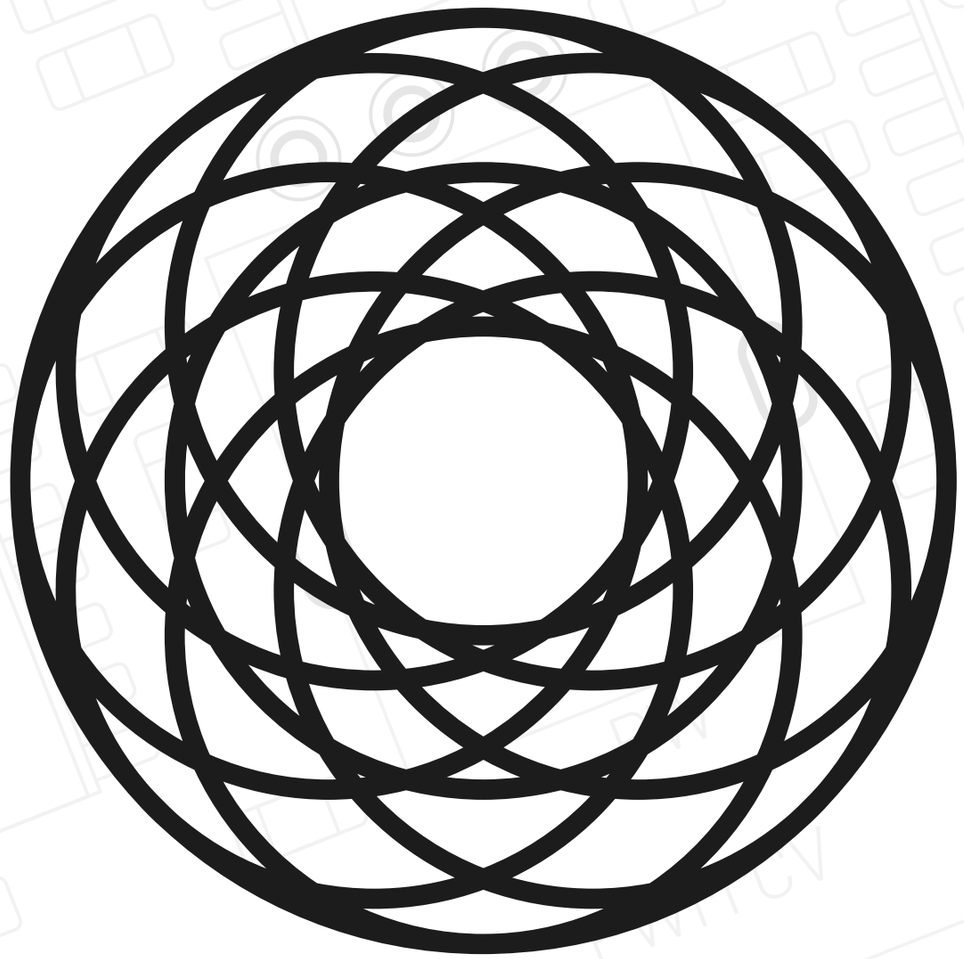


ECLIPSE

Build Instructions

V1.0

Building the Eclipse

Thank you for purchasing the Eclipse DIY Kit.

This kit is designed for through-hole assembly: all SMD components are already pre-soldered. The project is well within reach for anyone with basic soldering experience, take your time and follow the instructions step by step.

Warranty

BLACK NOISE warrants the contents of this kit to be free of defects in materials or workmanship and to conform to specifications at the time of shipment for a period of two years from the date of purchase.

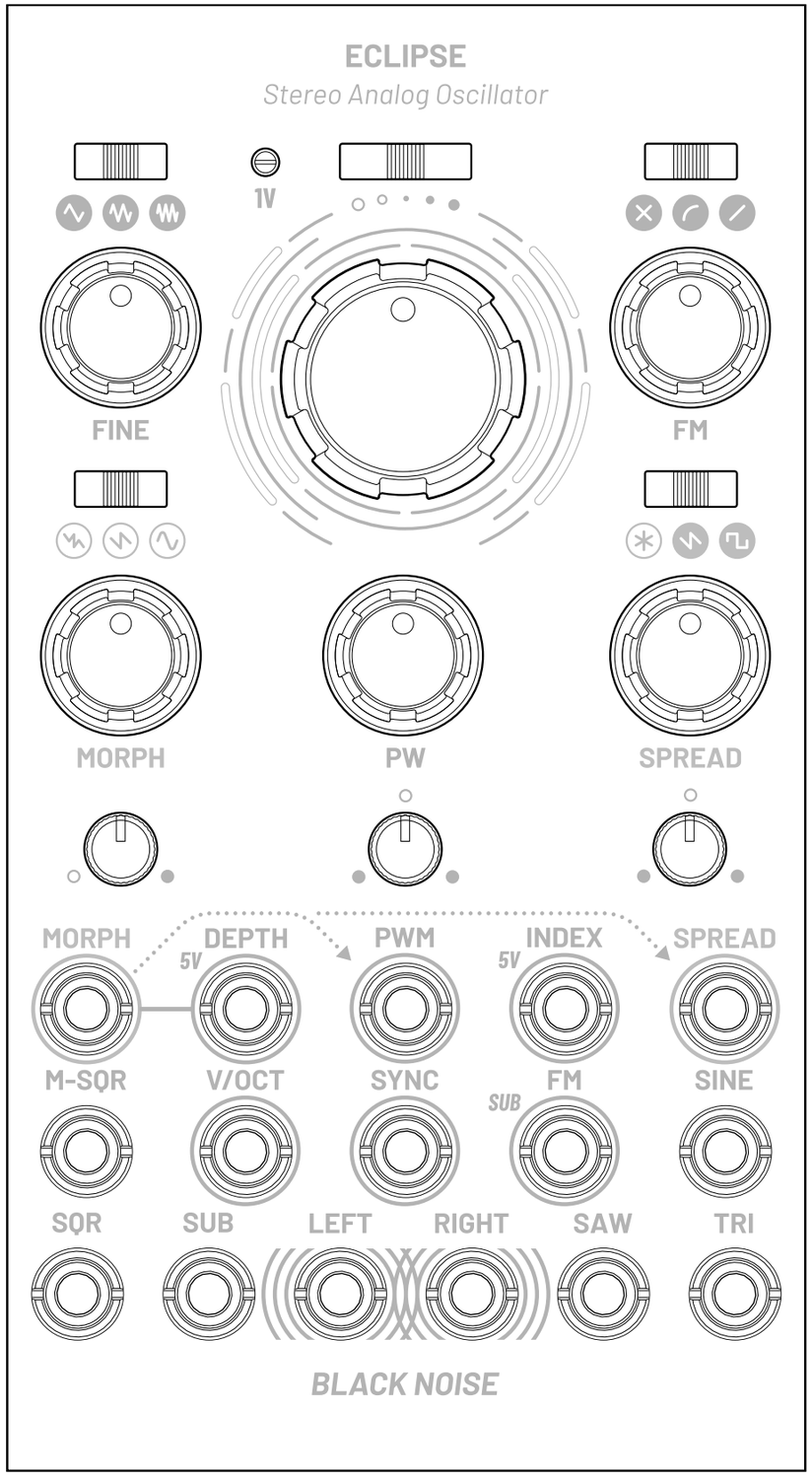
BLACK NOISE cannot be held responsible for damage resulting from incorrect assembly, soldering errors, or faulty handling during the build process.

Due to the difficulty of troubleshooting or debugging a module remotely, we do not provide assistance.

If your module is not functional due to an error during assembly, you can use our repair service: Magic Smoke Club.

For more information, please visit

www.blacknoisemodular.com

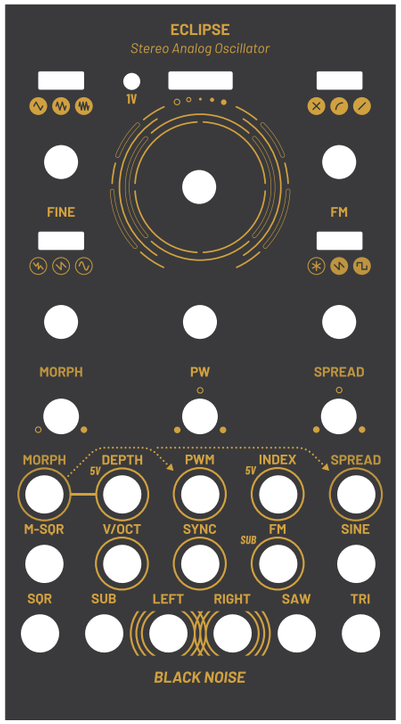


Check the components list

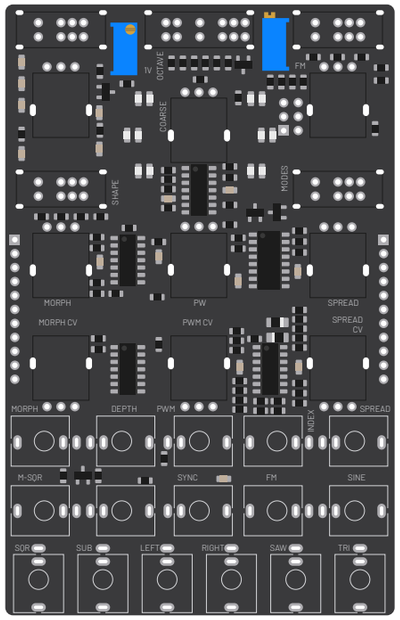
Before starting the build, make sure you have all the components listed in the kit.

