

Read This First!

The maximum output volume of the Baby Box is loud! Before connecting anything to the line output jack, turn Mercury ♀, Pluto ♁ and Neptune ♆ all the way to the left in order to avoid an audio level chock. Gradually increase them to obtain an appropriate output level. Also make sure the Baby Box is in Effects Position - push the foot switch button so that the LED to the right is on.

If Uranus ♅ is not turned to the left when the power jack is connected, it is a risk that the effect does not start up as it should. If this happens, disconnect the power supply from the current jack and connect it again, this time with ♅ turned left.

Do not use near water or install near heat sources.



Users Manual

moody[®]

Baby Box

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Baby Box



- a. Current Jack
- b. Line In Jack
- c. Line Out Jack
- d. Effects/Bypass Footswitch
- e. Effects/Bypass Indicator
- f, g. Sound Indicators
- h. Mode Toggle Switch

Image 1. Switches, jacks and indicators are assigned letters.

Section **Thank you for using Moody Baby Box Noise Generator!** In order to describe how to connect it, we will refer to image 1. Its switches, jacks and indicators have been assigned letters in the image. The list to the right of the image gives a brief introduction of what function the jacks and switches have. We will discuss the function of the control knobs in the next sections.

Baby Box is powered with 9 Volts to 12 Volts direct current. If you are using another power supply, than the one provided by Moody Sounds, make sure that its polarity is correct. The negative pole shall be on the inside of the plug, that is, the part of the plug that encloses the pin on the current jack on the pedal, when the plug is connected to it. The **Current Jack** is denoted by the letter "a" in image 1.

If you are using the effect with an external sound generating device, connect it to the **Line In Jack** on the pedal. The line in jack is the jack to the right (refer to the view in image 1) and it is indicated by an arrow "pointing into" the pedal on the pedal's screen print, and by "b" in image 1.

The **Line Out Jack** is the jack to the left (refer to the view in image 1) and it is indicated by an arrow pointing "out from" the pedal on the pedal's screen print, and by "c" in image 1.

Baby Box generates two signals. We will call them **Direct Out** and **Delayed Out**. They are routed to two different channels on the line out jack and we will refer to them as **Channel 1** and **Channel 2**. The line out jack is thus a stereo jack. However, you can use it with mono line out without losing the "stereo feeling".

Baby Box is designed to have a leakage between the two channels. Even though delayed out and channel 2 is grounded on the sleeve of a mono plug, the leakage of direct out into delayed out, makes both channels heard in mono. Read more about this in sections D and E.

The **Effects / Bypass Footswitch**, denoted by the letter "d" in image 1, decides which signal is routed to channel 1 on the line out jack: either a line in signal, or direct out from the Baby Box circuit. We call these two main modes for **Bypass** and **Effects Mode** respectively. Baby Box is furnished with **True Bypass**, which means that the pedal does not affect a line in signal when in bypass. The foot-switch only affects channel 1. Delayed out is always connected to channel 2. However, if you are using a mono line out, delayed out is grounded on the sleeve of the plug, and does not mingle with a bypassed line in signal in bypass mode.

The effect is also furnished with an **Effects / Bypass LED indicator**, which is on in effects mode and off in bypass. This indicator is denoted by "e" in image 1.

The other two **LED indicators**, "f" and "g", are connected to the noise generating circuit, which we soon will look into. These indicators connect to the circuit in such a way that they blink in time with the sound that the noise circuit generates.

