

# REFERENCE MANUAL



## Digitech Whammy Pedal

*Smooth Pitch Bend in a Pedal*



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## INTRODUCTION

Congratulations on purchasing the latest in Digitech's line of harmonizing products.

Digitech and IVL Technologies Ltd. have again collaborated to bring you this fine product incorporating the latest in Digital Signal Processing. New price/performance barriers have been broken using IVL's custom chip to achieve smooth pitch bending. Excellent fidelity and naturalness have been achieved to give you great sounding harmonies and pitch shifts.

The Digitech Whammy Pedal allows you to:

- perform smooth pitch bending. Five Whammy settings smoothly bend notes one tone down and one octave and two octaves up and down.
- create two part harmony from single note input. Nine settings provide single note harmony along with your lead note. These harmonies are chromatic.
- detune. Two detune ranges 1 - 25 cents and 0 - whole tone are controlled by the pedal.

The Whammy Pedal comes with its own external AC power supply.

**NOTE:** When first powering up the Whammy Pedal, it is necessary to move the pedal through its full range ONCE in order to calibrate it.

## **HOW THE WHAMMY PEDAL WORKS**

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The Whammy Pedal operates as a real time sampler that constantly samples and analyzes what you're playing. At the same time, the notes being sampled are sent back out at a different pitch.

Because it recognizes the pitch of each note you play, the Whammy Pedal is able to automatically choose a looping point that creates a natural sounding harmony for that pitch - not a garbled one like that of other pitch shifting pedals.

## **CONTROL DESCRIPTIONS**

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The controls on the Whammy Pedal are the Bypass switch which turns the effect on and off, the Preset Control, which has 16 positions — 5 for Whammy, 9 for Harmony and 2 for Detune — and the pedal for changing the pitch or the effect.

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## WHAMMY SECTION

↑ OCT	Pedal up- no change. Pedal down- one octave pitch shift up.
↑ 2 OCT	Pedal up- no change. Pedal down- two octaves pitch shift up.
↓ 2ND	Pedal up- no change. Pedal down- 2nd (whole tone) pitch shift down.
↓ OCT	Pedal up- no change. Pedal down- one octave pitch shift down.
↓ 2 OCT	Pedal up- no change.                      Pedal down- two octaves pitch shift down.

**Note:** All Whammy settings are 100% wet — your sound is completely replaced by the pitch shifted output.

## HARMONY SECTION

↑ 2nd ↑ 3rd	Pedal up- harmony part is a 2nd up. Pedal down- harmony part is a major 3rd up.
♭ 3rd ♯ 3rd	Pedal up- harmony part is a minor 3rd up. Pedal down- harmony part is a major 3rd up.
↑ 3rd ↑ 4th	Pedal up- harmony part is a major 3rd up. Pedal down- harmony part is a 4th up.
↑ 4th ↑ 5th	Pedal up- harmony part is a 4th up. Pedal down- harmony part is a 5th up.
↑ 5th ↑ 6th	Pedal up- harmony part is a 5th up. Pedal down- harmony part is a 6th up.

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↑ 5th ↑ 7th	Pedal up- harmony part is a 5th up. Pedal down- harmony part is a flat 7th up.
↓ 4th ↓ 3rd	Pedal up- harmony part is a 4th down. Pedal down- harmony part is a minor 3rd down.
↓ 5th ↓ 4th	Pedal up- harmony part is a 5th down. Pedal down- harmony part is a 4th down.
↓ Oct ↑ Oct	Pedal up- harmony part is an Octave down. Pedal down- harmony part is an Octave up.

Note: All presets in the Harmony section have a 50% mix of effect and your signal.

### DETUNE SECTION

SHALLOW	Pedal up- 1 cent detune. Pedal down- 25 cents detune.
DEEP	Pedal up- no change.                      Pedal down- one whole tone pitch shift down.

Note: For both Detune settings, there is a 50% mix of your note and the effect.

### INDICATOR LED'S

A red LED at the top of the Whammy Pedal indicates that the unit is on (i.e. not bypassed).

## JACKS

“INPUT” JACK: A ¼-inch phone jack which accepts mono phone plugs for an unbalanced connection.

“EFFECT OUT” JACK: A ¼-inch phone jack which accepts mono phone plugs for an unbalanced connection. This jack outputs the processed sound at the mixes described above.

“DRY OUT” JACK: A ¼-inch phone jack which accepts mono phone plugs for an unbalanced connection. This jack is used to output an unprocessed signal for stereo effects i.e. if you want to output a detuned signal to the left side and have a dry signal on the right side, the DRY OUT jack allows you to do this. Alternatively, you might want to layer additional effects on top of the Whammy Pedal - the DRY OUT provides you with an unprocessed signal for input to other effects.

“POWER”: Accepts only the 10 volt AC adapter supplied with the product.

PLEASE NOTE: THIS IS A SPECIAL POWER SUPPLY - THOSE SUPPLIED WITH OTHER DOD PRODUCTS WILL NOT WORK. Using any other power supply than the one supplied may damage this pedal and void your warranty.

