



**PARADOX**  
**TZF**

# PARADOX

## TZF

THROUGH-ZERO-FLANGER

---

### Features:

**Bypass foot switch:** True bypass with LED for both outputs A and B. Signal switching done with audio relays.

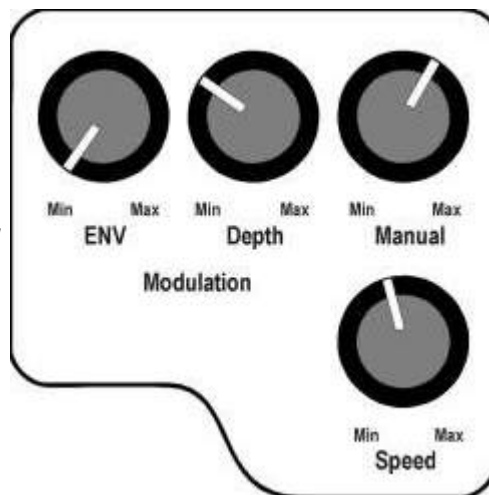
**TZF Polarity foot switch:** Switches polarity of TZF signal. Dual color LED is red when positive, and green when negative. Two very different, but essential TZF sounds, with the ability to be switched during performance.

**Positive TZF** creates a very musical sweep when it crosses over the zero point. Think - Brian May (Queen), Keep Yourself Alive. It's a very full sound with a fat low end.

**Negative TZF** is more intense and creates a deep cancellations as it crosses over the zero point. With the right settings you can get it to become very thin and cancel out completely. Think - Hendrix, House burning down. This mode has a hollow sound, subtracting low end as it approaches the zero point.

---

### *Modulation control*



**Envelope** takes the dynamics of your playing and turns it into a DC voltage which is added to whatever you dialed in with the Manual control. This produces some of the most incredible flanging sounds. All Modulation controls are highly interactive and can yield flange sweeps never before created. With a distorted guitar, Env can be set to produce unpredictable, erratic flanging sounds, very similar to an airplane flying over you on a windy day.

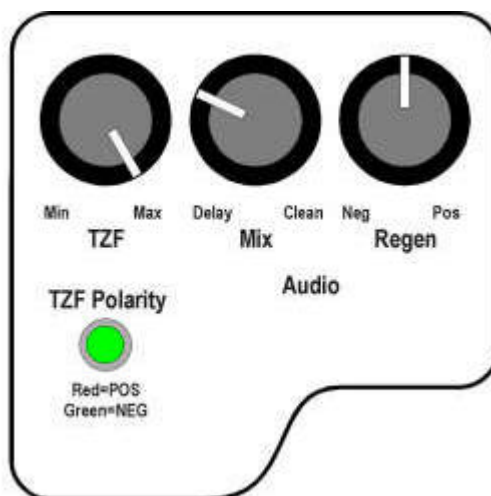
**Depth** controls how wide the sweep is. Turn it down and the sweep goes away. This allows flange control with Manual knob, Manual expression pedal, or Envelope control.

Maximum setting causes serious pitch bend. For wide sweeps, set at Depth at Max and Speed at Min. Typical usable settings are between 9:00 and 3:00

**Manual** (with jack for pedal control). Controls a DC voltage that sets the base delay time. Used for dialing in a custom sweep, and flanging manually. Also used in conjunction with the Depth pot, setting the base delay time, affecting upper and lower limits of the sweep. When using an expression pedal, the Manual knob can be used to set where the TZF point occurs within the pedal's travel.

**Speed** (with jack for pedal control). When set below 11:00, it enters a much slower speed range. Min - 11:00 SLOW speed range. 11:00 - Max FAST speed range. When using a speed pedal, the Speed knob sets the fastest speed limit.

### Audio control:



**TZF** signal mix. Adds the TZF signal to the mix. When TZF and Modulated signal are mixed, the TZF effect occurs.

**MIX** - Clean/Modulated delay. CCW- Modulated signal only. Can be used for vibrato effects. CW- Clean only. Center - Even mix of modulation and dry. Dial in the mix you want.

**TZF polarity** (LED and foot switch), Red = Positive summing, Green = Negative summing. Foot switch selects between them.

**Regeneration** positive/negative mix. Adds resonance to the mix by providing positive or negative feedback. Negative feedback is more prominent through output A, and positive feedback is more prominent through output B. This regeneration feature is calibrated NOT to self-oscillate. Distortion can occur at maximum settings when excessive signal is applied.



