Subject: Re: Parafeed vs transformer coupled
Posted by RC Daniel on Sat, 17 Nov 2007 09:49:27 GMT
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Howdy,Below, I have included quotes frrm others far more knowledgeable than I. As for differences between the two topologies, when looking at circuit diagrams, you should notice a few things. In a parafeed diagram, the power supply (B+) should connect to the output tube's plate via a plate choke (or CCS etc.); in a series-feed diagram, the B+ should connect to the output tube's plate via the transformer (which is gapped to carry the necessary DC current).
The parafeed circuit has the capacitor you noted to block any DC current that might want to make its way to the transformer. There are lots of theoretical advantages to the parafeed output, however, to realise these, the core of the output should be permalloy, cobalt etc. rather than plain old iron. That's fine, as parafeed is 'easier' to make with these cores than series-feed.
Also, despite parafeed's theoretical benefits, some people believe gapping a transformer linearises its core and provides some sonic benefits and others claim they can hear the parafeed cap in the signal path. Anyhow, read the comments from the pro-parafeed camp below – they provide some detail as to the benefits. Also, you could read this (you can ignore the PP stuff): http://homepage.mac.com/tlinespeakers/vaughn/downloads/SE-v-PP-Part2.pdfVoltsecond (2002):I don't fully understand yet why a Parafeed works as good as it does but I am still attacking the problem. A Parafeed will have much more power supply rejection than a SET. With a 10H choke in B+ it could be 50 dB more. The choke in the B+ both stores energy for the output and blocks power supply ripple voltage from getting on the output. The Parafeed naturally removes sub-harmonics from the output transformer making the output transformer's job easier. At low frequencies with the right coupling capacitor, the AC voltage on the plate is reduced without reducing the amount of voltage supplied to the speaker. This reduces the amount of AC current change in the plate choke which allows it to work to a lower frequency before it runs dry (stored current drops to zero.) If you want to design a little bass boost into a Parafeed, you can. But don't think this is why the Parafeed has good bass. With lossy parafeed I am trying to remove as much of the bass boost as possible. Doc Bottlehead (2002):An air gapped transformer will generally have much lower inductance than a interleaved transformer built for parafeed use. This is important because the inductance of the OT works in parallel with the inductance of the plate loading choke. A parafeed trans will tend to have very high inductance, maybe 200H, so it's influence on the overall inductance is relatively minor when paired with say a 30H plate choke. mqracing – of Magnequest (2006)awe... probably 99.9 percent of all series fed tranneys have the signal going to ground through the power supply (which is as the name suggests in series with the audio signal). And what is the first thing the signal sees in the series feed circuit after the trans? The last capacitor in the power supply filter circuit. Usually a 10, 20, 40 or more mfd capacitor. Right smack dab in the signal path. But... if you hide the cap... then a lot of folks will "see" a contrast... even in the case where the parafeed blocking cap is in the same exact position schematically as the series fed power supply cap. But, yet, many folks will not see this series capacitor in the signal path... just as they don't ever see all the tiny little capacitors (many, many of them) in any audio transformer... and in some cases (like a 1:1 bifilar wound critter) the capacitance can be rather large... and responsible for most of the effective coupling above a certain frequency.Anyhow, that lot can be a little confusing... perhaps best to read the article linked above for a bit of context etc.CheersRaymond