Keep each bag's compoents separated, as they will be used in sequence during the build.

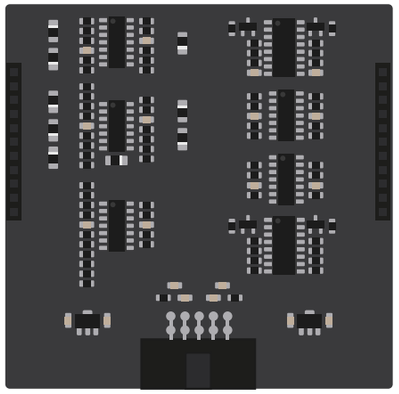
01 Faceplate



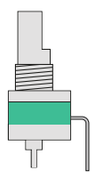
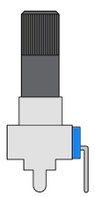
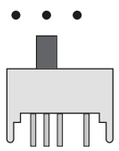
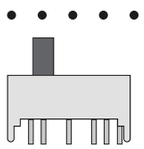
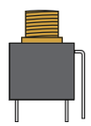
02 PCB Control Board



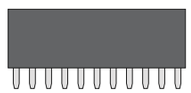
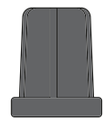
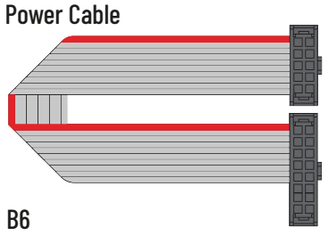
03 PCB Main Board



BAG A

Male PinHeader 3x2  A1 **x1**	Pot. Mono B100K-D  A2 **x6**	Pot Nut Black  A3 **x6**	TrimPot B100K  A4 **x3**
3-Pos. Switch  A5 **x4**	5-Pos. Switch  A6 **x1**	Mono Jack Conn.  A7 **x16**	Jack Nut  A8 **x16**

BAG B

Female PinHeader 11x1  B1 **x2**	Knob Cap S  B2 **x5**	Knob Cap S  B3 **x5**		
Knob Cap L  B4 **x1**	Knob Cap L  B5 **x1**	Power Cable  B6 **x1**		

Install the 6-pin header on the control board

Use the control board (larger PCB) and place the 6-pin male header on the back side, with the short pins going through the PCB. Pepare to solder from the front side.

Keep the header stable on a flat surface or a breadboard.

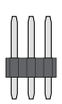
Solder one pin first.

While gently pressing on the opposite end of the header, reheat the solder joint so it sits flush with the PCB (don't touch the hot pin !) and keep it in position a few seconds until the joint cools.

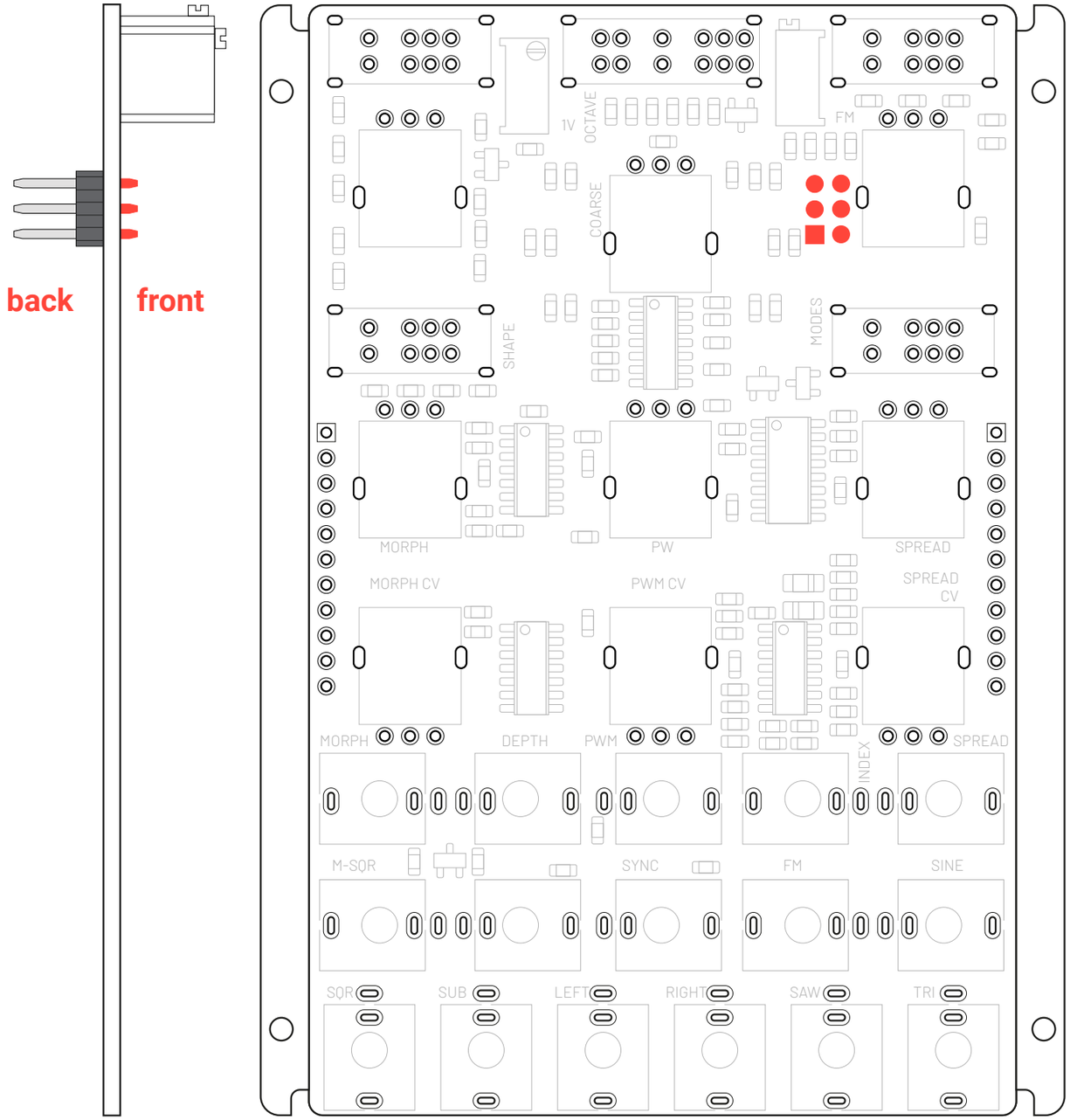
Then solder the remaining pins.

Check that all pins are soldered, and there are no solder bridges, then clean the flux residue.

Male PinHeader 3x2



A1 **x1**



Front Side

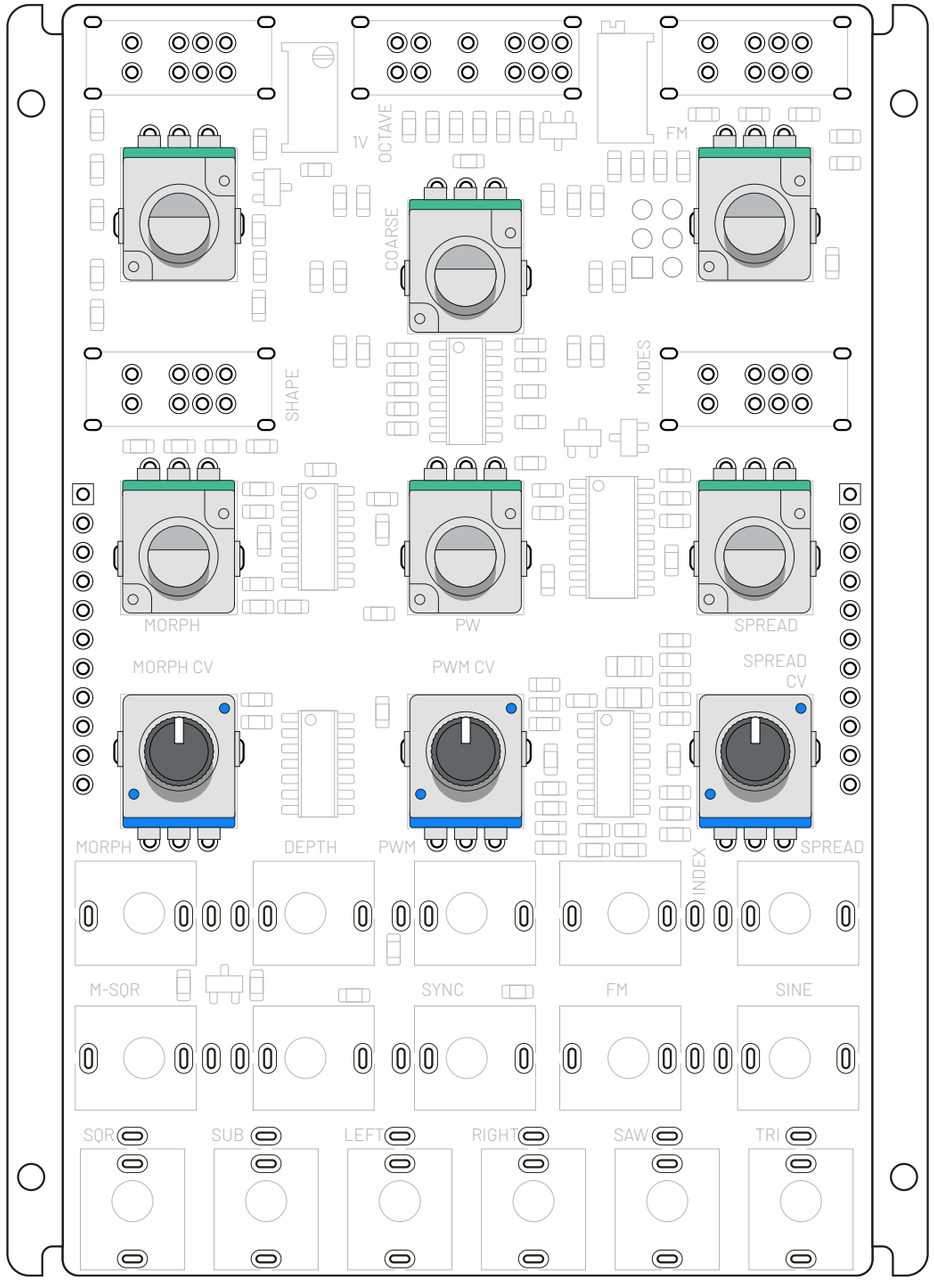
Insert the 6 potentiometers and the 3 trimpots