**Other:** Stereo outputs (all true bypass using audio relays), 9 Volt AC operation, all-analog bucket brigade delay (BBD) based flanging, compander based noise reduction, Emphasis / de-emphasis noise reduction, easy glide action when controlling flange manually - keeps the sweep "graceful" by ramping down.

# PARADOX

## TZF

THROUGH-ZERO-FLANGER

---

### Examples

To start off, it's best to have some kind of distortion or overdrive BEFORE the flanger. This gives TZF a more complex high mid and high frequency range to work with, accentuating the cancellations. Straight guitar sounds nice, but wait until you master all the features before you tackle it. The TZF effect really shines with an already overdriven or otherwise distorted guitar.

These samples are meant to give you some starting points. Try as many different combinations as you can. It's important that you take some time to get and know Paradox TZF, it's unlike any other flanger.

---

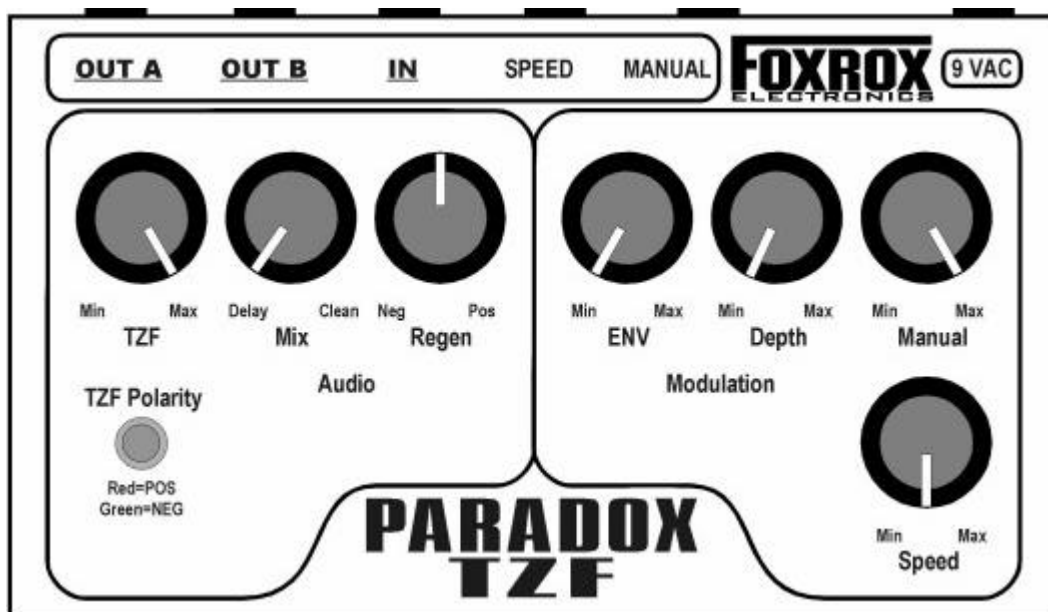
#### Example 1: Find the ZERO point



The first thing to do is to find the Zero point. Once you know where it is, you can start to experiment. Try it first with negative TZF, TZF=GREEN. As you turn the MANUAL knob, you will find that it cancels out as you reach the zero point (the Manual knob will be pointing towards the top right corner of the box). You should be able to null out the signal. Now, hit the POLARITY switch, and turn the MANUAL knob back and fourth, you'll notice that now it sweeps over the top without canceling out. You have now experienced both Negative and Positive TZF, two very different examples of TZF. Always experiment with different polarities!

---

#### Example 2: Manual control with expression pedal



Plug the pedal into the Manual jack. Floor the pedal. Now, rock it back and fourth and listen to the sweep. Floor it again, and turn the MANUAL knob down to set where the Zero point is in the pedal's sweep. Set it where you like it, and try both positive and negative TZF. If you're using a Foxrox Expression Pedal, the Taper control will set the lowest point of the sweep and the Manual knob will set the highest point of the sweep.

