

superOS-303

Shortcut Guide

FRAM EDITION V1.0.0-BETA-FRAM · USB-C · CUSTOM FIRMWARE FOR THE TB-303
SUPEROS-303 CPU V1.3 · 512 KB FRAM · FILTER CV · SUPEROS MODE

Every function of the Owner's Manual on one drawing each: the faceplate, the buttons involved, and the order to press them. Read the chapter you need, look at the picture, follow the numbered steps below it. Nothing here needs to be memorised; the sheet is meant to sit next to the instrument.

READING THE DRAWINGS

○

 Black ring: press or tap this button.

●

 Red ring and red label: hold this button while you press the others.

 Blue dashed box: any key in this group.

COMBINATIONS

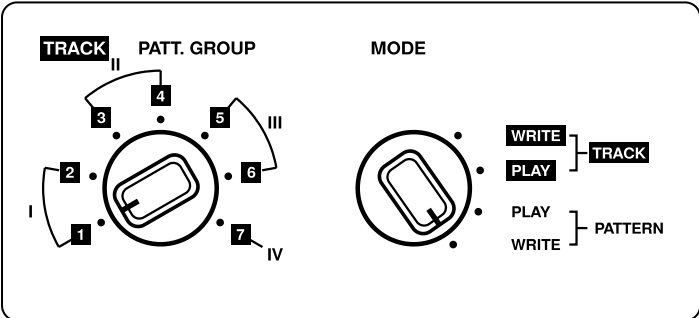
FUNCTION + CLEAR means hold the first control, then press the second.

Numbered labels (1., 2., 3.) give the order. Each drawing's header shows the Mode Dial position and whether the sequencer should be stopped or running.

TIME MODE NAMES

In TIME MODE the four writing keys carry the panel's original legends: STEP is the DOWN key, TIE is UP, REST is ACCENT and RATCHET is SLIDE.

Everything describes superOS mode unless the header says D650C.



Mode Dial (right): PATTERN WRITE to build and edit patterns, PATTERN PLAY to perform them, TRACK WRITE to record a song of patterns, TRACK PLAY to play it back. The dial position is printed in every header on the following pages.

Group Dial (left): selects the pattern group I–IV. The seven detents pair up: 1-2 = group I, 3-4 = II, 5-6 = III, 7 = IV. In the two Track modes the same dial selects track 1–8.

Saving: there is no save button. Patterns, tracks and settings are written to memory when the sequencer stops and about two seconds after the last edit while stopped.

CONTENTS

GETTING STARTED

1	Select a Pattern	3
2	Clear a Pattern	3
3	Set the Length Directly	4
4	Length: +1 / -1 · Double · Halve	4
5	Triplet Mode	4
6	Time Scale: Normal · Half · Double	5
7	Writing Pitches	5
8	Writing Rhythm	6

PLAYING PATTERNS

9	Play and Queue Patterns	7
10	Sections A and B	7
11	A/B Mode: 64-Step Patterns	7
12	Save the A/B Mode With a Pattern	8

PATTERN EDITING

13	Step Editing: Fix One Note	9
14	Transform: Hold CLEAR	9
15	Transform: Pitch Rotate · Randomize One Attribute	10
16	Copy and Paste	10
17	Building a Chain (Stopped)	10
18	Building a Chain in Any Order	11
19	Chains and Queues While Running	11
20	Chain A/B Mode and Browsing	11
21	Save a Chain With a Pattern	12
22	Playback Direction	12
23	Metronome Tap-Write	13
24	Step Probability: Select a Step	13
25	Step Probability: Arm a Characteristic	14
26	Step Probability: Set the Odds	14
27	Step Probability: Randomize	14

VARIATIONS & SCALES

28	Pick the Variation You Edit	15
29	Variation 3: Poly On / Off	15
30	Writing Chords (Variation 3 Poly)	16
31	Per-Pattern Scales	16

PERFORMANCE

32	Live Pattern Edit	17
33	Pin Live Edits to Section A or B	17
34	Step-Select: Overview and Banks	17
35	Step-Select: Edit a Step's Pitch	18
36	Step-Select: Edit a Step's Time · Chain View	18
37	Keyboard Play Mode	19
38	Live Transpose	19
39	Force Accent / Force Slide	19

FILTER CUTOFF CV

40	Filter CV: Open the Step Editor	20
41	Filter CV: Enter a Value	20
42	Filter CV: Arm · Glide · Move	21
43	Filter CV: Randomize	21

TRACKS

44	Writing a Track	22
45	Reviewing a Track · Per-Bar Transpose	22
46	Playing a Track	23

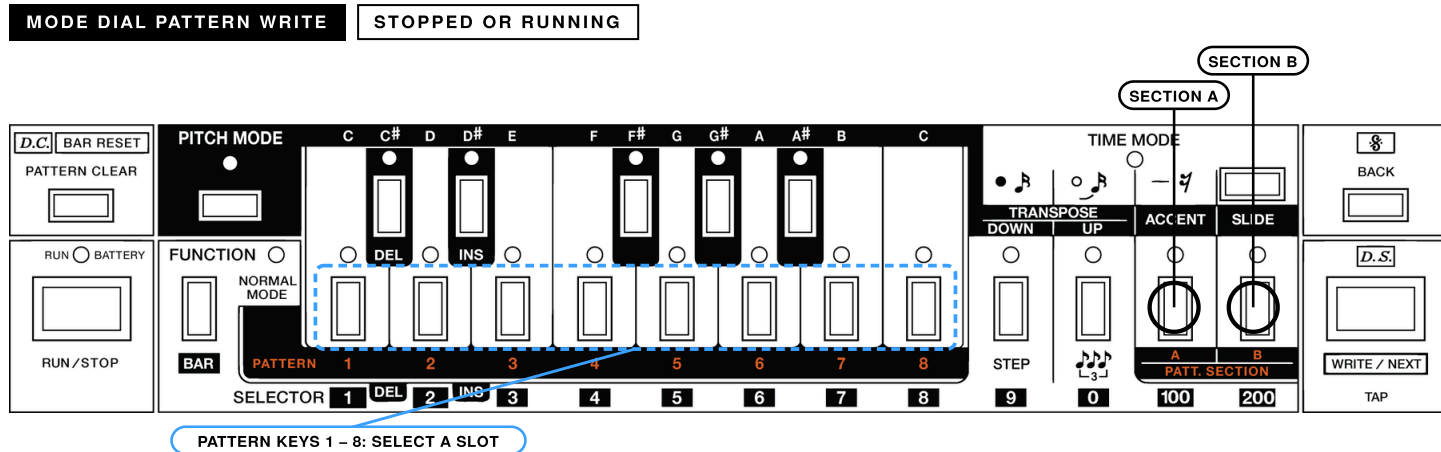
SETTINGS

47	Menu Mode	24
48	Variation MIDI Channels	24
49	Switching Firmware: superOS ↔ D650C	25
50	D650C Mode: Config Menu	25

REFERENCE

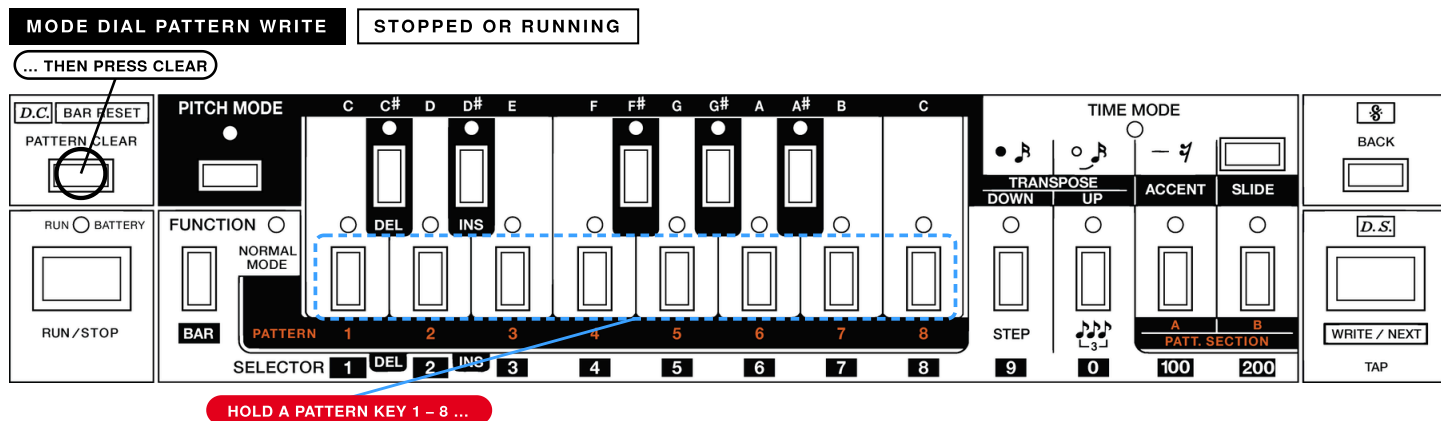
	Firmware update, MIDI, web editor, storage, filter floor	26
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1 SELECT A PATTERN



1. Set the Mode Dial to PATTERN WRITE.
2. Choose a group I-IV with the Group Dial (the seven detents pair up: 1-2 = I, 3-4 = II, 5-6 = III, 7 = IV).
3. Press a pattern key 1-8. ACCENT selects the slot's A section, SLIDE its B section.

2 CLEAR A PATTERN

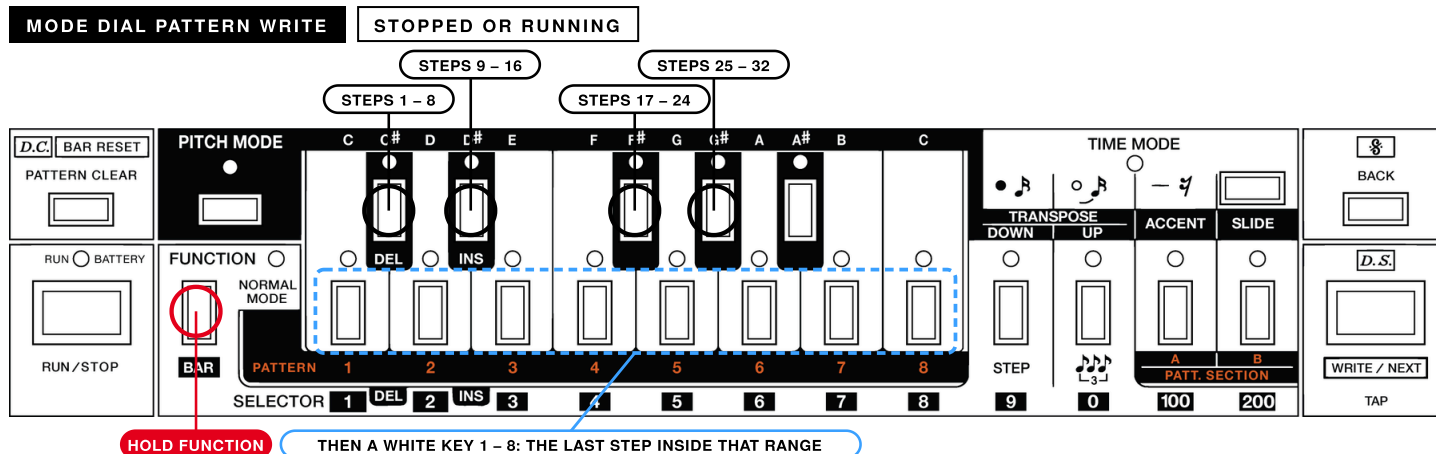


1. Hold the pattern key of the slot you want to erase.
2. Press CLEAR. The LEDs flash to confirm. In A/B mode both sections are erased.

NOTE

Clearing a pattern also clears its step probability and filter CV lane. The filter Floor is kept.

3 SET THE LENGTH DIRECTLY

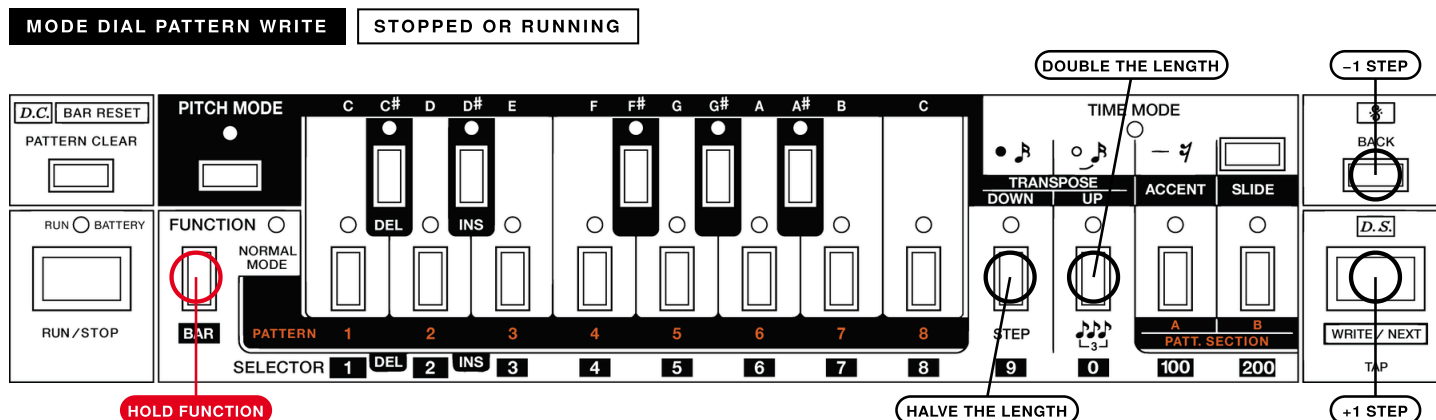


1. Hold FUNCTION. The LEDs show the current length and the editor opens on the page that holds the last step.
2. Press a black key to choose the range, then a white key for the exact step. Looking around without pressing a white key changes nothing.

NOTE

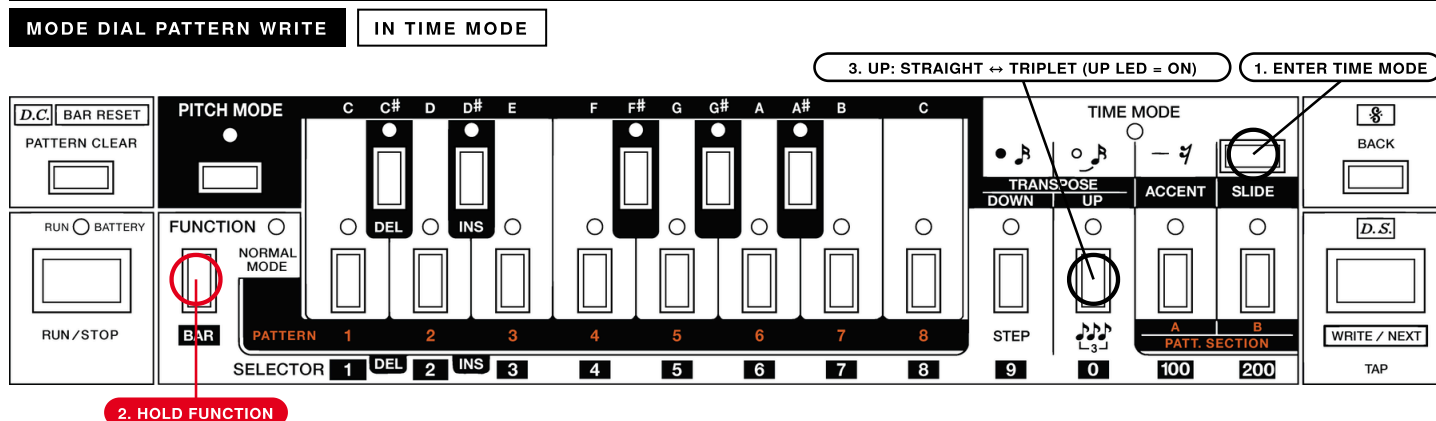
Length is never destructive: notes past the last step are kept and come back when you lengthen again. A section is 1-32 steps (1-24 in triplet mode).