Section B

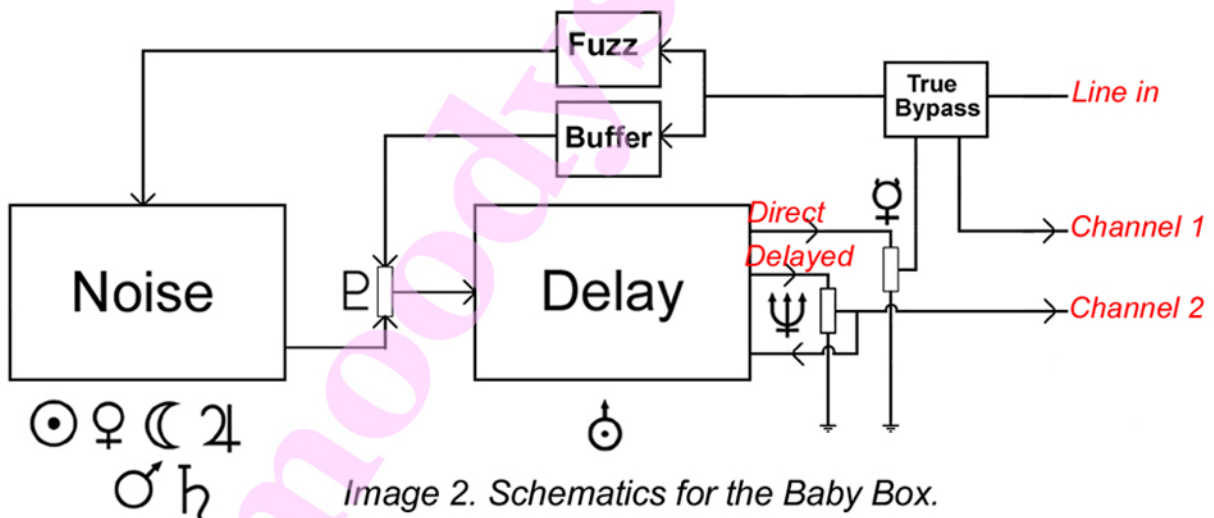


Image 2. Schematics for the Baby Box.

Baby Box is made up of three main units: one noise generating unit, which we call **Noise**, one delay unit, which we call **Delay** and one input drive unit, which we call **Fuzz**. The Baby Box has also a small stage which we call **Buffer**. It is there to split a line in signal in two. Image 2 shows the schematics for the Baby Box. The control knobs have different symbols and the image shows which knob is connected to which unit.

Baby Box has three modes of action, and we call them the **Triggered**, the **Auto** and the **Constant mode** respectively. The **Mode Toggle Switch**, denoted by "h" in image 1, decides the mode of action for the Baby Box. We will describe the function of the effect in each of the three modes, starting with the auto mode in the next section.

Section When the toggle switch is in the middle position, Baby Box is in the auto mode of action. In this mode the effect generates sound. The sound originates from oscillators in the Noise. The Sun, symbolized by ☉, is connected to an oscillator with low frequency of oscillation. It puts a rhythmic character to the sound: "sound-silence-sound" and so on. An appropriate name for the Sun would be **NOISE TEMPO** control, in that it decides the time interval of the sound and silence respectively in the Auto mode.

The **NOISE PITCH** controls: Venus ♀, Moon ☾, Jupiter ♃, Mars ♂ and Saturn ♄ are also connected to the Noise, but they adjust oscillators with higher frequency of oscillation. They therefore change the pitch, rather than the tempo, of the sound, and this motivates our choice of name for them. Their oscillations are superimposed and a synthesized sound is generated. The oscillators affect each other: Turning one knob *mainly* affect one oscillator. The other oscillators are also affected in an unpredictable way.

Pluto ♇ is connected as a **MIX** control. If there is a signal on the line in, it is passed on by the Buffer to "one side" of Pluto. The signal from the Noise is sent to "the other side" of Pluto. By turning Pluto you decide the mix between the buffered, unaffected line in signal and the signal from the Noise. If there is no line in signal, Pluto acts as a volume control: it adjusts **NOISE INPUT VOLUME** for the Delay. We could also say that it adjusts the mix between sound and silence.

The Pluto control is a *stereo potentiometer* and it is also connected to another part of the circuit: It also adjusts *how* the Fuzz connects to the Noise. When used without line in, the effect of this connection is a small change in noise pitch as Pluto is turned. In the auto mode and without line in, Pluto controls two things:

1. Noise Input Volume for the Delay
2. Noise Pitch (small effect)

The Baby Box has also *output* volume controls. We will introduce them in the next section.