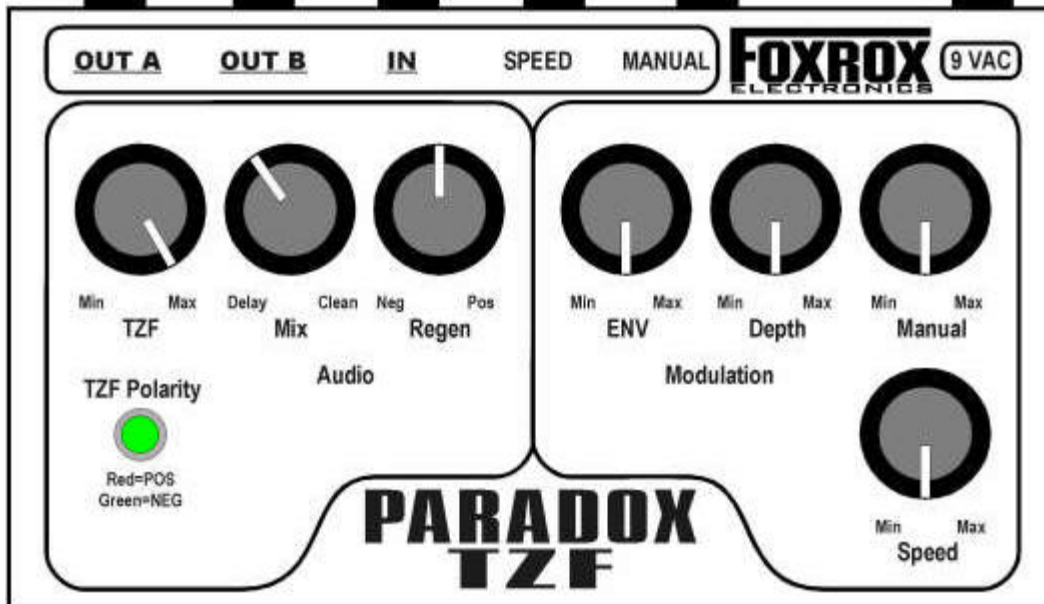
### Example 3: Envelope control



Strum a chord and let it ring. You'll hear it sweep on it's own. It might sound erratic, and you'll notice that it doesn't respond quickly like a typical Envelope filter pedal. This is intentional, fast attack and decay just doesn't sound good with TZF. I'm going for strange and unpredictable sounds. Tweak the ENV control to match your playing level. Try using distortion before the flanger. Turning up the MANUAL knob will set the lowest point of the sweep. By tweaking the MANUAL knob and the ENV knob, you can get some very intense, dynamic flanging sounds, and with some practice you can manipulate the sweep to your liking. Turning the REGEN knob either way will alter the way the ENV circuit behaves, because the ENV circuit gets it's source signal AFTER the REGEN circuit. This will help you to get some erratic, gurgling jet plane type sounds.

