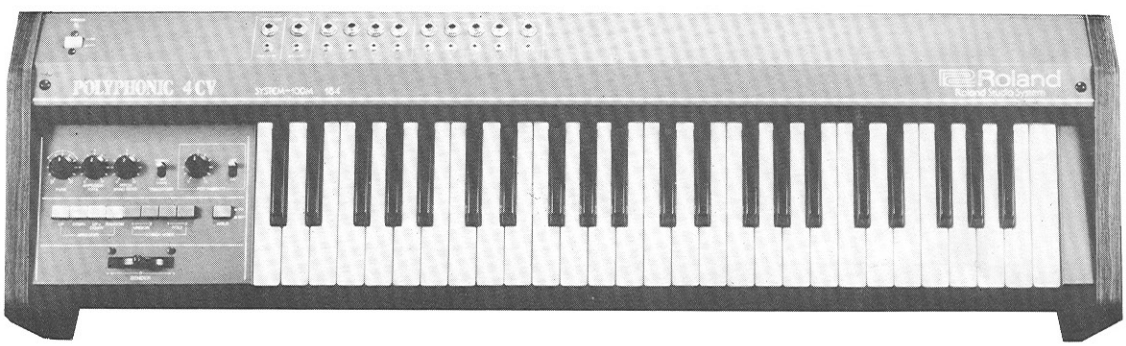
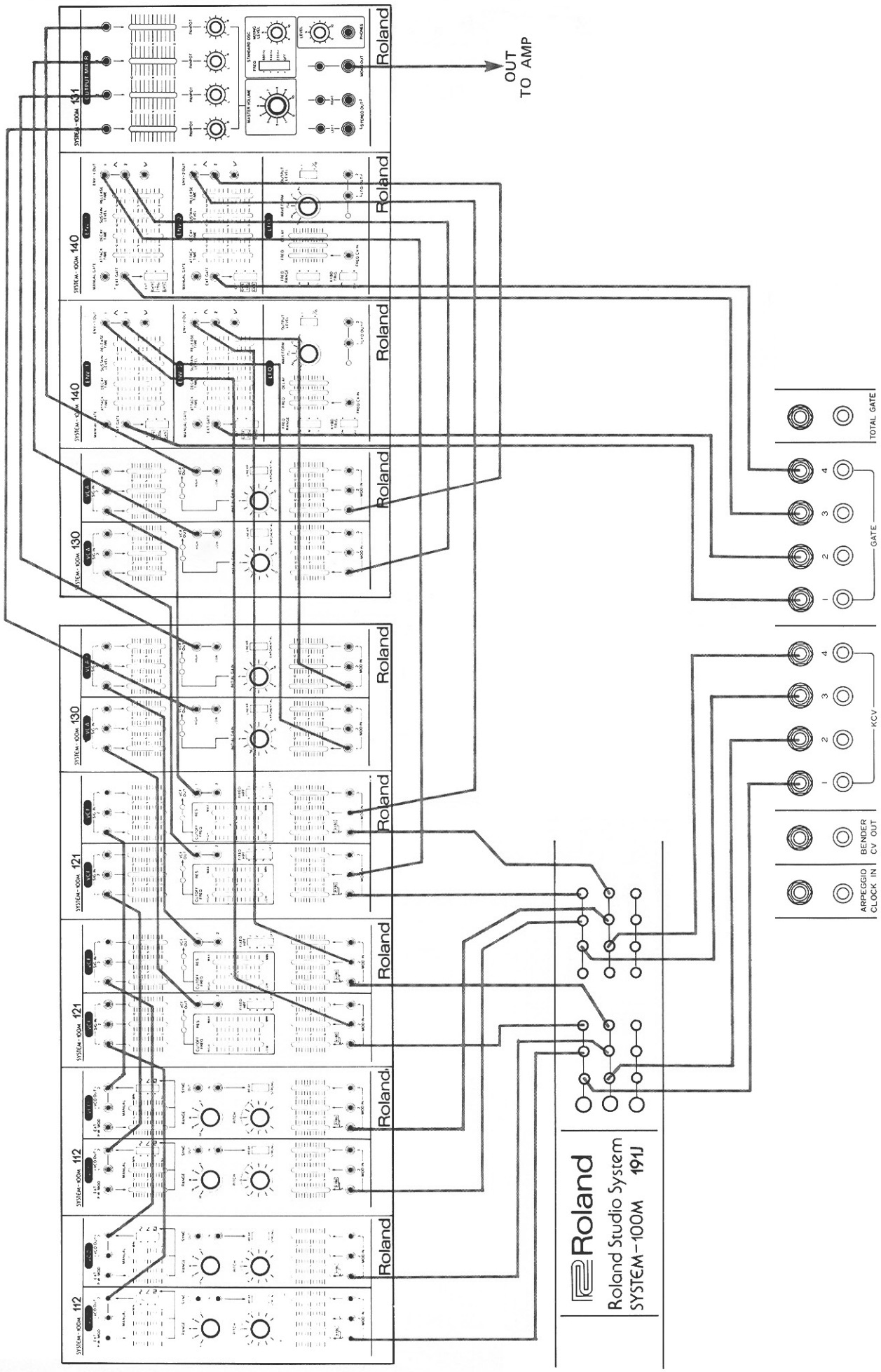
RSS Roland Studio System SYSTEM-100M 184

