Nu:Tekt

NTS-1 digital kit
PROGRAMMABLE SYNTHESIZER KIT

Owner's Manual

EFGSJ 2

The video assembly tutorial for the NTS-1 digital kit is available here:

For more information:
https://www.korg.com/nts_1/
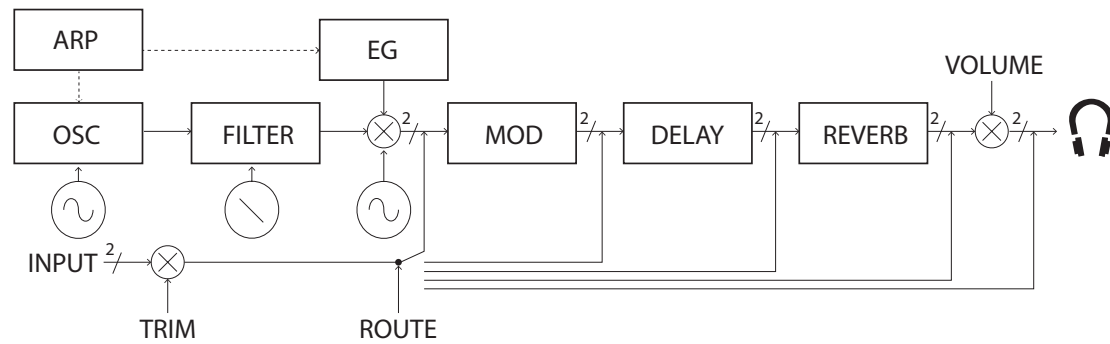
Precautions During Assembly

- Before assembly, discharge the static electricity from your body by touching the ground wire of a grounded device or similar methods. Failure to do so will cause a malfunction.
- Carefully handle the circuit boards to avoid injuries that could be inadvertently caused by protruding parts. In addition, be sure to wash your hands with soap when finished with the assembly procedure.
- Be sure to align screws properly before tightening them. In addition, be careful not to tighten screws with excessive force or over tighten them, otherwise the parts may be damaged.
- Provide a sufficiently large work space to complete the assembly procedure, and prepare work mats so parts will not be scratched.
- Carefully handle the included screws so they will not be lost. In addition, do not use screws other than those included for assembly, and do not use the included screws for any other purpose.

Checking package contents

Before beginning the assembly process, make sure that all of the parts are available. Extra screws are included. Use them as spares. If any part is missing or damaged, contact your local Korg distributor.

Precautions

Location
Using the unit in the following locations can result in a malfunction.
- In direct sunlight
- Locations of extreme temperature or humidity
- Excessively dusty or dirty locations
- Locations of excessive vibration
- Close to magnetic fields

Power supply
Please connect the designated AC adapter to an AC outlet of the correct voltage. Do not connect it to an AC outlet of voltage other than that for which your unit is intended.

Handling
To avoid breakage, do not apply excessive force to the switches or controls. Do not rub your eyes or lick your hands after you have touched the circuit boards. There may be protruding parts left on the circuit boards from the assembly process. Be careful not to injure yourself on these parts when operating this unit.

Care
If the exterior becomes dirty, wipe it with a clean, dry cloth. Do not use liquid cleaners such as benzene or thinner, or cleaning compounds or flammable polishes.

Keep this manual
After reading this manual, please keep it for later reference.

Keeping foreign matter out of your equipment
Never set any container with liquid in it near this equipment. If liquid gets into the equipment, it could cause a breakdown, fire, or electrical shock.
Be careful not to let metal objects get into the equipment. If something does slip into the equipment, unplug the AC adapter from the wall outlet. Then contact your nearest Korg dealer or the store where the equipment was purchased.

Specifications

Keyboard: Ribbon keyboard, **Sound generator system:** 1 VCO, 1 Multimode filter, 1 EG, 3 LFO, **Effects:** MOD (CHORUS, ENSEMBLE, PHASER, FLANGER), REVERB, DELAY, **Input/output jacks:** Headphone jack (3.5 mm stereo mini-phone jack), AUDIO IN jack (3.5 mm stereo mini-phone jack), SYNC IN jack (3.5 mm TRS mini-phone jack, 20V maximum input level), SYNC OUT jack (3.5 mm TRS mini-phone jack, 5V output level), MIDI IN jack (3.5 mm TRS mini-phone jack), USB port (micro B type),
Power supply: USB bus power mode, **Current consumption:** 500 mA or less, **Dimensions** (W × D × H): 129 mm×78 mm×39 mm / 5.08"×3.07"×1.54", **Weight:** 124 g / 4.37 oz, **Included items:** USB cable, Owner's manual

* Specifications and appearance are subject to change without notice for improvement.