4 LENGTH: +1 / -1 · DOUBLE · HALVE



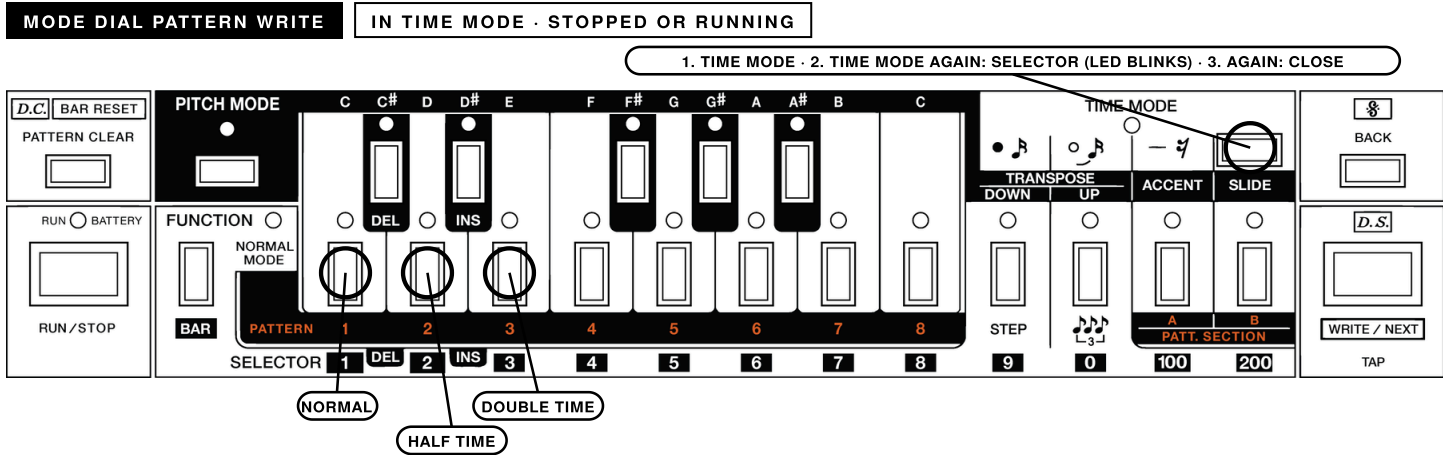
1. FUNCTION + WRITE/NEXT adds one step, FUNCTION + BACK removes one (down to 1).
2. FUNCTION + UP doubles: it reveals the retained tail or copies the first half. Doubling past 32 spills into section B and turns A/B mode on.
3. FUNCTION + DOWN halves (31 → 15 → 7 → 3 → 1) and destroys nothing.

5 TRIPLET MODE



1. Press TIME MODE, hold FUNCTION and press UP. The section switches between straight sixteenths and triplet timing.
2. A triplet section is up to 24 steps long. Steps past 24 are kept for when you switch back.

6 TIME SCALE: NORMAL · HALF · DOUBLE

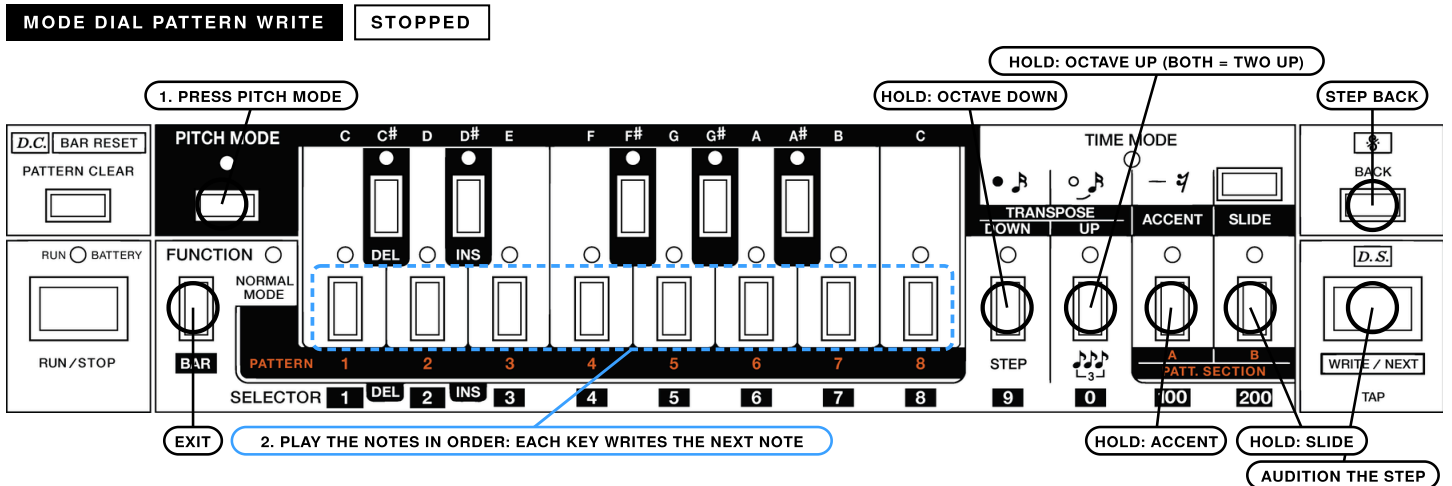


1. In TIME MODE press TIME MODE again: the selector opens and the TIME LED blinks. Keys 1, 2, 3 pick normal, half or double time for this pattern.
2. Running, the change waits for step 1 of the next pass (the key blinks while queued, solid once it lands). Stopped, it applies at once.
3. Press TIME MODE again, or leave TIME MODE, to close. The same second press works in step-select's time view.

NOTE

Half time doubles every step (12 ticks, 16 in triplets), double time halves it (3 ticks, 4 in triplets). It stacks with triplet mode and is stored per pattern, so a chain can change feel on its own.

7 WRITING PITCHES

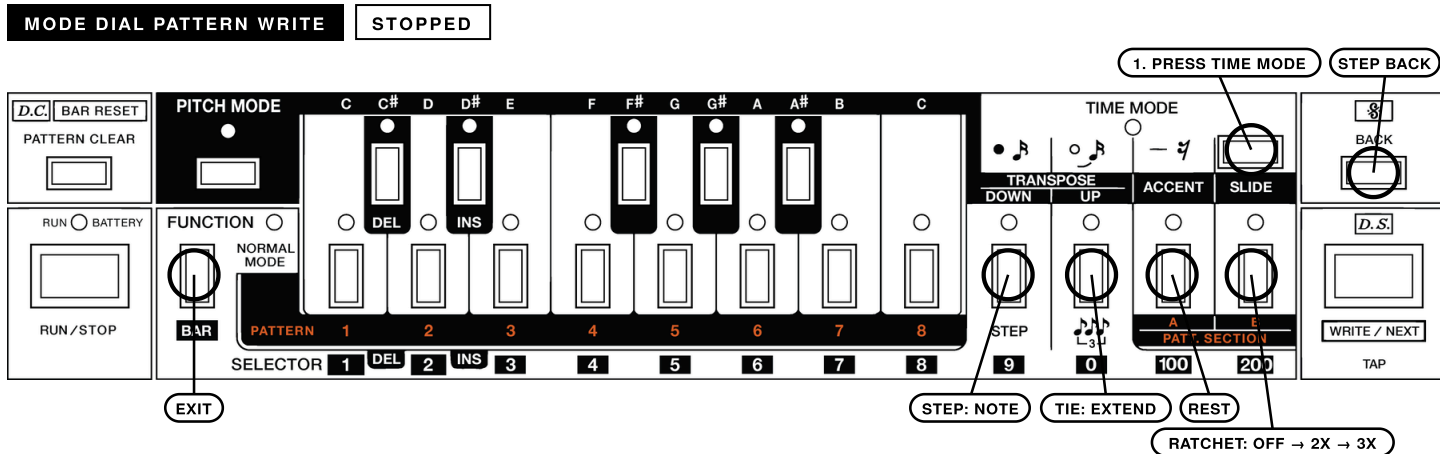


1. Press PITCH MODE, then play the keyboard in order; each press writes the next note.
2. Hold DOWN or UP while pressing for the octave, ACCENT and/or SLIDE to write those flags with the note.
3. The mode ends by itself when the section is full (32 steps) or you come back to the first note; FUNCTION ends it at any time. A blank pattern grows to the number of notes you play.

NOTE

From a MIDI keyboard: while PITCH MODE is on, a note played on the main channel replaces the note at the cursor (velocity 100 or more writes an accent). WRITE/NEXT moves on to the next note.

8 WRITING RHYTHM

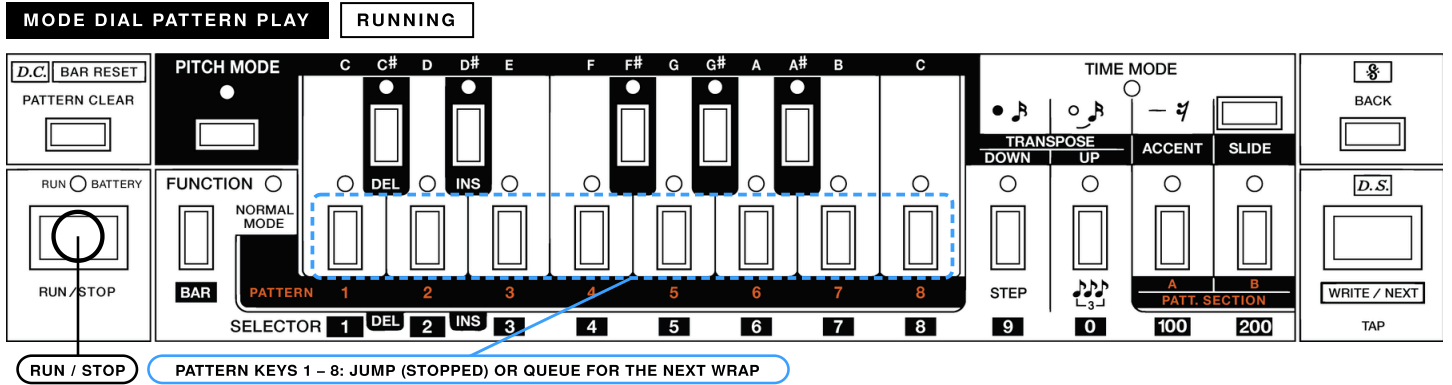


1. Press TIME MODE. For each step press STEP (note), TIE (extend the previous step) or REST; the cursor advances after each entry. BACK steps the cursor back one step.
2. RATCHET cycles the current step's ratchet without advancing: off, 2x (SLIDE LED solid), 3x (blinking). Only plain notes ratchet; ties and slides do not.
3. After the last step the mode exits automatically.

NOTE

Pitch and time are separate streams: turning a note into a rest keeps its pitch in the queue, and a note written there again plays the same pitch.

9 PLAY AND QUEUE PATTERNS

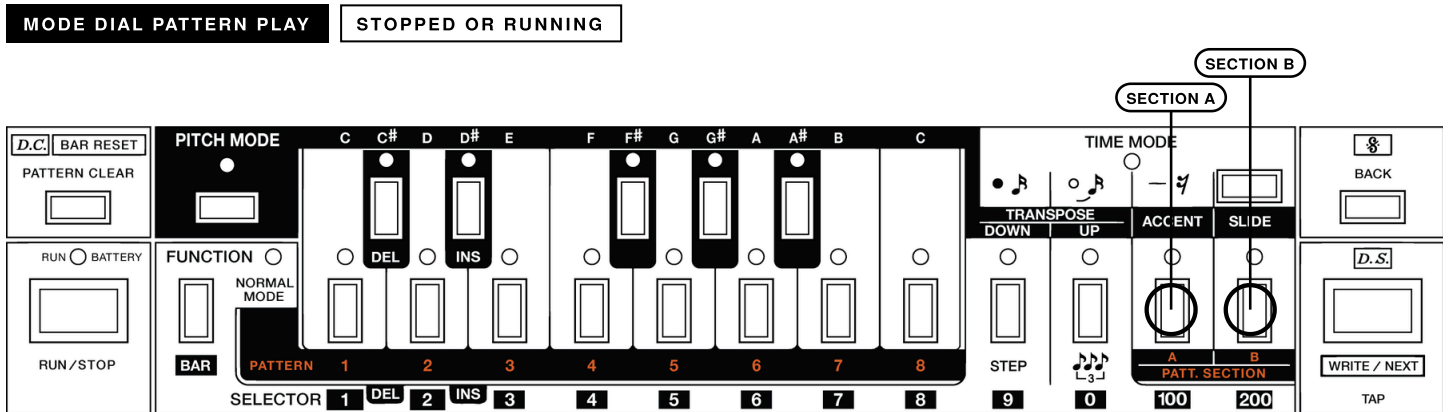


1. Set the Mode Dial to PATTERN PLAY and press RUN/STOP.
2. Press a pattern key: stopped, it jumps there at once; running, it plays from the next pattern wrap.
3. Turn the Group Dial while running, then press a pattern key: group and pattern switch together at the wrap.

NOTE

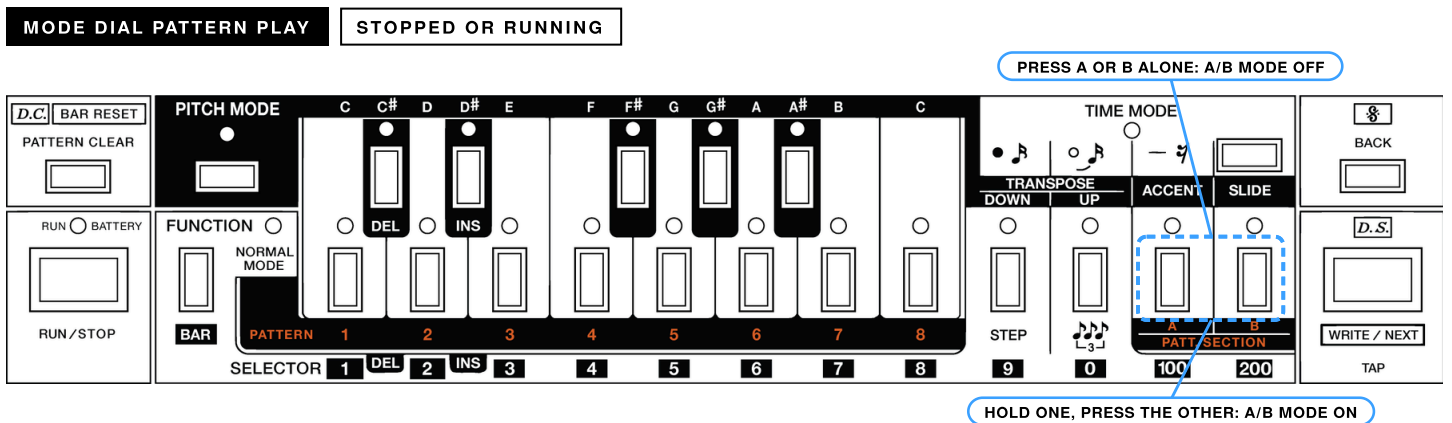
While stopped the selected pattern LED flashes at the tempo.

10 SECTIONS A AND B



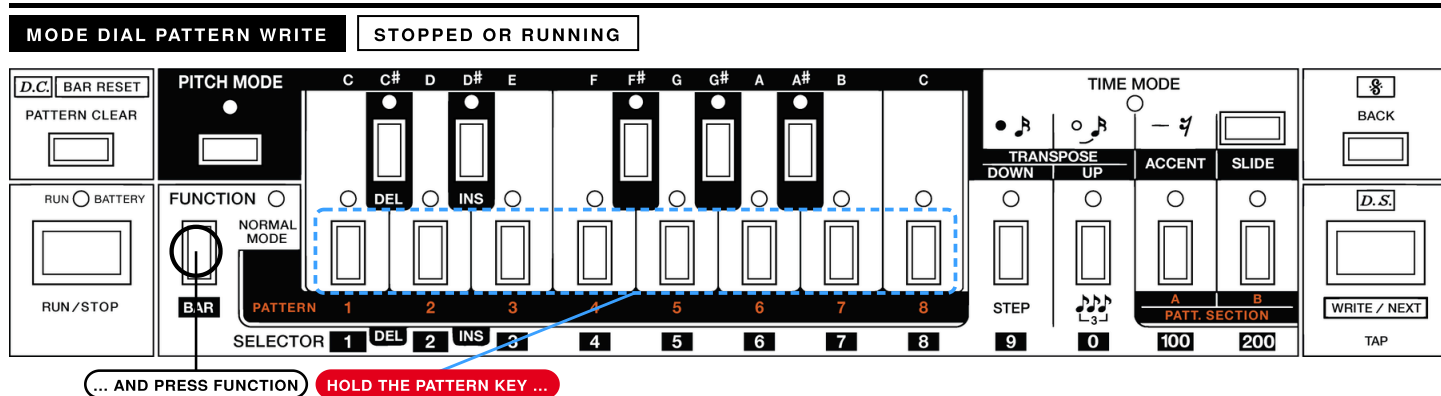
1. Every slot has two sections of up to 32 steps. ACCENT plays section A, SLIDE plays section B.
2. Stopped the switch is immediate; running it happens at the next wrap. Selecting a section leaves A/B mode.

