WELCOME!
Your decision to purchase a ToneShaper was a good one! Your new toy should give you lots of tone tweaking enjoyment, and will prove to be a valuable tool in getting the tone you’re looking for from your guitar. Please read over these instructions to become acquainted with your new unit, and keep them handy for future reference.

INSTALLATION
We've included everything you'll need. The first step is to remove the control plate from your guitar, and then remove the old switch and pots from your control plate. You'll also remove the existing jack. Disconnect the pickup leads and any ground wires from the old electronics and strip 1/4" of insulation from the ends of the wires to prepare them for connection to the ToneShaper.

The ToneShaper is designed to fit perfectly on a Fender control plate, but other brands of plates may require modification if their hole spacing varies from Fender's.

Put the included internal-tooth lockwashers (star washers) over the ToneShaper's two pot shafts, then insert the two pot shafts into the control plate's holes. If you find that the holes are too small, then they're probably sized for metric pots and need to be enlarged to 3/8". The flat washers go on the outside of the plate.

The switch will be connected next. The ToneShaper's function set is determined by the switch that's plugged into it, but all switches will connect to the board in the same way. It's easiest to let the switch actuator (the lever, or blade) poke through the slot in the control plate while you plug the plastic connector onto the circuit board. Even though we've attached a standoff to help support the circuit board, keep in mind that the portion where the switch attaches is very thin, so while it's fairly strong, you can break it if you're not careful. It's best to support the underside of the board with a finger while you slide the connector on.

With the actuator poking through the slot in the plate, line up the connector (the black thing attached to the switch in the following illustration) with the pins on the circuit board and push them down as far as they'll go. The illustration shows a 4-way switch, but all switches will attach in the same way.

Finally, attach the switch to the plate with the two 6-32 screws provided. Again, if your guitar is imported then the screw holes in your plate may be sized for metric screws, and may need to be enlarged slightly to accommodate the SAE screws.

The pickup leads and the grounds that you prepared earlier will now be connected to the terminal block on the board as shown below. Simply depress the plunger as shown, insert the stripped section of the wire, and release the plunger. To ensure a solid connection, verify that the spring contact down inside the terminal block is in direct contact with the wire, not the wire's insulation.

If your pickups have cloth wire (sometimes called "push back" wire), the cloth insulation will fit perfectly into the slots on the terminal block. The key is to strip the wire, rather than push back the insulation. If you push back the insulation it will bunch up, increasing its diameter and preventing it from fitting down into the slot.

CONNECTIONS
This ToneShaper configuration is designed for Teles with three coils, so this can mean either a single-coil plus a humbucker, or three single coils (Nashville Teles). The connections will vary depending on your pickup configuration.

The circuit board is labelled just in front of the terminal block, and we'll refer to these labels. Please note that the color codes we've listed apply to Seymour Duncan's standard product line. If you're using some other pickup line(s), then you'll need to research their color codes in order to connect your pickups properly. In some cases you may find that our instructions deviate from Duncan's, because we're considering things like hum-canceling combinations that wouldn't normally be encountered. If our instructions deviate from Duncan's, then use ours, not Duncan's.

Also, be advised that our instructions are taking into account Duncan's specific wind direction and magnet orientation. Other manufacturer's pickups may not follow the same conventions, so you'll need to determine how your pickups are oriented if you want to get best results.

This is a much deeper topic than most guitar players realize, and it has nothing to do with the ToneShaper, it has to do with guitar wiring in general. We've seen many instances of people hooking up pickups in incompatible ways, where at best they don't get hum-canceling when they should, and at worst have pickups that are out-of-phase, or have grounding issues or other problems, like covers that are connected to hot, etc.

Want to avoid the hassle? Then buy pickups from us. We have pickups from several manufacturers at fair prices, and we order (and in some cases special-order) pickups to work specifically
with each other, in sets, that complement our ToneShaper products. This is one way to ensure that you’re getting the most out of your ToneShaper. Give us a call if you’d like more info.

