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bluesbuster35 USA	May 23rd, 2002 05:45 PM Edit Profile <hr/> <p>Is it possible to change a TBX tone control to act as a mid boost? I would like to keep the half that acts as a regular tone control and only change the treble boost.</p> <p>Thanks</p>
unquiet Darkest Scotland <i>F-type Jaguar driver</i>	May 23rd, 2002 06:03 PM Edit Profile <hr/> <p>Not without fitting active circuitry.</p> <p>BTW, the TBX is NOT a treble-boost. Passive electronics cannot boost anything. What it does is to give an artificially-strangled sound at the mid position (by connecting an 82k resistor in parallel with the pickup), so when this is removed from the circuit as you turn up to 10, the guitar SEEMS to get brighter and more lively.</p> <p>In fact, the full-up sound is almost indistinguishable from a standard tone control using a 1Meg pot, and not quite as bright as a 'no-load' tone control at 10.</p>
jrfrond New York City, USA <i>John R. Frondelli</i>	May 23rd, 2002 11:10 PM Edit Profile <hr/> <p>Definitely not without active circuitry.</p> <p>BTW, I think that the whole TBX thing was jive. They made it appear as if you were getting more by giving you less in the center-detented "normal" position.</p> <p>They went through a lot of trouble with that dual-stacked pot, plus a resistor and a cap, to do absolutely nothing!</p>

<p>Doc H USA</p>	<p>May 24th, 2002 08:15 AM Edit Profile</p> <hr/> <p>On the stock TBX control, the 82k resistor is in the circuit as a shunt * all the time*, no matter where the knob is set. Yes, even when it's on "10". That's where the inherent problem lies.</p> <p>A few of us believe that the control was developed to work well with low impedance pickups and active solid state electronics, such as found in Clapton & Buddy Guy Strats, where 82k in parallel with say 15k has no deleterious effect on tone. But an 82k shunt resistor has no place in a guitar with standard high impedance passive circuitry. We don't know why it was just "thrown in" to a stock production guitar with passive electronics. It was poor judgement, or bad ears that allowed that to happen. Before it was featured, it should have been re-engineered. Makes me wonder why the paid "experts" couldn't figure this one out when it wasn't too difficult for me to do.</p> <p>The TBX control is very useful if you modify it. You'd be surprised. The repair is easy. It involves removing the tone-sucking 82k resistor, adding a jumper between two of the pot lugs, and adding a 220k resistor. The new resistor is necessary to make the transition between the two potentiometers at mid-position a seamless transition, with no abrupt change in tone or apparent volume as the circuit is handed off from one pot to the other.</p> <p>Rough sketches of the stock TBX control, and the modded control, can be found on Steve Ahola's "Blue Guitar" website. Take a look at those sketches, and after a while you can imagine what is happening as you turn the control knob.</p>
<p>unquiet Darkest Scotland <i>F-type Jaguar driver</i></p>	<p>May 24th, 2002 10:11 AM Edit Profile</p> <hr/> <p>>On the stock TBX control, the 82k resistor is in the circuit as a shunt * all the time*, no matter where the knob is set. Yes, even when it's on "10".</p> <p>Doc, are you quite sure about that?</p> <p>I can't find a TBX to check right now, but I'm pretty sure the upper (1 Meg) track is in series between the pickup and the mid-point, and the 82K is connected between the mid-point and ground, in parallel with the lower 250K track and the cap. This means that the 82K is progressively removed from the circuit as you turn up to 10, which is why the sound gets brighter...</p>
<p>bluesbuster35 USA</p>	<p>May 27th, 2002 11:49 PM Edit Profile</p> <hr/> <p>I can't seem to find the schema of the TBX mod on the Blue Guitar site. It might have been removed, although the site does not look like it was modified in quite some time.</p> <p>Do you have a link to a modified TBX schema?</p> <p>Thank you</p>
<p>ralfi Oslo, Norway <i>Ralf Lofstad</i></p>	<p>May 28th, 2002 02:55 AM Edit Profile</p> <hr/> <p>I think the TBX is useful for a couple of applications, with some setups:"</p> <ol style="list-style-type: none"> 1) These slightly darker-than-normal middle position on the pot was useful on older Am.Std. Strats, where the three pickups were of equal specs (save for the rw/rp middle pu, of course); the bridge pickup normally needed some treble attenuation to prevent it from sounding too shrill. 2) You could get pos 2 & 4 as bright as they needed to be by cranking the TBX, without sacrificing the tone control on the middle pu. 3) It's far more convenient to operate than the Delta Tone. Don't like the click between 9 and 10. <p>http://www.mp3.com/violetscene</p>
<p>bluesbuster35 USA</p>	<p>May 28th, 2002 12:02 PM Edit Profile</p> <hr/> <p>The TBX works only on the bridge pickup, thus affecting position 1 & 2 only. At least that's the way it is wired on my AM Deluxe Strat. On the bridge pickup it actually increases the treble making the sound even more shrill.</p> <p>(This message was last edited by bluesbuster35 at 12:03 PM, May 28th, 2002)</p>
<p>jrfrond New York City, USA <i>John R. Frondelli</i></p>	<p>May 28th, 2002 12:16 PM Edit Profile</p> <hr/> <p>"On the bridge pickup it actually increases the treble making the sound even more shrill".</p> <p>Remember, you can't increase ANYTHING with passive electronics. You can RESHAPE the tone by DE-EMPHASIZING certain frequencies, making others more apparent. Removing highs makes lows more APPARENT, while the converse, removing lows, makes the highs more apparent. In addition, the use of inductors (which is what a pickup behaves like in a circuit) and capacitors can create resonant peaks and valleys (bandpass and notch, respectively), further coloring the overall tone. Some people like this interaction, and others don't, but it is all relative and it all works at unity gain.</p>
<p>Doc H USA</p>	<p>May 28th, 2002 01:24 PM Edit Profile</p> <hr/> <p>I could not find a direct link to the TBX wiring on Steve's site, but here's a way to get there:</p> <p>For the stock TBX: http://blueguitar.org/tbx.gif</p> <p>And for the modified/ improved version I speak of: http://blueguitar.org/tbx_doc.gif</p> <p>Copy & save the diagrams for future reference. Hope this helps. -Doc</p>
<p>AxeGrinder USA <i>Have Axe- - Will Grind</i></p>	<p>May 28th, 2002 02:25 PM Edit Profile</p> <hr/> <p>Here is another Diagram I found when I was thinking about installing a TBX awhile back. Never did get around to installing one.</p> <p>TBX Diagram</p>

