
DAMAGE GUITARS
HEAVYOCITY
RAW INSPIRATION
USER MANUAL

1 Welcome to DAMAGE GUITARS!

Welcome to the hard-hitting world of DAMAGE GUITARS! Unleash this explosive collection of expertly-crafted, heavy guitar tones, face-melting riffs, lush clean guitars, and flawless performances — bursting with rhythm and energy, ready to kickstart your cue and unlock your inner guitar god.

Drawing from Heavyocity Co-Founder, Neil Goldberg's extensive background as a former touring metal guitarist, this expansive virtual instrument has been constructed using his diverse and impressive collection of legendary electric guitars including "custom shop" Gibson, PRS, Fender, Jackson, and Ernie Ball. Processed and sculpted with an eclectic lineup of guitar pedals that were fed through five iconic tube amplifiers to guarantee a tone, vibe, and attitude that is true production-ready quality. After each instrument had been pristinely recorded, they were further processed with Heavyocity's supercharged signal chain, delivering a massive dose of guitar wizardry. To elevate this already stellar collection, we meticulously recorded bass tracks that perfectly match each guitar riff, providing score-ready bass tones that further intensify the force of these driving riffs.

With over 1200 sources, all housed in a powerful, intuitive engine, DAMAGE GUITARS covers the gamut. This is a groundbreaking array of ferocious riffs, sparkling clean tones, and exciting transitional elements, in a playable, intuitive, and flexible format brought right to your fingertips.

1.1 System Requirements

DAMAGE GUITARS requires Native Instruments KONTAKT or KONTAKT PLAYER (version 6.7.1 or later).

1.2 Library Information

- Over 3,600 Samples
- 117 Snapshots
- 4 NKIs

1.3 Instrument Types

DAMAGE GUITARS provides you with 2 different instrument types.

- **Playable Guitar Textures** – this instrument uses keyswitches to switch between different sounds, which are played normally.
- **Loop Menus** – 3 nkis of looped riffs organized by the original key at which they were recorded.

2 The Playable Guitar Textures

The Playable Guitar instrument was designed to allow you to switch between sounds on the fly, with the sonic flexibility to match the sound of your project.

2.1 Interface and Navigation

The interface of a Playable Guitar instrument

Each section of the interface will be looked at in detail in the following chapters.

At the top are the articulation controls which will be explored in the next chapter.

The main central area is dedicated to the dynamics controls.

To the far edges of the Dynamics controls are six buttons that change what is displayed in the lower half of the instrument interface.

2.2 Articulations and Key-switches

This instrument contains several different articulations (or sources).

It is possible to switch articulations from the interface or via MIDI key-switches.

► To select an articulation via the interface, click on its name.

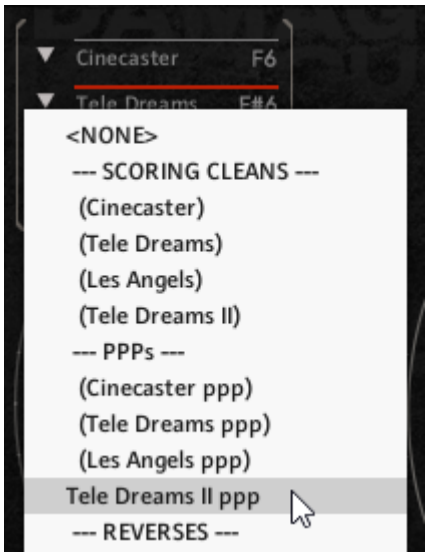
There are two key-switch ranges, one high and one low. These ranges are functional duplicates and are included to give you flexibility in how you want to perform.

- The low key range starts on C-1 (MIDI note 12)
- The high key range starts on F6 (MIDI note 101)

When you select an articulation via either method, the interface will update to show the controls for the selected articulation. Some articulations (like Long Sustains) do not have any controls, but others will have some. These controls will be located between the Key-switch controls.

2.2.1 Customizing Articulations

You can specify which articulation is loaded into which key-switch by using the menu beside the key-switch slots on the interface.



An Articulation Selection Menu

If an entry in the menu is in parenthesis it means that that articulation is already loaded in a key-switch slot. If you select an articulation that is already loaded in another key-switch slot, the articulation in the current slot will swap places with that articulation.

Selecting the <NONE> entry in the menu will purge the currently loaded articulation from memory and disable the key-switch. Doing this will reduce RAM usage, which can be important in a bigger project.

2.3 Dynamics Controls

The main central area on the interface is dedicated to the Dynamics controls.

The Dynamics Controls

The dynamics settings are stored with each articulation, so a Staccato articulation can have different settings than the Long Sustain articulation. However, the main Dynamics Knob will retain its setting regardless of articulation selection.

There are two main dynamics modes, which are defined by the VELOCITY switch.

The Velocity Switch

- When active, the MIDI velocity will set the dynamic layer used and the central knob will control the volume.
- When inactive, the MIDI velocity will have no effect, and the central knob will control the dynamic layer.

Velocity is best used with short articulations, like Staccato.

