



Pickups by Bill Lawrence

PICKUPS ▾

BILL LAWRENCE

WIRING ▾

INSTALLATION/SUPPORT

BILL'S WRITING

PATENTS

Q-filter Info & Diagrams

The Q-Filter is generally wired as an LCR network - a 1.8 Henry, low Q noise-free inductor in series with a .02 micro farad cap in parallel with an 8 kilo ohm resistor. Taking the place of the capacitor wired to the tone pot, you can gradually decrease the impedance of the circuit but maintaining a slightly higher impedance below 1100 Hertz. Also available without the cap and the resistor to gradually decrease the impedance of the pickup.

The EQ system is the most versatile system to alter the sound of a guitar and can be used for multiple functions. The basic components are a 1.8H low Q inductor in series with a capacitor and a variable resistor (the tone pot). We used to ship it as a complete pre-tuned unit to replace the cap at the tone pot, limited for one basic function. However, in conjunction with different pickups in different positions, it's much more versatile when the inductor is separated from the cap, as shipped now. In the past, this caused severe problems when players used the wrong caps and resistors, especially when the EQ was wired to a switch only. The system must be wired to a control or you totally limit its functions, as follows:

Function A - the L Filter

The L-filter wiring is simply the inductor wired in place of the capacitor to the tone pot.

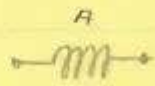
When you turn the pot from 10 to 0, you slowly reduce the impedance of the pickup. This is equal to taking turns off the pickup or making a sweet clean pickup out of a high power, overdrive pickup. This works fine for the neck pickup. With the control set below 3, the impedance is much too low so we block the control with a fixed 10 kilo ohm resistor or don't turn the control below 3 or 4.

Function B - the EQ Filter

On the bridge pickup, we want to maintain more lows so we block the inductor with a capacitor in parallel with a resistor. Now, when you turn the control to zero and you use hi-fi speakers, you can duplicate the sound of an acoustic guitar. With the controls on 3, you can get out of the bridge pickup, the #4 position sound of a Strat.

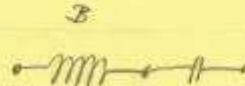
I don't use Coilsplitting since the sixties when I started to use LCR networks

EQ Filters or in short Q-Filter.



reduces Z

Neck pickup A



reduces Z above fr.

Bridge pickup B



reduces Z above and below fr. at a different ratio

When you use B and there is too much bass when the T-Control is on Zero use C. The smaller the resistor the lower the bass.

On all T and Q controls the Cap Value makes no difference between 10 and 4 on the dial. (250 K-Ω Pos Log 10% at 50% rotation.)

A cap is nothing but a resistor that changes resistance with Frequency.

A .02 μf cap has at 1 kHz a resistance of 7.958 KΩ

$$1 / (2\pi \times .02 \text{ EXP} - 06 \times 1000) = 7957.747 \text{ Ohms.}$$

Summary of Recommended Filter Wirings

L = 1800 mH low Q inductor by itself, reducing impedance over the total frequency response.

EQ = L in series with .02 cap for high impedance before 1200 Hz and lower impedance above 1200 Hz.

EQ wiring with the capacitor alone often maintains too much of the lows below 1200 Hz.

1. EQ1 is standard crossover at 1200 Hz, but reducing lows by 60% by using a 10K resistor over the capacitor.

2. EQ2 is similar to a tone cap without choking the highs, reducing lows by 25% by using a 25K resistor over capacitor. Like having a lower inductance pickup for your highend, it's a great option with the bridge position.
3. You may also try a 5K resistor in parallel with the capacitor for the neck position, which generally has more lowend due to the pickup's location.

All it takes is a different resistor to change the function. Please see the "EQ wiring" diagram.