**Tele Bridge + Humbucker Neck**
- **GND**: Misc ground (string ground, shielding, etc.)
- **GND**: Humbucker drain wire
- **JACK GND**: Jack ground (black)
- **JACK OUT**: Jack hot (white)
- **BRIDGE-**: Bridge pickup ground (black)
- **BRIDGE+**: Bridge pickup hot (yellow)
- **HB GND**: Neck pickup ground (white)
- **HB S/L**: Neck pickup series link (black/green)
- **NECK-**: Not used
- **NECK+**: Neck pickup hot (red)

**Tele Bridge + Strat Neck** (middle position) + **Tele Neck**
- **GND**: Misc ground (string ground, shielding, etc.)
- **GND**: Neck pickup cover
- **JACK GND**: Jack ground (black)
- **JACK OUT**: Jack hot (white)
- **BRIDGE-**: Bridge pickup ground (black)
- **BRIDGE+**: Bridge pickup hot (yellow)
- **HB GND**: Neck pickup ground (black)
- **HB S/L**: Mid ground (black) + neck hot (white)
- **NECK-**: Not used
- **NECK+**: Middle pickup hot (white)

**A Duncan Strat neck will hum-cancel when combined with a Duncan Tele neck, while a RWRP Strat middle won’t.**

**Assuming you’re using a covered neck humbucker with 4-conductor leads,** it will have a bare “drain” wire. This will be connected to one of the ground points (GND). Take care that the wire doesn’t inadvertently touch anything that it shouldn’t, by covering it with heat-shrink tubing or tape.

The term “series link” refers to the two wires that are used to join the coils of a humbucker together in series. You’ll only have this if your humbucker uses 3-conductor or 4-conductor wire. If your humbucker uses single-conductor braided wire, where you see a metal braid around the outside of the wire, then you won’t be able to use it with the ToneShaper with a 4-way or 5-way switch, though you may use it with a 3-way switch, in which case you would connect it like a normal Tele neck pickup.

In order to use a humbucker with either a 4-way or 5-way switch, you’ll need a 3-conductor or 4-conductor humbucker. Most manufacturers use 4-conductor wire, so it’s much more likely that your pickup will be 4-conductor than 3-conductor.

Unfortunately, there’s no universal color-coding standard applied to pickups, so you’ll have to determine the correct color-coding for the pickup you’re going to use.

**If you’re using a single-coil neck pickup with a cover,** the cover may need to be isolated and connected to ground independently of the pickup’s wires. There’s a good possibility that the manufacturer has connected the cover to the pickup’s ground wire with a short jumper as shown in the following illustration, assuming this wire would always be connected to ground, but when the neck and middle pickups are connected in series this isn’t necessarily the case.

In our second connection example, we’ve connected the Tele neck pickup’s ground wire to the HB GND slot, so there would be no need to isolate the cover. But in some other cases the neck pickup’s ground wire would be connected to the HB S/L slot instead, in which case you would **have** to isolate the cover. To do this, you would disconnect the cover from the pickup’s ground wire by severing the jumper, and add a separate length of wire to the cover, then connect it to GND as shown above. Refer to the illustration below.

**Confused?** As we stated previously, this whole pickup thing is a deeper topic than many people realize. There’s no way that this instruction manual can cover every scenario, or act as a primer on all the subtle nuances of pickup connection.

In the end, you may have to do a little homework to determine the best way to connect your pickups, especially if you’re combining pickups from different manufacturers. The other option is to buy a set of pickups from us, where we’ve done the work for you.

**The final connections will be the grounds.** If you’re using a vintage-style bridge pickup with a metal plate on the bottom, it’s most likely that this plate provides the string ground, and so no further grounding of the bridge will be required. However, if you don’t have a bridge pickup with this type of construction, then you’ll probably have a wire coming into the control cavity from the bridge, and this will be connected to one of the ground points marked GND. If you have a wire that is screwed to the cavity shielding (certain Fender models - see illustration below), then this will also be connected to any of these ground points.

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**Fender’s Shield Ground Wire**
Now you should be ready to physically install the control plate on the guitar. Feed the jack into the cavity so that it reaches down to the ferrule and secure it with the nut and washers provided (lock washer inside, flat washer outside). Then gently press the control plate down to the body and screw it into place.

