



# VOICETONE™ double

## PRODUCT MANUAL

ENGLISH VERSION

# Table of Contents

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<b>Introduction</b> .....	<b>4</b>	<b>Making Adjustments</b> .....	<b>19</b>
<b>QuickStart</b> .....	<b>6</b>	<i>Storing Your Edits</i> .....	20
<b>Using Two VoiceTone Pedals</b> .....	<b>11</b>	<b>Patch List</b> .....	<b>21</b>
<b>Front &amp; Back Panel Descriptions</b> .....	<b>12</b>	<i>Patch List Descriptions</i> .....	22
<b>Setup Configurations</b> .....	<b>14</b>	<b>FAQ &amp; Troubleshooting</b> .....	<b>35</b>
<i>Phantom Power</i> .....	14	<b>Specifications</b> .....	<b>38</b>
<i>Standard Live Setup</i> .....	15		
<i>Stereo Setup</i> .....	16		
<i>Mono Sound Engineer Setup</i> .....	17		
<i>Stereo Sound Engineer Setup</i> .....	18		

# Introduction

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## Welcome to VoiceTone Double

VoiceTone Double was built for the performance minded singer desiring studio quality doubling and thickening on stage.

The effects in VoiceTone Double are produced by the very same algorithms used by the world's biggest touring acts.

In terms of audio quality (noise floor, harmonic distortion, and frequency response), Double surpasses anything that has come before it, and unarguably exceeds even the most stringent "audiophile" standards.

To make your life as easy as possible, Double presents a wide pallet of professionally-authored patches. Where out-of-the-box sounds aren't enough, Double provides four editing controls to customize the effects to your preference.

## Features:

- o Dual effect blocks - "Overdub" and "μMod" (pronounced micromod)
- o 10 factory banks with 3 patches in each cover many doubling styles
- o Part A/B switch to allow instant selection of 2 different edited effects
- o Quick and easy tweaking of patches
- o XLR mic level input and output in stereo or mono
- o Clean, studio quality mic preamp with phantom power

## About TC-Helicon

At TC-Helicon we truly believe that the voice is the world's most beautiful instrument. We don't mean to degrade other beautiful instruments, but the singing voice is the anthropological source for all things melodic. In the words of the founders of TC-Helicon,

"Everything we do is dedicated to this instrument (the singing voice). We envision a world where those who work with the voice in live and recording situations can bring out the very best from any performance, and where the possibilities of vocal craft are endless."

Our mission was galvanized by a simple question:

"Isn't it time that someone finally provided dedicated tools and solutions for voice?"

So what does this all mean to singers? It means that you should know there is a dedicated group of engineers, researchers and product specialists, based in Victoria, BC,

Canada, who spend every waking moment of their working lives listening, talking, singing, and interacting with singers and those who have passion for the singing voice. All this knowledge and experience is used to design products respecting and empowering the modern vocalist. Our products focus on removing barriers and inspiring creativity in performance. That's why our products range from near-field personal vocal monitors to floor-based vocal multi-effects pedals.

Enjoy.

The TC-Helicon Team  
a TC Group company

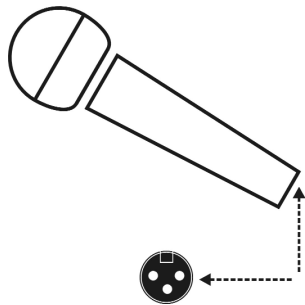
# Quick Start

## Step 1:

Connect your microphone to a mic cable

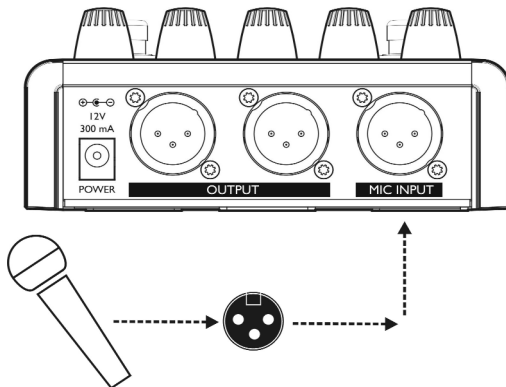
### NOTE:

Make sure Double is not powered.