Introduction

Thank you for purchasing the Nu:Tekt programmable synthesizer kit NTS-1 digital kit.

The NTS-1 digital kit is a compact DIY synthesizer kit that can be assembled without any soldering. It features a digital oscillator inspired by the prologue and minilogue xd; an analog modeled multimode filter; an analog modelled envelope generator; as well as modulation, delay and reverb effects. It is compatible with the logue SDK, making it possible to load your own custom oscillators and effects, or those created by third parties.

Connections and power

Commercial USB AC adapter (USB 2.0 compatible)

Computer   USB cable   USB port   NTS-1 digital kit
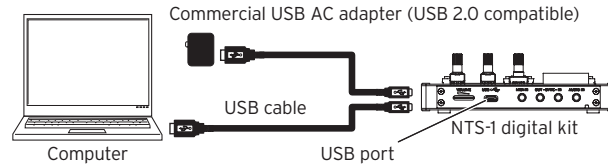
Use the included USB cable to connect the USB port of the NTS-1 digital kit to computer or a commercial AC adapter conforming to USB standards (DC5V 550 mA or higher).
Power will turn on, and the device will enter play mode.

⚠ Use only the USB cable provided.

⚠ Be sure to use an AC adapter that conforms to USB2.0 standards. However, there may be cases where, depending on the USB AC adapter used, it will not function normally even when compatible with the standards.

Turning off the power
Disconnect the USB cable from the NTS-1 digital kit.
Once disconnected all LEDs will go dark (unlit).

SLEEP MODE
After 15 minutes of inactivity the device will enter sleep mode. Press the OSC button to wake up the device and return to normal operation.

Parts and their functions

Display: When operating knobs and buttons, the parameter name or value will be displayed.

Ribbon keyboard: Press with your fingers to play sounds.

🎧 **(Headphone) jack:** Connecting your headphones to this 3.5mm stereo mini jack will mute the NTS-1 digital kit internal speaker and allow you to create music in private.

1. Pressing the MOD, DELAY and REVERB buttons will select the corresponding effect.
2. The TYPE knob, and A, B knobs can then be used to set parameters for the selected effect.

FX buttons	TYPE knob	A knob	B knob	FX buttons + B knob
MOD	OFF (oFF), Chorus (CHoruS), Ensemble (EnSEMbLE), Phaser (PHASEr), Flanger (FLAnGEr) Selects the modulation effect.	Time (t iNE) Sets the modulation speed.	Depth (dPtH) Sets the intensity of the effect.	-
DELAY	OFF (oFF), Stereo (StErEo), Mono (Nono), Ping Pong (P inG PonG), High Pass (H iGHPASS), Tape (tAPE) Selects the delay effect.	Time (t iNE) Sets the delay time.		Dry/wet mix: d100-d001, --, w001-w100 Sets the dry/wet balance of the effect.
REVERB	OFF (oFF), Hall (HALL), Plate (PLAtE), Space (SPACE), Riser (r iSEr), Submarine (SubNAr inE) Selects the reverb effect.	Time (t iNE) Sets the reverb time.		

For details about User effects see the Nu:Tekt web site (www.nutekt.org).

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1. Pressing the OSC, FILTER and EG buttons will select the corresponding element.
2. The TYPE knob, and A, B knobs can then be used to set parameters for the selected element.