■**M-184** is a 4-voice polyphonic keyboard controller.



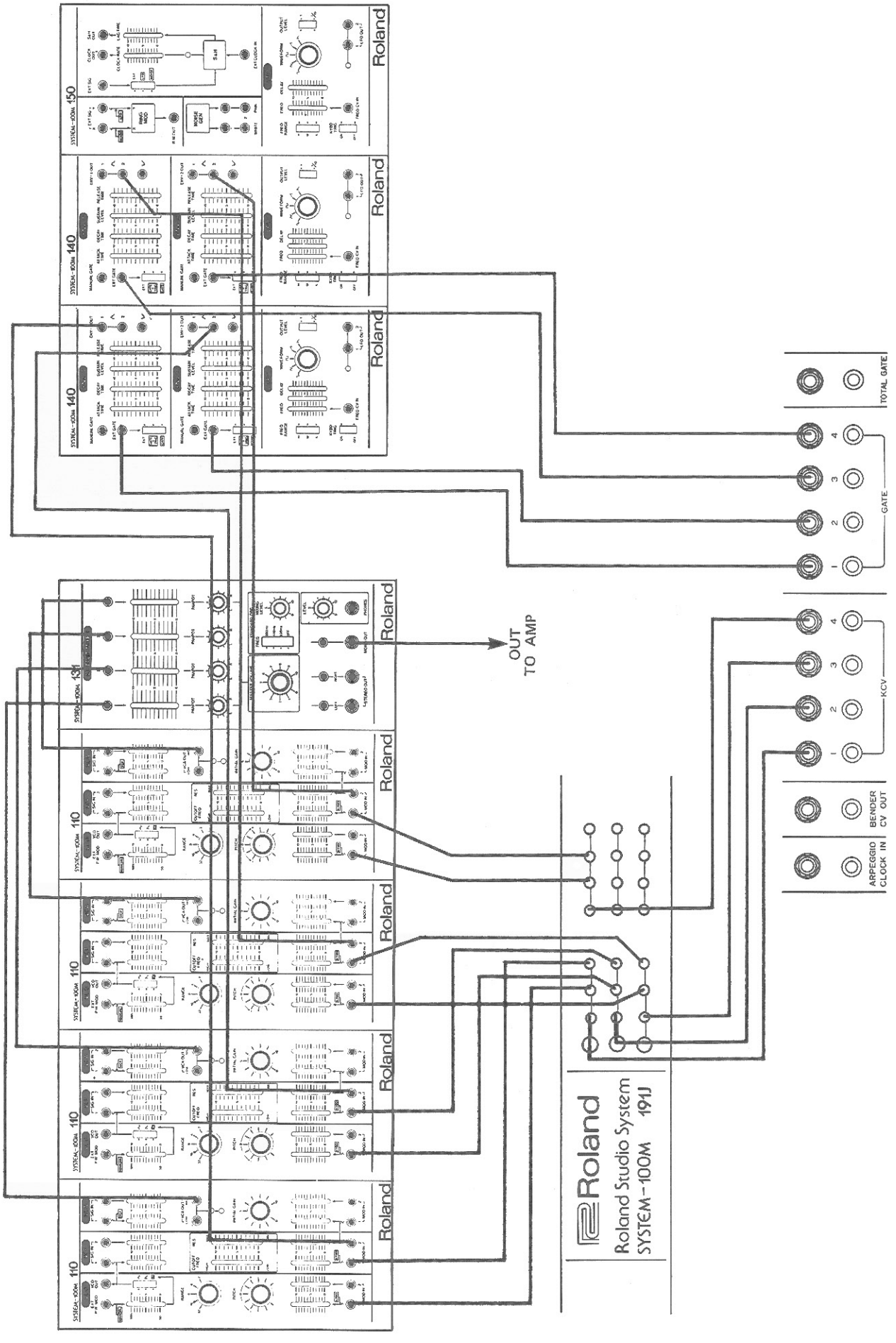
● BASIC CONNECTIONS I

(As an example of connection I: 112x2, 121x2, 130x2, 140x2)



● BASIC CONNECTIONS II

(As an example of connection II: 110x4, 140x2)



● TUNING INSTRUCTIONS

① After completing basic connections, set the synthesizer so that all four outputs produce a normal sound.

