USER'S MANUAL

BEATSTEP PRO

Controller & Sequencer

ARTURIA©

YOUR EXPERIENCE • YOUR SOUND

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Thank you for purchasing the Arturia BeatStep Pro!

This manual covers the features and operation of Arturia's **BeatStep Pro**, a full-featured pad/knob controller, dual analog-style step sequencer, drum programmer and live performance device.

In this package you will find:

- One BeatStep Pro controller, with a serial number and unlock code on the bottom. You will need this information in order to register your BeatStep Pro.
- One USB cable
- Two MIDI adapter cables (1/8" TRS jack to 5-pin DIN, gray)
- One DIN adapter cable (1/8" TRS jack to 5-pin DIN, black)
- The two Quick Start Guides for BeatStep Pro.

Be sure to register your BeatStep Pro as soon as possible! There is a sticker on the bottom panel that contains the serial number of your unit and an unlock code. These are required during the online registration process. You may want to record these elsewhere or take a photo of the sticker in case it becomes damaged.

Registering your BeatStep Pro provides the following benefits:

- It enables you to download the BeatStep Pro user manual and the latest version of the MIDI Control Center software
- It allows you to receive special offers restricted to BeatStep Pro owners.

Special Message Section

SPECIFICATIONS SUBJECT TO CHANGE:

The information contained in this manual is believed to be correct at the time of printing. However, Arturia reserves the right to change or modify any of the specifications without notice or obligation to update the hardware that has been purchased.

IMPORTANT:

The product and its software, when used in combination with an amplifier, headphones or speakers, may be able to produce sound levels that could cause permanent hearing loss. DO NOT operate for long periods of time at a high level or at a level that is uncomfortable.

If you encounter any hearing loss or ringing in the ears, you should consult an audiologist.

NOTICE:

Service charges incurred due to a lack of knowledge relating to how a function or feature works (when the product is operating as designed) are not covered by the manufacturer's warranty, and are therefore the owner's responsibility. Please study this manual carefully and consult your dealer before requesting service.

PRECAUTIONS INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:

1. Read and understand all the instructions.
2. Always follow the instructions on the instrument.
3. Before cleaning the instrument, always remove the USB cable. When cleaning, use a soft and dry cloth. Do not use gasoline, alcohol, acetone, turpentine or any other organic solutions; do not use a liquid cleaner, spray or cloth that's too wet.
4. Do not use the instrument near water or moisture, such as a bathtub, sink, swimming pool or similar place.
5. Do not place the instrument in an unstable position where it might accidentally fall over.
6. Do not place heavy objects on the instrument. Do not block openings or vents of the instrument; these locations are used for air circulation to prevent the instrument from overheating. Do not place the instrument near a heat vent at any location with poor air circulation.
7. Do not open or insert anything into the instrument that may cause a fire or electrical shock.
8. Do not spill any kind of liquid onto the instrument.
9. Always take the instrument to a qualified service center. You will invalidate your warranty if you open and remove the cover, and improper assembly may cause electrical shock or other malfunctions.
10. Do not use the instrument with thunder and lightning present; otherwise it may cause long distance electrical shock.
11. Do not expose the instrument to hot sunlight.
12. Do not use the instrument when there is a gas leak nearby.
13. Arturia is not responsible for any damage or data loss caused by improper operation of the instrument.

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1 INTRODUCTION

Congratulations on your purchase of the Arturia BeatStep Pro! This unique device is a combination of many musical technologies: an assignable MIDI controller, two analog-style step sequencers, a drum programmer and a live performance tool, all in a single compact package. It has an unlimited number of potential uses and setup options, thanks to its simultaneous USB, MIDI, CV/Gate and synchronization capabilities.

We'll give some useful examples in this manual and then you should be able to start experimenting with BeatStep Pro. The unit has a relatively simple appearance, but you will find there are many ways to integrate it with your system. This in turn will open up many new avenues for musical inspiration and creativity.

Be sure to visit the www.arturia.com website and check for the latest firmware, download the MIDI Control Center and check out the tutorials and FAQs.

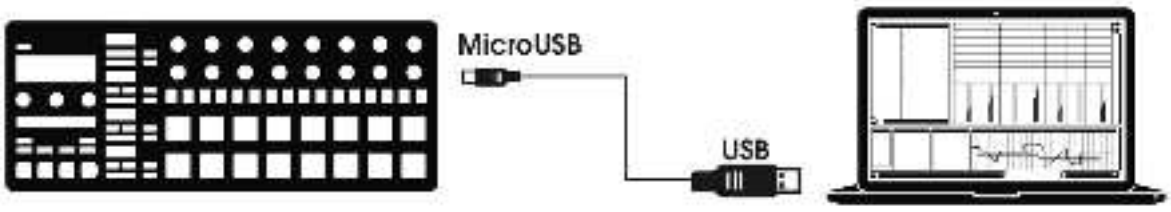
We are very proud of the BeatStep Pro, and are confident that as you use it you will find yourself immersed in many extended periods of creativity.

2 BEATSTEP PRO OVERVIEW

2.1 Making the connections

BeatStep Pro offers an unprecedented number of ways to connect with other types of equipment, from vintage to modern. Below are examples of potential setups:

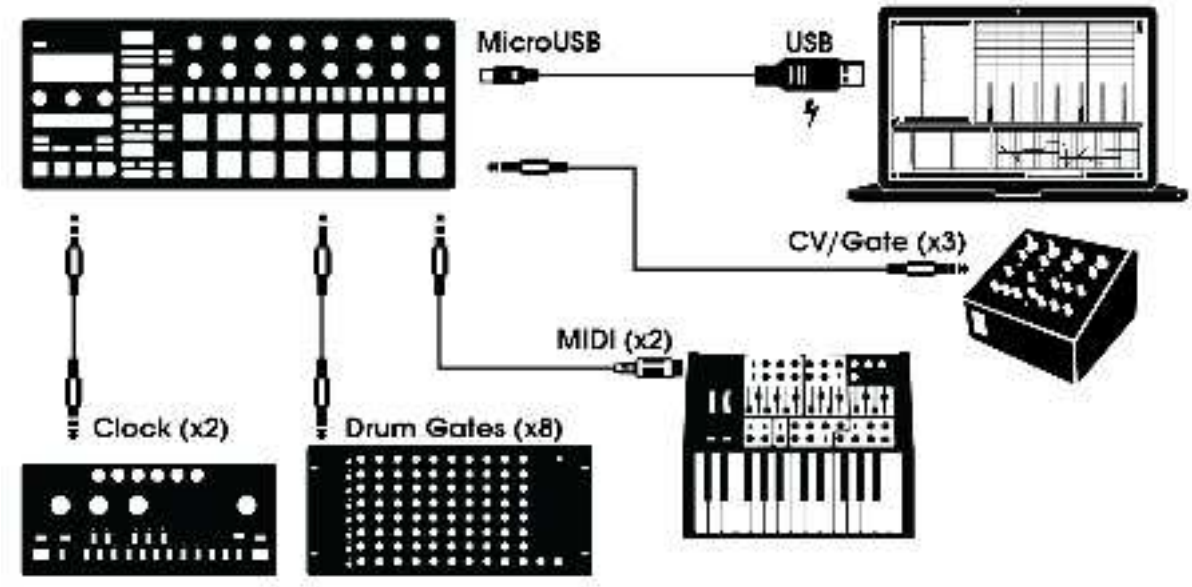
2.1.1 …with a Computer



BeatStep Pro is a USB class-compliant controller, so at its most basic level it can be connected to any computer with a USB port and used as an input device for various applications. The included MIDI Control Center software allows you to define a wide variety of MIDI commands to be transmitted by the encoders, buttons and pads of the BeatStep Pro.

However, BeatStep Pro is so powerful on its own that there may be times when you want to use it without a computer attached! In this case, simply use a standard USB mobile phone charger to power the unit and connect everything else as shown in the following diagrams.

2.1.2 …with external devices



As you can see, the BeatStep Pro can be at the center of some amazing systems.

2.1.2.1 CV/Velo/Gate/Drum Gate

The front panel of the BeatStep Pro allows you to take command of all sorts of external devices through its Pitch, Velo and Gate connectors. It also can send data to those devices from the USB port of your computer.

2.1.2.2 MIDI devices

There are lots of great devices that only have MIDI ports (no CV/Gate connectors, no USB). BeatStep Pro can control them from its front panel as well. And of course it can send and receive MIDI data using the USB port of your computer.

- Use the included adapters (1/8" TRS jack to 5-pin DIN, gray) to connect your external MIDI devices to the BeatStep Pro.

2.1.2.3 Clock sources/destinations

The Clock input and output can synchronize with older clock types such as 24 pulses per quarter note (ppqn), 48 ppqn, or even a single pulse per step.
The included adapter (1/8" TRS jack to 5-pin DIN, black) can be used to connect DIN sync-capable devices to the BeatStep Pro. See section 8.2.2 for specific information about what cables to use with other sync connections and formats.

2.1.3 Something to consider : Ground loops

A ground loop is an unwanted current in a conductor connecting two points. The result is noise in your audio signal, usually in the form of a low-frequency hum. In setups including computers, interfaces and audio devices, it's possible to end up with an annoying ground loop. We have provided you with a solution, however: the **anti ground loop adapter**.

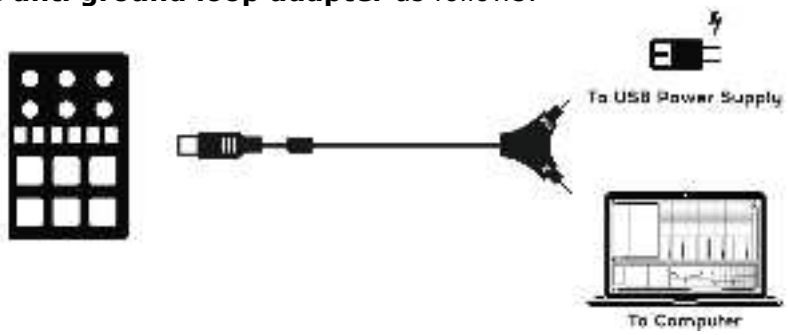
When should I use the anti ground loop adapter?

In most cases you will not need the anti ground loop adapter.

If you don’t have a ground loop problem in your setup, simply connect the BeatStep Pro with the supplied USB cable to a computer or a USB power supply.

You should use the included **anti ground loop adapter** if you experience background noise in your speakers that disappears when you disconnect the audio interface from your computer or the CV/Gate connections to your analog gear. A ground loop can also cause problems with pitch tracking when using the BeatStep Pro CV connections with analog synthesizers.

Connect the **anti ground loop adapter** as follows:



2.2 Front panel overview



1. Transport/Shift buttons (see 2.2.1)
2. Preset/project utility (see 2.2.2)
3. Roller/looper (see 2.2.3)
4. Swing/Randomness/Probability (see 2.2.4)
5. Tempo and synchronization (see 2.2.5)
6. Sequence control (see 2.2.6)
7. Project/Control modes (see 2.2.7)
8. Encoders (see 2.2.8)
9. Step buttons (see 2.2.9)
10. Pads (see 2.2.10)

2.2.1 Transport/Shift buttons



The Transport buttons control the internal sequencers and external MIDI devices using MIDI Machine Control. But they also can send other MIDI messages to your DAW, which is handy if your DAW does not respond to MMC commands. Use our MIDI Control Center software to make any necessary changes.

The function of the Record and Stop buttons is obvious. But the Play button also serves as a Pause/Continue button. So you can pause a sequence in mid-stream, make an adjustment, and then press Play again to resume the sequence.

The SHIFT button allows you to access the secondary functions of the current mode, such as the playback direction for one of the sequencers.

2.2.2 Preset/project utility



1. Transpose Link
2. Preset Link
3. Preset Length section
4. MIDI Channel

2.2.2.1 TRNS LNK

TRNS LNK enables the two step sequencers to be transposed simultaneously; when one is changed, the other will follow.

2.2.2.2 PRST LNK

PRST LNK allows the three sequencers to have their preset patterns linked, so that they can be changed with a single action.

The operation of these features is described in section 12.8.2.5.

2.2.2.3 Preset length section

BeatStep Pro sequences can be up to 64 steps long, consisting of up to four 16-step subdivisions that play one after the other. Those are called the Step Groups.

The four LEDs above the double arrow buttons (<< >>) are used to indicate the pattern length and which Step Group is currently playing.

The LST STEP button is used with the Step buttons and the << >> buttons to change the length of the current sequence.

For a complete description of these features, see section 4.3.5.

2.2.2.4 MIDI channel

Each of the sequencers can be set to its own MIDI channel using this button. For information on how to do this, see section 6.9.

2.2.3 Roller/looper



When BeatStep Pro is in Control Mode this strip is referred to as the "Roller". It will repeat the note of a pressed pad according to the time division selected within the Roller strip area.

When one of the sequencers has been selected, this strip is referred to as the "Looper". It will repeat a section of the current project, the size of which is determined by the time division selected within the Looper strip area. Looper works on all three sequencers at the same time.

2.2.4 Swing/Randomness/Probability



Swing introduces a "shuffle" feel to the sequences. It can affect the entire project (all three sequencers at once) or only the selected sequencer, leaving the others untouched.

Randomness and Probability introduce increasing amounts of unpredictability to the sequences. As with the Swing setting, these controls can affect the entire project (all three sequencers at once) or only the current sequencer, leaving the others untouched.

For more details on all three features, see sections 6.4 and 6.5.

2.2.5 Tempo and synchronization



Set the project tempo here, either with a twist of the RATE/FINE encoder or by tapping the TAP/METRO button.

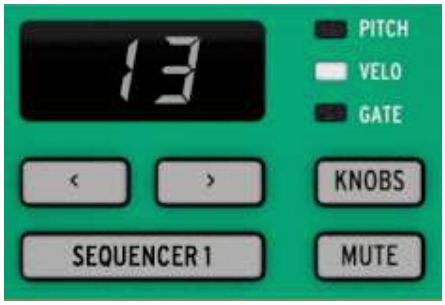
The display will normally display the tempo, but it changes temporarily to show encoder values when editing.

The metronome sends user-definable note data over MIDI, and can be toggled on/off using the SHIFT and TAP/METRO buttons together.

There are four Sync options which are accessed by pressing the Sync button repeatedly.

For descriptions of the tempo features see section 6.3. For the sync features see chapter 8.

2.2.6 Sequencer control



BeatStep Pro provides three independent sequencers: two step sequencers and a drum sequencer. Each sequencer has 16 patterns available per Project, and the patterns can be up to 64 steps long. The Mute buttons can be used to bring the sequences in and out of the mix instantly. And of course the various controls can be used to modify the sequences during performance.

There are unique features available for each type of sequencer, so be sure to read chapter 4 and chapter 5 to learn more.

2.2.7 Project/Control modes



There are 16 Projects available in the BeatStep Pro, and each Project contains 16 patterns per sequencer. This allows for tens of thousands of possible combinations, all available instantly. The Project button is used to select the desired Project.

The Control Mode button transforms the BeatStep Pro front panel into a monster MIDI controller, with each encoder, button and pad able to send data to external MIDI devices and/or your computer. The MIDI messages can be precisely defined by the included MIDI Control Center software.

For a full explanation of these features, see chapter 6 (Projects) and chapter 10 (Control Mode).

2.2.8 Encoders



The 16 "endless" encoders are highly versatile:

- In Control Mode they become fully assignable encoders for editing parameters.
- They will edit the Pitch, Velocity or Gate time for each step in a sequence.
- They can shift the timing of individual drums forward or backward (Drum sequencer only)
- They are touch-sensitive, so when you want to know the current value of a parameter before you edit it, simply touch the corresponding encoder.

And we've only scratched the surface of what the encoders can do. To learn more about them, see sections 4.3.2, 5.2.4, and chapter 10.

2.2.9 Step buttons

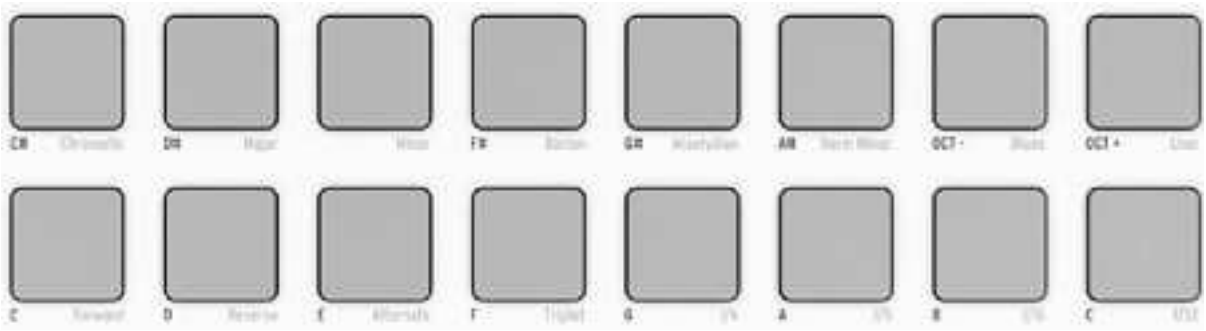


A familiar use for the Step buttons is to enable/disable events in a pattern. But they do many other things also, often in combination with another button. For example, they are used with the LST STEP button to set the pattern length.

In each section of this manual you will learn how they are used to load a Project, select a sequencer pattern, choose a destination, make a pattern chain etc. And with the MIDI Control Center you can configure them to do anything a pad can do in Control Mode.

But their most distinctive feature is that they are color-coded to match the sequencer that is currently selected. So when Sequencer 1 is active the Step buttons are green, for Sequencer 2 they are a light yellow color, and for the Drum sequencer they are purple. (Hint: This color scheme is followed on the rear panel, too.)