11 A/B MODE: 64-STEP PATTERNS



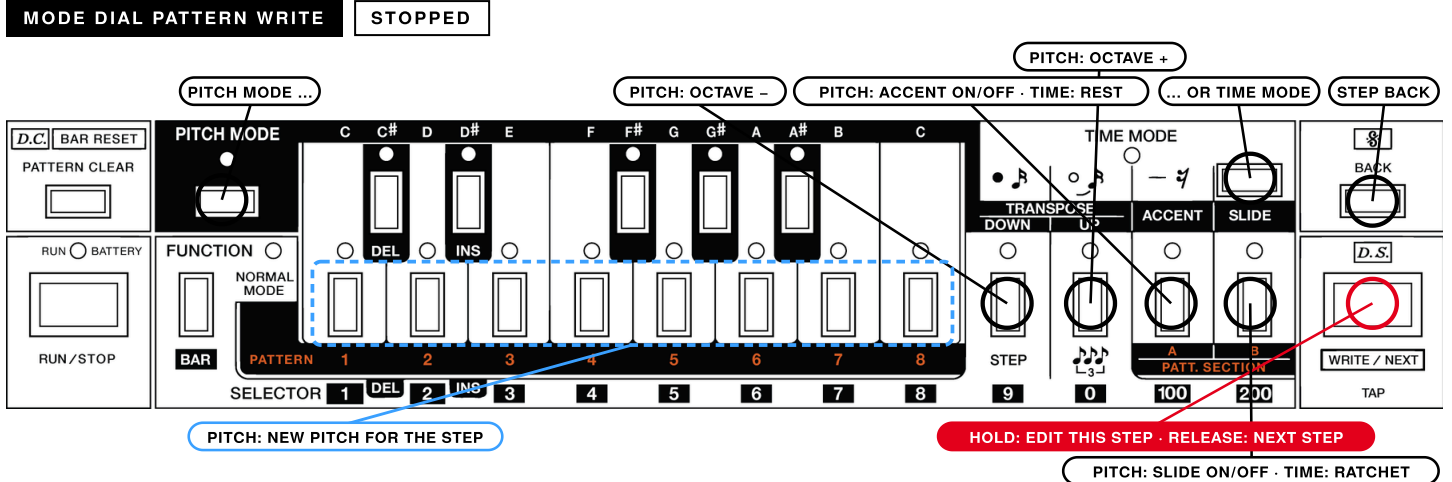
1. Hold ACCENT and press SLIDE (or the reverse). Every pattern you select now plays its A section, then its B section: one pattern of up to 64 steps.
2. The mode is sticky and follows you across pattern keys. Both section LEDs light, the playing section blinks.
3. Press ACCENT or SLIDE alone to go back to single sections.

12 SAVE THE A/B MODE WITH A PATTERN



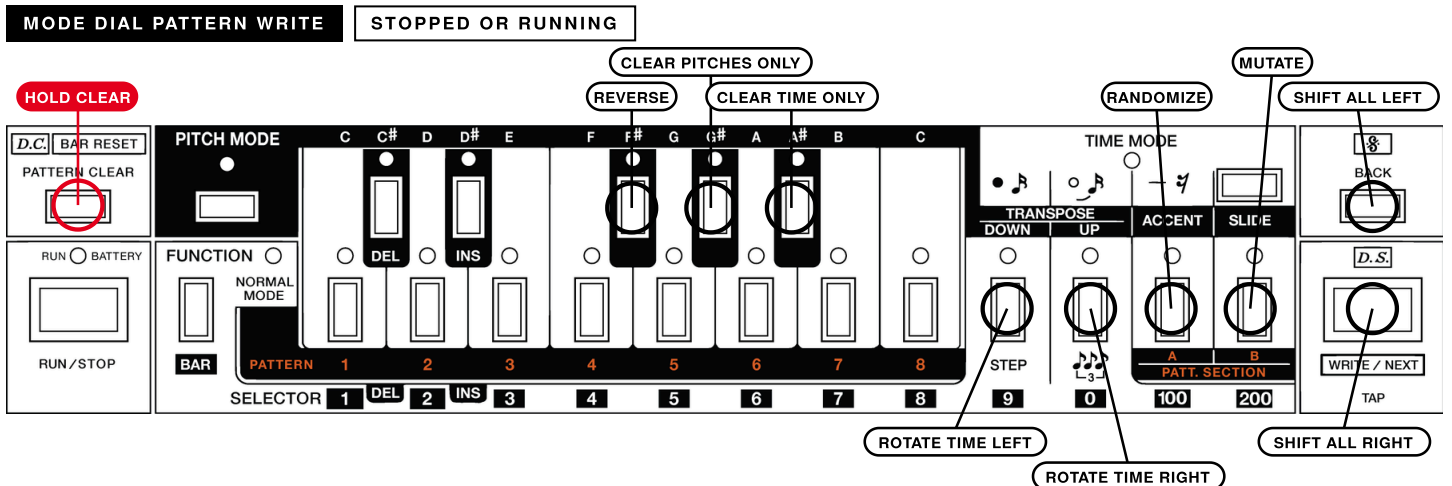
1. With A/B mode on: hold the pattern key and press FUNCTION. The mode is stored with the pattern and comes back whenever it is selected.
2. With A/B mode off (and no chain playing): the same gesture erases that pattern's saved A/B memory and its stored chain. The mode LEDs flash to confirm.

13 STEP EDITING: FIX ONE NOTE



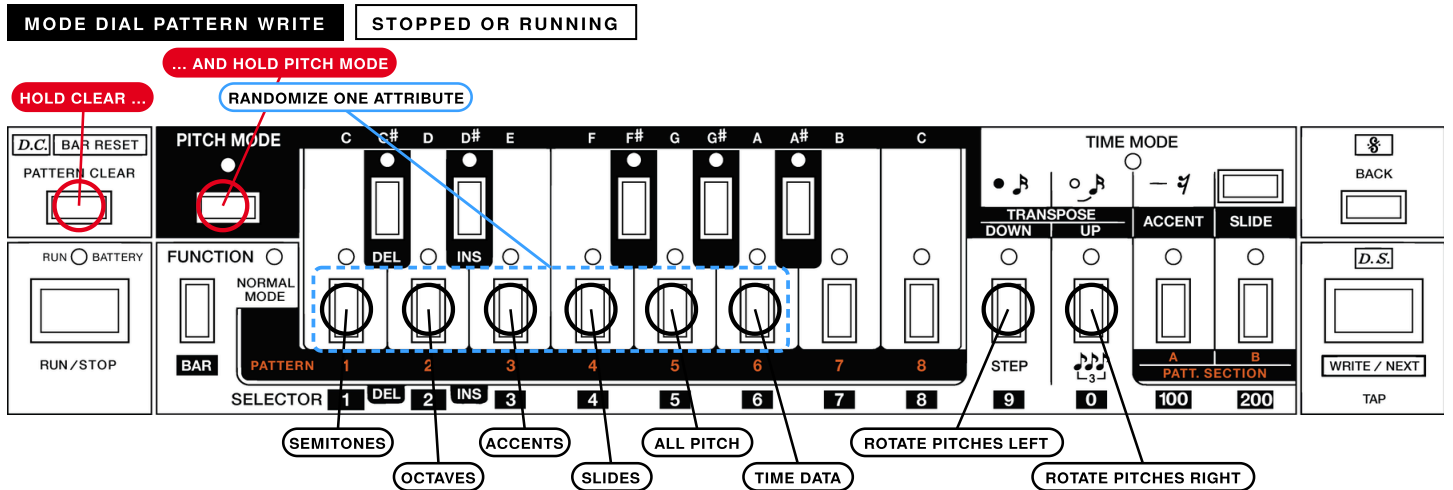
1. Enter PITCH MODE or TIME MODE, then hold WRITE/NEXT: the current step is auditioned and stays editable for as long as the key is held.
2. In PITCH MODE: a keyboard key replaces the pitch, UP/DOWN nudge the octave, ACCENT/SLIDE toggle the flags. Release to advance (rests and ties are skipped).
3. In TIME MODE: STEP, TIE or REST change the step type, RATCHET cycles its ratchet.

14 TRANSFORM: HOLD CLEAR



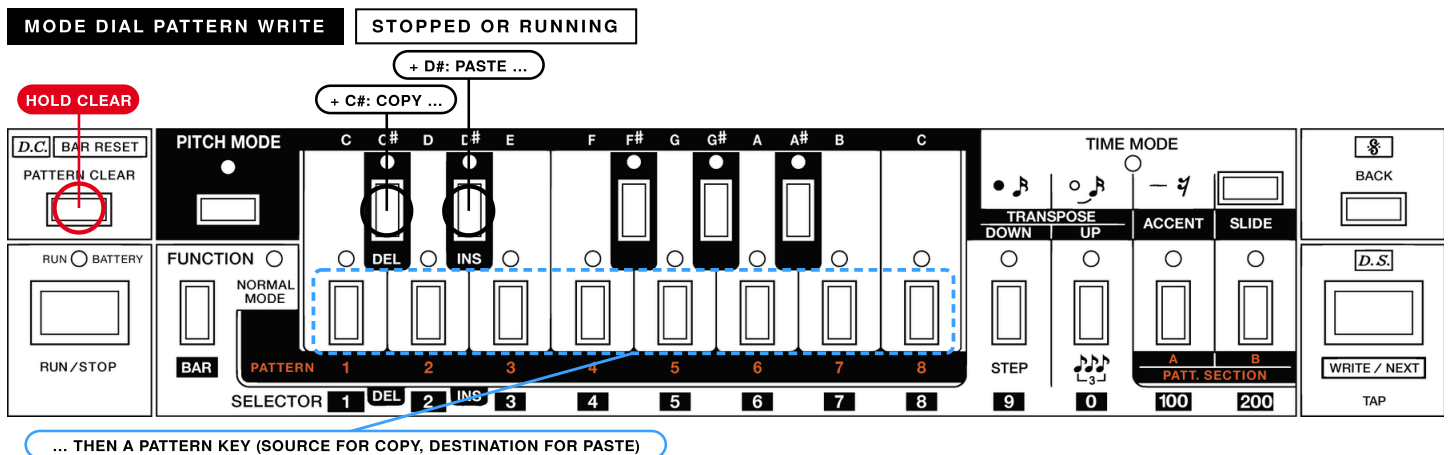
1. Hold CLEAR and press a key. Nothing here moves the playhead or interrupts the clock.
2. Randomize and mutate respect the pattern's scale. Rotate, shift and reverse are exact: the opposite gesture restores the pattern.
3. The operations apply to whichever variation is the edit target.

15 TRANSFORM: PITCH ROTATE · RANDOMIZE ONE ATTRIBUTE



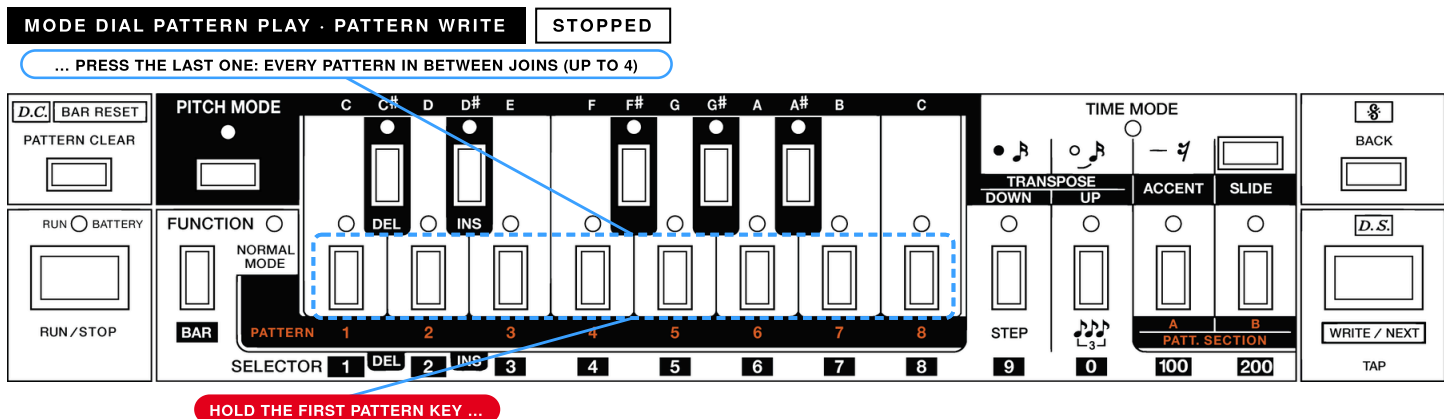
1. Hold CLEAR and PITCH MODE together.
2. DOWN / UP rotate only the pitch order; the rhythm stays where it is.
3. Tap a white key C–A to randomize just that attribute: semitones, octaves, accents, slides, all pitch data, or the time data.

16 COPY AND PASTE



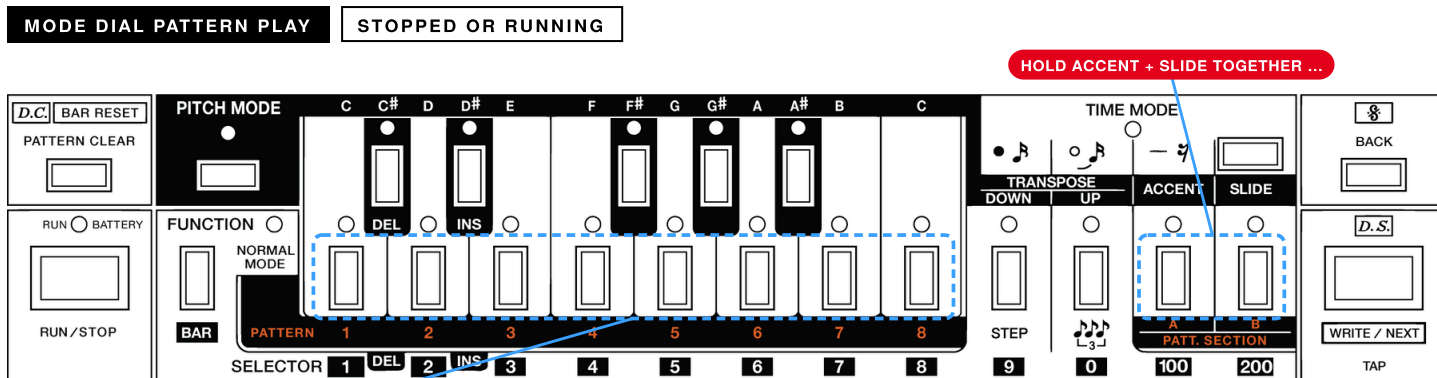
1. Hold CLEAR + C# and press a pattern key to copy that slot to the clipboard.
2. Hold CLEAR + D# and press a pattern key to paste into that slot. Both work within the current group and section (A or B), on variation 1.

17 BUILDING A CHAIN (STOPPED)



1. Hold the first pattern key and press the last one. Every pattern in between joins the chain, up to four.
2. Let go of the first key to start the chain. It plays the patterns in order and wraps back to the first.
3. Pressing a single pattern key brings back the chain saved on that pattern, if it has one.

