

# electro-harmonix

## STEREO TALKING MACHINE

### Vocal Formant Filter

Congratulations on your purchase of the Electro-Harmonix Stereo Talking Machine, a highly customizable envelope-controlled digital vowel filter. The Stereo Talking Machine (STM) utilizes multiple moving filters to turn your guitar in a growling, gurgling, snarling monster.

#### - Special Features of the Stereo Talking Machine -

- Nine selectable voices: Seven human vowel filter combinations, a classic wah-wah filter, and the legendary dual band filter of the EHX Bassballs
- Ability to reverse the sweep of each voice, doubling your sound options
- Attack/Decay knobs to separately control the rise and fall speeds of the filter sweep
- Sensitivity control to adapt the effect's response to your playing style
- Stereo Outputs for true stereo imaging and panning
- Expression Pedal option to manually control filter sweep
- Programmable distortion to make your guitar really growl
- Programmable internal LFO for automatic filter modulation
- Effects Loop side-chain
- 9 fully programmable presets

**WARNING:** Your Stereo Talking Machine comes equipped with an Electro-Harmonix 9.6DC-200 power supply (same as used by Boss® & Ibanez®: 9.6 Volts DC 200mA / Center Negative). The Stereo Talking Machine requires 185mA at 9VDC with a center negative plug. The STM does not take batteries. Using the wrong adapter may damage your unit and void the warranty.

#### - VOICE DESCRIPTIONS -

Each voice option in the STM sweeps between two distinct filter settings, mimicking the way a human mouth moves to form particular vowel sounds. The direction of the filter sweep can be reversed using the SENSITIVITY knob.

	Sensitivity +	Sensitivity -
<b>EE</b>	<u>Feed</u>	<u>Cereal</u>
<b>EE-ER</b>	<u>Hurry</u>	<u>Peer</u>
<b>AH-I</b>	<u>Glide</u>	<u>Papaya</u>
<b>AH-OO</b>	<u>Fact<u>u</u>al</u>	<u>Now</u>
<b>I-A</b>	<u>He<u>i</u>ght</u>	<u>Bayonet</u>
<b>AH</b>	<u>E<u>r</u>a</u>	<u>F<u>a</u>r</u>
<b>OW-EE</b>	<u>F<u>e</u>ud</u>	<u>Ch<u>e</u>wy</u>

The WAH and BB voice options simulate a classic wah-wah pedal filter and the EHX Bassballs filter respectively.

## – QUICK START GUIDE –

This Quick Start Guide will help you get started using your Stereo Talking Machine immediately. For detailed information on all of the Stereo Talking Machine's features and functions, please refer to the rest of this owner's manual.

### **Setup**

1. Using an unbalanced instrument cable, plug the output of your instrument into the INPUT jack on the right side of the STM.
2. Connect an unbalanced instrument cable from the MONO/L output jack on the left side of the STM to the input jack of an amplifier.
3. Connect the included AC Adaptor to a wall outlet and plug its barrel connector into the 9V power jack at the top of the STM.
4. Turn on the amplifier and turn up your instrument's volume. Press the BYPASS footswitch so that the STATUS LED is lit; the STM is now activated.

### **A. Preset Settings**

Press and release the PRESET footswitch to cycle through the STM's preset settings. Each factory preset has been carefully prepared to utilize the deep sonic capabilities of the STM. You may overwrite the factory presets with your own sound creations whenever you like.

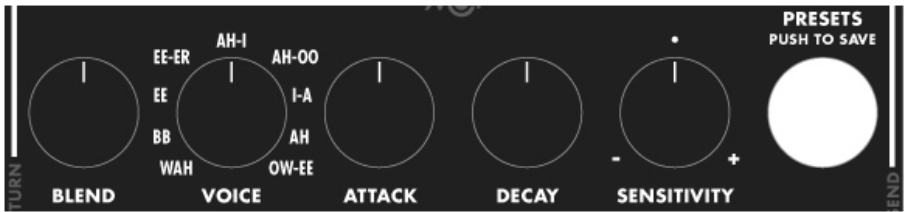
### **B. Manual Settings**

1. To begin, turn the STM's knobs to the following positions:

BLEND:	Full Clockwise
VOICE:	Full Clockwise (OW-EE)
ATTACK:	12 o'clock
DECAY:	12 o'clock
SENSITIVITY:	1 o'clock
2. Ensure the PRESET LED (bottom left) is off. If it is on, turn the white PRESETS knob clockwise until the PRESET LED shuts off. This action deactivates the currently loaded preset.
3. Ensure the auxiliary functions (indicated by the leftmost orange LED) are off. If they are on, press the white PRESETS knob to deactivate them.
4. Play your instrument at the intensity you would like to trigger the filter sweep. While playing, turn up the SENSITIVITY knob until the Sweep Level LEDs light up completely after each note you play.
5. To change the sweep speed of the filters, adjust the ATTACK and DECAY knobs.
6. Adjust the VOICE knob to try different voicings or filter types.

