

CV Interface

OP-8

— OPERATION MANUAL —



 Roland

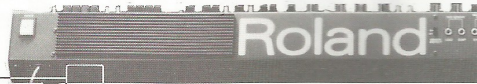
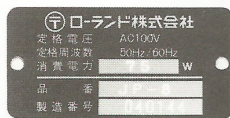
The Roland Interface OP-8

With this OP-8, it is now made possible to control the Juno-60 or Jupiter-8 by the MC-4 or MC-8.

When using the OP-8 with the Juno-60, the connection and operation are both extremely easy, as only the CV & GATE input jacks and the TRANSPOSE switch are relevant.

If, however, your Jupiter-8 is older than serial No 282880, it needs a minor change in its circuit for setting up with the OP-8. Please contact the authorized distributor in your country through your local Roland dealer.

● The SERIAL NO. PLATE



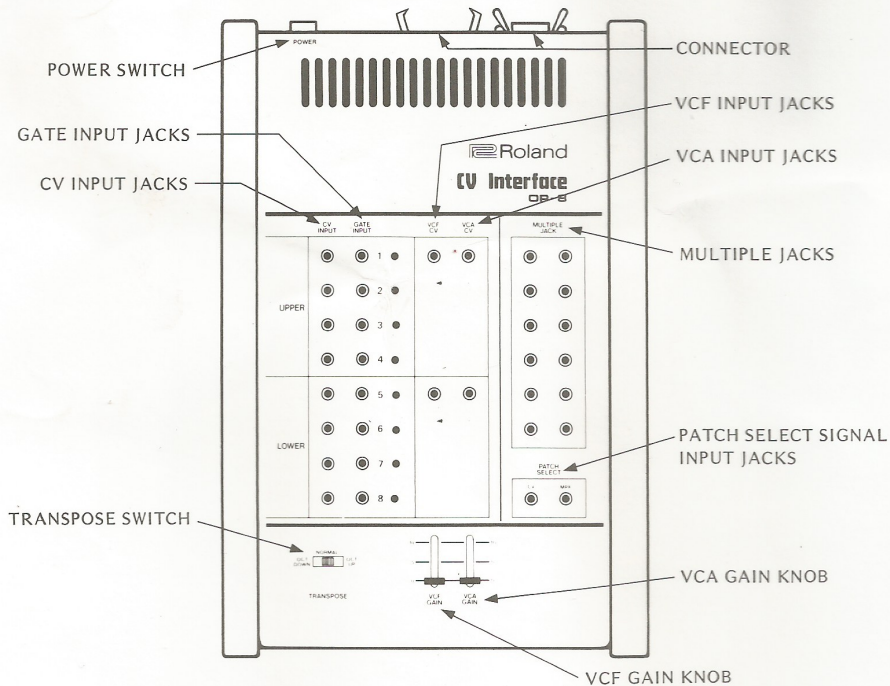
This Manual does not include the instruction about those Synthesizers or the Microcomposer. Please refer to each Manual for the detailed explanation.

< NOTE >

When driving the Juno-60 or Jupiter-8 by the Microcomposer, even if the several same data are sent into one key from the Microcomposer, its sound does not become richer. Please note that you send the data from the Microcomposer instead of playing the keyboard.

When using the MC-4 with the OP-8, set the TOTAL TUNE knob to the middle.

Panel Description



The Jupiter-8 & The OP-8

As written before, if your Jupiter-8 is older than serial No 282880, it needs a minor change in its circuit for setting up with the OP-8. Please contact the authorized distributor in your country through your local Roland dealer.

Connection

If your Jupiter-8 is the altered one, use the flat cable H-146 (provided by us) for setting it up with the OP-8.

Basic Course

1. Key mode of the Jupiter-8

The OP-8 has 8 CV and 8 GATE input jacks (No. 1 to 8). Send the outputs of the Microcomposer to these input jacks. The input jacks of No. 1 to 4 are used to send the signal controlling the UPPER section and No. 5 to 8 to the LOWER section of the Jupiter-8 keyboard. How the OP-8 controls the Jupiter-8 varies depending on the Key mode of the Jupiter-8.

a. In WHOLE mode

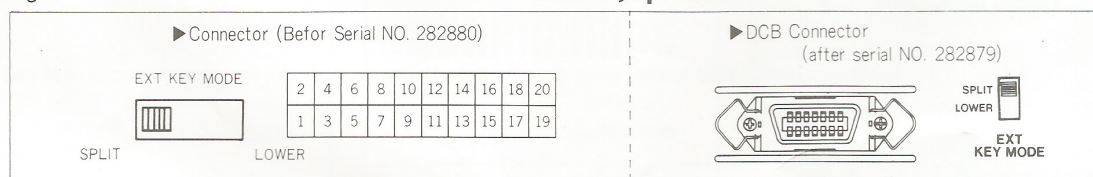
The CV and the GATE signal from the Microcomposer can be sent to any of these input jacks. For instance, when you send 4 CV's and 4 GATE signals to No. 1 to 4 of the OP-8, the Jupiter-8 will play 4 notes, and another 4 notes are available by actual manual playing on its keyboard.

b. In SPLIT mode

On the rear panel of the Jupiter-8 is EXT KEY MODE switch as shown in Fig. 1. How the OP-8 controls the Jupiter-8 varies depending on the position of this switch as shown below.