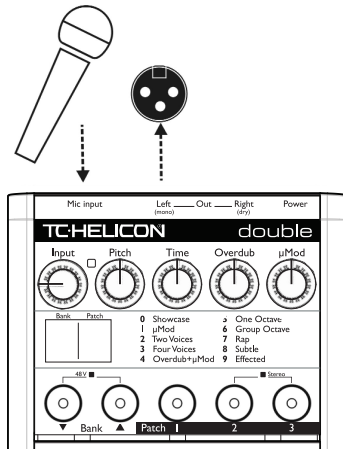
## Step 2:

Connect the mic cable to the Mic Input on Double



## Step 3:

Connect a mic cable to the Left (mono) Output of Double.

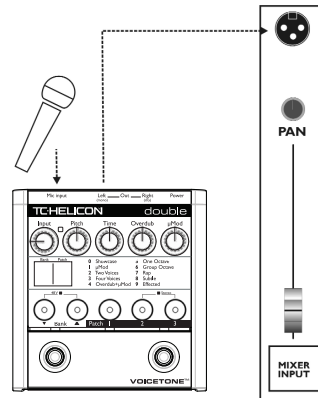


## Step 4:

Connect the mic cable from Double to a mic input on your sound system.

### NOTE:

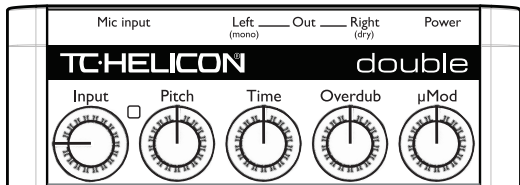
At this point it would be best to turn the gain and/or volume on your sound system's mic input to off.



# Quick Start

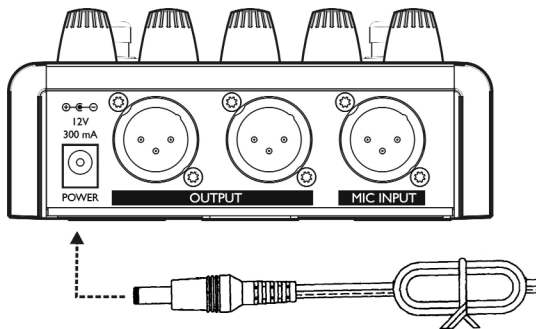
## Step 5:

Set the Input Knob fully left.



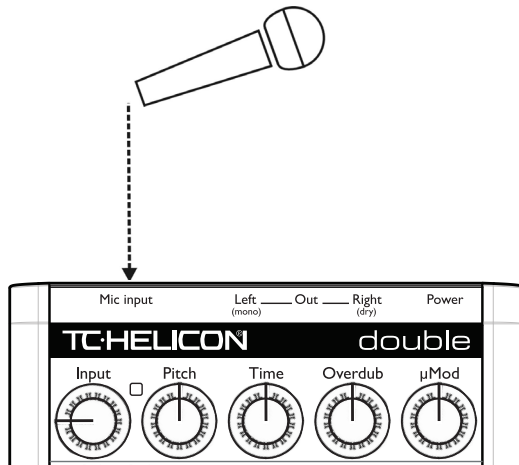
## Step 6:

Connect Double's power adapter to main power and to the Power Input on Double.



## Step 7:

While singing through your microphone, raise the Input Knob until the Input Light turns green, sometimes orange on louder parts, but never red.



## Step 8:

Raise the gain and/or volume on your sound system mic input channel and master volume until you hear a good level from your vocals.





