WHAMMERDYNE

HEAVY INDUSTRIES

The Ultimate Single Ended 2A3 Amplifier

www.whammerdyne.com

SAFETY PRECAUTIONS

SAFETY PRECAUTIONS The chassis should only be opened by a factory-authorized technician. Any internal modification or parts replacement (except for AC power fuse or tubes) will void the warranty and expose the user to hazardous voltages.

Unplug the power cord before replacing the AC power fuse or tubes. Replace the AC power fuse with exact same type and value (2.5 Amp Slo-blo 5x20 mm Littlefuse®).

This amplifier requires a grounded power outlet to operate safely.

When replacing tubes, use the same type or an exact equivalent (see specifications). If the wrong type of tube is used, the amplifier will be damaged and the warranty voided. Do not force tubes into the socket; check to be sure the pin orientation is correct, then use a gentle rocking motion to insert or remove the tube.

When performing the bias adjustment, DO NOT use a metal screwdriver; use the provided adjustment tool. If this is missing, a replacement adjustment tool can be ordered from Mouser Electronics®, Part Number: 652-H-90. To prevent burns, please use suitable and if possible soft cotton gloves when making the bias adjustment.

Whammerdyne strongly urges the owner to avoid aftermarket services that “modify”, “upgrade”, or “improve” the parts or circuit of this amplifier. This amplifier has a more sophisticated circuit than most, and may be extensively damaged if parts or circuits are modified.

INTRODUCTION

Congratulations on buying the Truth™ amplifier, which combines the beautiful tonality of a zero-feedback, direct-heated 2A3 triode with the speed, presence and immediacy of an ultra-wideband amplifier (6 Hz to 140 kHz, varies depending on model). The Truth™ and Truth family of amplifiers have a wider bandwidth than any analog source, and any digital through 196/24. Part of the reason for the extraordinary bandwidth is the complete absence of coupling capacitors and cathode-bypass capacitors in the Truth™ circuit.

All tubes operate in fixed-bias mode, with very low source impedances in the cathode circuit, and they are connected by the innovative Z-Direct Interface©, which has zero phase shift, does not store energy, and provides instant recovery from clipping. It's a difference you can hear and enjoy for the life of the amplifier. Speaking of life, the Truth™ has a precision bias circuit that lets you optimize all of the tubes for optimum sound and the longest possible life.

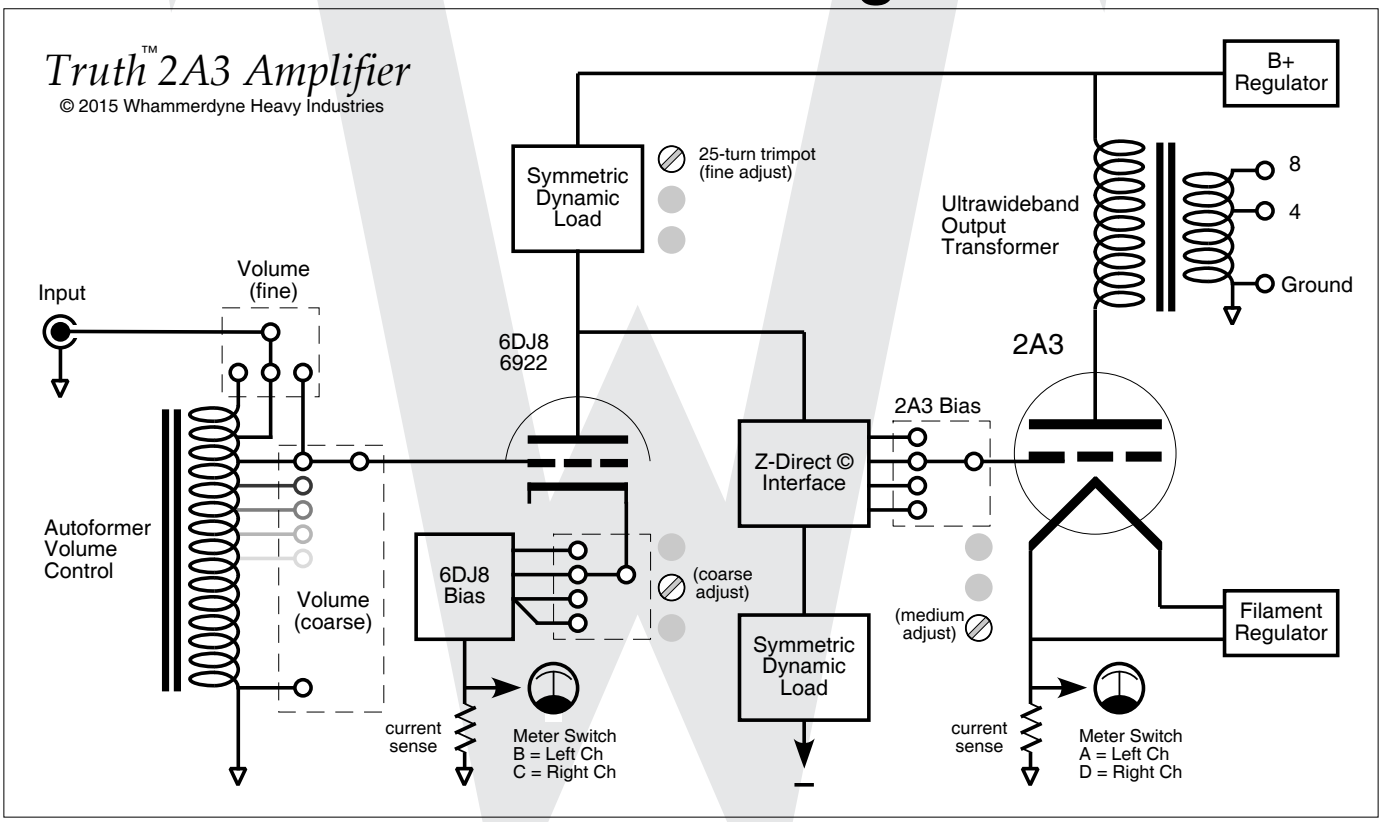
Although the Truth™ amplifier is ready to plug-and-play, thanks to the extended burn-in and testing at the factory, there's an optional bias setting procedure that lets you dial-in the bias to any good working set of 6DJ8 and 2A3 tubes. Do you have a personal favorite set of 6DJ8's, 6922's and 2A3's? Bring 'em on! The multifunction bias meter, unlike a TV-type tube tester, measures the tubes in-circuit, at the actual voltages and currents of the working circuit, so you can be confident all tubes are operating at the exact optimum parameters.