For sustained articulations, deactivating velocity is the recommended setting, as the dynamics knob gives you real-time control over dynamic layers, even on sustained notes. This allows for a more realistic performance.

The Dynamics Knob is connected to the ModWheel (MIDI CC1), so you can use your MIDI controller to easily control the dynamics or volume of the instrument.

You can use the DYN CURVE knob to control the dynamic response curve. At the central position, the curve is linear; when the knob is turned up the curve will become more exponential (i.e. focus on the softer dynamics), and when it is turned down the curve will be more logarithmic (i.e. focus on the harder dynamics).

Setting Ranges

It is possible to set minimum and maximum ranges for both velocity and the Dynamics Knob.

The velocity range can be set via the sliders to the left of the dynamics knob, and the range of the Dynamics Knob is set via the sliders to the right.

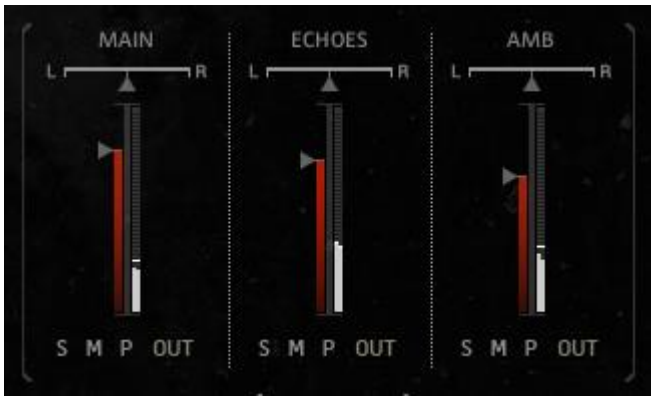
► Click and drag the top arrow to set the maximum value.

► Click and drag the bottom arrow to set the minimum value.

2.4 Mixer

Every articulation was sampled with three microphone positions; as such the interface provides a mixer to allow you to mix these microphone sources.

► If the Mixer is not already visible, you can access it by clicking on the **MIX** button to the right of the interface.



The Mixer

Each channel in the Mixer has the same controls:

- **PAN** – the horizontal slider at the top of the channel sets the stereo position of the channel.
- **VOLUME** – the main vertical slider sets the output volume of the channel.
- **SOLO** – the S button solos the channel, muting all others so that you can only hear the selected channel.
- **MUTE** – the M button mutes the channel, so that it cannot be heard.
- **PURGE** – purges (unloads) the selected channel from memory. Use this only if you do not plan to use the selected channel in your project. Click this button again to reload the channel.
- **OUTPUT ROUTING** – from the OUT menu you can select an alternate output for the channel (depending on your KONTAKT setup, this can allow you to route to multiple outputs in your DAW or soundcard). Note that setting the output to anything other than the Main setting will cause the channel to bypass the Delay and Reverb effects.

2.5 Performance

► If the Performance Page is not already visible, you can access it by clicking on the **PERF** button to the right of the interface.

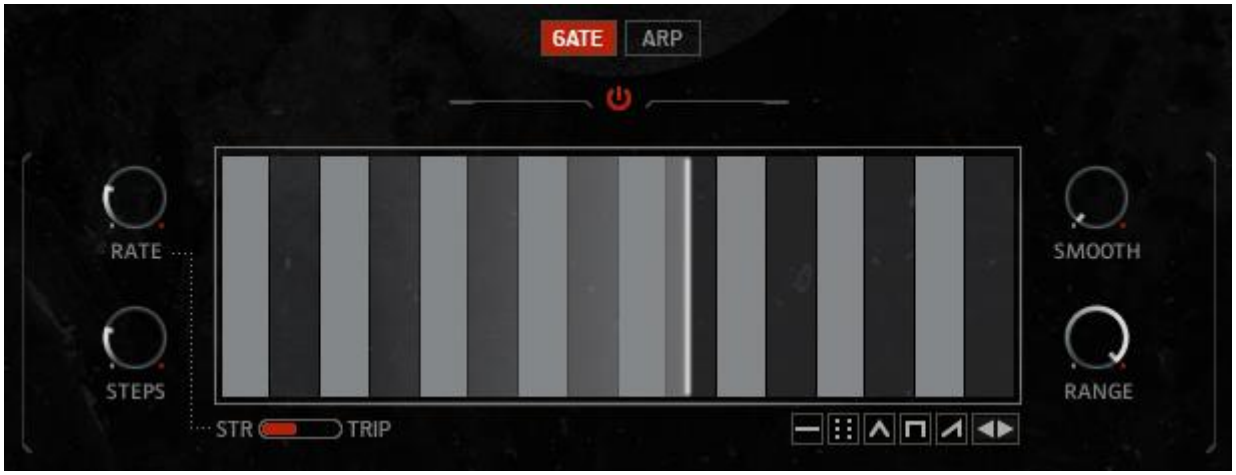
The Performance Page has two sub-sections:

- **GATE** – a volume modulation sequence.
- **ARP** – a performance effect that breaks up chords into patterns.

► Click on the respective tab to select a sub-section for viewing.

