

# Jog Operation Box

## JB-400

### User's Manual



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## For Your Safety

- Before using this product, read this manual and all warnings or cautions in the documentation provided.
- Only Factory Authorized Personnel should be changes and/or adjust the parts of controller.

### The Symbols Used in This Manual


 <b>WARNING</b>	 <b>CAUTION</b>
This symbol marks warnings that should be read and used to prevent serious injury or death.	This symbol indicates where caution should be used to avoid possible injury to yourself or others, or damage to property.

The above indications are used together with the following symbols to indicate the exact nature of the warning or caution.

<b>Examples of Symbols Accompanying Warnings and Cautions</b>	
	△Symbols enclosed in a triangle indicate warnings and cautions. The exact nature of the warning or caution is indicated by the symbol inside (the symbol at left indicates risk of electrocution).
	○Symbols enclosed in a circle mark indicate prohibitions(actions that must not be performed).The exact nature of the prohibition is indicates by the symbol inside or next to the circle mark (the symbol at left indicates that the product must not be disassembled).
	●Symbols inside a black circle mark actions that must be performed to ensure safety. The exact nature of the action that must be performed is indicated by the symbol inside (the symbol at left is used in cases in which the AC adapter must be unplugged to ensure safety).

## Symbols on the product

The symbol mark on the product calls your attention. Please refer to the manual, in the case that you operate the part of the symbol mark on the product.

	This symbol labeled on the portion calls your attention.
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- ④ If the equipment is used in a manner not specified by the SIGMAKOKI CO., LTD., the protection provided by the equipment may be impaired.



- Do not use this product in the presence of flammable gas, explosives, or corrosive substances, in areas exposed to high levels of moisture or humidity, in poorly ventilated areas, or near flammable materials.
- Do not connect or check the product while the power is on.
- Installation and connection should be performed only by a qualified technician.
- Do not bend, pull, damage, or modify the power or connecting cables.
- Do not touch the products internal parts.
- Connect the earth terminal to ground.
- Should the product overheat, or should you notice an unusual smell, heat, or unusual noises coming from the product, turn off the power immediately.
- Do not turn on the power in the event that it has received a strong physical shock as the result of a fall or other accident.
- Do not touch the stage while operation.
- Use dry clothes only for cleaning the equipment.

## Chapter 1: Before You Begin

### 1-1. Overview

The JB-400 is the operation box with representational function.

It can be connected to our stage controller, SHOT-30\* series and SHOT-702/PGC-04.

The operation box, connected to the controller via a cable, provides remote operation. This means that the operation box allows you to work near the motorized stage while checking its behavior even if the controller and the motorized stage are away from each other.

### 1-2. Connecting method

The operation box (JB-400) is connected to the controller with MDR14-CA cable.

