. The LESS input is the low gain input, meaning that the first preamp gain stage will be bypassed.

NOTE: You cannot plug into both inputs simultaneously or otherwise A/B between inputs. Plugging into the Less input will disable the More input.

3. Volume: This knob controls the loudness of the amplifier. The higher the volume knob setting, the more the tubes are engaged.

4. Treble: This knob can be used to boost or cut the high frequency response of the UniValve.

5. Bass: This knob can be used to boost or cut the bass frequency response of the UniValve.

6. Attitude: The attitude knob determines how the driver tube responds to the signal, and how it drives the power tube. If the Attitude knob is turned up, the BiValve-30 will sound edgier and more aggressive. With the Attitude knob turned down, the BiValve-30 sounds sweeter and more controlled.

7. Light Bulb ON/OFF Switch: The light bulb is part of the noise reduction system of the amplifier. When the light bulb is turned on, the noise reduction circuit is enabled. When turned off, the noise reduction circuit is disabled. The light bulb is powered by the signal coming from your guitar. Thus when you stop playing, the light bulb will stop glowing. If the light bulb does not glow even when it is switched on and you are playing, the bulb may need to be replaced. The amplifier will still function, but the noise reduction system cannot work if the light bulb is blown. Simply unscrew the lens and replace with a #1818 bulb only. These bulbs are available through any THD dealer or directly from THD. They can also be found at most electronic supply houses.

8. HOT PLATE Attenuator Control: The BiValve-30 does not have a master volume control typical of many guitar amplifiers. Instead, the BiValve-30 is a non-master volume amp with built-in attenuation. The advantage to this is that you can achieve true power tube saturation, and then utilize the built-in THD Hot Plate power attenuator to have full output distortion at any volume level. The Attenuator control determines the amount of attenuation applied. Turn the control all the way clock-wise and you will be attenuating by about 3-4 dB. As you turn the control counter clockwise, the volume drops smoothly down to almost no sound. This control is only activated when the Full Power / Attenuator switch is set to Attenuator.

9. FULL POWER/ATTENUATOR Switch: When set to Full Power, the Hot Plate is completely removed from the circuit for Full Power playing into a speaker. When set to Attenuator, the Hot Plate is placed in the signal path after the power section and the Hot Plate Attenuator Control above is activated. The **Standby** switch should be in the standby position when switching between the Full Power and Attenuator settings.

10. HI V/LO V Switch: This switch determines the plate voltage of the power tube. At the Hi V setting, depending on which power tube you use, approximately 450 to 470 volts are applied to the plates (a tube that draws more current will have a lower plate voltage). The amp has twice as much power at this setting than it does at the Lo V setting and results in a sound that is punchier, more aggressive and more “in your face.” At the Lo V setting, depending on which power tube you use, approximately 300 to 320 volts are applied to the plates. This setting will give you a sweet, warm and smoother sound with a slower attack. To insure maximum tube life, the standby switch should be in the standby position when switching between the Hi V and Lo V settings.

11. Standby Switch: Standby mode keeps the power tubes powered and the amplifier itself off. Always power up in Standby mode and allow the tubes to heat up for at least two minutes before switching to Play. The amp should also be placed in Standby before it is turned off to cool the tubes more gradually and to reduce the possibility of internal arcing.

12. Power On/Off: The Power switch turns the amplifier on or off.

Back Panel

Now let's go through the BiValve-30's back panel jacks and controls, starting from the right:

Output jacks: You can connect either one or two speaker cabinets to the BiValve-30 using these two output jacks. Only use speaker (not instrument) cable. The outputs are wired in parallel, so two 16-ohm loads result in an 8-ohm total load, two 8-ohm loads result in a 4-ohm total load, and two 4-ohm loads result in a 2-ohm total load.

