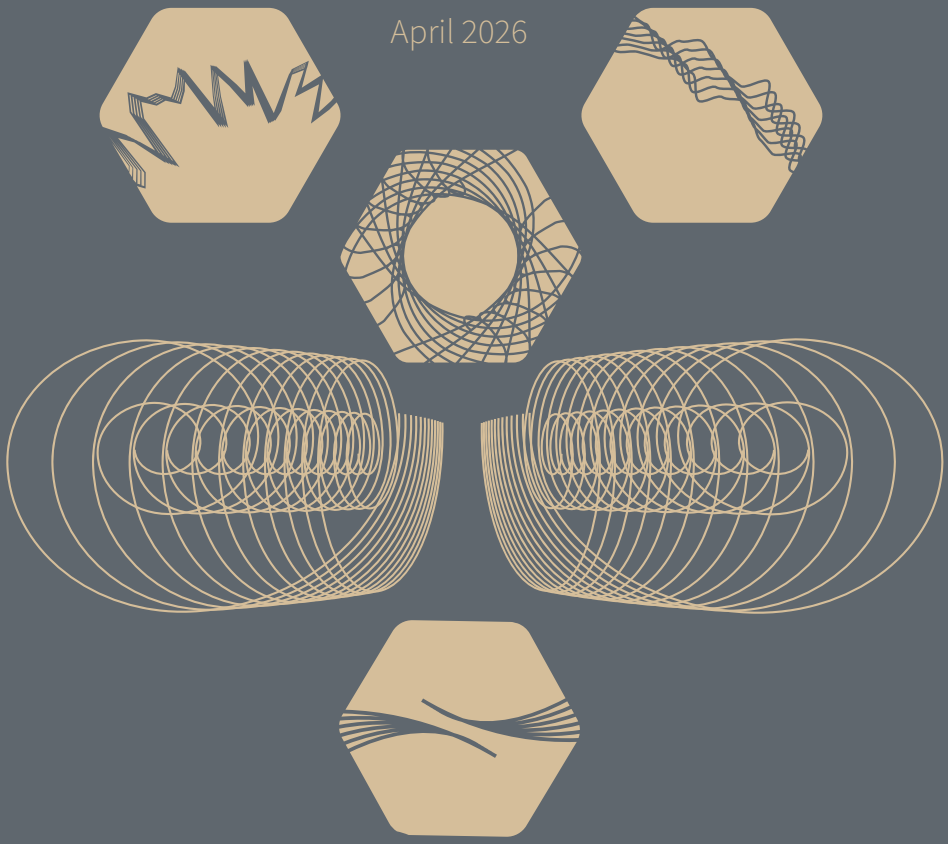
ARKIVE_EFFECTS_

The Dirt Magnet

User's Manual

Version 1

April 2026



FINEGEAR

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INTRODUCTION

Finegear is proud to continue the ARKIVE_EFFECTS_ series with a new collection of classic sounding effects, extended with exciting possibilities for expression and modulation: *The Dirt Magnet*. Just as before, each module was designed and tweaked for creative *misuse*.

The Dirt Magnet contains two VC LFOs, a noise generator and Band-Pass filter, a crackle generator with a High-Pass filter, a Ring Modulator, a VCF and a real-life cassette-tape Delay.

You can use and abuse any or all of the effects to add noise or crackle to your sounds, ring modulate them, filter them, or delay them using the two-tap tape delay. Any chaining combination is possible, as this collection of sound generators and analog effects also comes with independent audio I/Os.

Using the two included LFOs (and/or the modulation source of your choice), you can modulate the noise generator's filter, the crackle generator's density, as well as the VCF cutoff, and the speed and feedback of the tape delay. The LFOs in The Dirt Magnet are digital, allowing a wider frequency range, more waveform shapes, and MIDI sync.

The magic grunge of The Dirt Magnet sticks to the (literal) cassette-tape and is ready to transform your sounds into grainy, warbled and modulated soundscapes.

This manual covers each effect and module in detail, including controls, signal paths, and maintenance instructions.

Enjoy!
Cristian

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1. 2x VC LFOs
2. Noise generator
3. Crackle generator
4. Ring modulator
5. VCF
6. Tape delay
7. Two-tap tape delay mechanism

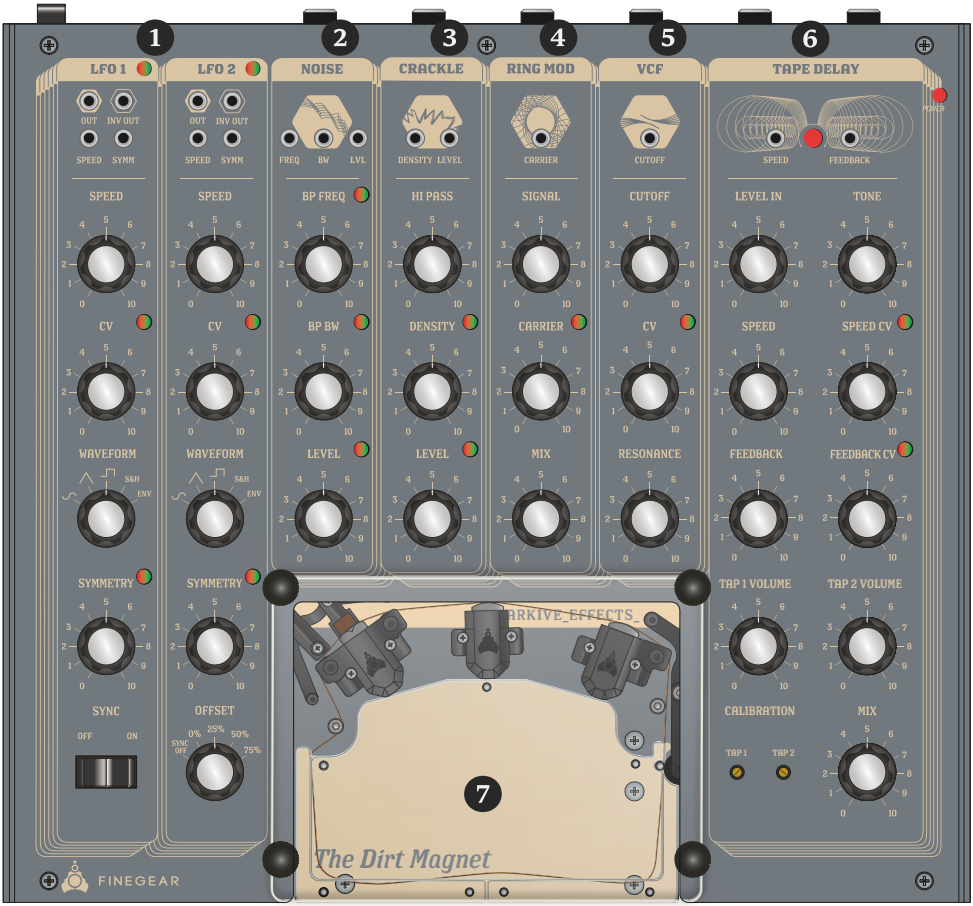

Fig. 1 - The Dirt Magnet, top view

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8. USB port
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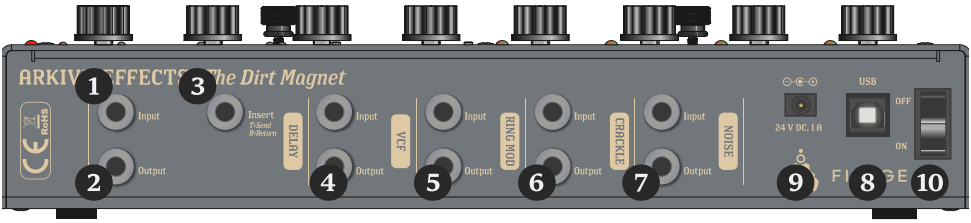


Fig. 2 - The Dirt Magnet, back view

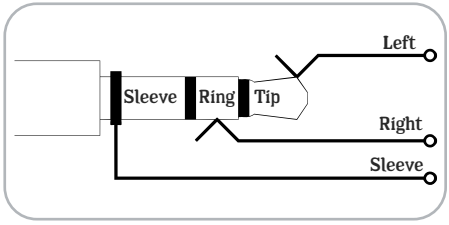


Fig. 3 - Insert, TRS jack plug connection

Only use the included 24V center-positive supply. Incorrect polarity or voltage may damage the unit.

Unless indicated otherwise, all inputs, outputs, and inserts require 6.35 mm stereo jacks. If mono jacks are used, only one channel of the effect will be used.

All CV inputs and outputs use standard 3.5 mm jacks.

LFOs 1 & 2

The two LFOs included in The Dirt Magnet serve as a starting point for modulating any of the effects, including the LFOs themselves.

These LFOs are digital, meaning they can sync to MIDI via USB. They also have a wider and a more stable frequency range compared to analog LFOs.

The Symmetry control was added to enhance modulation possibilities between the two almost identical LFOs, with the exception of an Offset switch on LFO2.

Controls

1 Speed

Sets the speed of the LFO. In MIDI sync mode (5,6), it sets the tempo division, ranging from Tempo×32 to Tempo÷32.

2 Speed CV & bi-color LED

Sets the amount of modulation received from the Speed CV input. The bi-color LED provides visual feedback of the LFO speed CV input value.

3 Waveform

Rotary switch that toggles between sine, triangle, square, S&H and envelope waveform shapes.

4 Symmetry & bi-color LED

Sets the symmetry of the waveform. When the Waveform switch is set to ENV, this knob controls the envelope's decay.

Fig. 4 - LFO 1 and 2 control interface with CV inputs.

5 Sync for LFO1

This switch turns on MIDI synchronization for LFO1.

6 Sync offset for LFO2

This rotary switch enables MIDI sync for LFO2 and offsets its phase relative to the timing grid. LFO2's phase can be offset as compared to the MIDI clock by 25%, 50% or 75%, and remain synced to the received BPM.

7 Output indicator LED

Bi-color LED providing visual feedback of the LFO output value.

CVs

8 Speed CV input:

Input for modulating the speed of the LFO using CV.

9 Symmetry CV input:

Input for modulating the symmetry of the selected waveform, using CV.

10 Output CV

Outputs the LFO CV.

11 Inverted CV output

Outputs the inverted LFO CV.

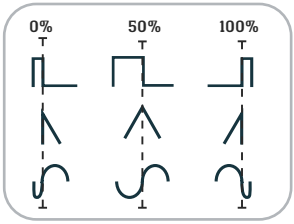


Fig. 5 - LFO waveform shapes at different Symmetry amounts.

Noise

This noise source, alongside the LFOs and the Crackles generator, is a starting block. Use it to create sound effects, high-hats or anything else that requires a dash of grain...

The noise passes through a Band-Pass (BP) filter with CV modulation. This allows precise and dynamic control of the filter's center frequency and bandwidth.

If present, the audio from the inputs is mixed with the generated noise for easy layering.

Controls

❶ BP Frequency & bi-color LED

Sets the Band-Pass filter's center frequency. A bi-color LED provides visual feedback of the BP filter's frequency CV input value.

❷ BP Bandwidth & bi-color LED

Sets the Band-Pass filter's bandwidth (BW) around the center frequency. A bi-color LED provides visual feedback of the Band-Pass filter's frequency CV input value.

❸ Output Level & bi-color LED

Controls the output VCA's level. A bi-color LED provides visual feedback of the Level CV input.

Tip: To create a high-hat sound, set the Envelope waveform on one of the LFOs and patch it on the Noise Level CV input.

Fig. 6 - Noise generator control interface with CV inputs.

CVs

❹ Level CV input

Input for modulating the output VCA's level.

❺ Frequency CV input

Input for modulating the Band-Pass filter's center frequency.

❻ Bandwidth (BW) CV input

Input for modulating the Band-Pass filter's bandwidth around the center frequency.

Audio I/O

❼ Stereo input:

6.35 mm jack input (L - tip / R - ring).