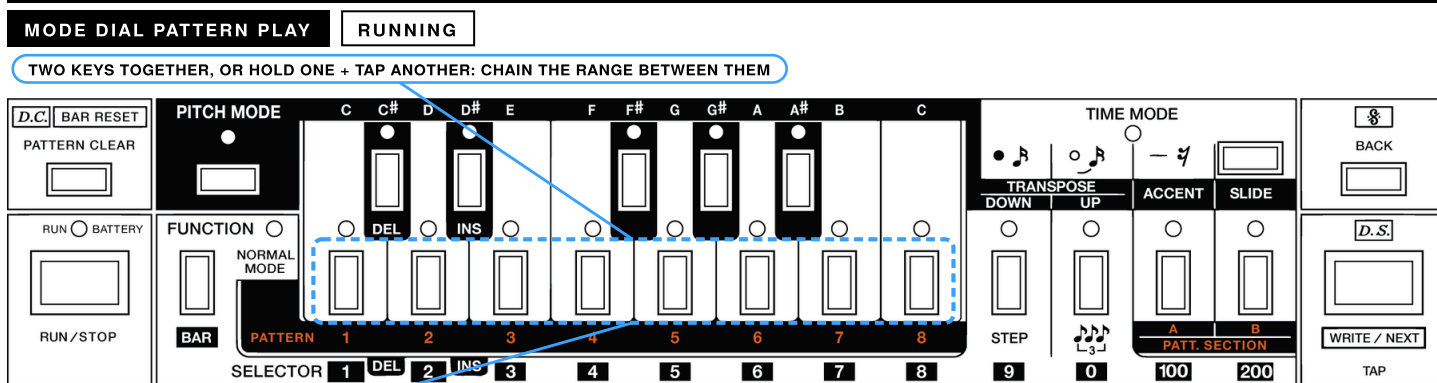
18 BUILDING A CHAIN IN ANY ORDER



... TAP UP TO 4 PATTERN KEYS IN ANY ORDER (REPEATS OK), THEN RELEASE

1. Hold ACCENT and SLIDE together and tap up to four pattern keys in any order; 1 1 2 4 is a valid chain.
2. Releasing the buttons commits it: stopped it starts at once, running it takes over at the next pattern wrap.

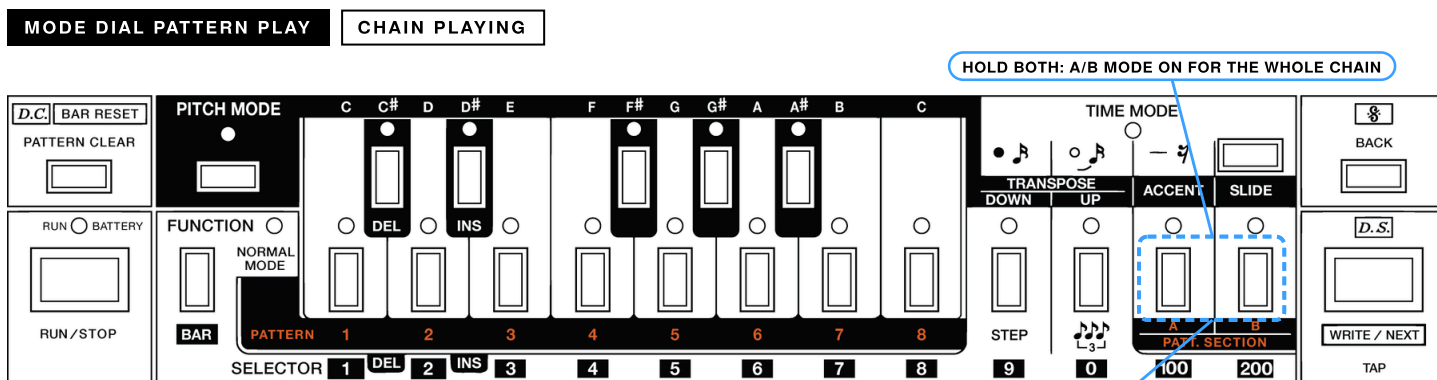
19 CHAINS AND QUEUES WHILE RUNNING



SHORT TAP (< 0.3 S): QUEUE NEXT · HOLD (≥ 0.3 S): LOOP WHILE HELD

1. A short tap queues that pattern next; a playing chain finishes its pass first.
2. Holding a pattern key loops that pattern for as long as it is held.
3. Two keys together (or hold one, tap another) build a chain from the range between them; with a chain playing the new one is queued and takes over at the chain boundary.

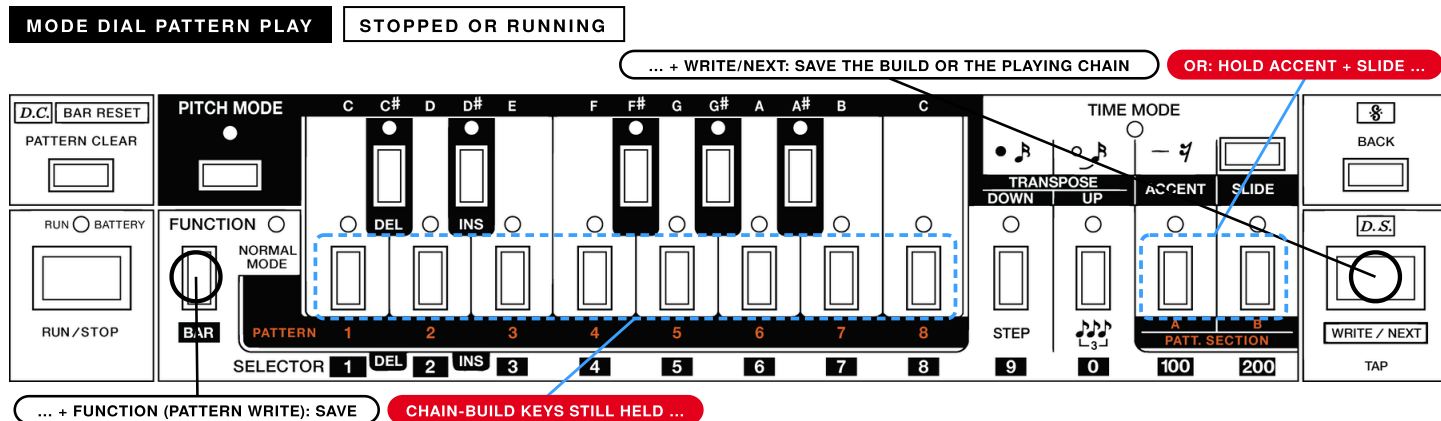
20 CHAIN A/B MODE AND BROWSING



MODE ON: A OR B ALONE = OFF · MODE OFF: A OR B ALONE = BROWSE

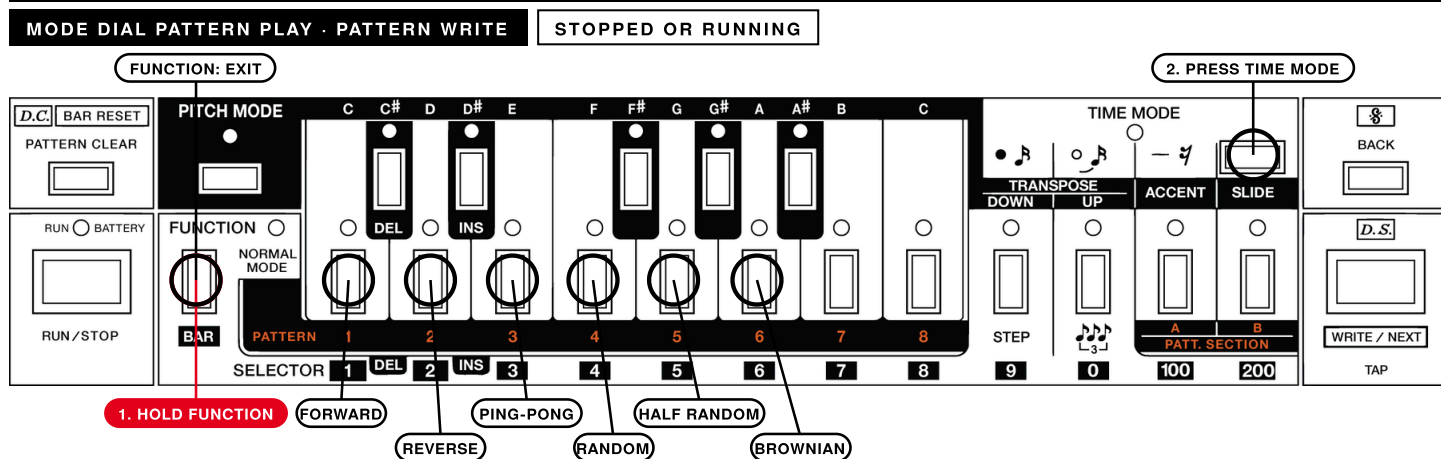
1. While a chain plays the section buttons never stop or redirect it.
2. Hold ACCENT + SLIDE: every chain member plays A then B before the chain advances. With the mode on, a single press of ACCENT or SLIDE turns it off.
3. With the mode off, ACCENT or SLIDE alone browses that bank: the pattern keys and LEDs show bank A or B so you can pick or chain there while the chain keeps playing.

21 SAVE A CHAIN WITH A PATTERN



1. The chain is stored on its first pattern together with the current A/B mode. The mode LEDs flash to confirm.
2. Selecting that pattern later while stopped (or powering on with it selected) re-arms the whole chain.
3. ACCENT + SLIDE + WRITE/NEXT with no chain active clears the stored chain from the current pattern.

22 PLAYBACK DIRECTION

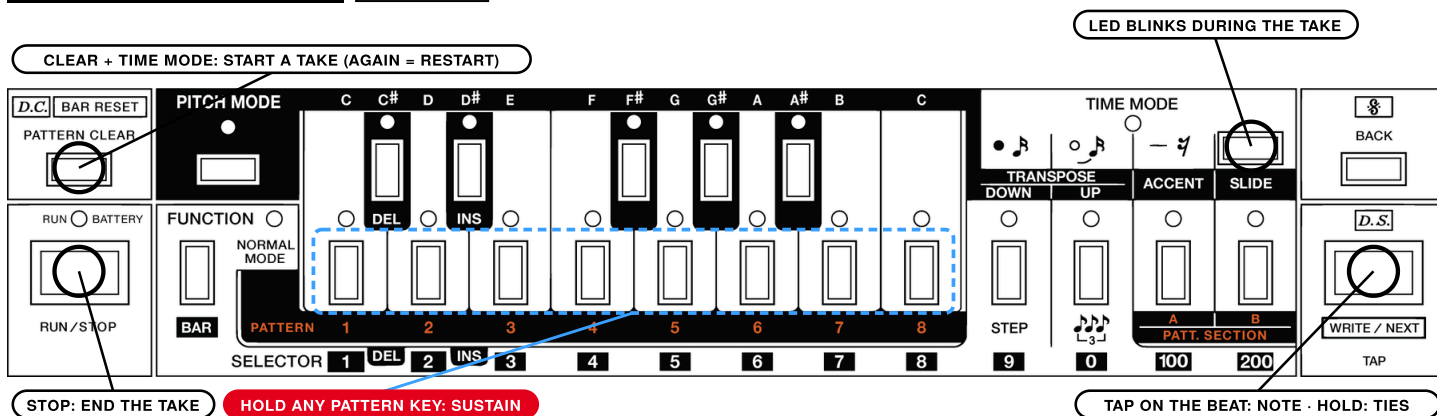


1. FUNCTION + TIME MODE opens the selector; six LEDs show the directions. Press a key to choose, FUNCTION to exit.
2. Running, a new direction starts after one full length of the pattern. Variations 2 and 3 keep their own direction with the pattern. Random modes never slide.

23 METRONOME TAP-WRITE

MODE DIAL PATTERN WRITE

RUNNING



1. Press CLEAR + TIME MODE while running. The rhythm of the whole take is cleared (the section, both halves in A/B mode, every chain member); pitches are kept and consumed in order.
2. Tap WRITE/NEXT on the beats: a tap writes a note, holding it writes ties. Slightly early taps land on the next downbeat. You hear each note from the moment you press.
3. Empty bars click along in record and loop until you tap something; bars with notes play back while you overdub. After one full pass with something recorded the take ends by itself.

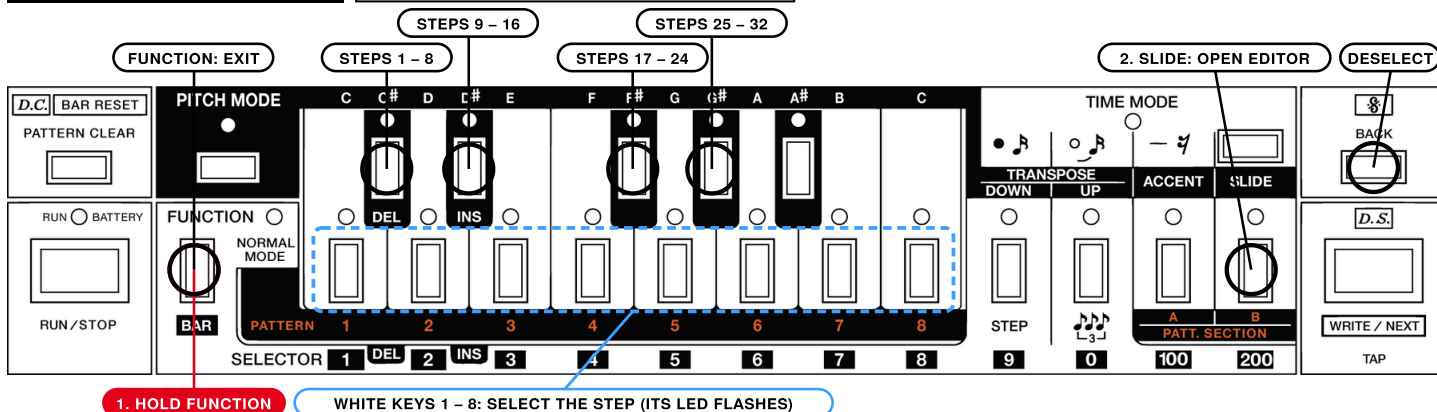
NOTE

During a take the pattern keys belong to the recorder and the CLEAR transform combos are disabled.

24 STEP PROBABILITY: SELECT A STEP

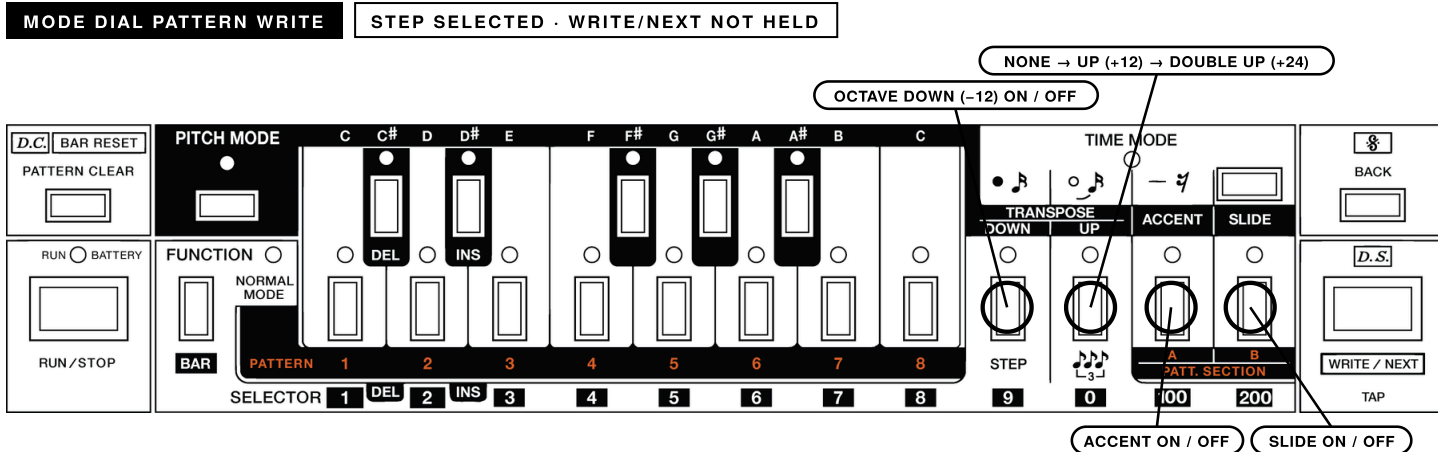
MODE DIAL PATTERN WRITE

VARIAION 1 · STOPPED OR RUNNING



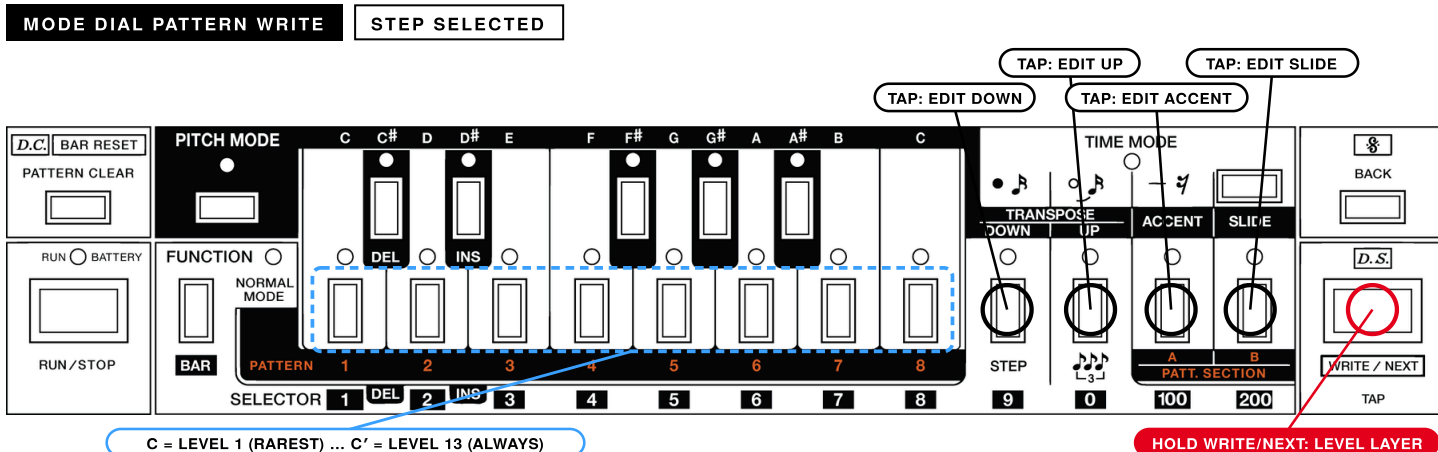
1. FUNCTION + SLIDE opens the editor. Steps that carry probability light bright, empty note steps show dim.
2. Black keys pick the bank of eight steps, white keys the step. Each section has its own probability: with A/B mode off, select the section first.