---

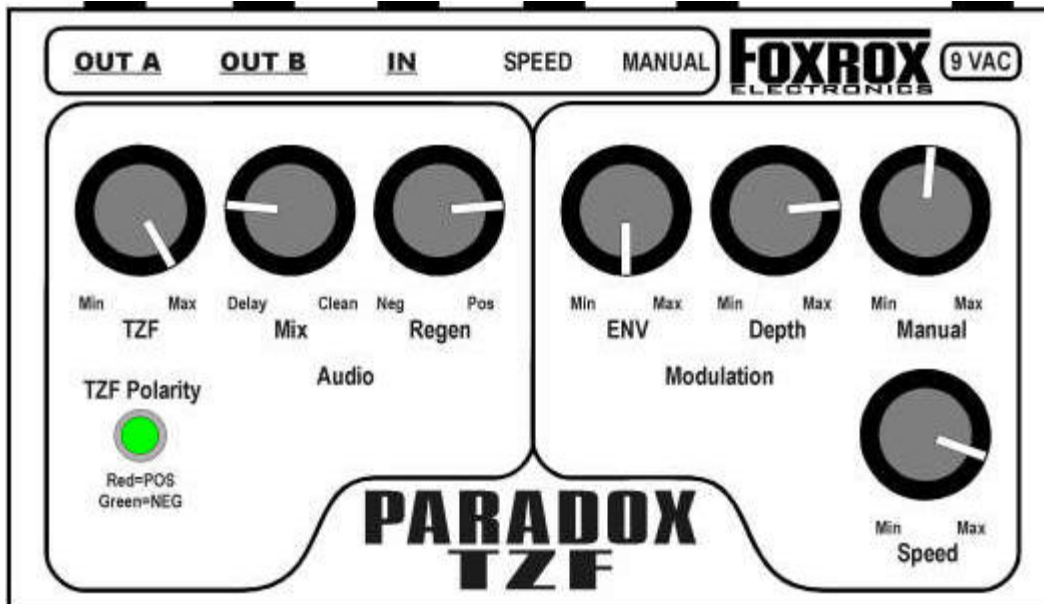
### Example 4: Stereo operation



In order to give a stereo image, some dry signal is dialed in. The flanging signal is out of phase between OUT A and OUT B, giving a somewhat hollow sound, but the dry signal is in phase between the two outputs. The combination of the two creates a wide stereo effect.

---

### Example 5: Leslie/Chorus sound



Paradox TZF can get a pretty impressive Leslie type of sound. It's best in stereo. If you have two amps, try experimenting with the Regen control. Turn it NEG, and it will show up more at OUT A. Turn it POS, it shows up more at OUT B. Turning it to either extreme can cause distortion. It is pre-set NOT to self-oscillate. If you plug in a Speed pedal, you can use the Speed knob to set the MAXIMUM speed. Foxrox may soon offer a Ramp up / Ramp down box that plugs into the SPEED jack.

---

**You can use Manual, Width and ENV features all at the same time** to create totally unpredictable sounds. However, you should be aware that the flange point is controlled by a voltage controlled oscillator. Feed it more voltage it goes up, feed it less, it goes down. The envelope circuit adds voltage as you play harder. The Manual control adds voltage as you turn it up, raising the flange point. Therefore, if you turn the Manual control up, the effects of the ENV circuit will be less noticeable. Keep this in mind if you try using ENV and a speed pedal at the same time.

---

## Using the Foxrox Expression Pedal



The Foxrox Expression Pedal can be used to control:

### 1) CC2 Provide SPEED and Paradox TZF SPEED

Set the SPEED knob at maximum. Back the pedal off all the way. Set the TAPER control right at the point before it starts to speed up. Press the pedal all the way down and set the fastest speed you want by setting the SPEED knob.

This will give an even speed increase throughout the pedal's travel. Tweak to your preference.

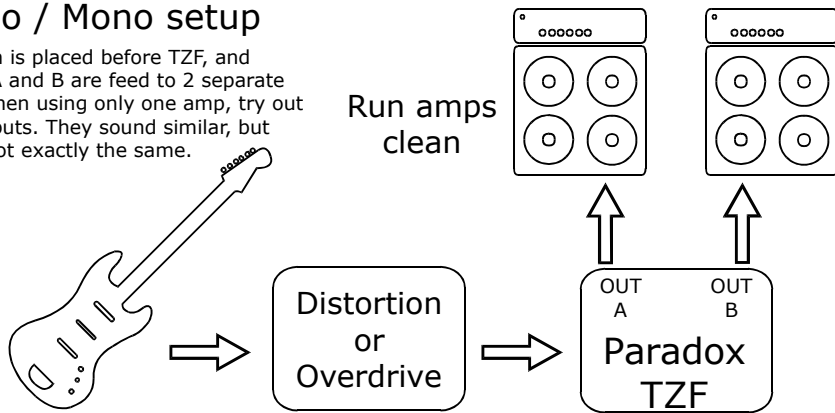
### 2) Paradox TZF MANUAL

Set the MANUAL at maximum. Back the pedal off all the way. Use the TAPER control to set the lowest point in the pedal's sweep range. Turning it counter-clockwise will allow the lowest flange point. Press the pedal all the way down and set the highest flanger point. Use the MANUAL knob to set the highest point.

With TZF, you can use it to set where the ZERO point appears in the pedal's travel. I like to set it so that the ZERO point kicks in at the 75% point, almost all the way down. That gives the right range.

### Stereo / Mono setup

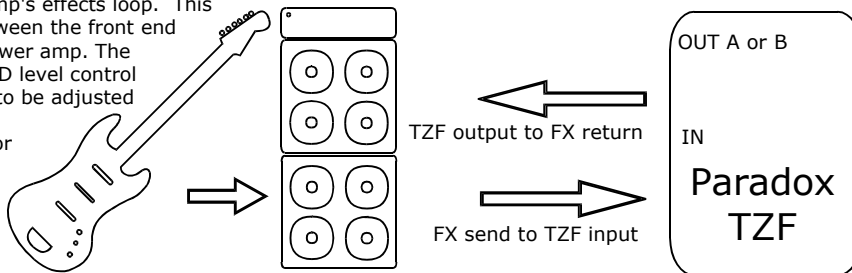
Distortion is placed before TZF, and outputs A and B are feed to 2 separate amps. When using only one amp, try out both outputs. They sound similar, but they're not exactly the same.



