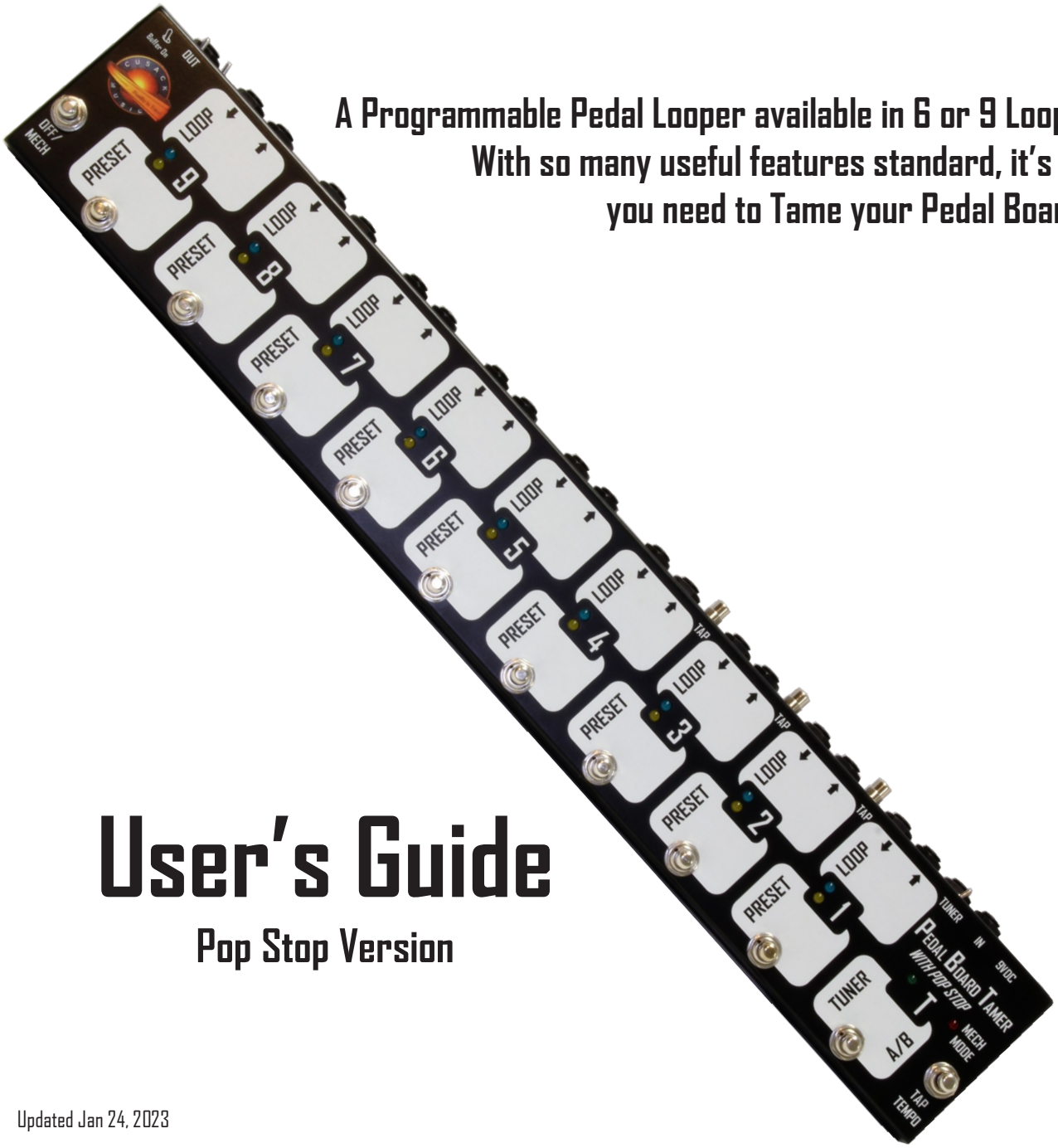
PBT

Pedal Board Tamer



A Programmable Pedal Looper available in 6 or 9 Loops. With so many useful features standard, it's all you need to Tame your Pedal Board!