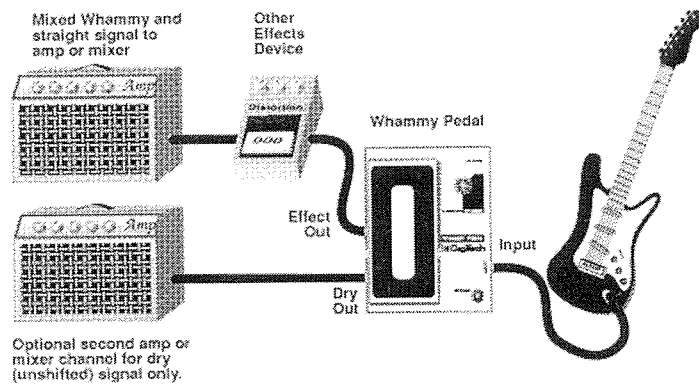
ALSO, THE UNIT WILL BECOME NOTICEABLY WARM DURING OPERATION. THIS IS NORMAL AND WILL NOT CAUSE ANY OPERATIONAL PROBLEMS.

## CONNECTION

The recommended way to connect up your Whammy Pedal is to place it before the distortion effect.

The alternate way is to place it after the distortion. The Whammy Pedal however, will accept distorted input and perform all functions satisfactorily.

Distortion may disturb the pitch recognition process to a small degree. Consequently, for best results, particularly with Whammy effects, place the Whammy Pedal first in your effects chain or reduce the amount of distortion on the input signal.



## APPLICATIONS

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### DETUNE

The Whammy Pedal provides beautiful rich chorusing/detuning effects. The shallow setting (25 cents) allows you to vary the depth of the detune from 1 (pedal up) to 25 cents (pedal down). This offers precise control of the amount of detune you want to use on particular notes, phrases etc.

The deep setting provides a sound like a Hawaiian guitar. Again, the depth of the detune is controllable by the pedal from unison (pedal up) to a shift of a whole tone (pedal down).

The detune functions work fine with chords.

### WHAMMY FUNCTIONS

The Whammy section of the unit offers the same types of features as a whammy bar, but without many of the drawbacks. The Whammy Pedal has these advantages:

- guitar stays in tune;
- bridge doesn't flutter;
- doesn't break strings;
- doesn't require special modification of guitars that don't have whammy bars;
- no loss of sustain.

Now you don't have to put a Whammy Bar on classic guitars, such as the Les Paul, and lose some of the great features of these instruments.



Some suggestions for using the Whammy functions:

- 2nd ↓: Emulate the Whammy Bar with your favorite lead lines, or emulate slide guitar.
- OCT ↓ and 2 OCT ↓: Get that great dive bomb effect through one or two octaves. Use it with your Rock and Roll squeal.
- OCT ↑ and 2 OCT ↑: Now you can do Whammy Bar effects up as well as down. Use it for your screaming high leads. You can also get both pull up and dive bomb effects in this mode. For example, say you're playing a solo in "G". You go up an octave and finger bend a note, which you then intensify by doing a one octave pitch bend up with the Whammy Pedal. Now you want a dive bomb effect. You can accomplish this by leaving the Whammy Pedal in its down position (full up octave) and playing down an octave on the fretboard. Even though you've shifted your playing down an octave, you still sound like you're up an octave up because you've left the Whammy Pedal down. Now, you hit a note you want to dive bomb. Step on the Whammy Pedal and move it to full up. This will create a dive bomb effect.

Try experimenting with the Whammy Pedal function in the Octave Down setting. You'll see just how versatile the Whammy Pedal really is.

**NOTE:** The Whammy section of the product works best with single note input. You can use chords and get good results with bending them down. The Whammy Pedal has limited use to shift pitches of chords up but with some experimentation you will be able to achieve reasonable results.

## HARMONY SECTION

Do great Rock and Roll effects.

Use the 5th  $\uparrow$  and 6th  $\uparrow$  setting for “boogie woogie”.

The 5th  $\downarrow$  and 4th  $\downarrow$  and the 4th  $\downarrow$  and 3rd  $\downarrow$  are good for both lead lines and blues.

**Country Music.**

Use the 2nd  $\uparrow$  and 3rd  $\uparrow$ , 3rd  $\uparrow$  and 4th  $\uparrow$ , and 5th  $\uparrow$  and 7th  $\uparrow$  settings for great steel effects.

**Special Effects**

Use the OCT  $\downarrow$  and OCT  $\uparrow$  to change the octave doubling possible with the Whammy Pedal. You can also do sweeping effects by operating the pedal from OCT  $\downarrow$  to OCT  $\uparrow$ .

## NOTICE TO USERS

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This equipment generates and uses radio frequency and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits of a Class B computing device in accordance with the specifications in Sub Part J of Part 15 of F.C.C. Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no such guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1) Reorient the receiving antenna,

- 2) Relocate the digital effects device with respect to the receiver,
- 3) Move the digital effects unit away from the receiver,
- 4) Plug the digital effects unit into a different outlet so that the digital effects unit and the receiver are on different branch circuits.

If necessary, the user should consult the dealer and/or experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the F.C.C. helpful:

*How to Identify and Resolve Radio-TV Interference Problems*

This booklet is available from the U.S. Government Printing Office, Washington, D.C. 20402. Stock Number: 004-000-000345-4.

## SPECIFICATIONS

Quantization:	12 bit autoranging
Sample Rate:	31.25 mHz
High Frequency Response:	Effect - 20 Hz to 12 kHz, Dry - 20 Hz to 40 kHz
Signal/Noise:	Effect - 85 dB, Dry - 98 dB
Max. Input:	- 4 dBm
Max. Output:	- 4 dBm
Pitch Bend:	+/- 2 Octaves
Detune:	+1 to 200 cents
Distortion:	1 kHz @ -4dBm, Effect = 0.1%. Dry = .015%
Input Impedance:	1 MegOhm
Pedal Control:	Auto Calibrating



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