❽ Stereo output:

6.35 mm jack output (L - tip / R - ring): the input audio is mixed with the generated noise.

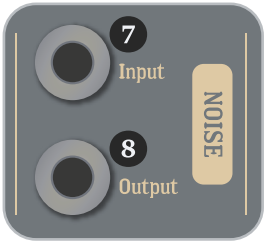


Fig. 7 - Noise audio connections in the back of the unit.

Crackle

The crackle generator, like the noise generator, is included to add dirt and texture to sounds and atmospheres, before or after passing through the other effects.

This simple yet powerful module features a Hi-Pass filter, with a VCA at the output, increasing its versatility.

The density of the crackles is controlled by a knob and a CV input.

For easy layering, the audio from the inputs - if present - is mixed with the crackles.

Controls

1 Hi-Pass filter frequency

Controls the high-pass filter's cutoff frequency.

2 Density & bi-color LED

Sets the crackle density from very rare to continuous. A bi-color LED provides visual feedback of the density CV input.

3 Output level & bi-color LED

Controls the output VCA's level. A bi-color LED provides visual feedback of the VCA CV input.

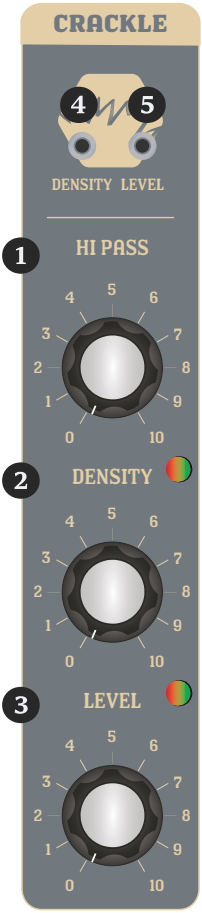


Fig. 8 - Crackles generator control interface with CV input.

CVs

4 Density CV input

Input for modulating the crackle density.

5 Output Level CV

Input for modulating the output VCA's level.

Audio I/O

6 Stereo input

6.35 mm jack input (L - tip/R - ring).

7 Stereo output

6.35 mm jack output (L - tip/R - ring): the input audio is mixed with the generated crackles.

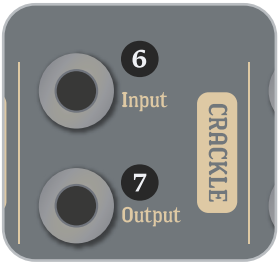


Fig. 9 - Crackle audio connections in the back of the unit.

Ring Modulator

This is a simple analog ring modulator with the classic audio signal input that gets modulated by the carrier CV.

Simple as it is, this effect can become very creative depending on the modulation it is fed. Any CV or audio signal patched to the Carrier input will work, from slow LFOs and envelopes to audio-rate oscillators or even noise.

Controls

❶ Signal Level

Sets the input audio's level.

❷ Carrier level & bi-color LED

Sets the CV carrier's level. A bi-color LED provides visual feedback of the Carrier's level.

❸ Dry/Wet Mix

Sets the balance between the input signal (dry/clean) and the output signal (wet/processed).

CVs

❹ Carrier CV input

Input for the carrier signal used to modulate the audio signal.

Tip: A slow LFO connected into the Ring Modulator's Carrier Cv input will make it behave like a VCA. Set a value below 1 on the LFO's Speed knob.

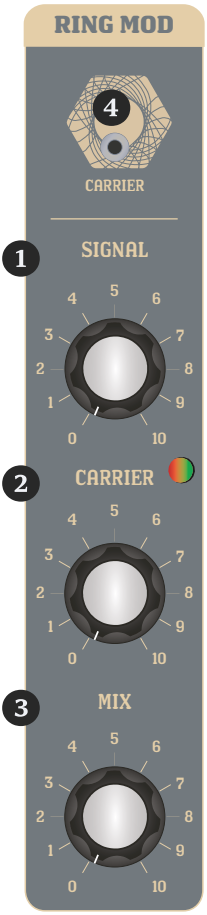


Fig. 10 - Ring Modulator control interface with CV input.

Audio I/O

❺ Stereo input

6.35 mm jack input (L - tip/R - ring).

❻ Stereo output

6.35 mm jack output (L - tip/R - ring).

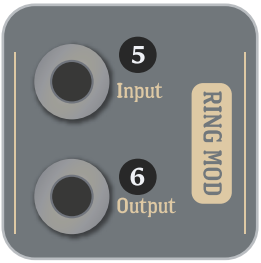


Fig. 11 - Ring modulator audio connections in the back of the unit.

VCF

This filter is a variation on the MS20 VCF with its raw sound.

The cutoff can be modulated and, when set to self-oscillate, it can deliver a large range of saturation on top of the oscillation. Simply turn the Resonance knob past the 5 mark and see where that gets you...

Controls

❶ **Cutoff**

Sets the filter's cutoff frequency.

❷ **Cutoff CV & bi-color LED**

Sets the amount of modulation from the CV input that will modulate the cutoff. A bi-color LED provides visual feedback.

❸ **Resonance**

Sets the filter's resonance.

CVs

❹ **Cutoff CV input**

Input for modulating the filter's cutoff.

Audio I/O

❺ **Stereo input**

6.35 mm jack input (L - tip/R - ring).

❻ **Stereo output**

6.35 mm jack output (L - tip/R - ring).

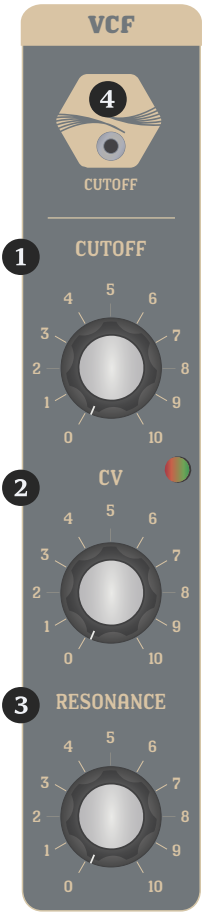


Fig. 12 - VC Filter control interface with CV input.

Steps to create a techno starter rhythm:

1. First, sync the LFOs to a USB MIDI master.
2. Then, patch LFO1 with an Envelope waveform to the VCF CV. For a subby kick, turn the VCF Resonance knob until it self-oscillates and saturates to your liking.
3. Finally, set LFO2 waveform to Envelope, then the Offset to 50%. Patch the output of LFO2 to the Noise Level CV input for an offbeat hi-hat loop.
4. You now have a basic techno 'Boom-tss' loop to start playing with...

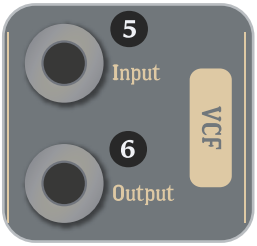


Fig. 13 - VC filter audio connections in the back of the unit.

Tape Delay

This tape delay module uses a replaceable cassette-tape loop. A knob and a CV input control the speed of the motor pulling the tape. This is what sets the delay time.

Also included: an input preamp with tone control, as well as a Feedback loop with a VCA, an insert point, and a pair of read-heads.

Controls

1 Level in

Sets the Gain of the input preamp.

2 Tone

Sets the Tone of the preamp, by controlling the tilt equalizer placed after it. ► *Signal Path, p. 35*

3 Speed

Controls the speed of the motor pulling the tape. The higher the speed, the shorter the delay time.

4 Speed CV & bi-color LED

The motor pulling the tape can also be driven by CV input.

5 Feedback

Sets the amount of signal from the read-heads to be sent back to the record head. ► *Tape Delay Mechanism, p. 12*

6 Feedback CV & bi-color LED

Sets the amount of CV modulation applied to the feedback VCA.

7 Tap 1 Volume

Sets the volume for the sound read on Tap 1 read-head. ► *Fig. 16*

Fig. 14 - Tape Delay control interface with CV inputs.

⚠ At high Feedback settings, the signal can build up fast. Reduce Feedback, Level In or Mix knobs to stop.

8 Tap 2 Volume

Sets the volume for the sound read on Tap 2 read-head. ► *Fig. 16*

9 Calibration

These trimmers are used to adjust the read-heads. ► *Read-heads calibration, p. 26*

10 Dry/Wet Mix

Sets the balance between the input signal (dry/clean) and the output signal (wet/processed).

CVs

11 Speed CV input

CV-controlled speed for the motor pulling the tape.

12 Feedback CV input

Input for modulating feedback.

Audio I/O

13 Mono input

6.35 mm jack input (L - tip/R - ring).

14 Mono output

6.35 mm jack output (L - tip/R - ring).

15 Feedback insert

6.35 mm jack input (L - tip/R - ring).

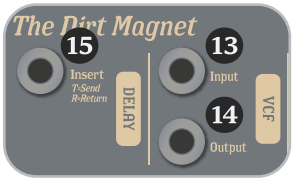


Fig. 15 - Delay audio connections in the back of the unit.

Tape Delay Mechanism

The mechanism moves the tape loop in front of the combined erase-record head and the two play heads to achieve the tape delay effect. The sound is recorded on the tape, then read and played back after a specific time, creating a delayed copy of the initial sound.

The delayed sound can also be fed back to be re-recorded on tape through a feedback circuit. ►*Signal Path, p. 35*

For detailed instructions about the maintenance and calibration of this tape delay mechanism, please read ►*Maintenance, p. 13* onwards.

❶ Erase-record head

This head erases the tape, then records new sound to be read and played back by the read-heads after a certain time.

❷ Read-heads, Tap 1 & 2

For reading the delayed signal after two different time periods, making this a two-tap delay.

❸ Cassette-tape loop

Approx. 1 m (3 ft) of Type II audio cassette tape.

❹ Tape cartridge

This replaceable acrylic cartridge houses the spool of tape for extended tape life.

❺ Variable speed motor

Stable BDLC motor for tape transport.

❻ Wheel-arm

This spring-loaded part presses a rubber wheel against the motor axle to control the tape movement. It has a handle at the top to facilitate tape replacement.

❼ Felt-arm

Felt protection that fixes the tape tight on the erase-record head for proper sound recording. It has a handle at the bottom and a screw for adjustment. ►*p. 25*

❽ Protection cover

Clear board, 4 thumbscrews.

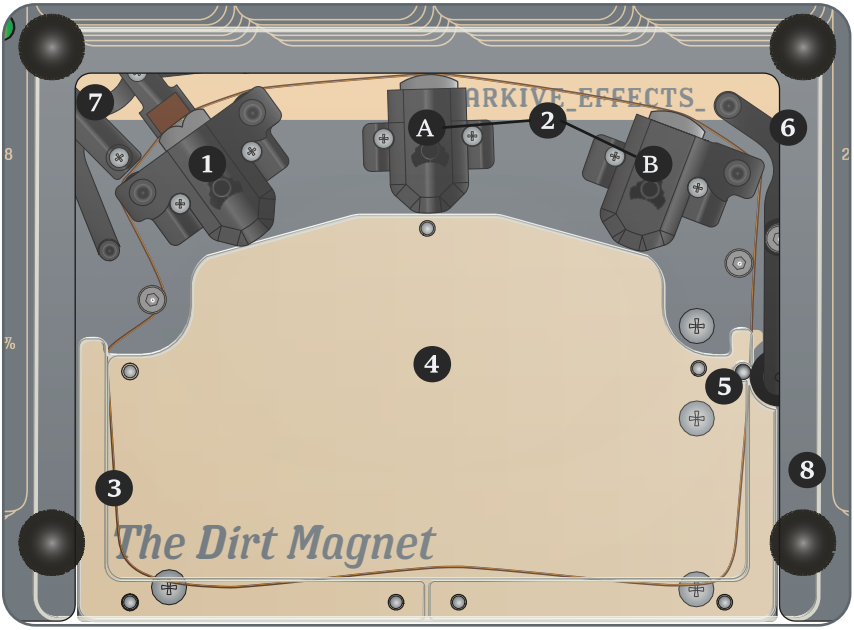


Fig. 16 - Two-tap delay mechanism, top view

General maintenance

Why is it needed?