User's Guide

Pop Stop Version

Updated Jan 24, 2023

www.cusackeffects.com 514 Lincoln Ave, Holland, MI 49423 (616)546-8888

Meeting the PBT

This section gives a brief description of the face of the PBT. There are many ways to configure your PBT. Please refer to the "Configuring Options Inside the PBT" section for more details on configuration options.

Com Link: An RJ-11 jack that allows multiple PBTs to be chained together. There is also one on the Input side of the PBT. Please refer to the "Linking Multiple PBT Devices" section for information on using multiple PBTs.

Audio Output: The output jack is a TRS jack, allowing for stereo configurations. An internal jumper must be set to use the stereo functionality of the PBT.

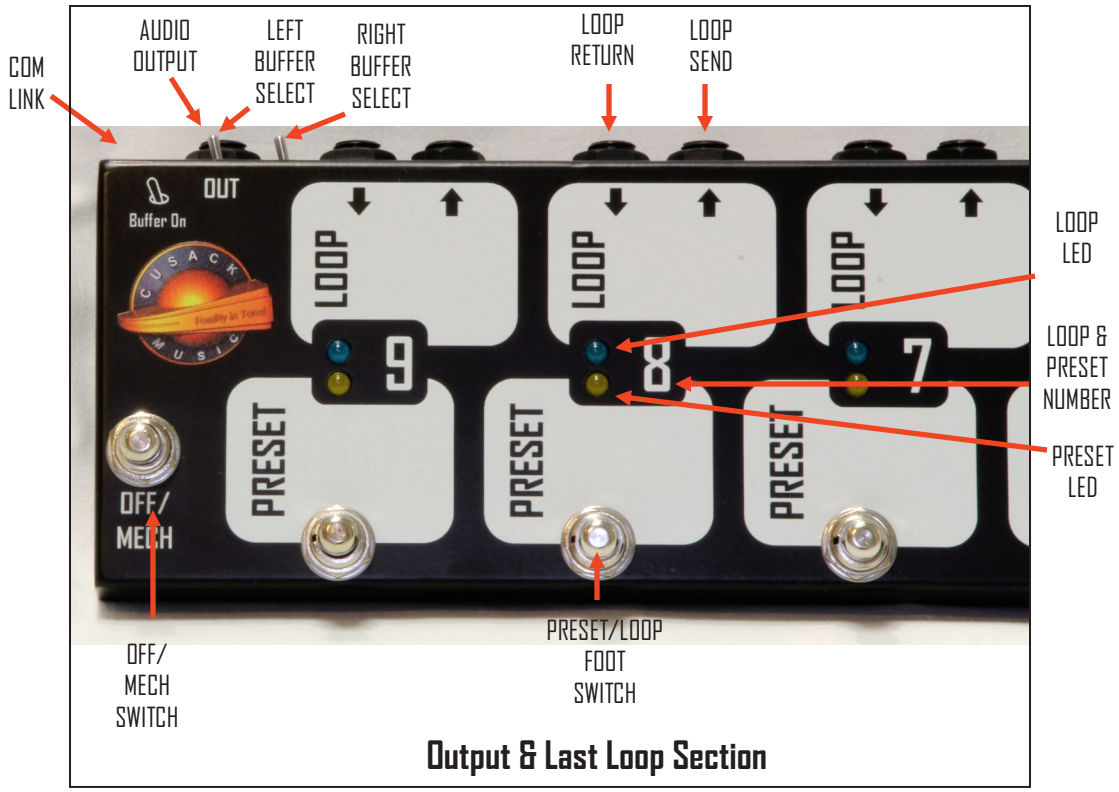
Output Buffers: The Output Buffers are connected to the stereo output jack. With the toggles to the right, there is no buffer, and the output is True Bypass. With the toggle to the left, there is a buffer on the output. These may be selected independently. Input impedance is 256k ohms, output impedance is 96 ohms.

Off/MECH Switch: Either turns off all active Loops and Presets, or toggles between Mech mode and Preset mode, depending on your configuration settings.

Preset/Loop Foot Switch: Activates a Preset or a Loop, depending on the mode.

Loop LED: Indicates if the corresponding LOOP is active.

Preset LED: Indicates if the corresponding PRESET is active.