25 STEP PROBABILITY: ARM A CHARACTERISTIC



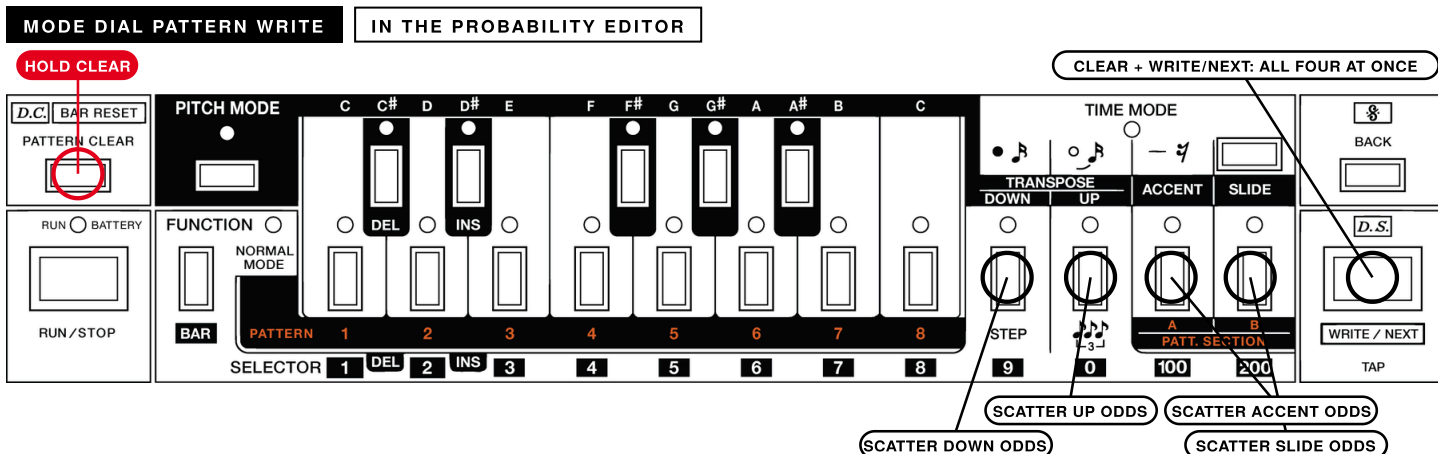
1. With a step selected, ACCENT, SLIDE, DOWN and UP arm a probabilistic accent, slide, octave down or octave up. Each arms at 100% as a starting point.
2. Every characteristic is rolled fresh each time the step plays. A tie holds the previous roll, a rest clears it. Down and up roll independently; if both pass, a coin flip decides.

26 STEP PROBABILITY: SET THE ODDS



1. Hold WRITE/NEXT. Tap ACCENT, SLIDE, DOWN or UP to pick which characteristic you are editing (its LED blinks).
2. Press a keyboard key C to high C to set the level 1–13; the pitch LEDs show it as a bar. Level 13 is certain, level 1 is roughly one step in thirteen.

27 STEP PROBABILITY: RANDOMIZE

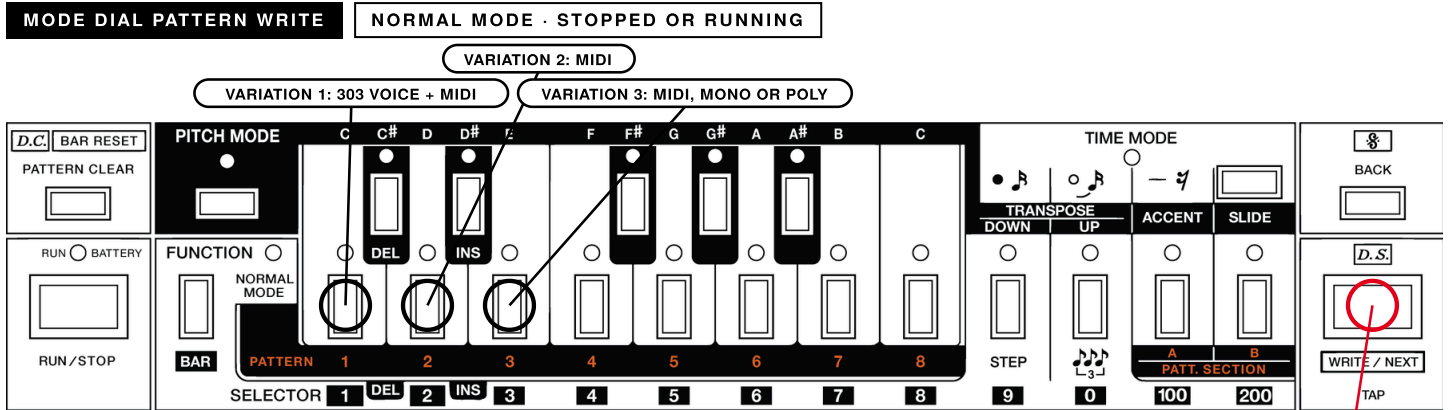


1. Hold CLEAR and tap ACCENT, SLIDE, DOWN or UP to scatter random odds for that characteristic across the whole pattern.
2. CLEAR + WRITE/NEXT randomizes all four. About a third of the steps land unarmed, the rest get a random level.

NOTE

Variations 2 and 3 carry no probability.

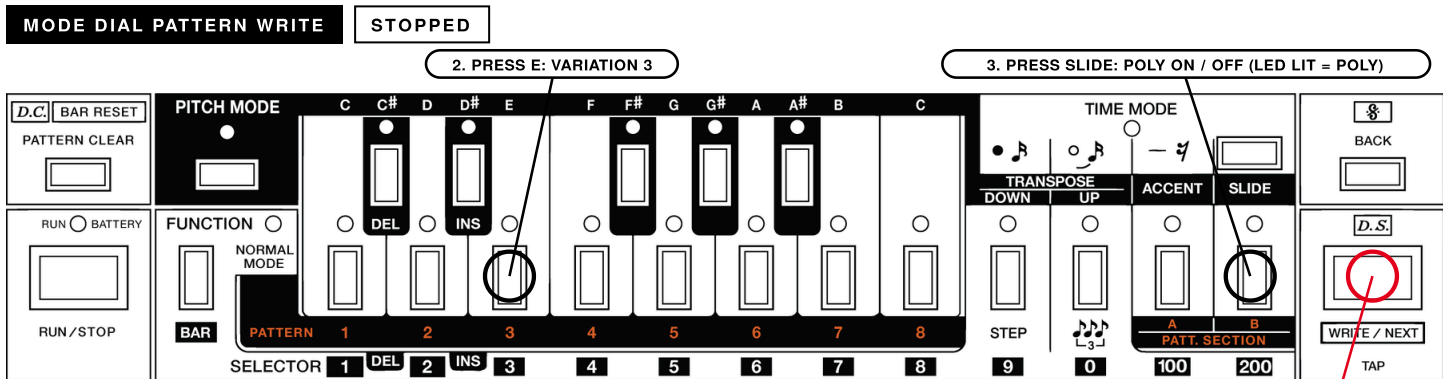
28 PICK THE VARIATION YOU EDIT



HOLD WRITE/NEXT

1. Every slot holds three sequences that play together: variation 1 drives the 303 voice (and MIDI), variations 2 and 3 are MIDI-only on their own channels.
2. Hold WRITE/NEXT: the picker appears on C / D / E (the selected one flashes). Press C, D or E to choose.
3. All editing then applies to that variation and the chase LEDs follow its playhead. The choice returns to variation 1 when you change patterns.

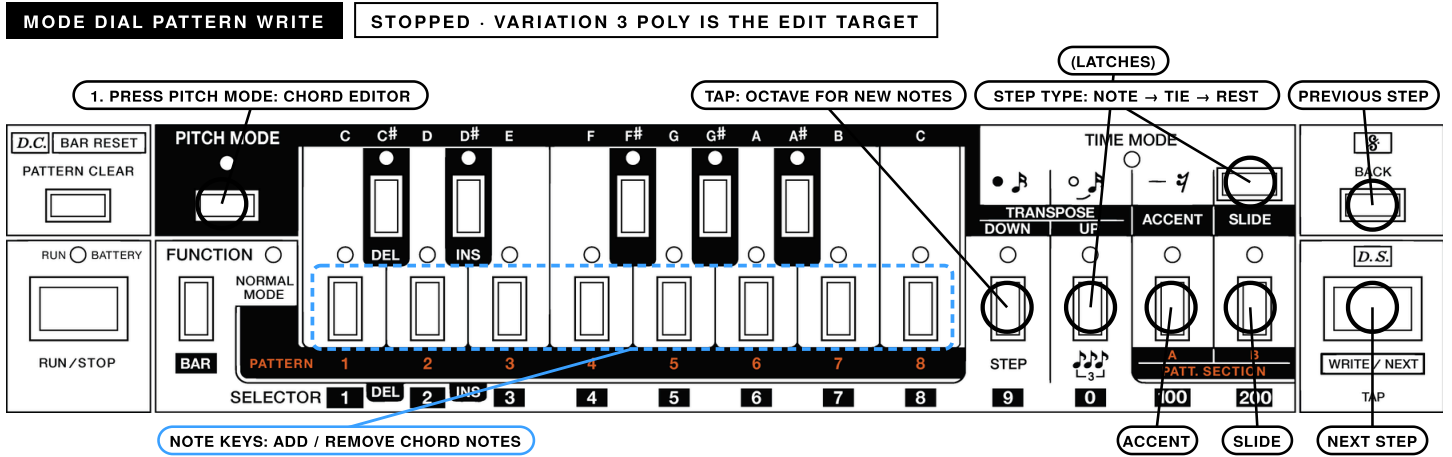
29 VARIATION 3: POLY ON / OFF



1. HOLD WRITE/NEXT

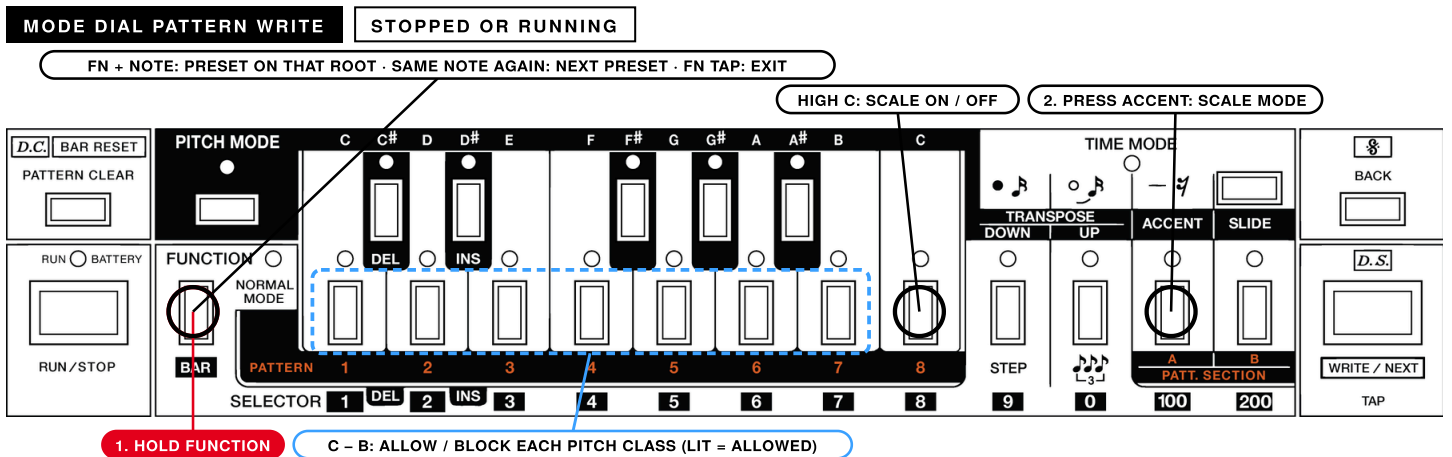
1. Stop the sequencer. Hold WRITE/NEXT, select variation 3 with E, and with WRITE/NEXT still held press SLIDE.
2. The SLIDE LED shows the state: lit = polyphonic (chords of up to four notes per step over MIDI), off = monophonic. The flag is stored per pattern slot.

30 WRITING CHORDS (VARIATION 3 POLY)



1. With variation 3 (poly) selected, stop and press PITCH MODE.
2. Note keys toggle chord notes on the current step. UP / DOWN set the octave new notes land in. TIME MODE cycles note / tie / rest, ACCENT and SLIDE set the step's flags.
3. WRITE/NEXT and BACK move to the next or previous step and play its chord. The note keys do not play the chord.

31 PER-PATTERN SCALES

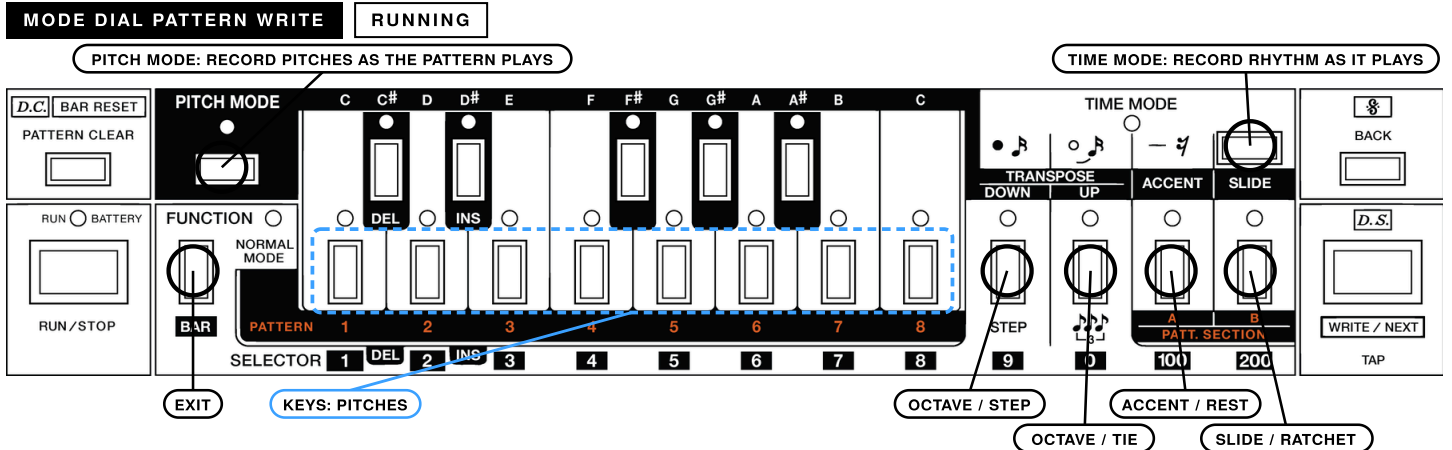


1. FUNCTION + ACCENT enters scale mode. Note keys toggle the twelve pitch classes; high C turns the scale on or off for this pattern.
2. Presets: hold FUNCTION and press a note to load a preset rooted there; the same note again cycles the 35 presets, a different note moves the preset to that root.
3. Tap FUNCTION (press and release with no note) to exit.