The Dirt Magnet is an electro-mechanical audio unit, meaning that, in order for it to fulfill its sonic duties, the mechanism requires extra maintenance compared to factory calibrated electronic audio units.

Making and changing tapes, as well as cleaning the heads, and calibrating the felt-arm should be performed as and when described in this chapter, using the items from the provided maintenance kit.

Cassette tape

The Dirt Magnet uses cassette erase-record and play heads, as well as the corresponding tape due to their wide availability and low price compared to reel-to-reel ¼" tapes and heads.

Compared to ¼" tape, cassette tape quality degrades with use faster. The tape is narrower, thinner and generally more prone to wrinkling and edge damage. As the oxide surface degrades over normal use, the delayed signal will sound noisy, wobbly, weak or interrupted.

When is it needed?

- When the tape degrades, it must be replaced.
- After replacing the tape loop, you must recalibrate the felt-arm to ensure good sound levels and clarity.
- The read-head calibration trimmers can be adjusted for tonal preferences.

Guidelines

- Tape loop lifespan varies from several hours to several weeks of active use, depending on speed, tape condition, and splice quality.
- To preserve tape life, turn the unit off when not using it.
- The tape is covered with a oxide layer than can build up on the heads. Clean them before attempting any other maintenance procedure.
- Clean the heads regularly. Use a cotton tip dipped in Isopropyl alcohol (IPA).

A list of solutions to common issues can be found at the end of this chapter. ►*Troubleshooting, p. 30*

The procedures described in this section are covered under normal use and do not void your warranty.

For issues involving the MOTOR, ELECTRONICS, or other internal components, please get in touch at contact@finegear.net.

⚠ Do not attempt any repairs beyond those described in this manual!

⚠ During the warranty period, any repair and/or maintenance other than those described in this User's Manual, performed by you or an unauthorized third-party, will void the warranty of your product.

The maintenance kit

Each unit of The Dirt Magnet comes with a maintenance kit containing everything* you need to maintain the tape delay. The kit includes:

1. **4 extra tape loops**, ready to install;
2. **Type I audio cassette** for additional loops;
3. **Splicing block** for cutting and joining tape at 45°;
4. **Splicing tape** roll for joining the tape loop ends;
5. **Razor blade** for cutting tape and splicing adhesive;
6. **Tweezers** for handling tape and splicing adhesive;
7. **Brush** for cleaning tape shedding from the mechanism;
8. **Screwdriver** for adjusting the felt-arm screw;

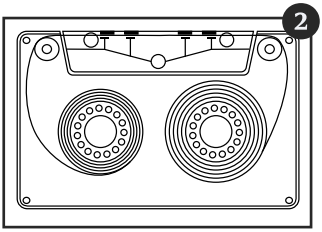
*Cotton tips and alcohol not included.

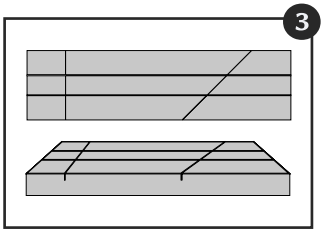
When the replacement loops run out, you can easily and quickly make more. Use the tools in this kit and follow the instructions in the next pages.

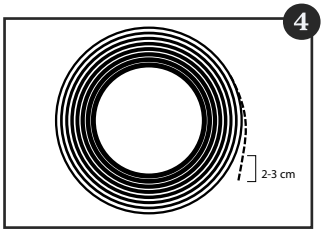
Other lengths and types of tape can be used. Please note that thinner tape will degrade more easily. A shorter loop will degrade faster, while a much longer one will last you longer, but will risk getting stuck. Experiment considering the trade-offs.

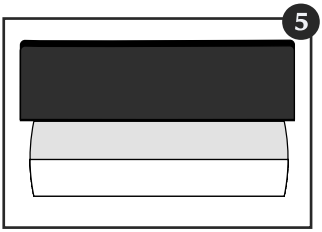
Similarly, other types and sizes of splicing or adhesive tapes can be used. The thinner the splicing tape, the better, regardless of width.

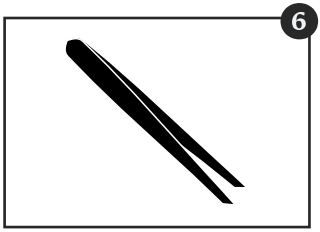
Ready-to-use loops, as well as maintenance kits, in case you misplace any of the tools, are also available from our webshop at finegear.net/shop.

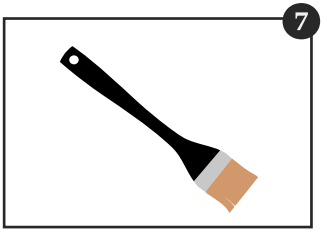


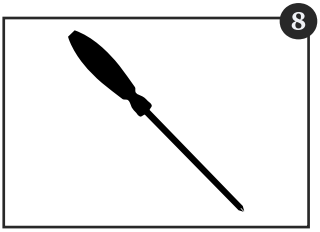












Watch the tutorial
https://youtu.be/LNXvVGxaT3E

Making a new tape loop

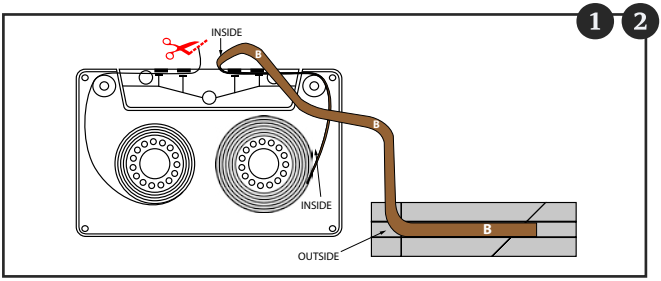
Tools:

Splicing block, razor, splicing tape, ~ 80 cm of tape.

Placement:

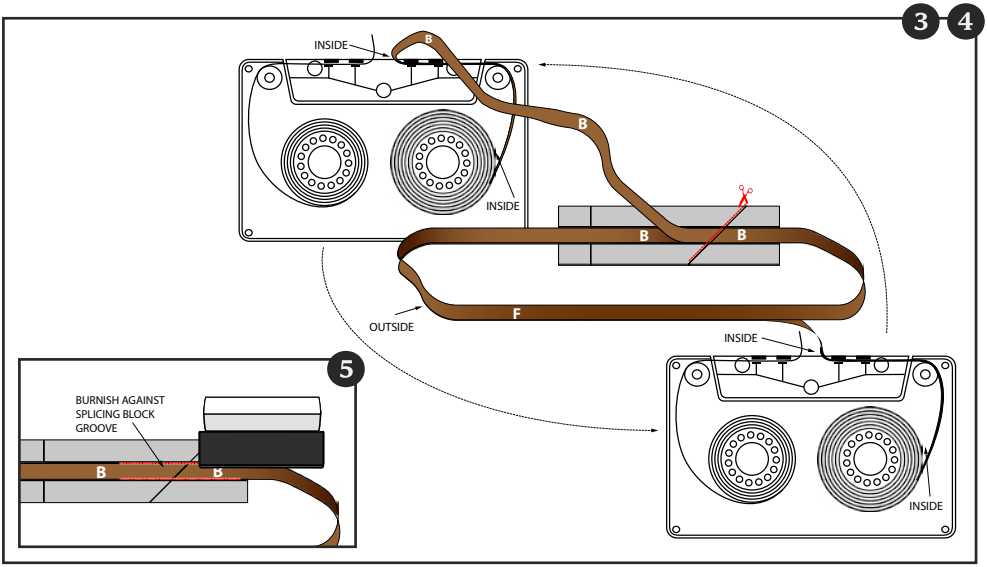
1. Pull out some tape from the audio cassette and cut it.
2. Take one end and place the cassette tape on the splicing block, with the *back side on top* (B). Make sure the tape lays flat on the bottom of the block.
3. Carefully take out ~80 cm of tape from the cassette.
4. Place the other end of the tape flat on top of the first end, on the other side of the splicing block.
5. Use the back of the razor to flatten the tape against the splicing block. Check *again* that the same side of the tape meets on both sides of the cut marker: the side that faces the cassette shell interior, i.e. the back side.

Don't cut the tape yet.
Continue to the next page.



i The back side (B) of the tape faces inside the cassette shell: this is where we will apply the splicing tape.

⚠ Do not twist, wrinkle or otherwise get the tape tangled. If the tape gets damaged, pull it out and start again.



Splicing:

6 Cut 2-3 cm of (splicing) adhesive tape.

7 Keep the tape in place with a finger on each side of the cut mark. Cut with the razor through both overlapped layers of tape along the 45° cut groove.

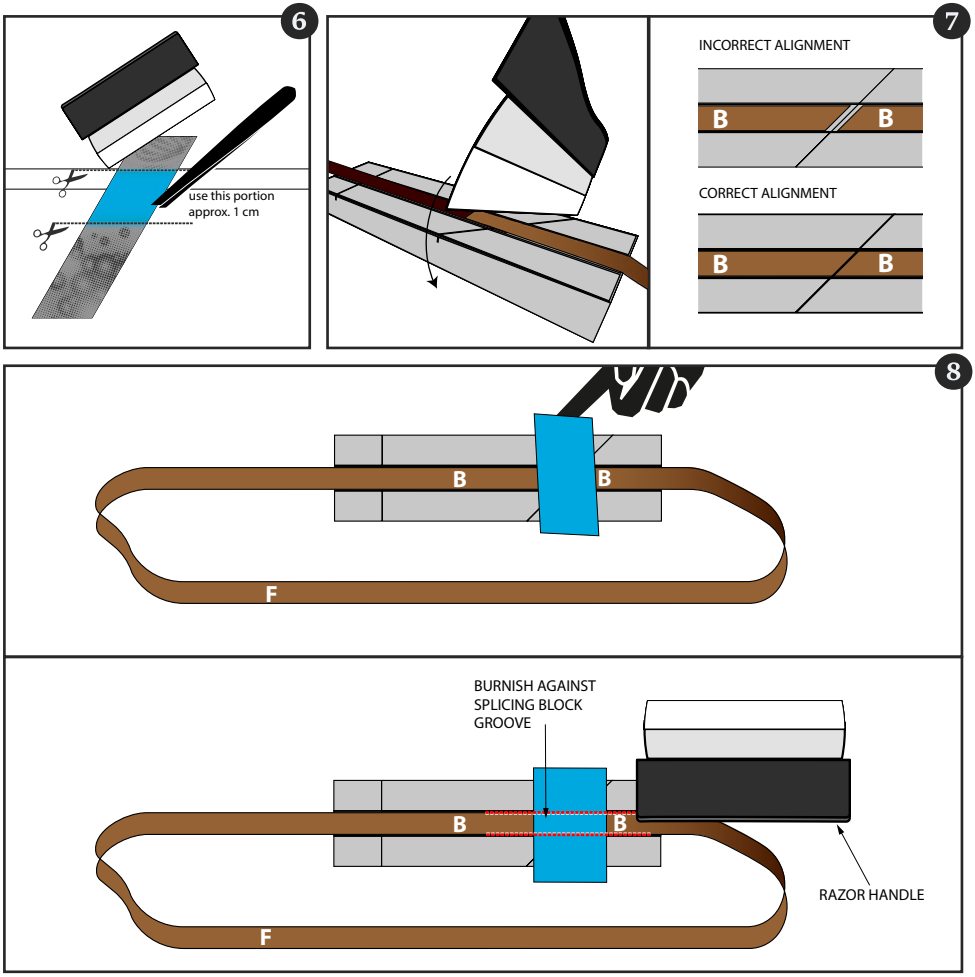
8 Keep the two ends of the loop perfectly aligned on the splicing block. Tape them together with the splicing tape bit from step 6.

Use the back of the razor to flatten the splice and remove air bubbles.