② Set each VCO module range to 8'.

③ Press key assign mode selector POLY-1.

④ Feed in a 440Hz signal from a standard oscillator.

⑤ While pressing the "A" key, the second lowest note on the keyboard, turn the tuning knob of each VCO module to find out which one alters the pitch, and then tune the pitch to the standard oscillator signal.

⑥ Release the "A" key, and then press the same key again, and find which of the remaining VCO tuning knobs alters the pitch, and tune.

⑦ Repeat step ⑥ to tune the other VCO modules.

⑧ After tuning is complete, switch off the standard oscillator.

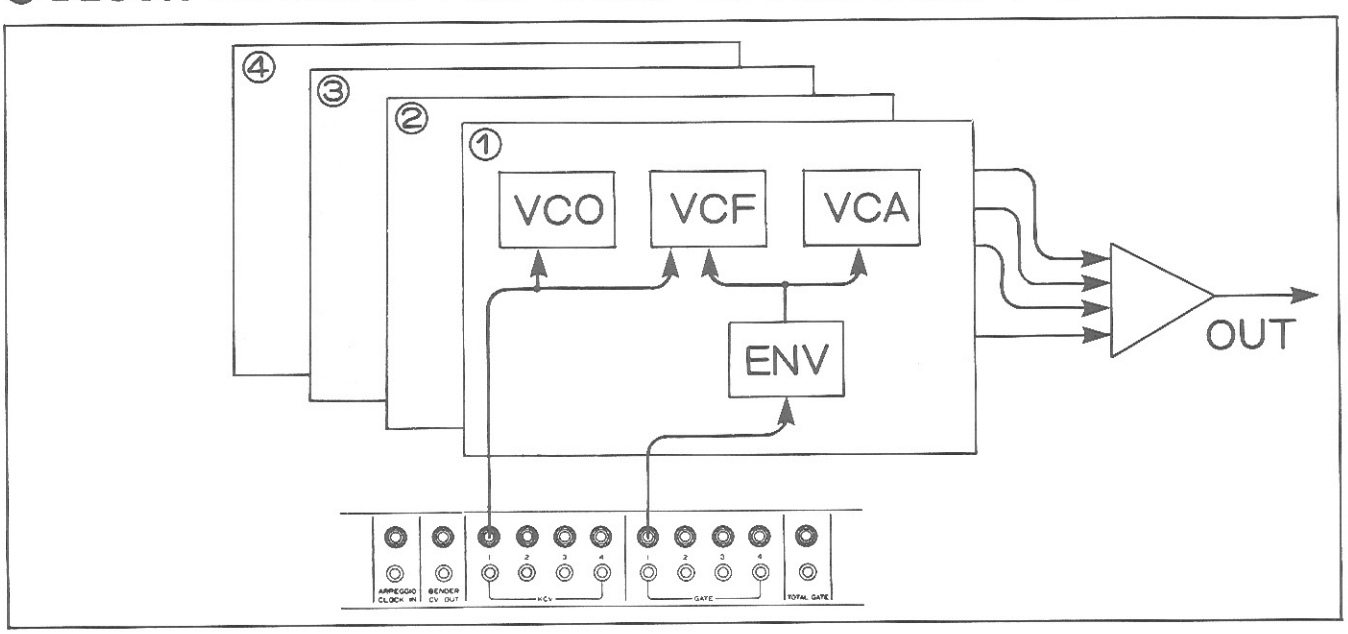
*If a standard oscillator is not available, choose an appropriate VCO module pitch, and tune the other modules to the same pitch.