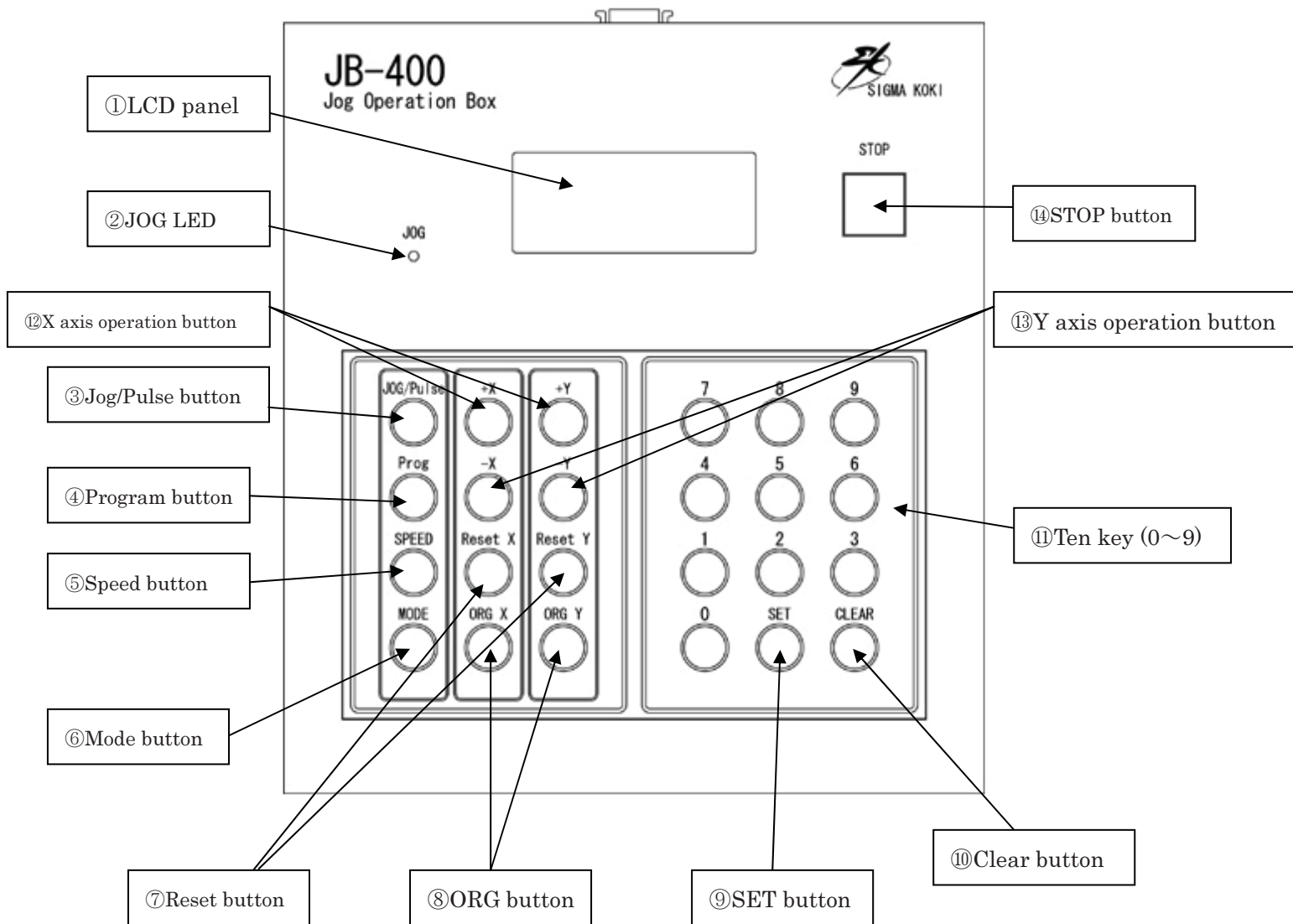
- ① Connect a standard cable (MDR14-CA-2.5) to the connector on the rear panel of the JB-400.
- ② Connect the cable from the JB-400 to the “JOYSTICK” connector on the front panel of the SHOT-30X series and PGC-04 controller. (Case SHOT-702 is rear panel connector.)
- ③ Turn power switch of the controller on.  
And confirm that the open message is displayed correctly. If it can not be displayed, reconfirm if connection of cable is done correctly.



Be sure the controller is off when you connect the joystick. You may not be able to use the buttons on joystick if you connect or disconnect either device while the controller is on.

## Chapter 2: Notes on Use

### 2-1. Parts of the JB-400



## 2-2. Operating method

### ①LCD panel

Display the position coordinates for each axis and the operating mode.

Display Digit : 16 digit × 4 lines

### ②JOG LED

The LED indicator lights up when Jog operation mode and lights off when Fixed pulse mode. Change Jog operation mode/ Fixed pulse mode setting every time pushing the JOG/Pulse button.

NOTE) Set during memory-switch editing and the whole Edit-mode editing in Jog operation mode.

### ③JOG/Pulse button

Change Jog operation mode/ Fixed pulse mode setting every time pushing the JOG/Pulse button. The LED indicator lights up when Jog operation mode and lights off when Fixed pulse mode.

NOTE) Set during memory-switch editing and the whole Edit-mode editing in Jog operation mode.

### ④Program button

Pressing this button will start programmed operation in controller (SHOT-30\*).

Pressing “Prg” and “Reset X” buttons will start No.1 programmed operation.

Pressing “Prg” and “Reset Y” buttons will start No.2 programmed operation.

NOTE) Do not work only in this button.

NOTE) IN SHOT-702, the program function is invalid.

### ⑤SPEED button

Cycle through “SPEED 1/2/3/4” settings stored in controller’s memory switches (1→2→3→4→1 . . .).

⑥MODE button

Press the “MODE” button to cycle through operating modes in controller.

Example) Host⇒Manual⇒Remote⇒Teaching⇒Edit⇒Load⇒Test⇒Host.

NOTE) IN SHOT-702 and PGC-04, the MODE change is invalid.

⑦Reset button

Reset X: Reset position coordinates X axis to zero.

Reset Y: Reset position coordinates Y axis to Zero.

⑧Org button

Org X: Position X-axis stage at mechanical origin.

Org Y: Position Y-axis stage at mechanical origin.

⑨Set button

After fixed pulse settings have been completed.

⑩Clear button

Pressing this button will clear fixed pulse (0 clear).

⑪Ten key (0~9)

Setting fixed pulse with this button.

Input pulse is 0~9999999.

⑫X axis operation button

Enables operation of X-axis. Pressing of this button continuously moves the stage continuously when Jog pulse mode. Releasing this button stops the stage.

When fixed pulse mode, Pressing of this button moves the stage by fixed pulse.