Do not solder yet!

Lightly bend the side legs inward so they slide in more easily.

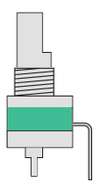
Insert the 3 main pins first.

Insert the side legs one after the other, take your time and be patient.



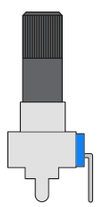
Front Side

Pot. Mono B100K-D



A2 **x6**

TrimPot B100K



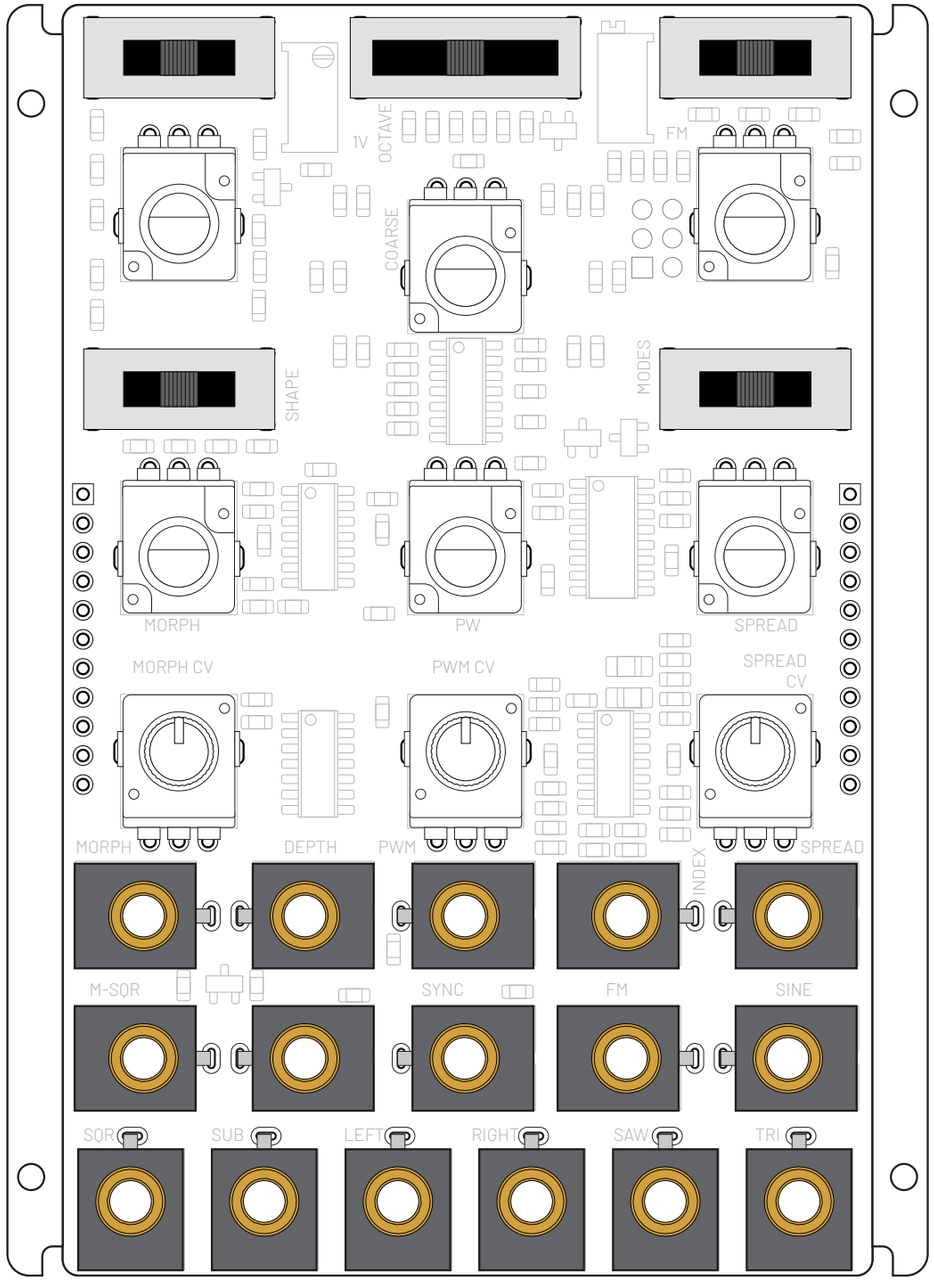
A4 **x3**

Insert the switches and all jacks

Do not solder yet!

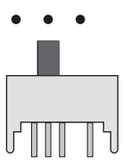
Place all jacks.

There are 4 three-position switches and 1 five-position switch. Each fits only one location and orientation there's no way to install them wrong.



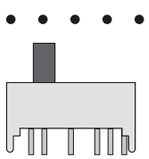
Front Side

3-Pos. Switch



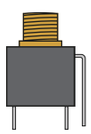
A5 **x4**

5-Pos. Switch



A6 **x1**

Mono Jack Conn.

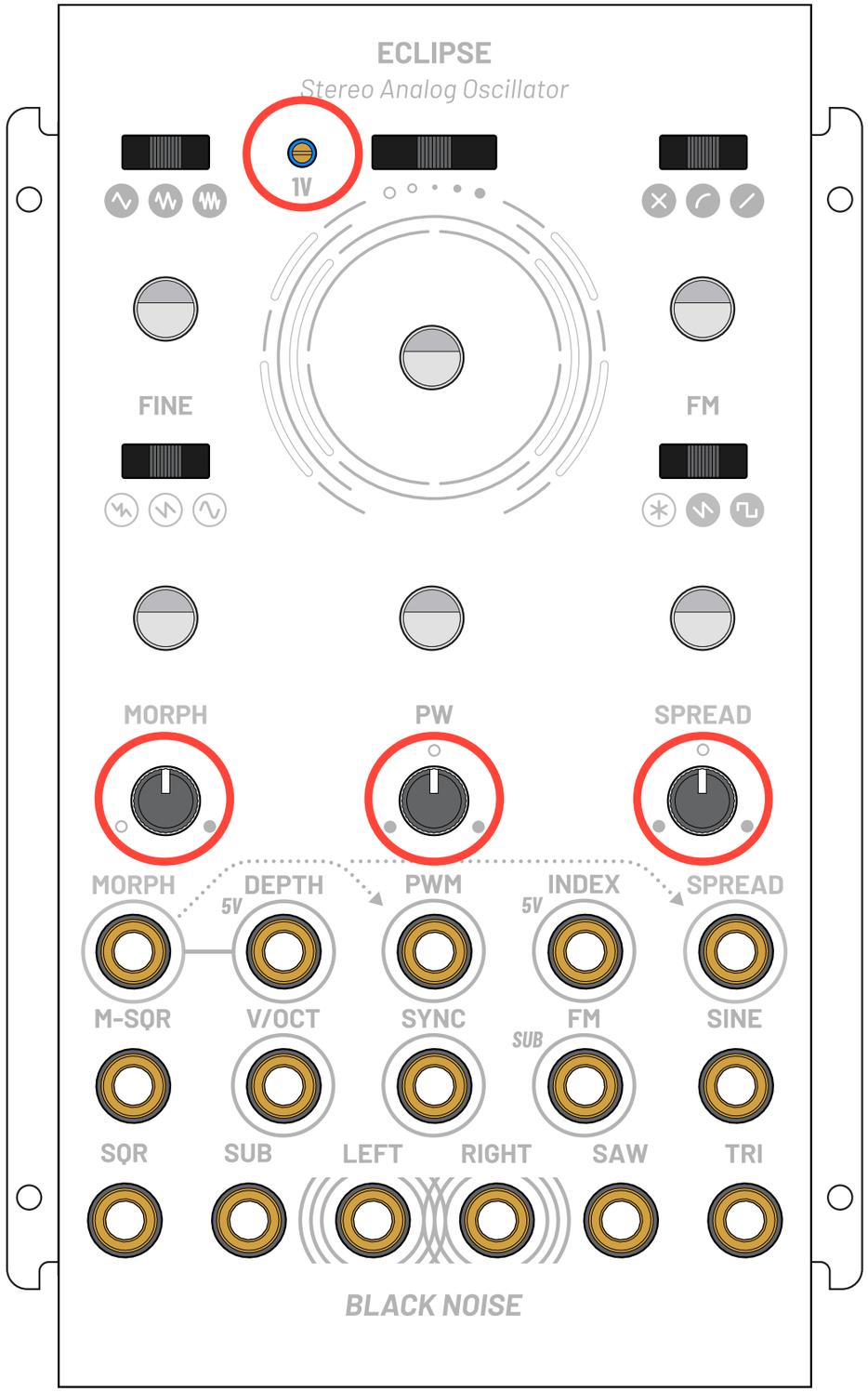


A7 **x16**

Place the faceplate

Carefully slide the faceplate over all the components.