## Quick Start

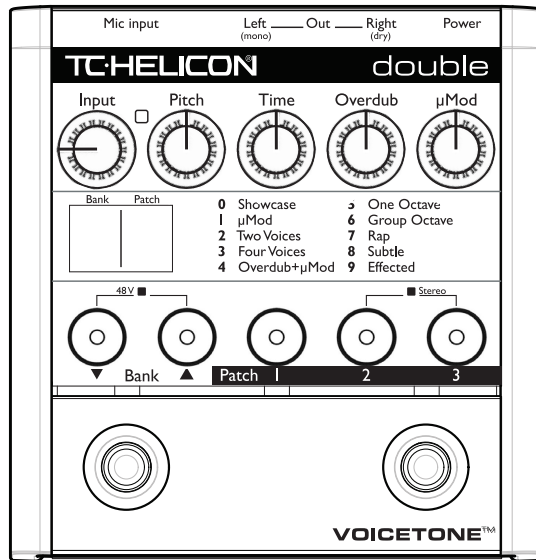
### Step 9:

You're ready to add doubling effects to your voice!

- Turn the effect on or off with the On (right) Footswitch.
- Listen to different patches by pressing the Patch 1, 2 or 3 buttons. To hear more patches in the other banks, press the Bank Up arrow button then select the patches in that bank.

#### NOTE:

Some patches may sound the same at first listen. A good way to assess the difference between patches is to sing a word into the mic that has a sharp onset and a longer sustained portion such as "Two". This will show how much onset pitch modulation is in the patch as well as how much the sustain portion varies.



# Using Two VoiceTone Pedals

You can use two or three VoiceTone pedals in series. The connection order is important:

- o VoiceTone Correct should be connected before Double
- o VoiceTone Create should be connected after Double

## Step 1:

Follow the Quick Start guide for both VoiceTone Pedals. The following steps describe connecting Double's output to VoiceTone Create

## Step 2:

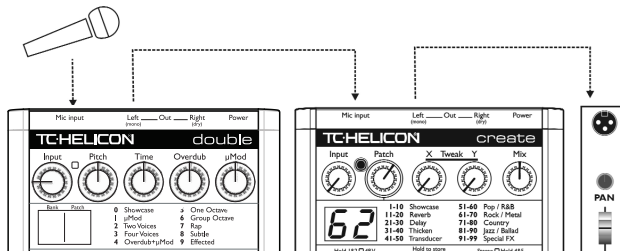
Instead of connecting Double to the PA, connect its Left (mono) output to the mic input on Create.

## Step 3:

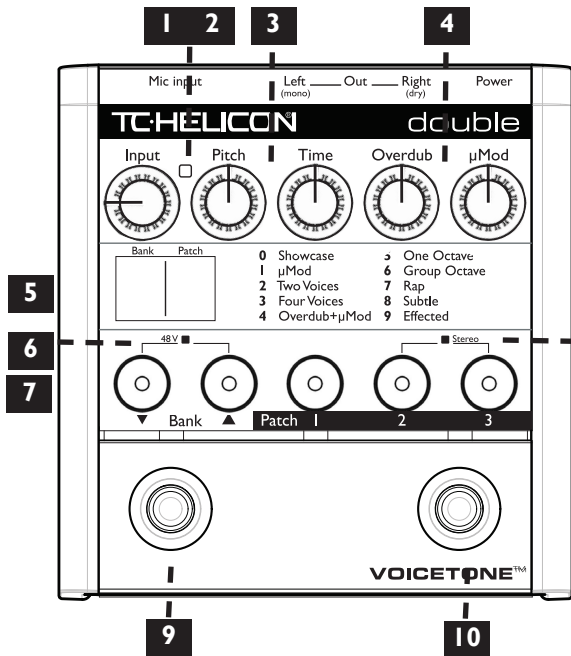
Connect the 2nd VoiceTone pedal, in this case Create, to the PA.

## Step 4:

Set the Input level knob on Create to the minimum position.



# Front & Back Panel Descriptions



## 1. Input Knob

Controls the microphone pre-amplifier gain. Double can accept dynamic or condenser microphones.

## 2. Input Light

Indicates the input level of the microphone. Flashing green, sometimes orange is good. Flashing red is clipping - not good!

## 3. Pitch and Time Edit Knobs

Allows you to add more or less pitch and time humanization to the current patch.

## 4. Overdub and µMod Edit Knobs

Raises or lowers the mix levels of the Overdub voices versus the µMod effects block.

