

Jog Controller

JC-01

Instruction manual



HOURS
www.hours-shop.com

MJ-1026-02.01

Thank you for your purchase.

■ About this instruction manual

This instruction manual describes the correct usage and functions of the equipment and notes on use. Please read carefully before use to ensure proper operation. Also, keep this manual available as a reference when using this equipment.

The content of the instruction manual has been prepared with all possible care. If there are any questionable points, errors or omissions, please contact us or your distributor.

Reprinting and copying of the instruction manual requires our consent.

The contents of the instruction manual and product specifications are subject to change without notice.

■ Warranty

If a failure occurs due to our manufacturing or delivery within one year from the date of purchase, we will repair it free of charge.

However, in the following cases, repair will be charged even if it is within one year of purchase.

1. If there is a failure or damage due to usage or carelessness different from what is described in the instruction manual
2. If there is a malfunction or damage due to improper modification, adjustment or repair
3. If there is a failure or damage due to natural disaster, fire, or other external factors

■ Repair

We will repair it. If you suspect a malfunction or damage, please contact us or your distributor. When transporting this equipment to us, pack it carefully so that it will not be damaged during transportation, and write down the occurrence, failure or damage. In addition, we cannot guarantee about malfunction and damage caused by transportation.

■ Contact

Tokyo Head Office	TEL	+81-3-5638-6551
Osaka Branch	TEL	+81-6-6307-4835
Kyushu Sales Office	TEL	+81-92-481-4300

■ Precautions for use

Please read this instruction manual carefully before use to ensure correct use. Keep this manual in a safe place and use as a reference when operating this equipment.

- This device is intended to operate the following stage controllers only. Do not use for any other purpose.




Model				
FC-111	FC-114	FC-411	FC-414	FC-511
FC-514	FC-611	FC-911	SC-111	SC-114

- This instrument is a precision instrument. Please handle with care.
- Protect from impact and excessive force being applied to the equipment.
- Maintain the installation environment described in this instruction manual.
- If the equipment is used in a manner not specified in this manual, the protection functions of the equipment may be impaired. The Company is not liable for any damages arising from use that violates this precaution.
- Fire caused by this equipment, damage caused by extinguishing agents, earthquakes, flooding, lightning strikes, other accidents, intentional or negligence of customers and third parties, use other than the intended use of the product, use in environments other than specifications The Company is not liable for any damages.
- The Company assumes no responsibility whatsoever for any damage to human life or property caused by a failure or malfunction caused by connecting this equipment to equipment or equipment other than our stage controller.
- No warranty other than those described in this instruction manual.




■ Safety Please be sure to observe

Explains what you must observe to prevent harm to people and others, and damage to property.








- The degree of harm or damage caused by improper use is classified and explained in the following display.

 DANGER	This symbol indicates that a risk of death or serious injury is imminent
 WARNING	This symbol indicates that there is a possibility of death or serious injury
 CAUTION	This symbol indicates that there is a possibility of physical damage to the equipment.

- Important notices are categorized and explained by the following symbols.

	Indicates required content that must be executed.
	Indicates prohibited content that must not be executed.
	Indicates a Caution that you should be aware of. Also displayed on the equipment.

- General usage requirements.

 WARNING	
	Do not use in an explosive atmosphere. Never use it in a place where flammable or explosive gas or vapor is present because it may cause an explosion or fire.
	Do not place in a corrosive atmosphere. Doing so may cause corrosion of the conductor or poor contact of the connector, which may cause malfunction or failure, resulting in a fire.
	Do not use the product if there are any signs of damage or malfunction due to risk of electric shock, smoke, or fire. In case of damage or malfunctions, immediately unplug the power cable from the outlet
	Do not use the product where it will be exposed to water. It may cause an electric shock or malfunction.
	Do not open the cover. It may cause an electric shock or malfunction.
	Do not connect other than our stage controller described in this instruction manual. Doing so may cause a failure of this instrument and connected equipment.

■ Precautions for install

The following are precautions for installing this equipment. Please be sure to observe.

- Avoid places where the temperature and humidity are high, where the product is exposed to direct sunlight, or where the temperature changes rapidly.
- Do not install it in a place where it will be exposed to water.
- Ensure that the ambient temperature of this equipment does not exceed 40 °C .
- Do not use the product in a place where there is a strong magnetic field or electric field, or where there is a lot of distortion or noise in the input power supply waveform.

■ Cleaning

If it gets dirty, use a soft cloth with a mild detergent diluted with water and wipe gently.



WARNING When cleaning, be sure to remove it from the stage controller.



CAUTION Use only neutral detergent diluted with water. Discoloration and roughness of the painted surface, fading of printed characters, and cloudiness of the acrylic board may occur.

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1. Overview

This equipment is used to operate our stage controller. Stage operations, teaching operations, emergency stop, mode switching, and sleep execution can be performed using the buttons on the front panel. The controllers that the JC-01 can be used with are shown below.