Ensure it doesn’t get stuck on any switches, the 1V trimmer, or the metal shafts of the trimpots.



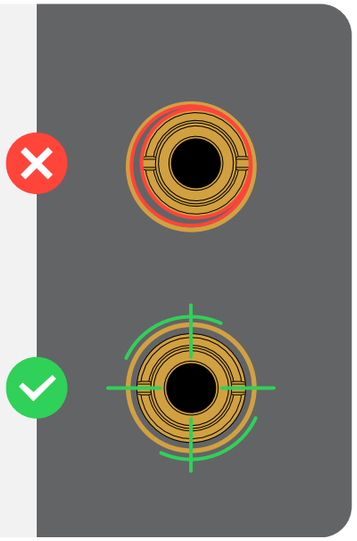
Front Side

Secure the faceplate

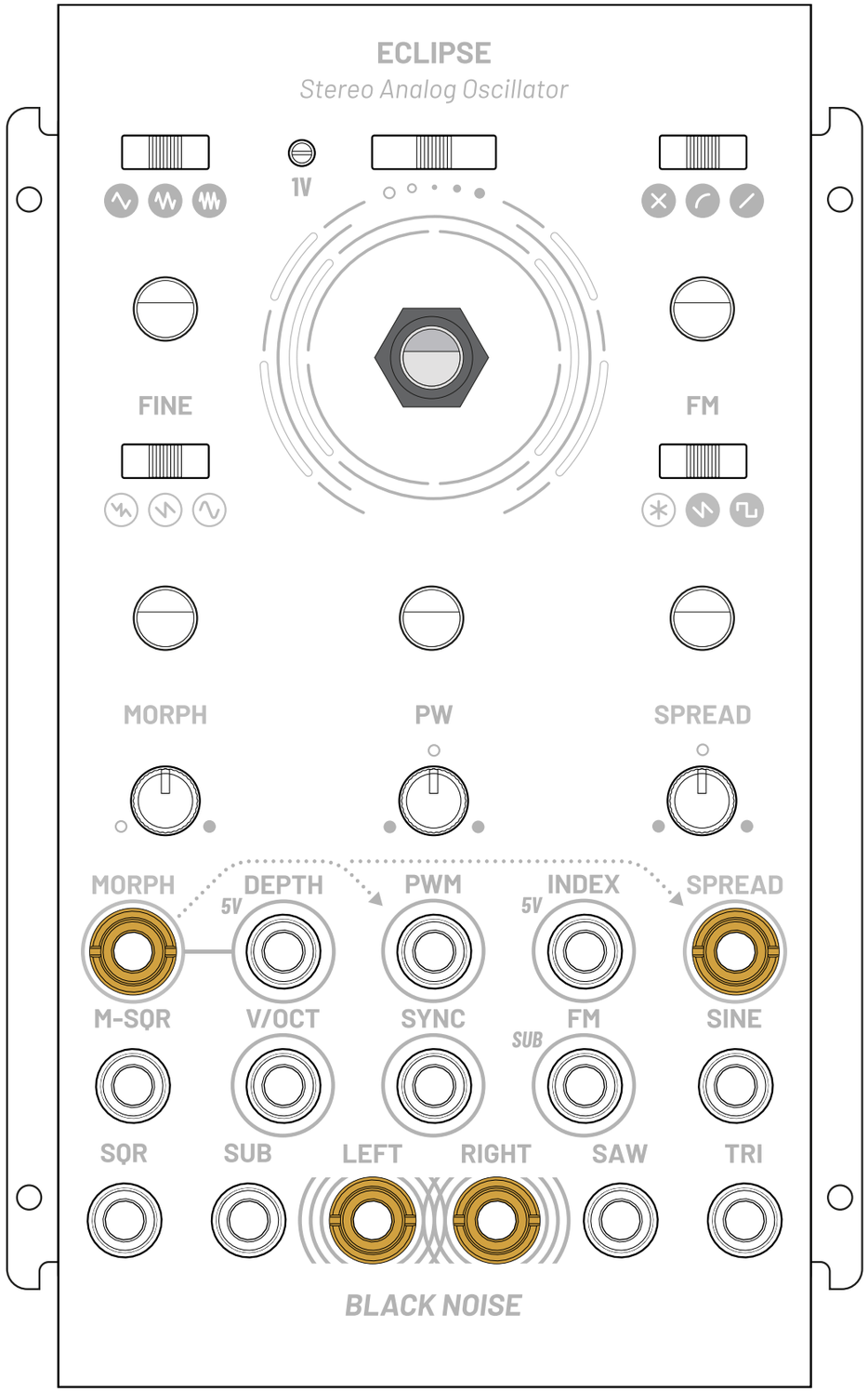
Gently screw the nut on the center potentiometer to hold the faceplate in place.

Add the nuts for the M-SQR, SPREAD, LEFT and RIGHT jacks to secure the faceplate

When a circle is printed around a jack nut on the faceplate, make sure the nut is centered within that circle before tightening it.



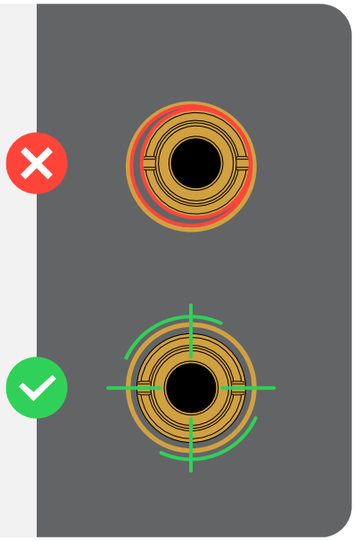
Pot Nut Black		Jack Nut	
			
A3	**x1**	A8	**x4**



Front Side

Secure all remaining jack and trimpot nuts

When a circle is printed around a jack nut on the faceplate, make sure the nut is centered within that circle before tightening it.