Output & Last Loop Section

9VDC In: Power supply input. The PBT uses a standard 9VDC pedal power supply. Current draw is about 50 mA during idle conditions. If switching many loops at once, there may be a brief (5ms) spike of up to 500 mA.

Guitar Input: The input jack is a TRS (Tip, Ring, Sleeve) jack, allowing for two inputs using a standard TRS or Y cable. You can A/B the two inputs using the Tuner A/B Switch.

Input Buffer: The Input Buffer is connected between the Input and Loop 1. With the toggle to the right, there is no buffer, and the input section is completely True Bypass. With the toggle to the left, there is a buffer between the input and Loop 1. Input impedance is 256k ohms, output impedance is 96 ohms.

Tuner Out: Connects to the input of a tuner.

Tuner A/B Switch: The Tuner A/B Switch toggles the where the inputs go. Please see the "Using the PBT" section for more details.

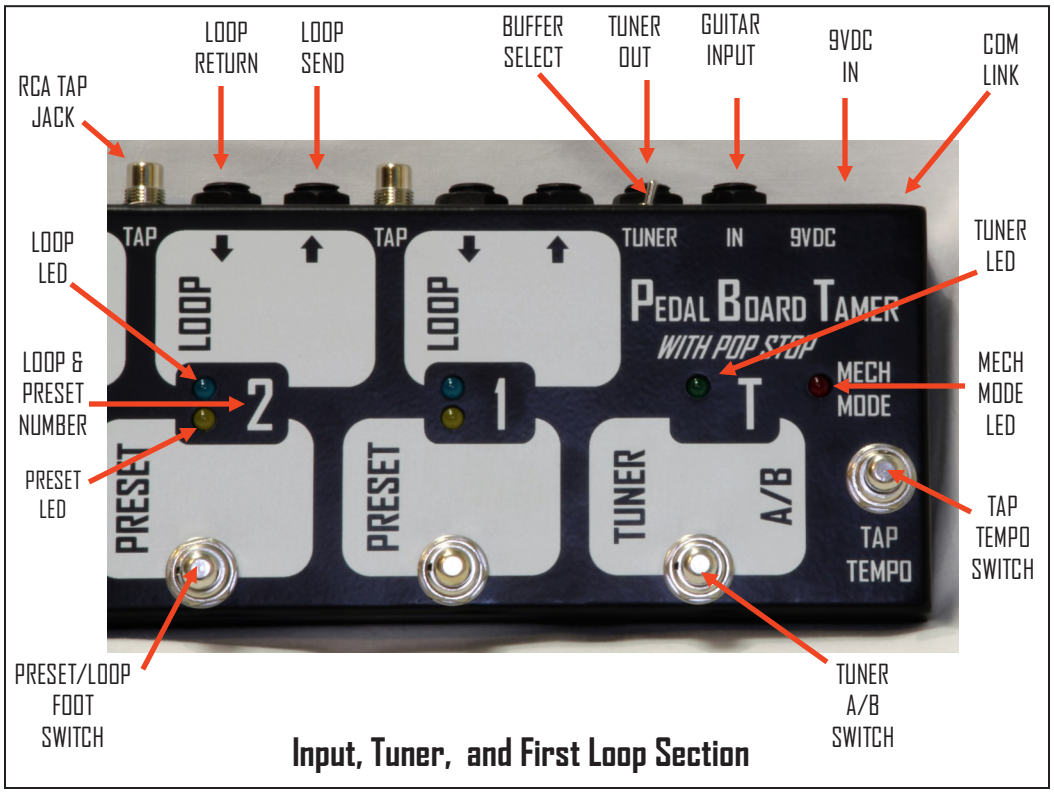
Tuner LED: Indicates if the status of the Tuner function

Mech Mode LED: Indicates if the PBT is in Mech Mode.

Tap Tempo Switch: The Tap Tempo Switch is a momentary switch that connects to three RCA Tap Jacks on the back of the unit. These are each pulled to ground by the switch through a diode. The three outputs can be routed to most effects that have an external Tap Tempo input, such as the Tap-A-Whirl, Tap-A-Phase, etc.

Loop Send: Connects to the input of your effect pedal.

Loop Return: Connects to the output of your effect pedal.