## – SWEEP LEVEL LEDs –

The two rightmost orange LEDs under the PRESETS knob indicate the position of the filters at any given moment. When the LEDs are both unlit, the filters are at their rest position (ex: set to OW for the positive OW-EE voice). When the LEDs are both lit, the filters are in their maximum position (ex: set to EE for the positive OW-EE voice). The LEDs sweep on and off, visually representing the audible sweep of the filters as the input signal triggers the envelope sweep, the expression pedal manually moves through the filters or as the internal LFO automatically modulates the filters.



## – PRIMARY KNOB FUNCTIONS –

**BLEND** – Controls the wet/dry balance of the effect outputs. Turning the BLEND knob to its minimum counter-clockwise position will yield 100% dry signal with no wet. Turning the BLEND knob to its maximum clockwise position will give 100% wet signal with no dry. A mix of the wet and dry signals will occur when BLEND is set anywhere between the extreme settings.

**VOICE Type** – Selects one out of the nine voice options. Turning the VOICE knob will change the filter type affecting the wet signal. A corresponding LED in the LED ladder will blink briefly when a new VOICE is selected, indicating the change. The STM does not blend between the nine voices. The VOICE knob acts like a switch; moving it within a single voice will not produce varying results. To reverse the polarity of the voice type, see the SENSITIVITY knob.

**ATTACK** – Varies the rise time of the filter sweep. The rise time is the speed at which the envelope generator travels from its rest position to its maximum position. With the ATTACK knob set to its counter-clockwise position, the filters rise at the fastest rate (8 mS); set to its clockwise position, the filters rise at the slowest rate (1200 mS).

**DECAY** – Varies the fall time of the filter sweep. The fall time is the speed at which the envelope generator travels from its maximum position to its rest position. The filter sweep's decay begins after the ATTACK time has finished. With the DECAY knob set to its counter-clockwise position, the filters fall at the fastest rate (8 mS); set to its clockwise position, the filters fall at the slowest rate (1300 mS).

**SENSITIVITY (w/ voice polarity)** – Controls the input volume at which the filters will start moving, varying the STM's responsiveness to the instrument's dynamics. The SENSITIVITY knob has a center detent which signifies the off position for no envelope response (a good position for use with an expression pedal). Turning the knob away from the center detent will make the STM more responsive to your playing. For chords and hard plucking, set the knob near the center. For single notes and softer strumming, set the knob far from the center.

The SENSITIVITY knob is split into two sections: In the positive (clockwise) half of the knob, the voice filters will sweep in the forward direction (ex: OW->EE for the OW-EE voice or from low to high frequency for the WAH and BB voices). In the negative (counterclockwise) half of the knob, the voice filters will sweep in the reverse direction (ex: EE->OW for the OW-EE voice or from high to low frequency for the WAH and BB voices).



## – PRIMARY SWITCH FUNCTIONS –

**PRESETS Encoder** – This white knob has three functions:

1. Turn this knob clockwise or counter-clockwise to scroll through the presets, though it will not load the preset. To load the selected preset, press and release the PRESET footswitch.\*
2. Press and hold the PRESET knob for 3 seconds to save a preset.\*
3. Press and release the PRESET knob (without holding it down) to toggle the Auxiliary functions on and off (the leftmost orange LED will light when auxiliary functions are on).\*\*

*\*See the PRESETS section for more on Presets.*

*\*\*See the AUXILIARY FUNCTIONS sections for more on the auxiliary sound processes: fuzz and LFO modulation.*

**BYPASS Footswitch & LED** – Pressing the BYPASS footswitch will toggle the STM between Effect mode and **buffered** Bypass mode. The associated red LED, near the BYPASS Footswitch, will light to indicate Effect mode. When this LED is off, the STM is in Bypass mode.