Continue on the next page to finish your loop.

i Avoid touching the adhesive side of the splicing tape. Use the tweezers.

i The two ends must meet without gaps or overlaps for a silent, long-lasting splice.



Trimming:

❾ Detach the spliced loop from the block and fix it on a clean, flat surface. Use the handle of the razor to flatten the splice again.

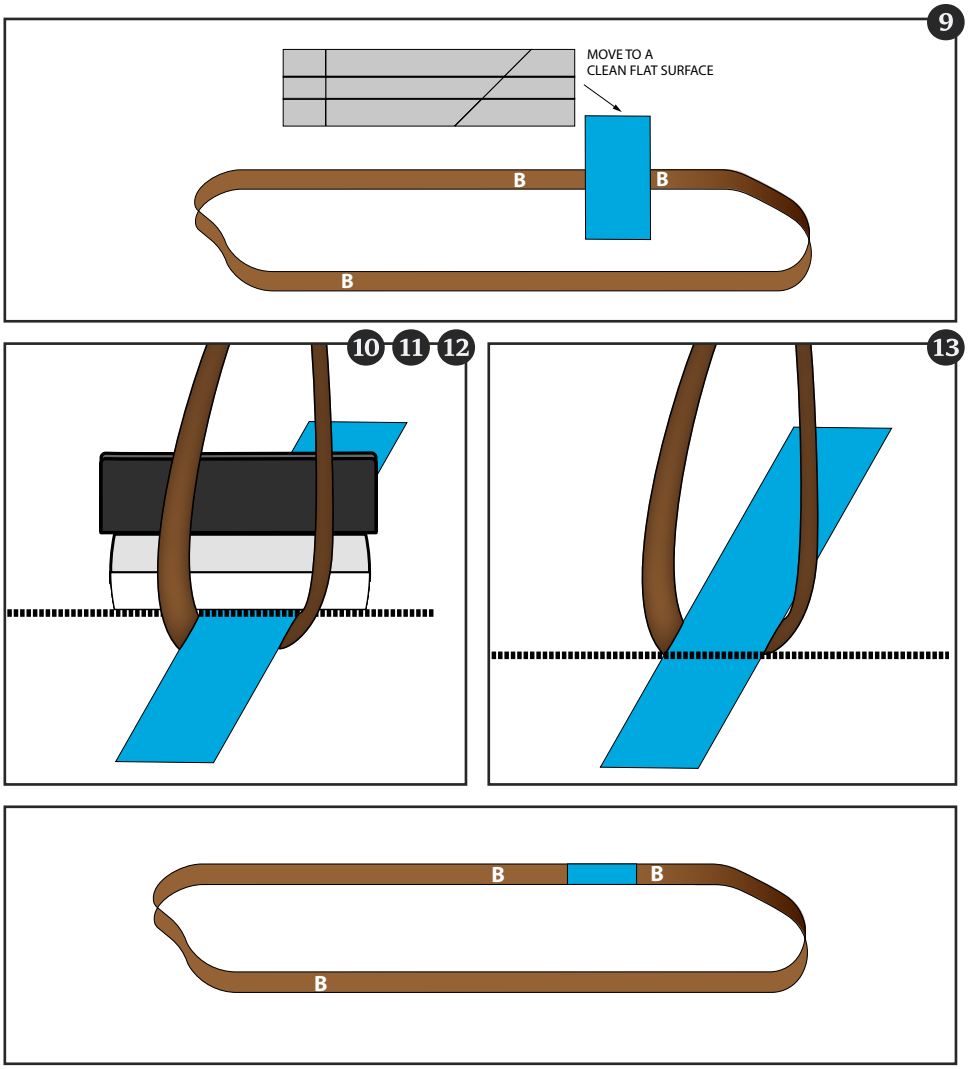
❿ Take both strands of tape on either side of the splicing tape and hold them up with one hand.

⓫ Prop up the razor against the tape strands. You will cut along the tape edge.

⓬ Press down on the razor and trim the excess splicing tape.

⓭ Repeat on the opposite side.

Your tape loop is ready.



Watch the tutorial
https://youtu.be/Fe1gqG8NyL0

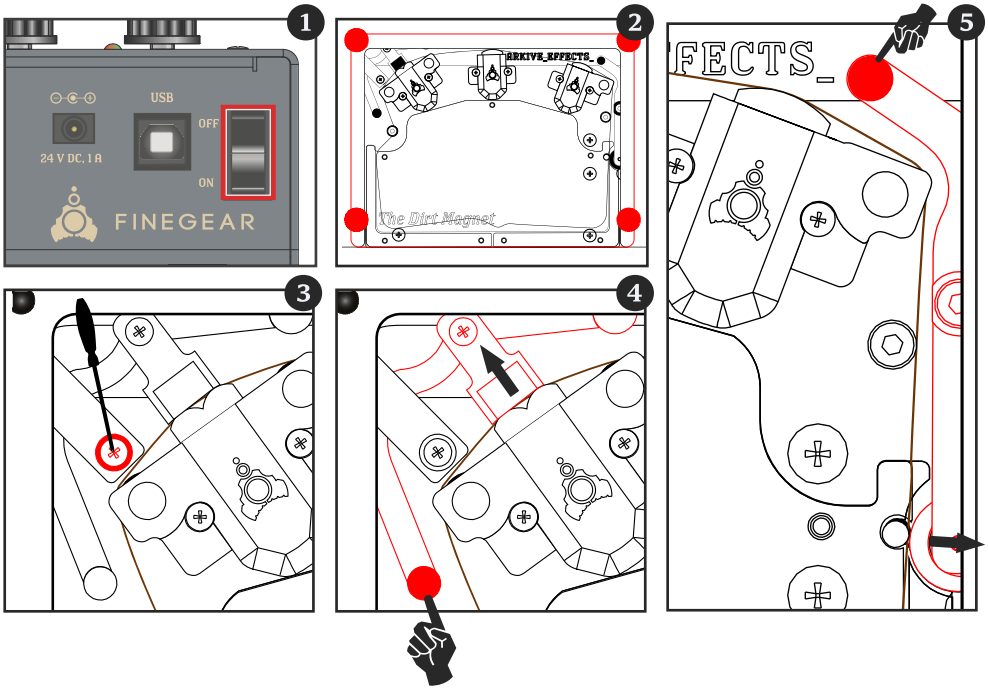
Removing the tape loop

Preparation:

1. Turn the device off.
2. Remove the four thumb-screws and the cover.

Releasing the loop:

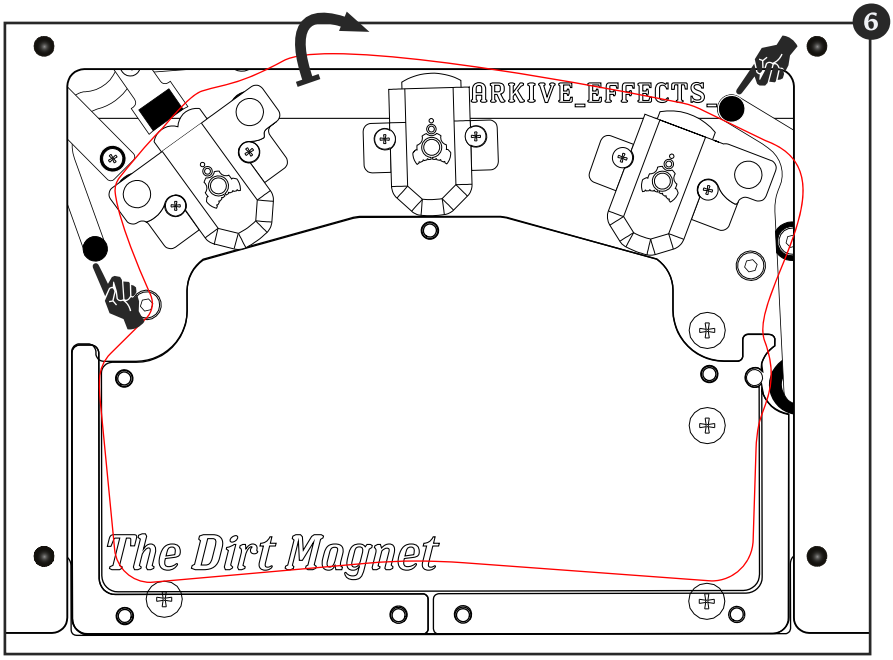
3. Slightly loosen the felt-arm screw, using the screwdriver from the kit.
4. Push the handle away from you to detach the felt-arm from the erase-record head.
5. Press the wheel-arm handle to release the wheel.



Removing the loop

6 Lift up with your fingers or the supplied tweezers, and remove the old tape loop.

Done!



Clean the mechanism after removing the tape!

Check the heads for brown spots of oxide resulting from friction with the tape. Clean with a cotton tip dipped in Isopropyl alcohol (IPA).

Check for tape shedding inside the mechanism. Use the brush from the kit to gently swipe it off.

Watch the tutorial
https://youtu.be/NIfccUwanmo

Installing a new tape loop

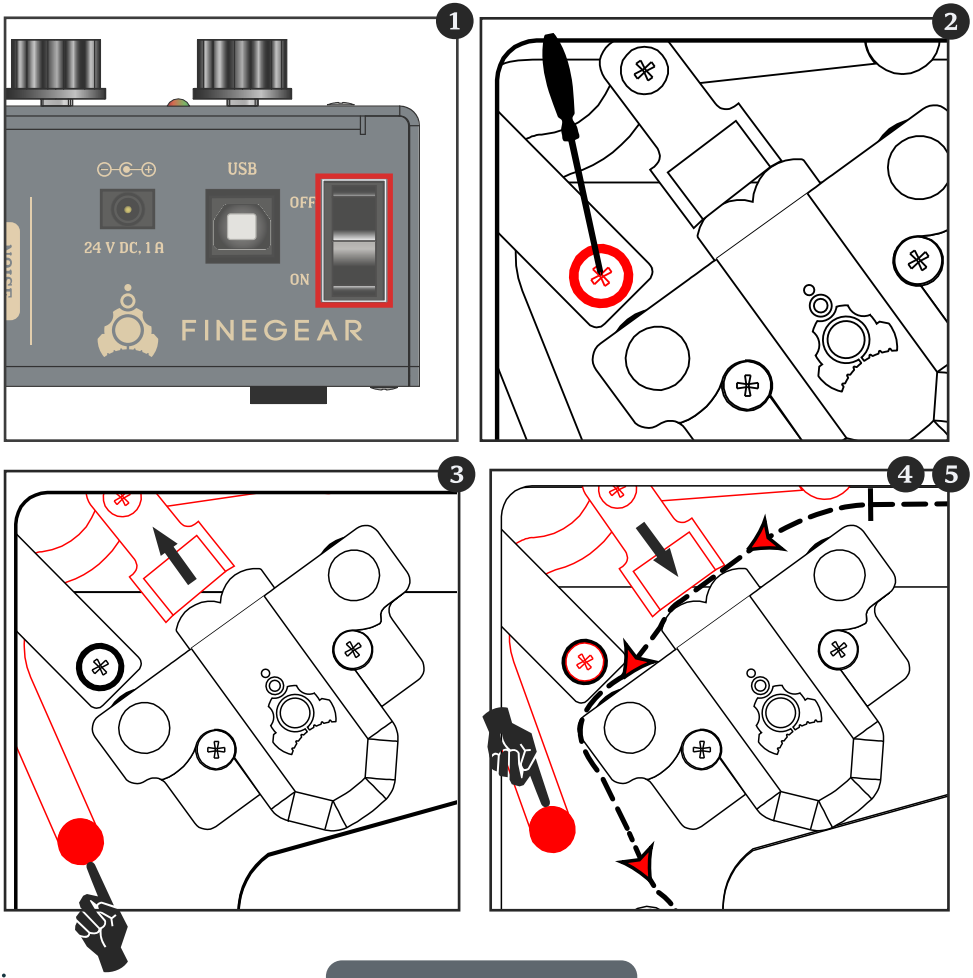
⚠ **Before** you start, locate the splicing tape, and make sure it is facing *away* from the heads.