Input, Tuner, and First Loop Section

Operating the PBT

The PBT can operate in one of two modes, Mech Mode and Preset Mode. Some configuration options allow for a combination of these two modes. The way to toggle modes is determined by your configuration settings. Please refer to the "Configuring Options Inside the PBT" section for more details on other options.

Wiring: The PBT is very easy to set up. Plug your power supply into the 9VDC Input, your guitar into the Input jack and the Audio Output jack goes to your amp input. The input of your effects pedal connects to the Send (up arrow) of a Loop, the output of the pedal goes to the Return (down arrow) of a Loop. Repeat this for all the Loops. If you are not using a Loop, we recommend using a small patch cable to connect the Send and Return in case that Loop is activated, unless you would like to use that Loop to mute the audio. Effects need to go in the order you would normally use them, the PBT does not change the order of effects.

The Difference between Loops & Presets: There are 6 or 9 Loop/Preset boards in the PBT depending on the model purchased. A "Loop" is associated with the send and return jacks which are connected to an individual effects pedal. A "Preset" is a programmed combination of any or all of the Loops.

Mech Mode: When the red Mech Mode LED is illuminated, the PBT is in Mech Mode. Mech Mode allows the Pedal Board Tamer to mimic the function of a standard mechanical looper. While in Mech Mode, each Loop acts as an independent loop. Pressing the associated foot switch will directly turn that Loop on and off. When active, the blue Loop LED will illuminate. The amber Preset LEDs will not illuminate in this mode since Presets are not applicable.

Preset Mode: Preset Mode allows you to program preset combinations of effects. In this mode, the Preset Switch does not specifically link to the Loop is it associated with. Pressing any of the Preset foot switches will activate that preset, the Loops that are assigned to that Preset, and also the Tap Tempo will change if one is set for the preset. The amber Preset LED corresponding to the Preset Switch selected will illuminate, as well as the blue Loop LEDs of the Loops that are active in that Preset.

Programming Presets: Programming Presets is a simple process:

A. Press and hold both the "ALL OFF" and "TUNER" switches at the same time until all the Amber Preset LEDs start to flash (about 3 seconds).

B. Press the Preset Switch to be programmed; The selected Preset LED will illuminate, along with the Loop LEDs programmed to that Preset.

C. Use the foot switches like Loop Switches to turn on or off the Loops desired for the preset.

D. Press the "ALL OFF" switch once to program another Preset Switch, or twice to exit Programming Mode.

E. Rock On!

Tuner A/B: Pressing the Tuner foot switch activates the Tuner A/B function. Mono input: The signal is routed to the Tuner Out and the Audio Output is muted whenever the Tuner LED is lit. Stereo input: The ring is routed to the Tuner Out and the tip is routed to the Loops when the Tuner LED is off. Pressing the foot switch will light the Tuner LED, route the ring to the Loops and the tip to the Tuner Out.

Tap Tempo: You can sync all of your tap tempo pedals with the three Tap Out jacks on the back of the PBT. The jacks are not tied to any specific Loop. You can save a tempo to a Preset by tapping it during step C of the Programming a Preset process.

Other Fun Ways to Use Your PBT

Individual Loop Mech Mode: Setting any Loop board address Dip Switch to "0" (all switches off) will put that loop into constant Mech Mode. With a Loop setup like this, it will ignore any Preset commands, and it will no longer be able to be used in or as a Preset. This might be useful if you tend to turn an effect on and off a lot, such as a Boost Pedal. Changing Presets would not affect the setting of the Loop, it will stay in its current state no matter what Preset is on. "ALL OFF" will still turn this loop off.

A/B Mode for a single guitar: The TRS input is also useful for a single guitar that has an acoustic bridge. If you use a stereo cable to the guitar with the standard pickups wired to the Tip and the Acoustic Bridge wired to the Ring, you can select between them using the Tuner-A/B Function.

Multiple Amps: Any loop can be used to send the audio to a second amp. For example, if you connect the Send of Loop 9 to a second amp (return is not used), selecting Loop 9 will send audio to that amp and mute the main output of the PBT. The last 3 loops can be used for stereo amps. Please note that any loops after this Send will not be sent to the second amp, as the audio never gets to them.