ralfl Oslo, Norway <i>Ralf Lofstad</i>	May 29th, 2002 08:13 AM Edit Profile <hr/> bluesbuster35, on Am.Std./Plus the TBX works on the bridge and middle pickups - just the way the Delta Tone works on the Am. series.
rmcfee Fredericton, Canada <i>"pulled by rubber dolphins"</i>	Jun 5th, 2002 07:29 AM Edit Profile <hr/> Will the modded TBX give any advantage over a stock pot? Thanks. - Rob
rmcfee Fredericton, Canada <i>"pulled by rubber dolphins"</i>	Jun 5th, 2002 07:31 AM Edit Profile <hr/> To clarify, I am talking about a stock tone pot not a stock TBX. Rob
Doc H USA	Jun 5th, 2002 08:46 AM Edit Profile <hr/> <p>The modded TBX will give you the same adjustable tone control range as the stock (regular 250k, not the DeltaTone no-load pot) control, but within about half the rotation. So at "1", both controls are full treble cut, deepness based on the chosen capacitor value. At "5" (at the mid-detent) on the modded TBX, tone is the about the same as a stock 250k wide open on "10". But with the modded TBX, you have the ability to increase the "air" or high end response progressively as you rotate from "6" up through "10". Since the series impedance on "10" is 1250k (1 megohm plus 250k), the response is very similar to that when being "unloaded", either with no tone control connected or with a Delta pot on its detent at "10". With the modded TBX, you don't get an abrupt change going from the slightly treble loading at "9" to the wide-open at "10" on the Delta. You can get a gradual, continuous adjustment up to that (effectively) unloaded point.</p> <p>So they are the advantages as I see them. It may not be for you. Occasionally I really like to hear the sound of an unloaded middle or neck single coil pickup. You can't get that on a stock Stratocaster. Also, it's sometimes desirable to have the bridge pickup's brightness dimmed a little. With this modified TBX control attached to the bridge pickup, maybe using a .01uf cap, a nice slide tone or Clapton tone is possible, while reverting to a bright unrestricted tone (close to stock) with the control on "10".</p> <p>So this modified TBX can make for a very versatile guitar. And since the rotational action is stiff, the control stays where you've set it.</p> <p>For those who are looking at the diagrams on the website referenced above, the captions may not be clear. The final design, the one that works the best, is the one in the lower RH corner labeled "As wired by Doc 2/22/01". The diagrams in the top half of the page were earlier developments in trying to optimize the control to obtain a smooth transition across the center detent. You can see how the two resistance elements are seriesed, and how the 250k section becomes open or discontinuous after mid position where the 1meg takes over. The extra 250k fixed resistor replaces the now disconnected 250k pot element into the series string. We liked the expanded version with the added parallel 250k resistor. It seemed more user friendly.</p>
rmcfee Fredericton, Canada <i>"pulled by rubber dolphins"</i>	Jun 5th, 2002 10:08 AM Edit Profile <hr/> That's fascinating. Thanks very much. - Rob
Jazzbo USA <i>Tell me why baby, why baby, why baby, why</i>	Jun 7th, 2002 12:24 PM Edit Profile <hr/> <p>"It involves removing the tone-sucking 82k resistor, adding a jumper between two of the pot lugs, and adding a 220k resistor."</p> <p>Doc, Does the 220K resistor replace the 82K? I see the jumper, but don't see any resistor in the modified tbx schematic?</p>
Doc H USA	Jun 10th, 2002 12:06 PM Edit Profile <hr/> <p>Jazzbo:</p> <p>You aren't looking at the right diagram. The revised wiring is in the lower r.h. corner of the page. (Please read my June 6th post, last paragraph.) There is definitely a 220k resistor shown there. No, it does not directly replace the 82k resistor. It's in a different location.</p>
toobalicious just south of north <i>resident smart (?!_)</i>	Jun 10th, 2002 07:09 PM Edit Profile <hr/> <p>i tried it both ways, i.e. the 220k replacing the 82k, and the 220k going to the pole that the cap connects to... actually, im not sure which is cooler... its hard to a/b because of the need to solder... its basically the difference in putting the resistor to ground before or after the cap, as far as i can tell. i like both ways better than stock, although i think the treble, or "10", setting is more pronounced by simply substituting (as opposed to moving) the resistor (i didnt experience any suddeness in the sweep)... i cant really tell if the "5" setting suffers a bit with this scheme... i have mine like docs, currently... perhaps someone could explain the differences inherent in the resistor's placement? a</p>
Doc H USA	Jun 12th, 2002 09:39 AM Edit Profile <hr/> <p>If you look at the stock TBX control internal schematic (not the simple physical hookup diagram from Fender) you will see that the 250k pot's resistance trace stops at midpoint of rotation. Beyond that the 250k element goes open-circuited. There is a temporary "wide open" at that point, until the 1megohm pot's trace picks up and starts adding total resistance to the series string. My 220k resistor substitutes for the now departed 250k resistance trace, so that the series string becomes seamless and the increasing rotation toward "10" adds 220k to whatever portion of the 1meg trace is picked off by the wiper. At "10" you have 1220k total resistance in series with the .02uf cap to ground. Almost "no-load".</p> <p>I opened up a guitar last night to verify the posted wiring sketch. The pictorial sketch showing the stacked control (not actually drawn by me) with the .02uf cap and 220k resistor, plus the diagonal jumper, is correct as shown. -Doc</p>