## 5. Bank and Patch Display

Shows the current bank and patch

# Front & Back Panel Descriptions

## 6. 48 Volt Phantom Power Light

Indicates phantom power on or off.

## 7. Bank Select Switches

Push to cycle up and down through the 10 banks.

## 8. Stereo Light

When the LED is on the output is stereo. When it's off, the output is summed to mono.

## 9. Left Footswitch: A/B effect

The patches stored to the A and B settings can be toggled here. Storing both patches is accomplished by holding this footswitch.

## 10. Right Footswitch: Effect On/Off

Toggles the doubling effect on and off

## 11. Mic Input

Microphone connection.

## 12. Left Output (mono)

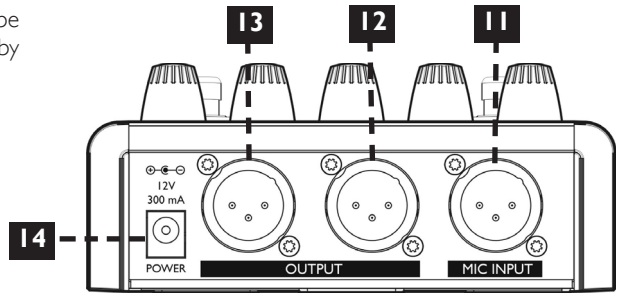
Connects the mono or left side of the stereo output to a sound system depending on the Stereo/Mono status.

## 13. Right Output

Connects the mono or right side of the stereo output to a sound system.

## 14. Power Input

Input connector for supplied power supply.



# Setup Configurations

## Phantom Power

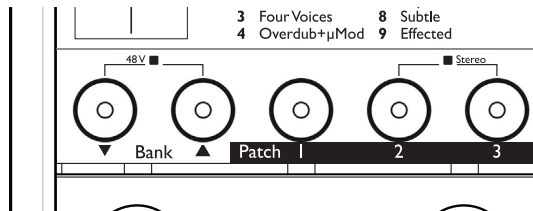
Before using any setup configuration, determine the type of microphone you are using:

Dynamic microphone: phantom power off.

Condenser microphone: phantom power on.

### Enabling Phantom Power:

1. Confirm that your sound system master level (overall volume) is off.
2. To prevent nasty pop sounds, turn off the phantom power for the channel Double's output will be connected to or the entire mixer.
3. Connect Double's power adapter to main power and to the Power Input on Double.
4. Press and hold the Bank Up and Bank Down buttons simultaneously until the Phantom Power Light comes on. To turn phantom power off, repeat this step.



### NOTE:

Set your sound system level to off when you are turning phantom power on/off as it can create a "pop" sound in your speakers.

# Setup Configurations

## Standard Live Setup

The standard live setup for VoiceTone Double couldn't be easier - put Double between your microphone and your microphone input on your sound system. In this configuration the Left Output produces the mixed wet and dry mono signal. The Right Output produces your dry voice for use with the Mono Live Sound Engineer configuration (pg 17); it is not required for standard operation.

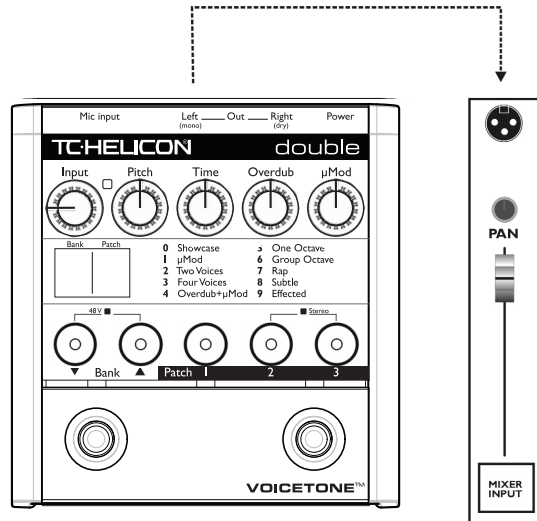
### Configuring Standard Setup:

1. Connect your microphone to Double's Mic Input.
2. Connect the Left Output to a mic input channel on your sound system.