Impedance switch: This switch allows you to set your BiValve-30 to match the impedance of your speaker cabinet. Most speaker cabinets and combinations of cabinets will use the "8 or 16 Ohm" setting. However, if you use 4-Ohm loads you will find the "2 or 4 Ohm" setting to be slightly louder, and has a bit more low-mids. Of course, this side should be used for 2-Ohm loads. The **Standby** switch should be engaged when switching between impedance settings.

Line Out Level: This control adjusts the output level of the Line Out jack.

Line Out Jack: The BiValve-30 offers a transformer-isolated line out. This output jack delivers a line level signal from the power amp. Use a 1/4" instrument (not speaker) cable with this output. You can use the line out jack to send the signal directly to a mixing console or recording system. Keep in mind that you will need a speaker simulator in between the line out and your recording equipment if you want to record the BiValve-30 from the line out.

LINE/INSTRUMENT Switch: This switch determines if the line out signal will be at the line-level (+4 dB) or instrument-level (-10 dB) signal range.

FX loop: Using 1/4" instrument (not speaker) cables, you can connect line level (+4 dB) effects to the BiValve-30. The FX loop is after the preamp section, and before the power amp. Connect the BiValve-30's Send jack to your line level device's input, and your device's output to the BiValve-30's Return jack. You can also use the send to connect the BiValve-30's preamp to the return of any other amp with an effects loop in order to use the preamp of the BiValve-30 with the power section of that amp.

Power Tube Fuse: Each power tube has its own fuse in the cathode circuit. When the tube goes bad, either due to excessive wear, age, short or a leak in the seal, it will draw excessive current and its associated fuse will blow. When the fuse blows, its LED will light. Disconnect the power cord before replacing this fuse. Replace it only with a fuse of the same type and rating. Also, replace the tube associated with the fuse that blew. This is clearly marked on the chassis.

Filament Fuse: This fuse is for the low voltage supply that drives the filament or heater supply for the tubes. Disconnect the power cord before replacing. Replace only with a fuse of the same type and rating.

HT Fuse: The high-tension fuse is for the high voltage supply that feeds the plates of the tubes. Disconnect the power cord before replacing this fuse. Replace it only with a fuse of the same type and rating.

IEC Power Cable jack: Use a standard universal VAC power cable with your BiValve-30.

Mains Fuse: The mains fuse protects the amplifier from damage caused by power tube failure or a failed component in the power supply. If it blows, it must be replaced with a fuse of the same type and rating.

Switching Tubes in the BiValve-30

Power Tubes

The BiValve-30 is a “self-biasing” amplifier. What that means is that the BiValve-30’s circuitry senses the current needs of the output tube and provides the correct bias voltage to the cathode of the output tube regardless of tube type or wear. In other words, without any trip to an amp technician, you can simply replace either or both of its output tubes with tubes that have different sound characteristics. For example, a 6550 will stay cleaner at higher volumes, but when overdriven, has an astoundingly "woody" character. On the other hand, an EL-34 will break up earlier than a 6550 and gives a more "British" sound. The ever-popular 6L6 family of tubes gives a tight overdrive with less power than a 6550 but more detail than an EL-34. You can also combine tubes of different types, so you could try one 6550 and one EL-34 tube, for a unique sound incorporating characteristics of both tube types! Even within the same type of output tube there are "harder" and "softer" tubes, so two guitarists playing with the same guitar through the same BiValve-30, but simply switching the tubes to their preference, can have noticeably different tones.

NOTE: If you want to use an EL-84 power tube, you will need to use the THD YJUni Adapter, which is specially designed to allow you to use EL-84 tubes in a self-biasing, Class-A amplifier like the UniValve or BiValve-30.

Preamp Tubes

You can experiment with preamp tubes in the BiValve-30 as easily as power tubes—just pull out the current tubes and inset a new one! The UniValve can take any type of dual-

triode preamp tube, such as 12AX7, 12AY7, 12AU7, 12AT7, 12AZ7, 12DW7, 12BH7, ECC83, ECC82, ECC81 and more. You can try any of the above tube types in any combination—remember, experimentation is the name of the game!

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