

Saw Tooth Organ



Quantity	Name	Description	Signing/Colorcode
1	BT1	9 V battery holder	
1	C1	22 nF capacitor	223
1	D1	5 mm green LED	
1	LS1	8 Ω–100 Ω speaker	
3	Q1–Q3	BC547C NPN transistor	
1	Q4	BC557C PNP transistor	
4	R1, RK1-RK3	3.3 kΩ resistor	OR OR BK BR BR
1	R2	100 Ω resistor	BR BK BK BK BR
1	R3	22 kΩ resistor	RE RE BK RE BR
1	R4	220 kΩ resistor	RE RE BK OR BR
1	R5	470 kΩ resistor	YE VI BK OR BR
1	R6	82 Ω resistor	GR RE BK GO BR
1	RK4	3 kΩ resistor	OR BK BK BR BR
4	RK5–RK8	2.7 kΩ resistor	RE VI BK BR BR
2	RK9,RK10	2.2 kΩ resistor	RE RE BK BR BR
1	RK11	2 kΩ resistor	RE BK BK BR BR
1	RK12	1.2 kΩ resistor	BR RE BK BR BR
1	RV6	25 kΩ potentiometer	
1	SW1	push button	
1	wire flexible 30 cm		
1	wire stiff 3 cm		
1	PCB		

Difficulty: ●●○○ Build-Time: 1–2 Hours

Manual v2.0 CC BY-SA 4.0 Binary Kitchen e.V.

Board v1.1 CC BY-SA 4.0 Elektronikmuseum Tettnang & Timo Schindler

Farblegende: SI = silber; GO = gold; BK = schwarz; BR = braun; RE = rot; OR = orange; YE = gelb; GR = grün; BL = blau;
VI = violett; GR = grau; WH = weiß

Safety Information

- ATTENTION: Not suitable for children under 3 years, choking hazard due to small parts that may be swallowed.
- We recommend: Supervision of the assembly and soldering process by an adult.
- Keep these operating instructions in a safe place for later use! It contains important information.
- If the battery is empty, replace it only with a new battery with the same values.
- When soldering, the soldering iron, the solder and also the components being soldered become very hot.
- Always wear safety glasses when soldering and assembling the kit.
- Always use a fire proof soldering pad when soldering! This prevents the components from slipping away.
- To keep the soldering iron safe during assembly, always use a suitable soldering stand.
- The kit is designed for battery operation only.
- CAUTION: Never connect the kit to 230 V mains voltage! There is an absolute danger to life!
- Please take the device to appropriately certified disposal companies at the end of its service life. This is good for the environment and ensures correct disposal.
- Subject to changes and errors.

Disposal

This appliance is labelled in accordance with the European Directive 2012/19/EU on waste electrical and electronic equipment (WEEE). The directive provides the legal framework for the take-back and recycling of waste equipment throughout the EU.

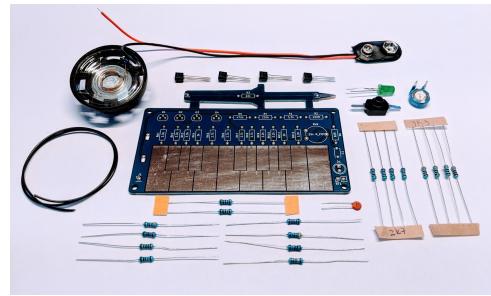
- **packaging:** The packaging is made of environmentally friendly materials and is therefore recyclable. Dispose of packaging materials that are no longer needed accordingly.
- **waste equipment:** Old appliances often still contain valuable materials. Therefore, hand in your old appliance to your retailer or a recycling centre for reuse. Please ask your retailer or your local authority for the current disposal routes.

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Step 1

- a) Hints: Resistance value can be determined via color coding
- b) Orientation for resistors is not important.
- c) LEDs have a flat side and one shorter leg. Both show the negative side. LED orientation is printed on the board.



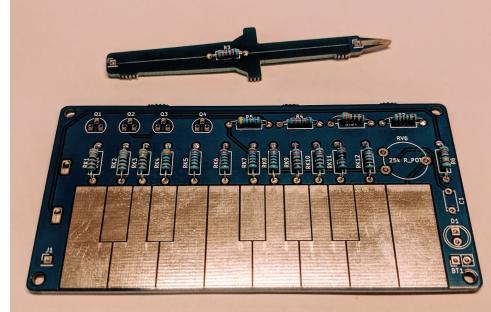
Step 2

- a) Break off the stylus at the predetermined breaking points. Use a pliers.



Step 3

- a) Solder all resistors.
- b) Pay attention to the correct value which is printed on the board.



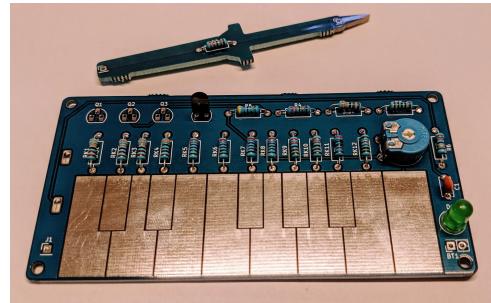
Step 4

- a) Solder the potentiometer.
- b) Solder the capacitor.
- c) Solder the LED. Pay attention to the correct orientation (See Step 1)!



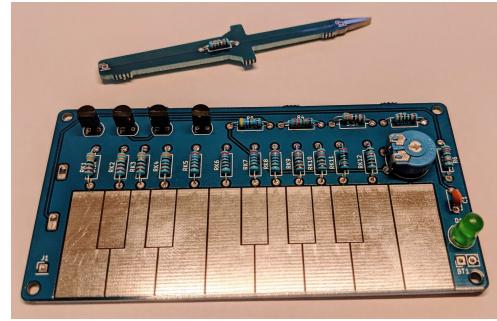
Step 5

- a) Solder the PNP transistor BC557C (Q4). Attention: Risk of mix-up with the NPN transistors.



Step 6

- a) Solder the three NPN transistors BC547C (Q1–Q3).



Step 7

- a) Turn around the board.
- b) Bend the soldering tabs and solder the button to the board. The direction does not matter.



Step 8

- a) Solder on the speaker.



Step 9

- a) Thread the red and black wire of the battery holder through the holes (not in the picture) above the solder pads and insert the wires into the solder pads. Attention: red is positive, black is negative
- b) Solder the wires.



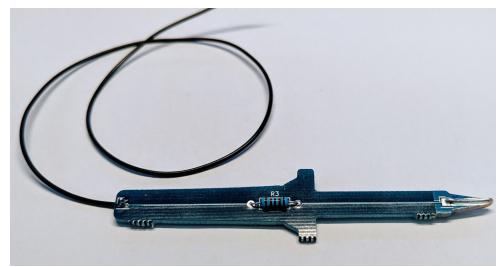
Step 10

- a) Solder the stiff wire at the tip of the stylus in the soldering point
- b) Then bend the wire over the tip and solder it on the long soldering points (back and front) at the tip.



Step 11

- a) Thread the flexible wire through the hole at the back-part of the stylus (not in picture)
- b) Solder the wire then to the soldering point
- c) Thread the other end trough the hole near the connector point on the board.
- d) Solder the wire to the soldering point.



Step 12

- a) Insert a battery and turn on your organ.
- b) The green LED should turn on now.
- c) You are done. Have fun playing your organ!