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unquiet
Darkest Scotland
F-type Jaguar driver

Jun 17th, 2002 05:46 AM [Edit](#) [Profile](#)

Having looked again at a TBX (just taken one out of yet another Strat) I think you could in fact set it up as a true treble/bass tone control.

If you use the 250K section pretty much as it is, as a standard treble-bleed tone control (but get rid of that tone-sucking 82K resistor), and rewire the 1M section as a treble-pass control - connect the track as a variable resistance in series between the switch and the volume pot, with a small cap (.001uF is a good value) in parallel with it, you will have: 0 - full treble-cut as a normal tone control; 5 (detent) - standard tone-up-full vintage sound; 10 - bass cut.

I think the TBX will work like this - the circuit certainly does, I have my old Aria 'project' guitar wired up like this with two separate pots for the treble-cut and bass-cut, but they are the same values as a TBX (this has only just occurred to me and I've had my old guitar wired like this for years!)

(edit) ...very nearly right. It actually works as a no-load tone up to the mid-point (the 250k track goes to open-circuit just below the detent) but otherwise it works exactly as I expected.

If you want to use this in a standard Strat scheme, you need the neck pickup connected permanently to it's own tone control, and selected with one half of the switch, and the other 2 pickups selected via the other half, with the bass-cut replacing the link between the two switch halves... I'll see if I can put up a circuit diagram, this is getting complicated to explain...

(This message was last edited by unquiet at 09:12 AM, Jun 17th, 2002)

Doc H
USA

Jun 17th, 2002 07:19 AM [Edit](#) [Profile](#)

Sounds interesting. That would make an extremely versatile 3-way control for a Strat: No-load at the middle detent, treble cut below, and bass cut above. (Last time I looked at [angela.com](#), the TBX was only \$12. A great value for experimenters.) I look forward to seeing the diagram when you get to it. Thanks. -Doc

unquiet
Darkest Scotland
F-type Jaguar driver

Jun 17th, 2002 09:07 AM [Edit](#) [Profile](#)

Here it is. I also corrected an error in the text above, if you were wondering...