NOTE

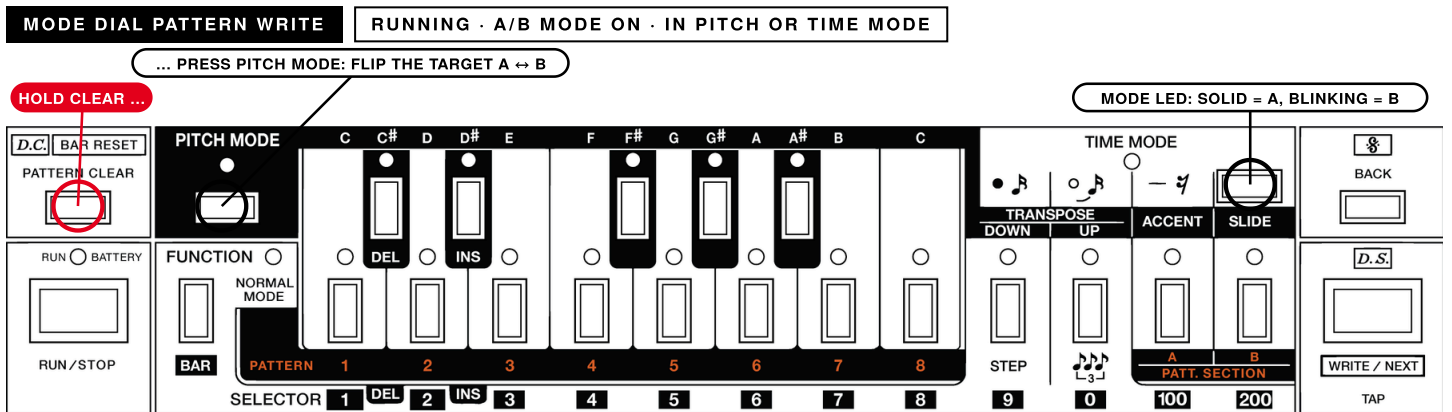
The filter is non-destructive: notes are pulled to the nearest allowed pitch at playback and come back exactly when the scale is switched off. Randomize and mutate respect it.

32 LIVE PATTERN EDIT



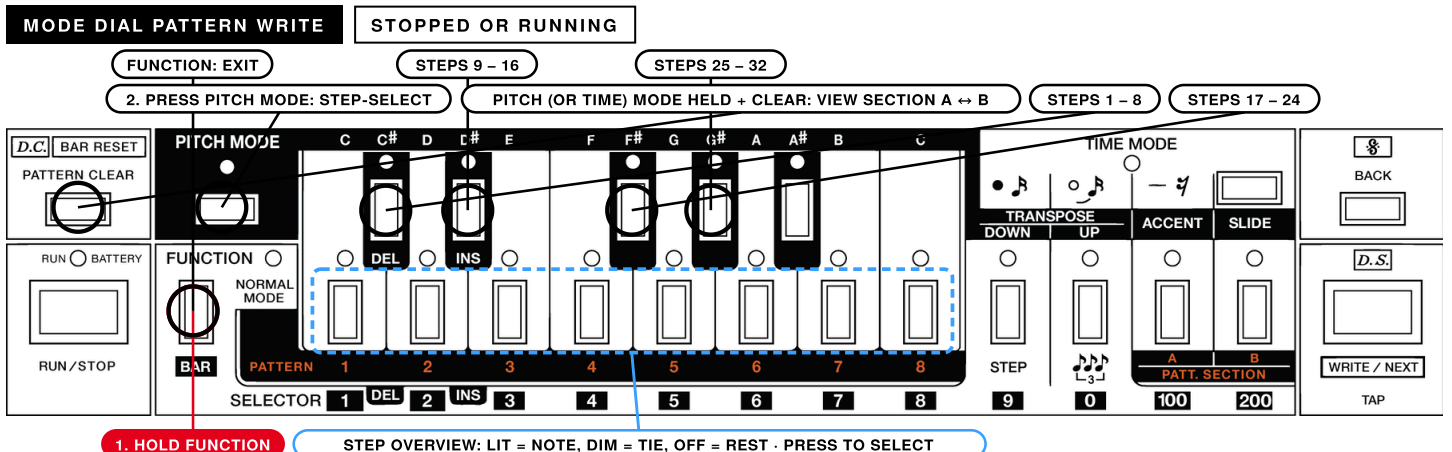
1. With the sequencer running, press PITCH MODE: whatever you play is recorded into the pattern as the step passes. UP / DOWN move the playing note one octave, ACCENT and SLIDE switch its accent and slide.
2. Press TIME MODE while running and tap STEP, TIE, REST or RATCHET to write rhythm and ratchets live. FUNCTION exits.

33 PIN LIVE EDITS TO SECTION A OR B



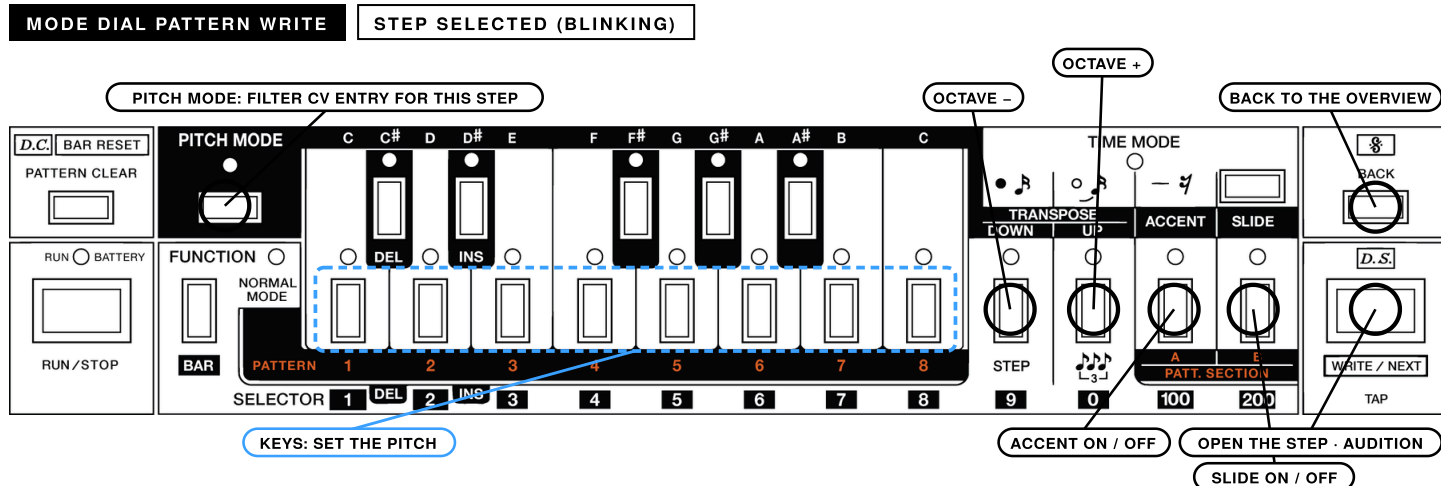
1. In A/B mode live edits normally land on whichever section is playing.
2. Hold CLEAR, then press PITCH MODE to pin them to the other section; each press flips between A and B. The mode LED shows the target: solid = A, blinking = B. Variation 1 only.
3. The pin drops when you leave the mode or stop.

34 STEP-SELECT: OVERVIEW AND BANKS



1. FUNCTION + PITCH MODE enters step-select. The pattern keeps playing, uninterrupted, while you jump straight to any step.
2. Black keys jump between 8-step banks; the pattern keys show the steps of that bank. In A/B mode the view opens on section A; hold PITCH MODE (or TIME MODE in the time view) and press CLEAR to flip to B (sub-mode LED solid = A, blinking = B).

35 STEP-SELECT: EDIT A STEP'S PITCH

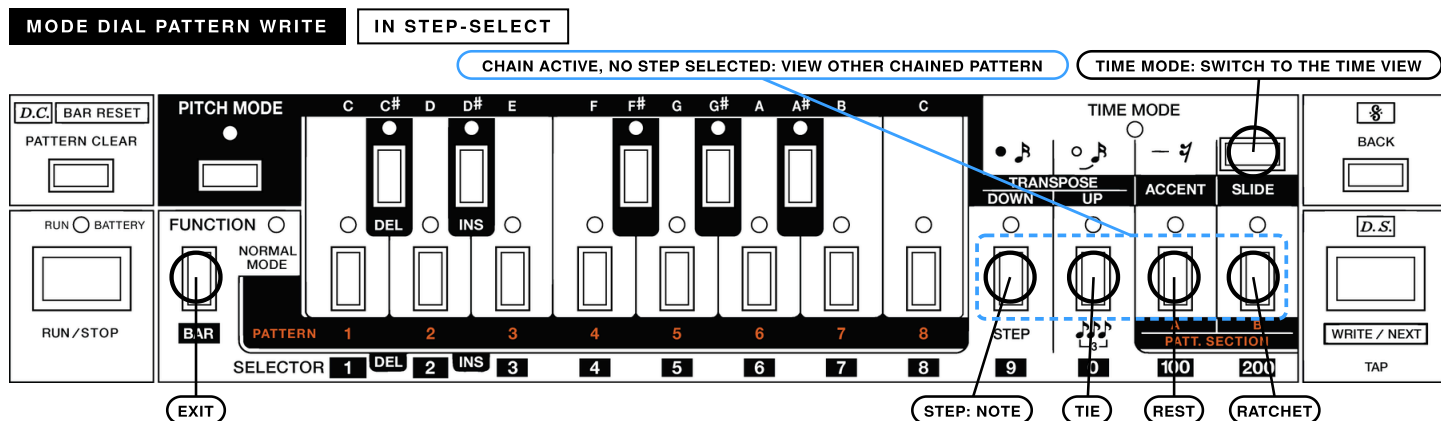


1. Press a lit step to select it, then WRITE/NEXT to open it.
2. Keyboard keys set the pitch, UP / DOWN nudge the octave, ACCENT / SLIDE toggle the flags, WRITE/NEXT auditions. The playhead is not disturbed.
3. BACK returns to the overview. PITCH MODE switches the open step into filter CV entry (see Filter Cutoff CV).

NOTE

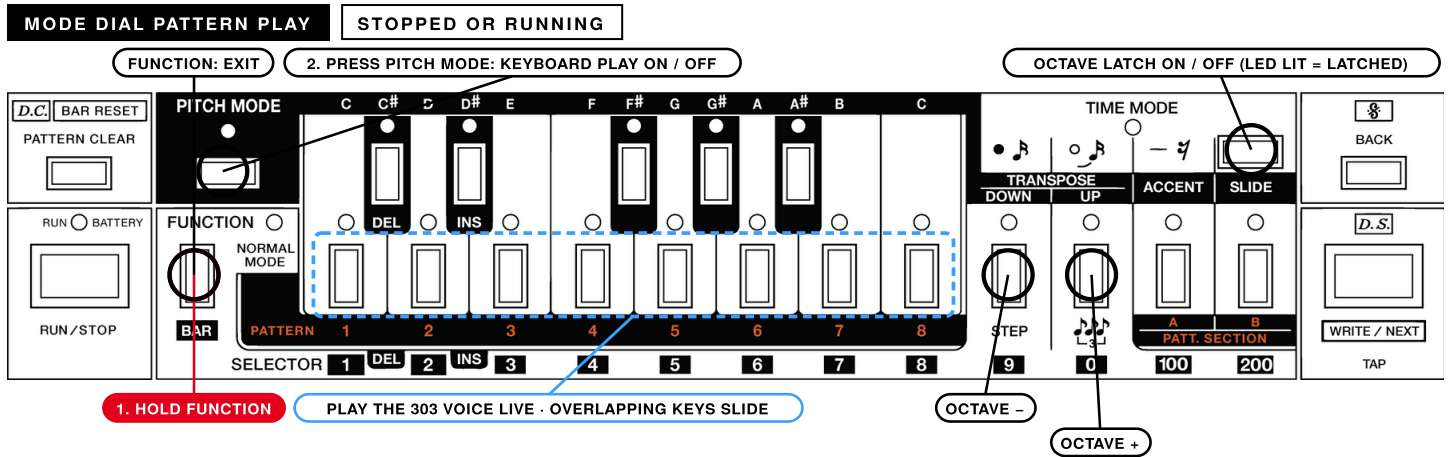
If variation 3 (poly) is the edit target, the detail editor works on the selected step's chord instead.

36 STEP-SELECT: EDIT A STEP'S TIME · CHAIN VIEW



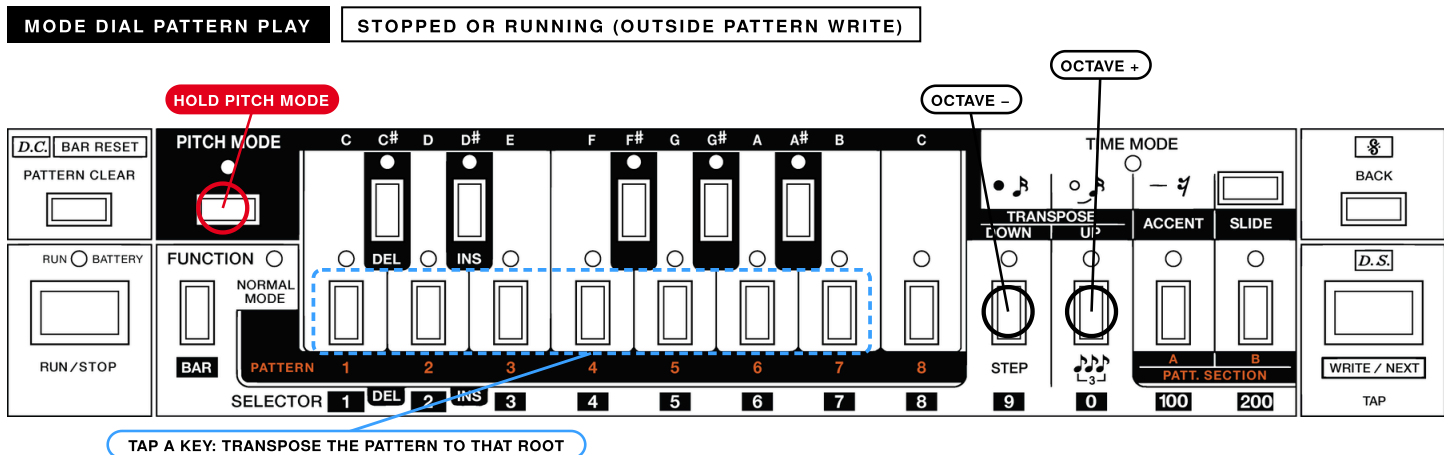
1. Press TIME MODE for the time view. Select any step and press STEP, TIE or REST directly, or RATCHET to cycle its ratchet; no need to open the step. TIME MODE again opens the time-scale selector.
2. With a chain of two or more patterns active, DOWN / UP / ACCENT / SLIDE switch which chained pattern you are viewing (in the time view only while no step is selected). LEDs: viewed slot solid, playing slot chase-blink, others dim.