2.2.10 Pads



The mode also determines the function of the 16 velocity- and pressure-sensitive pads:

- In Control Mode they are assignable to almost any MIDI-related function.
- In Sequencer mode, the pads trigger notes. When used with the SEQUENCER 1 or SEQUENCER 2 button, the pads are used to transpose the sequence.
- If Drum mode is selected the pads trigger notes. Used with the DRUM button, the pads let you select the corresponding drum without hearing it play.
- Used with the SHIFT button the pads set the playback mode, timing value, and the input scale.

2.3 Rear panel overview, part 1



2.3.1 Pitch/Velo/Gate outputs

These are normally used together to send electrical signals to an external device such as Arturia's powerhouse monophonic analog synthesizers (MiniBrute/SE and MicroBrute/SE) or to a modular analog synthesizer. The Pitch output is often referred to as Control Voltage or CV.

2.3.2 Drum gates

These outputs correspond to pads 1-8 when the Drum sequencer is selected. When these pads are played manually or as part of a pattern they will send trigger pulses to the Drum gate outputs, which in turn can be used to trigger a sound on an external device.

Note: Only the Gate on/off signals are transmitted for pads 1-8 from these connectors. In contrast, the MIDI connector sends Velocity and Gate Time information to all 16 pads. Read more about the Drum Gates in section 9.2.

2.4 Rear panel overview, part 2



2.4.1 Clock input/output

The included DIN adapter (1/8" TRS jack to 5-pin DIN, black) allows BeatStep Pro to interface with pre-MIDI technology that used these connectors for synchronization, such as early drum machines by Korg and Roland.

You can use the standard clock implementation on TRS jack with clock and state signal or a TS jack with only clock signals.

2.4.2 MIDI input/output

Use the included MIDI adapters (1/8" TRS jack to 5-pin DIN, gray) to send control signals of all sorts to external MIDI-compatible devices. Each of BeatStep Pro's encoders, buttons and pads can be configured independently to send specific MIDI data.

2.4.3 USB/DC IN

This connector provides the power and data connections to a computer. It can also be used with a standard USB mobile phone charger (5V and minimum 500mA), allowing you to use your controller presets and sequences even without a computer present.

2.4.4 Power switch

If you want to turn the unit off without disconnecting the USB cable, use this recessed switch.

2.4.5 Kensington lock port

BeatStep Pro is highly portable, and it should be carried only where you want it to go. So we've included a Kensington lock slot on the far right edge of the rear panel so you can secure it to the surface of your choice.

3 BASIC OPERATIONS

3.1 What's a Project?

BeatStep Pro contains 16 Projects. Each Project holds 16 patterns for each of the three sequencers (SEQ1, SEQ2 and DRUM), including all of the settings for each pattern.

The Project also includes a Control Mode preset, with independent settings defined by the MIDI Control Center for each BeatStep Pro control.

3.2 The Blank Project

Each of the Projects and patterns starts out with default, "blank slate" settings.

For Control Mode this means:

- The encoders are assigned to a useful variety of MIDI CC numbers
- The pads are assigned to play notes based on a chromatic scale
- The transport buttons send both MIDI and MMC commands
- Every control is set to transmit data on the User MIDI Channel to both USB and the MIDI output

  Note: the default User MIDI Channel is 1. Use the MIDI Control Center to change this (see section 12.8.1).

For the three sequencers this means:

- SEQ1, SEQ2 and DRUM send and receive on channels 1, 2, and 10, respectively
- Playback mode is set to Forward
- Time division is set to 1/16
- Gate time for each step is 50%
- Swing is set to 50%
- Randomness and Probability are set to 0.

For SEQ1 and SEQ2 this means:

- All steps in each sequence are enabled, with a pattern length of 16 steps
- The sequence steps are set to the same MIDI note (C3, or MIDI Note #60)
- The Chromatic scale will be used for encoder pitch edits

For DRUM this means:

- No pattern data exists yet; that part is up to you!

Chapter 4 has details about editing a sequence and describes each of the SEQ mode parameters.

Chapter 5 describes all of the Drum mode features.

Chapter 12 explains how to use the MIDI Control Center to configure BeatStep Pro so its controls are perfectly matched to your system. It also shows you how to access parameters that are not available from the front panel.

See Chapter 13 for a complete list of the default settings for each control.

3.3 Making a Project

BeatStep Pro is such a spontaneous compositional tool that as soon as you change almost anything, you have started a new Project. At the heart of each Project are the patterns it contains, so let's take a quick look at how to record a pattern.

3.3.1 Select a Sequencer

First decide which of the three sequencers you want to use as the basis for your Project. If you have a melody in your head or want to improvise a bass line, select either SEQ1 or SEQ2 by pressing its button.



If you prefer to start building a drum pattern first, press the DRUM button instead.



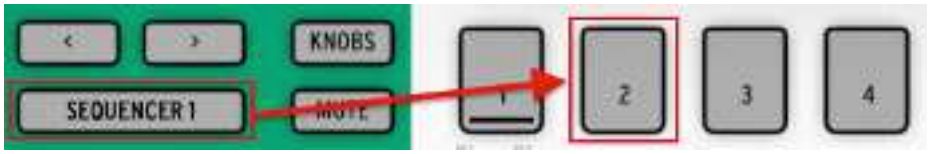
3.3.2 Select a pattern

You can record to any one of the 16 patterns. There are two ways to select a pattern:

- Use the < > buttons until you reach the desired pattern number



- Hold the sequencer select button and press one of the 16 Step buttons



Selecting pattern #02

Note: It isn't necessary to have the pattern numbers be the same for all three sequencers: you can have SEQ1 set to pattern 01, SEQ2 set to pattern 02, and DRUM set to pattern 03.

3.3.3 Clear a pattern

If you want to start recording on the selected sequencer with a pattern that's completely empty, hold the SHIFT button and press Step button 1. This will clear all of the data in the current pattern, so be careful!

If you want to copy the current data to a different location first, see section 4.4. You can also use the MIDI Control Center to back it up to your computer.

3.3.4 Set the tempo

When Sync is set to Internal, the tempo range of BeatStep Pro is 30-300 beats per minute (bpm).

There are two ways to set the tempo for your project:

- Turn the RATE/FINE encoder.
- Use the TAP/METRO button.

There are some more very useful features in this section:

- For fine tempo adjustment, hold SHIFT and then turn the RATE/FINE encoder.
- To enable the metronome, hold SHIFT and press TAP/METRO.

The MIDI Control Center offers even more features related to tempo and the metronome. See section 12.8.5 for details.

3.3.5 Enable the metronome

The metronome sends note data on MIDI channel 10 to an external device or your DAW. The MIDI channel and note can be changed using the MIDI Control Center.

To enable the metronome, hold SHIFT and press the TAP/METRO button. The same action will disable it.

3.3.6 Record a pattern (or three)

If you've gone through all the steps so far in section 3.3 then let's make a quick pattern on each sequencer. For a more detailed explanation of the following procedures, see section 4.3 (SEQ1, SEQ2) and section 5.2 (DRUM).

- Select SEQ1, press the RECORD button and press the PLAY button. The TAP/METRO button will begin flashing, and the Step buttons will turn white one at a time to indicate the current position in the pattern.
- Use the pads as a keyboard to enter notes in real time. The notes will be recorded on your pattern, quantized to the current grid.
- Toggle the Step buttons on or off and tweak the 16 encoders to change the pitches of the notes. You should hear a crazy little melody taking shape. Press STOP to exit Record mode.
- Select SEQ2 and repeat the process described above.
- Select DRUM. If you want to figure out a beat before you begin recording, you can press PLAY and practice on the pads while SEQ1 and SEQ2 play their parts. When you're ready, enter Record mode as before (RECORD + PLAY) and record a drum beat.

- Add or remove some drum trigs using the step buttons, use the knobs to change the velocity, gate length or timing shift of the trigs.

Important: If you want to keep what you've created, be sure to save the Project somewhere or you'll lose everything. Refer to section 3.4 to learn how.

3.3.7 Sequencer Mute

Each sequencer has a dedicated MUTE button, which is great for live performances and creative sessions. They can help you focus on the interactions of any two sequencers at a time, or you can use them to work on one of the patterns without hearing the others.

For the drum sequencer, you can choose to mute only specific pads by holding the DRUM button and MUTE button simultaneously, and pressing the pads you want to mute. The Drum sequencer's MUTE button will blink to show that some of the drum tracks are muted.

The status of the MUTE buttons is not stored with the Project.

3.4 Saving a Project

This is very important to know: Your patterns can be lost unless you save the Project that contains them.

Saving a Project is simple! It only takes three steps.

Caution: When you follow these instructions you will overwrite the selected Project and all of its patterns. Be sure this is what you want to do! If not, be sure to find out which memory location is available and store the Project there instead.

Once you're sure where you want to store the Project,

- Hold the SAVE button
- Press the PROJECT button and hold it
- Press the Step button number you chose earlier.

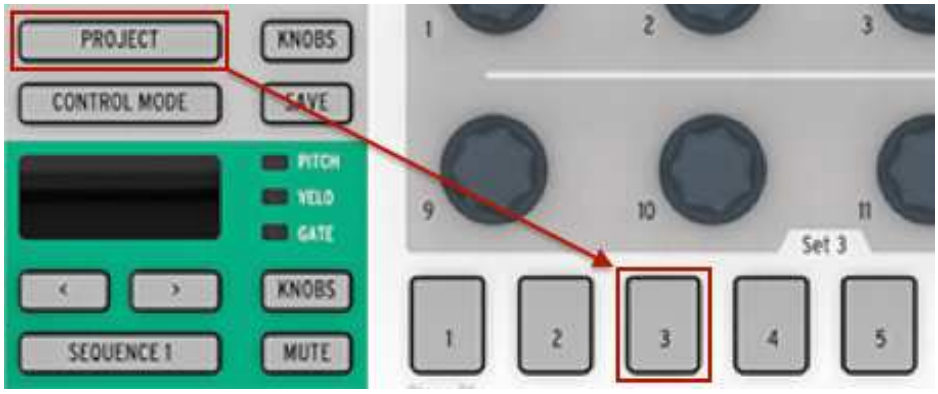
The next time you want this Project, that's where it will be.

It's a good idea to back up the Project using the MIDI Control Center, too. Section 12.3 will tell you what you need to know about that.

3.5 Loading a Project

Caution: If you need to, be sure you have saved the current Project before you load in a new one, because doing so will replace all of the patterns of all three sequencers and will also load a new set of Control Mode assignments. Be sure this is what you want to do!

When you press the PROJECT button one of the Step buttons will be lit red. This helps you know which Project is currently loaded into memory. To select a new one, simply hold the PROJECT button and then press the Step button that corresponds to the Project number you want to load.



Selecting Project #03

Note: There's a preference in the MIDI Control Center where you can specify whether the new Project should be loaded instantly or wait until after the Drum sequencer reaches the end of its current pattern. See section 12.8.5.6 to learn about this feature.

3.6 All Notes Off

It's possible for a MIDI message to be interrupted for some reason. This can result in a stuck or 'hanging' note on the target device.

If this happens, just press the BeatStep Pro STOP button quickly three times in a row. It will then send an All Notes Off command over MIDI.

4 THE STEP SEQUENCERS

The main focus of this chapter will be the sequencing features that are accessible from the front panel of the BeatStep Pro. There are more parameters available through the MIDI Control Center, though; see section 12.5 for information.

4.1 What's a step sequencer?

A step sequencer is a very basic type of music sequencer. Originally popular in the 1960's and 70's, they have been rediscovered as interest in modular synthesizers has grown. We've included virtual step sequencers in some of our analog synthesizer emulations.

A step sequencer is usually *monophonic*; i.e., it will output only one note at a time. It's different from an arpeggiator in that a step sequencer does not determine what to do based on keys you hold on a keyboard: the pitch of each note is set with a knob or a slider.

Once a sequence is running the performer's hands are free to adjust other parameters such as filters, envelope settings or pitch while the sequencer keeps looping.

Today's music often uses loops, so it makes perfect sense that step sequencers would experience a revival. With the purchase of BeatStep Pro you now have access to not one, but *two* of these unique creative tools (plus a drum sequencer!). And as you have come to expect, Arturia has taken them many steps beyond what the original devices could do.

4.2 SEQ1 and SEQ2 characteristics

Sequencer 1 and Sequencer 2 have identical features. They use the pads, Step buttons and encoders as input and control devices to help shape the sequences in the following ways:

- The pads will transpose the sequence while it is running, and are used with the SHIFT button to define various sequence parameters such as playback mode.
- The Step buttons show which sequence steps are active, allow you to enable and disable them, and indicate the current position of the sequence.
- The encoders can alter the pitch, velocity and gate time of each step in the sequence.

See section 12.5 for information about sequencer features that are only available in the MIDI Control Center software.

4.3 Sequence Creation

The BeatStep Pro provides an astounding array of options for music creation. Each of the following features plays a major role in shaping a sequence:

4.3.1 Quantize Recording

The process of recording a sequence has been described in the Basic Operations chapter. But there's an important concept to know about recording in real time using the pads or incoming MIDI: the notes will be quantized according to the time division you have selected.

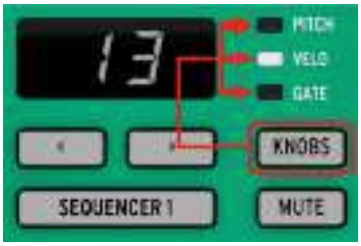
So for example, if 1/4 is the time division setting then the recorded notes will quantize forward or back to the nearest quarter note. And as the sequence loops you can replace certain notes by playing a new one within the timing range of those notes.

4.3.2 Encoders

The 16 encoders input the values of three different parameters for each sequence step:

- The note each step will play
- The velocity of the note
- The duration (gate time) of the note.

The parameter being affected by the encoders is determined by the KNOBS button:



Press this button repeatedly to cycle between the three options (Pitch, Velo, and Gate), then edit that value with the encoder that corresponds to the sequence step.

Note: The encoders are touch-sensitive, so you can touch an encoder to view the existing value for a parameter before selecting a new value.

Now let's focus on each editing option briefly.

4.3.2.1 Pitch

The encoders can edit the pitch of a step +/- 36 semitones from the default pitch of middle C (MIDI note 60).

You can edit the notes whether the sequencer is playing or not. When it is stopped you will hear the edit as it is made; when it is playing you won't hear the altered note until that sequence step comes around again.

The Scale Type parameter determines which notes are available when the encoders are turned. To learn more about Scales see section 4.3.3.

4.3.2.2 Velocity

If a note in a sequence is too loud or soft you can edit its velocity using the encoders. Just select the encoder that corresponds to that step in the sequence and then choose a new value from 1-127.

The default velocity for each step is 100.

4.3.2.3 Gate Time

The Gate Time parameter is used to adjust the length of a note. Potential values are from 1% (short) to 99% (long), with additional settings of TIE and SLIDE. These values can be set independently for each step in a sequence.

A setting of TIE does different things for the CV/Gate output and over MIDI:

- CV/Gate output: the note that follows a TIE will change the control voltage but will not send a new gate signal to the attached device.
- MIDI output: the Note Off command for the first note happens *after* the Note On command for the second note. This allows for "legato" playing on a monophonic synthesizer.

A setting of SLIDE (SLI) is similar to TIE over MIDI, but has a different behavior in CV:

- The note that follows a SLIDE will change the control voltage in a continuous way, with a slide time of approximately 60ms regardless of the tempo. This allows for the usual Slide effect that was found on vintage bass sequencers, for instance.

By default the Gate Time is set to 50% for each event.

4.3.3 Scales

4.3.3.1 What the Scales do

The BeatStep Pro front panel gives you the ability to assign one of eight input Scales to the encoders as a group. Think of a Scale as a sort of 'filter' that will help you use the encoders to select the notes you want more quickly.

What a Scale *doesn't* do is change the MIDI notes that have already been assigned to the sequence steps: the encoders do that.

What a Scale does is give the encoders a specific outline of notes to follow as they are turned. So rather than always altering the pitch chromatically, you have the option to specify a different musical scale. This is handy when you want to change the pitch of one or more sequence steps during a live performance: select the Scale that matches the song and no matter what, you'll never select a wrong note. Of course this would be handy in the studio as well.

And you can always switch to a different Scale if you want to input a note that is outside the Scale you've selected. Doing so will not affect the notes you have already chosen.

4.3.3.2 Scale Types

Here's what each of the Scales looks like. Keep in mind that the last note pictured in each scale type is actually the first note of the next octave:



Chromatic

There are twelve notes in t chromatic scale: that's the largest number a Scale can have. It's like a musical 'bypass' setting: all notes are available when the encoder is turned.

Now the 'filters' will start to kick in. There are only eight notes in most of these Scales:



Major



Minor



Dorian



Mixolydian



Harmonic Minor



Blues

Notice that the Blues Scale only contains seven notes.

And last but certainly not least, the…



User Scale

Only you know what the User Scale will be: choose any note in the chromatic scale and any number of notes between 1 and 12. To learn how to create one, see section 12.8.9.

4.3.3.3 How the root note of a sequence is determined

The actual note sent by a BeatStep Pro sequence at any given moment is the sum of two parts:

1. The note being played by the current sequence step
2. The transposition amount caused by which pad was last played or the last note that was received from an external controller.

4.3.4 Step Buttons

The Step buttons are used to enable or disable each step in the sequence. When one is lit, a note will play at the Pitch and Velocity you choose and will keep playing for as long as you want it to (Gate time). To silence that note event, simply press that Step button. When its LED is dark, that event will not play the next time.