Amp Control: When a Loop is not active, the tip of the Send is grounded. Because of this, the PBT can be modified to convert Loops into amp controls for channel switching and/or effects selecting. This will work with any amp looking for a grounded switch input. See "Configuring Options Inside the PBT" section for more details. You will also need to purchase the PBT Jumper Cables kit.

PBT as a Remote Control Switch: When you connect two PBT's together via the Com Link, one can act as a remote control for the other. You can have your pedals backstage and use another PBT for Preset Switches on stage. This setup is covered in the section "Linking and Configuring Multiple PBT's".

Configuring Options inside the PBT

This section covers the options as they apply to a single PBT. When connecting multiple PBTs, refer additionally to "Linking and Configuring Multiple PBTs". The following configuration options may be performed by opening the back cover of the PBT by removing the screws retaining it. Please be careful when reinstalling the back cover not to pinch any of the wiring to the foot switches. If you need any additional help configuring your PBT, please don't hesitate to contact us.

Input Board

This section discusses the configuration options on the Input board of the PBT. Please refer to the Input Board picture for jumper and switch locations.

Guitar Input Option Jumper

A/B Position (Factory Default):

Mono Input Cable - If using a single guitar (A), use a standard mono cable. When the Tuner LED is on the Guitar "A" is routed to the Tuner Out, and Loop 1 is muted ("B" is grounded through the sleeve of the input jack).

Stereo Input Cable - You can use the Tuner switch to select between two Guitars by using a "Y" cable to go to each guitar.

TAO Position:

Tuner Always On, Mono Input - Guitar "A" is always routed to the tuner. When the Tuner LED is on, Loop 1 is still muted. When the Tuner LED is off, the Guitar "A" is routed to both the Tuner and Loop 1.

Tuner Always On, Stereo Input - This mode would probably not be used in a two guitar set-up; if it were, when the Tuner LED is on then Guitar "B" is routed to Loop 1, and Guitar "A" is routed to the tuner. When it is off then Guitar "B" is not routed to the Tuner Out.

Mech Mode Option Jumper

Hold (Factory Default) - If you press and hold the Off/Mech switch for about 4 seconds, it will toggle between Preset Mode and Mech Mode. This will also turn any active Loops or Presets off.

Tap - Pressing the Tap Tempo switch will toggle Mech Mode. The Tap Switch will still output a Tap Tempo signal.

AO - Pressing the Off/Mech switch will toggle Mech Mode. This will leave any active Loops or Preset on. In order to turn them all off, you will need to press and hold the Off/Mech switch for about 4 seconds. Think of this as the reverse of the Hold setting.

Dip Switch

Switch 5: Off/Mech Turns Tuner Off

OFF - (Factory Default) - Using the Off/Mech switch will not turn off the Tuner.
ON - Off/Mech Turns Tuner Off - The Off/Mech switch will turn the Tuner Off

Input Board Dip Switch Cont.

Switch 4: Tuner on the Bus

OFF (Factory Default) - Turning the Tuner function on will not change the Preset (or Loop in Mech Mode). Turning a Preset (or Loop) on will not turn off the Tuner.

ON, Tuner on the Bus - When the Tuner is selected the active Preset will turn off. The Tuner (or A/B Mode) can be added to a preset program in programming mode. Also, the Tuner acts similar to a Preset in that Loops and a Tap Tempo can be assigned to it during programming mode in case you want a delay to continue on while tuning. Turning a Loop on in Mech Mode will not turn off the Tuner.