2.5.1 The Gate

The Gate modulates the output volume of the instrument over time to create rhythmic effects.

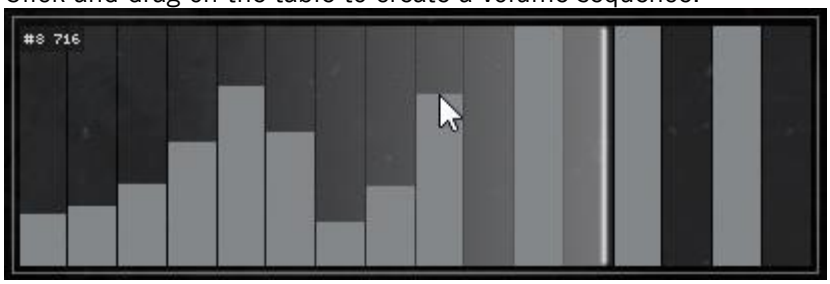


The Gate Controls

At the top of the Gate sub-section is an on/off switch which can toggle the effect on or off.

Below that is the main sequence pattern table.

► Click and drag on the table to create a volume sequence.



To the left and right of the main sequence table are the four playback parameters:

- **RATE** – sets the rate at which the sequence will play back. This control can be set to either straight (STR) or triplet (TRIP) modes by using the switch below the main sequence table.
- **STEPS** – sets the number of steps in the sequence.
- **SMOOTH** – sets the amount of smoothing between steps; in other words: how long it takes to change from one volume setting to another.
- **RANGE** – sets the range of the Gate effect. At 0% the Gate will have no influence on the output volume. At 100% the Gate will be able to set the volume to any settings from silence to full.

Below the main sequence table are a handful of quick preset controls that will auto-fill the sequence table with patterns. From left to right they are:

- **Reset** - sets the value of all steps in the pattern to their default value.
- **Random** - randomizes the values of all steps in the pattern.
- **Triangle** - select a number and the gate pattern will automatically be populated with a triangle shaped wave with that many cycles.
- **Comb** - creates a comb pattern in which the width of each tooth is that of the selected number.
- **Ramp** - select a number and direction and the gate pattern will automatically be populated with a ramp shaped wave with that many cycles
- **Nudge Left** - moves the whole pattern one step to the left.
- **Nudge Right** - moves the whole pattern one step to the right.

2.5.2 The Arpeggiator

An Arpeggiator takes a chord, breaks it down to its individual notes, and then plays those back in a rhythmic pattern.

The Arpeggiator Controls

The Arpeggiator is simple and easy-to-use with only four controls:

- **ON/OFF** – the switch at the top of the sub-section turns the Arpeggiator on or off.
- **RATE** – sets the rate at which notes will be generated.
- **MODE** – defines the order in which notes will be played:
  - Up – notes will be played from lowest to highest
  - Down – notes will be played from highest to lowest
  - Up/Down – notes will first be played from low to high, then high to low in a cycle
  - Down/Up – notes will first be played from high to low, then low to high in a cycle
  - Pairs Up – similar to Up, but notes are played two at a time
  - Pairs Down – similar to Down, but notes are played two at a time
  - Chord – all notes are played at once, as a chord
  - Random – notes are selected at random from the notes in the held chord
- **GATE** – defines the length of the notes generated by the arpeggiator.

2.6 Space

The Space Page contains two effects: a Delay and a Reverb. Both can be used to create and control a sense of acoustic space.

► If the Space Page is not already visible, you can access it by clicking on the **SPACE** button to the right of the interface.

The Space Page

The Delay

A delay effect creates a duplicate of the input signal which is delayed in time; when mixed with the original signal this produces an echo. The delayed output can then be fed back into the input to create repeated echoes.

The Delay effect has five controls:

- **ON/OFF** – the button to the right of the DELAY label toggles the effect on or off.
- **TIME** – sets the time between the input signal and the delayed signal.
- **FEEDBACK** – controls how much of the effect output is fed back into the effect input. In other words: this controls the number of repeating echoes.
- **WIDTH** – controls how much the echoes will ping-pong from the left channel to the right channel.
- **AMOUNT** – controls the volume of the delay signal.

The Reverb

Reverb effects simulate acoustic spaces. This reverb is a convolution reverb, which uses impulse responses (a kind of sonic fingerprint) of real acoustic spaces to produce a natural sounding reverb.

- The menu on the left of the REVERB section can be used to select an impulse response.
- The arrows to the left and right of the menu can be used to cycle through them.

Impulse responses are fairly fixed in their character, but there are a few parameters you can control:

- **DELAY** – sets the delay time between the input signal and the processed signal.
- **SIZE** – changes the size (and thus also length) of the reverb.
- **MIX** – controls the dry/wet mix; i.e. crossfades between the input signal and the reverb signal.

2.7 Envelopes

Each articulation in the instrument has its own ADSR volume envelope. Having an envelope per articulation gives you the ability to, for example, give the Long Sustain articulation a slow attack, but give the Staccato articulation a fast attack.

► If the Envelope Page is not already visible, you can access it by clicking on the **ENV** button to the left of the interface.