#### NOTE:

The default for Double is stereo mode *off* (mono). If the stereo LED is on but you prefer mono, press and hold the two switches under the Stereo LED to change back to mono.

3. Connect Double's power adapter to main power and to the Power Input on Double.



# Setup Configurations

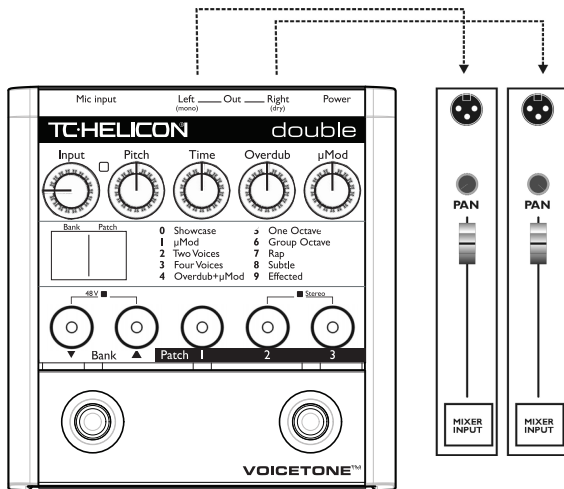
## Stereo Setup

If you run your sound system in stereo, or you are recording in a studio, you can enable stereo mode. In this setup, effect patches have more panoramic effect. In this configuration, you connect the Left and Right Outputs to two inputs on your sound system.

### Configuring Stereo Setup:

1. Connect your microphone to Double's Mic Input.
2. Connect to your sound system as indicated: Left Output and Right Outputs to two mic input channels on your sound system. Set the pan pots on your sound system fully left (from Double's Left Input) and fully right (from Double's Right Output).
3. Connect Double's power adapter to main power and to the Power Input on Double.

4. Press and hold Patch Buttons 2 and 3 simultaneously until the Stereo LED turns on. To return to mono mode repeat this step.



# Setup Configurations

## Mono Sound Engineer Setup

If you are in a situation where a live sound engineer mixes your vocal sound, you have the option of giving them control over your mono wet/dry mix. In this configuration the live sound engineer will receive one channel with your dry vocal, and a fully wet effects channel to mix in the mono doubling effects.

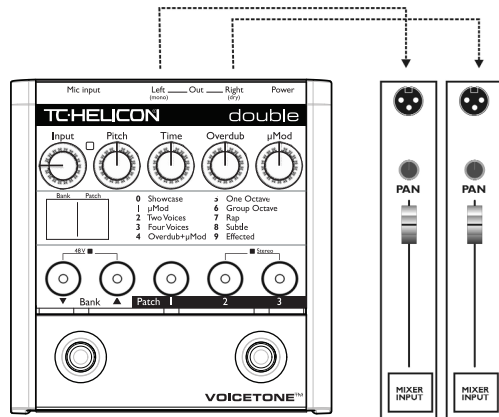
### Configuring the Mono Sound Engineer Setup:

1. Connect your microphone to Double's Mic Input.
2. Connect the outputs to your sound system as shown at right: Left and Right Outputs to two mic inputs on your sound system. Set these channels' pan pots to center.
3. Hold the Bank Up and Patch 1 buttons while you insert the connector from Double's power adapter into the Power input. This action mutes the dry voice so that it's duplicated on both channels.

4. Confirm that stereo mode LED is off. If the Stereo Light is on, press and hold Patch Buttons 2 and 3 simultaneously until the Stereo Light turns off.

### NOTE:

This is a temporary power-up mode that must be set each time it is used.





# Setup Configurations

## Stereo Sound Engineer Setup

In a live stereo PA setup or a recording studio you can mute your dry voice while the outputs produce %100 wet stereo for easier mixing. In this configuration you do not connect your mic to Double's Mic Input; your mic connects to a mixer channel that has an auxilliary (aux) send. This aux send will send your mic signal to Double.