Preparation:

1. Turn the unit off.
2. Loosen the felt-arm screw, if it isn't already done from the previous section.
3. Move the felt-arm away from the erase-record head, by pushing the handle away from you.

Felt-arm placement:

4. Slide the new tape loop between the erase-record head and the felt-arm.
5. Pull the felt-arm handle towards the head until the tape is held firmly in place — it should not move. You will release the pressure gradually in step 11.



Threading the tape (Left):

6 Slide the tape through the vertical slit on the left side of the cartridge.

7 Continue on the lower left horizontal slit, until the tape reaches the mid-lower slit, where it can hang.

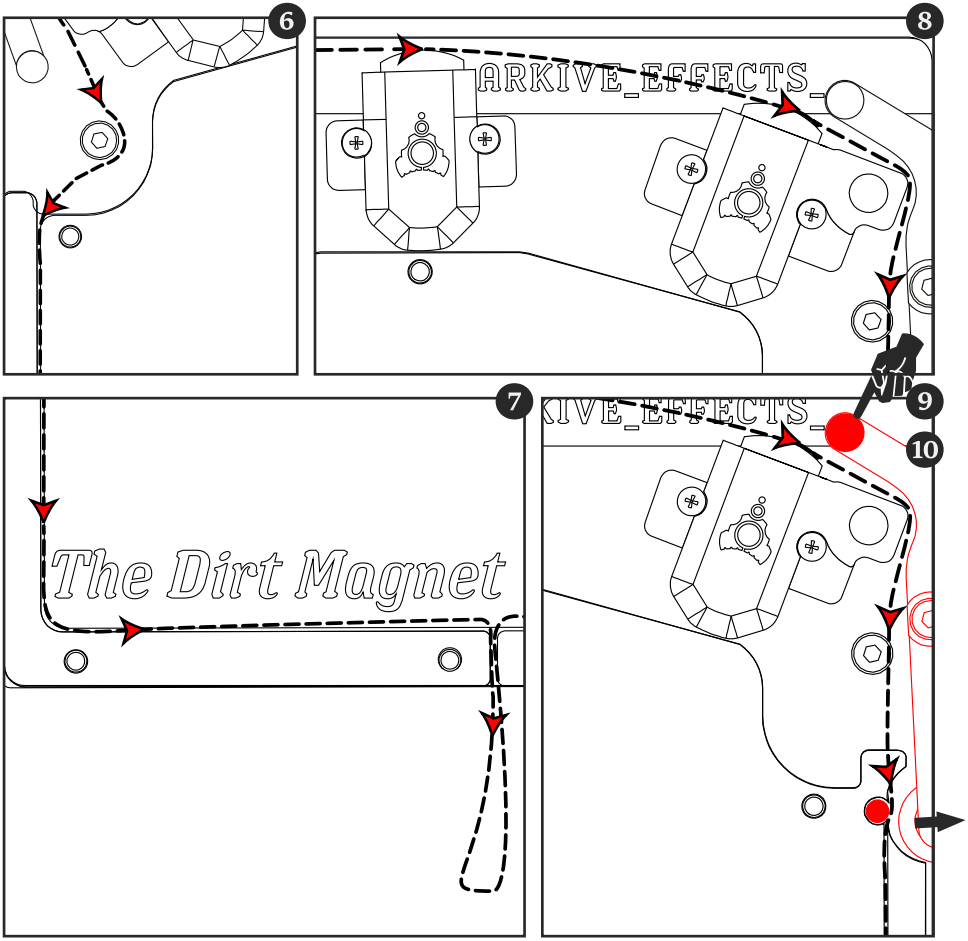
Threading the tape (Right):

8 Next, thread the tape around the two read-heads.

9 Push the wheel-arm away, pressing the handle at the top.

10 Slide the tape between the motor axle and the wheel.

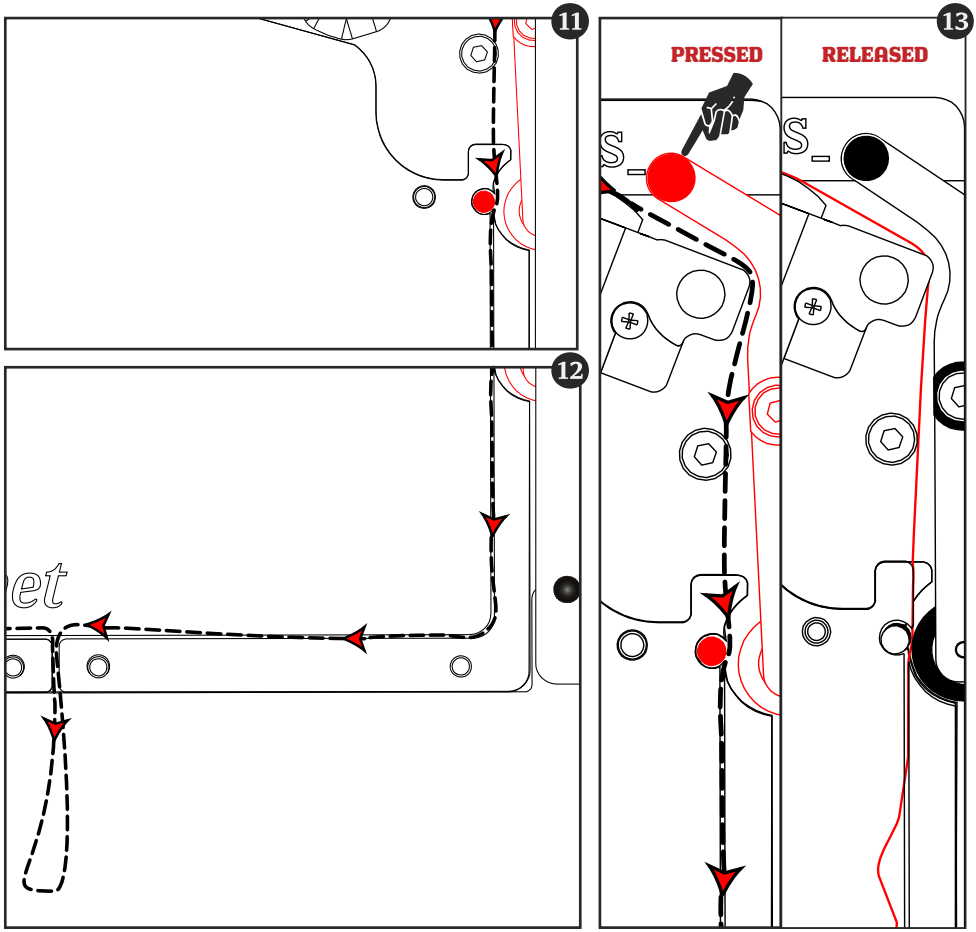
Tape installation continues on the next page.



⓫ Repeat step 6 on the right side: slide the tape through the vertical slit on the right side of the cartridge.

⓬ Continue on the lower right horizontal slit, until the tape reaches the mid lower slit, where it can hang.

⓭ Release the wheel-arm.



Loading in:

14 Straighten the hanging tape and hold it with a finger.

15 Set the delay Speed knob close to minimum. Turn the unit on.

16 Slowly release pressure from the felt-arm until the tape starts moving and is pulled into the cartridge.

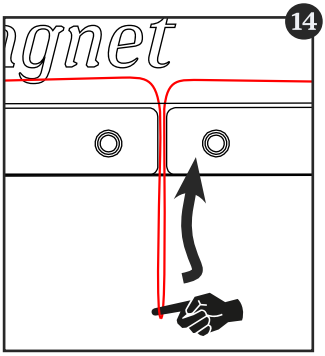
17 When the tape is almost entirely inside, and it can stand without twisting, turn the unit off. Release your finger.

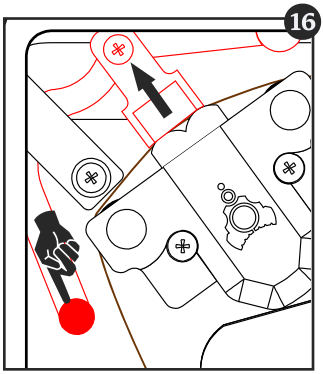
18 Turn the unit back on. Let the remaining tape load through the vertical slit.

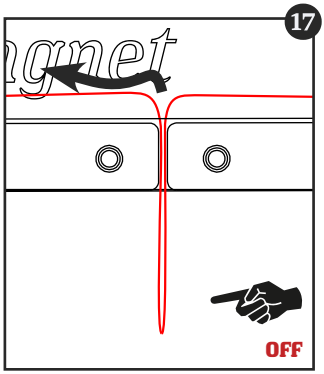
19 Continue releasing felt-arm pressure until the tape moves at a constant speed.

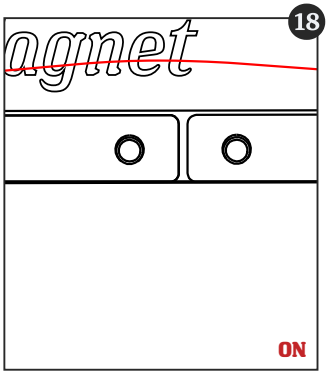
20 Meanwhile, slowly increase the Speed knob, monitoring the tape closely.

⚠ After installing a new tape loop, further calibration is needed to ensure good sound levels and a clear signal. ► *Calibration, p.25*









Troubleshooting:

1. If the tape twists or wrinkles, turn the unit off and pull the tape out.
2. Use a fresh loop if the tape is damaged.
3. If the tape moves intermittently, pull the felt-arm to release pressure.
4. If the tape wobbles or gets caught at the axle, the felt-arm is too loose. Push it slightly tighter.

Installing a new tape loop - full view

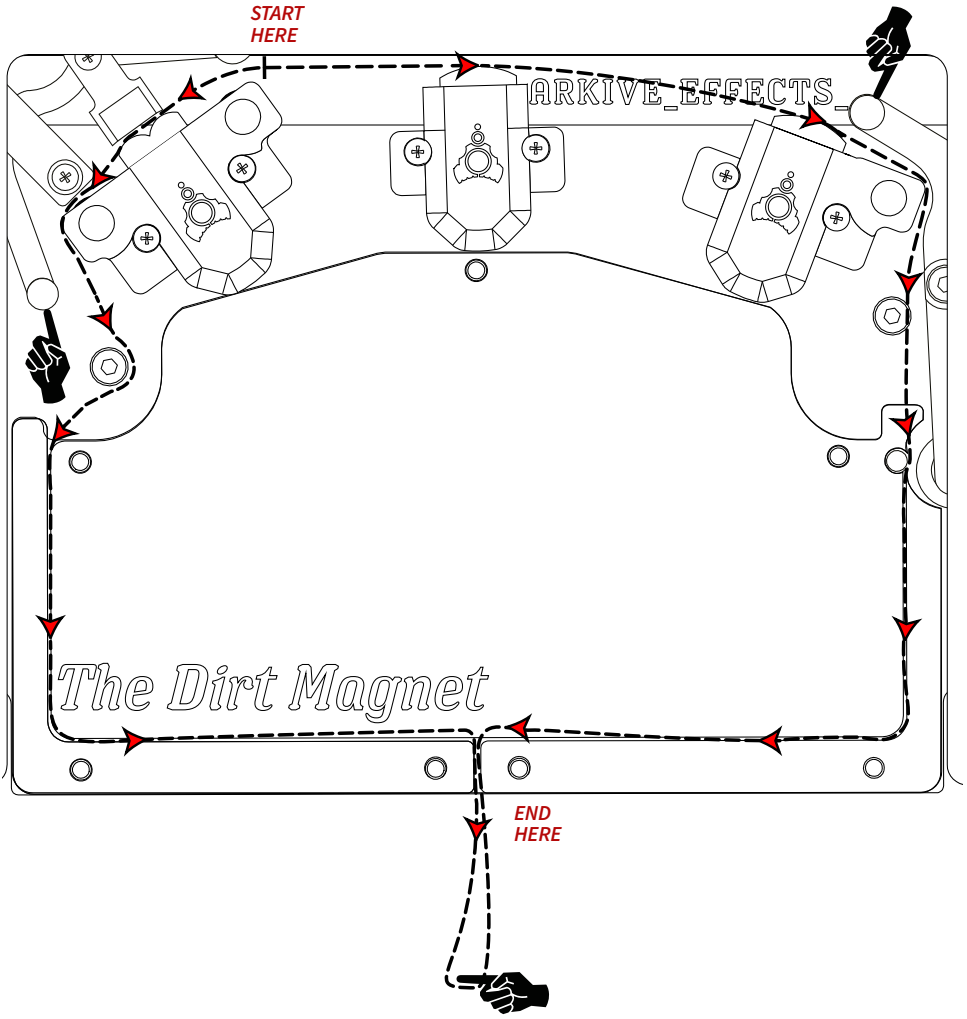


Fig. 18 - Place the new loop starting at the erase-record head.
Following the arrows, thread the tape first on the left, then on the right side of the mechanism.