MODE buttons	TYPE knob	A knob	B knob	MODE buttons + A knob	MODE buttons + B knob
OSC	Sawtooth (SA'u), Triangle (tr i), Square (Sqr), VPM (uPN), User OSC* Selects the waveform. ⟨When selecting User OSC*⟩ OSC+TYPE selects edit parameters (varies per oscillator).	Shape (SHPE) Amount of wave-shaping applied.	Alternate (ALt) Alternate parameter (varies per oscillator). ⟨When selecting User OSC*⟩ Sets the value of the selected edit parameter.	LFO rate: F0.0-F30.0 Sets the LFO frequency.	Pitch/shape LFO depth: P100-P001, --, S001-S100 Sets the amount of pitch or shape modulation.
FILTER	Low pass-2 pole (LP 2), Low pass-4 pole (LP 4), Band pass-2 pole (bP 2), Band pass-4 pole (bP 4), High pass-2 pole (HP 2), High pass-4 pole (HP 4), OFF (oFF) Selects the filter type.	Cutoff (CutF) Sets the cutoff frequency, altering the brightness of the sound.	Resonance (rESo) Adds emphasis to the overtones occuring at the cutoff frequency.	Sweep rate: F0.0-F30.0 Sets the cutoff sweep frequency.	Cutoff sweep depth: u100-u001, --, d000-d100 Sets the direction (up/down) and depth of the cutoff sweep.
EG	ADSR (AdSr), AHR (AHr), AR (Ar), AR loop (Ar LooP), Open (oPEn) Selects the amplitude EG type.	Attack (AttcK) Sets the time required for the EG to reach it's maximum level once a note is played.	Release (rELS) Sets the time required for the EG to reach 0 once a note has ended.	Tremolo rate: F0.0-F60.0 Sets the tremolo frequency.	Tremolo depth: d000-d100 Sets the tremolo depth.

* User OSC: Comes preloaded with " 'uAuES ". For details about User OSC see the Nu:Tekt web site (www.nutekt.org).
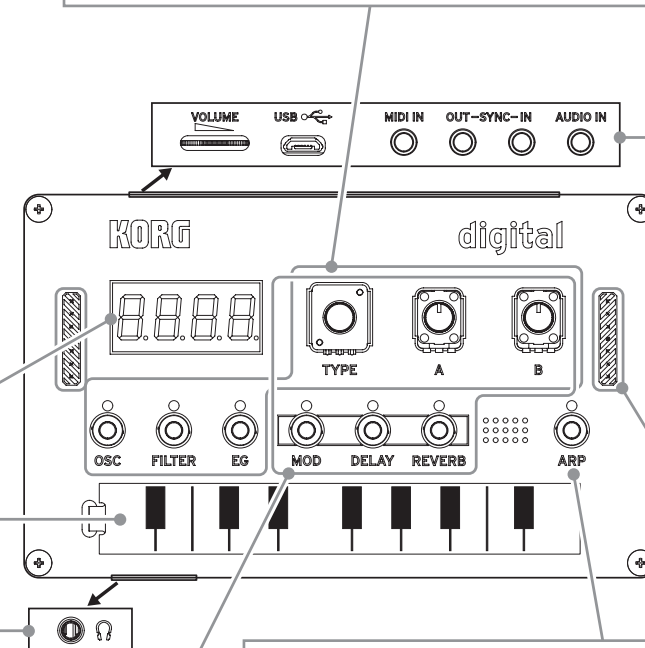
VOLUME: Sets the volume of the signal output to the speaker and 🎧 (Headphone) jack.

AUDIO IN jack: Stereo audio input. The gain trim and mix route can be set using global parameters.

IN-SYNC-OUT (SYNC IN, SYNC OUT) jacks: These jacks allow you to synchronize your NTS-1 digital kit to a Korg volca, monotribe or other equipment—including an analog sequencer or a DAW. The polarity of the SYNC jacks can be set using the global parameters.

SYNC OUT jack: A 5 V pulse of 15 ms is sent at the beginning of each step.

SYNC IN jack: If this jack is connected, the internal step-clock will be ignored, and the NTS-1 digital kit ARP will advance according to the pulses received here.

MIDI IN jack: By connecting a MIDI cable to this input, the NTS-1 digital kit can be played and controlled by the MIDI output of an external device (See the Nu:Tekt web site). The MIDI implementation chart can be downloaded from the Nu:Tekt website.

USB port: Use this USB port to connect the NTS-1 digital kit to your computer, or to a commercial USB power source.

⚠ Be careful not to touch the metal connections, as it can cause short circuits and failures.