### Mono setup using FX loop

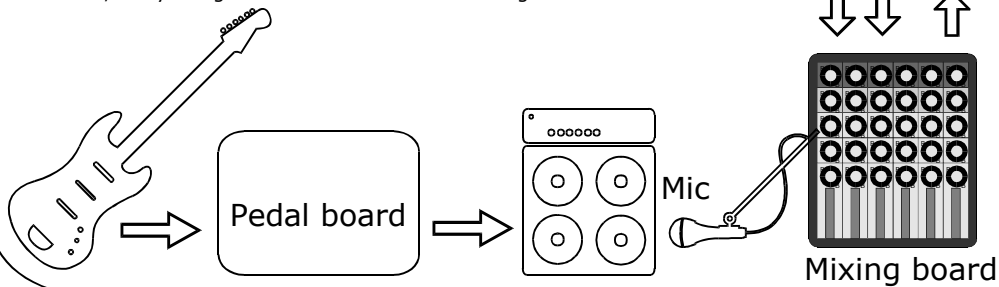
The front end of the amp is used for OD and lead tones. Since TZF sounds the best AFTER all distortion is added, the best place to put it is in the amp's effects loop. This puts it between the front end and the power amp. The amp's SEND level control may have to be adjusted to prevent distortion or maximize headroom.

Front end of amp used for distortion



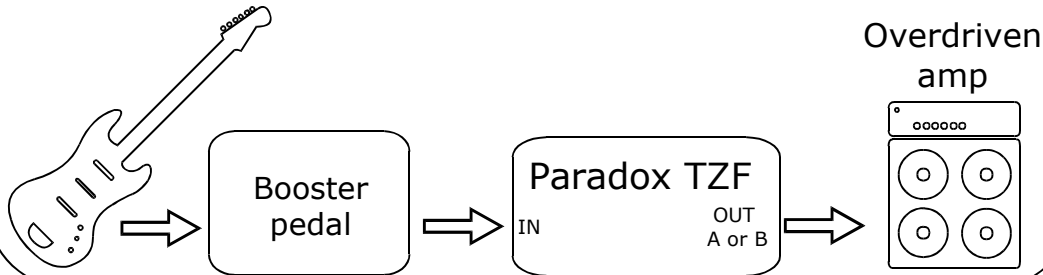
### Add flanging at sound board

A mic or an amp modeler/speaker emulator feeds the guitar sound to the mixing board. Paradox TZF is added at the insert point of the input channel, or by using an Aux send bus and returning it to the mix.



### The WRONG way to hook things up

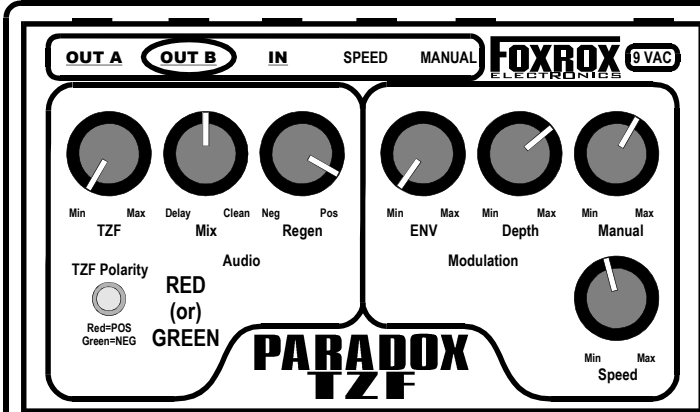
The classic approach of Guitar>Boost>Dirty amp doesn't work well with TZF. The signal chain below would result in a very masked, almost unnoticeable flanging sound. And with the booster kicked in, it could distort TZF in a bad way. Remember - do all of your distorting BEFORE TZF, not after!