***It requires about fifteen minutes for each 100M module circuits to completely stabilize.**

CAUTION

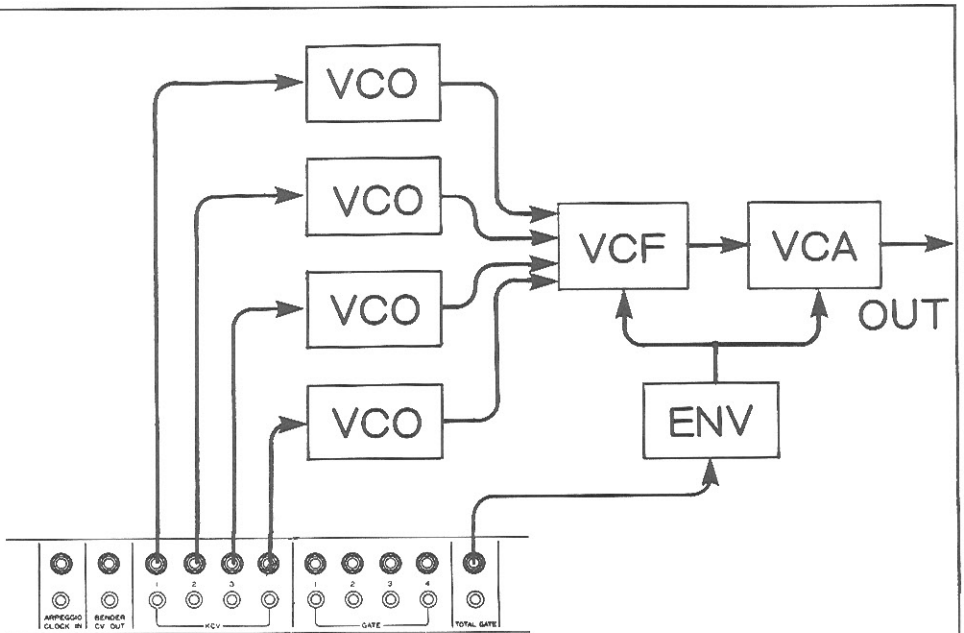
●If the tuning of each VCO is not carried out correctly, or the linearity of the VCO (1OCT/1V) is inaccurate, tuning may be affected according to different keyboard positions. If the instrument becomes out of tune even though the tuning is correct, please refer to the separate sheet "VCO Construction".

● BLOCK DIAGRAM FOR BASIC CONNECTIONS I & II

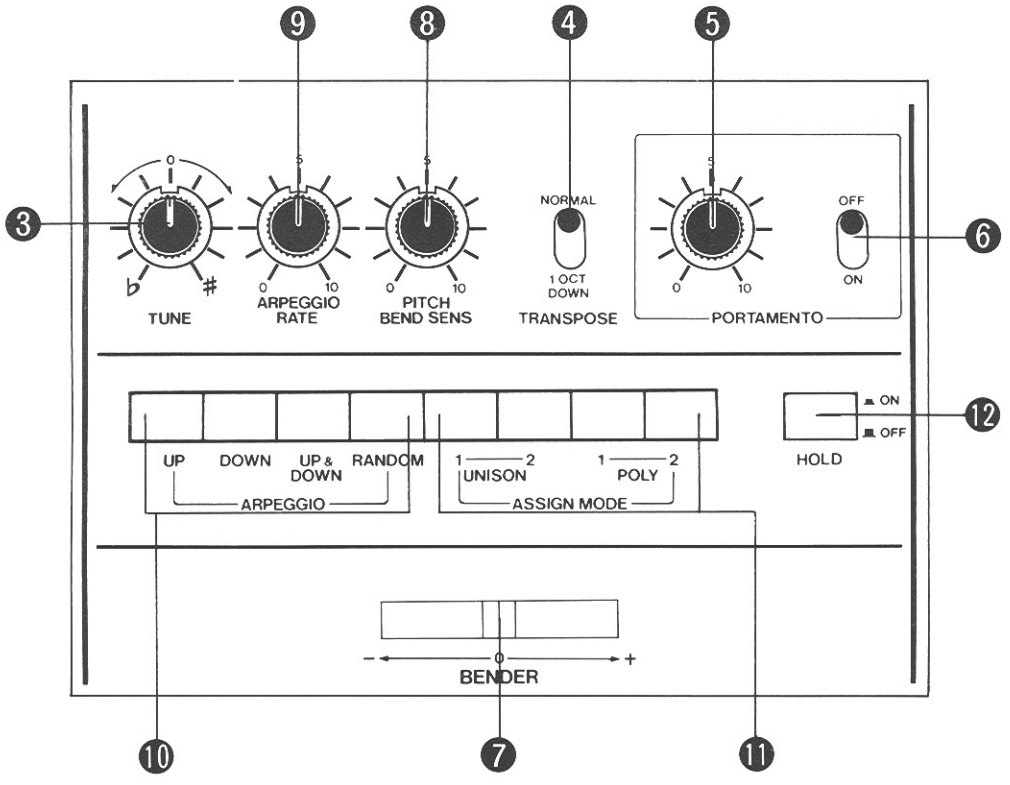


● REFERENCE (CONNECTED WITH 'TOTAL GATE')

Using TOTAL GATE, sounds like polyphonic synthesizer can be produced, by keeping each module after VCO independent (VCF, VCA, ENV.).
*In this case the tone cannot be altered individually through the VCF.