Fig. 1

◀Rear Panel of the Jupiter-8▶



— SPLIT —

The No. 1 to 4 input jacks of the OP-8 are used to control the UPPER section of the Jupiter-8 and No. 5 to 8 to the LOWER section. If using only 2 notes in each section, you are allowed 2 note manual playing in each section of the keyboard.

* Even if the data from the Microcomposer coincides with the note being played on the keyboard, only one note will be heard.

— LOWER —

Up to 4 CV's and GATE's can be sent into the OP-8, and all of the notes will be played in the tone color of the LOWER section. Also, up to 4 notes in the tone color of the UPPER section are available by actual manual playing on the keyboard. If the CONTROL BUS is not connected, the EXT KEY MODE switch does not function and has no effect on the Jupiter-8.

c. **DUAL**

Maximum of 4 CV's and 4 GATE signals can be used. You can use any input jack.

2. **TRANSDPOSE**

You can shift the entire pitch range of the keyboard by one octave with the **TRANSDPOSE** switch of the OP-8. The appropriate range for the CV data varies depending on the position of the switch.

At OCT DOWN: 24 to 84

At NORMAL: 12 to 72

At OCT UP: 0 to 60

The sound turns out one octave lower when the CV data figure exceeds the appropriate range, and one octave higher when it does not reach it.

a. **In OCT DOWN mode**

When the CV data of the Microcomposer is 48, the pitch is the Middle C. The CV of 2 to 7V covers the 61 keys of the Jupiter-8, i.e. 24 CV input makes the lowest note.

b. **In NORMAL mode**

When the CV data of the Microcomposer is 36, the pitch is the Middle C. The CV of 1 to 6V corresponds to the 61 keys of the Jupiter-8.

c. **In OCT UP mode**

When the CV data of the Microcomposer is 24, the pitch is the Middle C. The CV of 0 to 5V corresponds to the 61 keys of the Jupiter-8.

Advanced Course

1. **Controlling the VCF**

By using the OP-8, even tone color control is possible as well as pitch control. The Cutoff Frequency of the Jupiter-8 can be controlled by sending the control voltage of 0 to 10V to the VCF CV input jack. For instance, if using the Microcomposer MC-4, input the program into the CV-2. The CV-2 automatically shows '50' when it is not programmed at all. If you want to raise the Cutoff Frequency, set the number bigger than 50, and smaller to lower it. The VCF GAIN knob is used to adjust the intensity of this control of the Cutoff Frequency. The change of the Cutoff Frequency will grow greater as you raise the knob. When the knob is set to '0', there will be no change of the Cutoff Frequency, no matter what number you have inputted in the CV-2.

*CV data 50 in the Microcomposer corresponds to 4.167V output.

The OP-8 has 2 VCF input jacks; one for the LOWER section and another for the UPPER section, and each jack can be individually controlled, i.e. 4 notes are separately controlled in each section in any Key mode. Thereby, send the same voltage to both LOWER and UPPER section in the WHOLE mode.

2. Controlling the VCA

Just like the VCF, within the range of 0 to 10V the Microcomposer controls the volume of the Jupiter-8 (Expression control). The CV data is originally set to '50' and the volume will increase if you set a bigger figure, and decrease at a smaller figure. The GAIN knob can adjust the intensity of this volume control.

By using this function, you can add delicate expressions such as Forte, Piano, Crescendo and Diminuendo. Also, by sending the same CV data to the VCF and adjusting the both GAIN's, you can enjoy the effect of making a bigger, brighter sound and a smaller, softer sound.