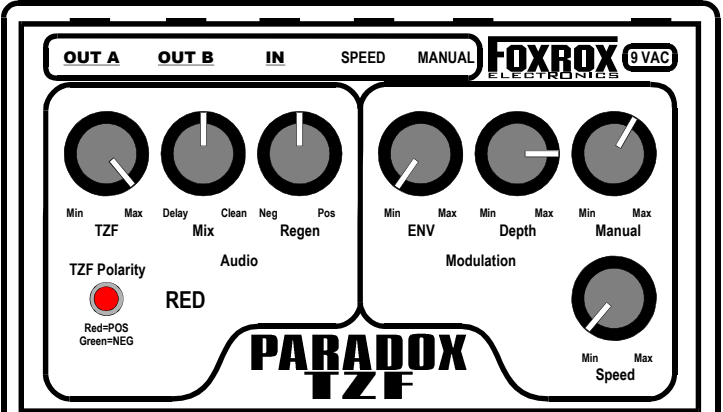
## More Sample Settings (page 1)

To get the best results, use a distortion pedal and insert it BEFORE the flanger.



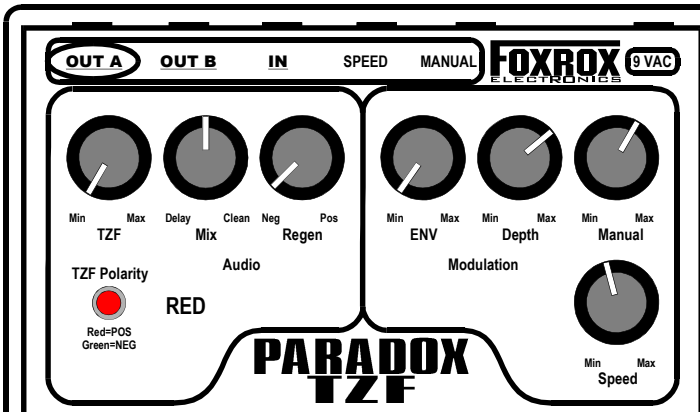
### Conventional flanger 1

This gets you into the territory of conventional flangers. Tweak and you'll find sounds reminiscent of Boss, DOD, Ibanez, etc. If you're going MONO, use OUT B. TZF polarity does not affect sound.



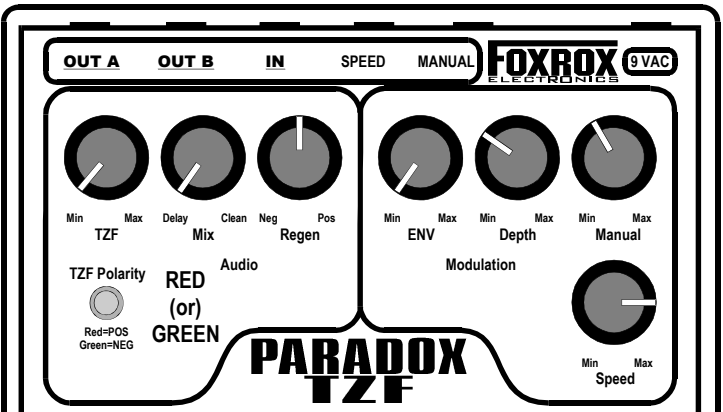
### Slow Phase

A slow, phasey sound. Kind of mild, but pretty. Try it in situations where you might use a slow phase shifter, like during the "Eruption" solo!



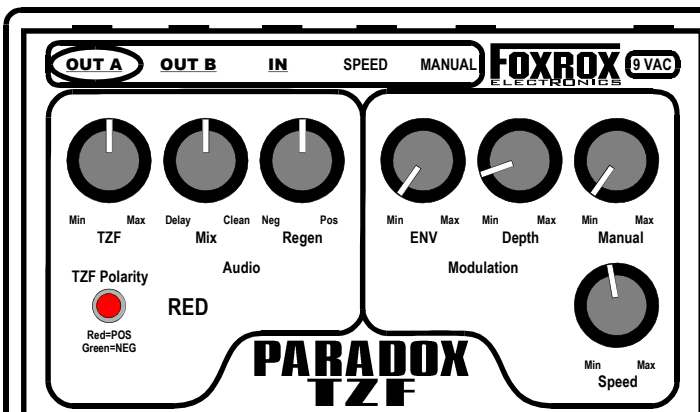
### Conventional flanger 2

Same as Conventional flanger 1, but different polarities, different regen...ect..Try it for a slightly different sounds. If you're going MONO, use OUT A.