Global Parameters
1. While holding down the REVERB button, turn on the NTS-1 digital kit.
2. Select a global parameter with the TYPE knob and change its value with the B knob. The current value is displayed on the right side of the display. If you decide to cancel the settings, press the REVERB button.
3. When you have finished specifying the settings, press the ARP button. The settings will be saved, and the NTS-1 digital kit will be restarted.
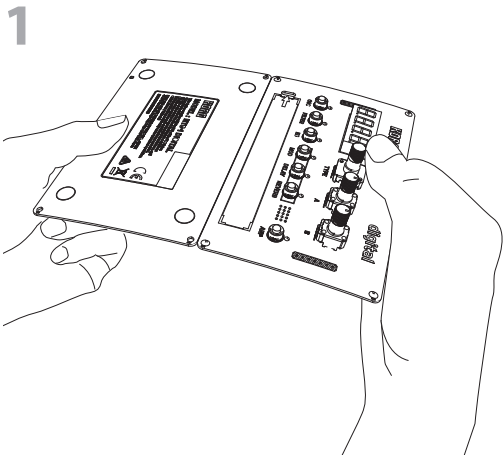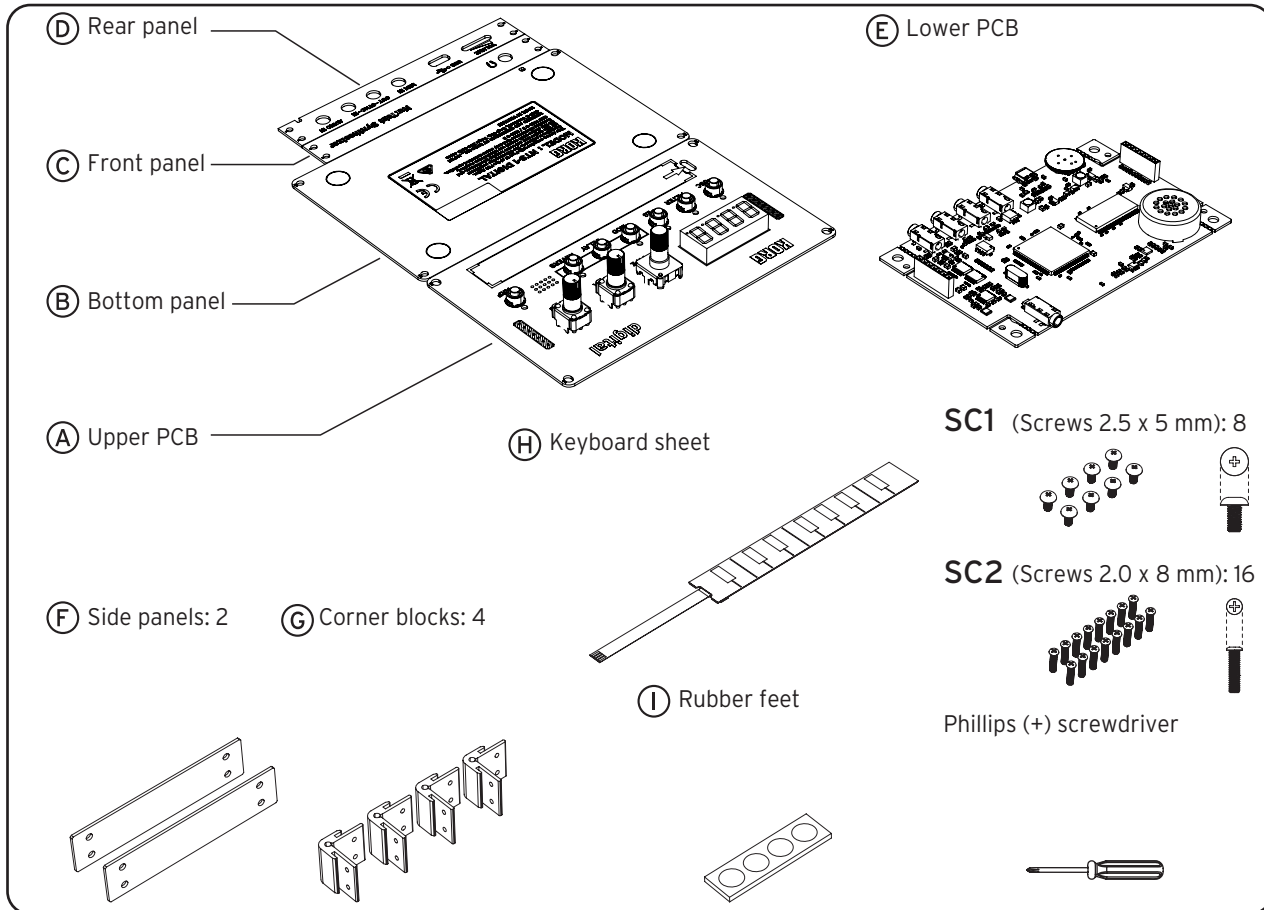
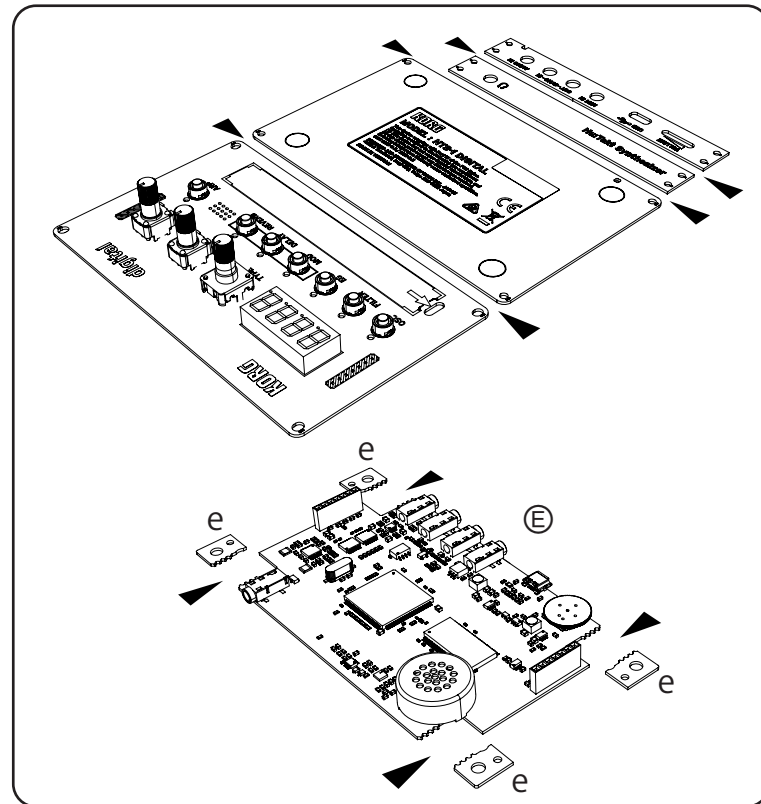| TYPE knob	B knob
Input route (Inr)	0*: before mod, 1: before delay, 2: before reverb, 3: before master, 4: after master
Input trim (trN)	0: 0dB, 1: -1dB, 2: -2dB, 3: -3dB, 4: -4dB, 5: -5dB, 6*: -6dB, 7: -7dB, 8: -8dB, 9: -9dB, A: -10dB, B: -12dB, C: -16dB, D: -24dB, E: -48dB, F: -64dB
Sync out polarity (SYo)	0*: active high, 1: active low
Sync in polarity (SY i)	0*: active high, 1: active low
Tempo range (tNP)	0*: narrow, 1: wide
MIDI clock source (CLK)	0: internal, 1*: auto
MIDI RX/short message (SHr)	0: off, 1*: on
MIDI route (Nrt)	0*: USB+MIDI, 1: USB
MIDI channel (CHn)	0*-F: 1-16
Sync in/out unit (StP)	0*: 2step, 1: every step
EG Legato (LGt)	0: off, 1*: on
Sleep mode (SLP)	0: off, 1*: on
Touch sensor calibration (CAL)	See the Nu:Tekt web site