We've poured our dedication, love of music, and decades of engineering talent into this amplifier. Welcome to the Truth™!

Whammerdyne Team

Table Of Contents

Functional Diagram



DESIGN FEATURES

The unique input autotransformer (Level Control) on certain models is a constant-power attenuator at all settings, transforming voltage and current, in the same way the transmission in a car changes RPM's and speed.

By contrast, conventional resistive attenuators (Level Control), whether a potentiometer or a ladder of discrete resistors, cut down on the power of the signal as the volume is lowered. With a resistive attenuator, the grid of the input tube sees a low source impedance at full volume, 1/2 the rated value at -6 dB, and gradually less as the volume is lowered. From the perspective of the input tube grid, the source impedance is both high and variable, depending on volume setting. This changes the bandwidth of the input tube, and in subjective terms, can affect the sense of dynamics.

The autoformer of the Truth™ amplifier presents a low source impedance to the 6DJ8 grid at full volume, and then goes even lower as the volume is lowered. For example, if the source component has an output impedance of 100 Ohms, at the -6dB attenuation setting, the grid of the input tube sees a source impedance of 25 Ohms; and it goes down from there. A 100 K Ohm resistive attenuator presents a source impedance of 25K Ohms to the grid of the input tube if the control is set to - 6dB.

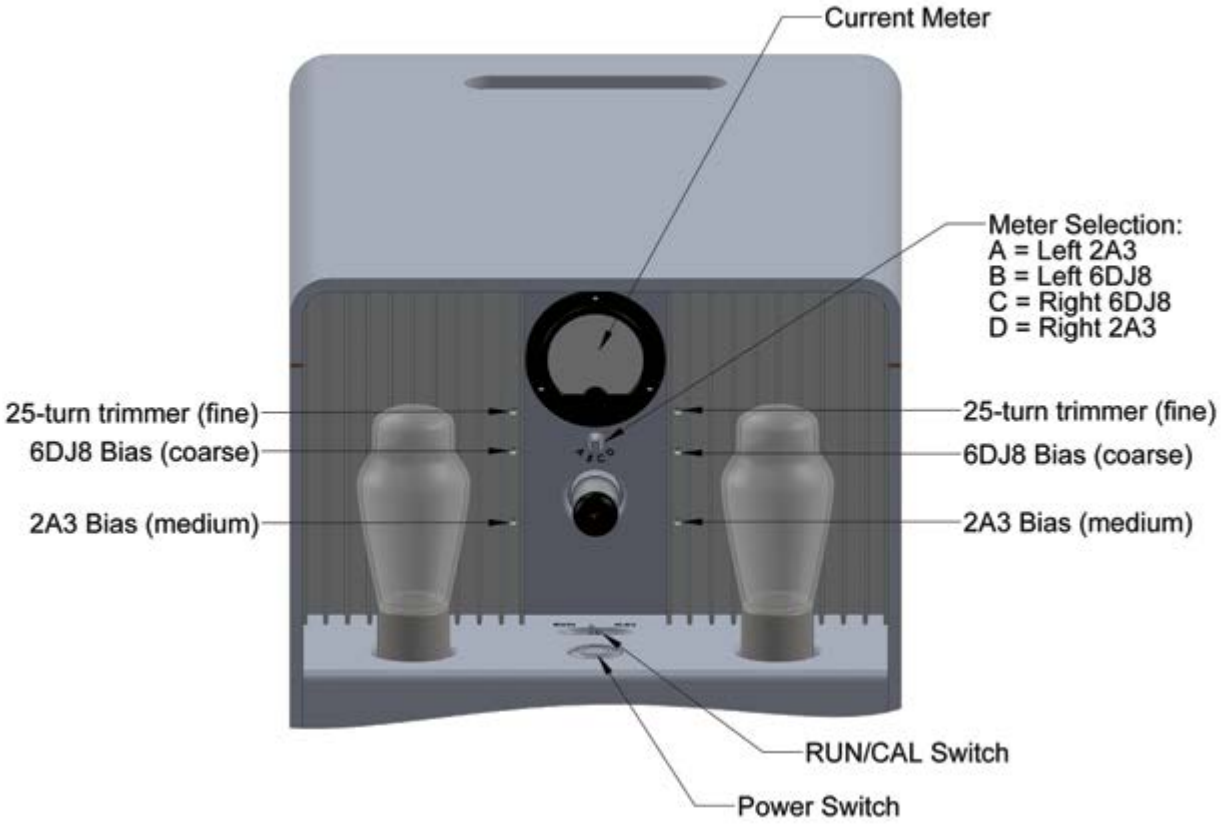