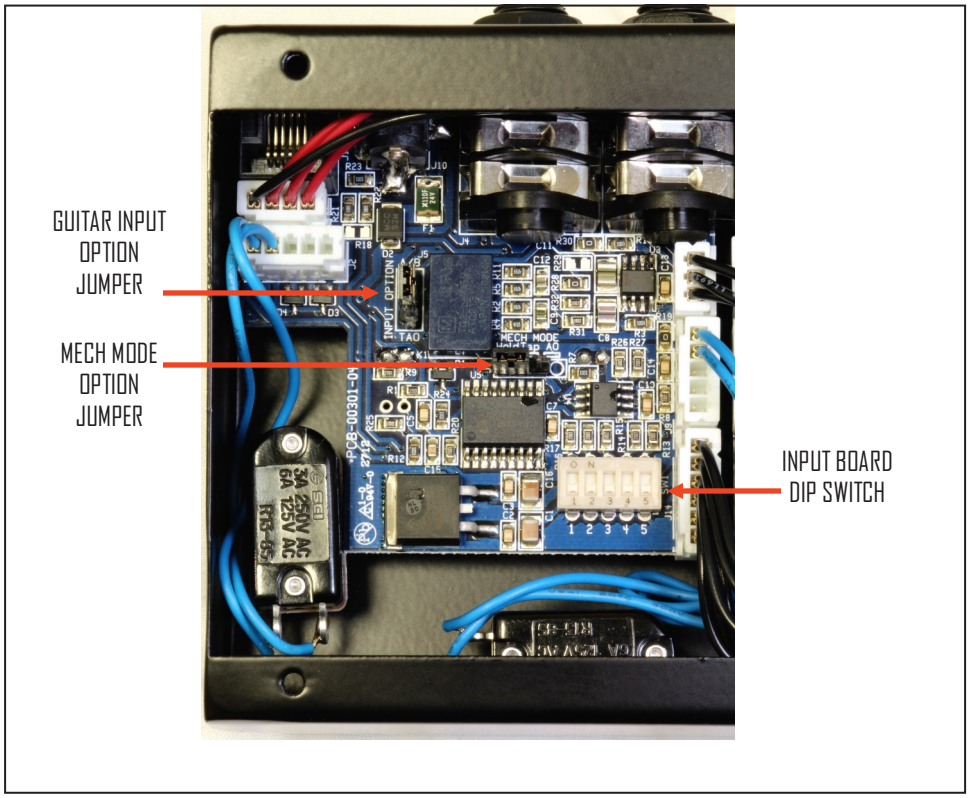
Switch 3: Tap Tempo on the Bus

OFF (Factory Default) - The Tap switch will only affect the 3 RCA jacks on the PBT.

ON, Tap Tempo on the Bus - In programming mode a Tap Tempo can be set and stored with a Preset. The Mech Mode LED will flash the tap signal going out when that Preset is activated.

Switch 1, & 2: (Factory Default OFF) These set the address of the Input board, and are applicable only if multiple PBTs are linked.

PBT— Input Board



Configuring Options Inside the PBT Continued:

Loop Board

This section discusses the options available on the Loop boards. Please refer to Loop Board picture for jumper and switch locations.

Pop Stop Option Jumper

TB (Factory Default): Puts the Pop Stop circuit on the Return jack, leaving the Loop true bypass.

A: Puts the Pop Stop circuit on the internal audio path to the next Loop. This is technically not true bypass, as when the Loop is not active, the Pop Stop circuit is still touching the audio path. Some pedals may work better with this setting.

Stereo Operation Jumper

The Loop Boards that are populated for the stereo option have internal jumpers with a shunt that can be moved between two positions.

Norm (Factory Default): The last three loops are stereo capable and have stereo configuration jumpers. All stereo loops should have their jumpers set to "Normal" in order to pass mono audio through all loops.

MS: In order to use any loops as stereo, the first stereo loop (7 in a 9 Loop, Or 4 in a 6 Loop) in the chain must have its Stereo Jumper Block set to "MC" for Mono Combine. This sends the mono output from the previous loop through the Left channel to the Right Output of the loop. When the first stereo loop is active, the Left is sent out, and both Left and Right are returned. All other stereo loops following the "MC" loop should have the jumper set to "Normal". The additional stereo loops are sent both a Left and Right signal, and return both as well. When they are all bypassed, the Left signal from the last mono loop is sent to both the Left and Right output. In order to work properly, all pedals after the first stereo pedal must be stereo in and out.

Note: The factory can upgrade additional loops to stereo capable if required.