Note: a sequence can be longer than 16 steps (see the next section). When this is true you may see the enabled Step buttons change as the sequence crosses over from steps 1-16 to steps 17-32, etc.

You can view a particular set of 16 steps by selecting that range of the sequence with one of the « » buttons, and then lock the view by pressing those buttons at the same time. You can disable this feature the same way.

4.3.5 Sequence Length

The default length is 16 steps, but a sequence can be up to 64 steps long.

If you'd like your sequence to be less than 16 steps long, simply hold the LST STEP button and then press the Step button that corresponds to the desired setting.

4.3.5.1 Sequence Follow mode

When working with sequences longer than 16 steps there is an important feature to know. When the double arrow buttons (<< >>) are pressed at the same time, their LEDs will toggle off and on. This takes BeatStep Pro into and out of Sequence Follow mode.

When this mode is active during playback, the Step Group LEDs and the Step buttons will show steps 1-16, then steps 17-32, then return to steps 1-16, and so on.

When « » LEDs are	Sequence Follow mode is
Dark	**OFF**
Lit	**ON**

Remember: the playback of the sequence itself is not affected when Sequence Follow mode is enabled. This only affects what you are seeing, which should make it easier to edit particular portions of the sequence.

4.3.5.2 Lengths > 16 steps

To make your sequence longer than 16 steps will involve the LST STEP button, the « » buttons and the Step Group LEDs.

For example, let's lengthen a 16-step sequence to 32 steps. We'll use SEQ1 this time.

First, press the Sequencer 1 button to select SEQ1.

Next, exit Sequence Follow mode by pressing the << and >> buttons at the same time. The buttons should be dark.

Here's what to do next:

- Hold the LST STEP button.
- Press the >> button once. A white LED will appear above the number 32.
- Press Step button 16 (technically it's button 32 now). It will turn green.
- Release the LST STEP button. Step 32 has now been defined as the last step in the sequence.

Now press << and >> at the same time to enter Sequence Follow mode (the buttons should be lit).

Next, press Play. You should see the Step buttons cycling through two sets of 16 steps, one with data and one without.

You should also see the Step Group LEDs changing every 16 steps:

- Steps 1-16: Red LED over #16, White LED over #32
- Steps 17-32: unlit LED over #16, Pink LED over #32 (White + Red)

The Red LED indicates the current position of the sequence. The White LED means that the last step in the sequence is during steps 17-32.

If you decide you want more than 32 steps for this sequence, hold the LST STEP button and press >> until the White LED is over the right number. Then press the appropriate Step button and you're ready to create.

4.3.5.3 Editing steps 17-32

If you want to focus on steps 17-32 while editing, here's what to do:

- Disable Sequence Follow mode (turn off the << >> buttons).
- Press >> once to move the Red LED over #32.

The Step buttons now show the status of steps 17-32. You can play the sequence while editing, if you want; it will play all 32 steps, but the Step buttons will stay focused on steps 17-32.

Simply edit the steps as desired with the Step buttons and encoders. When you're finished you can re-enter Sequence Follow mode with the << >> buttons if you like.

4.3.6 Pads

For SEQ1 and SEQ2 the pads act like a piano keyboard, starting with pad 9 on the left side of the lower row. You'll notice this pad is labeled with the note name "C". From there the note names proceed upward chromatically through an entire octave.

The pads with note names will transpose a sequence when used in combination with the SEQUENCER 1 or SEQUENCER 2 button.

Note: Neither SEQ1 nor SEQ2 will respond to transpose commands from the pads or external MIDI when they are in Record mode.

The pads also have secondary functions, which are accessed by holding SHIFT and pressing one of the pads. See section 7.4 for a chart of these functions.

4.3.6.1 Input Scale

There are words like 'Chromatic' and 'Minor' printed beneath the pads on the top row. These are the names of the Input Scales, which are described in section 4.3.3. To select one, hold the SHIFT button and press one of those pads.

Remember: the Input Scale doesn't change notes that already exist in the sequence. It chooses a certain set of notes that an encoder can select if you edit the Pitch of a step.

The default selection for this parameter is the Chromatic Scale. The User Scale can be defined using the MIDI Control Center (see section 12.8.9).

4.3.6.2 Octave range

There are two pads labeled "OCT-" and "OCT+" on the top row (pads 7 and 8). Their function is to transpose the pads up and down an octave at a time so you can access notes within +/- 3 octaves.

To reset the Octave range, press "OCT-" and "OCT+" at the same time.

4.3.6.3 Playback mode

The first three buttons on the bottom row of pads are used with the SHIFT button to select the Playback mode (i.e., the playback direction). Here's what each option does, using a four-step sequence as an example:

- Forward: plays sequence steps 1, 2, 3, 4 | 1, 2, 3, 4, etc.
- Reverse: plays sequence steps 4, 3, 2, 1 | 4, 3, 2, 1, etc.
- Alternate: plays through the sequence steps first in one direction, then the other. The result: 1, 2, 3, 4 | 4, 3, 2, 1 | 1, 2, 3, 4, etc.

The default setting is Forward.

4.3.6.4 Time division

Depending on the current setting, this parameter can be a quick way to double the playback rate of your sequence or cut it in half. Triplet options are available, too.

To set the time division, press and hold the SHIFT button and then press the pad that corresponds to the timing you want:

- Quarter notes (1/4)
- Eighth notes (1/8)
- Sixteenth notes (1/16)
- Thirty-second notes (1/32)

To switch any of those time divisions into their triplet values, hold SHIFT and then press the Triplet pad.

The default setting is 1/16.

4.3.7 Swing

The Swing feature is described in greater detail in section 6.4, but it is important to know that each sequencer can have its own Swing % setting.

To try this, press the CURRENT TRACK button. After this, any changes to the swing percentage will affect only the current sequence. Then you can select the other sequencers and edit their Swing settings also.

To make all three sequencers use the same Swing % again, simply toggle the button off.

The default Swing setting is 50%.

4.3.8 Randomness/Probability

The Randomness and Probability features are described in greater detail in section 6.5, but it is important to know that each sequencer can have its own settings for these parameters.

To try this, press the CURRENT TRACK button. After this, any changes to the Randomness and Probability settings will affect only the current sequence. Then you can select the other sequencers and edit their settings for these parameters as well.

To make all three sequencers use the same Randomness and Probability settings again, simply toggle the button off.

The default setting is 0 for each parameter.

4.4 Saving a sequence

It's important to know that if you switch to another sequence and then go back, you will lose any edits you have made to the first sequence. So it's a good idea to save your sequences often while you are working on them. In order to know that a sequence has been modified a dot will appear next to the sequence number in the display when a change has occurred since the last save.

You can save individual sequences from within SEQ1, SEQ2 modes without having to switch to Project mode and save the whole Project. Here's how:

- Start in SEQ1 or SEQ2 mode

- Hold the SAVE button. The step button corresponding to the number of the current sequence will light up with the SEQUENCER mode's color (SEQ1 : green, SEQ2 : Yellow). If you have saved other sequences their corresponding step buttons will light up in white to show you that they are not empty.
- Select the Step button that corresponds to the location where you want your new sequence to be saved.
- Release the buttons. Your sequence has been saved to the location you selected.

4.5 Copying a sequence

You can also copy a sequence from one location within the sequencer to another, even if no edits have been made. To do this, simply follow the same steps described above in section 4.4 and select a new location number instead of the original number.

4.6 Copying a sequence from one sequencer to the other

The two Sequencer 1 and 2 allow you to copy sequences from one to the other. Use Save + Sequencer X + Step

To copy the sequence 4 from SEQUENCER 1 to the sequence 7 of the SEQUENCER 2. Load sequence 4 on Sequencer 1 and activate Sequencer 1 by pressing the [Sequencer 1] button. Press and hold Save then Sequencer 2 then Step 7. Sequencer 2 will display a blinking "07" which indicate that you are currently saving a pattern.

5 THE DRUM SEQUENCER

5.1 DRUM vs. SEQ: a comparison

SEQ1/SEQ2 and DRUM look similar, but the Drum sequencer is different in many ways:

- Drum mode will record parts for up to 16 different instruments, not one.
- Each of the 16 drums has its own 'track', and when one is selected the Step buttons display the pattern events for that drum. This is similar to the 'classic' workflow of early drum machines.
- Pads 1-8 will send Gate on/off signals to Drum Gates 1-8, as will any drum sequencer events entered by those pads. Output from all 16 pads is also sent over MIDI.
- The first option selected by the KNOBS button is Shift, not Pitch. The encoders can be used to 'shift' the timing of Drum events forward or backward in relation to the beat.

See section 12.6 for information about Drum mode features that are only available in the MIDI Control Center software.

5.2 Pattern Creation

For this section we'll assume you have your BeatStep Pro in Drum mode. If you aren't sure, press the DRUM button.

5.2.1 Recording a Pattern

To record a pattern, hold the Record button and press the Play button. If the pattern is already playing, just press the Record button. When both are lit and the unit is running, it is in Record mode. If it isn't running, check the Sync settings (see chapter 8).

Now play one or more pads. Whatever you play will be captured as a part of the pattern. You can toggle individual events on and off with the Step buttons.

You can also record using an external MIDI/USB source, but the only steps that will be recorded are ones that correspond to the current drum note mapping. For more about drum maps see section 12.8.8.

5.2.1.1 About quantize recording

There's an important concept to know about recording in real time using the pads or incoming MIDI: the notes will be quantized according to the time division you have selected.

So for example, if 1/16 is the time division setting then the recorded notes will quantize forward or back to the nearest sixteenth note. And as the pattern loops you can replace certain notes by playing new ones within the timing range of those notes.

5.2.2 Selecting a Drum

To select a Drum instrument for individual editing, simply tap a pad. When the pad is lit solid that means the Drum has been selected.

To select a Drum instrument without hearing it, hold the DRUM button and press a pad.

At this point the Step buttons will display the events that exist in the pattern for this Drum. You can use the KNOBS button and the encoders to edit particular events if you like. Use the Step buttons to toggle events on and off as needed.

5.2.3 Muting a Drum

If you'd like to mute one or more drums while creating your pattern or during performance, this is very easy:

- Start in DRUM mode
- Hold the DRUM button
- Hold the MUTE button
- Press the pad that corresponds to the drum or drums you would like to mute. The muted pads will light solid so you can see which ones are muted.

The same process is used to unmute the drums: hold DRUM + MUTE and press the desired pads.

5.2.4 Encoders

Use the KNOBS button to cycle through the following editing options for the encoders.

5.2.4.1 Shift

The encoders can be used to 'shift' the timing of Drum events forward or backward in relation to the beat. This can help add a 'human' feel to your drum patterns.

5.2.4.2 Velocity

If a drum event in the pattern is too loud or soft you can edit its velocity using the encoders. Just select the drum in question with the pads and then use the encoder that corresponds to that step in the sequence. Turning the encoder will choose a new value from 1-127.

The default velocity is 100.

5.2.4.3 Gate Time

The Gate Time parameter is used to adjust the length of a note. Potential values are from 1% (short) to 99% (long). These values can be set independently for each step in a pattern.

By default the Gate Time is set to 50% for each event.

5.2.5 Step buttons

The Step buttons are used to enable or disable each step in the pattern. When one is lit, a note will play at the Velocity you played on the pad and will keep playing for as long as you want it to (Gate time). To silence that note event, simply press that Step button. When its LED is dark, that event will not play the next time.

Note: a pattern can be longer than 16 steps (see the next section). When this is true you may see the enabled Step buttons change as the sequence crosses over from steps 1-16 to steps 17-32, etc.

You can view a particular set of 16 steps by selecting that range of the pattern with one of the « » buttons, and then lock the view by pressing those buttons at the same time. You can disable this feature the same way.

5.2.6 Pattern Length

The default length is 16 steps, but a pattern can be up to 64 steps long.

If you'd like your pattern to be less than 16 steps long, simply hold the LST STEP button and then press the Step button that corresponds to the desired setting.

5.2.6.1 Pattern Follow mode

When working with patterns longer than 16 steps there is an important feature to know. When the double arrow buttons (« ») are pressed at the same time, their LEDs will toggle off and on. This takes BeatStep Pro into and out of Pattern Follow mode.

When this mode is active during playback, the Step Group LEDs and the Step buttons will show steps 1-16, then steps 17-32, then return to steps 1-16, and so on.

When « » LEDs are	Pattern Follow mode is
Dark	**ON**
Lit	**OFF**

Remember: the playback of the pattern itself is not affected when Pattern Follow mode is enabled. This only affects what you are seeing, which should make it easier to edit particular sections of the pattern.

5.2.6.2 Lengths > 16 steps

To make your pattern longer than 16 steps will involve the LST STEP button, the « » buttons and the Step Group LEDs.

For example, let's lengthen a 16-step pattern to 32 steps.

First, press the DRUM button to select the Drum sequencer.

Next, exit Pattern Follow mode by pressing the << and >> buttons at the same time. The buttons should be dark.

Here's what to do next:

- Hold the LST STEP button.
- Press the >> button once. A white LED will appear above the number 32.
- Press Step button 16 (technically it's button 32 now). It will turn green.
- Release the LST STEP button. Step 32 has now been defined as the last step in the pattern.

Now press << and >> at the same time to enter Pattern Follow mode (the buttons should be lit).

Next, press Play. You should see the Step buttons cycling through two sets of 16 steps, one with data and one without.

You should also see the Step Group LEDs changing every 16 steps:

- Steps 1-16: Red LED over #16, White LED over #32
- Steps 17-32: unlit LED over #16, Pink LED over #32 (White + Red)

The Red LED indicates the current position of the pattern. The White LED means that the last step in the pattern is during steps 17-32.

If you decide you want more than 32 steps for this pattern, hold the LST STEP button and press >> until the White LED is over the right number. Then press the appropriate Step button and you're ready to create.

5.2.6.3 Editing steps 17-32

If you want to focus on steps 17-32 while editing, here's what to do:

- Disable Pattern Follow mode (turn off the << >> buttons).
- Press >> once to move the Red LED over #32.

The Step buttons now show the status of steps 17-32. You can play the pattern while editing, if you want; it will play all 32 steps, but the Step buttons will stay focused on steps 17-32.

Simply edit the steps as desired with the Step buttons and encoders. When you're finished you can re-enter Pattern Follow mode with the << >> buttons if you like.

5.2.7 Pads

When the Drum sequencer is selected the 16 pads send note data over MIDI, including velocity. Pads 1-8 send gate on/off signals only to the Drum Gates on the rear panel.

The pads also have secondary functions which are accessed by holding SHIFT and pressing one of the pads. These combinations allow you to specify the following pattern parameters:

5.2.7.1 Playback mode

The first three buttons on the bottom row of pads are used with the SHIFT button to select the Playback mode (i.e., the playback direction). Here's what each option does, using a one-bar 4/4 pattern as an example:

- Forward: plays pattern beats 1, 2, 3, 4 | 1, 2, 3, 4, etc.
- Reverse: plays pattern beats 4, 3, 2, 1 | 4, 3, 2, 1, etc.
- Alternate: plays through the pattern beats first in one direction, then the other. The result: 1, 2, 3, 4 | 4, 3, 2, 1 | 1, 2, 3, 4, etc.

The default setting is Forward.

5.2.7.2 Time division

Depending on the current setting, this parameter can be a quick way to double the playback rate of your drum pattern or cut it in half. Triplet options are available, too.

To set the time division, press and hold the SHIFT button and then press the pad that corresponds to the timing you want:

- Quarter notes (1/4)
- Eighth notes (1/8)
- Sixteenth notes (1/16)
- Thirty-second notes (1/32)

To switch any of those time divisions into their triplet values, hold SHIFT and then press the Triplet pad.

The default setting is 1/16.

5.2.8 Swing

The Swing feature is described in greater detail in section 6.4, but it is important to know that the drum sequencer can have a different Swing % setting than the other sequencers.

To experiment with this, press the CURRENT TRACK button: any changes to the swing percentage after this will affect only the drum pattern. Then you can select the other sequencers and edit their Swing settings also.

To disable the independent settings and force all three sequencers to use the same Swing %, simply toggle the button off.

The default Swing setting is 50% in each case.

Note: the CURRENT TRACK button is disabled in Control Mode, but the global Swing % can still be used.

5.2.9 Randomness/Probability

The Randomness and Probability features are described in greater detail in section 6.5, but it is important to know that the drum sequencer can have its own settings for these parameters.

To experiment with this, press the CURRENT TRACK button: any changes to the Randomness and Probability settings after this will affect only the current drum pattern. Then you can select the other sequencers and edit their settings for these parameters as well.

To disable the independent settings and force all three sequencers to use the same Randomness and Probability settings, simply toggle the button off.

The default setting is 0 for each parameter.

Note: the CURRENT TRACK button is disabled in Control Mode, but the global Randomness and Probability settings can still be used.

5.3 Saving a pattern

It's important to know that if you switch to another pattern and then go back, you will lose any edits you have made to the first sequence. This will also happen if you switch to a different sequencer. So it's a good idea to save your patterns often while you are working on them. If a pattern has been modified, a dot will appear next to the pattern number in the display when a change has occurred since the last save.

You can save individual patterns from within DRUM mode without having to switch to Project mode and save the whole Project. Here's how:

- Start in DRUM mode
- Hold the SAVE button. The step button corresponding to the number of the current sequence will light up with the DRUM mode's colour (DRUMS : purple). If you have saved other sequences, their corresponding step buttons will light up in white to show you that they are not empty
- Select the Step button that corresponds to the location where you want your new pattern to be saved.
- Release the buttons. Your pattern has been saved to the location you selected.