The Envelope Page

At the top of the Envelope page is a readout showing you the currently selected articulation. This will help you avoid editing the wrong articulation by mistake.

Below the articulation readout is a plot of the current ADSR curve.

Below that are the main Envelope controls:

- **ATTACK** – sets the attack (fade-in) time.
- **DECAY** – sets the decay time, i.e. the time it takes for the volume to drop from maximum to the sustain level.
- **SUSTAIN** – sets the sustain level.
- **RELEASE** – sets the release (fade-out) time, i.e. the time it takes for the envelope to drop to silence after you release a note.

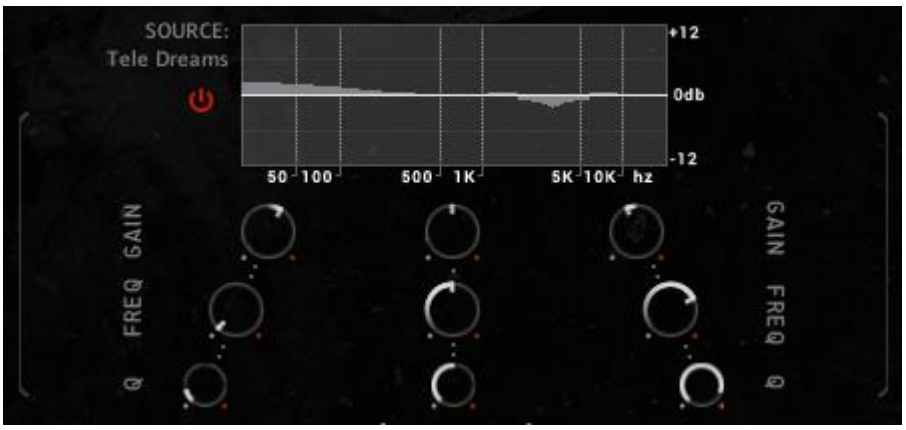
Holding the [Alt] key while using an ADSR control will copy that setting to all articulations.

2.8 EQ

An Equalizer (or EQ) allows you to control the timbre of a sound by giving you control over the volume level of ranges (or bands) of frequencies.

For maximum sonic flexibility each articulation has its own EQ settings.

► If the EQ Page is not already visible, you can access it by clicking on the **EQ** button to the left of the interface.



The EQ Page

At the top of the EQ Page is a readout showing you the currently selected articulation. This will help you avoid editing the wrong articulation by mistake.

Beside that is a graph showing you the frequency curve of the currently selected EQ.

Each EQ has the following main controls located to the left of the frequency curve:

- **ON/OFF** – the power switch toggles the EQ on or off.

The EQ has three identical bands, each with the same three controls:

- **GAIN**– sets the gain for the band.
- **FREQ**– sets the central frequency of the band.
- **Q** – sets the width of the band.

Holding the [Alt] key while using an EQ control will copy that setting to all articulations.

2.9 Filter

Like the EQ, a filter is used to control the timbre of a sound, but in a much more drastic way. As such, filters are generally used as a creative effect.

As with the EQ, there is a filter per articulation.

► If the Filter Page is not already visible, you can access it by clicking on the **FILTER** button to the left of the interface.

The Filter Page

At the top of the Filter Page is a readout showing you the currently selected articulation. This will help you avoid editing the wrong articulation by mistake.

The filter has the following main controls:

- **ON/OFF** – the power switch at the top of the Filter page turns the currently selected filter on or off.
- **FILTER TYPE** – the menu below the power switch is where you can select a filter type.
- **CUTOFF** – controls the cutoff frequency of the filter.
- **RESONANCE** – controls the resonant peak at the cutoff frequency.

To the left of the Filter page are controls that allow you to define the filter modulation:

- **ENV** – *Envelope Amount* : sets the how much the filter envelope will modulate the filter cutoff.
- **KEY** – *Key-Tracking* : sets how much the filter cutoff will track (i.e. follow) the key pitch.
- **VEL** – *Velocity Sensitivity* : sets how much the filter cutoff will be modulated by the key velocity.

To the right of the Filter page are the Filter Envelope controls:

- **ATT** – sets the attack time (fade-in time) of the filter envelope.
- **DEC** – sets the decay time (fade-out time) of the filter envelope.
- **SUS** – sets the sustain level of the filter envelope (i.e. the level at which the envelope will rest after the attack and decay phases).

Holding the [Alt] key while using a filter control will copy that setting to all articulations.

3 The Loop Instruments

Where the Playable instrument focuses on performance, the Loop instruments focus on sound design and sonic creativity.

At the core of the Loop instruments is the Macro system. The instrument has many sound design options, and the Macro system allows you to simplify all of these parameters into a handful of controls, which can then be modulated or controlled in real-time.

3.1 Navigation and Anatomy

The Main Interface for a Loop Instrument

The main Loop Instrument interface has three main sections:

- At the top left and right are the main navigation buttons, a number of which open completely new pages of controls.
- In between the navigation buttons is the main mixer.
- In the middle of the instrument are the Macro controls and navigation.
- The lower part of the interface is where the controls for the Macro sections and the Master FX are displayed.