37 KEYBOARD PLAY MODE



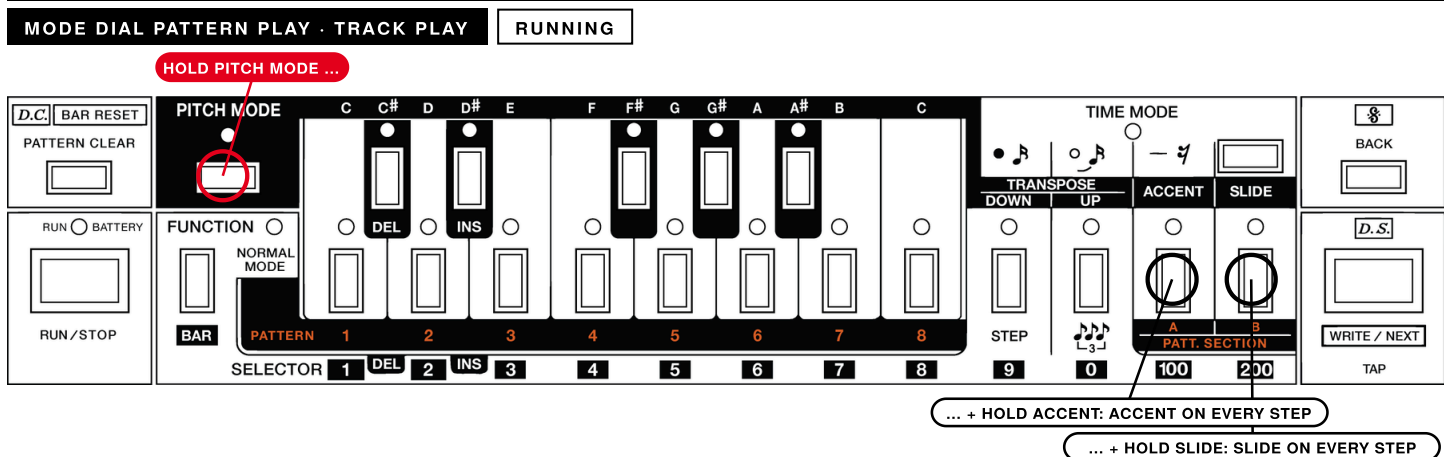
1. FUNCTION + PITCH MODE toggles the mode. Note keys play the analog voice; overlapping presses slide, releasing slides back to a still-held key.
2. Latched (default): tap DOWN / UP to step through octaves 0–3 and it stays. Unlatched: DOWN / UP work only while held.
3. Everything also goes out over MIDI per key. FUNCTION leaves the mode.

38 LIVE TRANPOSE



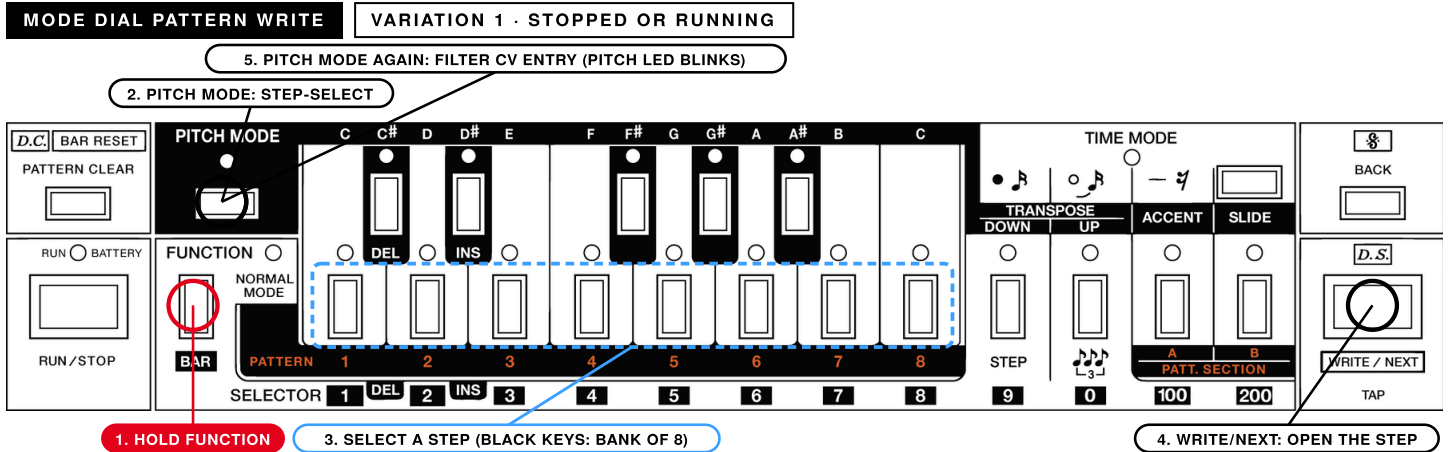
1. Hold PITCH MODE and tap a keyboard key: the pattern transposes to that root, each step keeping its octave. With PITCH MODE still held, UP / DOWN shift the octave.
2. Running, the new transpose lands on the next bar 1 (the pitch LEDs show the queued value). Non-destructive; it resets when you switch patterns.

39 FORCE ACCENT / FORCE SLIDE



1. While holding PITCH MODE, also hold ACCENT to force an accent on every step, or SLIDE to force slides (the gate stays open across non-rest steps for continuous portamento).
2. The effect lasts while held and reverts on release. It is applied at the analog output only; the pattern is unchanged.

40 FILTER CV: OPEN THE STEP EDITOR

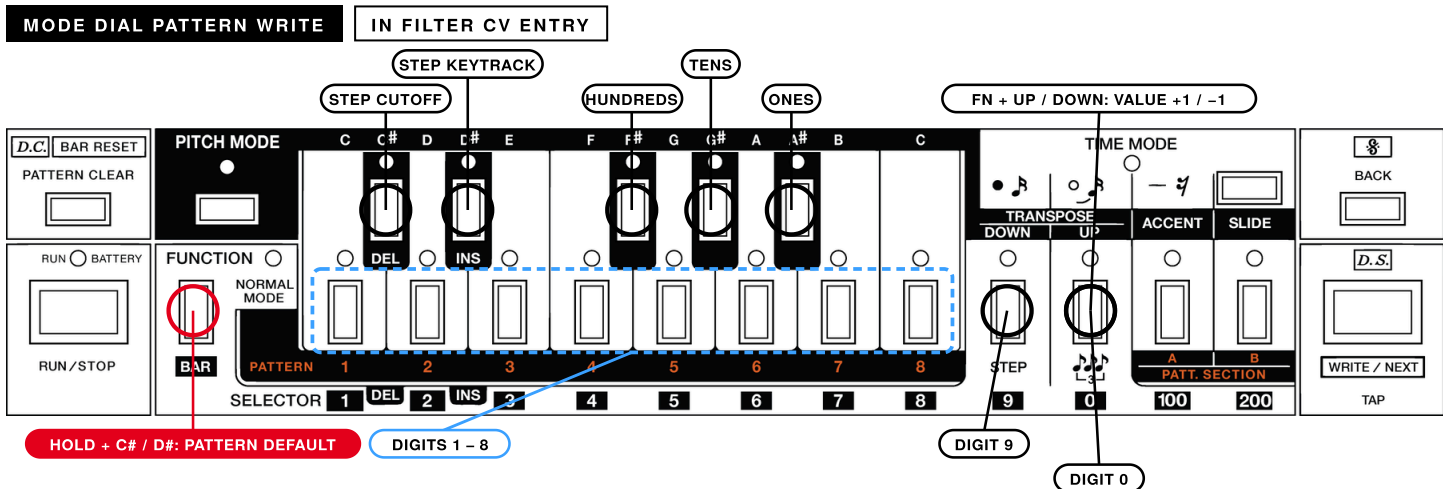


1. Open step-select with FUNCTION + PITCH MODE, select a step and press WRITE/NEXT to open its detail editor.
2. Press PITCH MODE: the step switches to filter CV entry and the PITCH LED blinks. The mode is latched; releasing WRITE/NEXT does not drop it.
3. Press PITCH MODE again to go back to pitch editing. Leaving step-select also closes it.

NOTE

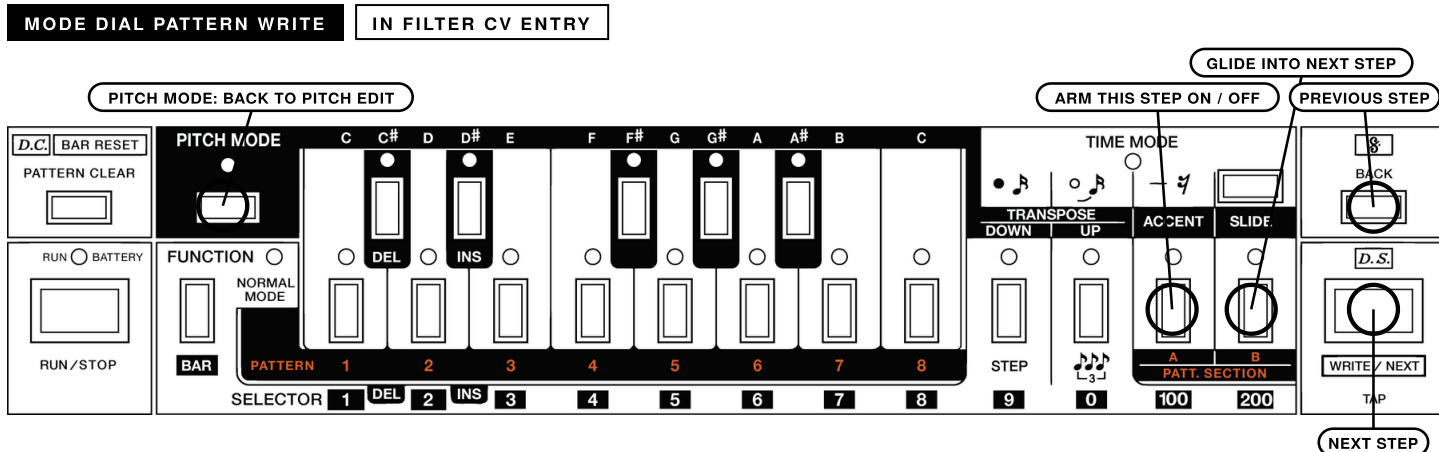
Each step carries a cutoff (1–127), a keytrack amount and a glide flag. 0 means unset: the step falls back to the pattern default. A step's value plays only when the step is switched on with ACCENT; typing digits does not switch it on. A tie with no value holds the step it continues. Rests carry nothing.

41 FILTER CV: ENTER A VALUE



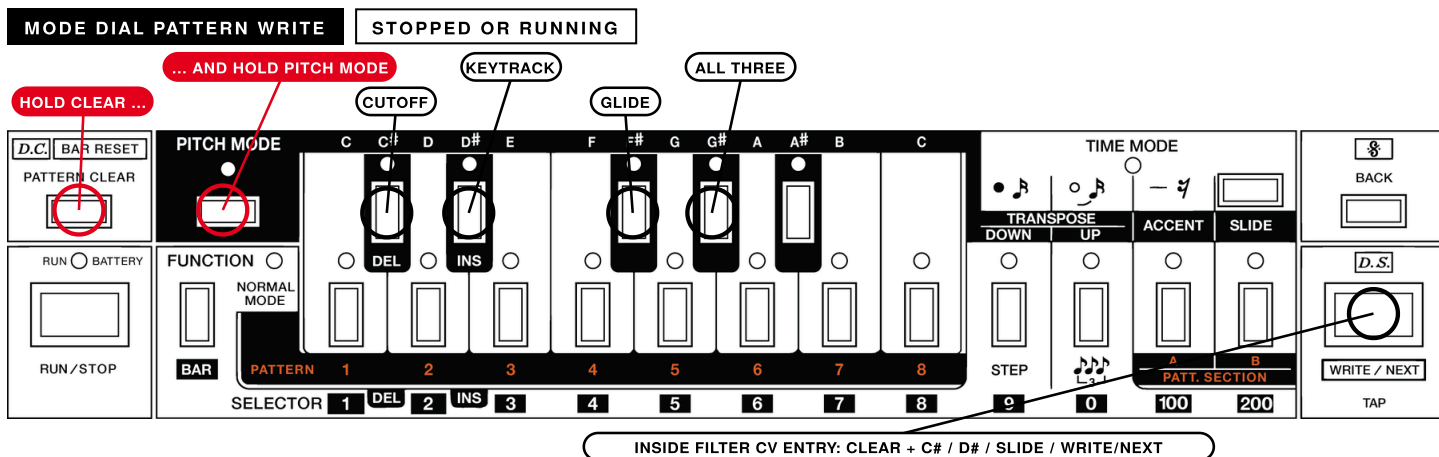
1. C# edits this step's cutoff, D# its keytrack. Hold FUNCTION while pressing C# or D# to edit the pattern default instead (its LED blinks).
2. F#, G#, A# pick the hundreds, tens or ones digit (the selected one blinks); the white keys, DOWN (9) and UP (0) show and enter that digit. Values clamp at 127.
3. FUNCTION + UP / DOWN nudges the whole value by one.

42 FILTER CV: ARM · GLIDE · MOVE



1. ACCENT arms the step's filter CV without changing its number, so a value can be parked, muted and brought back unchanged.
2. SLIDE glides from this step into the next step's value over about 60 ms, the same way a note slide works. A next step with no value cancels it.
3. WRITE/NEXT and BACK move to the next or previous step and stay in filter CV entry.

43 FILTER CV: RANDOMIZE

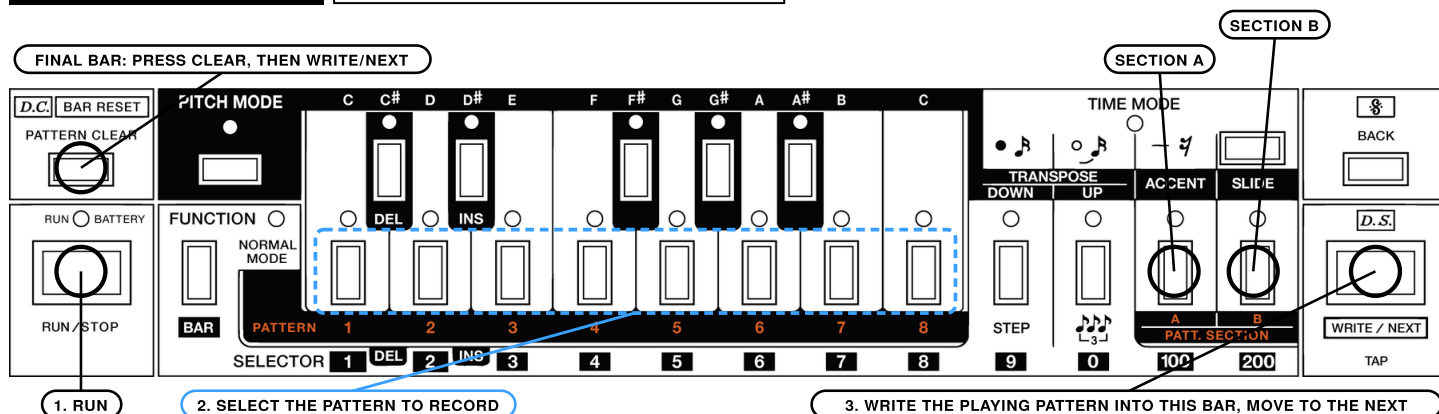


1. Hold CLEAR and PITCH MODE, then tap a black key: C# scatters the per-step cutoff, D# the keytrack, F# the glide flags, G# all three. The white keys under the same hold stay the pitch and time randomizers.
2. Inside filter CV entry the same four live on CLEAR + C#, D#, SLIDE and WRITE/NEXT.
3. Cutoff and keytrack leave about a third of the note steps without a value; glide is switched on for about a third of them. The result changes each time.

44 WRITING A TRACK

MODE DIAL TRACK WRITE

RUNNING · GROUP DIAL = TRACK 1 – 8



1. Set the Mode Dial to TRACK WRITE, choose a track with the Group Dial and press RUN/STOP.
2. Select the pattern with the pattern keys (ACCENT / SLIDE for section A / B), then press WRITE/NEXT to write it into the current bar and move on.
3. For the last bar press CLEAR and then WRITE/NEXT: the bar is written, marked as the end, and the cursor returns to bar 1. Stop the sequencer to save the track.