At every volume setting of the Truth™ amplifier and specific models, the input tube has maximum bandwidth and the least interaction with the source impedance (and the interconnect cable between the source and the Truth™ amplifier). We've done all the hard work of calculating turns ratios, impedances, and system bandwidth. All you have to do is turn the volume to the level you prefer.

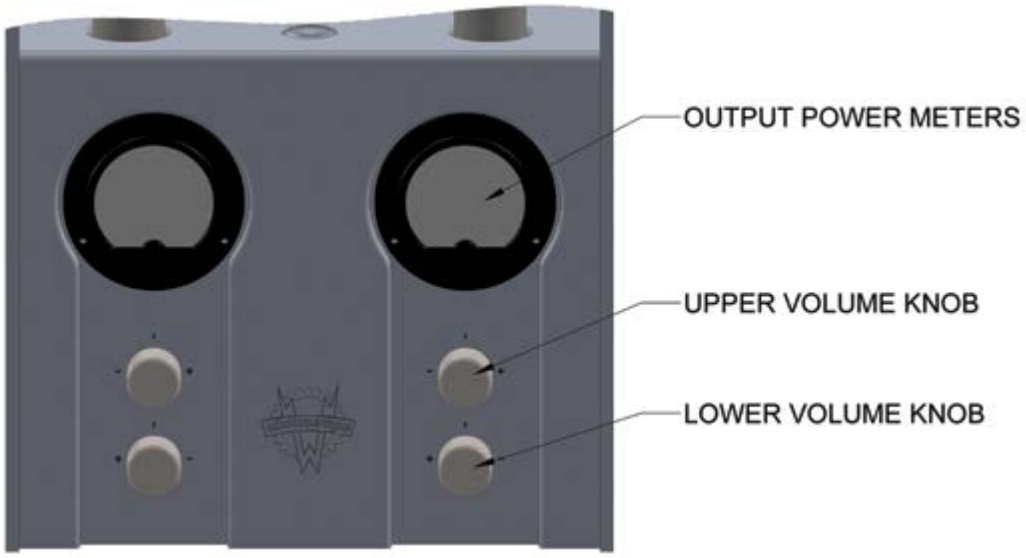
The 2-stage triode circuit uses the Z-Direct Interface®, with all tubes operated in a stable fixed bias mode. The Z-Direct Interface®, unlike conventional RC-coupling, does not store energy, and does not "block" when the 2A3 draws grid-current. This provides immediate recovery from overload, and the impression of a much more powerful amplifier than the steady-state RMS power rating. The Z-Direct Interface® also presents a low source impedance to the 2A3 grid, which optimizes slew rate and gives the widest possible bandwidth.

The output of the 6DJ8/6922 and the Z-Direct Interface® benefit from symmetric dynamic loads on the plus and minus side of the circuit. The dynamic impedance is both high (orders of magnitude higher than the plate resistance of the 6DJ8/6922) and symmetrical, so the 6DJ8/6922 operates in the most linear region, with a flat load-line. Driver linearity is an important consideration with an output tube as linear as the 2A3; there's not much point in having a super-linear output tube if the driver has more distortion, is there? That's where the Z-Direct Interface® and the symmetric dynamic loads come in; they provide the most linear working environment for the 6DJ8/6922, as well as a stable operating environment.

