

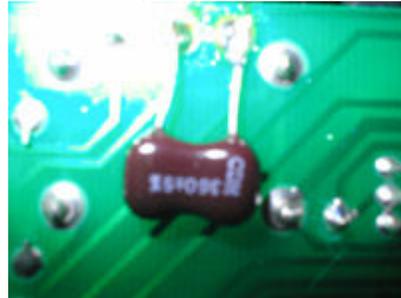
fixing "Muddy" Tone at Low Volumes

This mod will convert one or more channels into classic Fender bright channels by installing a *treble bypass*. I highly recommend this mod as it will liven up the amp considerably. I found the clean and drive channels to sound "muddy" (meaning "lack of clarity/sheen") at lower settings. The clean sounds very muddy when turned down around 2, and even with the Drive around 7 the distortion sounded a little flat. Installing a treble bypass will fix both of these complaints. It allows more highs to be amplified at lower Volume and Drive settings, although it will lose its effect as the volume increases. With some very basic soldering skills this is an extremely easy mod to do. It's also extremely easy to remove without a trace, assuming you decide you don't want it anymore.

1. First we'll need the correct parts, which is just one or two capacitors. (One for Clean, and one for Drive.) I recommend using Silver Mica caps, which can be purchased from Mouser Electronics. A 47pF's part # is [5982-10-500V47](#), and costs just US\$0.92 each. This is the same value cap that Fender has always used in their amp's bright channels. All you have to do is solder it into place. I personally prefer a 220pF or 360pF cap, which emphasizes high mids. You don't want to use too big of a cap on the clean channel, as with larger capacitances the Volume control will become more "touchy" from 1 to 2. The part #s for caps that emphasize high mids are [5982-15-500V220](#) and [5982-15-500V360](#).

2. [Drain the filter caps!](#) Filter caps are potentially deadly. ALWAYS drain the filter caps before working on the inside of an amp—your life might depend on it..

3. How do we install it? You'll have to get underneath the printed circuit board (PCB) first. Facing the controls, the cap bridges the **middle** and **right** lugs of each pot. (Right being the side closest to the power and standby switches.) Solder the cap underneath the PCB. Installing one on the volume pot will only affect your Hot Rod's clean channel. Installing one on the Drive pot will only affect the Drive channel. Whether you want to do both or one-or-the-other is your call. I have installed a treble bypass on both of mine, 220pF on Clean and 360pF on Drive, and both channels sparkle like never before. A very inexpensive and effective mod that sounds great whether I'm at home or on stage.



IMPORTANT! Do not install a treble bypass across the Master pot, although doing it on the Drive pot is fine. The Drive channels ground off high frequencies later in the amp to prevent *parasitic oscillation*, which robs power and tone. This is important when we're designing high gain amps. Installing a treble-bypass cap across the Master may result in an annoying high pitched squeal. The master actually has a low-pass filter across it, the opposite of our treble-bypass (a high-pass filter), which is trying to ground highs NOT let them through. The Drive pot is early enough in the circuit where we don't need to worry about oscillations from high gain—the distortion in this amp is post-EQ.

Enjoy the mod!

Source: [Bright Channels and Bright Switches](#) by Dan Torres

By Justin Holton