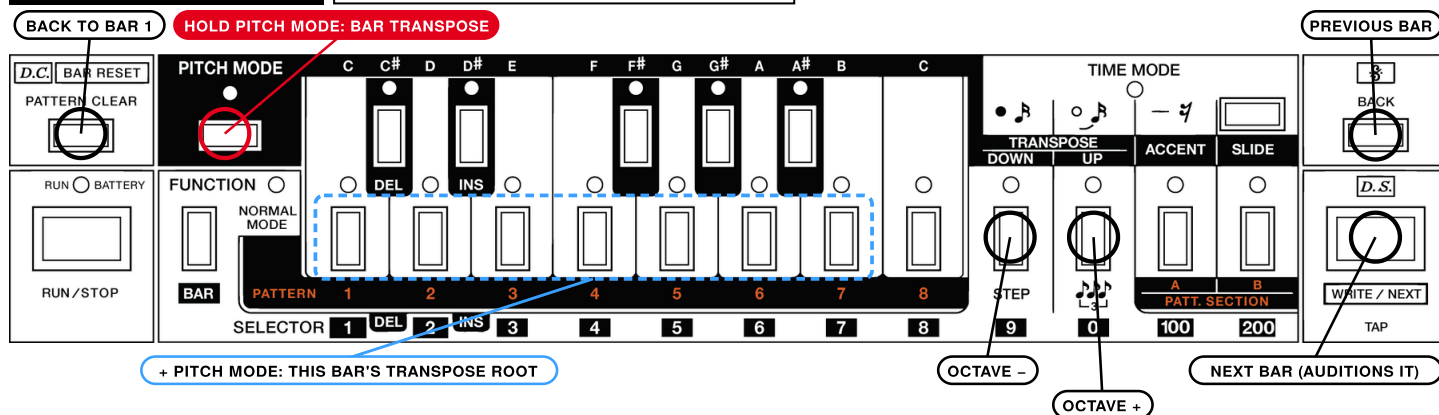
NOTE

A track is up to 64 bars. Tracks 1–2 use patterns from group I, 3–4 group II, 5–6 group III, 7–8 group IV.

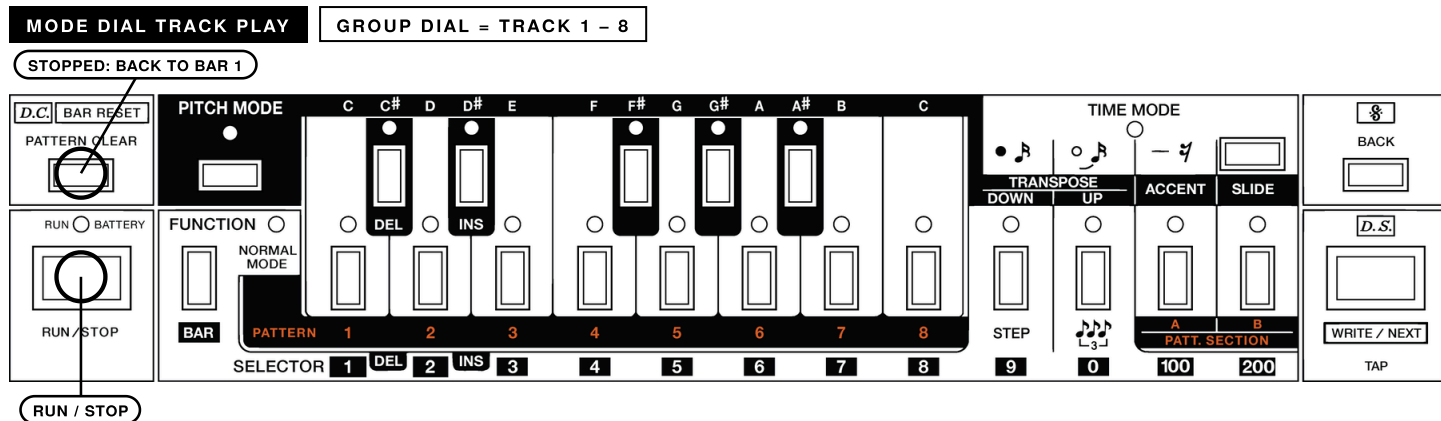
45 REVIEWING A TRACK · PER-BAR TRANSPOSE

MODE DIAL TRACK WRITE

STOPPED (REVIEW) · ANY (TRANSPOSE)

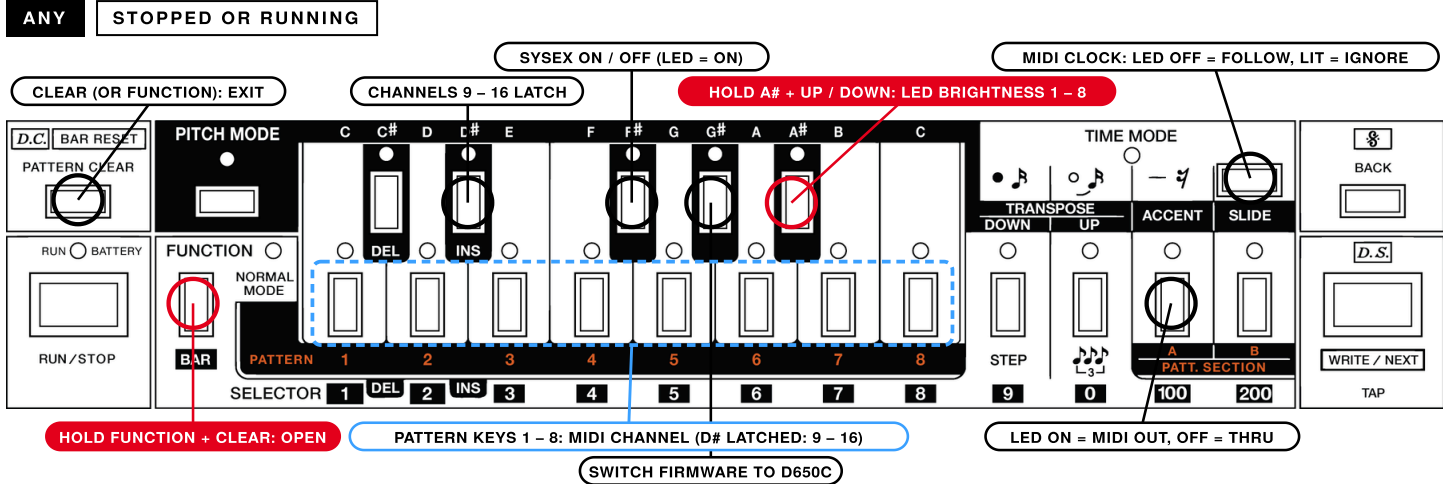


1. While stopped, WRITE/NEXT and BACK step through the written bars and audition each bar's pattern; CLEAR returns to bar 1. Writing only happens while running, so browsing is safe.
2. Hold PITCH MODE: the keyboard sets the current bar's transpose and UP / DOWN its octave. The LEDs show the stored value while held.



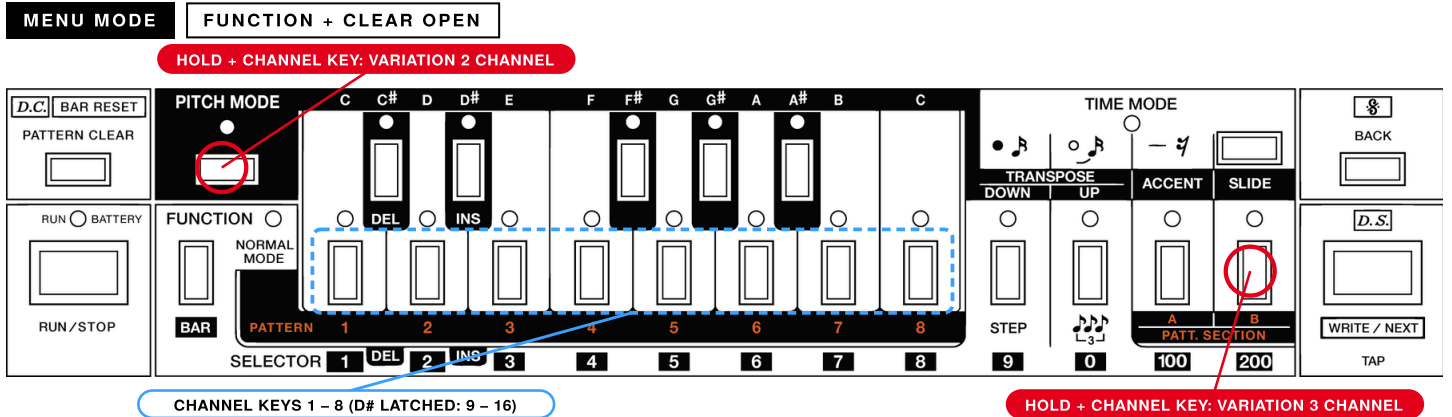
1. Set the Mode Dial to TRACK PLAY, choose the track with the Group Dial and press RUN/STOP.
2. The track advances one bar at every pattern wrap and loops at the end. While stopped, CLEAR resets the playhead to bar 1.

47 MENU MODE



1. FUNCTION + CLEAR opens the menu; everything is visible and editable at once. CLEAR or FUNCTION exits.
2. Pattern keys set the MIDI channel (D# latches the 9-16 bank). TIME MODE sets MIDI clock (LED off: follow MIDI clock when it arrives; lit: ignore it, TEMPO knob or DIN sync only), ACCENT the output mode, F# turns SysEx (web editor traffic) on or off.
3. Hold A# and press UP / DOWN for LED brightness. G# switches to the D650C firmware.

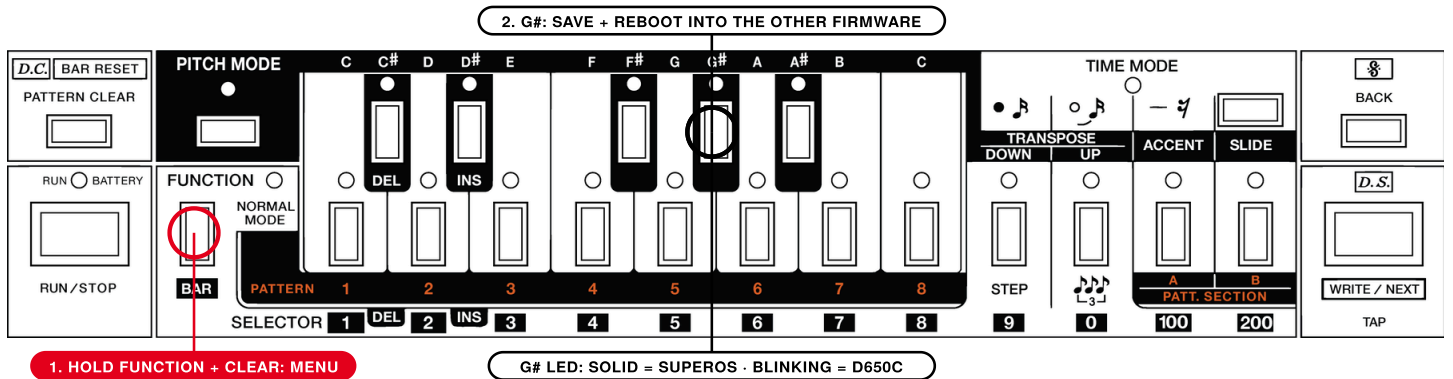
48 VARIATION MIDI CHANNELS



1. In Menu Mode, hold PITCH MODE while pressing a channel key to set the variation-2 channel, or hold SLIDE for variation 3.
2. Without a modifier the keys set the main channel (variation 1 and live play).

49 SWITCHING FIRMWARE: SUPEROS ↔ D650C

ANY BOTH FIRMWARES



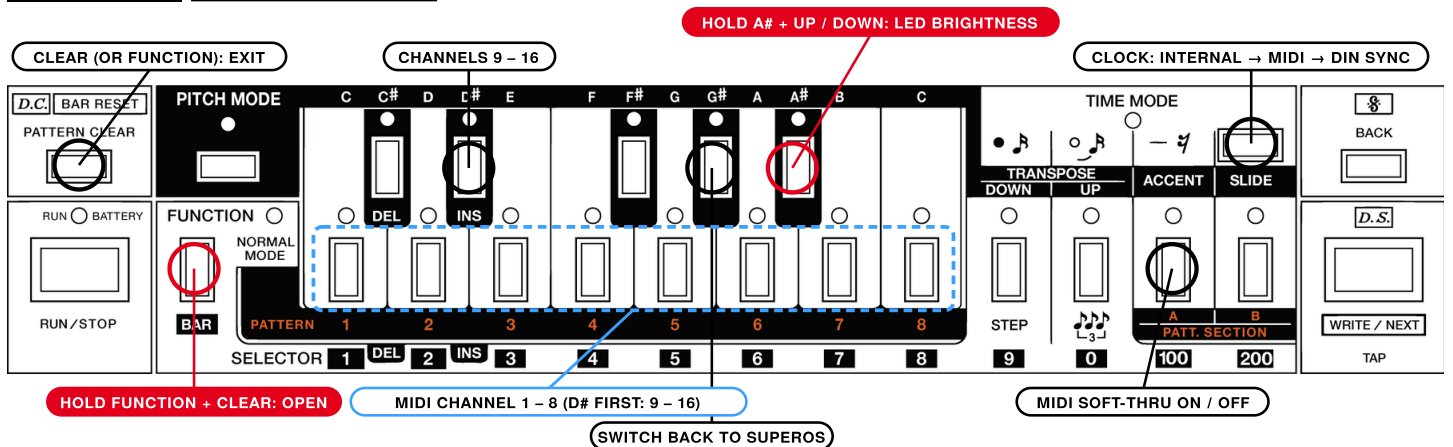
1. Open Menu Mode with FUNCTION + CLEAR (works in both firmwares). The G# LED tells you which firmware is running.
2. Press G#. The unit saves everything, waits for a quiet panel, and reboots into the other firmware in about a second. Both pattern memories are kept.

NOTE

D650C mode runs the original TB-303 program, so the original owner's manual is the manual for that mode. The original program has to be loaded once from the web editor; until then the low and high C LEDs blink in turn.

50 D650C MODE: CONFIG MENU

D650C MODE FUNCTION + CLEAR



1. The same menu exists in D650C mode. TIME MODE cycles the clock source (TIME LED lit = external; PITCH LED also lit = DIN sync), ACCENT toggles MIDI soft-thru.
2. MIDI in D650C mode: the sequencer is mirrored to MIDI out (slide = legato, accent = velocity 127), notes in play the voice while stopped, and external Start / Stop or the DIN run line drive the transport.

FIRMWARE UPDATE

Back up your patterns with the web editor first: an update that changes how patterns are stored erases them. Then press Update OS in the web editor and pick the update file; the editor saves, restarts the unit ready for the update and sends the file. Or hold WRITE/NEXT while switching the power on: PITCH MODE, TIME MODE, FUNCTION and A# light when the unit is ready. Do not switch off during the update.

MIDI & DAW CONTROL

Sequencer notes go out on the main channel (variation 1) and the variation 2 / 3 channels; clock and transport in and out. Live notes in while stopped play the 303 voice: velocity 100 or higher adds accent, legato playing slides. CC 0 selects the group (0–3), CC 32 the section (0 = A, 1 = B), Program Change the pattern; it switches at once. CC 74 sets the filter cutoff CV live (1–127); CC 74 = 0 hands the cutoff back to the panel knob. MIDI works over the DIN jacks and USB-C at the same time; over USB-C the unit appears as a MIDI device named “SuperOS-303”, no driver needed. When clock arrives on both, the first one is followed and the other is ignored until it has been silent for half a second.

WEB PATTERN EDITOR

superos303.com/editor over WebMIDI (USB or a USB-to-DIN interface). Edits all 16 patterns of a group, all three variations, chords, chains, tracks, scales, probability, the filter CV lane (FCV / KT / GLD rows, pattern defaults and the Floor) and settings, with a live playhead; backs up and restores everything; switches firmware; loads the original program for D650C mode. SysEx must be on in the menu (F#).

PATTERN STORAGE

Patterns, tracks and settings live in the 512 KB FRAM on the board and save automatically when the sequencer stops and about two seconds after the last edit while stopped. Saving never pauses the sequencer, the LEDs or incoming clock. Back up with the web editor before every update. D650C mode keeps its own separate patterns; the two never overwrite each other. The Group Dial's seven detents map to four groups of 16 slots (8 patterns with an A and a B section each).

FILTER CV FLOOR

Only part of the CV range does useful work: below the Floor the filter is already closed. Set the CUT OFF knob where you play, find the value at which the filter just closes and enter it as the Floor in the web editor; it is set per pattern (default 54, knob at mid travel). Step values and keytrack are mapped into Floor–127. The CV sums with the knob, so moving the knob moves the Floor.