Capacitor coloration (a notorious problem in tube amplifiers) is avoided by the Z-Direct Interface®. Unlike conventional amplifiers, there is no RC-coupling between the input and output tube. In addition, there are no cathode resistors with capacitor bypasses, which sidesteps the problem of finding large-value caps that are free of capacitor artifacts. Last but not least, there is no cap coloration from the power supply; all tubes are powered directly from super low noise regulators, which isolate AC line noise and AC line variations from the audio circuits.

Controls


Current Meter
Meter Selection:
A = Left 2A3
B = Left 6DJ8
C = Right 6DJ8
D = Right 2A3
25-turn trimmer (fine)
6DJ8 Bias (coarse)
2A3 Bias (medium)
25-turn trimmer (fine)
6DJ8 Bias (coarse)
2A3 Bias (medium)
RUN/CAL Switch
Power Switch


OUTPUT POWER METERS
UPPER VOLUME KNOB
LOWER VOLUME KNOB

- The ultrawide bandwidth output transformers are custom engineered for this amplifier and have the widest bandwidth of any single-ended output transformer, past or present. (depending on model) Tube amplifiers have gotten a reputation as “midrange” amplifiers. Not the Truth™! The response extends from the deep infrasonic at 6 Hz, to the far ultrasonic at 140 kHz. (Model specific) Although it might seem unnecessary, this additional bandwidth provides flat phase response in the 20 Hz to 20 kHz audio band.

- Why single-ended? One of the subtle advantages of single-ended operation is no zero-crossing region, either in the tubes or the transformer. The zero-crossing region is where most of the music is, along with reverberation.

  This is where both analog and digital electronics have to be most linear; unfortunately, for most conventional Class AB amplifiers, the zero-crossing region is where pairs of transistors are switching on and off, and for tube amplifiers, the region where the magnetization in the core of the output transformer switches direction. The Truth™ 2A3 amplifier completely sidesteps both problems by biasing the core of the output transformer with a DC current, and keeping all tubes in in the most linear Class A region. As a result, harmonic and IM distortion go down in proportion to signal level, which matches the perception of the human ear.

- All key supplies (including B+) are precision regulated, so the operating points of the tubes are not affected by random line-voltage variations. More importantly, the sonics are not affected by line-voltage variations or AC line quality. As we all know, the quality of the 60-cycle AC waveform has gotten worse over the decades, thanks to noise from switching supplies in TV sets and computers, and the many RF transmitters in modern households. The electrostatic shielded power transformer of the Truth™ amplifier acts like a filter against these noise sources so they do not contaminate the delicate audio signal.

- We recommend you do NOT use aftermarket power conditioners with the Truth™ amplifier. Unlike “one-size-fits-all” power conditioners, the precision regulators of the Truth™ amplifier are custom designed to match the operating parameters of the 6DJ8/6922 input tube and the 2A3 power tube.

- Last but not least, there’s a pair of relative-power meters (specific to models) that show the percentage of power out of each channel. At the start of the red marker, there’s about 1-Watt RMS into 8 Ohms, and 4.5 Watts RMS at full scale. Since the Truth™ amplifier is a zero-feedback circuit with inherently soft clipping, the range between the 1 and 4.5 Watts is fully usable.

- The Left and Right audio signals going to the pair of meters are isolated by buffer circuits, rectified, and logged to match the meter scaling. Like the VU meters of old, but with wider dynamic range. So no range switching is required.

  The Functional Diagram shows the key features of the Truth™ amplifier along with the precision bias settings for the 6DJ8/6922 input tube and the 2A3 output tube. Each channel has its own fully adjustable set of bias controls, with a custom milliammeter that measures the operating currents of each 2A3 and each half of the 6DJ8. Although the Truth™ family of 2A3 amplifiers are already pre-adjusted and matched to its own set of tubes from the factory, you can replicate the factory adjustments.

INSTALLATION and SETUP

The Truth™ amplifier should be on a placed on a hard surface with good air circulation everywhere around it! **Never on a carpet or in an enclosure without air circulation.**

When installing the tubes, confirm that the large 2A3 power tubes have the correct orientation in the socket. The filament pins are the two big pins, and are spaced apart just a bit more than the smaller grid and plate pins. When you're sure the filament pins are correctly in the socket, grasp the 2A3 by the base (not the glass!) and firmly push downward. When removing the 2A3, wait until cool, grasp the base, with one hand, place your other over the top of the tube. Use a gentle rocking motion while pulling upward.

The single 6DJ8 input tube has a missing set of pins; use this to index the tube in the socket, which also has a corresponding open space. Push downward firmly, rocking the tube a little as it goes inward. When removing the 6DJ8, wait until cool, grasp the tube, and use a gentle rocking motion while pulling outward.