3.2 Master FX

When you first open a Loop instrument, the Master FX is the first feature on display.

► If the Master FX are not displayed, you can view them by clicking on the **MASTER FX** navigation button to the top right of the interface.

The Master FX

The Loop instruments have seven master effects, all of which are applied to the final output of the instrument.

To the far left and right of the Master FX controls are the Punish and Twist effects.

In the center are the various other effects. The controls of each are accessed by clicking on the respective tab. The on/off switches for the effects can be found below these tabs.

Punish

Of course no Heavyocity product would be complete without the trademark Punish Knob. In the Loop instruments, the Punish Knob is located to the far left of the Master FX controls.

The Punish Knob

The Punish Knob is a single knob effect that uses a combination of compression and saturation to distress your sound. Simply turn the knob to punish the sound!

The power switch below the Punish Knob turns the effect on or off.

Twist

The Twist effect is another mainstay of Heavyocity's arsenal; it is located to the far right of the Master FX controls.

The Twist Controls

At its core, the Twist effect is a modulated EQ, but the result is something between a phaser and a formant filter.

The Twist effect has three main controls:

- **TWIST** – controls the modulation intensity, or twist amount.
- **TONE** – sets the central tone of the effect.
- **RATE** – controls the modulation rate, this is automatically synched with your host tempo.

The power switch below the Twist Knob turns the effect on or off.

Filter

The master filter has three controls.

The Master Filter

These are (from left to right):

- **CUTOFF** / **TALK** – controls the cutoff frequency of the filter. If a FORMANT type filter is selected, then this controls the vowel.
- **TYPE** – use this menu to select the type of filter.
- **RES** / **SHARP** – sets the level of the resonant peak at the cutoff frequency. If a FORMANT type filter is selected, then this controls the sharpness of the formant.

Distortion

The master distortion has three controls.

The Master Distortion

These are (from left to right):

- **DRIVE** / **BITS** – controls the overdrive amount or bit depth, depending on the TYPE selection.
- **TYPE** – select from the 3 available distortion modes:
  - STOMP – a stompbox style distortion.
  - AMP – a guitar amplifier style distortion.
  - LOFI – a digital degredation effect.
- **TONE** / **S.R.** – controls the distortion tone or sample rate, depending on the TYPE selection.

Chorus

The chorus effect uses modulated delays to thicken the sound.

The Master Chorus

The master chorus has four controls:

- **RATE** – sets the rate of the chorus modulation.
- **DEPTH** – controls the depth of the chorus modulation.
- **PHASE** – controls the difference in modulation phase between the left and right channels; in other words: the stereo width of the effect.
- **AMT** – controls the intensity of the effect.

Delay

The Master Delay

The master delay has four controls:

- **TIME** - sets the time between the input signal and the delayed signal.
- **FEEDBK** - controls how much of the effect output is fed back into the effect input. In other words: this controls the number of repeating echoes.
- **WIDTH** - controls how much the echoes will ping-pong from the left channel to the right channel.
- **AMT** - controls the volume of the delay signal.

Reverb

The master reverb is a convolution reverb.

The Master Reverb

► The impulse response for the reverb is selected via the menu. Click on the reverb name to display this menu.

You can use the arrow buttons on either side of the menu to cycle through the impulse responses.

The additional reverb parameters are:

- **DELAY** – sets the delay time between the input signal and the processed signal.
- **SIZE** – changes the size (and thus also length) of the reverb.
- **MIX** – controls the dry/wet mix; i.e. crossfades between the input signal and the reverb signal.

3.3 Mixer

The Loop instruments use three channels, one for each bank of loops.

The channels can be mixed together using the mixer at the top of the interface.

The Mixer

Each channel has the same controls:

- **VOL** – controls the output volume of the channel.
- **PAN** – controls the stereo position of the channel.
- **TUNE** – sets the transposition amount for the channel.
- **SOLO** – the S button mutes all other channels so that only the soloed channel can be heard.
- **MUTE** – the M button mutes the channel so that it cannot be heard.
- **PURGE** – the P button purges (unloads) the selected channel from memory. Use this only if you do not plan to use the selected channel in your project. Click this button again to reload the channel.
- **OUTPUT ROUTING** – from the OUT menu you can select an alternate output for the channel (depending on your KONTAKT setup, this can allow you to route to multiple outputs in your DAW or soundcard). Note that setting the output to anything other than the Main setting will cause the channel to bypass the Master Effects.

The VOL and PAN parameters for each channel can be modulated using the Macro system. For more information on this see chapter 3.4 Macro Control.

Sound and Bank Selection

The label of each channel is also the access point to the bank selection.

► Clicking on the channel name opens a menu of the available banks. Clicking on a menu entry will load that bank into the channel.

3.4 Macro Control

The Macro Control system is a very powerful tool for controlling the Loop instruments.

The Main Macro Controls

The central Macro Knob moves the six Macro Sliders, each of which controls the parameters of their category. The range and direction can be individually defined for each slider.