Dip Switch

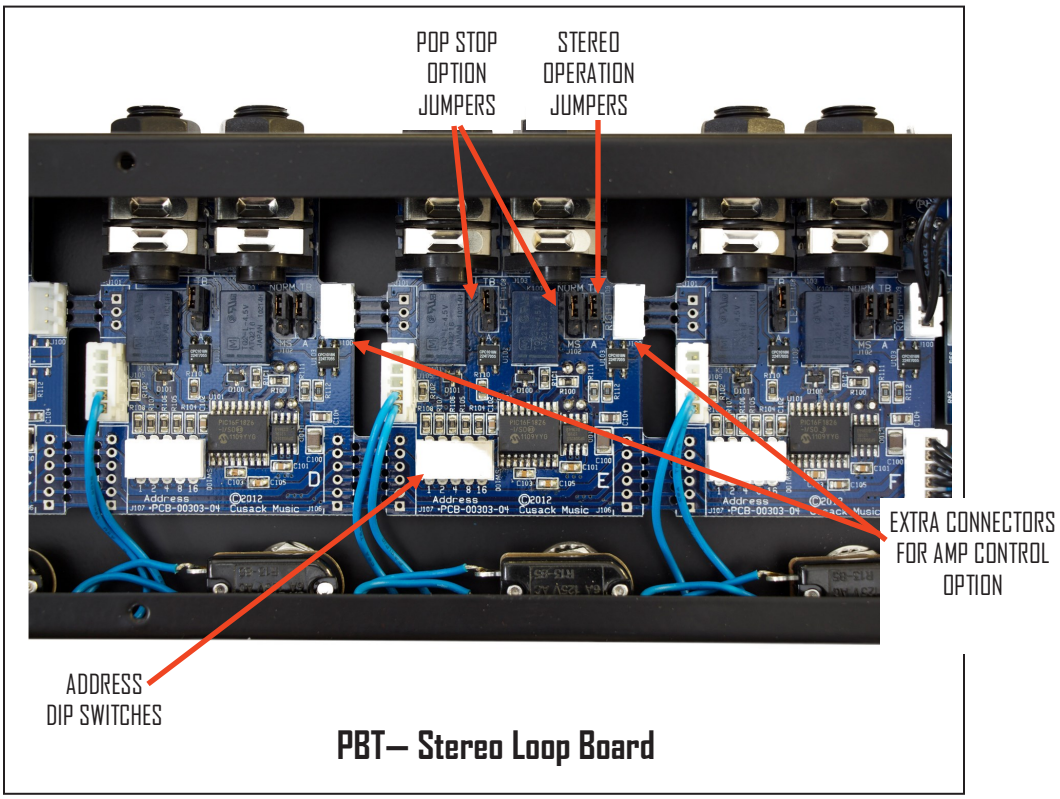
Each Loop/Preset board has a Dip Switch that must be set to a unique address. At the factory, the address is set to 1 for Loop/Preset 1, 2 for Loop/Preset 2, etc per the table below; a " 1 " is a switch in the ON position. Only when linking multiple PBT's together will these addresses need to be changed. See "Linking Multiple PBT Devices" if this is needed.

Address	1	2	4	8	16
1	1	0	0	0	0
2	0	1	0	0	0
3	1	1	0	0	0
4	0	0	1	0	0
5	1	0	1	0	0
6	0	1	1	0	0
7	1	1	1	0	0
8	0	0	0	1	0
9	1	0	0	1	0

Loop Board - Amp Control Option

Note: This option requires purchasing the optional PBT Jumper Cables accessory.

As explained earlier, when a Loop is not active, the tip of the Send jack is grounded, allowing it to be used to switch channels or functions on an amp. The Loop Boards that are populated for the stereo option also have extra connectors that allow one, two or three loops to have the audio bypassed so they may be used for Amp controls. Cutting the 3 traces between these audio connectors (see picture below) opens the audio path to that loop. The audio path is then reconnected with the longer jumper cable (from the accessory kit) to the Output Board of the PBT. Please see the instructions with the PBT Jumper Cables or contact us for any for more details.



PBT— Stereo Loop Board

Linking and Configuring Multiple PBT Devices

By linking multiple PBT devices together you can create a system with up to 27 Presets and 27 Loops, plus have the ability for remote switching of a backstage pedal board.

Com Link: Two or more PBT devices can be chained together via the Com Link RJ-11 jacks. A standard four wire telephone cable will work to connect the devices from output end of one PBT to the input end of the next PBT. Also, when chained like this the Preset Address Dip Switches on the PBT's must be configured with a unique addresses for each of the Presets per the table in the configuration section.

