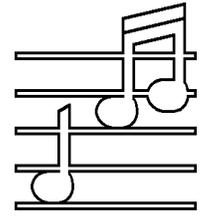


AUDIO BASICS



A MONTHLY NEWSLETTER OF AUDIO INFORMATION
VOLUME TEN NUMBER TWO FEBRUARY, 1991

A.V.A. Ω mega Power Amps, The Best Solid State Ever!

It is time to tell you about our brand new Ω mega power amplifiers which now replace the Transcendence Two solid state series of power amplifiers and are without question the most transparent and high definition solid state power amplifiers you have ever heard. **The prices of the Ω mega power amplifiers are substantially less than the prices of the Transcendence Two amplifiers.** This series is available in many more chassis and power configurations, priced for every budget. **There are Ω mega circuit board upgrades for all of our older Mos-Fet and Transcendence power amplifiers.**

What do the circuits sound like?

They sound bigger, tighter, much more dynamic, stunningly smoother but absolutely transparent, with no "solid state" artifacts at all. The Ω mega power amplifiers have a power bandwidth extending to nearly 500kHz, slew rates of hundreds of volts per microsecond, and stability so pure that DC balance trimpots are not necessary. The bass definition sets new standards. The ability to musically follow the most complex high frequency transients is unequalled. You will hear violins sound just right. There is a sense of faithfulness to the spirit of the music combined with accuracy that will let you enjoy program material you previously thought was defective. Of course the circuits really don't "sound" this way, it is just that they are so pure and fast that they allow you to hear much more of the music in a way that will surprise and please you. New Ω mega power amp prices start at \$595.00.

What is new about the engineering?

Normally, the various stages of a power amplifier must be compromised because it is nearly impossible to design a circuit con-

figuration that does everything you desire simultaneously. For example, a front end circuit that may have good overload immunity might not have good DC stability or a really good signal to noise ratio. Or, a drive circuit that has superior linearity and frequency response might be too difficult a load for a front end circuit to drive. Thus, normally one designs the best circuits possible that are able to be properly driven by the circuits ahead of them.

With the Ω mega designs these compromises are not necessary because we have interfaced front end circuits that are so fast, linear, and high current that they can drive difficult loads hundreds of times better than before. Thus we could then design mos-fet driver circuits optimized for speed, linearity, stability, and high output drive current without worrying if the drive circuits themselves were too much of a load for the front end. The result is a truly balanced amplifier of extraordinarily linearity and bandwidth. Finally we rethought the job of the feedback loop and configured it differently than ever before. Actually, the Ω mega amplifier circuits have no overall

loop feedback at all, thus the input circuits simply cannot overload on an overall loop error correction signal – that signal does not exist. But feedback does exist as an active powered feedback loop matched perfectly (electrically and thermally) to the input parameters. Thus not only are the amplifiers perfectly balanced top to bottom but they have balanced in input and feedback drive parameters too. Because the feedback loop is actively isolated from the speaker terminals, nothing the loudspeaker or speaker wire does has any adverse effect on the internal musicality of the amplifier. These amps sound great with any decent speakers, and the brand of speaker cables you use with them will make no difference at all.

How do the Omega amplifiers fit into our existing product line?

Of course the much more expensive vacuum tube hybrid Fet-Valve units remain our very best because there are aspects of musical liquidity combined with absolute linearity that they best achieve. But, we know that the Omega units will significantly “out-music” anything else. If you are not a Fet-Valve owner, we think you will find the Omega amplifiers to be the most musical you have ever heard at any price. You are going to be very pleasantly amazed by our quality.

A very important aspect of the Omega amplifier design is its ability to get the very best out of associated equipment. **You don't need to have the most expensive speakers, CD player, or preamp to realize a huge musical improvement in your system.** Your records will sound more natural than ever because the Omega amps don't ever get into trouble, even if your phono cartridge does. Likewise, the Omega amps simply are not disturbed by the high frequency digital distortion from less than perfect CD players. You will hear music

from CDs like never before. An Omega amplifier will probably be the most important audio component you have ever owned. They are available right now.

These are the New Omega Models

The Omega 400 Amplifier. The Omega 400 is the best solid state amplifier we have ever produced. It is rated at 200 watts per channel and it sounds like much more. It is silent, completely stable, and is happy into 2 to 4 ohm loads. It is available as a complete brand new unit – a black chassis with an anodized AVA black faceplate and rear heat fins at \$1295.00. The circuits can also be built into any Dyna St-400, St-416, or St-410 amplifier you furnish with a useful cost savings because you don't pay for a new chassis.

A higher power version, our **Omega 500** circuits, can be built into any Hafler DH-500 or XL-600 chassis you supply. The XL-600 chassis allows extra power output devices in parallel, useful if you want to drive very low load impedances (less than 2 ohms).