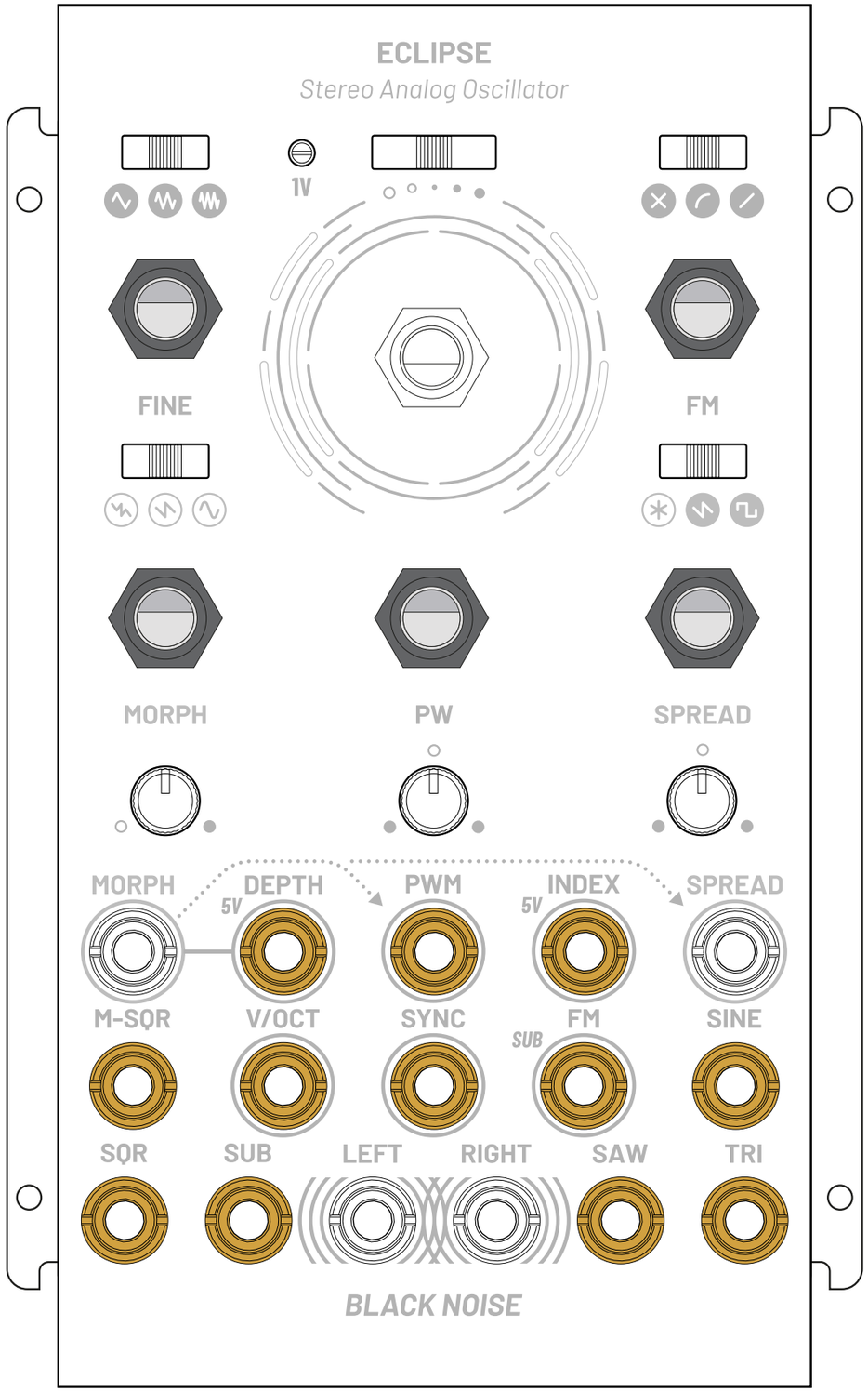


Pot Nut Black

A3 **x5**

Jack Nut

A8 **x12**

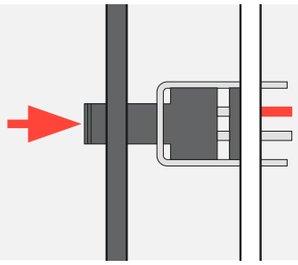


Front Side

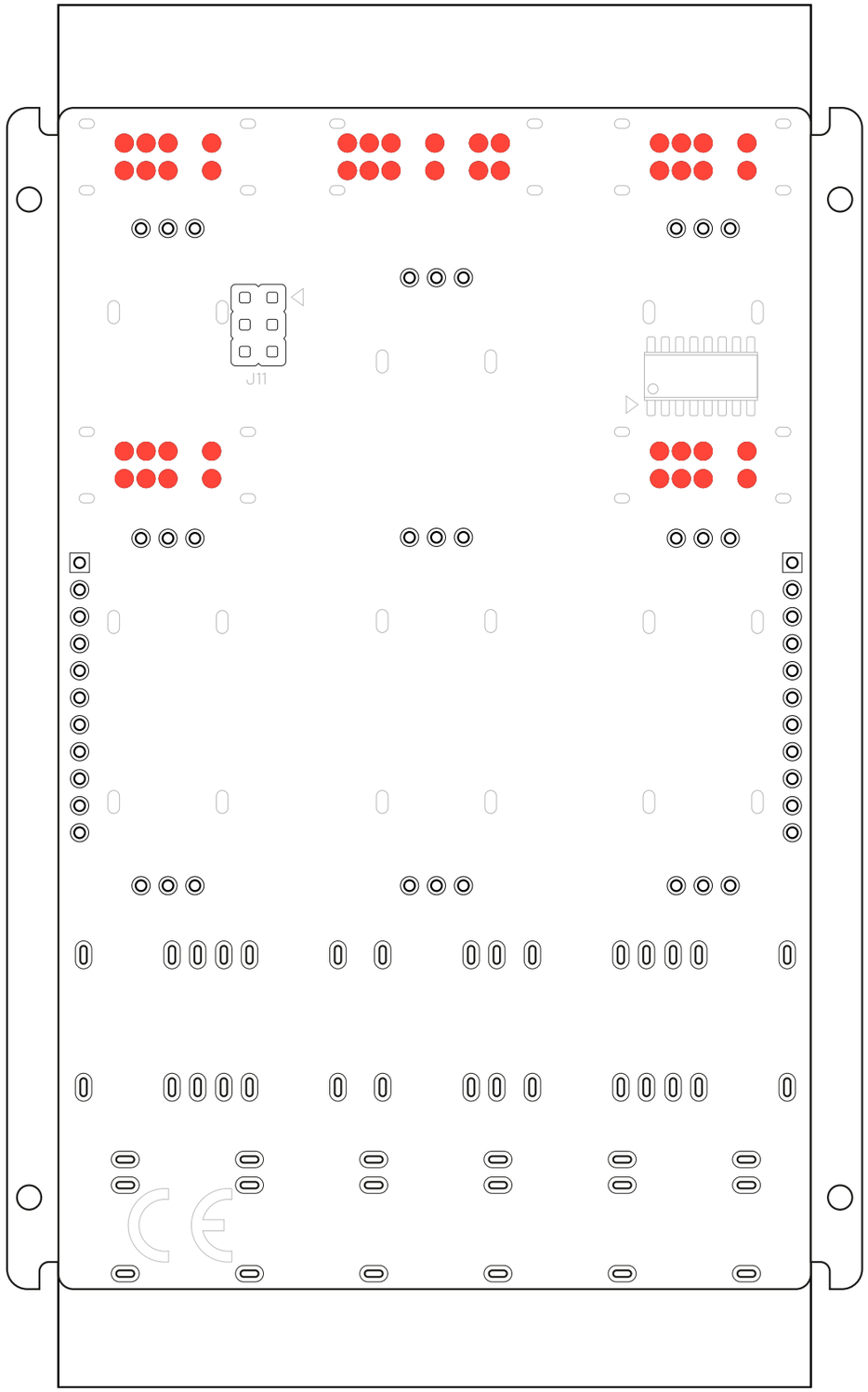
Solder the switches

1. Solder only the center pin of each switch first.

2. While gently pressing the switch to sit flat, reheat the pin to adjust if needed.



3. Once aligned, solder the remaining pins.

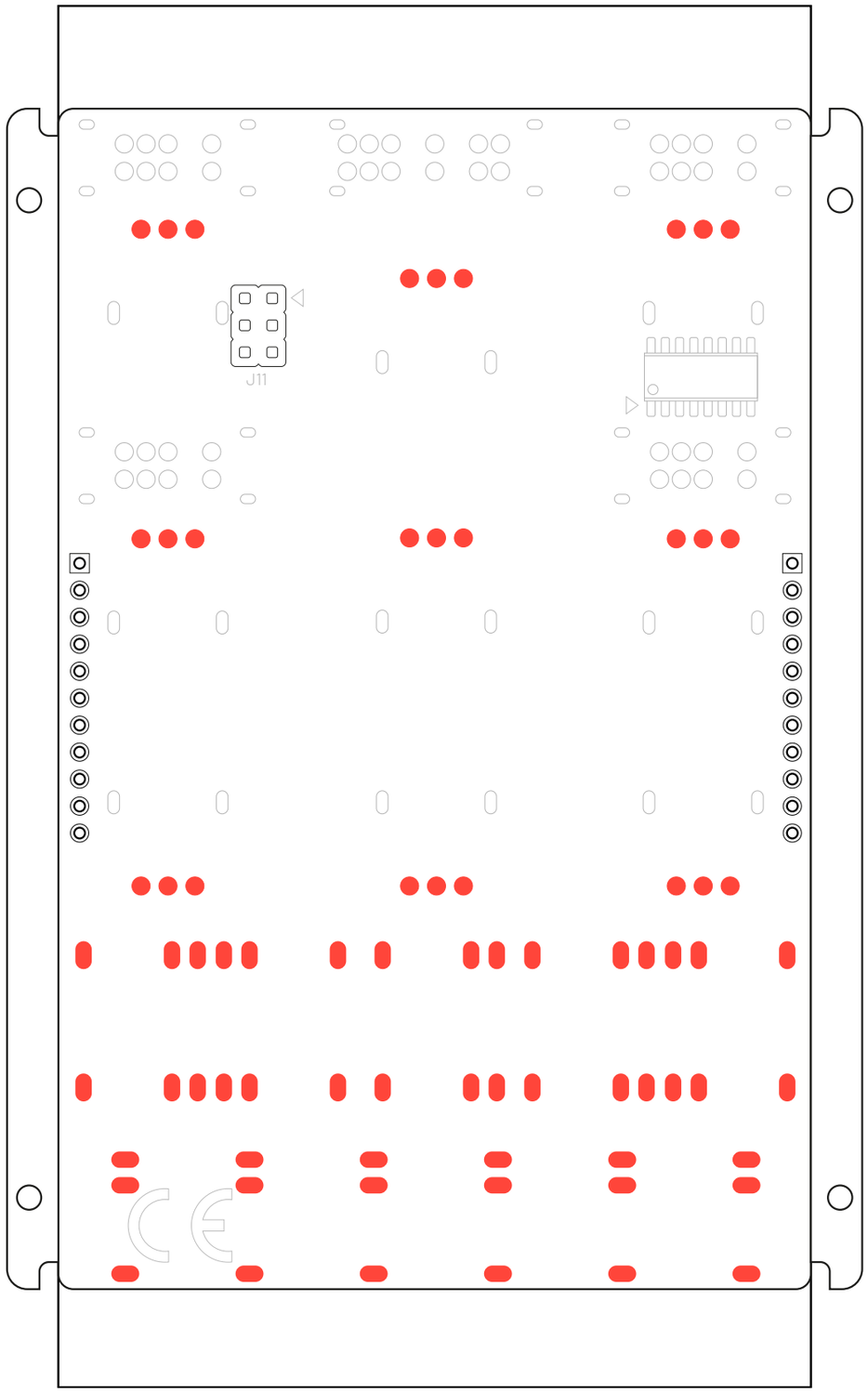


Back Side

Solder the rest of the components

Potentiometers, trimpots, and jacks can now be soldered.