● CONTROLS AND THEIR USES



❶ POWER SWITCH

❷ KEYBOARD

❸ TUNE
This is a control to adjust pitch.
* By moving this knob, the 4CV (Control Voltage) outputs from the M-184 are altered simultaneously. When this control is at the zero position (standard) when each C key is depressed, from the lowest C to the highest C, the output voltage is 1, 2, 3, 4, 5V (when the transpose switch is in the 'normal' position).

❹ TRANSPOSE
This provides a transposition of one octave lower.
* When the switch is in the '1 OCT DOWN' position all CV's are reduced by 1V.

❺ PORTAMENTO
This control adjusts the time element in the portamento effect. The further this knob is turned to the right, the slower the portamento effect becomes.

❻ PORTAMENTO ON/ OFF Switch

❼ BENDER
This lever controls the voltage that is used when controlling each module manually.
As the control is moved towards '+' the pitch becomes higher, and as the control is moved towards '–' the pitch becomes lower.
* Even if 'PITCH BEND SENS' ❽ , is at zero, movement of this control provides control voltage from 'BENDER CV OUT' ⓮ . The range of variation is ± 1V (or greater).

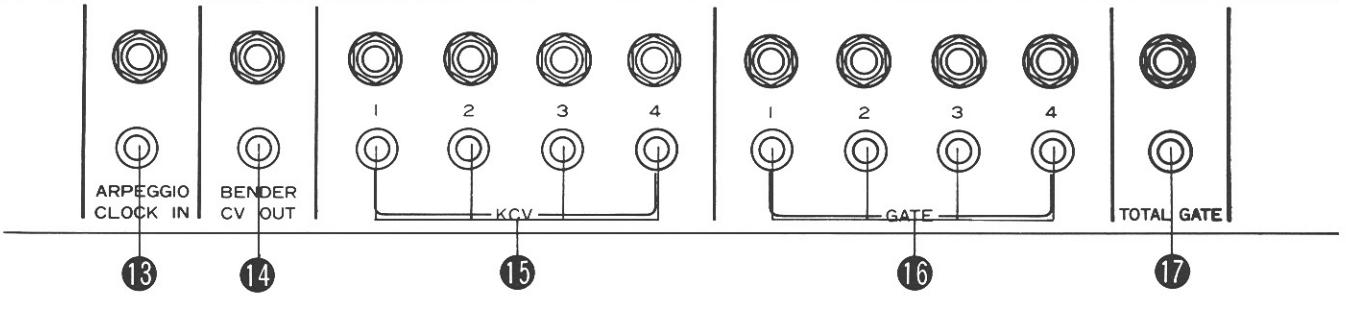
❽ PITCH BEND SENS
This control determines the variable range when controlling the pitch by the bender control. The range is increased by turning the knob to the right.
* The maximum variable range is ± 1300 cents (1 octave is 1200 cents).

❾ ARPEGGIO RATE
This control adjusts the speed of auto-arpeggio.
The speed becomes faster as the control is moved to the right.

❿ ARPEGGIO
The M-184 provides an auto-arpeggio over a maximum range of four octaves starting from the depressed key. The pattern of the arpeggio is set according to the order of the depressed keys. There are four pattern modes: UP, DOWN, UP & DOWN, and RANDOM.
* For details, refer to page 6.

⓫ ASSIGN MODE
The use of the two modules, VCO and ENV, which are connected to CV (1-4) and GATE (1-4), can be selected according to the player's requirements; for example, as 4 VCO monophonic.
* For details, refer to page 7.

⓬ HOLD
This switch enables notes to be held even after the keys have been released.
* Notes are not held when the ENV SUSTAIN level is zero.



⓭ ARPEGGIO CLOCK IN.
By connecting the EXT. CLOCK SIGNAL (Rhythm Composer TR-808, Compu-Rhythm CR-78 and 68, Synthesizer outputs 'gate' and 'trigger') to this jack, you can control the arpeggios according to the cycle.
* 1 note/1 clock is performed.