Section The sound that is generated in the Noise, is routed first to Pluto and then to the Delay. The Delay does two things: it splits the signal in two *and* it creates a time delay between these two signals. One of the signals is unaffected by the Delay and we call it **Direct Out**. The other signal is affected by the Delay and we call it **Delayed Out**. The outputs are routed to two different channels, channel 1 and channel 2 respectively, on the same (and only) output jack.

The Uranus knob ☽ is connected as a **DELAY INTERVAL** control, and adjusts the time difference between the direct and the delayed signals. The Neptune knob ♆ is connected as a **DELAY FEEDBACK** control. The more to the right this knob is turned, the bigger is the feedback for the Delay, and the longer it goes on.

The Delay is designed to create **Positive Feedback** when Neptune is turned all the way, or almost all the way, to the right. With "positive feedback" we mean that every repetition has louder volume than the previous one. This increase in volume goes on to a limit when the circuit distorts the signal completely. We can think of Neptune as a control for **DELAYED OUT VOLUME**. Mercury ♀ controls **DIRECT OUT VOLUME**.

The output volume can be very loud! Keep Mercury, Neptune and Pluto turned left when the line out is connected. Gradually increase the settings of these controls to obtain an appropriate output level!

Image 3 gives a description of what function the different knobs have in the auto mode.



Image 3. The function of the control knobs in the auto mode.

SectBaby Box generates two signals: direct out and delayed out. They are routed into channel 1 and channel 2 respectively, on the stereo line out jack. Baby Box has one volume control for each of the two channels, Mercury and Neptune respectively.

There is a leakage between direct out and delayed out. Mercury *mainly* adjust the volume for direct out and Neptune *mainly* adjust the volume (or delay feedback) for delayed out. If a *mono* jack is used as line out, delayed out is grounded on the shield of the plug, and only the leakage of this channels into direct out is heard. Mercury acts as a master volume control in this case.

Direct out goes passed the bypass switch before connecting to channel 1.

The bypass footswitch decides if channel 1 connects with direct out or a line in signal. The bypass switch does not affect channel 2.

We said that a mono line out plug (which is most common for use with electric guitar) grounds delayed out. And we said that in this case only the leakage of delayed out into direct out is heard. If a stereo line out plug is used (headphones for instance), delayed out is *not* grounded on the plug. This means that, for stereo line out, the Baby Box is not bypassed from the line out when the bypass button is pressed. The table below sum up what connect with channels 1 and 2 in the different main modes and for the different types of line out plugs used.

Plug Type	Mode	Signal on CH.1	Signal on CH.2
Mono	Bypass	Line in	None - grounded on plug
Mono	Effects	Direct out and leakage of delayed out	None - grounded on plug
Stereo	Bypass	Line In	Delayed out and leakage of direct out
Stereo	Effects	Direct out and leakage of delayed out	Delayed out and leakage of direct out

Table 1. The signals on channels 1 and 2 depend on type of line out plug used and on which position the footswitch is in.

Sect **The difference between the auto and the constant modes** is mainly that **i on** the sound has a rhythmic character in the auto mode and is constant in the **F** constant mode. Baby Box comes in the constant mode when the mode toggle switch is switched towards you. The screen print also specifies how to position the toggle switch to get it in this mode.

The function of the control knobs is mainly the same as in the auto mode: the five noise pitch controls adjust noise pitch, and the Delay controls adjust the Delay. Because there is no tempo to adjust in this mode, the Sun obtains a new function: it becomes a sixth noise pitch control, but it does not affect the pitch as much as the five main noise pitch controls.

If the Sun is turned all the way to the left, when changing from constant to auto mode, the oscillations will not start.

Sect **Baby Box has a mono line in jack.** The line in signal is split in two after **i on** entering the Box: one signal goes to the Fuzz and one signal goes to the **G**Buffer, as described by the schematics in image 2. The Fuzz amplifies and distorts the signal and the output of the Fuzz is connected to the Noise. This means that *this* signal goes though *both* the Fuzz *and* the Noise. We see from image 2 that the output of the Noise is routed to Pluto, which acts as a **MIX CONTROL**, as discussed earlier. Pluto mixes the Fuzz+Noise signal with the unaffected line in signal coming from the Buffer. And this mixed signal goes on to the Delay.