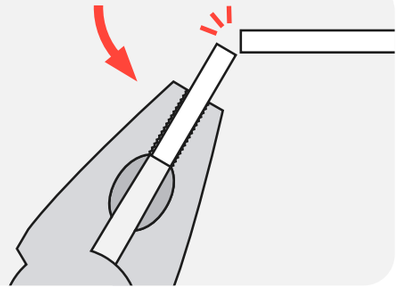
Check that all pins are soldered, and there are no solder bridges, then clean the flux residue.

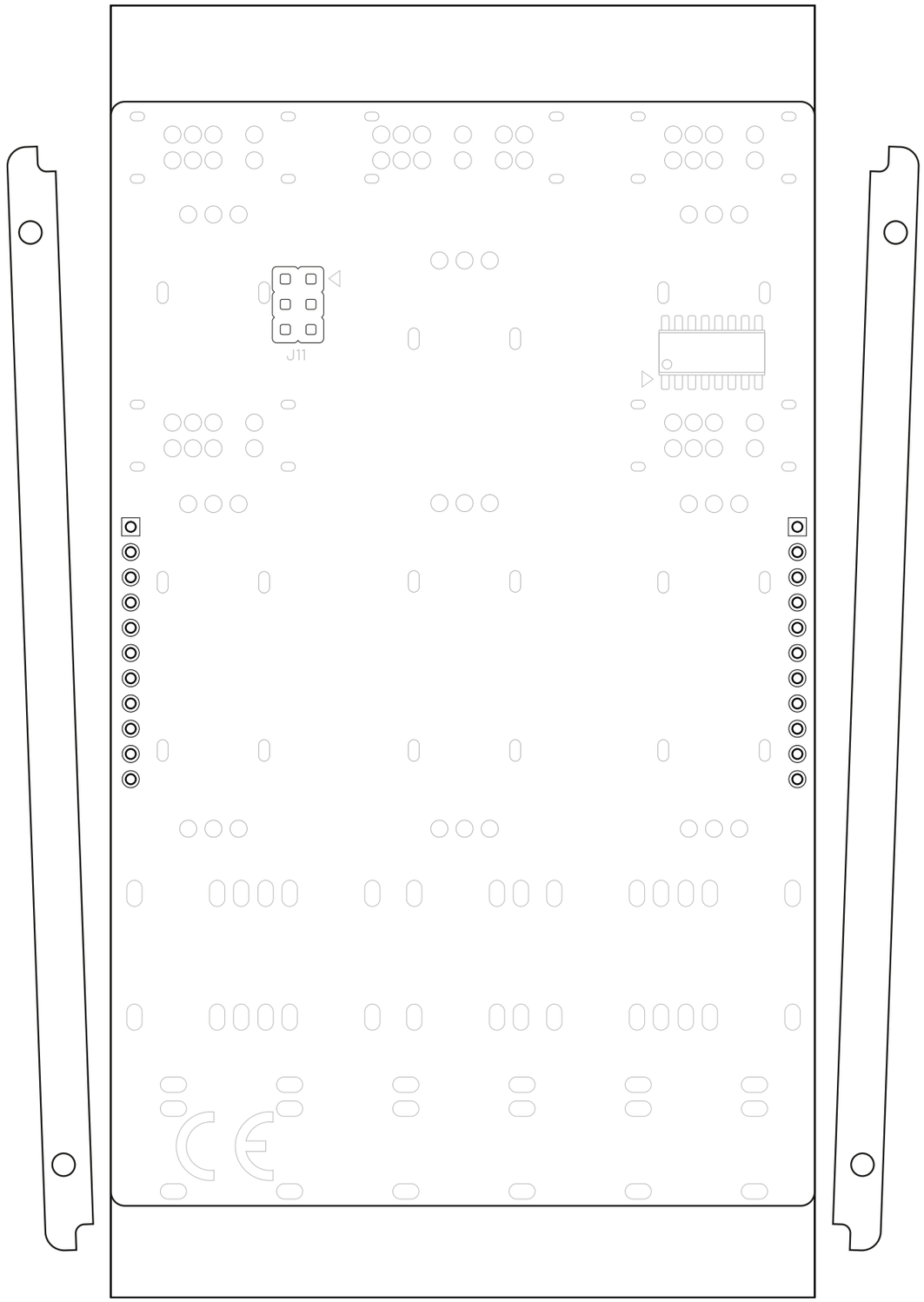


Back Side

Remove the break-off tabs

Use pliers to snap off the side break-off tabs from the PCB.





Back Side

Connect the main board to the control board

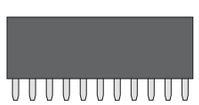
Take the main board (smaller PCB).

Place the female 11-pin headers onto the male ones on the control board.

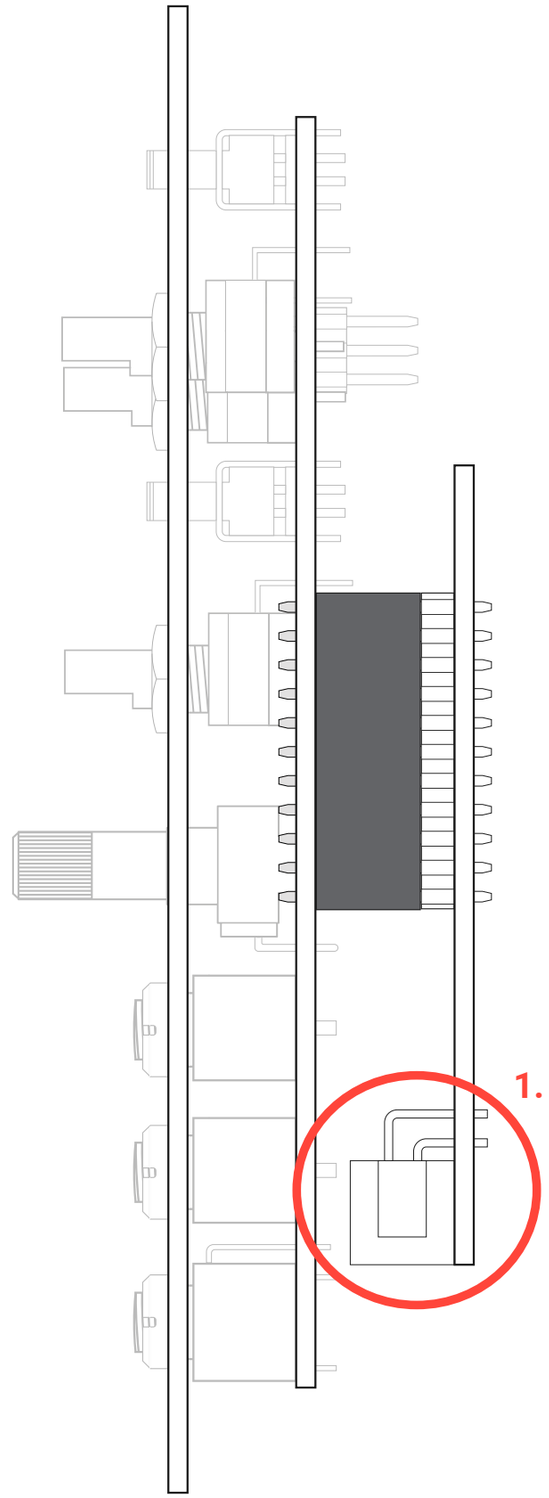
Align the two PCBs and press them together via the 11-pin headers.

Ensure the power header is facing downward (**1**).

Female PinHeader 11x1



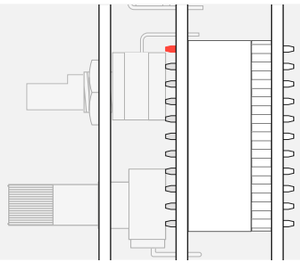
B1 **x2**



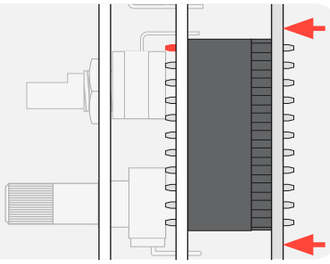
Right Side

Solder the female headers on the main board

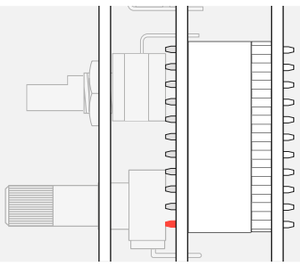
1. Lay the module on its side and solder the first pin.



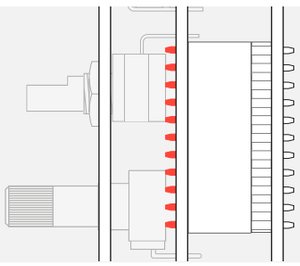
2. While pressing the board to sit flush, reheat the first pin (don't touch the hot pin !).