⓮ BENDER CV OUT
The output voltage is according to the position of the bender control.
* CV is ± 1V (or greater).

⓯ KCV (1-4)・KCV Out
This is a control voltage output jack.

⓰ GATE (1-4)・GATE Out
This is a gate signal output jack.

⓱ TOTAL GATE
When a gate signal is fed from 1 or more GATE Out (1-4), ⓰ , it is a permanent output.

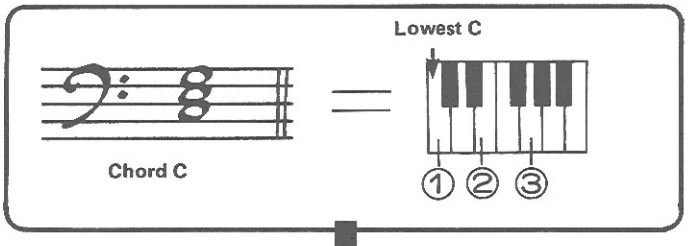
* When modules VCF and VCA are used as a pair, connected after VCO, this can be used for controlling.

* With regard to all input and output jacks, both mini and standard jack sockets are provided, and, with the exception of ARPEGGIO CLOCK IN, both can be used simultaneously.

● AUTO ARPEGGIO

■PERFORMANCE MODE ACCORDING TO ARPEGGIO SELECTOR

If a C chord is played in the order C–E–G, it is performed according to the following table:



■3 CONDITIONS OF THE ARPEGGIO

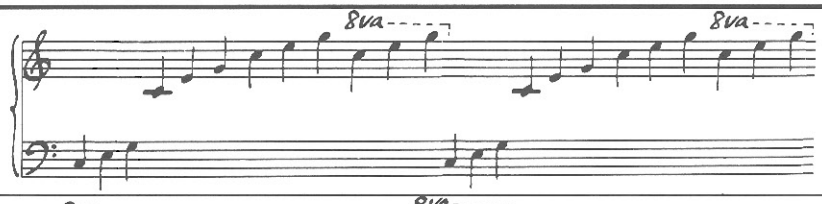
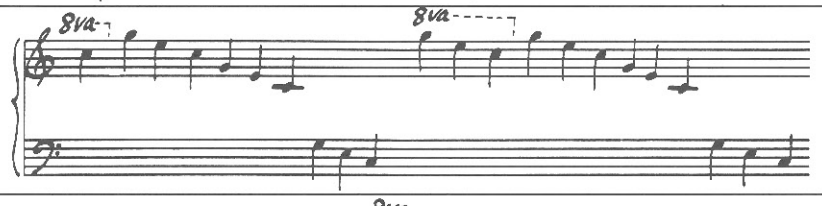
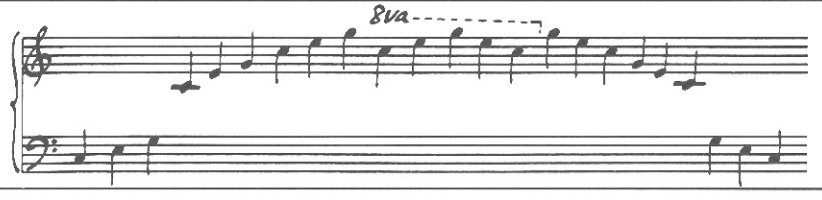
The pattern of the arpeggio is determined according to the following three conditions:

1. The number of keys depressed in the chord
2. The order in which the keys are depressed
3. Selection of the performance mode by the arpeggio selector switch

Normally, according to the three conditions mentioned above, the arpeggio is repeated over four octaves.