5.4 Copying a pattern

You can also copy a pattern from one location within the Drum sequencer to another, even if no edits have been made. To do this, simply follow the same steps described in section 5.3 and select a new location number instead of the original number.

6 PROJECTS

There are many independent features for each sequencer. But a Project is where you will find parameters that affect all three sequencers at the same time.

The internal memory of the BeatStep Pro holds a total of 16 Projects. You could think of a Project as a single song (although it could be an entire performance). Each one contains:

- 16 patterns for each of the three sequencers (SEQ1, SEQ2 and DRUM), including all of the Swing, Random and Probability settings for each pattern
- A Control Mode preset, with independent settings for each BeatStep Pro control
- The status of the TRANS LNK and PRST LNK buttons.

See section 12.8.5 for information about Project parameters that are only available through the MIDI Control Center software.

6.1 Loading a Project

To load a Project, hold the PROJECT button and press the Step button that corresponds to the number of the Project you want to load. Be sure you have saved your current Project somewhere before you do this!

Projects can also be loading during performance while the sequences are running.

Note: There's a preference in the MIDI Control Center where you can specify whether the new Project should be loaded instantly or wait until after the Drum sequencer reaches the end of its current pattern. See section 12.8.5.6 to learn about this feature.

6.2 Project management

6.2.1 Saving a Project

Caution: When you follow these instructions you will overwrite the selected Project and all of its patterns. Be sure this is what you want to do! If not, be sure to find out which memory location is available and store the Project there instead.

Once you have chosen a Project location,

- Hold the SAVE button
- Press the PROJECT button and hold it
- Press the desired Step button number.

To recall this Project later follow the steps described in section 6.1.

6.2.2 Copying a Project

You can also copy a Project from one location to another, even if no edits have been made. To do this, simply follow the same steps described above in section 6.1 and select a new location number instead of the original number.

6.3 Tempo

The RATE/FINE encoder controls the Tempo value, which is stored per Project. It's also possible to override the per-Project settings with a Global tempo using the MIDI Control Center (see section 12.8.5.5).

6.3.1 Fine-tuning of the Tempo

If you want to change the tempo in increments smaller than 1 bpm (to 100.33 bpm, for example), hold the SHIFT button and turn the RATE/FINE encoder clockwise. Once you've reached the desired value between .00 and .99, release the SHIFT button.

To reset the fine-tune value to zeroes, turn the RATE/FINE encoder without holding the SHIFT button.

6.3.2 Tap tempo

You can set the tempo of your Project using the TAP/METRO button. All you have to do is tap the button at the desired rate and the tempo will change to match your rhythm.

Note: Tap tempo will not function when the BeatStep Pro is set to one of the external sync sources.

You can set the number of taps it takes to set the Tempo using the MIDI Control Center.

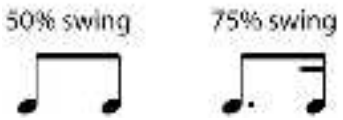
6.4 Swing

The Swing setting can shift the timing of the notes in a sequence to lengthen the first note of a pair and shorten the second note. To affect all three sequencers at the same time, simply turn the SWING encoder to a value between 50 and 75.

Assuming the time division is set to 1/8, here's what will happen:

- With Swing set to 50% each note gets 'equal time', resulting in a 'straight 1/8th note' feel.
- As the Swing value exceeds 50% the first 1/8th note is held longer and the second is played later and shorter. You'll notice the sequence starts to 'shuffle' a bit and perhaps sounds less 'mechanical' to your ear.
- The maximum Swing setting is 75%, at which point the 1/8th notes sound more like a 1/16th note figure than 'shuffled' 1/8th notes.

Here's a graphic showing the minimum and maximum Swing values in musical notation:



6.4.1 Current Track button

The CURRENT TRACK button enables each sequencer to have its own Swing setting. After you press that button, changes to the swing percentage will affect only the current sequencer. Then you can select the other sequencers and edit their Swing settings also.



To return all three sequencers to the same Swing %, simply toggle the CURRENT TRACK button off.

Note: the CURRENT TRACK button is disabled in Control Mode, but you can still set a global Swing % value.

6.5 Randomness/Probability

The Randomness and Probability encoders enable you to add an element of unpredictability to your sequences and drum patterns.

To summarize how the Randomness and Probability parameters interact:

- The Randomness value determines how *much* Randomness will occur;
- The Probability value determines how *often* the Randomness will occur.

You can specify how much these features will affect the sequencers. As their levels are increased, the following aspects of the sequenced notes will be affected:

- The playback order
- The rhythmic pattern (Steps on/off)
- The velocity
- The gate time

The pitches of the sequenced notes will not change, so the sequence will stay within the chord structure you have defined. But the rhythms, playback order, dynamics and length of the notes will become increasingly disturbed as you increase these parameter values.

In a Drum pattern, only the rhythm, dynamics and length of the events will be affected.

6.5.1 Randomness

The Randomness encoder has a range of 0-100%, with 0% having no effect on the music.

But at 100% the rhythm, velocity and gate times of all three sequencers will be entirely random, within the constraints of the Probability setting. The pitches of SEQ1 and SEQ2 will be selected at random also within the pitches of their current sequences.

The Randomness encoder is touch-sensitive, so you can check its setting without editing the value by touching the encoder.

6.5.2 Probability

The Probability value will determine how often the Randomness will occur. Its encoder has a range of 0-100%, with 0% having no effect on the music.

At 100% probability, the pattern will be constantly random with the amount based on the value set by the Randomness encoder.

At low probability settings the randomness might only change the rhythm or velocity infrequently, maybe once every few bars. Lower probabilities will mean that much of the pattern is not affected and will play as normal.

For example, if the Probability value is at 10%, then only 10% of the time something random might happen. And if the value is increased to 50%, then random variations might happen half of the time.

6.5.3 Current Track button

Each sequencer can have an independent setting for both the Randomness and Probability parameters. To experiment with this, press the CURRENT TRACK button: any changes to the Randomness or Probability settings after this will affect only the current sequence. Then you can select the other sequencers and edit their settings for these parameters as well.



To disable the independent settings so that all three sequencers will use the same Randomness and Probability settings, simply toggle the button off.

Note: the CURRENT TRACK button is disabled in Control Mode, but the global Randomness and Probability settings can still be used.

6.6 Roller/Looper



The Roller/Looper strip does different things depending on the mode:

- When in Control Mode the strip functions as a Roller. It will repeat a pad at the rhythm you select by placing your finger on the strip. You can use the pressure-

sensitivity of the pads to perform volume swells on the selected drum during the roll.

- When SEQ1, SEQ2 or DRUM are selected the strip functions as a Looper. It will loop a certain section of the music based on the position of your finger on the strip. It affects all three sequencers at the same time.

6.6.1 Roller mode

The Roller functions exclusively in Control Mode. Since the pads are set to transmit MIDI notes by default you should be able to try it immediately.

But the MIDI Control Center can configure the pads to send other types of MIDI messages, so it's important to know that the Roller will only work with pads that are set to NOTE or MIDI CC. For example, it won't use a pad to transmit the same Program change command repeatedly.

Here are some other things to know about the Roller:

6.6.1.1 General operation

The Roller will repeat a pad based on a combination of the clock source, the time division and the position of your finger on the Roller strip.
The output will be based on 4/4 time, too. So if your song has a bar of 7/8 and you have your finger on the strip at 1/4, the Roller output will be off by an eighth note after that bar.

6.6.1.2 Sync settings

The Roller will work even when an external sync source is used. The results may vary depending on the source, though.

If playback is stopped and no external clock is being received, the Roller will output notes at a rate based on the internal clock setting.

If the Time Division is set to TRIPLET, then the roller will playback in triplet beats.

6.6.2 Looper mode

Select SEQ1, SEQ2 or DRUM and the strip enters Looper mode. It controls all three sequencers at the same time, so it doesn't matter which one is selected.

The Looper function allows you to alter the playback of the Project in real time. It will generate smaller loops based on where you touch the Looper strip and when you do it.

6.6.2.1 Loop length

The length of the loop is determined by the placement of your finger on the Looper strip, with 1/4 being the largest loop and 1/32 being the smallest. Changing the location of your finger changes the size of the loop.

6.7 TRNS LNK

The TRNS LNK button allows both SEQ1 and SEQ2 to transpose together by the same amount. The Drum sequencer will not be affected.

There are three potential sources for transposition commands:

- Note data from the MIDI In connector

- Note data from the USB connection
- The pads (SEQ1 or SEQ2 must be selected).

The MIDI Control Center has Transposition preferences such as the Latch mode, the input port, the input channel and the center pitch. See section 12.8.2 for a full description.

To toggle Transposition Link feature on and off, press the TRNS LNK button.

6.8 PRST LNK

When the PRST LNK button is lit it links the sequencer presets so you can change all three at the same time with a single action. You can use any one of the sequencers to make the change, like you would if you were changing only that sequencer's pattern:

- Press one of the singe arrow buttons, < or >
- Hold the SEQ1, SEQ2 or DRUM button and press a Step button

There's a preference in the MIDI Control Center that controls the response of the sequencers to the PRST LNK button (Absolute or Relative). Examples of each response are given in section 12.8.2.5.

6.9 Selecting MIDI Channels

6.9.1 Output Channels

Each sequencer in the BeatStep Pro can sent to its own output MIDI channel by following these steps:

- Select the sequencer you want to change
- Press and hold the CHAN button
- Press one of the Step buttons.

Note that when the CHAN button is pressed the Step buttons show four different colors

This is because there's an independent MIDI channel for each of the sequencers and for Control Mode. The color scheme follows the front panel design:

Control Mode channel	Red
Sequencer 1 channel	Green
Sequencer 2 channel	Yellow
Drum channel	Purple

The send and receive channels for each sequencer can be set independently using the MIDI Control Center. For details about this see section 12.8.1.

6.9.2 Input Channels

Sequencer 1, 2 and Drum can receive MIDI on its own channel by following these steps:

- Select the sequencer you want to change by pressing the [SEQUENCER X] or [DRUM] button
- Press and hold the SHIFT button
- Press and hold the CHAN button
- Press one of the Step buttons.

Note that when the SHIFT + CHAN buttons are pressed the Step buttons show three different colors.

The color scheme follows the front panel design:

Sequencer 1 channel	Green
Sequencer 2 channel	Yellow
Drum channel	Purple

The send and receive channels for each sequencer can be set independently using the MIDI Control Center. For details about this see section 12.8.1.

7 ADVANCED FEATURES

7.1 Enter notes with Step+Pad

In Sequencer mode, you can use the pads to enter notes when Recording is on.

When the sequencer is turned off, or when Recording is off, you can set the Pitch and Velocity of a step by holding the Step button and hitting the Pad of the note you want to play. The velocity at which you hit the pad will be memorized for this step as well.

This will also work by using an external MIDI keyboard instead of the pad.

7.2 Fast Ties

In Sequencer mode, you may want to create long notes quickly. For that, you can use the Fast Tie function:

- Press two step buttons simultaneously to tie all steps in between
- The two steps you pressed, as well as all the steps in between will be active
- The Pitch of all those steps will be set to the Pitch of the first step
- The Gate of all those steps will be set to TIE, except for the last step, for which the Gate will remain unchanged.

7.3 Extend a pattern or sequence

It's possible to extend a pattern using the SHIFT button and >> button. This is done through a "copy and append" process that takes up to 16 steps of pattern data and attaches it to the end of the existing pattern.
Patterns can be extended up to the maximum pattern length of 64 steps.
To extend a pattern:

- Start in SEQ1, SEQ2, or DRUM modes. Only the pattern in the selected mode will be affected.
- Hold SHIFT and then press the >> button. This will copy the first 16 steps of the pattern into the next Step Group, making the pattern 32 steps long.

Here are some rules to keep in mind:

- If the pattern has 16 or more steps, only the first 16 steps are copied and appended to the end.
- If the pattern is shorter than 16 steps, then that number of steps is copied and the sequence is doubled in length.

Here are some examples of this process in action:
Example 1

Original size	Action	New size	Reason
16 steps	SHIFT+>>	32 steps	Steps 1-16 were copied / appended to step 17
	SHIFT+>>	48 steps	Steps 1-16 were copied / appended to step 33

Example 2

Original size	Action	New size	Reason
32 steps	SHIFT+>>	48 steps	Steps 1-16 were copied / appended to step 33

Example 3

Original size	Action	New size	Reason
7 steps	SHIFT+>>	14 steps	Steps 1-7 were copied / appended to step 8
	SHIFT+>>	28 steps	Steps 1-14 were copied / appended to step 15
	SHIFT+>>	44 steps	Steps 1-16 were copied / appended to step 29

To make the pattern an intermediate length, use the LST STEP button and the Step buttons as described in section 4.3.5 (SEQ1/SEQ2) and section 5.2.6 (Drum mode).

7.4 SHIFT button chart

The SHIFT button allows you to access important features in each mode. Some are shared between the two step sequencers, some are shared between all three sequencers, and some are also shared with Control Mode.

Here's a chart indicating which SHIFT functions are available in which mode:

MODE	SHIFT+	Function
SEQ1 or 2	Pad 1-8	Sets the input scale for the encoders
SEQ1, 2 or DRUM	Pad 9-11	Sets the playback direction of the current SEQ or DRUM pattern
SEQ1, 2 or DRUM	Step button 1	Clears the data in the current SEQ or DRUM pattern. Sets everything to default values (see section 3.3.3)
SEQ1, 2 or DRUM	>>	Extends the length of the sequence
SEQ1, 2 or DRUM	PAD 12	Changes the time division of the selected sequence to Triplet
SEQ1, 2 or DRUM	PAD 13-16	Changes the time division of the selected sequence
All	TAP/METRO	Toggles the sending of metronome data ON or OFF
All	RATE/FINE	Increments or decrements the tempo to the 100th decimal place.
All	PLAY	Restart the 3 sequencers to the beginning of their sequences, quantized to the next DRUM step

7.5 MIDI to CV

It is possible to use BeatStep Pro as a MIDI to CV converter. For instance, if you want to use an external MIDI keyboard to play a vintage synth or send a drum sequence from your DAW to send triggers to an analog modular system, you can use BeatStep Pro as the converter between the digital MIDI data and the analog CV/Gate signals.

7.5.1 Sequencer mode – MIDI to CV

When the sequencer is stopped, or when SEQUENCER 1 – or SEQUENCER 2 is muted, then :

- The MIDI input defined for the SEQUENCER (1 or 2) is sent to the MIDI output defined for the same SEQUENCER.
- The Gate output is triggered
- The Pitch CV output sends the incoming MIDI note plus pitch bend
- The Velocity CV output sends the incoming MIDI velocity.

When the sequencer is playing and record mode is on, the same thing happens with two differences :

- The notes are recorded in the BeatStep Pro sequencer
- The Pitch CV output does not send pitch bend data

7.6 Chaining Patterns

Hold [SHIFT] + [SEQUENCER 1, 2 or DRUM]. This activates pattern chain mode. [SHIFT] can be released but [SEQUENCER 1, 2 or DRUM] button must remain pressed.

Press the steps in the order that you want them to play in your chain.

Release the [SEQUENCER 1, 2 or DRUM] button. The chain will be created in the order that you built it.

You can, for instance, create the chain 1 – 1 – 1 – 4.

The pattern chain cannot be saved. If you manually change to a new pattern, the current chain will be lost.

You can press any combination of the [SEQUENCER 1], [SEQUENCER 2] and [DRUM] buttons while holding [SHIFT] to create the same chain on the selected Sequencers.

The PRST LINK function has no effect on pattern chains, which means that other sequencers will not change patterns because a change occurred in a chain.

7.7 SHIFT + Knob 1 or Knob 2

Set the Velocity (SEQ1, SEQ2, DRUM), Gate length (SEQ1, SEQ2, DRUM) and Shift (DRUM only) of all the active steps of a sequence at once by holding [SHIFT] and turning Knob 1 or Knob 2. Active steps are the ones between the Step 1 and the Last Step of your sequence.

Knob 1 will apply an offset to the values contained in the sequence. This offset will be shown in the Value Display. The range is [-99 , +99].

Knob 2 will set the same value for all the active steps of your sequence as soon as you turn the knob. The value will be shown in the Value Display.

For the DRUM sequencer, the changes will be applied to the currently selected drum only.

Example 1:

Select SEQUENCER 1, set the length to 4 steps. Select the Velocity knob mode and change the velocities of the four steps to 127 - 100 - 4 - 50

Now hold [SHIFT] and turn Knob 1.

The display will show you how much offset you applied. Turn Knob 1 until you get to a value of 10.

The Velocity for the four steps should now be 127 - 110 - 14 - 60

Note: Velocity cannot go beyond 127 so when this value is reached, turning the knob to the right or adding more offset will have no effect.

Example 2:

Select SEQUENCER 1, set the length to 4 steps. Select the Velocity knob mode and change the velocities of the four steps to 127 - 100 - 4 - 50

Now hold [SHIFT] and turn Knob 2.

The display will show you the new value for the velocity of all steps. Turn Knob 2 until you get to a value of 10.

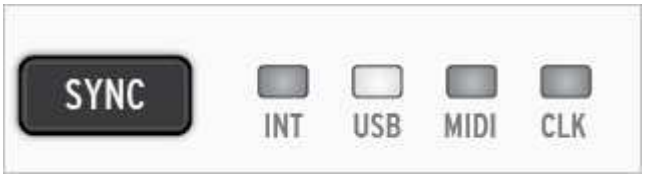
The velocity for the four steps should now be 10 - 10 - 10 - 10

8 SYNCHRONIZATION

BeatStep Pro can be the master clock for an entire MIDI rig, or it can just as happily serve as a slave to any one of several sources. See section 2.1 for connection diagrams.