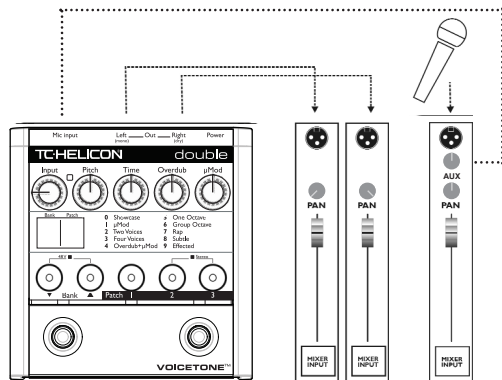
### Configuring the Stereo Sound Engineer Setup:

1. Connect your microphone to your mixer channel.
2. Connect a cable from the aux send of your mixer to the Mic Input on Double.
3. Connect the outputs of Double to two channels of your mixer. Set these channel pans to hard Left and Right.
3. Hold the Bank Up and Patch 1 buttons while you insert the connector from Double's power adapter into the Power input. This action mutes the dry voice.

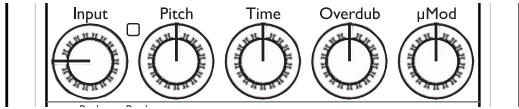
4. Confirm that the Stereo mode LED is on. If not, press and hold Patch Buttons 2 and 3 simultaneously until the Stereo Light turns on.

### NOTE:

This is a temporary power-up mode that must be set each time it is used.



# Making Adjustments



## The Edit Controls

VoiceTone Double has a simple set of four controls you can use to modify the current patch. Once you have selected a patch for the currently selected A or B part (as indicated by the A/B LEDs), you can edit its sound using the four Edit Controls. You must move an Edit Control close to its last stored value before you can change it. This prevents unwanted changes when accidentally bumping an Edit Control, and allows you to preview a value before changing it.

You can preview the last edited value of each Edit Control by turning each control slightly. Its value will be shown briefly in the Bank and Patch display window. The value will stop flashing once you've moved the control to match the last edited value.

If the Pitch and Time controls do not appear to make an audible change, it's likely that on the  $\mu$ Mod block is used in that preset. Some presets are made up purely of the the output of the  $\mu$ Mod effect block and these have the Overdub level turned to zero.

## Pitch

The Overdub voices use pitch modulation on your sustained vowels and onset pitch manipulation at the beginnings of words to achieve the sound of one or more singers performing a doubled part. The Pitch control adds or reduces to the amount in the preset.

## Time

The Overdub voices also use time delay and moving time compression and expansion to simulate different takes and different singers' time interpretation. This control adds or reduces this amount.

The presets have differing adjustment ranges of Pitch and Time.

## Making Adjustments

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The Overdub and  $\mu$ Mod controls act like a mixer to vary the relationship between the two effects blocks.

### Overdub

This controls the level of the Overdub voices. The effect of this block is to sound more like real voices as opposed to electronic processing used to create a doubling effect.

### $\mu$ Mod

This controls the level of the  $\mu$ Mod effect block. This effect block is responsible for the chorus, detune/microshifting and flange effects you hear in the patches.

## Storing your Edits

You can store your two favorite presets or their edited versions and toggle between them in performance with the A/B footswitch. You can store the Bank, Patch number and any edits of the Pitch, Time, Overdub and  $\mu$ Mod controls. Once stored, these settings will remain in effect each time you power up the unit.

The Store function stores both A and B at the same time. To store what you have currently assigned to A and B, press and hold the left (A/B) footswitch until the A, B and On LEDs flash briefly.

Pressing the Bank or Patch buttons will reload the factory settings for each patch. Adjusting any of the knobs will temporarily modify your patch. To return your patches to how you stored them, toggle the A/B footswitch. If you want to overwrite your current A/B assignment with the restored factory setting, hold the A/B footswitch.