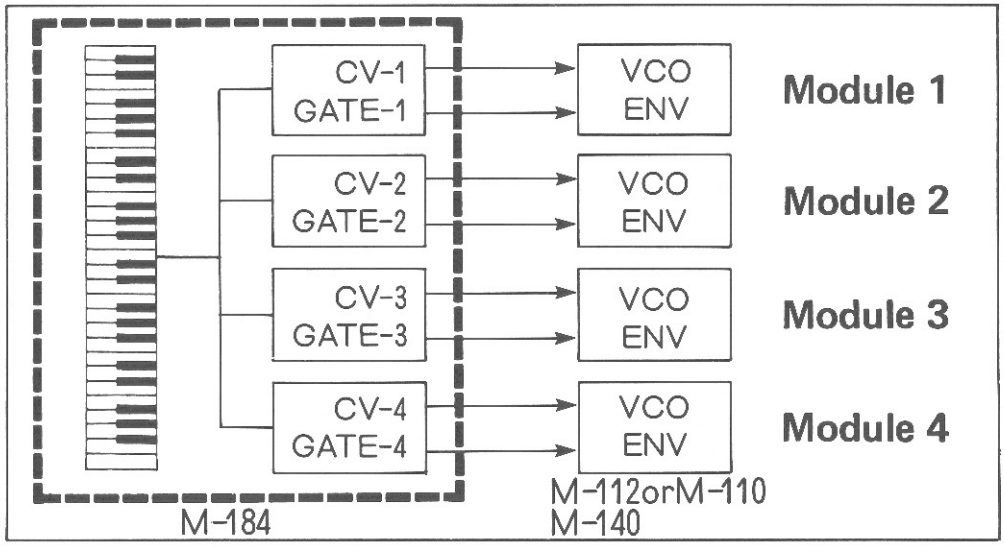
*The upper limit of the arpeggio range is the C one octave above the highest C on the keyboard. Thus, the octave range may be less than 4 octaves, according to the position of the selected keys.

*In the case of the DOWN mode, it a C chord is played in the order C, E, G, they are perform in the order G, E, C, but starting from the C three octaves above the selected note.

UP	**This is a rising arpeggio.**	
DOWN	**This is a falling arpeggio.**	
UP&DOWN	**This is an arpeggio which rises and falls.**	
RANDOM	**This produces an arpeggio in which the selected notes, and their related notes in the four octaves above, are performed in a random order.**	

● KEY ASSIGN MODE

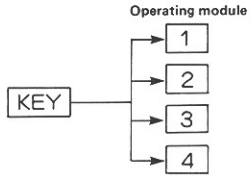
The M-184 has four pairs of CV and GATE outputs and normally these are used by feeding the CV outputs into the VCO and the GATE outputs into the ENV. The Key Assign Mode selector determines the operation of each module (1-4) into which these CV and GATE signals are fed, and modes can be selected to give operation of one module per key (4-voice polyphonic mode), or to give simultaneous operation of four modules per one key (4 VCO monophonic mode).



■MODE SELECTED BY KEY ASSIGN MODE SELECTOR

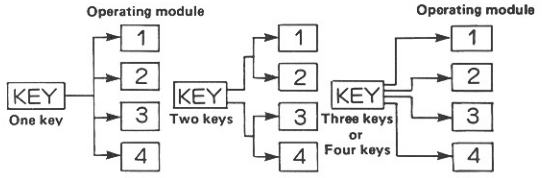
●UNISON-1

This gives simultaneous operation of four modules when one key is depressed (4 VCO monophonic). When two or more keys are depressed, the lowest key is effective.



●UNISON-2

This gives simultaneous operation of four modules when one key is depressed, but when two keys are depressed each key operates a different pair of modules, and when three or four keys are depressed each key operates a different module.



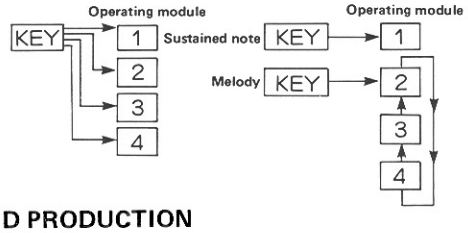
●POLY-1

One module is operated by one key (4-voice polyphonic). When the key is depressed, each module is operated in turn, thus: 4 → 3 → 2 → 1. (Because each module produces a different sound, natural release is obtained.)

*This is suitable for manually performed arpeggios.

*When Portamento is on, because it uses the same module, sometimes the sound may become abnormal (the portamento effect does not start from the previous key). If the Portamento effect is required, it is generally better to use POLY-2.

*If a melody is played while a single key is held as a sustained note, the module used by the sustained note continues its function, and the melody is performed through the remaining modules in rotation.



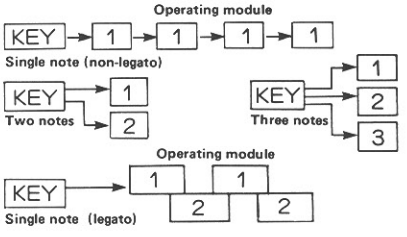
●POLY-2

One module is operated by one key (4-voice ploypohonic). When a single key is depressed (non-legato), the same module is always used. When two keys or more are depressed at the same time, as in a chord, each key operates a different module, so that the firstest key operates module 1, the next key operates module 2, and so on.