You can cycle through the various Sync options using the SYNC button. A white LED will let you know which mode you've selected.

For example, in the illustration below the USB sync option has been selected:



Note: When the unit is playing a sequence, the Sync setting cannot be changed.

8.1 As Master

BeatStep Pro is the master clock when the INT button is lit. When this is the case:

- The transport section will control the internal sequencers
- MIDI clock messages are sent to MIDI out, USB MIDI, and the Clock output
- The sequence tempo can be set using the TEMPO encoder and the TAP/METRO button.

8.2 As Slave

BeatStep Pro functions as a slave to an external clock when one of the other three SYNC LEDS are lit (USB, MIDI or CLK). When BeatStep Pro is in Slave mode:

- The Tempo controls will not control the internal sequencer while the external source is running.
- The BeatStep Pro transport section will still perform as usual; you can still stop, start and pause the internal sequences, and you can still record patterns.
- When the external source is not running, BeatStep Pro will function according to its own internal clock at the last known tempo.
- BeatStep Pro will pass the synchronization messages it receives from the external source to its USB, MIDI and Clock outputs.

8.2.1 Clock In/Out rates

The MIDI Control Center can be used to configure the BeatStep Pro to send and receive one of the following clock signals at the Clock input and output connectors:

- 1 pulse per step

- 24 pulse per quarter note (ppqn) - standard DIN sync
- 48 ppqn

8.2.2 Clock connectors

There are several types of connectors that have been used for musical synchronization purposes over the years. Here's a chart that indicates the best kinds to use when connecting older devices to BeatStep Pro:

Connector type	*Signal(s) sent*
1/8'' mono (TS)	Clock pulse only
1/8'' stereo (TRS)	Clock pulse and start/stop
1/8'' stereo (TRS) plus DIN sync adapter	Clock pulse and start/stop

You can use the supplied DIN sync adapters to connect to devices which utilize DIN sync messages. Check the owner's manual for your device if you are not sure which sort of sync capabilities it has.

If you use a TS jack connector the sequencer needs to be armed before it can start when it receives a clock signal. You must press [Play] to arm the sequencer.

Ex :
PLAY with No clock received -> It will wait for a clock signal and start when it receives one.
Clocks are received but PLAY is not active-> It will start when you press [Play]

If you use a TRS connector, BeatStep Pro will follow the master and play when it receives a high state signal and clock, pause with a high state signal and no clock and stop on a low state signal and no clock.

9 CV/GATE FUNCTIONS

BeatStep Pro provides direct access to some of the best music technology the world has produced in the last six decades: USB, MIDI, Clock and CV/Gate connectors are all present on its rear panel in a space not much larger than a pencil.

Connection diagrams for each of these interfaces are available in section 2.1.

In this chapter we'll focus on the features of the BeatStep Pro CV/Gate circuitry. See chapter 12 for in-depth coverage of the MIDI features available to you with the MIDI Control Center.

9.1 SEQ1/SEQ2: Pitch, Velo and Gate

9.1.1 How do they work?

When SEQ1 or SEQ2 is selected the notes you play on the pads are translated immediately into Control Voltage (CV) and Gate signals and sent to the connectors on the back panel. Three independent voltages are sent for each note: Pitch, Velocity, and Gate open/close.

The sequencers can record what you play on the pads, and then you can use the encoders to change the pitch, velocity and gate time (duration) of each note. When sequences play back they send those signals to the attached devices through the CV/Gate connectors, just like the pads would.

However, the pads can't "play" the CV/Gate connectors while the unit is in Control Mode. You can start the sequencers, though, and they will play the attached devices while you control your DAW and play your MIDI devices from Control Mode.

9.1.2 Can my DAW send CV/Gate signals?

It's possible to send note data from a couple of MIDI tracks on your DAW to the BeatStep Pro CV/Gate jacks. When the MIDI channels match, that's what will happen.

There are two things to keep in mind, though:

- All CV/Gate jacks are monophonic, so if the selected MIDI track on the DAW contains polyphonic data, playback could be extremely unpredictable. It's best to send only one note at a time to the CV/Gate jacks.
- CV/Gate jacks can send only basic signals: pitch, velocity and note on/off. In other words, the BeatStep Pro encoders aren't able to control synthesizer parameters through the CV/Gate jacks, for example. All edits to your modular synth settings need to be made on the synth itself.

9.1.3 How should I route the signals?

Typically the Pitch (CV) output is connected to a Voltage Controlled Oscillator (VCO), the Gate output is connected to a trigger input or a Voltage Controlled Amplifier (VCA), and the Velo output is connected to a VCA or a Voltage Controlled Filter (VCF) or both

through a splitter or a patch bay. Those routings will produce the most predictable results. But you can send those signals to any parameters that will accept them.

9.1.4 CV/Gate specifications

Some analog synthesizers have unusual implementations that are not fully compatible with the BeatStep Pro CV/Gate signals. Please refer to their specifications before making a purchase so you can be sure the two devices will work together well.

We've designed the BeatStep Pro to be as flexible as possible, though: the MIDI Control Center allows you to configure the response of the CV/Gate jacks in a number of ways.

These are the electrical signals that can be sent by the BeatStep Pro CV and Gate jacks:

- Control Voltage (Pitch) has three options:
  - 1 Volt/octave (0-10V)
  - Hertz per Volt
  - 0 Volt MIDI note range: 0-127 (Volt/octave)
  - 1 Volt MIDI note range: 0-127 (Hz/Volt)
- Gate output has two options, each at 12 Volts:
  - V-trigger (positive, or "voltage")
  - S-trigger (negative, or "short")

The MIDI Control Center allows each of these settings to be configured independently for SEQ1 and SEQ2.

9.2 Drum Gates

9.2.1 How do they work?

When DRUM is selected the notes you play on pads 1-8 are translated immediately into Gate signals and sent to the Drum Gate connectors on the back panel. Two voltages are sent for each note: one for Gate open and one for Gate close. Velocity information is not sent.

The Drum sequencer can record what you play on pads 1-8 and then you can use the encoders to change the gate time (duration) of each note. When sequence plays back it will send those signals to the attached devices through the Drum Gate connectors, just like the pads would.

However, the pads can't "play" the Drum Gate connectors while the unit is in Control Mode. You can start the sequencers, though, and they will play the attached devices while you control your DAW and play your MIDI devices from Control Mode.

9.2.2 Which pads do I use?

The bottom row of pads are numbered 1-8, which corresponds to the Drum Gate numbers on the rear panel. So these are the pads to play when you want to send trigger signals to an external device.

9.2.3 Can my DAW send CV/Gate signals?

It's possible to send triggers from up to 8 MIDI tracks on your DAW to the Drum Gate jacks. There's a MIDI note number assignment for each Drum Gate, and you can set those values using the MIDI Control Center.

When the MIDI channel and the note numbers match, the Drum Gates will be triggered.

There are two things to keep in mind, though:

- The Drum Gate jacks are monophonic, so if the selected MIDI track on the DAW contains polyphonic data, playback could be extremely unpredictable. It's best to send only one note at a time to the Drum Gate jacks.
- The Drum Gate jacks can send only one type of signal: note on and note off. So even though the Drum pattern holds velocity data for all 16 pads, the Drum Gates are only intended to trigger sounds and shut them off.

9.2.4 How should I route the signals?

Typically the Drum Gate output is connected to a Voltage Controlled Amplifier (VCA). But you can send those signals to any parameters that will accept them.

For example, they can be used to trigger a synthesizer such as one from our MiniBrute or MicroBrute series.

9.2.5 Drum Gate specifications

Drum modules and other devices with Gate input connections have different requirements for the type of signal they will recognize.

Fortunately, we've designed the BeatStep Pro Drum Gate jacks to operate as either a V-trigger (positive, or "voltage") or an S-trigger (negative, or "short"). These settings will work with the vast majority of the devices you will encounter.

Please refer to the specifications of other devices before connecting them to the BeatStep Pro so you can know how to make them work properly together.

10 CONTROL MODE

10.1 What is Control Mode?

When BeatStep Pro is in Control Mode every encoder, button and pad can transmit specific MIDI data to external devices that are connected to the MIDI output jack. This same data will be sent to your computer via USB.

The controller assignments can be set using the MIDI Control Center software. See chapter 12 for more information.

There is one thing the pads won't do while the unit is in Control Mode: they will not transmit directly to the CV/Gate or Drum Gate connectors.

The sequencers will still send their data to those outputs, though. The Transport section works the same way in Control Mode as it does in the other modes.

10.2 Top panel functions

Most of the performance controls on the left side of the front panel will control the same features in Control Mode unless configured otherwise with the MIDI Control Center. There are some slight variations, though, which we'll point out as we go through them:

10.2.1 Tempo

The RATE/FINE encoder works exactly the same in all modes. Its functions are described in section 6.3.

10.2.2 Metronome/Tap Tempo

The Metronome/Tap Tempo button works exactly the same in all modes:

- SHIFT + TAP/METRO toggles the metronome on and off.
- Tap the TAP/METRO button several times to set the tempo.

The MIDI Control Center allows you to specify how many taps it will take to set the tempo.

10.2.3 Swing

The Swing encoder still controls the Swing percentage in Control Mode. The difference is that the Swing percentage is applied to all three sequencers equally; the CURRENT TRACK button does not have any effect over the Swing assignment.

For a description of the Swing feature see section 6.4.

10.2.4 Randomness/Probability

The Randomness and Probability encoders still control their respective parameters in Control Mode. The difference is that the amounts are applied equally to all three sequencers; the shared CURRENT TRACK button does not have any effect over these parameters.

For a description of the Randomness and Probability features see section 6.5.

10.2.5 Roller

The Roller/Looper strip is a special case, as it functions as a Roller in Control Mode and as a Looper in the other three modes.

To use the Roller strip, press and hold one of the pads. Then place a finger on the Roller strip and it will repeat the MIDI note or CC Value that was assigned to that pad using the MIDI Control Center. That event will be repeated at the time division you selected with your finger.

For more information about the Roller strip see section 6.6.1.

10.2.6 Transport

The Transport section works the same way in Control Mode as it does in the other modes, unless instructed otherwise by the MIDI Control Center.

The functions of the Transport section are described in section 2.2.1.

10.2.7 Disabled features

There are several features that are disabled in Control Mode:

- Current Track (both buttons)
- Looper strip (it's the Roller in Control Mode)
- LST STEP button
- Transposing sequences from the pads
- Octave +/- buttons
- Encoder scale selection (SHIFT + pads 1-8)
- Time divisions (SHIFT + pads 9-16)

10.3 Encoders: CC vs. MCU/HUI mode

There's a KNOBS button in the Project/Control Mode section also. It toggles the encoders between their MIDI CC assignments in Control Mode and their MCU/HUI protocol assignments.

For a detailed list of these assignments, see the list in section 13.2.

11 MIDI CONTROL CENTER BASICS

The MIDI Control Center is an application that allows you to configure the MIDI settings of your BeatStep Pro. It works with most of Arturia's devices, so if you have an earlier version of the software you'll want to download the BeatStep Pro version. It will work with those products as well.

11.1 System requirements

PC: 2 GB RAM; CPU 2 GHz (Windows 7 or higher)

Mac: 2 GB RAM; CPU 2 GHz (OS X 10.7 or higher)

11.2 Installation and location

After downloading the appropriate MIDI Control Center installer for your computer from the Arturia website, double-click on the file. Then all you have to do is start the installer and follow the instructions. The process should be trouble-free.

The installer puts MIDI Control Center with the other Arturia applications you have. In Windows, check the Start menu. In Mac OS X, you'll find it inside the Applications/Arturia folder.

11.3 Connection

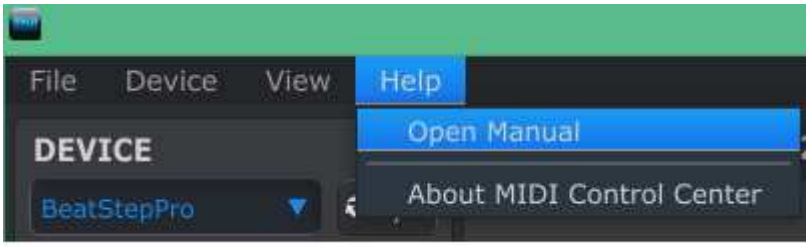
Connect BeatStep Pro to your computer using the included USB cable. It'll be ready to go after its LEDs go through the startup cycle.

Now launch the MIDI Control Center. BeatStep Pro will be in the list of connected devices:



11.4 Where to find the manual

There is a built-in help file for the MIDI Control Center in its Help menu, as shown below:



It's a good introduction to the MIDI Control Center, describing each section of the software window and defining important terms you will need to know while using the MIDI Control Center, such as 'Working Memory' and 'Template'.

The next chapter explains how to use the MIDI Control Center software to configure the BeatStep Pro presets so they match your system and enhance your workflow.

12 USING MIDI CONTROL CENTER

The built-in MIDI Control Center manual has general descriptions of the features that are common to all Arturia products. To learn how to access the manual, see section 11.5.

This chapter will cover only the MIDI Control Center features that are unique to the BeatStep Pro.

12.1 Device Projects



12.1.1 The Working Memory

The currently active project on the BeatStep Pro is known as the Working Memory. It includes all of the patterns from the sequencers, the Control Mode settings, and the Project-level settings for Swing %, etc.

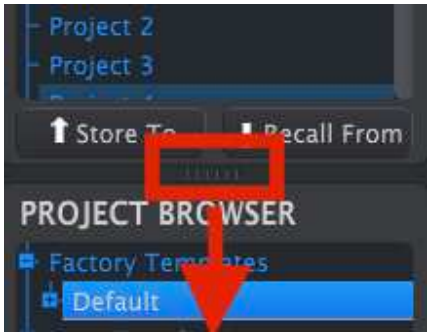
Each of these features is given its own Tab in the middle of the MIDI Control Center application. We'll cover the Tabs in section 12.4.

12.1.2 Project list

The left side of the MIDI Control Center window shows a list containing the Working Memory and Projects 1-16. When one of the Projects is selected from the list the MIDI Control Center can recall that Project from the internal memory of the BeatStep Pro and place it into the Working Memory. See section 12.3 for instructions about this.

12.1.3 Resizing the window

To see a larger number of the Projects in the Device Projects list, click and drag the window resizing button:

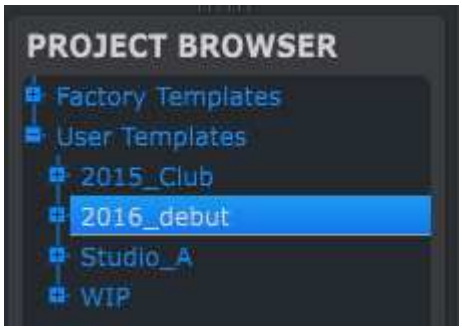


Resizing the Device Projects window

12.2 Project Browser

The Project Browser shows a list of all the Projects that have been archived using the MIDI Control Center. These are divided into two main groups of Templates: Factory and User.

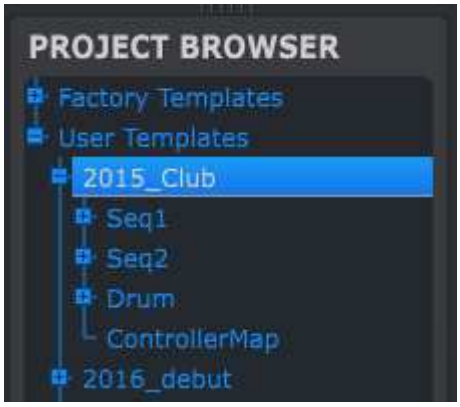
The User Templates are the ones you have recalled from the BeatStep Pro using the MIDI Control Center. See section 12.3 to learn how to do this.

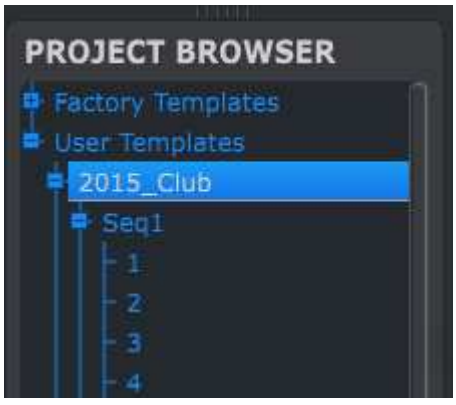


The Project Browser window

A Template in the MIDI Control Center is the same thing as a Project inside your BeatStep Pro: it contains the Project-level settings, the Control Mode settings, and the patterns from all three sequencers.

Here's an expanded view of the contents of a Template named "2015_Club", with a secondary view of the patterns inside Sequencer 1.