Watch the tutorial
https://youtu.be/8bBmeBfMP08

Calibration

After replacing the tape loop, calibration is needed to ensure good sound levels and clarity in the recorded and reproduced signals. Follow these steps to calibrate your device.

Sound calibration

1. Set the controls on the unit as follows:

Control	Value
Level in	2
Tone	5
Feedback	0
Mix	10
CV amounts	0
Speed	any

2. Next, run a signal through the delay. (Ideally a sine wave from a synth, sampler or audio interface).

3. Monitor the output:
   - The signal is very loud, noisy, and/or warbled → the felt is too tight. Gently push the felt-arm away from the erase-record head.
   - The echoes are too soft or there is no sound → the felt is too loose. Push it tighter on the erase-record head.

4. If this doesn't help, adjust the angle of the felt part against the head. The felt must press evenly across the erase-record head.

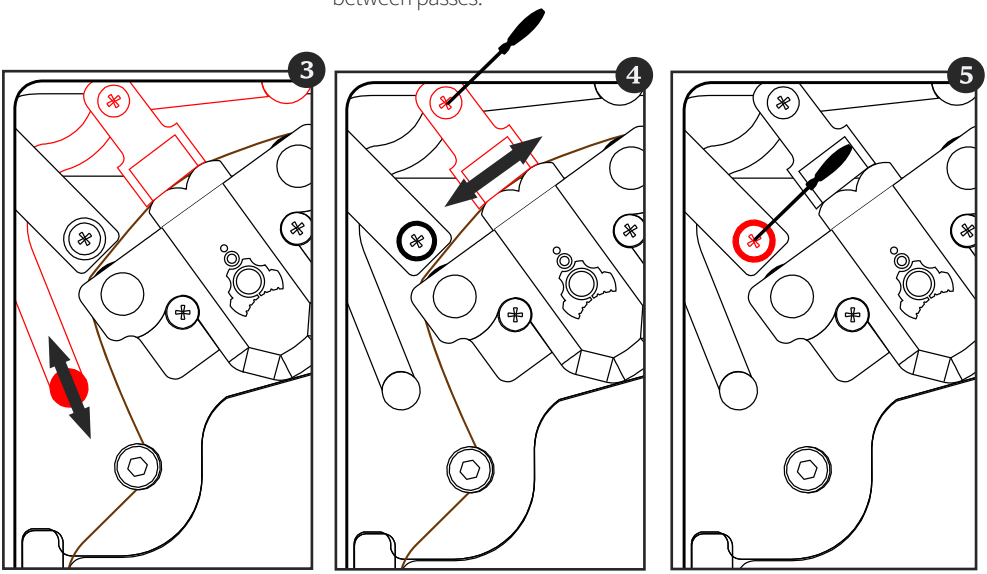
   Make sure the screw holding the felt part to the arm is tight enough that the moving tape can't shift it. The felt must *always* cover at least part of the record head; if it doesn't, the tape won't be erased between passes.

5. Tighten the felt-arm screw to fix your adjustments in place.

Success! You have completed the calibration of your unit.

Tip: Deliberately pulling the felt away from the record head prevents erasure, and lets sounds layer on top of each other with each pass. Combine with low feedback for controlled accumulation.

Troubleshooting: If there is no sound or very poor quality regardless of how you calibrate, there may be magnetic dust buildup on the heads. Inspect and clean them with a cotton tip dipped in Isopropyl alcohol (IPA).



Read-heads calibration

Please note that calibrating the read-heads is not needed if everything is working correctly.

It can be useful if, after having changed the tape loop, the delayed sound is clear, but either too loud or too soft. Instead of opening up the cover to recalibrate the felt-arm, the calibration trimmers can be used for faster results.

Calibration of the read-heads can also be performed if a different behavior is desired, such as saturated *vs* cleaner delays, or faster *vs* slower feedback buildup.

The two taps can be configured in similar or completely opposite ways, as each tap can have a different sound character.

Factory setting:

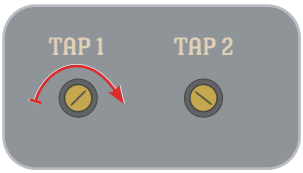
The standard setting calibrated during manufacturing is approx. 15 turns to the right, starting with the trimmers turned all the way to the left (until you hear/feel a click in the trimmer).

Other settings will produce different results, knowing that the maximum turns of the trimmer is 50.

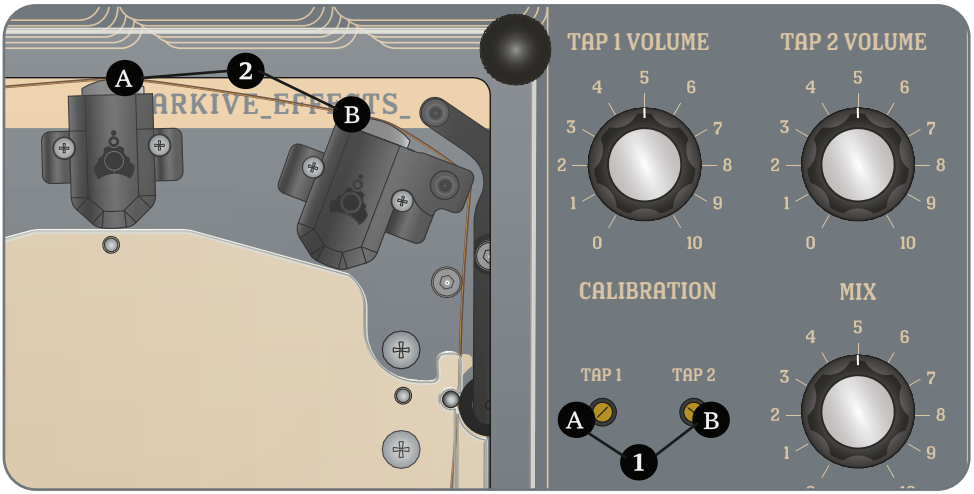
Lower values, i.e. fewer turns, will attenuate the sound read by the respective read-head, while higher values will amplify it.

Experiment at will.

Reset: *Turn the trimmer all the way to the left. Repeat for Tap 2, if needed.*



Factory setting: *Turn the trimmer 15 times to the right. Repeat for Tap 2, if needed.*



1 - A: Tap 1 calibration trimmer ; **1 - B:** Tap 2 calibration trimmer

2 - A: Tap 1 read-head; **2 - B:** Tap 2 read-head.

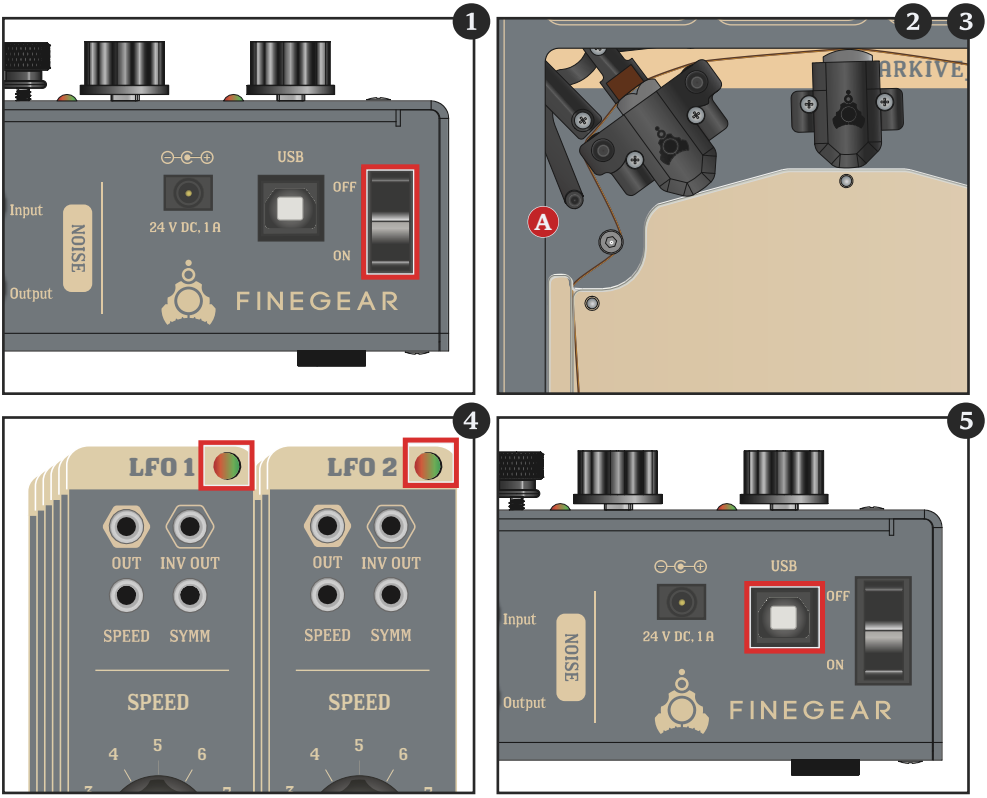
Firmware update

For future firmware updates of your device, please visit finegear.net/firmware, as well as an archive of firmware versions.

Download the .bin file for the version you wish to install, then follow the steps below to upload it to your device.

Enable update mode:

1. Turn the device off. Remove plexi cover and thumbscrews.
2. Locate the Firmware update switch (A) on the left of the tape mechanism, underneath the faceplate.
3. Facing the unit, rock the switch towards yourself.
4. Turn the device on. The firmware update mode is confirmed by checking that LFO LEDs do **not** blink in response to the controls of the LFOs, and that the the motor is **not** moving the tape.
5. Connect to a computer via USB.



Download and Install

6 Windows/Mac: click on the message-box notification.

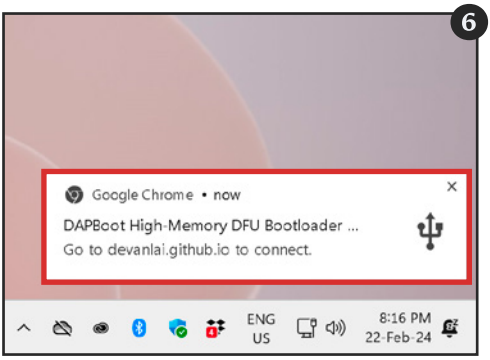
7 Connect to the USB DFU.

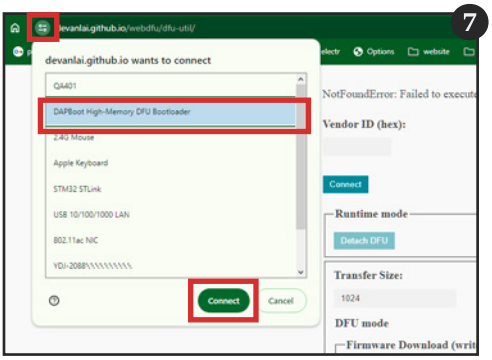
8 Click "Choose file".