**PRESET Footswitch & LED** – The PRESET footswitch serves two purposes:

1. Press and release the PRESET footswitch to load a selected preset. If a preset is already loaded, the STM will increment to the next preset in the LED ladder. The PRESET LED will light up solid, indicating a preset is loaded. A member of the LED ladder will also illuminate, indicating which preset is loaded.\*
2. Press and hold the PRESET footswitch to enter auxiliary knob edit mode. While holding the footswitch, turn the knobs to adjust the auxiliary knob parameters.\*\*

*\*See the PRESETS section for more on Presets.*

*\*\*See the AUXILIARY FUNCTIONS sections for more on these secondary knob parameters.*



## – AUXILIARY SWITCH FUNCTIONS –

In addition to the primary knob functions, the STM has a set of auxiliary knob functions. When enabled, these add options for **Fuzz**, **LFO Filter Modulation** and **Volume Control**. These auxiliary functions can be used independently or in combination with each other and are saved in presets along with the primary function settings.

### **AUXILIARY TOGGLE Encoder (PRESETS Encoder) and AUX STATUS LED**

Press and release the white PRESETS knob to toggle the auxiliary functions on or off. The leftmost orange LED will illuminate to indicate the status: (LED ON = Aux Functions ON; LED OFF = Aux Functions OFF). The STM Auxiliary Functions will remain in their last state after power cycling.

### **AUXILIARY EDIT Footswitch (Preset Footswitch)**

Use this footswitch to adjust the parameters of the auxiliary functions. The auxiliary parameters can be edited whether the functions are toggled on or off. These parameters will remain in their settings even after the STM is power cycled. The auxiliary settings are saved and recalled with the presets just like the primary knob functions.

1. Hold down the PRESET footswitch. While holding down the footswitch, the black knobs will control their auxiliary functions (see the AUXILIARY KNOB FUNCTIONS section).
2. Turn the knobs for the auxiliary functions that you want to adjust. The auxiliary parameters will only change to a new setting when you turn the knob. If you do not adjust a given knob, its parameter setting will not change. The leftmost orange LED will blink to indicate a change in the auxiliary parameters.
3. Release the PRESET footswitch to finish editing the auxiliary functions. After releasing the PRESET footswitch, the knobs will return to their primary functions and settings from before you pressed the PRESET footswitch. The current knob positions may not reflect the actual settings for the primary knob functions after editing the auxiliary functions.

*Note: If no knobs are turned while the PRESET footswitch is being held down, releasing the footswitch will cause a preset to load. See PRESETS section.*



### – AUXILIARY KNOB FUNCTIONS –

**VOLUME** (*BLEND knob*) – Adjusts the overall output volume of the STM. As you turn the knob clockwise, the volume will increase.

**FUZZ TONE** (*VOICE knob*) – Increases the treble or high frequency response of the fuzz as the knob is turned clockwise. The FUZZ GAIN aux knob must be set to somewhere other than the off position for FUZZ TONE to have an effect.

**FUZZ GAIN** (*ATTACK knob*) – Controls the amount of distortion. As you turn the knob clockwise the distortion will increase. At the full counterclockwise position (off), the fuzz section is bypassed.

**LFO RATE** (*DECAY knob*) – Controls the rate or speed of LFO modulation applied to the filter sweep. The LFO DEPTH/SHAPE aux knob must be set to somewhere other than the off position for LFO RATE to have an effect.

**LFO DEPTH/SHAPE** (*SENSITIVITY knob*) – Sets the amount of triangle or sawtooth wave modulation that is applied to the filter sweep. The center detent signifies the off position for no modulation. Turning the knob clockwise will increase the amount of sawtooth modulation. Turning the knob counterclockwise will increase the amount of triangle modulation.

## – I/O CONNECTIONS –

**INPUT** – Connect the output of your instrument or another effects pedal to this jack.

**SEND / RETURN** – An optional effects loop can be used to add additional effects pedals between the STM's preamp and filter sections without any alteration to the instrument's original dynamics. The external effect(s) will be active in the wet mix of the STM's output, and will be bypassed when the STM is itself in bypass mode. Connect the SEND jack to the external effect's input; connect the RETURN jack to the external effect's output.

**MONO/L and R OUTPUTS** – The STM can be operated in mono (single output) or stereo (dual output) configuration. In stereo configuration, VOICE modes WAH, BB, AH-OO, AH, OW-EE produce a pan sweep in sync with the filters; VOICE modes EE, EE-ER, AH-I, I-A shift the filters differently for each output to produce a wide, lush sound field. Connect the MONO/L jack to the input of your primary amp. For stereo, connect the R jack to the input of your secondary amp.

**EXP PEDAL** – An optional expression pedal\* can be plugged into this jack for manual control of the STM's filters, enabling interaction similar to that of a wah-wah pedal. The SENSITIVITY knob will still allow the envelope generator to sweep the filters based on the dynamics of the instrument, so the knob should be turned to 12 o'clock to disable the envelope response. If the auxiliary functions are enabled, the LFO may also modulate the filters while sweeping the expression pedal. The toe/heel positions can be swapped by moving the SENSITIVITY knob slightly into the negative range.