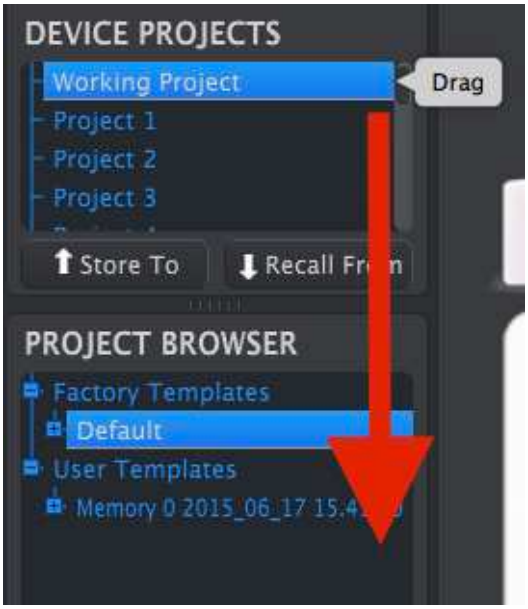




User Templates: click +/- to expand or collapse Project view

12.2.1 Building a Project library

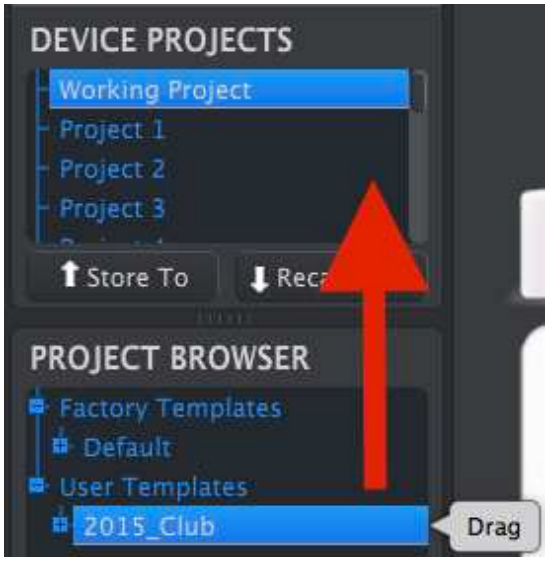
You can build a limitless library of Projects in the User Templates area. Simply drag one of the Projects to the Project Browser window and it will be transferred from the BeatStep Pro automatically. Then you can give it a new name if you like.



12.2.2 Revise a Template

If you'd like to modify a Template you can drag it from the Project Browser and drop it on the Working Memory area. This will also send the selected Project directly into the BeatStep Pro edit buffers.

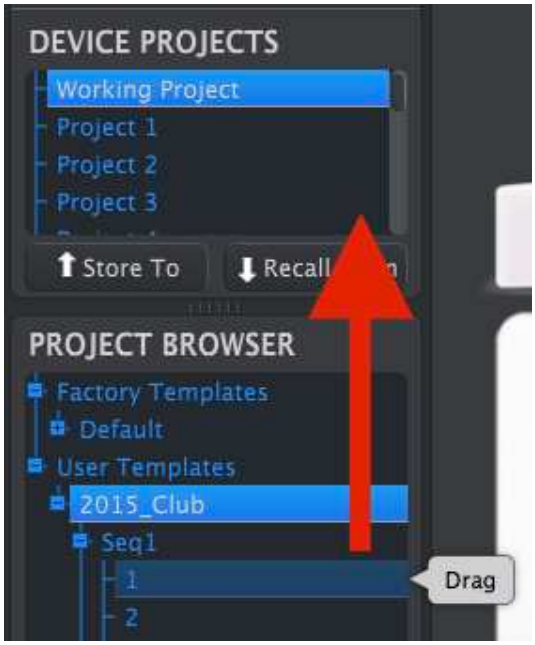
Important: This process will **overwrite** the Working Memory and the edit buffers of the BeatStep Pro. Be sure to save what you were doing before you transfer the file!



This same procedure can also be used to drop a Template onto a Project location in the Device Projects window. Doing this will store that Template to the BeatStep Pro internal memory at the location you select.

12.2.3 Revise a pattern

If you'd like to modify a pattern inside an archived Template you can drag that pattern from the Project Browser and drop it into the Working Memory. You can also drop it on one of the Project locations in the Device Projects window. This will send the selected pattern directly into the BeatStep Pro.



Important: When the MIDI Control Center sends a pattern to BeatStep Pro **it will overwrite the pattern** in that memory location. Be sure this is what you want to do before you transfer one of these files!

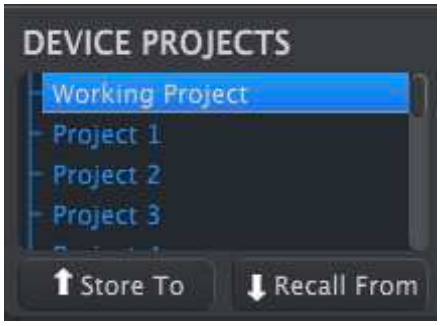
12.3 Store To/Recall From

12.3.1 Store the Working Memory to the BeatStep Pro

The upper left-hand section of the MIDI Control Center has a button called "Store To". Right above that is a list that allows you to specify which of the 16 BeatStep Pro memory locations will contain the settings and sequences you've created in the Working Memory.

Important: When you follow the steps below you will overwrite the current Project #2 that resides inside the BeatStep Pro. Be sure this is what you want to do! If not, please store it to another location inside the BeatStep Pro.

We'll assume that Project #2 is available for this example:



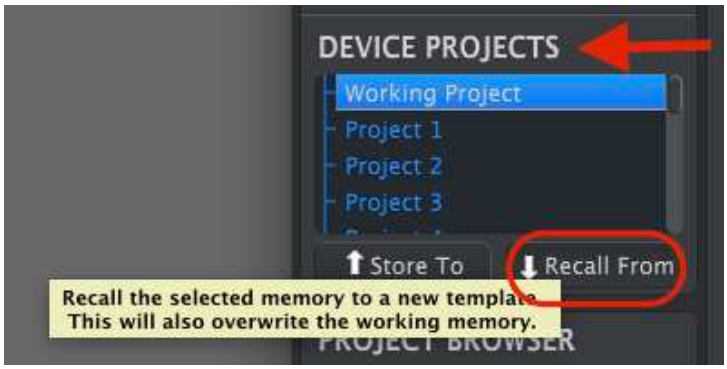
First select "Project 2" in the list as pictured above.

Next, click the Store To button at the bottom of that section.

That's all there is to it! The settings and sequences you created in the Working Memory of MIDI Control Center have been stored as Project #2 in the BeatStep Pro. Now you can load that Project whenever you want by using the PROJECT button and Step button 2.

12.3.2 Recall a Project from the BeatStep Pro

it is possible to make whole Projects without a computer attached. So when it's time to back them up, remember that you can grab any one of the internal Projects or patterns directly from the internal memory and store it to a Template in the MIDI Control Center.



For example, if you want to back up Project #3 from the internal memory, simply select it in the Device Projects window and click Recall From. Project #3 will show up in the Project Browser with a time/date stamp as a name. You can rename it if you like.

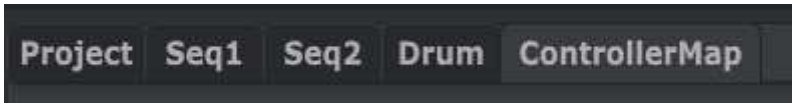
Important: When you recall the selected Project **it will replace the current Project** in the Working Memory and the BeatStep Pro. Be sure to drag what you've been working on into the Project Browser / User Template area first!

12.3.3 Save, Delete, Import/Export, etc.

These important features have been documented in the MIDI Control Center manual, which you will find in the software Help menu. Look in section 7.1 of the Help file for information about Save, Save As…, New, Delete, Import and Export.

12.4 Tabs

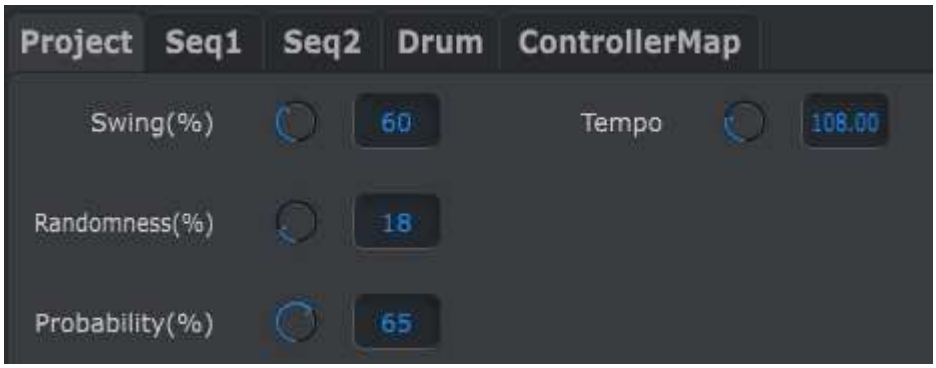
The middle window of the MIDI Control Center has five tabs, each of which contains the parameters for the various modes of the BeatStep Pro.



Simply click on a tab to select its window.

12.4.1 Project

The Project tab contains four parameters:



The Project tab

- Swing / Randomness / Probability (section 2.2.4)
- Tempo (section 2.2.5)

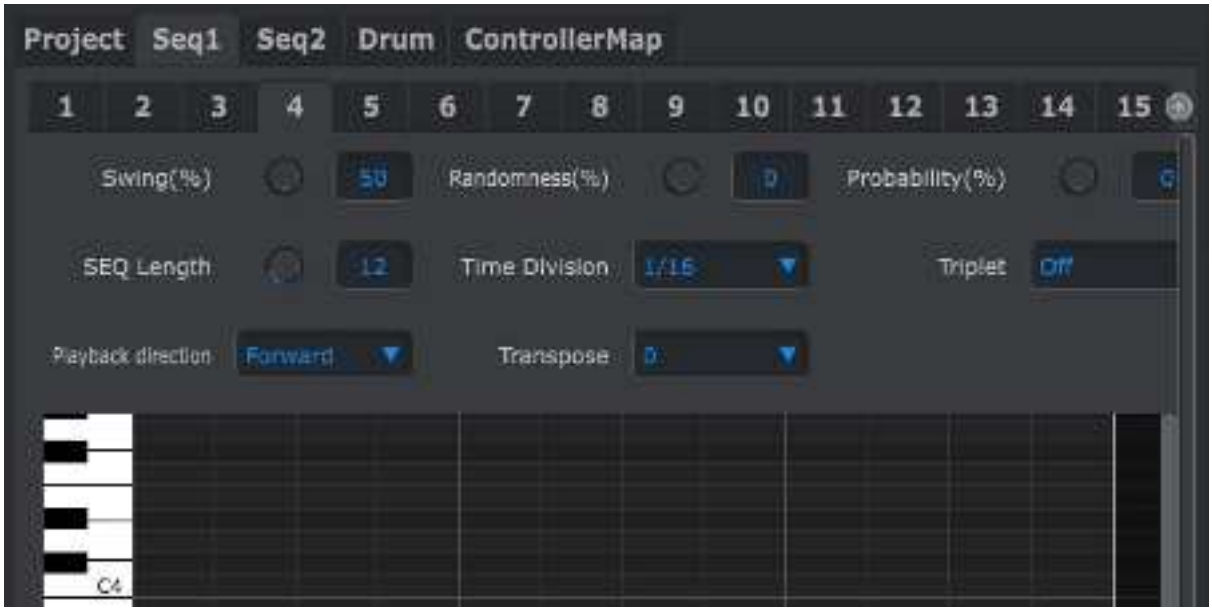
Of these four parameters, three can be overridden by the CURRENT TRACK button. In this case the individual settings per sequencer will take effect. See sections 6.4.1 and 6.5.3 for more information about that.

12.4.2 SEQ1/SEQ2

The tabs for SEQ1 and SEQ2 are identical. We'll cover them in section 12.5, but there is one feature we'd like to point out here: pattern selection.

Look for the second set of tabs right below the 5 mode tabs. These allow you to select the patterns within each Sequencer.

Note: If you're using a laptop with a smaller screen you might see a plus sign (+) on the right, as we've shown next to tab 15. This allows you to select the patterns you can't see directly.

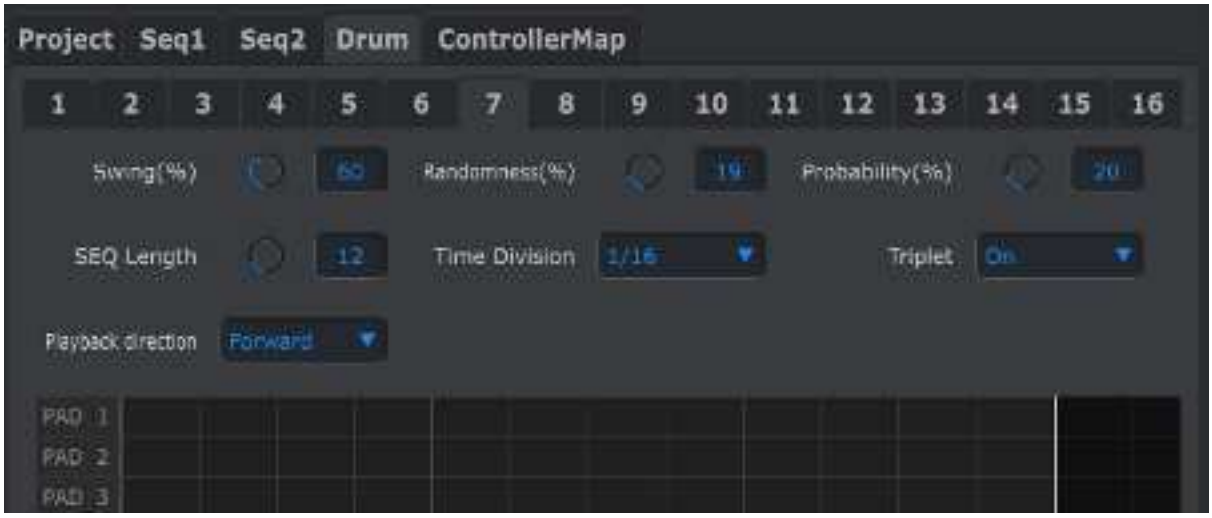


The SEQ1 tab

12.4.3DRUM

The Drum tab contains almost all of the same parameters as the SEQ1/SEQ2 tabs. We'll cover them in section 12.6, but we'd like to point out the pattern selection feature here.

Look for the second set of tabs right below the 5 mode tabs. These allow you to select the individual patterns within the Drum sequencer.



The DRUM tab

12.4.4Controller Map

The Controller Map tab shows the entire set of BeatStep Pro controls. From here you can select one of the 16 encoders, Step buttons or Pads and map them to the MIDI parameters you need to control your system.



The Controller Map window

We'll go through some examples of MIDI mapping in section 12.7.

12.5 Sequence window

12.5.1 Navigation

12.5.1.1 Scroll

If you have a scroll wheel you can move the piano roll view up and down. Place the cursor in the piano roll field first, not over the keyboard graphic.

If you hold the Shift key on your computer keyboard the piano roll will move sideways.

You can also click/drag the scroll bars at the edge and bottom of the window to reposition the sequence view.



Scroll bar locations

12.5.1.2Zoom

To zoom in and out of the horizontal view, place the cursor in the piano roll field. Then press Command (Mac) or Control (Windows) and use the scroll wheel to adjust the view.

To zoom in and out of the vertical view, place the cursor over the keyboard graphic first. Then press Command (Mac) or Control (Windows) and use the scroll wheel to zoom in and out.

12.5.2Front-panel parameters

Most of these parameters have been covered in chapter 4:



Front-panel parameters for SEQ1 and SEQ2

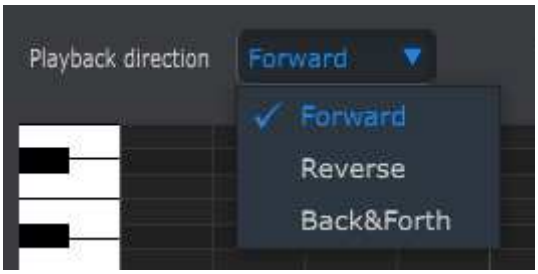
The exception is the Transpose parameter. See section 12.5.2.1 for information on that.

To edit Swing %, for example, click and drag the knob graphic or double-click in the value field and enter a new value:



Editing a knob value

To edit a parameter such as Playback Direction, click its pull-down menu and make a selection:



Selecting a pull-down menu option

12.5.2.1Transpose

This parameter allows you to transpose the entire pattern up or down by 12 semitones without having to select the notes and drag them to new places in the piano roll window.



The SEQ1/SEQ2 Transpose window

12.5.3SEQ Length

Changing the sequence length here affects the SEQ window. For example, here's how it looks when the length is set to 12:



The patterns can be up to 64 steps long, and the unused steps are darkened because they are outside the pattern length area.

The steps are numbered along the bottom of the window:



12.5.4Sequence events

12.5.4.1Enter/delete notes

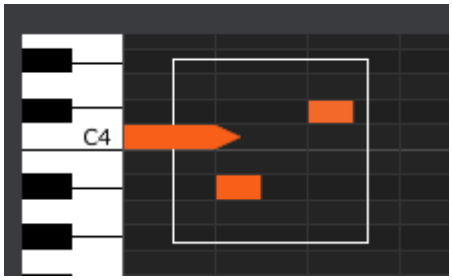
Double-click on a square inside the piano roll to enter a note. To delete notes, select a note with a single click or drag a box around several notes. Then press the Delete key on your computer keyboard.

12.5.4.2Move notes

To move an existing note, click and hold the middle of note. The cursor will become a hand icon. Then drag the note up or down to place it anywhere within the MIDI note range.

You can also drag it to the left or right to place it anywhere within the sequence. If a note already exists at the new location, it will be replaced by the note you are moving.