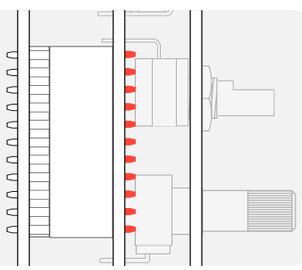
3. Repeat 1. and 2. for the last pin.

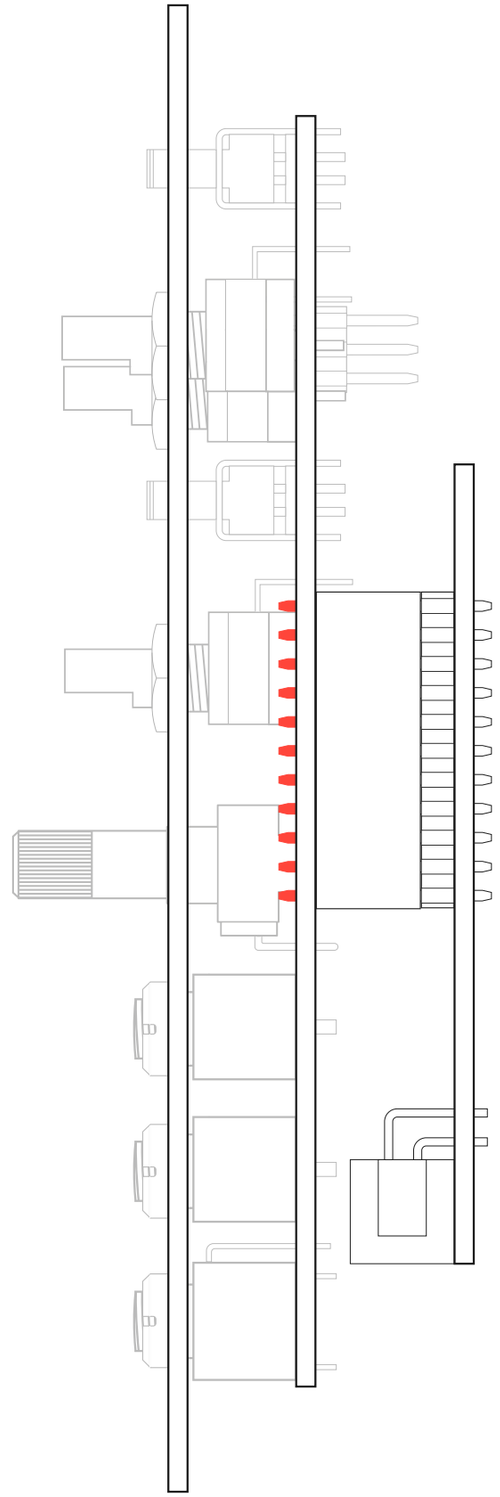


4. Once the board is aligned, solder all remaining pins.



5. Turn the module on the other side and repeat everything for the second header.

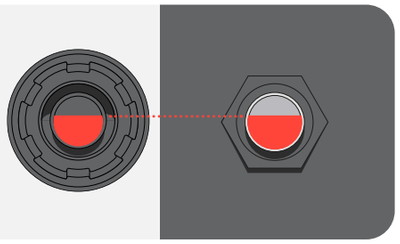




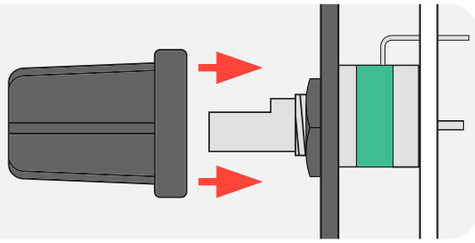
Right Side

Install the knobs

1. Align the D-shape inside the knob with the D-shape of the potentiometer shaft.

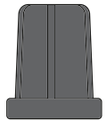
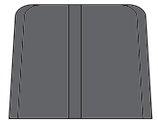


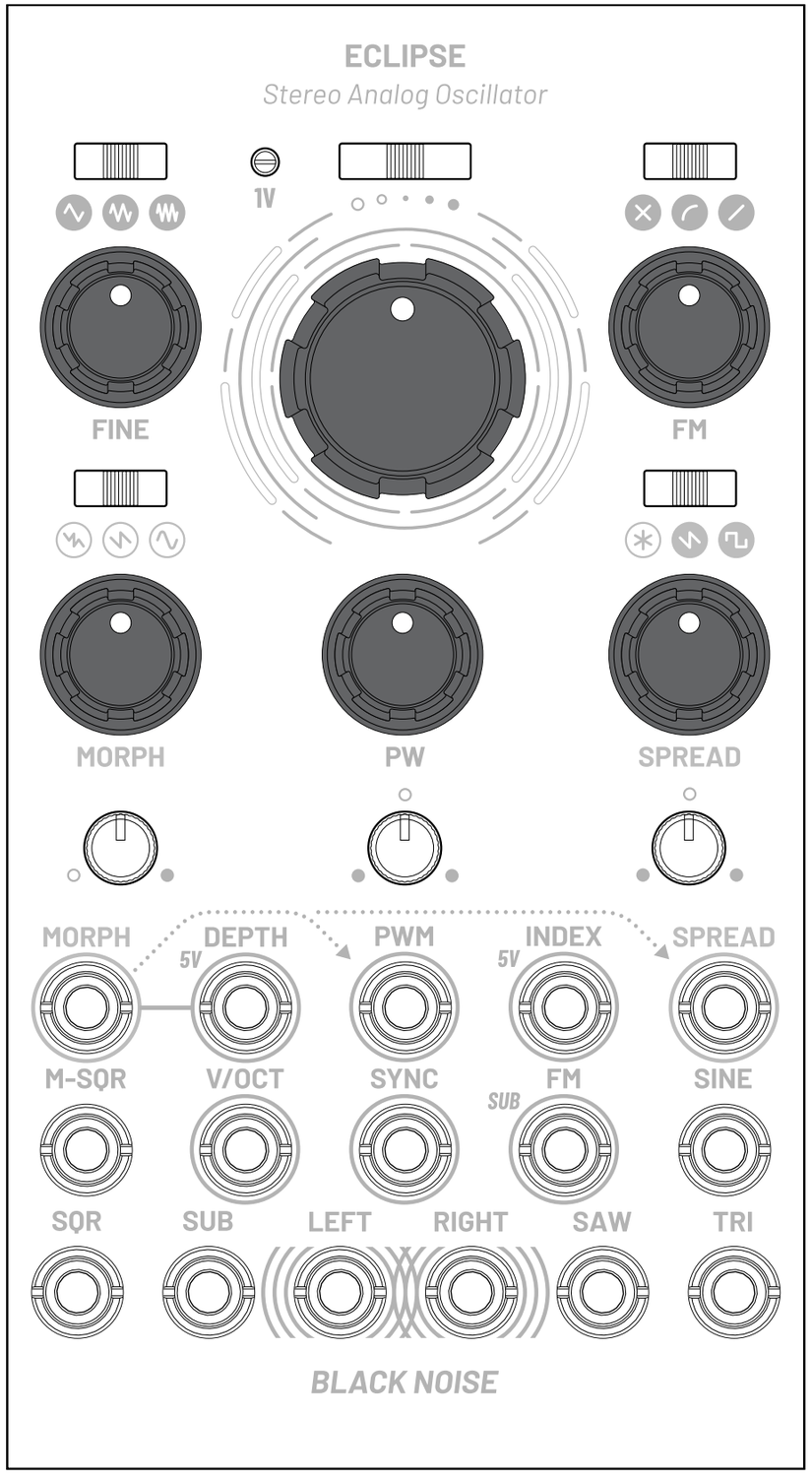
2. Place the knob on it potentiometer.



3. Turn the knob fully counter-clockwise (minimum position) so it stays stable.

4. Place the cap so the white dot marks the starting position. Align the dot with the knob's slit. take your time and be gentle.

Knob Cap S	Knob Cap S	Knob Cap L	Knob Cap L
			
B2 **x5**	B3 **x5**	B4 **x1**	B5 **x1**

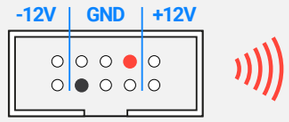


Front Side

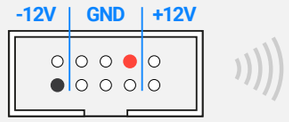
Test for short circuits

1. Set your multimeter to continuity mode (beep mode).

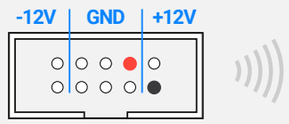
2. Place two probes on some ground pins. It should beep.



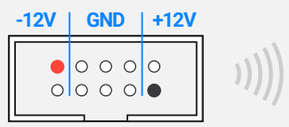
3. Keep one probe on ground and move the other one on a –12V pin. it should NOT beep.

