

Tube vs solid state phase inverter

The first stage in a power amp is normally the voltage amplifier. A line stage, if present, is normally a separate item. Nowadays there is little need for line stages, as modern digital sources have fairly high output voltages. 12AX7 has a stage gain around 50-80. 12AU7 around 10-15. Either can be used as a phase inverter/splitter.

Its function is relatively simple: take a signal input, and create two outputs, one that is identical (e.g. in-phase) to the original, and another that is a mirror-image (phase-inverted or flipped ...

Both the complex solid-state phase converter design and digitally controlled rotary phase converters can provide precise three-phase output that can run multiple loads at a time. Potential of Control . Solid-state phase converters can safely power virtually any three-phase load within its rated capacity--pumps, irrigation systems, machine ...

This signal is not inverted so the two signals flowing to the power tubes are 180 degrees out of phase--mirror images of one another--one is inverted and one isn't. Unlike the 5F6A Bassman's long tail pair phase inverter, the 5E3's cathodyne phase inverter barely amplifies the guitar signal. It's differential gain factor is always slightly ...

Solid state rectifiers are often a bit quieter than their tube rectifier counterparts, but this is a consequence of the filtering in the power supply, not the rectifier itself. ... There are other stages in amps which can cause their own types of compression anyway: preamp, phase inverter, power amp biasing system (notably cathode biasing), and ...

In addition, the usual 12AX7 or 12AT7 phase inverter plate impedance is so high that it can't pull the output tube grid positive in the face of grid current, so the grid of the output tube is hard-clipped at $V_{gk}=0V$. This clipping can be as harsh as any solid state situation.

Hey guys. Concerning my 1983 JCM 800 2204. I understand that V1 and V2 have the most effect on the the gain for the preamp but my question concerns V3 the phase inverter. How important is that tube? Is there a recommended 12AX7 for that position. Thanks in advance.

Both types make great phase inverter tubes, but only if the circuit is optimal for them. A 12AT7 can drive a power section just as well as or better than a 12AX7. Especially when the circuit is designed around its electrical characteristics. If you use a 12AT7 in a phase inverter circuit designed for a 12AX7, you will get less drive from your ...

The phase inverter stage certainly makes a big sound difference in these amplifiers. I'm really starting to pay a lot more attention to the sound of the phase inverter tubes. I used to put any good tube into the phase inverter stage and never considered its sound very much. I was told that they don't have much effect on the sound.

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Solid state amps are often rated far higher due to headroom. Tube amps overdrive at a lower volume but analogue clipping is a soft clipping which is pleasant on the ear. Solid state amps are transistor clipping which is harsh. As a result, solid state amps are rated higher to prevent clipping. A 100w solid state amp isn't louder than a 100w ...

The Ice Pick Cap affects only the phase inverter and power tubes. ... You might compare the two magnetic circuits to solid state amps versus tube amps, where the solid state amp gives it all its got then clips hard, while a tube amp compresses nice and smooth. The extension of this idea, then, is that with the AlNiCo, like the tube amp, you can ...

An intriguing alternative for the phase-inverter tube, the 12AU7--aka ECC82 in the U.K. and Europe--has a gain factor of only 19. The 12AU7 is extremely resistant to distortion in the PI stage, which is why, circa 1963, JMI included a 12AU7 in their new 100-watt Vox AC100. The goal was to give the Beatles enough clean power to be heard over ...

Yes, I am looking for a phase inverter that can drive a quad of 6l34s or 6l6s into full breakup. I want an inverter that is better balanced than the typical long tail pair phase inverter (which tends to be unbalanced if you crank the amp). Still, this is only a 100w guitar amp, so even a 12bh7 driver is perhaps too much. a 12au7 might suffice

This time the solid-state phase splitter provides a gain of 6, so 1Vpk comes out as +6Vpk and -6Vpk. The higher gain is needed as two negative feedback loops reduce the tube amplifier's gain. Next time, I will show how we can further take advantage of the solid-state phase splitter in a hybrid tube amplifier. Single-Ended Hybrid Amplifier

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The one with the GE 5751 in the phase inverter has a slightly, but definitely noticeable better tone. Admittedly, there are amps in which I don't hear much of a difference. I have a Blue Voodoo 100 watt head in which I can't hear much difference. The 12AX7 in the phase inverter leaves you with piercing, shrill highs.

The 7199 is a sharp cutoff pentode combined with a medium mu triode, compared to a dual high-mu triode in the 12AX7. H H Scott uses a 6GH8 or 6BL8 pentode/triode tube pretty similar to the 7199 as their driver/phase inverter in many ...

Any amp other than a single-ended design carrying only one output tube (or two running in series in the occasional dual-single-ended type) will use at least one triode--half of a traditional preamp tube--in its phase inverter, and most use two triodes, a full tube, in one way ...

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There's a difference in the way they behave, the phase inverter is the tube that diverts current between pairs of power tubes. A 12at7, though lower in gain than a 12ax7, actually has a much ...

When you change your output tubes change that phase inverter. At the least change it every other output tube change. Many folks think that when they want to have their amp have more clean headroom they can insert a 12AT7 in place of the 12AX7. Very true. (By the way, the 12AT7 in a first gain stage is an awful tone generator in a guitar amp.

I've turned the corner full circle on this. I think if the amp designer calls for a 12AX7, then that's what should go in there. Putting an AT7 where an AX7 is called for just rolls off the highs, and makes the tone duller with less output.

Of course, this would leave you with a triode stage unused, if you don't want to add an extra stage or something, then I would suggest using two halves of a 12AX7 parallel in the first stage, like one sees them being used in some Matchless amps, the Fender Concert II and a few others, and using the second tube for the second stage and the phase ...

The phase inverter tube is playing an important for the clean headroom of your amp, and it should be replaced as often as the power tubes and for the exact same reason; clean headroom. The rectifier tube we keep longer than the power tubes as long as it is noise free and can provide a high enough bias current for the power tubes.

MOSFETs for the output stage eliminates some of the problems associated with vacuum tube OTL output stages: inefficiency, high heat, the need for a phase inverter, and, sometimes, reliability problems. The output tube heaters alone draw a considerable amount of current.

The phase inverter in my amp is a 6922. A better choice for PI in my opinion, but a different genetic pool to the 12A*7 series. In your amp, I would favour a 12AT7 over 12AX7 for a phase inverter. 12AT7's have more output power to drive the power tubes than a 12AX7.

The phase inverter tube doesn't need to amplify the signal, but it needs to keep as much current as possible running to the banks. While you can use a 12AX7 as a phase inverter tube, many guitarists find that a 12AT7 gives them a better sound with less distortion and more headroom for soft-to-loud dynamic passages.

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