The Macro Knob can also be modulated to create an evolving sound. The details of the macro modulation can be found in chapter 3.5 Macro Modulation.

There are six Macro pages, each of which is triplicated for each channel, giving a total of 18 sub-pages of controls. The Macro system gives you easy access to this depth of control, but you also have the ability to dig into the instrument and define the Macro settings yourself.

Each Snapshot provided with the DAMAGE GUITARS library will utilize the Macro system in some way. If you load a Snapshot you like, but want to reduce the Macro Knob's control of the Drive effects, then it is a simple case of pulling down the Drive range.

Each of the six Macro categories has four main controls:

- **Display** – clicking on the category name will display the control page for that category in the lower section of the instrument.
- **Power Switch** – the power switch at the end of the slider can toggle Macro control of the category on or off.
- **Range** – clicking and dragging on the outer bracket allows you to define the range of control the Macro Knob has over the category.
- **Invert** – inverts the direction of the slider.

The control pages for the Macro categories will be described in detail in the later sub-sections of the manual.

Assigning Modulation

Any knob that can be controlled by the Macro system is easily identified by a red indicator inside the knob and a pair of arrows to the side of the control.

A Macro-Enabled Control

► Click and drag on the arrows to define the Macro control range for the knob.

A dot on the range bar will show the current value of the parameter.

Common Controls

Each Macro Page has three tabs for displaying the controls for each channel/bank.

Channel and Link Buttons

Clicking on the **LINK** button will link all of the channels for that Macro category allowing you to control them as one. The settings of the current channel will be copied to the other channels, but if you unlink the channels they will return to their original settings.

Some categories offer **COPY** and **PASTE** options, so you can copy the settings from one channel to another, without the need to link all three.

3.4.1 Envelope

► Clicking on the **ENV** tab will display the Envelope controls.

The Envelope Page

Each channel has an ADSR envelope as well as additional channel controls that are found on this page. Note that only the ADSR controls can be modulated by the Macro system.

The main Envelope controls are:

- **ATTK** – sets the attack (fade-in) time.
- **DECAY** – sets the decay time, i.e. the time it takes for the volume to drop from maximum to the sustain level.
- **SUS** – sets the sustain level.
- **REL** – sets the release (fade-out) time, i.e. the time it takes for the envelope to drop to silence after you release a note.

The additional channel controls are:

- **SYNC** – when active, this synchronizes the ATTACK time with the host tempo.
- **WIDTH** – sets the stereo width of the channel.

3.4.2 EQ

Each channel has a 3-band parametric EQ

► Clicking on the **EQ** tab will display the EQ controls.

The EQ Page

Each band of the EQ has the same three controls:

- **GAIN**– sets the gain for the band.
- **FREQ**– sets the central frequency of the band.
- **Q** – sets the width of the band.

The GAIN and FREQ controls can be modulated with the Macro system.

3.4.3 Filter

► Clicking on the **FILTER** tab will display the filter controls.

The Filter Page

The filter has the following main controls:

- **ON/OFF** – the power switch at the top of the Filter page turns the currently selected filter on or off.
- **FILTER TYPE** – the menu below the power switch is where you can select a filter type.
- **CUT** – controls the cutoff frequency of the filter.
- **RES** – controls the resonant peak at the cutoff frequency.

The CUT and RES controls can be modulated with the Macro system.

To the left of the Filter page are controls that allow you to define the filter modulation:

- **ENV** – *Envelope Amount* : sets the how much the filter envelope will modulate the filter cutoff.
- **VEL** – *Velocity Sensitivity* : sets how much the filter cutoff will be modulated by the key velocity.

To the right of the Filter page are the Filter Envelope controls:

- **ATT** – sets the attack time (fade-in time) of the filter envelope.
- **DEC** – sets the decay time (fade-out time) of the filter envelope.
- **SUS** – sets the sustain level of the filter envelope (i.e. the level at which the envelope will rest after the attack and decay phases).

3.4.4 Drive

► Clicking on the **DRIVE** tab will display the saturation and distortion controls.

The Drive Page

The drive page contains two effects: **SATURATION** and **DISTORTION**.

Saturation

The Saturation effect has three available modes which can be selected using the TYPE switch. The three available saturation types are:

- **TUBE** – a vacuum tube style distortion.
- **TAPE 1** – a clean, modern tape saturation.
- **TAPE 2** – a warmer, vintage tape saturation.

Each of these saturation types is controlled by the same two parameters:

- **DRIVE** – sets the overdrive amount.
- **OUT** – sets the output volume level.

Distortion

The Distortion effect has three available modes which can be selected using the TYPE switch. The three available distortion types are:

- **STOMP** – a stompbox style distortion.
- **AMP** – a guitar amplifier style distortion.
- **LOFI** – a digital degredation effect.

When the distortion is set to STOMP or AMP the available parameters are as follows:

- **DRIVE** – sets the overdrive amount.
- **TONE** – controls the tone (i.e. high frequency level or harshness).
- **BASS** – controls the low frequency level of the input signal.
- **TREBLE** – controls the high frequency level of the input signal.