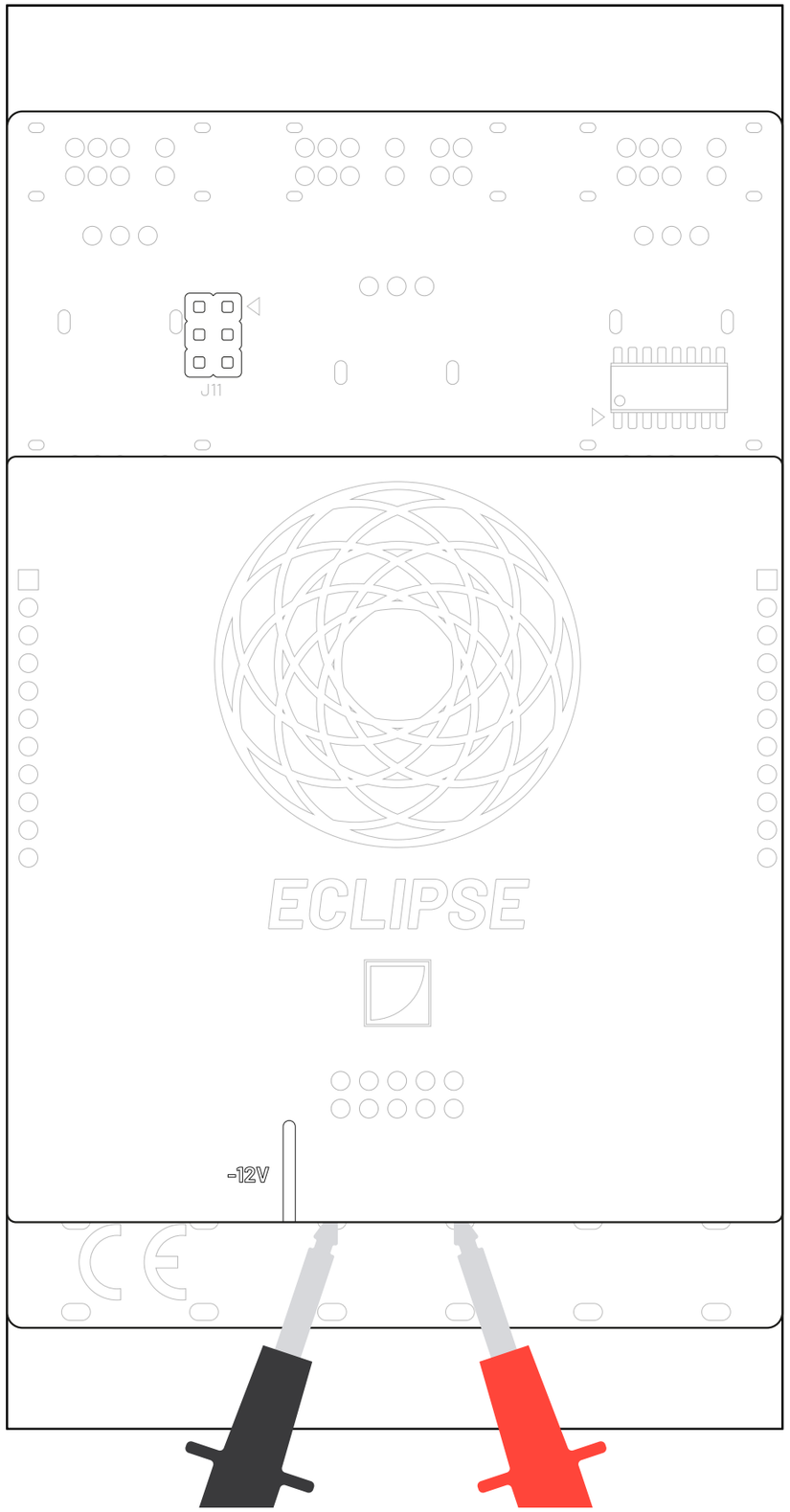


4. Keep the probe on ground and move the -12Vpin probe to a +12 V pin. it should NOT beep.



5. Keep the probe on +12 V pin and move the ground probe to a -12 V pin. it should NOT beep.





Prepare calibration

1. Let the module rest for about 1 hour after soldering to cool down.

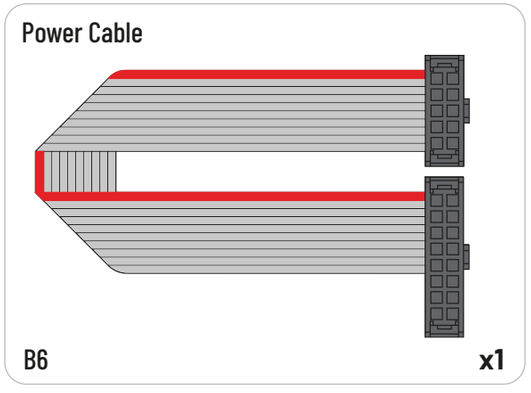
2. Connect it to your case using the provided ribbon cable.

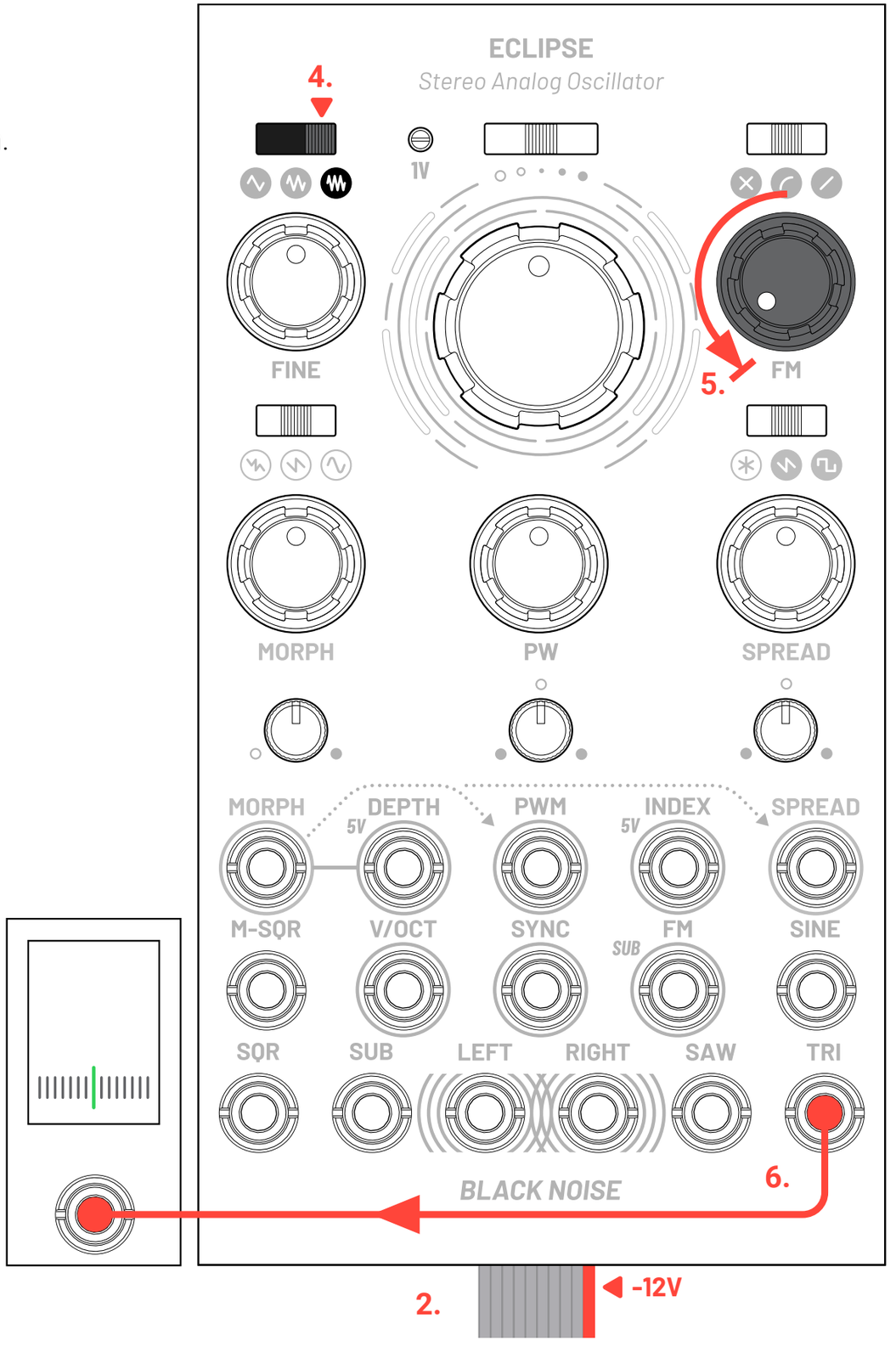
3. Power on the case and wait about 20 minutes for the module to reach temperature stability.

4. Switch to VCO mode (right position).

5. Turn the FM knob fully counterclockwise (0%).

6. Connect the TRI output to a tuner.





Tracking calibration

1. Set the Octave switch to the lowest position (left).

2. Adjust Frequency and FINE knobs to reach an exact C1.

3. Set the Octave switch to the highest position (right).

4. Adjust the 1V trimmer to reach an exact C6.

5. Repeat step 1 to 5 until you reach a perfect C1 and C6.

Lowest Frequency Adjustment

1. Set the Octave switch at the highest position (right).

2. Turn the Frequency knob fully counterclockwise, keeping the FINE knob around the center.

3. Adjust the top-side trimmer to reach an exact C4

Well done!

You’ve successfully built and calibrated your Eclipse module!

You can now enjoy using it in your system.

For in-depth features and patch ideas, we recommend checking the full user manual available on the BLACK NOISE online ressources.