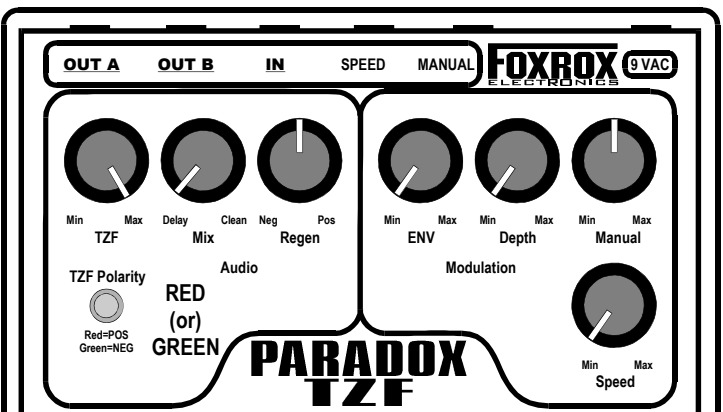
### Warm analog vibrato

Use the modulated delay to create a true analog vibrato. Since your entire signal is passing through an analog bucket brigade chip, the result is a warm, organic wiggling sound.



### Conventional Chorus

Setting the Manual control to a low setting and setting the Width low gets you into Chorus territory. Use these settings for a nice stereo chorus. Of you're going MONO, use OUT A

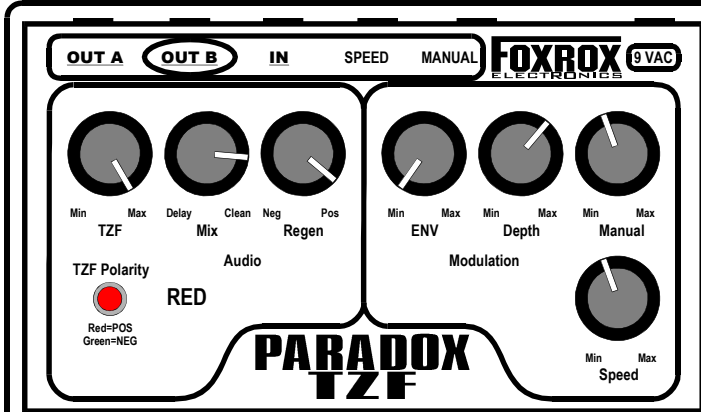


### Matrix Filter (comb filter)

The world's first through-zero comb filter! Set the Manual control where you like it. By keeping the WIDTH and ENV controls down all the way, you can dial in different static spatial images. Amazing in stereo (turn up mix control).

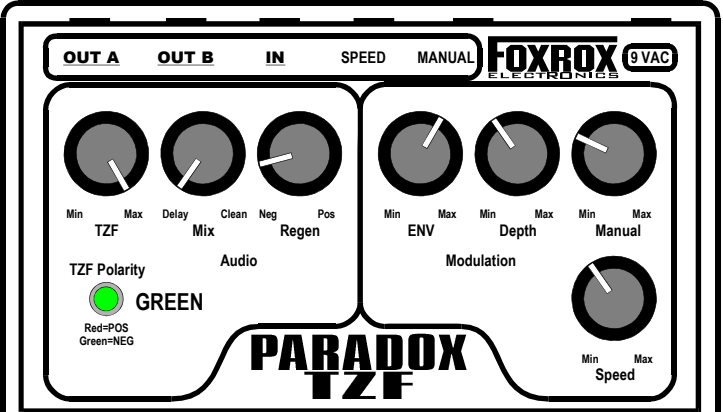
## More Sample Settings (page2)

To get the best results, use a distortion pedal and insert it BEFORE the flanger.



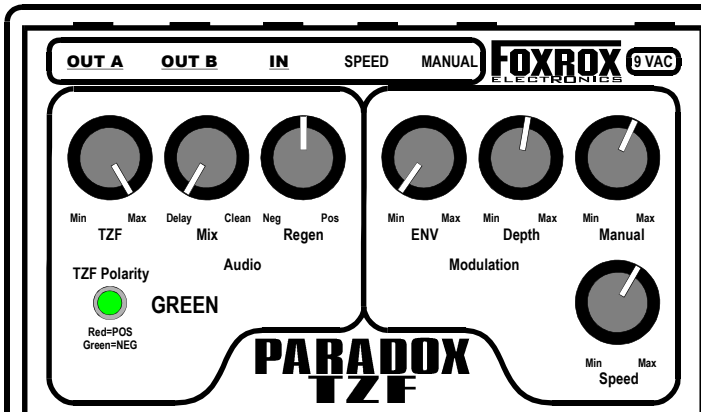
### Metallic flange

An ever-swirling metallic tunnel tone that seems to lock onto the notes you play. Reminds me of a sound that Jan Hammer got in the mid 70's