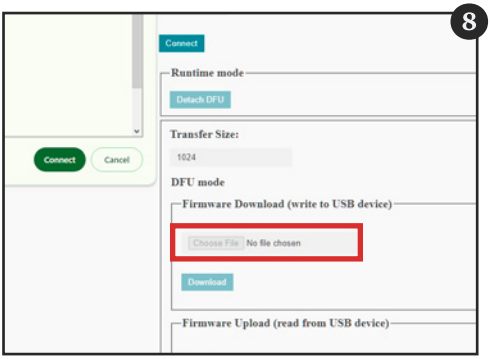
9 Select the .bin firmware update file. Click open.

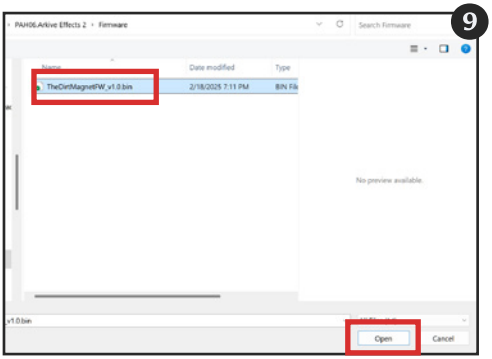
10 Click Download.

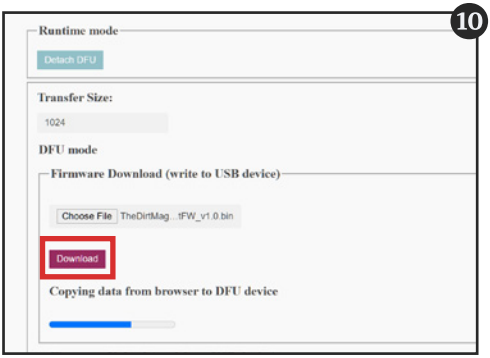
11 Ignore the error message.

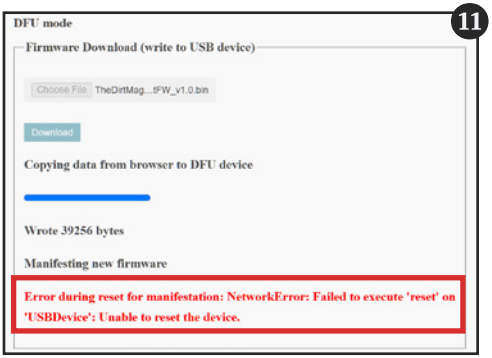












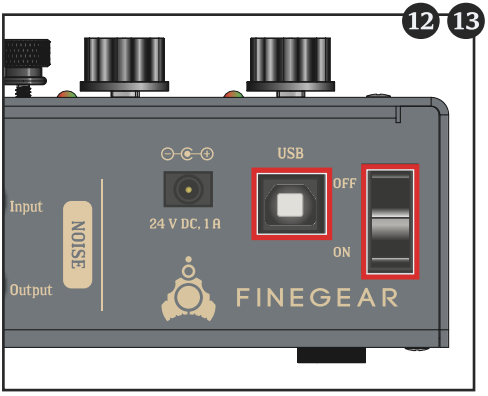
Exit update mode

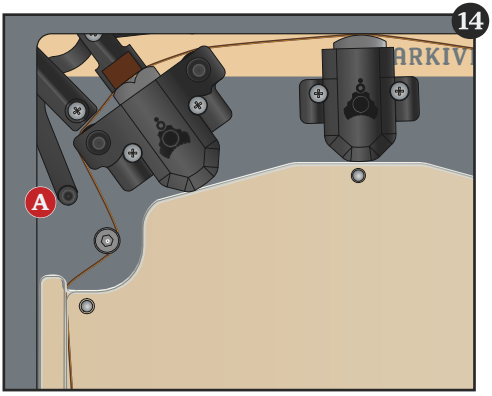
⓬ Turn the device off.

⓭ Disconnect the USB cable.

⓮ To exit the firmware update mode, return the Firmware update switch (Ⓐ) to its original position, away from you.

Update completed.





Troubleshooting

The Dirt Magnet's tape mechanism requires regular attention to keep it in proper condition. The system is simple, though, and you already have the tools to solve the few things that can go wrong. Most issues come down to felt-arm pressure, tape and splice condition, or head cleaning. The list below helps you identify which one applies to your situation.

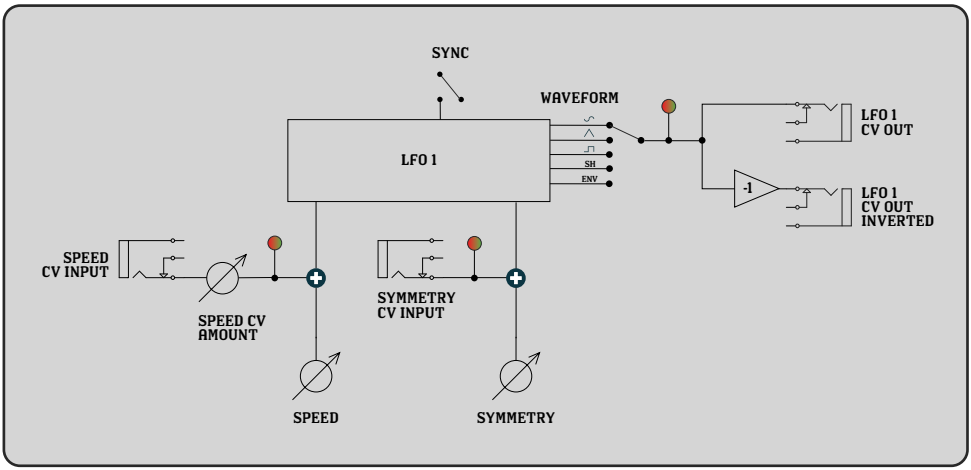
If your issue isn't listed here, contact us: contact@finegear.net.

When	This happens	Do this	
Making a tape loop	The two ends move when I try to tape them.	Hold both ends in place with your other hand as you apply the splicing tape.	► p. 16 step 8
	My loops keep breaking close to the splice spot.	Re-align the ends with no gaps or overlaps. Cut again if needed. Make sure the splice is completely flat — no raised corners, no air bubbles.	► p. 16 steps 7-8
Removing the tape	There is tape stuck around the motor axle.	Remove the cartridge. Press the wheel-arm to separate the wheel from the axle. Pull out the tape. Re-install the cartridge flat, load a new loop.	► p. 18 ► p. 20
Loading the tape	The tape got twisted, tangled, wrinkled, damaged.	Pull it out and start again. Work slowly, check often.	► p. 20
	The tape got stuck and eaten at the axle after turning on.	Replace the tape. Tighten the felt-arm. Set Speed close to minimum, increase gradually.	► p. 20
Calibration	Sound doesn't get erased from the tape.	Adjust the felt so it presses on the erase-record head evenly.	► p. 25 step 4
	Weak or no sound, regardless of settings.	Try these in order, stopping when the issue is resolved: Check tape orientation. → Clean the heads. → Replace the tape. → Adjust calibration trimmer(s). → Contact us.	► p. 20 ► p. 25 ► p. 26
Playing	The tape isn't moving after turning the unit on.	Try these in order, stopping when the issue is resolved: Check the motor axle is spinning. → Check for a tape break at the axle. → Tighten the felt-arm. → Replace the tape.	► p. 20
	The tape is stuck at the axle.	Tighten the felt-arm. Replace the tape.	► p. 20
	The tape is stuck at cartridge exit.	Try these in order, stopping when the issue is resolved: Nudge the tape free with the screwdriver or a pencil. → Restart the unit. → Check the splice for raised or folded corners. → Replace the loop if it persists.	► p. 16 ► p. 20

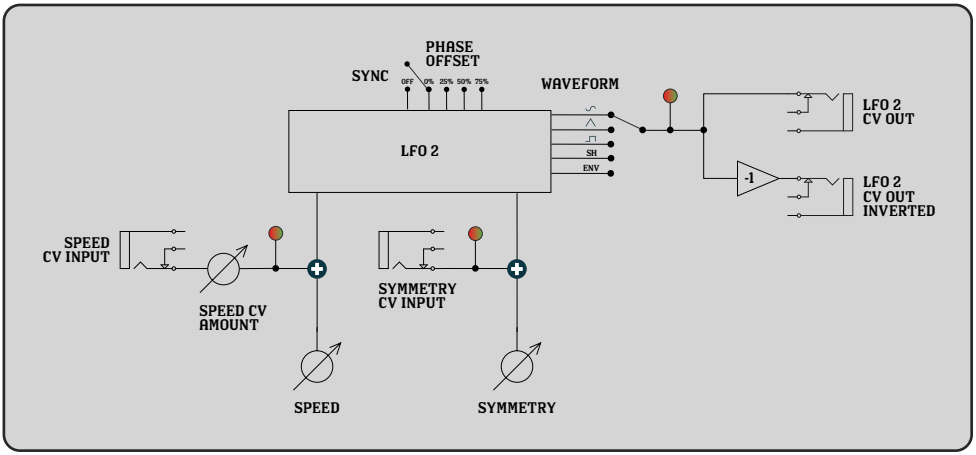
When	This happens	Do this	📖
	The tape looks grazed. Weak or discontinuous sound.	Replace the tape loop.	► *p. 20*
Playing	The tape doesn't move. Warbled sound.	Loosen the felt-arm. Recalibrate	► *p. 25*
	The felt-arm moves with the tape.	Tighten the screw fixing the felt part to the arm.	► *p. 25* *step 4*
	The tape moves unevenly, speed varies intermittently.	Press and release the wheel-arm. Check that the cartridge is installed correctly and that the wheel presses evenly against the axle.	► *p. 22* *step 13*
	There's a click or thump sound, once per loop cycle.	The felt is pressing too tightly on the head and you can hear the splice. → Release felt-arm pressure. If it persists, the splice is uneven or too thick. → Cut a new loop, flatten the splice well.	► *p. 25* *step 3*
	The tape degrades fast. Brown dust accumulates at the heads.	Loosen the felt-arm. Adjust the angle of the felt protection if needed. Secure your adjustments.	► *p. 20* ► *p. 25*
Audio	There is no sound, or only weak sound.	Try these in order, stopping when the issue is resolved: Check tape orientation. → Clean the heads. → Replace the tape. → Contact us.	► *p. 20* ► *p. 25*
	Feedback builds up too fast.	Decrease the calibration trimmer(s).	► *p. 26*
	The delayed sound is (too) saturated.	This can be normal, most settings favor texture. To reduce, try these, stopping when the issue is resolved: Lower the calibration trimmer. → Release felt-arm pressure. → Replace the tape.	► *p. 20* ► *p. 26*
	The dry sound is (too) saturated.	The preamp saturates from 3. Reduce the Level In knob.	► *p. 11* ► *p. 35*