Sect The trig mode inactivates the sound generating properties to some extent.

i on Baby Box comes in this mode when the mode toggle switch is switched away from you.

In this mode an external pulse or signal on the line in *trigs* the Baby Box to make sound. The sound is of the same character as that of the auto mode, but it is just one pulse instead of repeating pulses. In this mode it is possible for other sound generating devices, such as an electric guitar or vocals, to "talk" to the Baby Box, and tell it when it shall make a sound. The Pluto mixes the line in signal with the Fuzz and the Noise. Image 4 shows four positions of Pluto and the text below each knob, describes what the sound is like, when an electric guitar is lined in directly to the input, and with corresponding setting of Pluto. The sound from the Fuzz and Noise is much louder and you may need to compensate an increase of Pluto by a decrease of Mercury.



Clean



Fuzz mixed with clean



Classic Fuzz



Baby Box Noise

Image 4. Different settings of Pluto produce different sounds.

The function of the other control knobs is mainly the same as in the auto mode. One exception is the Sun, which, in the trig mode, adjusts two new properties:

a) Sensitivity of the Trig - turned all the way to the left it is least sensitive. The sensitivity gradually increases as the Sun is turned right. Most likely it becomes too sensitive, when turned all the way to the right.

b) Release time of the Triggered Noise - turned all the way to the left, the release time is the lowest, and the triggered noise signal last for about the same time as there is a signal on the line in. When the signal on the line in fades the triggered noise signal also fades. The release time of the triggered noise gets longer as the Sun is turned right.

Sect Power supply: 9 or 12 V DC

i on Power connector: 2,1 mm DC jack,
I 'negative center

Current draw at 12 V: 30 mA

Maximum power supply voltage: 16 V

Minimum power supply voltage: 6 V

Weight: 0,81 kg (1.8 lbs)

Dimensions (HxWxD): 188x120x78 mm

Manufacturer: Moody Sounds

Address: Moody Sounds

Trelleborgsgatan 20

214 35 Malmö Sweden

Web: moodysounds.com

Email: info@moodysounds.com

Telephone: 0046(0)40970540

Section Suggested Settings

ion Odd and Pitch Bent Beats

Plug in stereo headphones. Set the mode toggle switch to auto and turn the Sun almost all the way to the left. Adjust Mercury and Pluto to a get volume that suits you. Adjust Neptune to get good balance in the two channels. Set Uranus pointing straight up. You will hear a rhythmic sound in both channels. Wiggle Uranus off and on in time with the beats and you will hear the sound pitch bent in one of the channels. Now, try the same thing with a new setting of the noise pitch controls.



Guitar goes with the Baby Box

Connect an amplifier to the line out of the Baby Box. Set the mode toggle switch to constant and turn Pluto all the way to the right. Adjust Mercury to get a volume that suits you. Set Neptune and Uranus so that they point straight up. You will hear a constant sound. Plug in electric guitar in the line in jack and take a tone. You will hear it blend and interfere with the sounds the Baby Box generates. You will also hear it echo because settings of Neptune and Uranus are not all the way to the left.



Becoming Dirty and Noised

Connect an amplifier to the line out of the Baby Box. Set the mode toggle switch to trig and turn Pluto all the way to the left. Set Mercury so that it points straight up. Keep the Sun almost or all the way to the left. A tone on the guitar will be heard unaffected in the amp. (Compare with the true bypass signal by pressing the true bypass Button). Increase Pluto just a bit. You will hear the Baby Box produce a classic guitar Fuzz sound. If Neptune is *not* turned all the way to the left, you will hear it fuzzed *and* with delay. Now, turn Pluto further to the right, and compensate the increase in volume by turning Mercury left. When Pluto reaches its maximum position, you will hear the Baby Box produce sound as you play on the guitar. You can play around with the settings of the noise pitch controls. In some positions, the sound of the gutiar is more prominent, and in some positions the sound of the Baby Box is prominent.

