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**From:** Jeff G.  
**Date:** 1/4/2002 1:41 AM  
**Subject:** **Yellowjackets--2203**

So what are these exactly? Do you have to purchase a set of EL84's also? I would like to try them in my JCM 2203 head if possible. Can I just use 2 and keep 2 EL34's in?---Thanks,-----Jeff

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**From:** wesb ([the\\_wesb@hotmail.com](mailto:the_wesb@hotmail.com))  
**Date:** 1/4/2002 4:50 AM  
**Subject:** **Re: Yellowjackets--2203**

I haven't tried them, but I've read some reviews on harmony central. I think they come with the EL84 tubes....interested in what anyone who has tried them has to say. I'd considered trying them in a JMP 50w head.

wesb

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**From:** Chill ([home@cthlaw.com](mailto:home@cthlaw.com))  
**Date:** 1/4/2002 5:30 AM  
**Subject:** **Re: Yellowjackets--2203**

I think they do come with the tubes. If you call THD, they will tell you what the yellowjackets do, and whether you can use them in your amp.

My recollection is that the yellowjackets convert the tubes to some kind of class A cathode bias ala the AC30. So when you push them into power tube overdrive, I think it's really turning them back into class AB, but you should check out Randall Aiken's article "The Last Word on Class A" in the tech papers section of his site on what is and is not class A.

What the yellowjackets allow you to do is run a smaller power tube in a less efficient setup. A pair of EL84's can get you about 18 watts, whereas a pair of 6L6's or EL34's can get you about 40-60 watts. And, class A is less efficient because the tube is running all the time instead of half the time (with the caveat above). The idea is basically to lower the power of your amp so you can turn the master up louder, which IMHO sounds better.

There is a voltage maximum that THD says you should not exceed. E.g. they told me not to put them into an Ampeg VT40 with 570 plate volts (according to Triode Electronics' site). THD can tell you more if you call them. They also make an attenuator and can tell you if that will risk damaging your amp/ transformers.

No affiliation with THD but I called them once,  
Chill

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**From:** Sebastian Enoch ([enoch@t-online.de](mailto:enoch@t-online.de))  
**Date:** 1/5/2002 2:05 PM  
**Subject:** **Anyone ever measured them?**

Hi!

I wonder what's inside these yellowjackets (or maybe ruby tone bones).  
I guess it's just a cap to decouple the grid from the amp's bias DC and a R/C at the cathode for cathode biasing. What else may be in there?  
Shouldn't be too difficult to build a pair of them from an old tube socket..

any comments appreciated

Sebastian

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<b>From:</b>	<b>manu</b> ( <a href="mailto:manulonch@yahoo.com">manulonch@yahoo.com</a> )
<b>Date:</b>	1/5/2002 8:29 PM
<b>Subject:</b>	<b>Re: Yellowjackets--2203</b>

Someone know the schematic of the Yellow Jacket ???

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<b>From:</b>	<b>Bob M.</b> ( <a href="mailto:lumetz@earthlink.net">lumetz@earthlink.net</a> )
<b>Date:</b>	1/5/2002 9:48 PM
<b>Subject:</b>	<b>Re: Yellowjackets--2203</b>

You're right, it shouldn't be too hard to build something similar. I think that Yellowjackets are targeted for people who do not feel that comfortable 'under the hood'.

They do two things: 1) rewire and adapt the tube socket to accept an EL 84 and 2) they block negative grid voltage from a fixed bias amp and give you a cathode bias instead. I'm assuming that they must do some voltage/current limiting of some sort. They are being shipped with JJ Tesla EL 84's which you replace by yourself when you feel the tubes are expired.

There are several types of these made, depending upon what amp you have but generally speaking, there are two common ones a) for fixed bias amps and b) for cathode biased amps. Both these are designed for power reduction. A third type is made for small Fender amps (which ones, I'm not sure but Champ (VibroChamp, Bronco) are included) that do not reduce power (I'm assuming that they don't recommend this type for your SVT). There are restrictions on their usage, voltages over a certain (high) point are verboten, amps using 7027A's are out, and you cannot sub 6AQ5's in them either. Also, parallel single-ended amps (i.e. Gibson Gibsonette) are off limits.

I have a friend who uses them and likes them alot but they are expensive but also very convenient. And the people at THD are helpful. Call or email with your questions (as I have) and they will respond with alacrity.

Bob M.

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<b>From:</b>	<b>Andy Marshall</b> ( <a href="mailto:andrew@thdelectronics.com">andrew@thdelectronics.com</a> )
<b>Date:</b>	1/5/2002 10:14 PM
<b>Subject:</b>	<b>Re: Yellowjackets--2203</b>

Bob,

Why would single-ended parallel amps be a problem? While I have never tried Yellow Jackets in the Gibsonette (a great little amp, by the way), they work perfectly in our new BiValve-30 amp, which is single-ended parallel.