The Truth™ amplifier is shipped with a custom 14 AWG IEC power cord. (specific to certain models) The plug is hospital-grade and the output connector is chosen for a consistent low-resistance connection. We do NOT recommend aftermarket "power conditioners", which are usually optimized for high-powered transistor amplifiers with brute-force power supplies. The Truth™ amplifier is the exact opposite: it has moderate power output, a very sophisticated power supply, and doesn't need an aftermarket power conditioner.

For interconnects, we recommend Blue Jeans Cable™ LC-1 RCA cables. These provide double copper braid shielding and very low capacitance, which lowers the high frequency drive current requirement from the source components.

For speaker cables, we recommend the bulk Audioquest® FLX/DB -14/4 speaker cable, which can be configured in parallel to give 2-11 AWG conductors. Use the same length cable for both L & R speakers.

Like all audio components, you are free to choose whatever power cable, interconnect, or speaker cable you like. We strongly suggest auditioning them for yourself, in your own system, rather than relying on magazine or Internet reviews. The "sound" of a power cable, interconnect, or speaker cable is strongly influenced by the component it is used with. For example, a speaker cable that sounds wonderful with a 200-Watt transistor amplifier might not sound good at all with a moderate-power tube amplifier (and vice versa). Trust your ears, not the reviewer.

Once all cables are connected, power up your source components (first), wait a minute or two for them to stabilize, turn on the Truth™ 2A3 amplifier, and wait for the current meter backlight (if equipped, some models can vary) color to turn from red to white (about 4 minutes).

When turning off your system, we recommend turning off the amplifier first, then turning off the source components. This prevents power-off transients (if any) from the source components damaging your speakers.

Speakers

The Whammerdyne team has spent a lot of time listening to many different speakers powered by the Truth™ 2A3 amplifier. We strongly recommend speakers with >92 dB SPL 1W, 1m efficiency (or better), 8 ohms nominal impedance (or higher), and simple crossovers or no crossover at all (full range designs). We have tested this extensively using the Zu Audio© Druid Mk.V, which are 2-way minimal crossover, 101 dB efficient and a nominal 16 Ohm impedance.

Pure Audio Project line of open baffle speakers are very highly recommended, most models are a nominal 8 Ohm load and 95 dB efficient) There are many medium to high-efficiency speakers these days, and we recommend listening to the ones that you enjoy the most (go to audio shows), I know it is trial by fire. Set aside the reviews, set aside the Internet noise, bring the recordings that matter to you, and choose the speaker that you really connect with. That's the right speaker for you. (I bet I opened a can of worms here)

SETTING THE BIAS

The Truth™ family of amplifiers come pre-adjusted from the factory, and is tested, calibrated, and matched to the installed 6DJ8/6922 input tube and the pair of 2A3 output tubes. The only time you need to do the entire setting procedure is when the tubes are replaced. (either the 6DJ8 or 2A3) Or when replacing the original tubes at end of life. (Usually after several thousand hours of operation). You can also do a "fine-tuning" so the amplifier is thermally matched to its location in your audio system.

Although the procedure might seem complex, all it does is set each channel of the 6DJ8/6922 input tube to the optimum range of 8 to 12 mA, and each 2A3 output to the optimum 60 mA. The internal circuits are so precise that the adjustment procedure actually tests the tube as you make the adjustment.

If a replacement tube cannot be adjusted to the optimum current, its performance may be out of specification. If the current is out of range, the amplifier won't be harmed, but the tube may have a shortened life (if the current is too high) or not sound its best (if the current is too low). When each tube is set to the green range shown on the current meter, you can be confident you are getting the best possible performance from the tube.

It's very rare for a tube amplifier to have regulated high voltage power supplies. Our precision regulated supplies solve plate current changes due to fluctuations in line voltages. Don't fret and wear out the adjustments by trying to tweak out the tiny up and down motions to make it always exactly 60 mA because it will still sound great.

Bias Controls:
Bias Controls The main RUN/CAL (other models may call out with Play/Mute or may not have this switch) switch is directly behind the lighted power switch. Remember to return the RUN/ CAL switch to the RUN position after both channels have been adjusted.

The meter selector switch is below the current meter, and selects (A) Left 2A3 current, (B) Left 6DJ8 current, (C) Right 6DJ8/6922 current, and (D) Right 2A3 current.

There are 3 small holes on the left heat sink, and 3 small holes on the right heat sink. The top hole is a 25-turn trimmer that sets the current for the 6DJ8/6922 (fine adjust). The middle hole is a 4-position switch that sets the 6DJ8/6922 bias (coarse adjust), and the lower hole is a 4-position switch that sets the 2A3 bias (medium adjust).