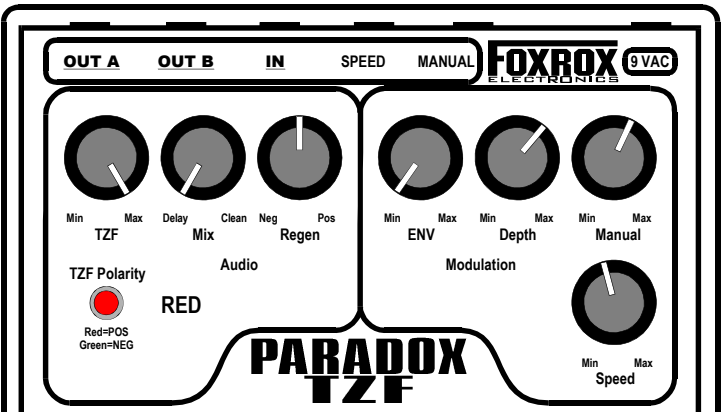
### House burning down

This is good for getting the strange and bazaar flanging sounds that Jimi and Eddie somehow managed while recording Electric Ladyland. Carefully tweak the ENV control so that it hovers right over the zero point while you play. This IS the sound! No other flanger will nail it like this.



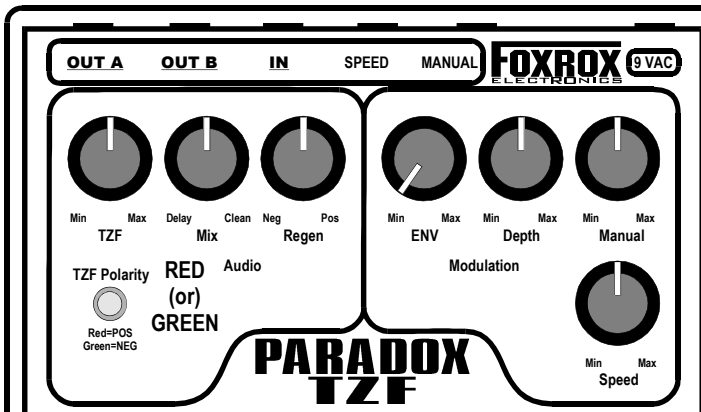
### Tremolo flange!

Use the total-cancellation that happens when you cross over the zero point with Negative summing. Tweak the MANUAL control to get an even tremolo sound. Set the speed to your liking. An interesting twist to a classic effect. Try with clean or compressed guitar. Try with keyboards.



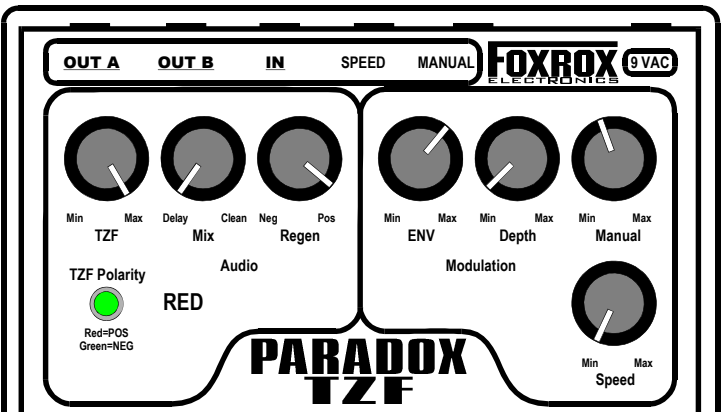
### Uni-flange Vibe

If you play around with this one, you can get pretty close to the sound of a Uni-vibe. Tweak the Manual and Width controls to get an uneven wobble. Try it with Neg (green) TZF.



### Mild flange

This is good for times when you want to add some swirly color in the back ground, and don't need an in-your-face flanging effect.



### Gurgle

Get some twisted gurgling sounds with this setup. Carefully adjust the TZF and Manual controls for proper gurgle.