*\*The expression pedal must have a Tip-Ring-Sleeve connection. It is important that the expression pedal have the correct polarity. The tip of the plug must be connected to the wiper of the potentiometer inside the expression pedal. If you are not sure what type of expression pedal to use, try one with a polarity switch so that it will work with many different types of instruments. Some suggested Expression Pedals: M-Audio EX-P, Moog EP-2, Roland EV-5 or Boss FV-500L. You may also connect a control voltage to the jack. The Control Voltage range must be between 0 V to 5 V.*

## – POWER –

Use the supplied AC adaptor to power the STM. Plug the barrel connector of the adaptor into the 9V power jack located at the top of the unit. The STM requires 9 – 9.6VDC at 200mA with a center negative plug. The STM accepts Boss™ style AC adaptors. The actual current draw of the STM is 185mA.

## – TECHNICAL SPECIFICATIONS –

Sample Rate:	46875 Hz
A/D and D/A Conversion Bit Resolution:	24 bits
Processed Audio Bit Resolution:	32 bits

### Input Jack Impedance

INPUT:	2.2 M $\Omega$
RETURN:	2.2 M $\Omega$

### Output Jack Impedance

MONO/L:	220 $\Omega$
R:	1.1 k $\Omega$
SEND:	1.1 k $\Omega$

## – PRESETS –

The STM has nine fully programmable presets. Saving a preset will capture the setting of each of the five black knobs and the auxiliary function settings. Once a preset is saved, the STM will remember its settings after power has been disconnected. You may write the name of the preset in the white painted block that each number is located in; we recommend dry erase marker.

### ***Preset Save Procedure***

1. Once you have created a sound you want to save or if you want to save an edited preset, turn the PRESETS knob to light the preset LED number where you want to save the setting to.
2. Press down and hold the PRESETS knob for 3 seconds. The LED ladder will blink to indicate save completion.
3. After the LEDs stop blinking, release the PRESETS knob. The PRESET LED will light up solid.
4. Your preset is now saved.

### ***Preset Load Procedure***

There are two options for loading presets:

- A. Press and release the PRESET footswitch repeatedly until the preset you want to load is selected. Make sure the PRESET LED is lit to indicate your preset is loaded. **Please Note:** The current knob positions are no longer valid.
- B. Use the PRESETS knob and the PRESET footswitch.
  1. Turn the PRESETS knob so the preset number where the preset was saved is selected.
  2. Press and release the PRESET footswitch. The PRESET LED will light up to indicate that the preset is loaded. **Please Note:** The current knob positions are no longer valid.

Upon loading a preset, an LED in the LED ladder will blink briefly indicating the VOICE mode that was recalled with the preset. After loading a preset, if you move a knob, the knob's new location will supersede the preset's stored value for that knob. At this point, the PRESET LED will blink rapidly to indicate that a knob has been moved, though a preset is still loaded.

### ***Preset Unload Procedure***

A preset can be unloaded to restore the current knob positions. Turn the PRESETS knob clockwise until no LEDs in the LED ladder are lit to unload the current preset and restore the sound to the current knob settings. This will also revert the auxiliary functions to their prior, non-preset settings. If Preset 9 is loaded, upon pressing the PRESET footswitch, the STM will cycle back to the unloaded setting, where no preset is loaded. Press the PRESET footswitch again and Preset 1 will load.

### ***Factory Preset Restore Procedure***

1. Press and hold down the PRESETS knob and the PRESET footswitch while applying power.
2. After applying power, continue to hold down both switches until you see the LED ladder blink rapidly. At this point you can release the switches; the factory presets have been restored.



### **- WARRANTY INFORMATION -**

Please complete and return the enclosed warranty card within 10 days of purchase or register online at <http://www.ehx.com/product-registration>. Electro-Harmonix will repair or replace, at its discretion, a product that fails to operate due to defects in materials or workmanship for a period of one year from date of purchase. This applies only to original purchasers who have bought their product from an authorized Electro-Harmonix retailer. Repaired or replaced units will then be warranted for the unexpired portion of the original warranty term. If you should need to return your unit for service within the warranty period, please include a brief description of the problem as well as you name, address, telephone number, copy of your receipt, and a check or money order.

### **- FCC COMPLIANCE -**

*Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful 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:*

- *Reorient or relocate the receiving antenna.*
- *Increase the separation between the equipment and receiver.*
- *Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.*
- *Consult the dealer or an experienced radio/TV technician for help.*

*Modifications not expressly approved by the manufacturer could void the user's authority to operated the equipment under FCC rules.*