The fine-adjust trimmer and 6DJ8/6922 bias switch (coarse) change the operating point of the 6DJ8 and the 2A3, while the 2A3 bias switch (medium) only affects the operating point of the 2A3. Each channel has its own independent set of bias controls, and the meter-select switch lets you see the effect of the controls on each channel of the 6DJ8 and each 2A3.

When you make the bias adjustments, please use soft cotton gloves to prevent inadvertent contact with the 2A3 tubes, and the provided adjustment tool. If necessary, a replacement adjustment tool can be ordered from Mouser Electronics®, Part Number: 652-H-90.

Preparation:
Preparation refer to illustrations in this manual showing adjustment locations, the plastic adjustment tool, and cotton gloves.

The amplifier should be adjusted in its usual location in the audio system. (If the amplifier is adjusted in a location different than the usual position in the audio system, the local air temperature may be different, which will affect the accuracy of the adjustment.)

The ideal room temperature for making adjustments is between 68F/20C and 72F/22C.

1) Turn off source components.

2) Reduce the volume of each channel to zero.

3) Turn the amplifier on, and wait 4 minutes till the backlight of the current meter turns from red to white. (If readings are not to high then let the unit run for 15-20 minutes to climatize the internal working circuits)

Calibration Procedure
Left Channel

This procedure sets the 2A3 plate current to 60 mA and the 6DJ8 between 8 and 12 mA. There may be one or two combinations of switch and trim-pot settings to achieve this goal. If possible, avoid currents higher than 70 mA during the procedure.

1) Locate the RUN/CAL switch behind the power switch. Change the RUN/CAL switch to the “CAL” position.

2) Locate the selector switch below the current meter. Change the switch to the “A” position. (This monitors the current through the left 2A3 output tube.)
3) On the Left heat sink, there are three small holes in a vertical line. These set the bias points and operating currents of the tubes on the left channel of the amplifier. (The holes on the Right heat sink have the corresponding functions for the right channel.)

4) Put on the white gloves, and insert the adjustment tool into the top hole. Rotate the trim-pot so the meter reads a low value around 10 mA. (In most cases these will be counter-clockwise turns.) This is a 25-turn trim-pot, so it will take several rotations.

5) Insert the tool in the bottom hole (2A3 bias, medium adjust switch). Rotate until the meter falls in the 40 to 60 mA range.

6) If there are not enough steps, back off two steps, move the tool to the middle hole (6DJ8/6922 bias, coarse adjust switch) and increase by another step.

7) If necessary, move the tool to the top hole (trim-pot) and rotate until the current reads 60 mA. (In many cases, this is a clockwise rotation.) Please turn slowly so the circuit can stabilize and give an accurate reading.

8) Move the selector switch for the current meter to the “B” position. This monitors the current through the left side of the 6DJ8 input tube. Check to see the current falls between 8 and 12 mA (lower green zone on the meter). A 6DJ8/6922 is still considered serviceable (and listenable) even if it’s a little out of this range. (I prefer current around 11 mA)

Calibration Procedure
Right Channel

1) Confirm the RUN/CAL switch is in “CAL” position.

2) Move the selector switch for the current meter to the “D” position. (This monitors the current through the right 2A3 output tube.)

3) On the Right heat sink, there are three small holes in a vertical line. These set the bias points and operating currents of the tubes on the right channel of the amplifier.

4) While wearing the gloves, insert the adjustment tool into the top hole. Rotate the trim-pot so the meter reads a low value around 10 mA. (In most cases these will be counter-clockwise turns.) This is a 25-turn trim-pot, so it will take several rotations.

5) Insert the tool in the bottom hole (2A3 bias, medium adjust switch). Rotate until the meter falls in the 40 to 60 mA range.

6) If there are not enough steps, back off two steps, move the tool to the middle hole (6DJ8/6922 bias, coarse adjust switch) and increase by another step.

7) If necessary, move the tool to the top hole (trim-pot) and rotate until the current reads 60 mA. (In most cases, this is a clockwise rotation.) Please turn slowly so the circuit can stabilize and give an accurate reading.

8) Move the selector switch for the current meter to the “C” position. This monitors the current through the right side of the 6DJ8/6922 input tube. Check to see the current falls between 8 and 12 mA (lower green zone on the meter). A 6DJ8 is still considered serviceable (and listenable) even if it’s a little out of this range. (I prefer current around 11 mA)

9) Move the RUN/CAL or Play/Mute if equipped switch to back to RUN/Play. Start your source music playing and increase the Left and Right volume controls. Enjoy!

Bias Drift over Time

If a tube is marginal (either old or has residual gas), it will slowly drift over the next several hours of operation. If it borders on defective, or is outright bad, it will not stabilize during the time the adjustments are being made. The Truth™ family of amplifiers measures all of the tubes in-circuit, with actual operating voltages and currents. The old-fashioned TV-tube testers used by many resellers are much cruder, and basically only tell you whether the tube is completely dead or not. They can't accurately tell if the tube has problems or is at the end of its working life.