We also build the **Omega 250** version of this new circuit set into any Hafler DH-200, DH-220, or XL-280 chassis you supply. It is the same circuit topography with a little less power but still excellent 2 to 4 ohm drive capability.

The Omega 240 Amplifier. The Omega 240 is a less expensive version of our new amplifier design. It uses the same circuit boards and has the same unbelievably musical sound but it comes in a 120 watt per channel smaller new package. It also has a black chassis and a black anodized AVA faceplate and rear heat fins. The price for a complete new amp, with the same state of the art sound as the bigger ones, is just \$895.00. We can also build the Omega 240 circuits into any existing Dyna St-150

chassis with the same sound but at a lower price.

The Omega 150 Amplifier. If you are looking for the purest music you ever heard, but don't need (or cannot really afford) a high power amplifier we have something brand new just for you - our 75 watt per channel Omega 150 circuits. The sound is identical to its big brothers (it is the same new circuit design) – it is simply scaled down in voltage and power rating to fit a more economical mechanical layout. We can usually offer you new Omega 150 circuits in a very good clean used Dyna St-120 chassis at just \$595.00. Or, at an even lower price, we can build these circuits into any Dyna St-120 or Hafler DH-120 you supply. Note that the **Dyna St-120 will get a brand new power transformer** (along with new everything else) so your old one need not be working at all.

The Omega 180 Control Amplifier. How about a brand new 90 watt per channel Omega power amplifier and a full function Omega preamplifier complete with phono, dual tape monitors, switchable tone controls, precision volume and balance controls, a ceramic selector switch, two sets of 5 way binding post output terminals, speaker switcher, and a toroid power transformer all in one compact and attractive black chassis for \$995.00? Now get the best of both our Omega amplifier and preamp circuits for a lower price because you only pay for one chassis, not two. Music better than you have ever heard in any audio salon is now within your reach.

If you supply us with a Dyna SCA-50 amplifier (working or not) you will save \$100.00 because we won't have to charge you for a chassis, but you will get the same great circuits (complete with the new toroid transformer) and with a renewed appearance

too – our AVA black faceplate and knob set is no extra charge on this rebuild.

Remember that Omega Circuits are Retrofittable into Most Existing AVA amps.

In the past we would have told you to upgrade your preamp or CD player first. But with the new Omega amp circuits, consider seriously upgrading your power amp first. The enhanced pure musicality will amaze you.

**Audio Engineering vs. Audio Magic
Session Two**

We still have lots more to say about the topic we started last month and we better get back to it. If you remember, we were talking about the fact that there is no such thing as a “good sounding part” when we ended the issue. Since then I have received calls claiming that you did hear differences when replacing parts in your whatever with new expensive “audiophile” grade parts therefore there must be substance behind the claims of good sounding parts.

Nonsense. Certainly there are valid reasons why you may hear differences when you replace parts. But none of the reasons are because the new parts are “better sounding.” The audiophile is simply fooling himself into paying too much for subjective claims.

Here are some of the reasons that you may hear differences when you do parts transplants.

- Many “audiophile” brand capacitors are in fact simply rebranded inductive wound soft film capacitors, designed and built in the Far East as cheap repair parts for third world vacuum tube radios. The main “virtues” of these parts is that they are microphonic and inductive. They

make a circuit ring like a defective vacuum tube if you tap on them while the circuit is on. The effect is much like adding a little reverb machine to the unit. If you use microphonic capacitors in your electronics or in your loudspeakers, you may easily fool yourself into thinking that the low level “reverb” these capacitors add is improved “ambiance” and “air” — except that this ambiance did not exist in the original source material and you cannot turn it off. It is simply distortion that you happen to like today. The inductive spikes these capacitors add to the signal can put a nice sharp little edge on transients, fooling you into thinking you are hearing more “detail” — kind of like turning the contrast control way up on your TV set. I cringe at the thought because that fake detail that you cannot turn off really sounds like “fingernails on the blackboard” to someone who demands that high fidelity reproduce music, not generate special effects. Avoid extra cost “good sounding” capacitors like the plague, because that is exactly the kind of damage they do to the music.

- A second reason amateurs hear differences when they do parts swaps is that they unknowingly dramatically change the value of the parts and thus the operation of the circuit. *Remember the value of a part is the value that it really is, not simply the value of the number marked on it.* In Dyna St-70 amplifiers, for example, it is not unusual to find that the 1K Ω 2 watt gain set resistors actually measure 50% off from their marked value. If you replace these resistors with new parts that actually happen to be close to the specified value you will hear a marked difference in the channel balance and the apparent loudness of the amplifier. The difference was not because the new parts

sounded better, only because the new parts were of a different value than the old parts. In doing a parts transplant, you must measure the actual value of each part you remove and then replace it with a new part that measures exactly the same as the part you removed if you are trying to find out if new parts sound better. If you do not make these measurements and take care to make exact in kind value replacements, than any observations you make about the sound of the parts is invalid because there are important variables that you did not control.