Is there something peculiar about the Gibsonette's configuration that I am forgetting about?

- Andy Marshall

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<b>From:</b>	<b>Bob M.</b> ( <a href="mailto:lumetz@earthlink.net">lumetz@earthlink.net</a> )
<b>Date:</b>	1/5/2002 10:35 PM
<b>Subject:</b>	<b>Re: Yellowjackets--2203</b>

The Gibsonette is a single ended parallel amp using 2 x 6V6's. THD says not use Yellowjackets with this or any other single ended parallel amp. I don't know why they say that. maybe it's a transformer/reflected impedance issue.

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<b>From:</b>	<b>Andy Marshall</b> ( <a href="mailto:andrew@thdelectronics.com">andrew@thdelectronics.com</a> )
<b>Date:</b>	1/5/2002 10:06 PM
<b>Subject:</b>	<b>Re: Yellowjackets--2203</b>

All Yellow Jackets come with EL84 tubes. We used to use Sovtek non-military EL84s, but a few years ago switched mostly to JJ/Tesla EL84s. We have had good luck with them both sonically and in terms of reliability.

What in them? Different models of Yellow Jackets have different components, but basically they have a cathode circuit (parallel power resistor and capacitor), a capacitor to block the grid bias from them amplifier, a grid reference resistor, a supplemental current limiting power resistor on the screens and, in most models, a set of Zener diodes to give a constant voltage reduction on the plate and another set of Zeners on the screens. Most Yellow Jackets, you see, have around 9 discreet components in the circuit, excluding the socket and base. Building them is more like jewelry making than like electronics.

Furthermore, there are a few different sleeves of Teflon and/or fiberglass to add insulation to the certain internal components so that they cannot short to one another.

Another consideration, in addition to the component values and ratings, is the manufacturer of the component. The Zeners that we use do, under certain circumstances, get hot enough to melt solder joints, so these components are connected using a special high-heat crimp connection that is tested repeatedly before final assembly.

You may ask how a Zener could possibly survive getting hot enough to melt solder. Good question. Most brands cannot survive this. We have found one brand of military-grade Zeners that can take this heat all day long with no ill effects. Are they expensive? Yes. Are they time-tested? Well, we have about 7000 Yellow Jackets in the field, some of them almost 10 years old, and the field failure rate is well under 1%.

Could you possibly build your own? Sure, but there are a bunch of things to keep your eyes open about. Build it sturdy, insulate the heck out of everything; don't forget to study the temperature de-rating curves of your components.

Also, for safety's sake, don't even consider using metal tubing for the body of the adaptor. (We use fiberglass tubing.) If something were to go wrong, it is way too easy to get plate voltage on the body, and touching that could be very unpleasant. While I have never heard of anyone being killed by this, a few people I have heard from have gotten NASTY shocks from metal-bodied copies of the Yellow Jacket.

Be careful and have fun experimenting!

- Andy Marshall, THD Electronics, Ltd.

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**From:** Bob M. ([lumetz@earthlink.net](mailto:lumetz@earthlink.net))  
**Date:** 1/5/2002 10:46 PM  
**Subject:** **Re: Yellowjackets--2203**

Andy,

As I have alot of different amps, I emailed THD and asked specific questions as I was confused as to if I could buy one pair of Yellowjackets and use them in all of my amps or I had to have special ones for certain specific amp/amp types. One of the questions I asked was about single-ended parallel and the example amp I used was the Gibson Gibsonette. The email that came back said that one couldn't use yellowjackets in a single ended parallel amp.

Here's a good time to set the recod straight. I'm sorry if I passed any misinfomation.

Bob M.

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**From:** Andy Marshall ([andrew@thdelectronics.com](mailto:andrew@thdelectronics.com))  
**Date:** 1/5/2002 11:50 PM  
**Subject:** **Re: Yellowjackets--2203**

Bob,

I am sorry that you were given that erroneous answer by one of my employees. My tech folks are VERY good at what they do, but we all make mistakes from time to time.

I looked into it, and the person who responded to your email was under the misimpression that you needed a special version, the YJUni, for a single-ended parallel amp. You do not, you just need one with a cathode wire, like the YJCD or the YJ20D.

This is not to say that it will work with any home-brew single-ended parallel amp, but it should work fine in a Gibsonette or a THD BiValve-30, but the BiValve-30 sounds a bit better to my ears with a pair of YJUni converters than with a YJCD set or YJ20D set. It is a subtle difference, and it is totally subjective.

- Andy

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**From:** Bob M. ([lumetz@earthlink.net](mailto:lumetz@earthlink.net))  
**Date:** 1/6/2002 12:35 AM  
**Subject:** **Re: Yellowjackets--2203**

Andy and I communicated today and let's clear this up: you CAN use Yellowjackets in single-ended parallel designs such as the Gibson Gibsonette amp. Sorry for the mis-infomation folks.

Bob M.