

## WELCOME

Hello there dudes and dudettes. Congratulations on purchasing the MI Effects CROSS OVER DRIVE. The Cross Over Drive is a new design, which bridges the gap between boost, tone enhancer, touch-sensitive overdrive, to all out fuzz depending on how it is set, and more importantly, how it's played. This is my most dynamic, touch-sensitive overdrive design to date. The four stage, cascaded, pure class-A JFET design has a remarkably valve-like feel, and a harmonic complexity like nothing I've ever designed before. This, coupled with the two tone controls provides excellent control over your tone.

The Cross overdrive was intended as a limited edition pedal, due mainly to the fact that the JFETs used in the pedal were discontinued, and I only had a limited supply. Thankfully, I have been able to source the same transistors in surface mount packaging, so the tone and feel of V2 is identical to V1.

The new V2 pushes things further by offering 3 distinct modes: A low gain mode, standard, and a new tight mode.

## INTRODUCTION

The genesis of the Cross Over Drive was not with other pedal designs, but in fact with amp circuits. A few years ago, I challenged myself to create a JFET implementation of a valve amplifier. I thought it would be a good idea to start with an amplifier I knew well, ... one of my own! So I began to play around with a JFET implementation of our award winning high gain Megalith amplifier. After a year of tweaking, the result was very impressive. This design crystallised into the Megalith Delta high gain distortion pedal.

This success piqued my interest in JFET designs. I then set about working on a valve-like smooth overdrive. The result initially was pleasing. However, I had focused on a narrow gain range. So I extended the gain range to see how it would sound, and the Cross Over Drive was born. To my surprise, taking the 'smooth' gain structure of the Cross Over Drive and pushing the gain produced a huge, violin-like smooth fuzz.

Another wonderful aspect of the design is just how well the Cross Over Drive reacts to both pick attack and changed in guitar volume. I know that this expression has become somewhat of a throw-away tag applied to virtually every drive pedal, but I feel that this genuinely applies in this case. Even with the gain cranked all the way up, a slight reduction of the guitar's volume in combination with a lighter pick attack will produce a wonderful clean tone. This really something quite special, and will be particularly rewarding for expressive guitarists who play with a wide dynamic range.

Below is a detailed description of the controls.

## CONTROLS

### GAIN

The gain control is used to control the amount of saturation, as well as the tone and feel of the cross over drive. The unique gain control adjusts the gain in two parts of the circuit, which means that there is a wide range of lower gain sounds, and then towards the end of the gain sweep, the saturation really piles on. There are three distinct ranges:

1) 0% to 40% Boost/light breakup. In this range, you can use the Cross Over Drive as a boost pedal (by cranking the output volume), or for light breakup. The exact setting of the drive control will depend on how hot your pickups are. Low output single coil pickups will stay clean in this range, whereas high output humbuckers will break-up almost immediately when hit hard. By adjusting the Balance and Detail controls, you'll be able to use the Cross Over Drive as a JFET based tonal enhancer.

2) 40% to 70% Smooth, touch-sensitive overdrive. In this range, the Cross Over Drive will behave like a smooth (dare I say 'D-style') amp-like overdrive. It will retain the tone of each guitar, but will also respond very dynamically to pick attack, producing anything from a delicate clean to a wild roar, all by varying the pick attack.

3) 70% to 100% Smooth Fuzz. With the gain in this range, the Cross Over Drive will take on an almost fuzz-like persona, especially with the neck pickup. Once again, by adjusting your pick attack and guitar volume, you can still go from clean, to overdrive to fuzz.

### BALANCE AND DETAIL

These two tone controls give you two different ways of adjusting the character of the Cross Over Drive.

The Balance control is a shelving control, which adjusts the high frequency band relative to the low frequencies. When you turn this control down, it drops the signal above 1KHz. The Detail control is a high frequency roll-off. All the way to the right, all frequencies are passed through the output stage of the pedal. As you turn this control down, it will limit the bandwidth by shaving off more top end. As you turn this control down, the 'knee' frequency at which the rolling off happens will decrease.

These two controls, whilst both adjusting the top end of the pedal, allow a great deal of control over the tone without compromising the overall character of the pedal.

To set adjust these controls, I like to do the following:

Turn the gain and volume up to the desired levels, and turn both balance and detail all the way up.

First reduce balance control until you reach the point where you feel that the balance of low to high frequencies is right. Next, adjust the detail control so that the high frequencies extend as far as you like.

This will bring you fairly close to your desired tone. From there, you can also try to turn the Balance and Detail in opposite directions to hear different tones with roughly the same frequency content.

### VOLUME

Rather surprisingly, this control adjusts the output volume

## MODE SWITCH

The mode switch is a new feature of the Cross Over Drive. The middle position (STD) is identical to the original Cross Over Drive.

The Low Gain mode has a similar tone to the standard mode, but with perhaps a touch more low end early on in the signal path. This is my favourite mode for on-the-verge-of-breakup strat and tele tones.

The Tight mode has a similar amount of gain to the standard mode. However, the frequency response is shifted more towards the upper mids, with a tighter low end. This reduces some of the fuzz of the standard mode, and creates a more modern sounding pedal. It works especially well when you need a bit of extra cut, or if you're using very high output humbuckers.

## OTHER FEATURES

Tiny enclosure – I worked really hard to pack in a huge amount of features into a tiny enclosure. Pedal-board real-estate is very expensive these days! But don't let size fool you. This die-cast aluminium enclosure is very, very strong.

- The enclosure is professionally powder-coated and silk-screened.
- The Cross Over Drive can be powered by an internal 9V or an external 9V DC power supply. Please make sure to use a well regulated negative centre pin supply. I also recommend running the Cross Over Drive at 9V exclusively for the best tone.
- Heavy duty 3PDT footswitch for true bypass and absolutely no signal loss when bypassed.

## REGISTRATION & WARRANTY

To register your pedal, you can email your name, contact details, purchase date, and retailer details along with the pedal serial number to: [register@miaudio.com](mailto:register@miaudio.com)

Alternatively, you can send the above information to the postal address on the front of this manual. **PLEASE REGISTER YOUR PEDAL.** In the long run, it will be difficult to have your pedal serviced if you need to if the pedal is not registered.

This pedal carries a 5 year warranty that covers all repairs due to manufacturer error. It does not cover any damage due to user mishandling, shipping, acts of God, and abuse. The owner should contact MI Audio directly for all repairs, and any work done by anyone other than MI Audio voids the warranty. All shipping costs are the responsibility of the owner, and are to be paid in advance of any work performed on the pedal. The owner may be asked to provide a copy of the sales receipt for verification.

## DISCLAIMER

The owner or user assumes responsibility for death, injury and/or damages relating to the operation of this device. MI Audio assumes no responsibility for death, injury or damages relating from the operation of this device. I am always thinking of ways to improve things, so all specifications are subject to change without notice.