When the distortion is set to LOFI the available parameters are:

- **BITS** – sets the bit depth of the signal.
- **S.RATE** – sets the sample rate of the signal.
- **NOISE** – controls the level of noise added to the signal.
- **COLOR** – controls the color (tone) of the noise.

3.4.5 Gate

► Clicking on the **GATE** tab will display the gate controls.

The Gate Page

The Gate modulates the output volume of the instrument over time to create rhythmic effects.

At the top of the Gate sub-section is an on/off switch which can toggle the effect on or off.

Below that is the main sequence pattern table.

► Click and drag on the table to create a volume sequence.

To the left and right of the main sequence table are the four playback parameters:

- **RATE** – sets the rate at which the sequence will play back. This control can be set to either straight (STR) or triplet (TRIP) modes by using the switch below the main sequence table.
- **STEPS** – sets the number of steps in the sequence.
- **SMOOTH** – sets the amount of smoothing between steps; in other words: how long it takes to change from one volume setting to another.
- **RANGE** – sets the range of the Gate effect. At 0% the Gate will have no influence on the output volume. At 100% the Gate will be able to set the volume to any settings from silence to full.

Below the main sequence table are two controls for defining how the gate should react to MIDI and host inputs:

- **RETRIG** – When active, the sequence will start from the beginning when a new non-legato note is played. When inactive, the sequence position will link to the host song position.
- **CONT** – When active, the sequence will play continuously, when in active, the sequence will stop when no voices are active.

To the right of those controls are a handful of quick preset controls that will auto-fill the sequence table with patterns. From left to right they are:

- **Reset** - sets the value of all steps in the pattern to their default value.
- **Random** - randomizes the values of all steps in the pattern.
- **Triangle** - select a number and the gate pattern will automatically be populated with a triangle shaped wave with that many cycles.
- **Comb** - creates a comb pattern in which the width of each tooth is that of the selected number.
- **Ramp** - select a number and direction and the gate pattern will automatically be populated with a ramp shaped wave with that many cycles
- **Nudge Left** - moves the whole pattern one step to the left.
- **Nudge Right** - moves the whole pattern one step to the right.

3.4.6 Space

► Clicking on the **SPACE** tab will display the delay and reverb controls.

The Space Page

The Space Page contains two effects: **DELAY** and **REVERB**.

Delay

The master delay has four controls:

- **TIME** - sets the time between the input signal and the delayed signal.
- **FBACK** - controls how much of the effect output is fed back into the effect input. In other words: this controls the number of repeating echoes.
- **WIDTH** - controls how much the echoes will ping-pong from the left channel to the right channel.
- **AMOUNT** - controls the volume of the delay signal.

Reverb

The space reverb is an algorithmic reverb with five controls:

- **SIZE** – changes the size (and thus also length) of the reverb.
- **COLOR** – controls the color (tone) of the room.
- **DAMP** – controls the amount of absorption in the room.
- **SPREAD** – controls the stereo width of the effect output.
- **MIX** – controls the dry/wet mix; i.e. crossfades between the input signal and the reverb signal.

3.5 Macro Modulation

Not only is the Macro Knob a powerful real-time performance tool, but it can be modulated using the built-in Macro Modulation Sequencer, making it a way to evolve your sound over time.

► To view the Macro Modulation controls, click on the **MACRO SEQ** tab at the top right of the interface.

The Macro Modulation Page

At the top of the Macro Modulation page is an on/off switch which can toggle modulation on or off.

Below that is the main sequence pattern table.

► Click and drag on the table to create a sequence.

To the left and right of the main sequence table are the four playback parameters:

- **RATE** – sets the rate at which the sequence will play back. This control can be set to either straight (STR) or triplet (TRIP) modes by using the switch below the main sequence table.
- **STEPS** – sets the number of steps in the sequence.
- **SMOOTH** – sets the amount of smoothing between steps; in other words: how long it takes to change from one value to another.
- **RANGE** – sets the range of modulation. Note that this control is bipolar and can be set to both positive and negative values.

When the Macro Modulation is active and the range is set, the Macro Knob will display the range information and current value with the modulation applied.