*: Factory default setting

A single press on the ARP button will toggle the arpeggiator on (LED lit) and off (LED unlit).
When enabled, the arpeggiator will run while the ribbon keyboard is pressed.
A long press on the ARP button will latch the arpeggiator. To unlatch the arpeggiator, long press the ARP button again.
While holding the ARP button, the TYPE, A and B knobs can be used to set arpeggiator parameters.

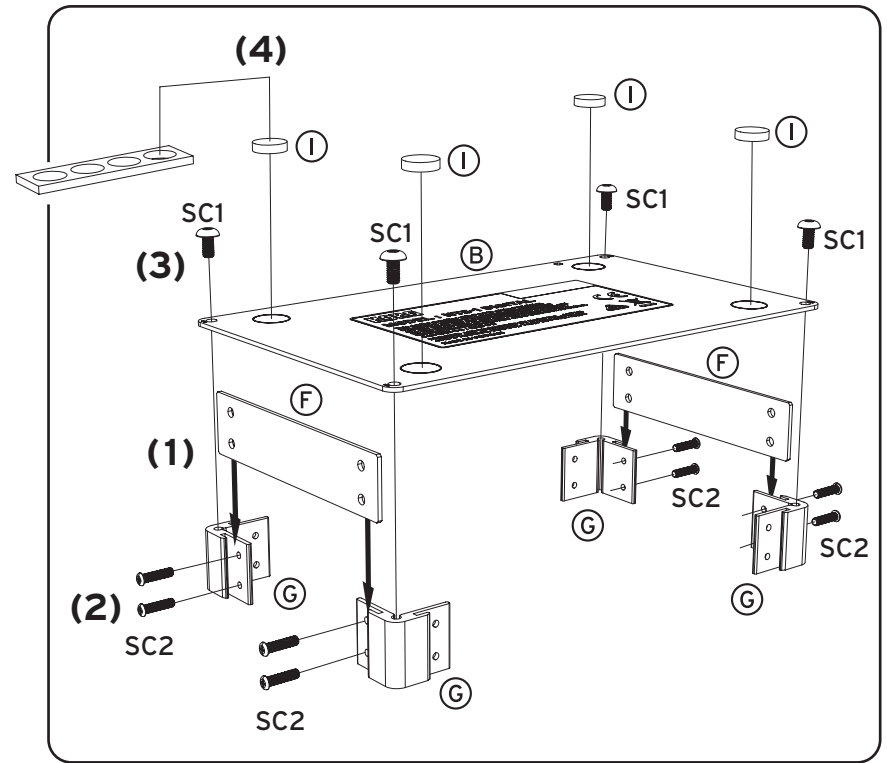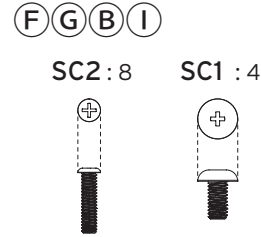| ARP buttons +	Arpeggiator settings
OSC button	Octave (oCt)
FILTER button	Major Triad (NAJ)
EG button	Major Suspended (SuS)
MOD button	Major Augmented (AuG)
DELAY button	Minor Triad (N in)
REVERB button	Minor Diminished (d iN)
TYPE knob	Up (uP), Down (do'n), Up-Down (u-d), Down-Up (d-u), Converge (ConU), Diverge (d iU), Conv.-Div. (C-d), Div.-Conv. (d-C), Random (rAnd), Stochastic (StoC) Selects the arpeggiator pattern.
A knob	ARP pattern length: 1-24
B knob	If synced externally, sets the step duration: 16th-64th. Otherwise, sets the tempo: 56.0-240.0

Assembly

D Rear panel

C Front panel

B Bottom panel

A Upper PCB

F Side panels: 2   G Corner blocks: 4

E Lower PCB

H Keyboard sheet

I Rubber feet

SC1 (Screws 2.5 x 5 mm): 8

SC2 (Screws 2.0 x 8 mm): 16

Phillips (+) screwdriver

1

e: When attaching a custom sideboard, use these as
spacers (see step 6, page 7).

e

e

E

e

e

2

F G B I

SC2 : 8   SC1 : 4

(4)

I

I

I

I

SC1

SC1   SC1   B

SC1

(3)

F

F

(1)

SC2

(2)   G

SC2   G

SC2   G

G

SC2

G

SC2

3

A H

⚠ Do not bend the flat cable ⊕.