It's also possible to move several notes at the same time. To do this, first drag a box around the notes with the cursor:

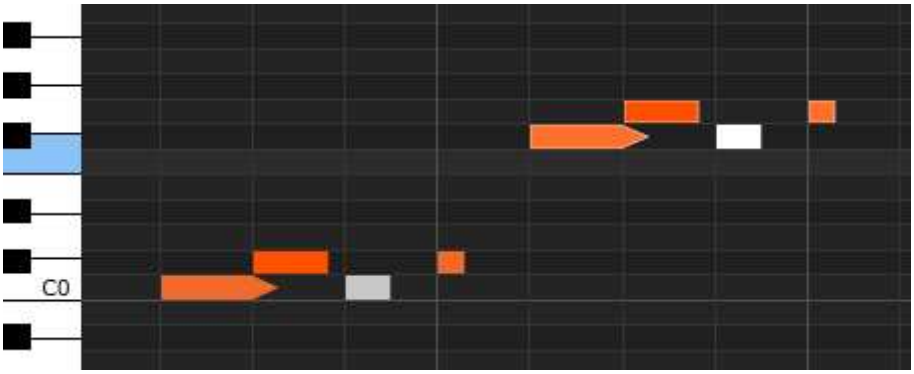


Next, click on the middle of one of the notes and drag the selected notes up, down, left or right.

Note: if one of the selected notes moves outside the MIDI note range, the entire piano roll will glow red. The same thing happens if the notes are moved beyond the 1st or 64th steps in the sequence.

12.5.4.3Copy/paste notes

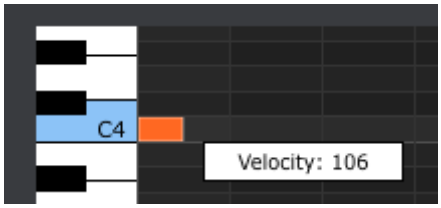
After selecting a group of notes you can make another copy of those notes in another section of the sequence. Just hold the Alt key (Option on a Mac), select one of the notes, and drag them all into the new area.



The new notes will have the same velocity and gate time values as the original notes.

12.5.4.4Note velocity

If you click on the top of a note box you will see the cursor become a vertical arrow icon. Drag the cursor up and down to change the velocity of that note to a value between 1 and 127.

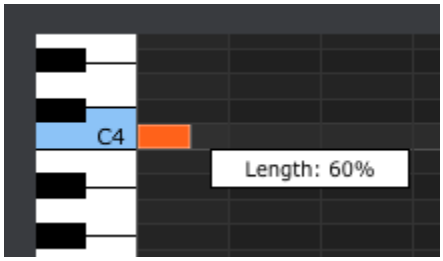


The color of the selected note will change to indicate the velocity value: white is the lowest velocity value and red is the highest velocity value.

When the velocities of multiple notes are edited at the same time they will all change to the same value.

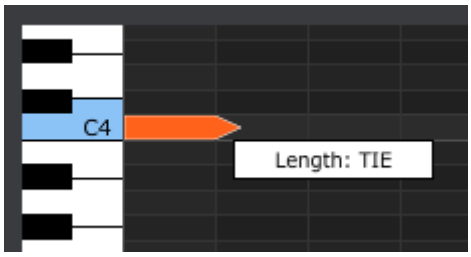
12.5.4.5Note length/Gate time

If you click on the right edge of a note box you will see the cursor become a horizontal arrow icon. Drag the cursor left and right to change the gate time of that note to a value between 0 and 99%.



12.5.4.6TIE a note

If you continue dragging the horizontal cursor to the right past 99%, a value of TIE will appear. The right edge of the note box will become an arrow:



A new note will appear in the next Step. The overlapped arrow shows that the two notes are tied:



You can continue dragging the cursor to set the Gate time of the second note. If you want an even longer note, you can keep dragging the cursor until the second note's length value also becomes TIE, and so on.

When the lengths of multiple notes are edited at the same time they will all change to the same value.

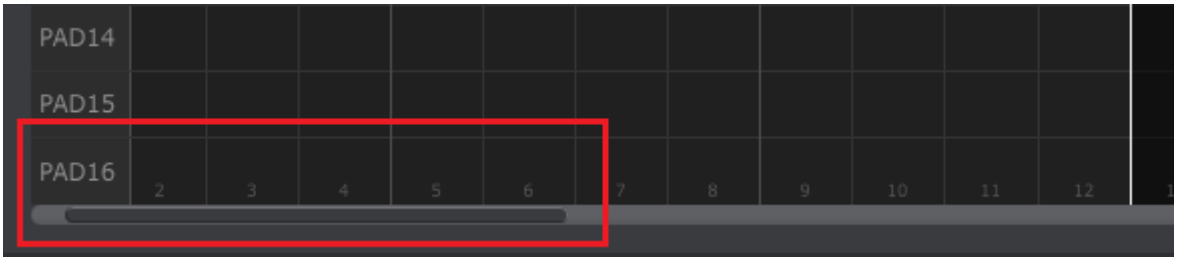
12.6 Drum window

12.6.1Navigation

12.6.1.1Scroll

If you have a scroll wheel you can move the sequence view horizontally. Place the cursor in the sequence field (not over the pad names), then hold the Shift key on your computer keyboard and use the scroll wheel. The sequence view will move sideways.

You can also click/drag the scroll bar at the bottom of the window to reposition the sequence view.



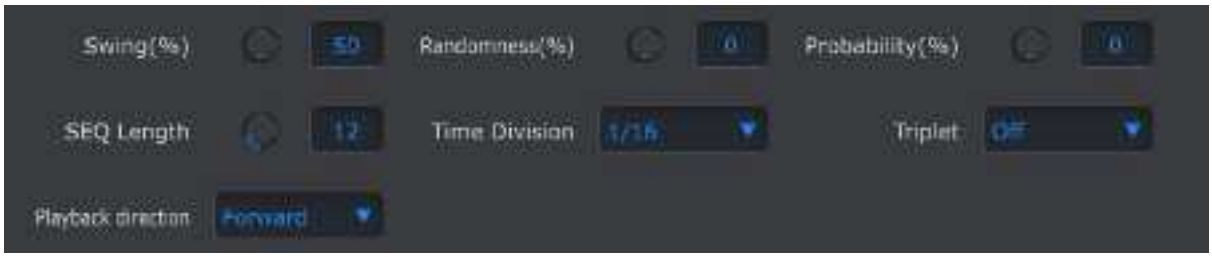
Scroll bar location

12.6.1.2Zoom

To zoom in and out of the horizontal view, place the cursor in the sequence field. Then press Command (Mac) or Control (Windows) and use the scroll wheel to adjust the view.

12.6.2Front-panel parameters

Most of these parameters have been covered in chapter 5:



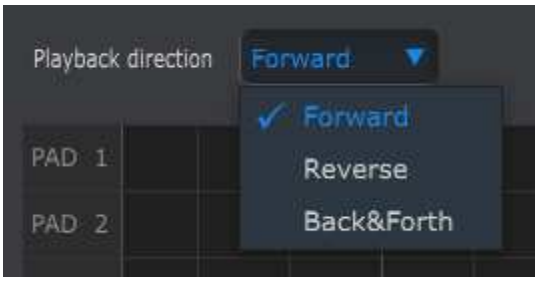
Front-panel parameters for the Drum tab

To edit Swing %, for example, click and drag the knob graphic or double-click in the value field and enter a new value:



Editing a knob value

To edit a parameter such as Playback Direction, click its pull-down menu and make a selection:



Selecting a pull-down menu option

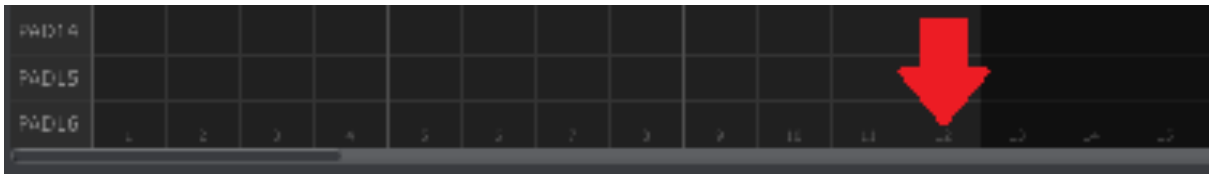
12.6.3SEQ length

Changing the sequence length here affects the SEQ window. For example, here's how it looks when the length is set to 12:



The patterns can be up to 64 steps long, and the unused steps are darkened because they are outside the pattern length area.

The steps are numbered along the bottom of the window:



12.6.4Sequence events

12.6.4.1Enter/delete events

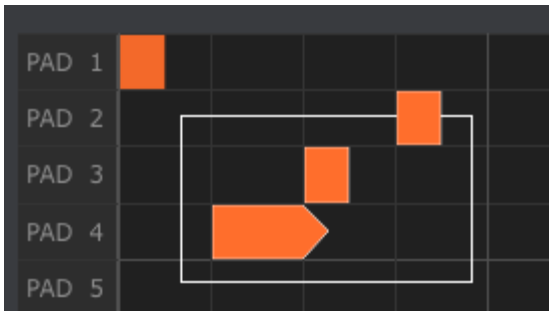
Double-click on a square inside the sequence view to enter an event. To delete events, select one event with a single click or drag a box around several events. Then press the Delete key on your computer keyboard.

12.6.4.2Move events

To move an existing event to a different drum, click and hold the middle of that event. The cursor will become a hand icon. Then drag the event up or down to place it in the drum track you want.

You can also drag the event to the left or right to place it anywhere within the sequence. If an event already exists at the new location, it will be replaced by the event you are moving.

It's also possible to move several events at the same time. To do this, first drag a box around the events with the cursor:

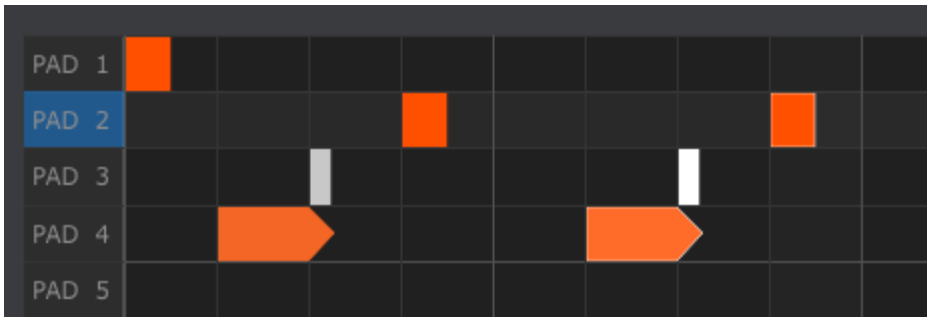


Next, click on the middle of one of the events and drag the selected events up, down, left or right.

Note: if one of the selected events moves beyond pad 1 or pad 16 the entire sequence field will glow red. The same thing happens when a note is moved beyond the 1st or 64th steps.

12.6.4.3Copy/paste events

After selecting a group of events you can make another copy of those events in another section of the sequence. Just hold the Alt key (Option on a Mac), select one of the events, and drag them all into the new area.



The new events will have the same velocity and gate time values as the original events.

12.6.4.4Event velocity

If you click on the top of an event you will see the cursor become a vertical arrow icon. Drag the cursor up and down to change the velocity of that event to a value between 1 and 127.

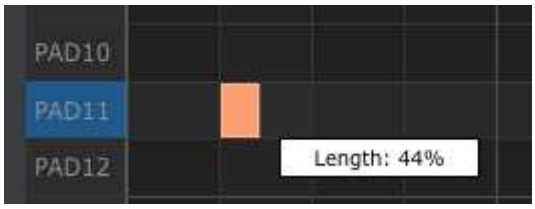


The color of the selected event will change to indicate the velocity value: white is the lowest velocity value and red is the highest velocity value.

When the velocities of multiple events are edited at the same time they will all change to the same value.

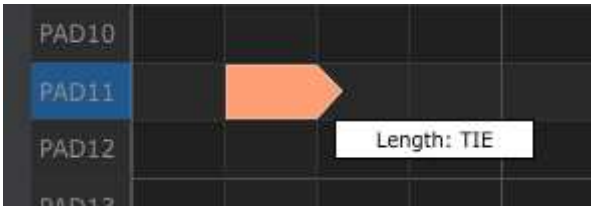
12.6.4.5Event length/Gate time

If you click on the right edge of an event you will see the cursor become a horizontal arrow icon. Drag the cursor left and right to change the gate time of that event to a value between 0 and 99%.

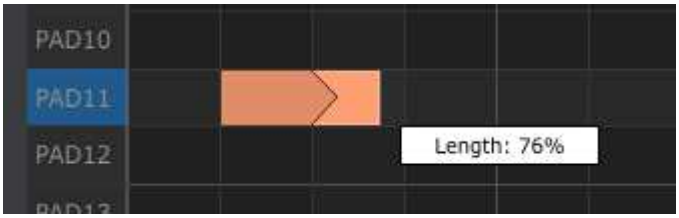


12.6.4.6TIE an event

If you continue dragging the horizontal cursor to the right past 99%, a value of TIE will appear. The right edge of the event will become an arrow:



A new event will appear in the next Step. The overlapped arrow shows that the two events are tied:



You can continue dragging the cursor to set the Gate time of the second event. If you want an even longer event, you can keep dragging the cursor until the second event's length value also becomes TIE, and so on.

When the lengths of multiple events are edited at the same time they will all change to the same value.

12.7 Controller window

Here are some examples of what you can assign a BeatStep Pro control to do using the MIDI Control Center:

- Configure pads to transmit MIDI notes
- Set a pad to switch between two values of any MIDI CC# each time it is played
- Assign an encoder to control any MIDI CC# and define its operational range

We'll take you through two examples of those scenarios in this chapter. For more detailed information please refer to the MIDI Control Center manual, which is located inside the Help menu as shown in section 11.5.

12.7.1 Common features

When each control is selected a tab appears at the bottom of the Controller window. They have many similar features:



Knob control options

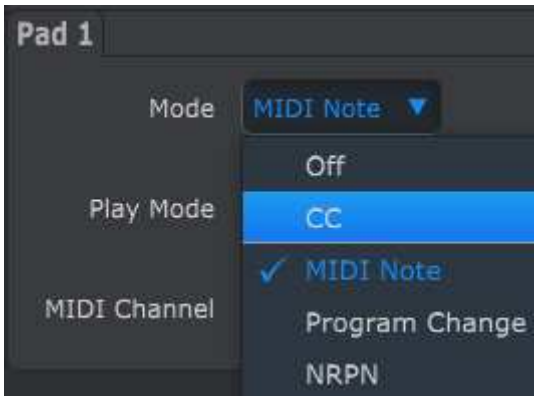


Step button control options



Pad control options

Each has pull-down menus with additional options. For example, the Mode of a pad can also be assigned to CC:

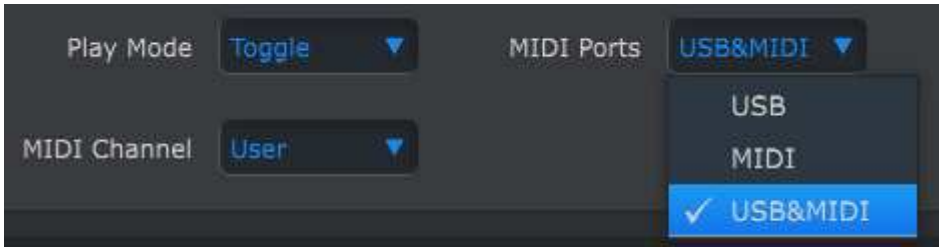


The options of each field are different for each control type.

However, there are two fields that are always available for each control: MIDI Port and MIDI Channel.

12.7.1.1MIDI Port

There is an option that allows you to choose whether the MIDI data for each control will be sent out of the physical MIDI port, the USB connection to your computer, or both.



12.7.1.2MIDI Channel

Another option is available for setting the MIDI channel for the control. Be sure to check the MIDI Channel assignment to make sure it matches that of the receiving device.



The "User" setting allows you to change the MIDI channel of this control from within Control Mode by holding the CHAN button + pressing a Step button.

So for each control you can choose whether they will be locked to a particular MIDI channel or will 'float' with the Control Mode MIDI channel.

Now let's go through a couple of real-world examples of MIDI control assignments.

12.7.2Toggle MIDI CC values with a pad

One popular musical effect is to take an audio loop, filter it heavily for one section of a song, and switch it back to the full-open sound later. You can configure one of the BeatStep Pro pads to send those commands to a filter module inside your DAW.

We'll use Pad 9 for this example. Select it and then use the pull-down Mode menus to select "CC" and "Toggle":



These settings will allow you to send two different values of a particular MIDI CC number each time you press the pad.

There are a couple of MIDI CC numbers that have been assigned the task of controlling filter brightness (CC# 74) or harmonic content (CC# 71). We'll use CC# 74 for this example.

Click on the MIDI CC number field and select the Brightness controller number as shown:



Next we'll set some minimum and maximum values that might work (adjust them to suit the audio source):



The first press of Pad 9 will send a CC# 74 command with a value of 78, which will close the filter down part way but still let a lot of the audio pass through. The second press of Pad 6 will send a value of 127, opening the filter completely.

12.7.3Set encoder range for a MIDI CC

The encoders are assignable using the same techniques described for the pads. Let's give a quick example of an interesting use: setting the rate of an LFO so it operates only within a certain range.



…



Looking at the pictures above we see familiar information:

- Knob 9 has been selected, so it is shown in red.
- It is assigned to the User MIDI channel; you can specify any MIDI channel from 1-16 or leave it on the User channel.
- Its Mode is set to CC, which means it will transmit a value for a particular MIDI Continuous Controller number (CC#) when it is turned.
- The second Mode field is set to Absolute, which means it will transmit in a linear fashion from fully counter-clockwise to fully clockwise.
- The CC number field shows CC# 76, the MIDI CC# that has been assigned to control Vibrato Rate.
- The MIDI Port setting means the data will be sent to both the physical MIDI port and to your computer via the USB port.
- The Acceleration field allows you to set the controller response to one of four "locked" options or the "floating" value of User. See section 12.8.4.1 for details.
- The Min Value and Max Value fields are set to values that will cause Knob 5 to transmit data only within a certain range.