⑬Y axis operation button

Enables operation of Y-axis. Pressing of this button continuously moves the stage continuously when Jog pulse mode. Releasing this button stops the stage.

When fixed pulse mode, Pressing of this button moves the stage by fixed pulse.

⑭STOP button

Stop all operating motorized stages immediately.

Refer to the manual of each controller for stopped condition.



### 2-3. Fixed pulse setting

JB-400 has two operating modes Jog operation mode and fixed pulse mode.

In Fixed pulse mode, operate a stage by fixed pulses.

In Fixed pulse, six kinds of 1-6 are settable.

Default Fixed Pulse: Fixed Pulse1:10, Fixed Pulse2:100, Fixed Pulse3:1000,

Fixed Pulse4:2000, Fixed Pulse5:5000, Fixed Pulse6:10000.

[Operations]

① Press the “JOG/Pulse” and “MODE” buttons simultaneously.

The fixed pulse settings screen will be displayed. (Fig. 2-1)

	F	i	x	e	d		P	u	l	s	e	1							
												1	0						

Fig. 2-1 Fixed pulse setting

② Changes of the fixed pulse by the “ten key” (0~9).

③ Press the “SET” button when changes to settings are complete.

When fixed pulse settings clear, press the “CLEAR” button.

④ Press the “SPEED” button when changes to setting No.(1~6).

No.1⇒No.2⇒No.3⇒No.4⇒No.5⇒No.6⇒No.1 . . .

Pressing the “SET” button saves changes to settings and returns you to normal display.

## 2-4. Memory Switch and Editing Program setting

JB-400 can be setting Memory switch and Edit Program in controller (SHOT-30\*).

Memory switch settings can be changed using the buttons on the JB-400.

NOTE) For the details of the memory switch and Edit program for the controller, see the controller's user manual.

NOTE) IN SHOT-702 and PGC-04, the Memory switch and program function is invalid.

### ① Changing Memory switch setting

To display the memory switch settings screen in Manual mode, press the “MODE” and “SET” buttons simultaneously.

Memory switch settings can be changed using the buttons on the JB-400.

Button	Function
+X	For numeric options, move cursor to right digit
−X	For numeric options, move cursor to left digit
+Y	Cycle through items in descending order (No.2⇒1⇒86⇒85)
−Y	Cycle through items in ascending order (No.85⇒86⇒1⇒2)
SET	① Cycle through options for the current item (or increase the value of numeric options)
	② After changes to settings have been completed, save change to settings and exit
SPEED	① Cycle through options for the current item (or decrease the value of numeric options)
	② After changes to settings have been completed, cancel changes to settings and exit
MODE	① Press to end changes to settings (a confirmation screen will be displayed)
	② Exit confirmation screen and return to memory switch settings screen
ResetX+ORGX+CLEAR	Restore memory switch settings to factory defaults

NOTE) Set during memory-switch editing and the whole Edit-mode editing in Jog operation mode. Not setting memory-switch and Edit-mode in Fixed pulse operation mode.

②Edit mode setting

In Edit mode, you can be recording and selection and Data input from JB-400.

From the Edit mode screen, press the “SET” button. The program-number selection screen will appear.

Programs can be edited using the buttons on the JB-400.

Button	Function
+X	Move the edit cursor to the right
−X	Move the edit cursor to the left
+Y	① Cycle through program numbers in the order No.1⇒2⇒1 ② Scroll through program line numbers in descending order (No.3⇒2⇒1)
−Y	① Cycle through program numbers in the order No.1⇒2⇒1 ② Scroll through program line numbers in ascending order (No.1⇒2⇒3)
SET	①In the Edit mode start-up screen, press this button to begin editing
	②On the confirmation screen, press this button to exit and record changes to settings
	③Make changes to the selected item (numerical data increases)
SPEED	① On the confirmation screen, exit without saving changes to settings
	②Make changes to the selected item (numerical data decreases)
MODE	①Press to exit Edit mode( a confirmation screen will be displayed)
	②In the confirmation displayed at completion of Edit mode operations, press MODE to return to Edit mode

NOTE) Set during memory-switch editing and the whole Edit-mode editing in Jog operation mode. Not setting memory-switch and Edit-mode in Fixed pulse operation mode.

## Chapter 3: Specifications

### 3-1. Specifications

Power source	DC5V $\pm$ 10% ( from controller)
Operating temperature	5~40°C
Storage temperature	-20~60°C
Ambient humidity	20~80%RH (no condensation)
External dimensions	178W×195D×38H (excluding projections)
Weight	700g
Electrical burst immunity	EN61000-4-4(1995) Level 2
Electrostatic discharge	EN61000-4-2(1995)+A1(1998) Level 2

### 3-2. Exterior Dimensions