Tubes can test "Good" or "OK" on a vintage tube tester, only to sound pretty bad in a high-quality amplifier, or not bias at all in a fixed-bias amplifier. (It's a little counter-intuitive, but "fixed-bias" amplifiers actually have bias adjustments, along with bias meters.)

If you find the "upgrade" tubes are drifting over time, we strongly suggest removing them and replacing them with the original tubes the amplifier came with. There are wonderful tubes out there, but there are some fakes as well. The precision bias circuits of the Truth™ amplifier show the real-world performance of the tube; you can trust the measurements you're seeing during the bias-setting procedure.

If the tubes are stable (and all good tubes are), you can set the bias, check it every now and then if you want to be double-sure, and go ahead and enjoy the Truth™ family of amplifiers as much as you want. It can't be harmed by minor miss-biasing; this procedure is here so you can get the best sound, and the longest life, from any set of tubes you install.

SPECIFICATIONS
The TRUTH

All measurements taken after 1/2 hour warm up time

Power Output:
Power output, both channels driven at 5% distortion:
4.2+ Watts RMS

Peak power output:
12.5 Watts per channel

Frequency Response:
1 Watt RMS -3 dB @ 6 Hz - 140 kHz
Flat 18 Hz-85 kHz +/- 0
Phase shift through audio pass band zero

Wideband hum and noise:
Input shorted, output into 8 Ohm load
<25 µV RMS (less than 25 micro volts)

S/N Ratio @1kHz, just below clipping:
125 dB

Input sensitivity for full power:
1.3 V RMS

Gain:
14.5 dB

Gain match left and right channels:
Better than .3 dB

Input Impedance:
at 20 Hz: 30 K Ohms

Output Impedance:
4 Ohm, 8 Ohm

Dimensions:
11.8" W x 18" H x 18" D

Weight:
69 Lbs

Power Consumption @ 120VAC, 60 Hz line voltage:
109 Watts, 1.2 A

Features
The Truth™ is a non-inverting, zero feedback single-ended pure class A amplifier D/C coupled tube stage, with no capacitors in the signal path. Highest quality components and matched utilized

COMPONENTS/ CONTROLS

Vacuum Tubes:
1x 6DJ8 input tube (selected and factory tested)
2x 2A3 output tube (selected and factory tested)

Compatible tubes:
2A3... JJ 2A3-40
6DJ8... 6922, 7308, CCa, E88CC, E188CC

Front panel indicators and controls:
1x... Custom Simpson® plate current meter
(L/R bias for 2A3, L/R bias for 6DJ8)

2x... Custom Simpson® relative-power meters,
(approx. 1 Watt RMS into 8 Ohms @ the start of the red marker & 3.5 Watts RMS @ full scale)

2x... Independent coarse L/R stepped volume control,
Rotary switch, 12-position:
0, -5, -8.75, -12.5, -16.25, -20, -23.75, -27.5, -31.25, -35, -38.5 dB, mute

2x... Independent fine L/R stepped volume control,
Rotary switch, 3-position:
0, -1.25, -2.5 dB

1x... Main power switch, push button, w/LED "ON" indicator

1x... Run - Calibrate switch
toggle switch, 2-position

1x... Rotary 4-position selector switch for current meter
(L/R bias for 2A3, L/R bias for 6DJ8)

Rear Panel Connectors:
IEC socket with integral 2 Amp Slo-blo 5x20 mm fuse - Littlefuse® 120 VAC 60 Hz line voltage

2x... RCA audio inputs
(left and right)

6x... Speaker connection terminals
(left and right - Common, 4 Ohm, and 8 Ohm)

SPECIFICATIONS
DAA-3

All measurements taken after 1/2 hour warm up time

Power Docking Base (an industry first)

Base power supply is docked to amplifier module 100% total isolation of amplifier and power supply module

Power supply (7) fully regulated DC ultra-low noise regulators

Heavy duty power transformer low magnetization current high VA custom built

Magnetically shielded topology and noise isolation IEC removable power cord with fuse (spare fuse integral)

Aerospace quality components including docking plug assembly

Gold plated connections

Full aluminum CNC machined chassis anodized

Amplifier module (DAA3)

(Dual) Auto-former 23 position tapped ultra-wide bandwidth Input volume controls

Full aluminum CNC machined chassis, knobs, trims, anodized

Direct coupled to gain stage from volume control

Two sources input RCA gold plated, selectable (Input 1 and Input 2)

Play/Mute switch

6DJ8/6922 input gain/drive tube DC coupled by our unique “Z-Direct” coupling circuit to the output stage. (True DC stage coupled, no capacitors, resistors, inductors in the signal path)

Simpson analog current meter (custom)