To summarize, the settings seen above mean that Encoder 9 will control the Vibrato Rate of the target device, sweeping it between the values of 10 and 32 only. The vibrato will not become too fast, nor will it become too slow.

Naturally you can choose settings that are appropriate for the MIDI device you are using.

Note: Some devices may not use standard MIDI controller assignments. Refer to the documentation for your device to determine what settings to use for each purpose.

12.8 Global parameters

The right side of the MIDI Control Center window contains essential parameters you can use to optimize BeatStep Pro for your setup and your working style.

12.8.1 MIDI Channel



Use the pull-down menus to select the User MIDI Channel for BeatStep Pro. This is the same parameter as the Control Mode MIDI Channel that you can set from the front panel. Changing the User Channel is a quick way to reassign many controls at once.

There are also separate Send and Receive MIDI Channels for each sequencer.

12.8.2 Transposition



The top four parameters affect the way the BeatStep Pro will respond to Transposition commands:

12.8.2.1Latch

This preference allows you to choose whether a sequence will be transposed momentarily or latched when receiving incoming MIDI notes on the Transposition Input Channel. With either setting the transposition will happen immediately; the difference is what will happen once the pad is released.

When Latch is Off the sequences will transpose back to the original key immediately after the pad is released. When Latch is On the sequences will stay transposed after the key is released, and continue in that key until another key is pressed.

This parameter does not affect the transposition from the pads on the unit, only what comes from an external source.

12.8.2.2Input channel

Instructs the BeatStep Pro which MIDI channel will set the transposition amount.

12.8.2.3Input port

Use this to tell the BeatStep Pro which MIDI port will receive the transposition request.

12.8.2.4Center pitch

The Center pitch decides which incoming note means "don't transpose". The default value is MIDI note #60, or middle C [C3].

So for example, an incoming C3 won't transpose the sequence, but an incoming D3 will transpose the sequence +2, etc.

12.8.2.5Seq Link

The fifth parameter determines how the sequencers will respond when a new pattern is selected from the front panel. There are two settings: Absolute and Relative.

Absolute: all of the sequencers will change to the same pattern number whether you use the < > buttons or select a pattern directly using the Step buttons.

Relative: the sequencers will add or subtract a number from the pattern selections when the < > buttons are used.

In other words, if SEQ1 = 01, SEQ2 = 02, and DRUM = 03, pressing the > button will increment all pattern numbers by one. Result: SEQ1 = 02, SEQ2 = 03, and DRUM = 04.

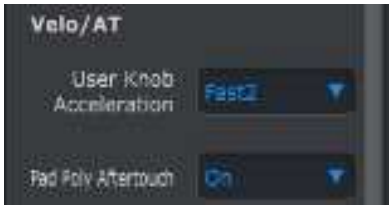
Direct selection using the Step buttons will still change all sequences to the same number.

12.8.3CV/Gate mode



This is where you select the electrical behavior for each sequencer. The various settings are described in section 9.1.4 (SEQ1/SEQ2) and section 9.2.5 (DRUM).

12.8.4Velo/AT



12.8.4.1User Knob Acceleration

There are four response curves for the encoders:

- Slow (Off): the encoders transmit every value. It takes more turns of an encoder to move from minimum to maximum. Use this when greater precision is desired.
- Medium: when turned quickly the encoders will skip a few values. It takes fewer turns of an encoder to move from minimum to maximum.
- Fast 1: when turned quickly the encoders will skip a few more values. It may take as few as 1-1/2 turns of an encoder to move from minimum to maximum.
- Fast 2: maximum acceleration; when turned quickly the encoders will skip even more values. Parameter values can change from minimum to maximum in the least number of encoder turns (usually only one), but there will be less precision when the encoder is turned at a moderate speed.

Each encoder can be set to its own Acceleration value (see section 12.7.3). One of the values is "User", and all encoders set to that value can be changed at the same time by changing this parameter inside the MIDI Control Center.

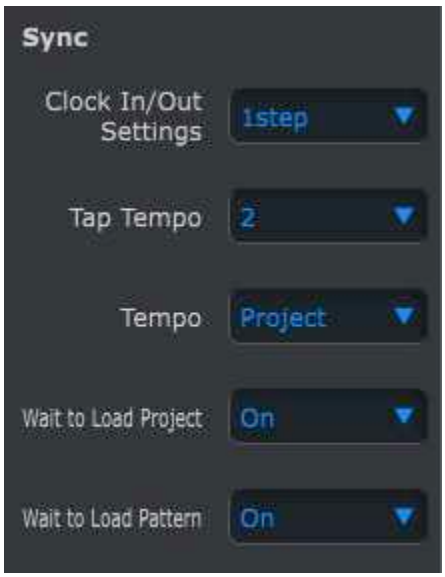
12.8.4.2Pad Poly Aftertouch

This setting will allow each pad to send an independent Aftertouch value, even on the same MIDI channel as the other pads. Check the specifications the target device to

confirm whether it is capable of responding to Polyphonic Aftertouch. If it is, this is an utterly expressive way to control that device.

But it also will generate a lot of extra MIDI data, so route your devices accordingly.

12.8.5Sync



These allow you to specify the response to various synchronization and tempo options.

12.8.5.1Clock In/Out Settings

This is where you determine which clocking signal will be transmitted and recognized by the Clock input and output connectors. Settings: 1step, 24 ppq (pulses per quarter note) and 48 ppq.

12.8.5.2Tap Tempo

Choose whether it will take 2, 3, or 4 taps to set the Tempo.

12.8.5.3Tempo

This parameter allows you to override the independent Tempo settings of each Project. When set to Global each Project will play at the current Tempo value on the front panel.

12.8.5.4Wait to Load Project

With this parameter you can specify whether a new Project will be loaded as soon as you select it or not. This is useful in live performance settings where you may not want to interrupt the flow of the music between Projects.

If SEQ1, SEQ2 and the Drum pattern are different lengths and this preference set to On, the BeatStep Pro will wait until the end of the Drum pattern before loading the next Project.

12.8.5.5Wait to Load Pattern

Similarly to the wait to Load Project, you can choose if you want the patterns to switch instantaneously or wait until the end of the current pattern before switching.

If PRST LNK is On and this function is active, BeatStep Pro will wait until the end of the DRUM pattern.

12.8.6Metronome



These parameters work together to define the metronome:

On/Off: when set to On the Metronome will be enabled by default when the unit first powers up.

Note: select the MIDI note of the metronome sound

Port: the metronome note can be sent to external MIDI, your computer via USB, or both.

Channel: choose the MIDI channel of the metronome sound

Bar Velocity: set the velocity at which the metronome note will play on the downbeat of each bar.

Beat Velocity: set the velocity at which the metronome note will play in the middle of each bar.

12.8.7Transport



You can define the MIDI channel and CC number for each of the three main Transport commands independently. All three must transmit the same type of MIDI information, though: MMC, MIDI CC or both.

12.8.8Drum Map



The Chromatic and Custom drum map templates

There are four options for the MIDI note assignments of the pads in Drum mode:

- Chromatic: MIDI notes 36-51 are spread evenly across pads 1-16
- General MIDI: pads 1-16 conform to the General MIDI specification.
- Spark: Conforms to the layout of our Spark drum controllers.
- Custom: user-definable drum mapping. Enter a MIDI note value for each pad with its knob or by double-clicking in the field and entering a number.

12.8.9User Scale



To create your own User Scale for the encoders, turn each note on or off.

For example, if you wanted to set up a whole-tone scale, turn off C#, D#, F, G, A and B. That way the encoders will only select C, D, E, F#, G# and A# when they are turned.

13 PARAMETER CHARTS

13.1 Default settings

The following tables list the default settings for Control Mode:

13.1.1 Encoders

Parameter	Range	Default settings / notes
MODE options	CC, Program Change, Bank LSB, Bank MSB, Aftertouch, NRPN	CC
CC mode		
MIDI CC	1-128	Varies
MIDI channels	USER, 1-16	User
MIDI port	USB, MIDI, USB&MIDI	USB&MIDI
Acceleration/scaling	Global, slow, normal, fast 1, fast 2	fast 2
Min range	0-127	0
Max range	0-127	127
Data mode	absolute, relative 1, relative 2, relative 3	Absolute
Program change		
MIDI channels	USER, 1-16	User
MIDI port	USB, MIDI, USB&MIDI	USB&MIDI
Min range	0-127	0
Max range	0-127	127
Loop	ON/OFF	Loop determines if the encoder will stop when it reaches 0 or 127 or loop around
Bank LSB		
MIDI channels	USER, 1-16	User
MIDI port	USB, MIDI, USB&MIDI	USB&MIDI
Min range	0-127	0
Max range	0-127	127
Loop	ON/OFF	Loop determines if the encoder will stop when it reaches 0 or 127 or loop around
Bank MSB		
MIDI channels	USER, 1-16	User
MIDI port	USB, MIDI, USB&MIDI	USB&MIDI
Min range	0-127	0
Max range	0-127	127
Loop	ON/OFF	Loop determines if the encoder will stop when it reaches 0 or 127 or loop around
Aftertouch		
MIDI channels	USER, 1-16	User
MIDI port	USB, MIDI, USB&MIDI	USB&MIDI
Min range	0-127	0
Max range	0-127	127
NRPN mode		
NRPN High	0-127	127
NRPN Low	0-127	0
Data	0-127	Varies

MIDI channels	USER, 1-16	User
MIDI port	USB, MIDI, USB&MIDI	USB&MIDI

13.1.2Step buttons

Parameter	Range	Default settings
MODE options	MIDI CC, NOTE, Program Change, NRPN	CC
See the data for each mode below		
MIDI CC mode		
MIDI cc	1-127	Varies
MIDI channels	USER, 1-16	User
MIDI port	USB, MIDI, USB&MIDI	USB&MIDI
Min range	0-127	0
Max range	0-127	127
Play mode	GATE/TOGGLE	Gate
NOTE mode		
MIDI note	0-127	Varies
MIDI channels	USER, 1-16	User
MIDI port	USB, MIDI, USB&MIDI	USB&MIDI
Min velocity range	0-127	0
Max velocity range	0-127	127
Play mode	GATE/TOGGLE	Gate
Program Change mode		
Program Change	0-127	Varies
MIDI channels	USER, 1-16	User
MIDI port	USB, MIDI, USB&MIDI	USB&MIDI
BANK LSB	0-127	0
BANK MSB	0-127	127
NRPN mode		
NRPN High	0-127	127
NRPN Low	0-127	0
Data	0-127	Varies
MIDI channels	USER, 1-16	User
MIDI port	USB, MIDI, USB&MIDI	USB&MIDI

13.1.3Pads

Parameter	Range	Default settings
MODE options	MIDI CC, NOTE, Program Change, NRPN	MIDI Note
MIDI CC - mode		
MIDI cc	1-127	Varies
MIDI channels	USER, 1-16	User
MIDI port	USB, MIDI, USB&MIDI	USB&MIDI
Min range	0-127	0
Max range	0-127	127
Play mode	GATE/TOGGLE	Gate
NOTE mode		
MIDI note	0-127	Varies
MIDI channels	USER, 1-16	User
MIDI port	USB, MIDI, USB&MIDI	USB&MIDI
Min velocity range	0-127	0

Max velocity range	0-127	127
Play mode	GATE/TOGGLE	Gate
PROGRAM CHANGE mode		
MIDI CC	0-127	Varies
MIDI channels	USER, 1-16	User
MIDI port	USB, MIDI, USB&MIDI	USB&MIDI
BANK LSB	0-127	0
BANK MSB	0-127	127
NRPN mode		
NRPN High	0-127	127
NRPN Low	0-127	0
Data	0-127	Varies
MIDI channels	USER, 1-16	User
MIDI port	USB, MIDI, USB&MIDI	USB&MIDI

13.2 MCU/HUI encoder assignments

Mackie Control Universal (MCU) / Human User Interface (HUI) settings:

Item	Position left/right	Type	CW	CCW	Channel
Vpot 1	1	Gen. purpose 1	1	65	1
Vpot 2	2	Gen. Purpose 2	1	65	1
Vpot 3	3	Gen. Purpose 3	1	65	1
Vpot 4	4	Gen. Purpose 4	1	65	1
Vpot 5	5	Controller 20	1	65	1
Vpot 6	6	Controller 21	1	65	1
Vpot 7	7	Controller 22	1	65	1
Vpot 8	8	Controller 23	1	65	1

Continuous (level)	Position left/right	Controller	Value/Max	Value/Min	Channel
fader one	1	Pitch Wheel	8176	-8192	1
fader two	2	Pitch Wheel	8176	-8192	2
fader three	3	Pitch Wheel	8176	-8192	3
fader four	4	Pitch Wheel	8176	-8192	4
fader five	5	Pitch Wheel	8176	-8192	5
fader six	6	Pitch Wheel	8176	-8192	6
fader seven	7	Pitch Wheel	8176	-8192	7
fader eight	8	Pitch Wheel	8176	-8192	8

14 ARTURIA BEATSTEP PRO – LEGAL INFORMATION

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6. Assignment of Rights
You may assign all your rights to use the software to another person subject to the conditions that (a) you assign to this other person (i) this Agreement and (ii) the software or hardware provided with the software, packed or preinstalled thereon, including all copies, upgrades, updates, backup copies and previous versions, which granted a right to an update or upgrade on this software, (b) you do not retain upgrades, updates, backup copies und previous versions of this software and (c) the recipient accepts the terms and conditions of this Agreement as well as other regulations pursuant to which you acquired a valid software license.
A return of the product due to a failure to accept the terms and conditions of this Agreement, e.g. the product activation, shall not be possible following the assignment of rights.

7. Upgrades and Updates
You must have a valid license for the previous or more inferior version of the software in order to be allowed to use an upgrade or update for the software. Upon transferring this previous or more inferior version of the software to third parties the right to use the upgrade or update of the software shall expire.
The acquisition of an upgrade or update does not in itself confer any right to use the software.
The right of support for the previous or inferior version of the software expires upon the installation of an upgrade or update.

8. Limited Warranty
Arturia warrants that the disks on which the software is furnished is free from defects in materials and workmanship under normal use for a period of thirty (30) days from the date of purchase. Your receipt shall be evidence of the date of purchase. Any implied warranties on the software are limited to thirty (30) days from the date of purchase. Some states do not allow limitations on duration of an implied warranty, so the above limitation may not apply to you. All programs and accompanying materials are provided "as is" without warranty of any kind. The complete risk as to the quality and performance of the programs is with you. Should the program prove defective, you assume the entire cost of all necessary servicing, repair or correction.

9. Remedies
Arturia's entire liability and your exclusive remedy shall be at Arturia's option either (a) return of the purchase price or (b) replacement of the disk that does not meet the Limited Warranty and which is returned to Arturia with a copy of your receipt. This limited Warranty is void if failure of the software has resulted from accident, abuse, modification, or misapplication. Any replacement software will be warranted for the remainder of the original warranty period or thirty (30) days, whichever is longer.

10. No other Warranties
The above warranties are in lieu of all other warranties, expressed or implied, including but not limited to, the implied warranties of merchantability and fitness for a particular purpose. No oral or written information or advice given by Arturia, its dealers, distributors, agents or employees shall create a warranty or in any way increase the scope of this limited warranty.

11. No Liability for Consequential Damages
Neither Arturia nor anyone else involved in the creation, production, or delivery of this product shall be liable for any direct, indirect, consequential, or incidental damages arising out of the use of, or inability to use this product (including without limitation, damages for loss of business profits, business interruption, loss of business information and the like) even if Arturia was previously advised of the possibility of such damages. Some states do not allow limitations on the length of an implied warranty or the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

14.2 FCC INFORMATION (USA)

Important notice: DO NOT MODIFY THE UNIT!
This product, when installed as indicate in the instructions contained in this manual, meets FCC requirement. Modifications not expressly approved by Arturia may avoid your authority, granted by the FCC, to use the product.
IMPORTANT: When connecting this product to accessories and/or another product, use only high quality shielded cables. Cable (s) supplied with this product MUST be used. Follow all installation instructions. Failure to follow instructions could void your FFC authorization to use this product in the USA.
NOTE: This product has been tested and found to comply with the limit for a Class B Digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide a reasonable protection against harmful interference in a residential environment. This equipment generate, use and radiate radio frequency energy and, if not installed and used according to the instructions found in the users manual, may cause interferences harmful to the operation to other electronic devices. Compliance with FCC regulations does not guarantee that interferences will not occur in all the installations. If this product is found to be the source of interferences, witch can be determined by turning the unit "OFF" and "ON", please try to eliminate the problem by using one of the following measures:

- Relocate either this product or the device that is affected by the interference.
- Use power outlets that are on different branch (circuit breaker or fuse) circuits or install AC line filter(s).
- In the case of radio or TV interferences, relocate/ reorient the antenna. If the antenna lead-in is 300 ohm ribbon lead, change the lead-in to coaxial cable.
- If these corrective measures do not bring any satisfied results, please the local retailer authorized to distribute this type of product. If you cannot locate the appropriate retailer, please contact Arturia.

The above statements apply ONLY to those products distributed in the USA.

14.3 CANADA

NOTICE: This class B digital apparatus meets all the requirements of the Canadian Interference-Causing Equipment Regulation.

AVIS: Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

14.4 EUROPE

CE This product complies with the requirements of European Directive 89/336/EEC
This product may not work correctly by the influence of electro-static discharge; if it happens, simply restart the product.