ALL ABOUT...POWER TUBES

BY JOSH WORKMAN

UNLIKE TRANSISTORS—WHICH ARE ALL MADE TO very exact specs by computers and robots—vacuum tubes are still hand-assembled in different countries with different metals, and under varying conditions that can drastically affect their sound. This is a boon to tone aficionados, because the organic nature of each tube's sonic characteristics allows you to *individualize* the sound of your amp by simply swapping out its power tubes. In fact, according to tube guru Aspen Pittman of Groove Tubes, changing your tubes is the most basic modification you can have done to your amp,

and, very often, you can get the sound you're looking for without further effort.

Of course, "have done" is a critical phrase in the modification process, because tube replacement can be a dangerous operation for both your lifespan (there's often more than 400 volts DC running through those circuits) and your amp's. This is not something you want to attempt if you don't have the electronics chops, so be sure to call on a qualified amp technician to do the actual work.

As power tubes arguably affect your amp's sound more decisively than preamp tubes, we'll spotlight several power bottles and detail their basic tonal characteristics. Use these guidelines as a basic menu for finding the power tube(s) that might satisfy your personal concept of ideal amp tone.

The **6V6** is known for its sweet overdrive at low volumes, and it can be found in lower-wattage American amps such as the Fender Champ, Princeton, and Deluxe, as well as the Gibson GA6.

At the heart of the revered Vox AC30 is the **EL84** (aka 6BQ5 and 7189), which possesses a rich, warm tone with tons of sustain and top-end chime.

A big part of the "American" sound, **6L6** tubes produce a "glassy" or "airy" sound at the top-end, and are found in a wide variety of amps from 40 watts on up—including most Fenders.

Designed in the early '50s for heavy-duty audio applications such as P.A. systems, the **5881** shares some tonal characteristics with the 6L6, but it has a more bluesy sound, as favored by early rock and rollers and old-school blues players. (This is the tube that powered the early Fender 4x10 Bassman.) Vintage Tung-Sol 5881s are known for their distinctive, twangy "Texas" tone.

The Ampeg sound was often driven by **7027**s, and, after being out of production for a while, these high-power tubes are back. If you own an Ampeg amp that uses 7027s, you can reportedly replace the bottle with any tube in the 6L6 family without a modification—as long as you check the bias adjustment.

A direct 6L6 drop-in (again, with a bias adjustment), the **KT66** has a more buttery top end, a looser bottom, and is heralded for its role in Eric Clapton's "Beano"-era Bluesbreakers tone. Hence, it's perfect for vintage amps such as the the Marshall Bluesbreaker combo.

The **EL34** (aka 6CA7) tube emphasizes the mids, and it is a huge part of the brawny "Brit Rock" sound of Marshall and Hiwatt amps.

The **KT77** is a direct replacement for the EL34, but it can also be used in place of a 6L6 to get the "British" sound with nothing more than a bias adjust on your amp.

For a while in the 1980s, Marshall replaced its standard EL34s with **6550**s for American export models. Soon after the switch, many hard-rock musicians—pleased with the stability, road-readiness, and bare-knuckles sound of 6550s—began modifying their old EL34-based Marshalls to take 6550s.

The **KT88** is a direct replacement for the 6550, but it can handle higher plate voltages, and possibly yield a bit more power.

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