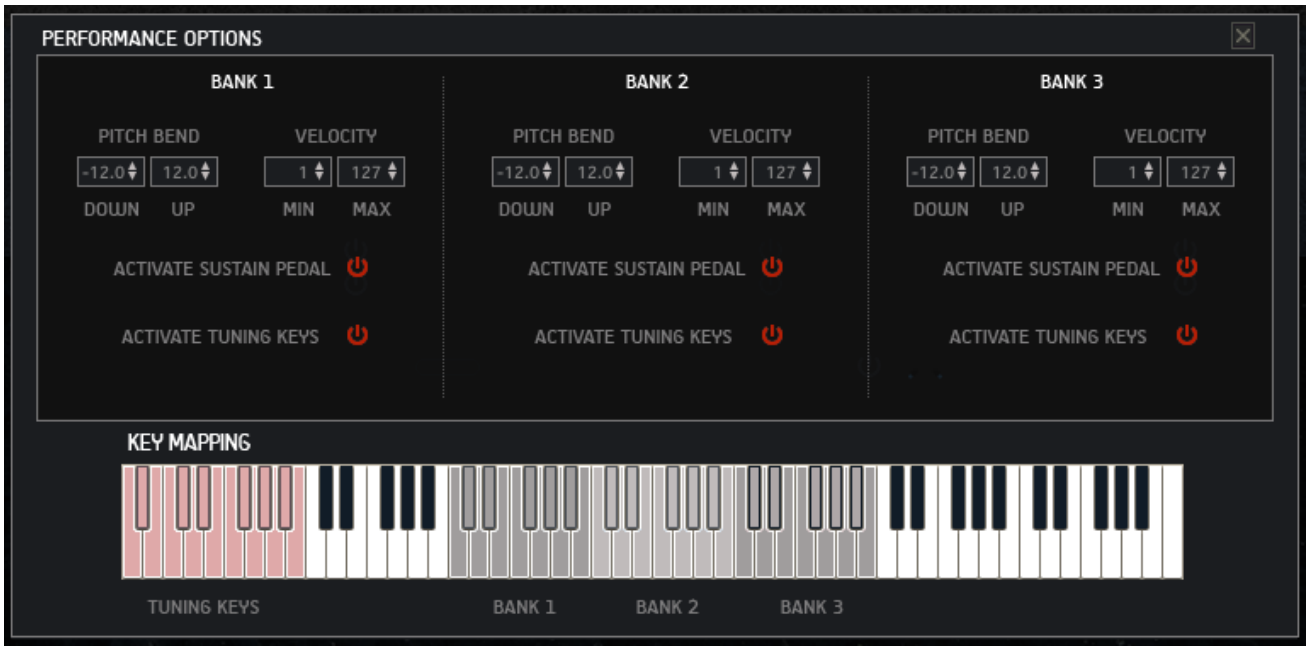
Below the main sequence table are two controls for defining how the gate should react to MIDI and host inputs:

- **RETRIG** – When active, the sequence will start from the beginning when a new non-legato note is played. When inactive, the sequence position will link to the host song position.
- **LOOP MODE** – When 1X is selected, the sequence will play back once and will stop when it reaches the last step; the sequence will then retrigger with the next note. When the infinity setting is selected, the sequence will loop continuously after it is triggered.

To the right of those controls are a handful of quick preset controls that will auto-fill the sequence table with patterns. From left to right they are:

- **Reset** - sets the value of all steps in the pattern to their default value.
- **Random** - randomizes the values of all steps in the pattern.
- **Triangle** - select a number and the pattern will automatically be populated with a triangle shaped wave with that many cycles.
- **Comb** - creates a comb pattern in which the width of each tooth is that of the selected number.
- **Ramp** - select a number and direction and the pattern will automatically be populated with a ramp shaped wave with that many cycles
- **Nudge Left** - moves the whole pattern one step to the left.
- **Nudge Right** - moves the whole pattern one step to the right.

3.6 Options



The Options Page for the Loop Instrument

Each bank has a set of options that influence how it reacts to MIDI, these are:

- **PITCH BEND** – these two controls allow you to define the range of pitch bend for both the DOWN and UP directions.
- **VELOCITY** – these two controls can be used to limit the velocity range of the channel, any velocities played lower than the MIN value will be set to that value, and any played higher than the MAX value will be set to that value.
- **ACTIVATE SUSTAIN PEDAL** – when active the channel will use the sustain pedal (MIDI CC64) to sustain notes; when inactive the channel will ignore the sustain pedal and will only respond to note on and off messages.
- **ACTIVATE TUNING KEYS** – defines whether or not the bank reacts to the tuning key-switches.

Since the mapping for the Loop instrument is fixed, the lower part of the Options Page displays a key map.

3.7 Loop Designer

► Click on the **DESIGNER** button to the top right of the interface to display the Designer Page.

The Loop Designer Page

In this page you can edit parameters for each sound in the instrument.

Key Mapping

The functionality of the Designer is inherently linked to its key mapping. There are three main key ranges:

- Approx **C-1** to **B0**: Tuning Keys – these key-switches will transpose any sounds in a bank with the ACTIVATE TUNING KEYS option active. Note the tunings keys will be placed relative to the key of the loops (so for the D loops will be D-1 to C#1)
- **C2** to **B4**: Loop Keys – each octave contains 12 sounds from a Bank. Bank 1 is played on octave 1, Bank 2 on octave 2, and so on.

Loop Parameters

Each sound features the following four parameters, which are located below the waveform display:

- **VOL** – sets the volume level of the sound.
- **PAN** – sets the stereo position of the sound. Note that this happens before the pan setting for the bank, so if you set the pan of a sound 100% left, and the pan for its bank 100% right, no audio will be heard for that loop.
- **TUNE** – sets the transposition of the sound.
- **START** – sets the start offset for the sound.

The sound parameters are applied to the last played sound. The name and note of the sound are always displayed in the readout above the waveform.

Holding the [Alt] key while editing a sound parameter will copy that setting to all sounds.