4 local DC integral regulated local power supplies
Output tubes 2A3 type grid biased and run on regulated DC supplies and DC filaments

Output transformers: Custom made, special core materials, high bandwidth, low insertion loss, low DCR, high inductance,
-1 dB down 15 Hz-85 KHz -3 dB 10 Hz-85 KHz

Second harmonic down -70 dB at rated power
Power 4.2 Watts per channel 6.5 peak (maximum impulse 12 watts +)

Wideband hum & noise better than 150 microvolts (both channels)

Signal to noise better than 115 dB

Custom Simpson auto ranging 3.5-inch relative power analog meter (lighted)

4 and 8 Ohm speaker output terminals (5 way)

Power 117 Volts AC 60 Hz 107 watts
W 13.5” x D 12” x H 12” 59 Lbs.

Warranty 5 years amplifier and power base,
90 days tubes

Provided with Old Stock issue 2A3 tubes & 6DJ8

SPECIFICATIONS
DGA-2

All measurements taken after 1/2 hour warm up time

Power Docking Base (an industry first)

Base power supply is docked to amplifier module

100% total isolation of amplifier & power supply module

Power supply (7) fully regulated DC ultra-low noise regulators

Heavy duty power transformer low magnetization current high VA custom built

Magnetically shielded topology and noise isolation IEC removable power cord with fuse (spare fuse integral)

Aerospace quality components including docking plug assembly

Gold plated connections

Full aluminum CNC machined chassis anodized

Amplifier module (DGA2)

Alps matched section “Blue Velvet” stereo input volume control.

½ dB end to end tracking

Direct coupled to gain stage.

Two sources input RCA gold plated, selectable (Input 1 and Input 2)

6DJ8/6922 input gain/drive tube DC coupled by our unique Z-Direct coupling circuit to the output stage. (True DC stage coupled, no capacitors in the signal path)

Simpson analog current meter (custom)

4 local DC integral regulated local power supplies Output tubes 2A3 type grid biased and run on regulated DC supplies and DC filaments

Output transformers utilized are gapped for 60-70ma standing dc current and of extended wideband design (custom wound)

4 and 8 Ohm speaker output terminals (5 way)

We use a hand computer graded and matched** section Old Stock tubes

EZ bias system utilizing analog panel meter with indicated “set” point bias takes only a few minutes and only needs adjustment as tubes age. Built in tube condition tester

Measured specifications:

3.9 watts per channel, peak power 5.5 watts per channel

Wideband hum and noise less than 200 microvolts. (both channels)

Bandwidth +/- 1 Db 15 Hz - 45 KHz +/- 3 Db 10 Hz-75 KHz 2nd harmonic down 65 Db at rated power

107 watts, line at 117 volts AC 60 Hz.

Dimensions W 13.5” x D 12” x H 12” 55 Lbs.

Warranty 5 years amplifier and power base, 90 days tubes

Provided with Old Stock issue 2A3 tubes and 6DJ8 (Matched pairs and matched section NOS upgrades available)

SPECIFICATIONS
DGA-1

All measurements taken after 1/2 hour warm up time

Amplifier Specifications (DGA1)

Alps “Blue Velvet” stereo input volume control

Single chassis all aluminum CNC machined anodized

Direct (DC) coupled to gain stage (input to 6922)
Two source input RCA, selectable (Input 1 and Input 2)

6DJ8/6922 input gain/drive tube

True DC stage coupled, Gain stage direct to 2A3 no capacitors

Output tubes 2A3 type (2) new issues
Regulated DC B+ supplies and DC filaments

Output transformers utilized are gapped for 60-80ma
standing dc current and of wideband design (custom made)

4 and 8 Ohm speaker output terminals (5 way)

EZ bias system utilizing LED digital segment display (switch selectable left & right 2A3)

3.2 watts continuous each channel/peak power 4.5 watts

Wideband hum and noise less than 300 micro volts

Bandwidth +/- 1 dB 25 Hz-35 Khz +/- 3 dB 14 Hz-55 KHz

Power consumption 117 watts @ 117 Vac 50 Hz
Dimensions W 13.5” x D 12” x H 6” less tubes

Weight 40 Lbs.

Warranty 5 years amplifier 90 days tubes

NOTE:
DGA-1 model is suppled with bias and set up instructions separately to this manual as the procedure differs from the other models we offer

WARRANTY

All parts and materials warranted for 5 years. Vacuum tube warranty, 90 days
Contact the factory for Return and Warranty RMA authorization

Whammerdyne Heavy Industries

Tel: (503) 887-9015 (Pacific Time)

Email: info@whammerdyne.com
Web: www.whammerdyne.com

The Truth™ 2A3 amplifier is designed, manufactured, and tested in the United States of America.

Rev# 4.08.15.0

www.whammerdyne.com