- Amateurs also unsuspectingly come to the conclusion that the new parts sounded good because they didn't realize that the old parts they were replacing were defective. For example, in the Dyna FM-3 tuner, the coupling capacitors between the IF and Mplx sections age, becoming very inductive as they get older. Although the measured value and voltage rating appears to still be within specifications, the capacitor's high frequency response degrades with time. Since the proper operation of the Mplx section depends upon seeing a strong 38KHz signal from the IF section, if this signal is attenuated by an inductive coupling capacitor, then the stereo separation and high frequency musicality suffers badly. Putting in new capacitors resolve this problem, but not because the new capacitors were better sounding, but only because the old capacitors were defective.
- The most important thing to remember is that “good sounding” parts are very expensive because the purveyor is simply marketing audiophile BS at a high price. True high quality parts are remarkably good values. 1% tolerance low noise half watt metal film resistors are only six cents each in 100 lot.

- More is not necessarily better. Adding output transistors to a given design may add enough lead capacitance to make the circuit less stable or make the driver circuit distort more trying to drive the extra load. Extra power supply capacitors, if wired in with long leads, will decrease stability by adding spurious resonances. Power supply termination must be controlled and amateurs cannot do this.

Finally remember that if “military grade” parts really sound best than what you really want as the heart of your audio system is the radio from an army jeep (or HumVee) because it is made completely of military grade parts – right!

More next month.

The FM-5 Rebuild is Gone, Unless -

Unless we hear from enough of you still wanting Dyna FM-5 or AF-6 tuners rebuilt to make it economically rational for us to run this circuit board set again. Our rebuild uses two complex and expensive circuit boards. It will cost us about \$1500 to order another production run of these boards. Economically it makes no sense for us to do this unless we can anticipate enough sales to support this up front tooling cost. As the FM-5 gets older we simply have not been seeing enough of them to rebuild to justify the cost of a board re-order.

We would have to hear from at least ten of you promising an order for an FM-5 or AF-6 rebuild (cost \$325.00 each) before we could afford to reorder the boards and reinstate the unit into production. Get your letter to us now if you still want your FM-5 or AF-6 rebuilt.

The Super Seventy Kit Special Price is Over

Our costs on this unit have gone up because we are now including the new 6GH8A phase inverter tubes and a circuit board revised for these improved tubes in the kit at no increase in the retail price. Our readers have had plenty of time to get the kit at the \$150 special price. Now the price is \$200 for everybody.

We still have complete wired Super Seventy amplifiers available at \$595, including our new power transformer and jacks. Note that we have authorized Sound Value to use our transformer design. Their tooling works just fine and you can buy the transformer directly from them if you desire.

Used Equipment

We have a really nice Hafler DH-100 based preamp for you this month with a brand new black faceplate and cover. We can give you three choices with this very attractive and functional unit. The price with the now installed Fet Three Plus circuit modules is \$245.00. Or we can supply it upgraded to new Fet-3i status for a total of \$295.00 or upgraded to Ω mega preamp status for a total of \$345.00. This will be the lowest price available on our great Ω mega preamp. (Six month warranty)

We have a very clean and tested stock Dyna Pas-3 preamp available complete with new tubes for \$125.00. Buy this at the same time as our Super Pas Three rebuild kit and get both for \$295.00. (90 day warranty)

Finally we have a good Fet Three Plus CD player with remote control (CDB1560 chassis) we have just checked out. This unit is just \$195.00 and includes a 90 day warranty. We will sell this unit upgraded with Fet-3i circuits for \$245 or upgraded with Ω mega circuits for \$325.00.

That is it for this month. Next month we may have a special price on a set of walnut B&W 801 Matrix speakers complete with our crossover improvements. Call us about it in a few days. I hope you saw the nice letter to the editor in *Stereophile* about our crossover rebuild. This has brought us an enormous number of inquiries about the project.

A New Catalog

Sorry, I don't have our new full line catalog ready yet. I simply have not had time to complete it yet. If you have the blue Ω supplement, you have our most current information for now. We will let you know when the new catalog is ready.

Upgrade Prices

The last page this month is the current price list to upgrade an older A.V.A. component to the most current specifications. We will continue to support our older equipment as long as economically possible.