H

(1)   **(2)**
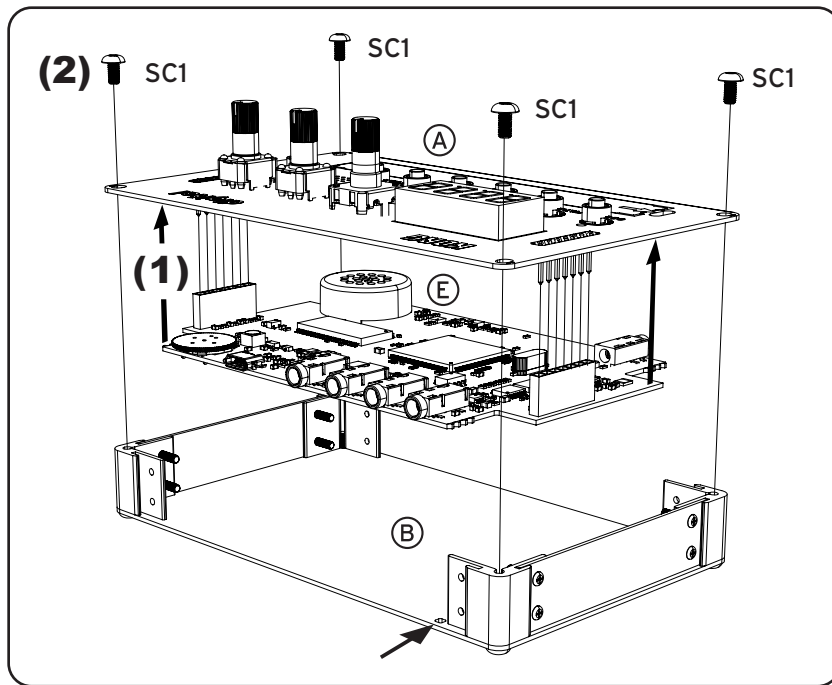
H

A   A

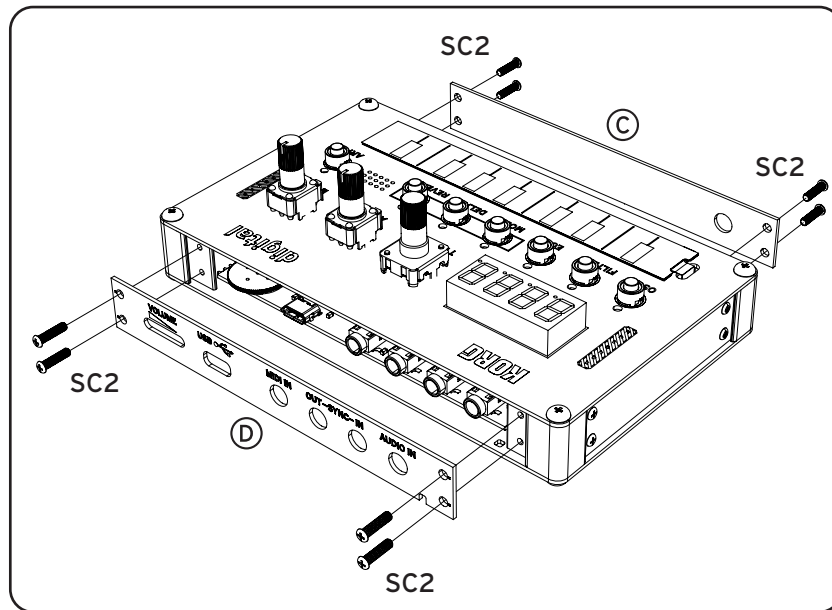**(3)**   **(4)**

H

A

Open

Lock
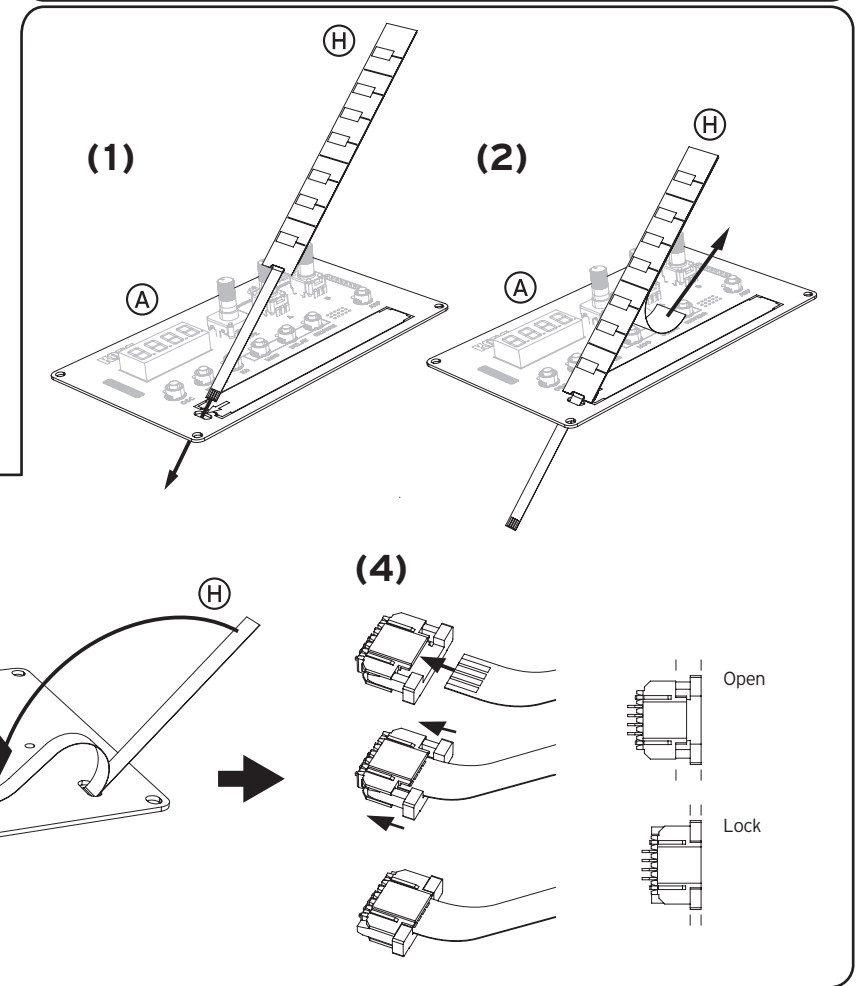
4

(A)(E)

SC1 : 4

Make sure that the circuit boards for (1) are not misaligned when inserting.
The section on ⑧ with holes indicated by an arrow ↗ is the rear side.
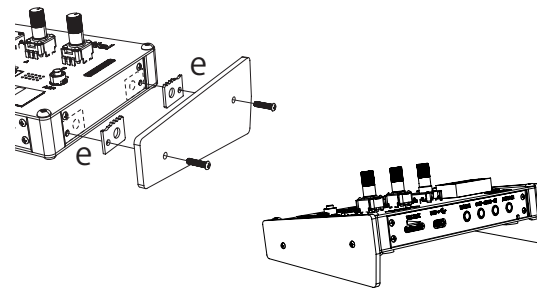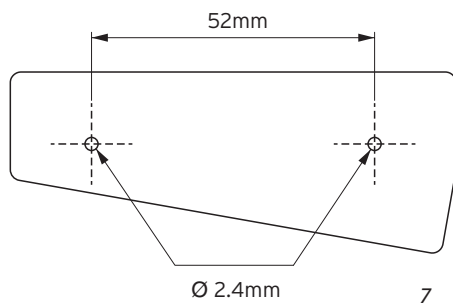
(2) SC1

SC1

SC1

SC1

(A)

SC1

(1)

(E)

(B)

SC2

(C)

SC2

SC2

SC2

5

(C)(D)

SC2 : 8

6

Refer to the following when attaching a custom sideboard.

52mm

Ø 2.4mm

e

e

7

After assembling the kit and before turning on the power, make sure to check the following.
• Are the parts mounted in the correct direction?
• Is the kit built securely, without wobbling?

Troubleshooting

Extra parts remaining, or parts missing.
→ There are more screws than the number that will be used.
→ If any parts are missing, contact your local Korg distributor.
→ If any parts are damaged or missing before beginning the assembly procedure, contact your local Korg distributor.

The unit makes an abnormal sound when tilted or shaken after assembly.
→ A loose screw or other part might have been left inside the unit. Open the unit and check the inside.

The device does not turn on.
→ In step 4 (1), the pin positions may be misaligned when inserting the circuit board. Make sure that the pins are in the proper position when inserting.
→ In step 3 (3), the flat cable may not be inserted correctly into the connector. Make sure that the flat cable is inserted into the connector.