This will work in a Strat-style system. There is just one minor disadvantage, which is that when the TBX (bridge/middle pickups) is fully off, the .001uF cap is in the circuit even if the neck pickup alone is selected, which will subtly change the sound...

It would work perfectly as a sole tone control (eg in a Tele-type system).

The range of tones is as follows: 0-5 normal tone control; 5 (detent) no load; 5-10 - bass cut.

Apologies for the poor quality of the diagram.

[Yet another TBX mod](#)

(This message was last edited by unquiet at 09:13 AM, Jun 17th, 2002)

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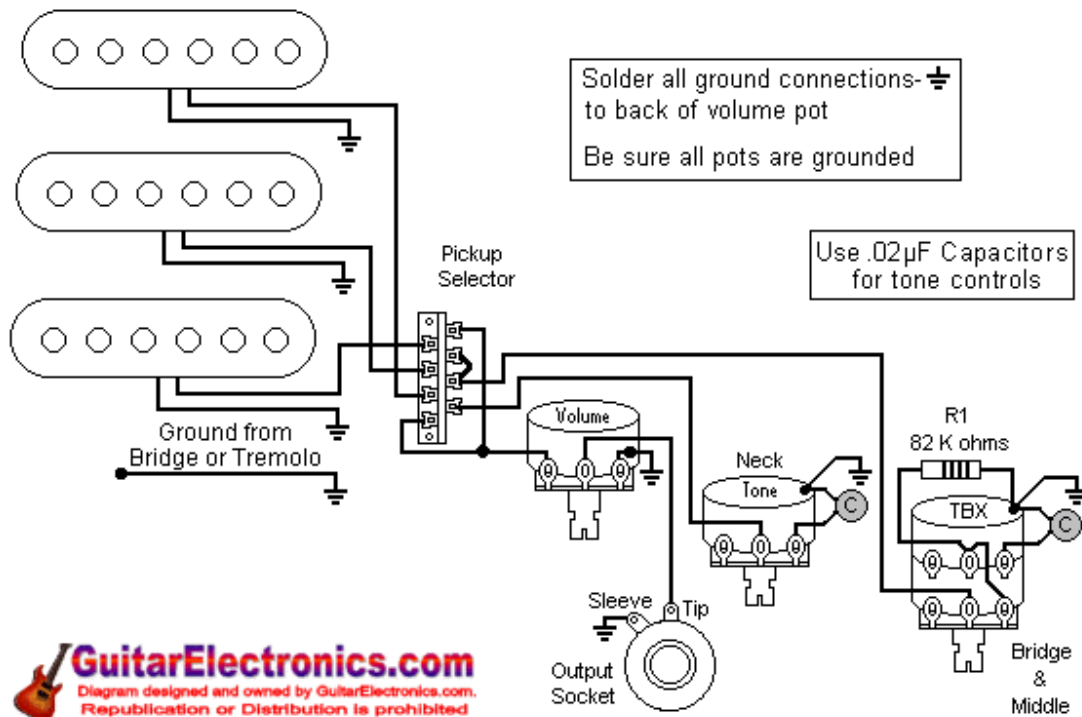
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Strat Style Guitar w/ TBX Tone Control



Terminal cross reference
from USA/ Strat style switch
Import style switch

A1	B0
A2	B1
A3	B2
A0	B3

Typical Stratocaster style guitar with the Fender TBX tone control. Note that in addition to adding the TBX Control, the switch is also rewired from the original configuration so that the TBX control is active in switch positions 1-4 (bridge and middle pickups) and the standard neck control is active in switch positions 4 & 5.

Picture to the right shows the corresponding terminals between USA and import style switches.

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Bass/Treble	1	Fender TBX Treble & Bass control w/ capacitor, resistor & knob	CP TBX	\$14.95	Add to Cart
Selector	1	5-Way Strat style lever switch	PS 520	\$10.95	Add to Cart
Jack	1	1/4" mono jack-Switchcraft USA	JK 12	\$2.25	Add to Cart
Capacitors	1	.05MFD capacitors (2)	TC 503	\$1.50	Add to Cart
Parts Kit	Complete parts kit with all parts listed above. (save \$5.70)		PK TBX	\$30.95	Add to Cart

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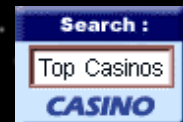
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