SIGNAL PATHS

LFO 1

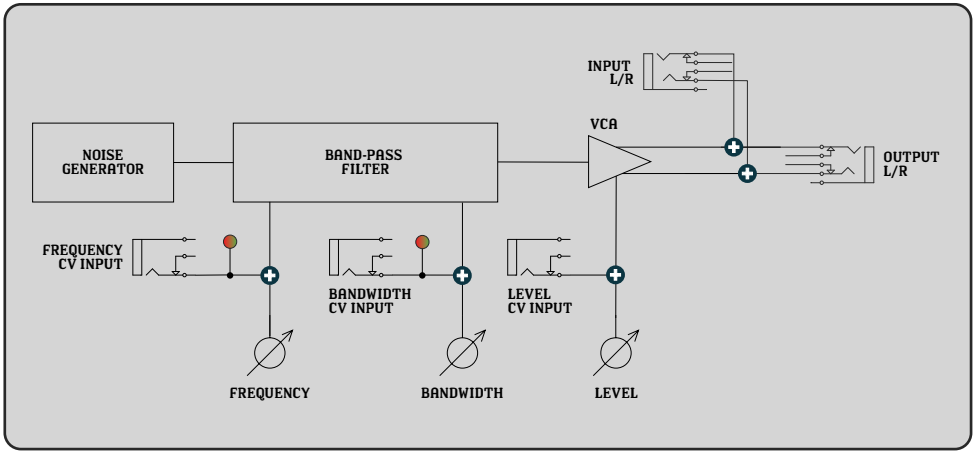


LFO 2

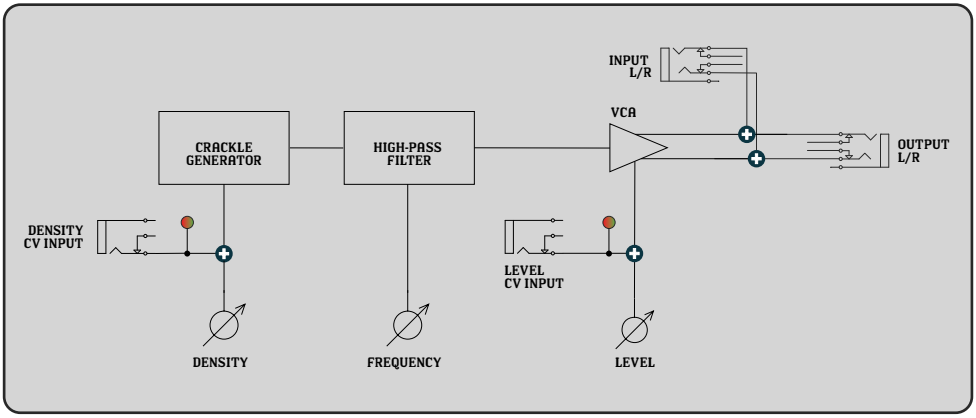


SIGNAL PATHS

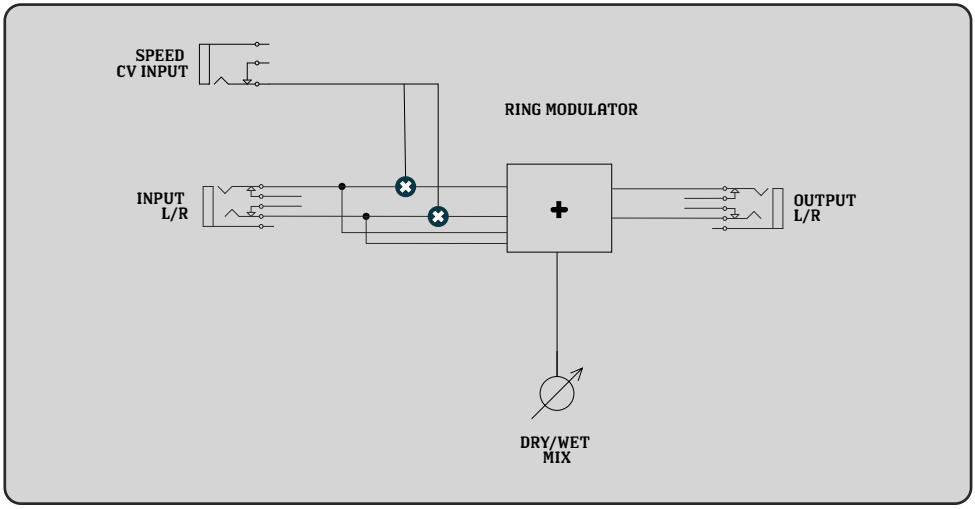
Noise



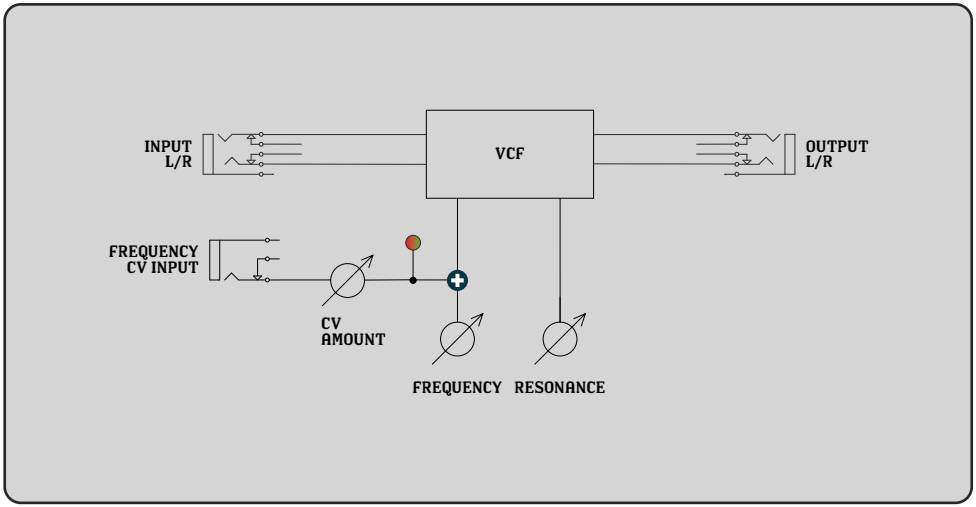
Crackle



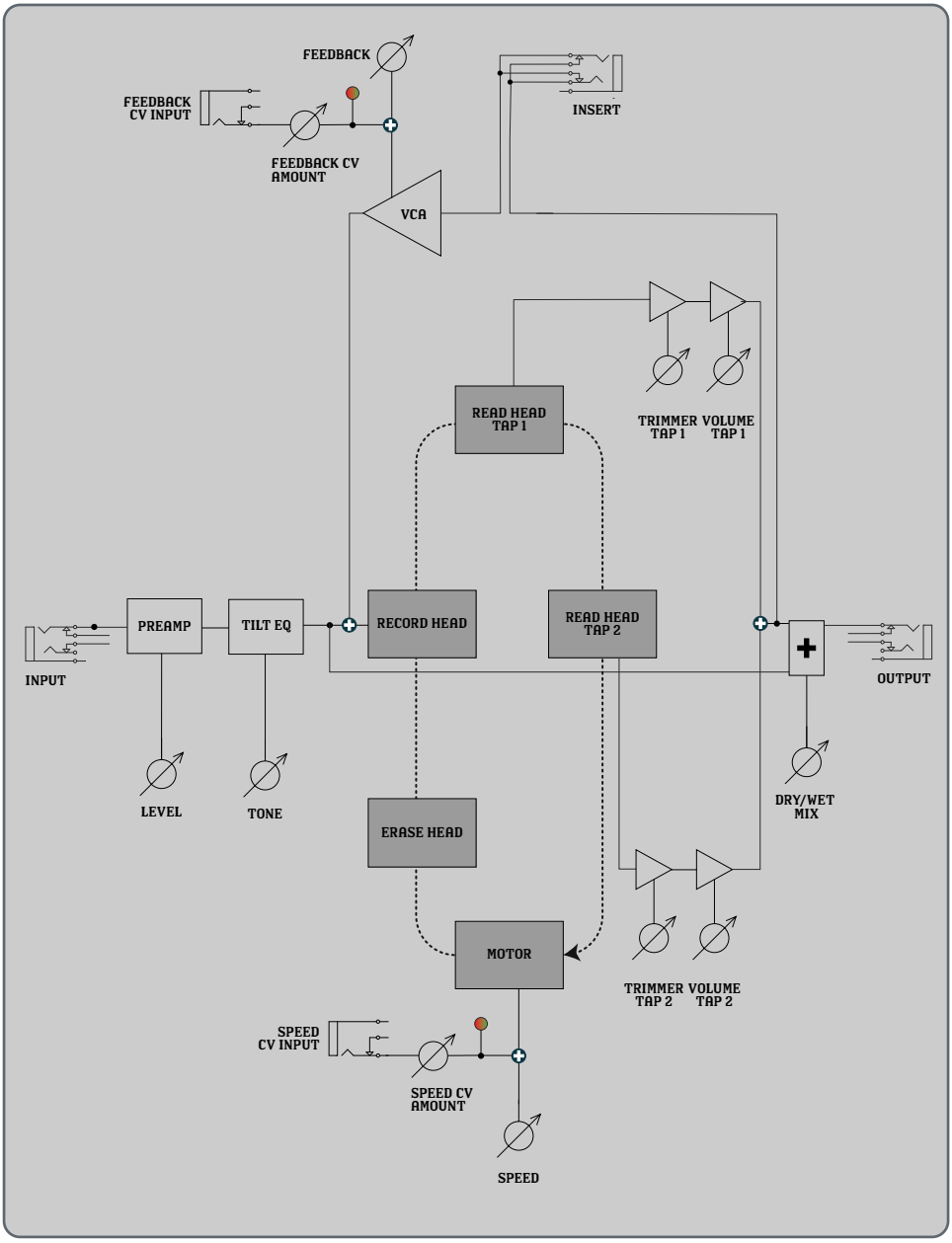
Ring Modulator



VCF



Tape Delay


FEEDBACK
FEEDBACK CV INPUT
FEEDBACK CV AMOUNT
INSERT
VCA
TRIMMER TAP 1
VOLUME TAP 1
READ HEAD TAP 1
INPUT
PREAMP
TILT EQ
RECORD HEAD
READ HEAD TAP 2
OUTPUT
LEVEL
TONE
DRY/WET MIX
ERASE HEAD
MOTOR
TRIMMER TAP 2
VOLUME TAP 2
SPEED CV INPUT
SPEED CV AMOUNT
SPEED

Technical details

- **LFOs CV output range**: -5 V — 5 V.
- **Universal power supply**: 24 V, 1 A, center positive supply, with a 5.5 mm diameter and 2.5 mm hole connector.
- **Variable speed motor:** 12 V, 3500rpm BLDC motor, type/case 3625.
- **Maintenance kit contents:**

  1 splicing block
  1 straight razor
  1 audio cassette, ie. 130 m (430 ft.) of Sony Type I, 1/8" (3,81 mm) tape.
  4 extra ready-made tape loops.
  1 roll splicing tape
  1 soft brush
  1 pair of tweezers
  1 mini-screwdriver

Dimensions

- Width : 341 mm;
- Depth : 313 mm;
- Height : 57 mm (enclosure only), 70.5 mm (including the knobs);

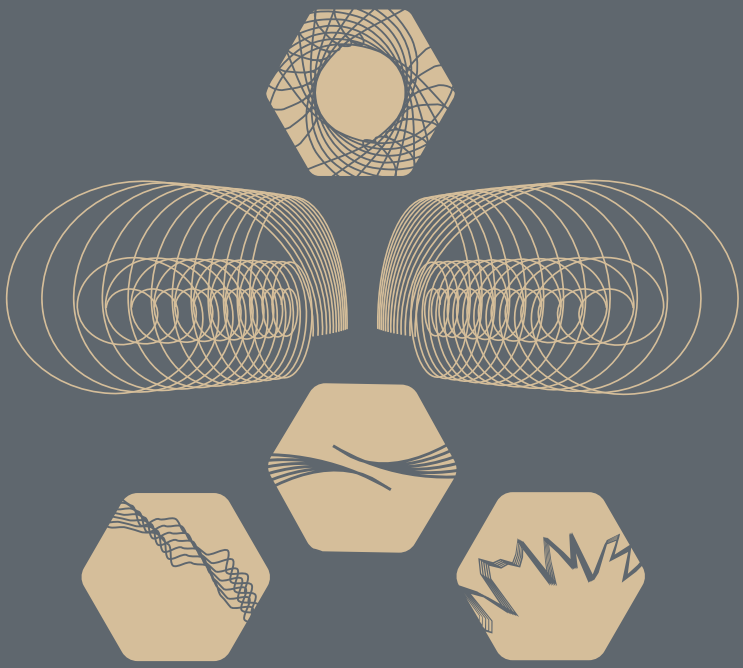
Weight

- 2.6 kg.

The Dirt Magnet

User's Manual

written by
Cristian Kreindler & Ioana Tomsa
Finegear - evolving instruments



Layout & design by
om*objet marginal

More info at
www.finegear.net

Cluj-Napoca, Romania