## Patch List

Bank Name	Bank Number	Patch 1	Patch 2	Patch 3
Showcase	0	Mono Overdub	4V Porta Detune	Oct Down Stereo
Microshift	1	E Type McrShift	Sweet Chorus	Wide Detune
2 Voices	2	Two Overdubs	2 Vox Mono	2V Porta Detune
4 Voices	3	Four Overdubs	Mixed Genders	4 Vox Corrected
Combi	4	1 Vox Detune	2 Vox Chorus	Mono 4V Flange
One Octave	5	1 Vox Oct Down	Oct Up Female	Oct Down Male
Group Octave	6	Male Octaves	Female Octaves	2 Uni 2 Oct Up
Rap	7	Rapper Add One	Rappers Add Two	Rapper Crowd
Subtle	8	TCH Thickener	Correct Overdub	Subtle Spread
Effectd	9	2Vox Flange	Mixed Genders	2 Vox Rotor

## Patch List Descriptions

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The following lists rough descriptions for each preset. Any mention of pan position is invalid when Double is set to the default mono output mode.

**Mono Overdub** - 1 voice panned center with slight pitch effects and portamento. Simulates a single overdub track.

**4V Porta Detune** - All 4 overdub voices, 120ms porta, +/-3 cents and +/-6 cents detune, with reduced stereo width.

**Oct Down Stereo** - 1 voice with overdub pitch effects shifted down an octave and processed 100% wet through  $\mu$ Mod.

**E Type McrShift** - Overdub voices muted. An updated  $\mu$ Mod-only effect offering an uncanny tribute to a popular processor.

**Sweet Chorus** - A simple but effective chorus effect with no Overdub voices.

**Wide Detune** - This preset sends the dry voice to the  $\mu$ Mod effect block only. The overdub voices are muted although you can add them by raising the Overdub value.

**Two Overdubs** - A nice stereo simulation using 2 of the 4 voices with a little scooping. No porta.

**2 Vox Mono** - Porta and scooping on 2 overdub voices panned center.

**2V Porta Detune** - 2 overdub voices tuned +/-6 cents and panned hard LR. 120ms porta.

**Four Overdubs** - All 4 voices with more scoop, pitch detune, randomization and portamento.

**Mixed Genders** - 4 unison voices with various male and female genders, overdub detuning and pitch effects.

**4 Vox Corrected** - 4 voices with various pitch correction attack times and a little timing scatter.

**1 Vox Detune** - A single mono overdub voice, -16 cents detuned sent to +/-12 cents of  $\mu$ Mod detuning panned wide. No dry voice FX.

**2 Vox Chorus** -  $\mu$ Mod chorus added to 2 overdub voices that have been detuned +/-3 cents.

**Mono 4V Flange** - 4 overdub voices panned center and stereo flange effect for an interesting panorama.

**1 Vox Oct Down** - A single voice emulating a "dry" octave overdub. Some male gender, pitch effects but no  $\mu$ Mod processing.

**Oct Up Female** - A single octave above overdub voice with porta, female gender and pitch randomization.

**Oct Down Male** - Male gender set to an octave below.

## Patch List Descriptions

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**Male Octaves** - 4 voices with detuning, male gender. Additional  $\mu$ Mod detuning is added to both the overdub and dry voices.

**Female Octaves** - Same as Male Octaves only with female characteristics

**2 Uni 2 Oct Up** - Upper octave pitch shifts and unison doubling

**Rapper Add One** - The “Rapper” presets will not work for melodic singing! They provide a convincing simulation of group shout-type performances from one voice. This preset is 1 voice with high pitch random and scoop settings.

**Rappers Add Two** - 2 voices panned wide. Try removing or reducing dry level!

**Rapper Crowd** - 4 voices with mixed genders and over-the-top pitch effects. Dry and overdub voices are processed by the  $\mu$ Mod block.

**TCH Thickener** - A variation of the E Type preset with matched LR delay times and no feedback.

**Correct Overdub** - A single overdub voice lightly corrected to a chromatic scale and portamento provide a different flavour of doubling.