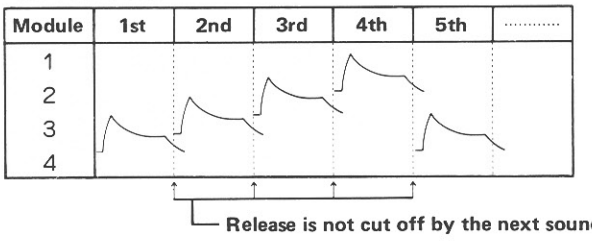
*If only a single note is depressed as in a melody, in legato, two modules are used in a cyclical fashion.

*When portamento is required, for single note performance with non-legato, the same module is used, and a natural portamento effect can be obtained (the portamento effect starts from the previous key). For playing chords, by fixing the order of depressed keys the same modules are used, and a natural portamento effect can be obtained (the portamento effect starts from the previous key).

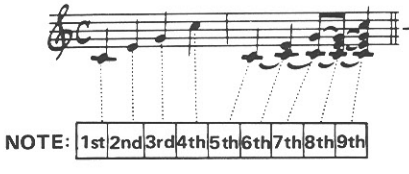
*After switching in HOLD, even if single non-legato notes are played, except for the first note (the first depressed key is not held), the notes are held. However, if a note is played legato, or when a chord is played, the modules used start changing in sequence from the original module arrangement.



●SOUND PRODUCTION



■MODULE OPERATION ACCORDING TO MODE (EXAMPLE)



Mode	Module \ Note	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	.....
UNISON-1	1	ⓒ	Ⓔ	Ⓖ	◎	C————				C	.....
	2	ⓒ	Ⓔ	Ⓖ	◎	C————				C	.....
	3	ⓒ	Ⓔ	Ⓖ	◎	C————				C	.....
	4	ⓒ	Ⓔ	Ⓖ	◎	C————				C	.....
UNISON-2	1	ⓒ	Ⓔ	Ⓖ	◎	C————				C	.....
	2	ⓒ	Ⓔ	Ⓖ	◎	C————	C		Ⓔ	Ⓔ	.....
	3	ⓒ	Ⓔ	Ⓖ	◎	C	Ⓔ	Ⓖ————		Ⓖ	.....
	4	ⓒ	Ⓔ	Ⓖ	◎	C	Ⓔ	Ⓖ		◎	.....
POLY-1	1				◎				Ⓔ	Ⓔ	.....
	2			Ⓖ				Ⓖ————		Ⓖ	.....
	3		Ⓔ				Ⓔ			◎	.....
	4	ⓒ				C————				C	.....
POLY-2	1	ⓒ	Ⓔ	Ⓖ	◎	C————				C	.....
	2						Ⓔ	Ⓖ————		Ⓖ	.....
	3								Ⓔ	Ⓔ	.....
	4									◎	.....

● NOTE

* A circle in the table indicates that a module is in operation.
* The letter in the circle indicates the note in the musical scale.
* ———— indicates a continuous sound (under the condition that the key is kept depressed).
* ◎ indicates an octave above ○.

● SPECIFICATIONS

KEY BOARD . . . . . 49 keys 4 oct. (C ~ C)
TUNE . . . . . ± 100 cents (semitone)
TRANSPOSE . . . . . NORMAL ↔ 1 oct. DOWN
BENDER
PITCH BEND SENS . . . . . MAX 1300 cents
PORTAMENTO . . . . . ON/OFF
PORTAMENTO TIME . . . . . 0 ~ 1 s/oct.
ARPEGGIO MODE . . . . . UP/DOWN/UP & DOWN/RANDOM
ASSIGN MODE . . . . . UNISON-1, -2, POLY-1, -2
ARPEGGIO RATE
HOLD . . . . . ON/OFF
KCV OUT . . . . . (1 oct/ 1 V) X 8 . . . . . .(mini jack, standard jack)
GATE OUT . . . . . (+15 V) X8 . . . . . .(mini jack, standard jack)
BENDER CV OUT . . . . . ±1 V (over) X2 . . . . . .(mini jack, standard jack)
ARPEGGIO CLOCK IN . . . . . .(OFF: OV/ON: min + 1 V pulse) X 2 . . . . . .(mini jack, standard jack)
TOTAL GATE OUT . . . . . (+15 V) X 2 . . . . . .(mini jack, standard jack)
DIMENTIONS . . . . . 938(W) X 235(D) X 95(H) mm
POWER CONSUMPTION . . . . . 8 W
WEIGHT . . . . . 8.5 kg

Roland Corporation