Note: Be careful when choosing a cable so that is has 4 wires, not 2 or 6 wires since they do look similar. Also, a standard telephone cable is not pin 1 to pin 1. If your cable is 1 to 1, then connect the cable from input of one PBT to input of the next PBT (or output to output).

Input Board - Switch 1 & 2: Input Board Address

Set each input board of a linked PBT Device to a different address per the following table; a " 1 " is a switch in the ON position.

Address	1	2
28	0	0
29	1	0
30	0	1
31	1	1

Loop Board - Preset Address Dip Switches

Each Loop Board has a Dip Switch that must be set to a unique address per the table below; a " 1 " is a switch in the ON position. To chain two Pedal Board Tamers together, the second PBT needs to have these addresses changed, since they will be the same coming from the factory. Starting the second PBT Preset 1 address at 10 is suggested and numbering them up to 18. The addressing allows up to 27 different Presets.

Address	1	2	4	8	16
1	1	0	0	0	0
2	0	1	0	0	0
3	1	1	0	0	0
4	0	0	1	0	0
5	1	0	1	0	0
6	0	1	1	0	0
7	1	1	1	0	0
8	0	0	0	1	0
9	1	0	0	1	0

Address	1	2	4	8	16
10	0	1	0	1	0
11	1	1	0	1	0
12	0	0	1	1	0
13	1	0	1	1	0
14	0	1	1	1	0
15	1	1	1	1	0
16	0	0	0	0	1
17	1	0	0	0	1
18	0	1	0	0	1

Address	1	2	4	8	16
19	1	1	0	0	1
20	0	0	1	0	1
21	1	0	1	0	1
22	0	1	1	0	1
23	1	1	1	0	1
24	0	0	0	1	1
25	1	0	0	1	1
26	0	1	0	1	1
27	1	1	0	1	1

Address 0 0 0 0 0 configures an individual Loop for Mech Mode only, with this address it no longer has a Preset and no Presets will affect it.

Setting up a Remote Switch:

For a PBT remote switch, duplicate the addresses of the Presets that you want to control remotely. They don't need to be in the same order and you can skip some if desired. The input board address should be the same as the address of the PBT that has your primary Tap Tempo preset settings.

Operating Linked PBT Devices

Here are some additional considerations when configuring and operating multiple linked PBT's:

Off/Mech Switch Turns Tuner Off Option:
The Off/Mech switch will only turn off the Tuner for the PBT's which have Dip Switch 5 set to ON. It needs to be ON for all PBT's in order for a single Off/Mech switch to turn all Tuners off on all PBT's.

Tuner on the Bus Option:
Dip Switch 4 can be set different on each PBT. For example, if you use the Tuner on your first PBT as an A/B Switch, you could set Dip Switch 4 to OFF to keep it off the bus, and the Tuner on your second PBT could be connected to a tuner and be on the bus.

Tap Tempo on the Bus Option:
When Dip Switch 3 is set to on for all the PBT's, pressing the tap switch on any PBT will cause all the RCA Jacks to go low. Also, holding the tap switch down, like for a brake function, will cause all the RCA Jacks to stay low.

When programming a Preset, the Tap Tempo can actually be set differently for each PBT by using the Tap Switch on that PBT, so that you can get two different tempos out for a given Preset. If only one PBT has a Tap Tempo setting, then all PBT's output the same Tap Tempo.

Dip Switch 3 does not need to be the same for all linked PBT's. If you want the RCA Jacks of one PBT to be un-affected by the others, then set it to OFF.

Mech Mode option jumper:
With the jumper in the Tap position, and if Tap Tempo is on the Bus, then the pressing the Tap Switch on any PBT will toggle Mech Mode for all PBT's. If the jumper is in the Tap position, and if Tap Tempo is NOT on the Bus, then only the Tap switch on the PBT with this option enabled will put all PBT's in Mech Mode.

With the jumper in the A0 position only the PBT tied to that All Off foot switch will toggle in and out of Mech Mode. All other All Off footswitches work normally.

www.cusackeffects.com
494 Lincoln Ave, STE 10
Holland, MI 49423
(616)546-8888