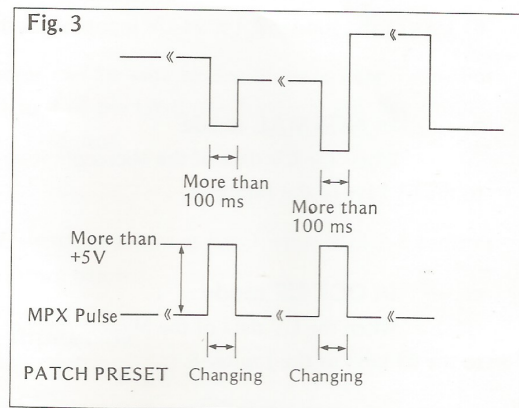
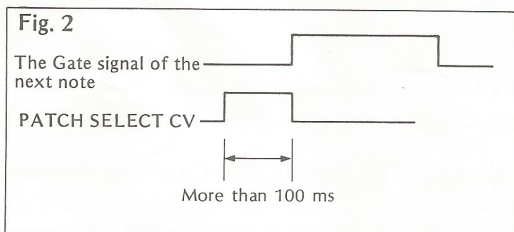
3. Selecting the PATCH PRESET

You can select any PATCH PRESET of A to H by the command from the Microcomposer, i.e. by using the CV data from 1 to 8 and the MPX output. The CV data, the PATCH PRESET and the Voltage are related with each other as shown in the table below.

The Fig. 2 shows how the GATE signal and the PATCH SELECT CV should be input.

*Though one channel is shared by two kinds of signals, it does not affect the VCF or VCA control at all. (Because the PATCH SELECT CV is too short.)

Voltage ¹	1/12	2/12	3/12	4/12	5/12	6/12	7/12	8/12
CV data	1	2	3	4	5	6	7	8
PATCH PRESET	A	B	C	D	E	F	G	H



What is important here is to send the PATCH SELECT CV earlier than the GATE signal of the next note by more than 100 ms. If the pulse width of the PATCH SELECT CV is shorter than 100 ms, a kind of noise might be heard when the PATCH PRESET is changing from one to the other.

The Step Time, which should be longer than 100 ms, differs depending on the TIME BASE and TEMPO. How to work out this figure is as follows.

$$\text{TIME BASE} \times \text{TEMPO} \div 600 \geq \text{the required figure.}$$

If the Microcomposer is being operated with the TIME BASE of 48 and the TEMPO of 112:

$$48 \times 112 \div 600 \geq 8.96$$

As the figure with the decimal points cannot be inputted, the figure bigger than 9 is the appropriate figure in this case. This, however, applies only when the TEMPO VOLUME is set to the middle position. When the Tempo is quickened, you naturally have to increase the number.

When you connect the PATCH SELECT MPX jack of the OP-8 with the Microcomposer's MPX output jack, the PATCH PRESET of the Jupiter-8 changes only when the voltage over +5V is sent from the Microcomposer. Fig. 3 shows the relation between the CV PULSE and MPX's.

The pulse sent to this PATCH SELECT MPX jack needs to be longer than 100 ms as well.

*When you can spare one whole channel exclusively for the PATCH SELECT CV, it is not necessary to use this MPX input.

*Use the MULTIPLE JACK for dividing the CV.

4. The Programming of the Patch Select data

The examples shown on the next page explains the case when you change the PATCH PRESET of the Jupiter-8 in the middle of the piece.

The CV data is inputted in the STEP-1 and the STEP-10 in the MEAS-1.

*Remember to input the CV data at the beginning of the piece. If you press the PATCH PRESET switch of the Jupiter-8 while selecting the PATCH PRESET with the Microcomposer, the OP-8 might fail to function correctly.

Fig. 4

MEAS	STEP	C V for VCO	C V VCF VCA	for PATCH	STEP TIME	GATE TIME	
1	1	2 4		1	30	0	P A T C H P R E S E T [A]
	2	2 4	5 0		120	15	
	3	2 6	5 0		120	15	
	4	2 8	5 0		120	15	
	5	2 9	5 0		120	15	
	6	3 1	5 0		120	15	
	7	3 3	5 0		120	15	
	8	3 5	5 0		120	15	
	9	3 6	5 0		90	15	
	10	3 6		2	30	0	
2	1	3 6	5 0		120	15	P A T C H P R E S E T [B]
	2	3 5	5 0		120	15	
	3	3 3	5 0		120	15	
	4	3 1	5 0		120	15	
	5	2 9	5 0		120	15	
	6	2 8	5 0		120	15	
	7	2 6	5 0		120	15	
	8	2 4	5 0		90	15	

5. Changing the Split Point of the Jupiter-8

The modified Jupiter-8 allows you to set the Key Split position anywhere you like. Without playing the Jupiter-8, hold down the SPLIT KEY MODE button situated in the KEY MODE on the front panel. While you are holding it down, the indicator of the SPLIT KEY MODE button will keep lighting. Then press any key you like, and the key will become the lowest note of the UPPER section.

* The latest type of the Jupiter-8 has the key Split function already.

Roland Corporation