Good work! Now go enjoy yourself a nice sarsaparilla.

**HOW THE THING WORKS**
Okay, let’s put this baby through its paces.

The ToneShaper has been designed to be really simple to use. Once installed, you can make changes to its configuration by simply removing the control plate and flipping it over, then manipulating some mini switches. The mini switches that are used are large enough for many people to move with their fingernails, but we’ve also included a dandy pointed stick that you fingernail-challenged folks can use instead.

As you might expect, the mini switches have an OFF side and an ON side:

![Mini Switches]

This is pretty straightforward, but in the interest of making things really clear and easy-to-discern in the rest of this manual, we’re going to use color coding to illustrate when switches are on, off, or optional, as follows:

- **CYAN (BLUE)** = ON
- **MAGENTA (PINK)** = OPTIONAL
- **YELLOW** = SELECT ANY
- **BLACK** = OFF

![Color-Coded Switches]

**THE VOLUME KIT**
The volume kit is a resistor/capacitor that can be engaged to address the problem of treble roll-off that accompanies rolling back your guitar’s volume control. Perhaps you’re aware of this. When you roll the volume control down, there is a discernible tonal change that comes along for the ride. This is the case with all vintage Teles, and it’s something that many people have never noticed, while it drives other people crazy. The volume kit may be switched on or off at almost any time, it’s use is optional. If you check it out then you’ll find that the treble roll-off that exists without it really is there, even though you may never have noticed. To engage the volume kit, you’ll turn on SW1-1 as shown above.

**THE BILLY MOD**
Some people don’t like the idea of a volume kit, saying that it brings it’s own baggage to the party. There’s another way to address the treble roll-off issue that involves having the tone pot receive its signal from the volume pot’s output, rather than from the switch. Of course, this makes the tone and volume controls interactive, so this method has its own trade-off. Still, there are many people who swear by this method, so we’ve incorporated it into the ToneShaper.

By the way, we call this the “billy mod”, after Billy Wagner, the killin’ (and illin’) Tele player who first brought it to our attention.
OUR OPINION
We’ve put the volume kit under the microscope and find that it’s an effective solution to what some consider to be a problem, with no discernible negative consequence. Let’s qualify that: no negative consequence that we can discern, though you may hear things that we don’t.

In the end, it’s all just opinion. Tone is always about opinion, there is no wrong or right. The thinking with the ToneShaper is that we’ll provide all of the options so you can try them all and make up your own mind. So please, experiment! People often agonize over these things, reading opinions on forum sites in an attempt to sniff out the prevailing wisdom. Our approach is to make it easy for you to try different things to see what works for you.

Tone is like art: your opinion is valid. Listen, learn, have fun, draw your own conclusions.

LET’S GO!
Okay, enough, let’s get on with the party!

5-Way Switch - Tele Bridge - Humbucker Neck
No Billy Mod

See those blue switches? They’re on, and the black switches are off. The magenta switch is the volume kit, and you can turn it on if you choose to. And the yellow switches are the caps for the tone control - turn on one or more of them.

By the way, switches 5 & 6 on SW3 are the switches that turn on the 500k/250k volume pot functionality. By default, we ship the 5-way ToneShapers with a 500k volume pot, which accommodates the humbucker. If SW3 switches 5 & 6 are left off, then all five positions at left will “see” a 500k volume pot. However, turning on SW3 switches 5 & 6 as shown will have the effect of reducing the load in positions 1-4. So positions 1-4 will see a 250k volume pot, while position 5 will see a 500k volume pot. This will more closely approximate the values that these pickups were originally voiced with.

Now you have the idea. The ToneShaper is very simple to use, and once you get used to the color codes you’ll be able to quickly and easily make any changes you need to.

ACTIVE PICKUPS
The illustrations at right will show you the active pickups in each of the switch positions. Active pickups are shown in orange. Series pairs are shown in red.
5-Way Switch - Three Single-Coils (Nashville Tele)
With Billy Mod

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