Frank and Darlene Van Alstine

Component Retrofit and Upgrade Prices January 15, 1991

Chassis	From	To	Price	Notes
Hafler DH-110	Fet Three Plus	Ωmega	295.00	with tone controls
Hafler DH-110	Fet Three Plus	Transcendence Two	550.00	with tone controls
Hafler DH-100	Fet Three or Fet Three Plus	Fet-3i	195.00	with tone controls
Hafler DH-101	Super Fet, Fet Three, Plus	Ωmega	195.00	with tone controls
Dyna Pat-4	Super Fet Series	Ωmega	245.00	with tone controls
Dyna Pat-4	Fet Three, Fet Three Plus	Ωmega	195.00	with tone controls
Dyna Pat-4	Super Fet, Fet Three, Plus	Transcendence Two	495.00	with tone controls
Dyna Pat-5	Super Fet Series	Ωmega	245.00	with tone controls
Dyna Pat-5	Fet Three, Fet Three Plus	Ωmega	195.00	with tone controls
Dyna Pat-5	Super Fet, Fet Three, Plus	Transcendence Two	550.00	with tone controls
Dyna Pat-5	Transcendence Series One	Transcendence Two	495.00	with tone controls
Dyna Pat-5	Any AVA circuits	T-3 Fet-Valve	1045.00	with new faceplate
Dyna Pat-5	Any current AVA circuit	New black AVA faceplate	75.00	with black knobs
Dyna Pas-3	Super Pas, Super Pas Two	Super Pas Three	250.00	supply and audio upgrades
Dyna Pas-3	Super Pas Three	Add Ωmega Buffers	195.00	output and phono
Dyna Pas-3	Super Pas Three	Add Ωmega Buffers	125.00	output only
Dyna Pas-3	Super Pas Three	black AVA faceplate	50.00	AVA selector switch needed
Dyna Pas-3	Super Pas Three	Ceramic selector switch	75.00	
Dyna Pas-3	Super Pas Three	AVA gold jack set	75.00	
Dyna Pas-3	Super Pas Three	Faceplate, jacks, & switch	150.00	(you save \$50.00)
Dyna SCA-50	CA-50, CA-150, Mos-Fet Control Amp	Ωmega preamp circuits	195.00	preamp upgrade only
Dyna SCA-50	Omega 150	Ωmega 180 power circuits	295.00	power amp circuits only
Dyna SCA-50	Any AVA circuits	Ωmega 180 Control Amp	795.00	amp, preamp, supply, as needed
Dyna SCA-80	CA-80 or Mos-Fet Control Amp	Ωmega preamp circuits	195.00	preamp upgrade only
Hafler DH-120	Any AVA circuits	Ωmega 150	395.00	
Hafler DH-220, 200	Any Mos-Fet Series	Mos-Fet 250E	295.00	
Hafler DH-200, 220, 280	Mos-Fet Series, Transcendence One	Ωmega 250	695.00	
Hafler DH-200, 220, 280	Transcendence Two Series	Ωmega 250	495.00	
Hafler DH-500, XL-600	Any Mos-Fet Series	Ωmega 500	695.00	
Hafler DH-500, XL-600	Transcendence Two Series	Ωmega 500	495.00	
Dyna St-400, 410, 416	Any Mos-Fet Series	Mos-Fet 400E	395.00	
Dyna St-400, 410, 416	Mos-Fet Series, Transcendence One	Ωmega 400	695.00	
Dyna St-400, 410, 416	Transcendence Two	Ωmega 400	495.00	
Dyna St-410	Any Mos-Fet Series	Fet-Valve 300i	1195.00	
Dyna St-410	Any Mos-Fet Series	Fet-Valve 500	1795.00	
Dyna St-150	Any Mos-Fet Series	Mos-Fet 240E	350.00	AVA black faceplate + \$50
Dyna St-150	Any Mos-Fet Series	Ωmega 240	595.00	AVA black faceplate + \$50
Dyna St-150	Any Mos-Fet Series	Fet-Valve 300	1045.00	meters N/A with AVA faceplate
Dyna St-120	Any Mos-Fet Series	Mos-Fet 120E	295.00	with low noise regrounding
Dyna St-120	Any Mos-Fet Series	Ωmega 150	395.00	(includes new transformer)

Call us at **612 890-3517** to confirm the status and cost to upgrade your equipment before shipping to us. Our prices assume that you are sending an AVA wired and working unit not subsequently modified by others. If you do not see your old AVA equipment on this list, call us to find out if there is an upgrade available for it. Upgrade prices assume **no complications**. If your unit needs additional work to complete the conversion (upgraded supply or controls for example) the price will be higher. Upgrades are not available as user installed kits. Super Pas Three upgrade from Super Pas and Super Pas Two does not include new audio circuit boards.