**Subtle Spread** - +/- 5 cents, 5.0 and 5.2ms delay and cross feedback.

**2Vox Flange** - 2 overdub voices with a nice flanger effect.

**3D Flanger** - Flange effect that swirls in the stereo field

**2 Vox Rotor** - Leslie-type effect on 2 overdub voices.

# FAQ & Troubleshooting

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## FAQ & Troubleshooting:

### 1. I'm not getting any sound out of Double

- a. Confirm the power adapter is properly connected by checking that a patch number is lit on the Numeric Display.
- b. Confirm your microphone is connected properly by talking through microphone and looking for the Input Light to light green or orange. If the Input Light is going on, check your connections and settings on your sound system. If the Input Light is not on, press the Right Footswitch and turn the effect off, then try varying the Input Knob and see if you can start to hear the dry/unaffected signal through your sound system. Additionally, if you have a condenser microphone, ensure phantom power is enabled.

### 2. I'm not hearing any effect from Double, just my dry voice

- a. If you're running in stereo output mode, ensure the Effect On Light is on. If it's off, press the Effect On button

once to engage it. Additionally, ensure the Mix Knob is not in the off position (fully left).

- b. If you're running in mono sound engineer mode, confirm which outputs are connected to your sound system. Only the Left Output will produce effects. If it's not producing any effect sound, ensure the Effect On Light is on. If it's off, press the Effect On button once to engage it.

### 3. I don't hear any difference when I turn the Pitch, Time, $\mu$ Mod or Overdub knobs.

- a. Ensure the Effect On Light is on. If it's off, press the Effect On button once to engage it.
- b. Not all patches have all features enabled. Try rotating the knob fully left, then fully right - then setting it to a value.

### 5. My sound is distorted.

- a. If your sound is only distorted when you have the

effect on, and the Input Light is never flashing red, try reducing the  $\mu$ Mod and Overdub levels for the current patch.

b. If Double's Input never flashes red, and you still hear distortion, the gain on your PA mixer channel is likely set too high.

c. If your sound is distorted when the effect is *off*, try turning the Input Knob to the left until the Input Light is *green* and sometimes *orange*. If the Input Light is still flashing *red*, reduce the input level, sing further away from the microphone, or send the mic signal through an aux send on an external mixer.

### **6. How do I restore the factory presets to A and B?**

Hold the Bank Up and Down buttons while you apply power. After the led finishes flashing the presets have been restored.



# Specifications

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## Analog Inputs

- ◆ Connectors Balanced XLR, Input Impedance 1kOhm
- ◆ Mic Input Sensitivity @ 0dBFS -44dBu to +2dBu
- ◆ Mic Input Sensitivity @ 12dB headroom -56dBu to -10dBu
- ◆ EIN -128dBu @ max. mic amp gain,  $R_g = 150 \text{ Ohm}$

## Analog Outputs

- ◆ Connectors Balanced XLR
- ◆ Output Impedance 40 Ohm
- ◆ Output Level @ 0dBFS +2dBu

## Input to Output Analog Audio Performance

- ◆ Dynamic Range, Mic. @ Min gain >108dB, 20 Hz - 20kHz \*A-weighted
- ◆ Dynamic Range, Mic. @ -18dBu sensitivity > 104dB, 20hz - 20kHz\*
- ◆ THD+ Noise, Mic. @ Min gain <-90dB
- ◆ Frequency Response, max gain -1.5dB @ 40 Hz, +0/-0.3 dB (200Hz to 20 kHz)

## Conversion Characteristics

- ◆ Sample Rate 48 kHz, Converter AKM AK4620B
- ◆ AD / DA Conversion 24 bit, 128x oversampling bitstream

## EMC & Safety

- ◆ Complies with EN 55103-1 and EN 55103-2 FCC part 15, Class B, CISPR 22, Class B
- ◆ Certified to IEC 65, EN 60065, UL6500 and CSA E60065 CSA FILE #LR108093

## Environment

- ◆ Operating Temperature 32° F to 122° F (0° C to 50° C)
- ◆ Storage Temperature -22° F to 167° F (-30° C to 70° C)
- ◆ Humidity Max. 90 % non-condensing

## Supplementary

- ◆ Dimensions 130mm x 132mm x 41mm (5" x 5.25" x 1.5")
- Weight 1.5 lb. (0.72 kg)
- Warranty Parts and labor 1 year