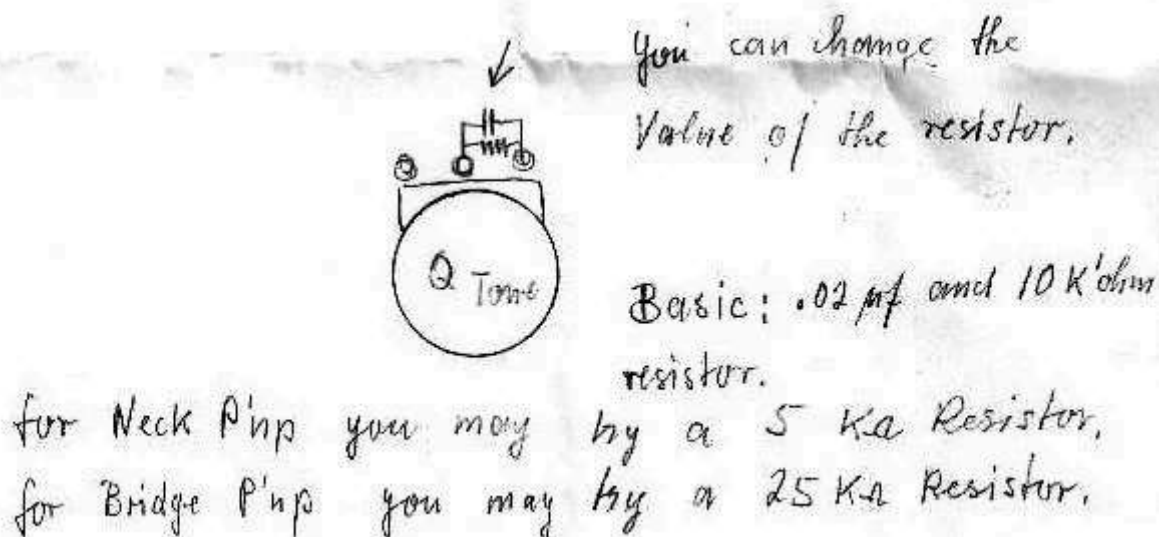
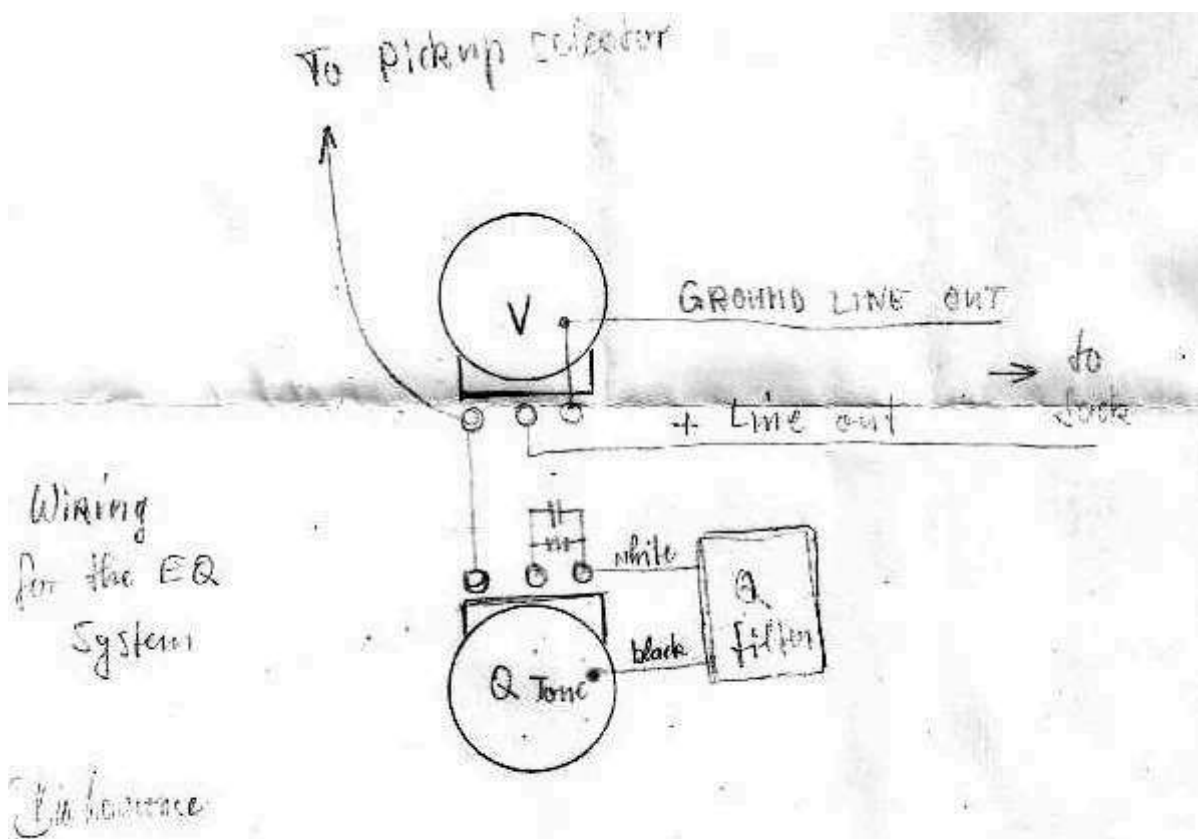
Push Pull

Here are some of the options you have with a volume and tone control using a push pull.

- L to EQ1
- L to EQ2
- EQ1 to EQ2
- EQ1 to Tone Cap only
- L to Tone Cap only

Here are a couple of "standard" diagrams for wiring the Q-Filter:

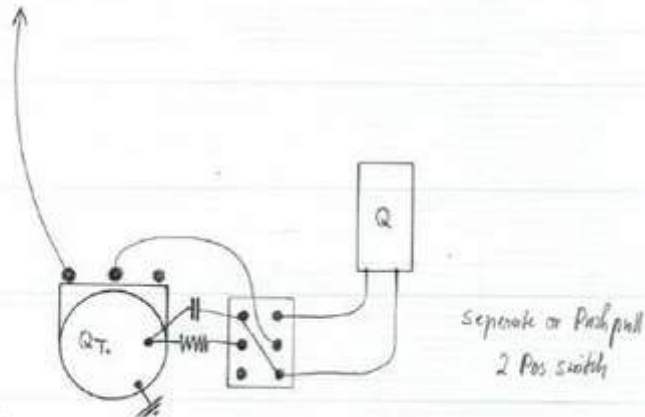
Q-filter "EQ wiring"



Push-Pull Q to Standard Tone

Q to standard tone

To 5 pos. switch



Cap 0.01 Micro FARRAD

Resistor 10 ~ 25 KΩ

QT 250 KΩ Audio

Ground Connect to Ground

DL

Contact Us

Call or text:

Becky Lawrence: 951-371-1494

Shannon: 951-310-9033

becky@billlawrence.com

www.billlawrence.com

Follow Us



Newsletter

Your email

SUBSCRIBE

Your email

SUBSCRIBE

Copyright © 2025, Bill and Becky Wilde Pickups . Powered by Shopify