Model				
FC-111	FC-114	FC-411	FC-414	FC-511
FC-514	FC-611	FC-911	SC-111	SC-114

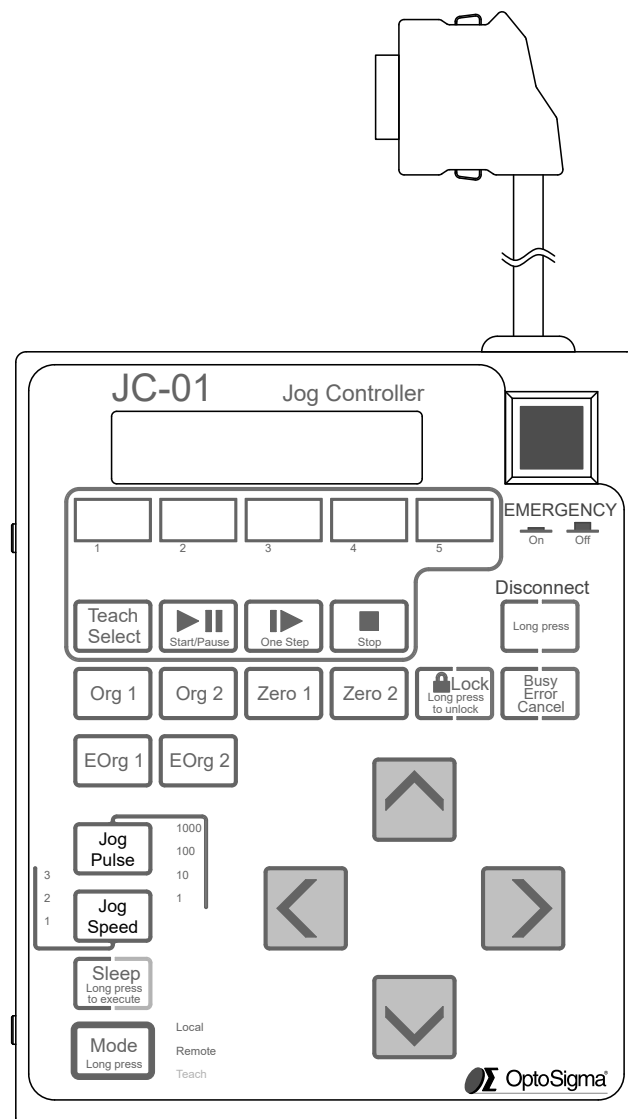
2. Package Contents

Purchasers should find that the package contains the items listed below. If anything is missing or damaged, contact us or your distributor.

Name	Model or specification	Quantity	Remarks
Jog Controller	JC-01	1	
Instruction manual	-	1	This book

3. Part names and functions

3-1. Panel



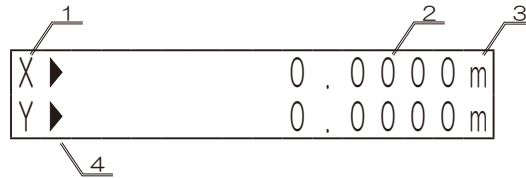
(1) Display unit

JC-01

Jog Controller



The display shows the positioning status, axis name, coordinate value, unit, and error. The error is displayed on the axis where the error has occurred, and all the errors that have occurred are displayed at regular intervals. For the positioning status, axis names, units, and errors, see the instruction manual for the stage controller.



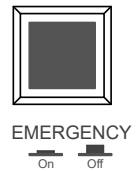
• Display contents

No	Item	Contents																		
1	Axis name	The upper display (X) corresponds to axis one. The lower display (Y) to axis two. The display contents depend on the setting of the parameter "AXIS Name".																		
2	Coordinate value	The upper display corresponds to axis one. The lower display to axis two.																		
3	Unit	The upper display corresponds to axis one. The lower display to axis two. The unit displayed is set by the parameter "Unit Select". <ul style="list-style-type: none"> • For nanometers, it is "n". • For micrometer, it is "u". • For millimeters, it is "m". • In the case of degrees, it is "°". • When there is no display, the display is such that the smallest digit of the coordinate value is the digit of the resolution of the connected stage controller. For details, see the instruction manual for the stage controller. 																		
4	Positioning status	<table border="1"> <tr> <td>▶</td> <td>READY</td> <td>Motion completed successfully, Position is Stable.</td> </tr> <tr> <td>▷</td> <td>READY</td> <td>Motion did not complete successfully.</td> </tr> <tr> <td>></td> <td>BUSY</td> <td>Motion in process and has not been completed.</td> </tr> <tr> <td>+</td> <td>BUSY</td> <td>Jog button is pressed and Stage is moving in the positive direction.</td> </tr> <tr> <td>—</td> <td>BUSY</td> <td>Jog button is pressed and Stage is moving in the negative direction.</td> </tr> <tr> <td>no display</td> <td>BUSY</td> <td>Command operation or error has occurred.</td> </tr> </table>	▶	READY	Motion completed successfully, Position is Stable.	▷	READY	Motion did not complete successfully.	>	BUSY	Motion in process and has not been completed.	+	BUSY	Jog button is pressed and Stage is moving in the positive direction.	—	BUSY	Jog button is pressed and Stage is moving in the negative direction.	no display	BUSY	Command operation or error has occurred.
▶	READY	Motion completed successfully, Position is Stable.																		
▷	READY	Motion did not complete successfully.																		
>	BUSY	Motion in process and has not been completed.																		
+	BUSY	Jog button is pressed and Stage is moving in the positive direction.																		
—	BUSY	Jog button is pressed and Stage is moving in the negative direction.																		
no display	BUSY	Command operation or error has occurred.																		

The buttons that can be used depend on the positioning status, errors and modes are shown below.

Error Positioning status	Mode	Local, Remote	Teach
▶		Disconnect Long press Org 1 Org 2 Mode Long press Lock Long press to unlock EOrg 1 EOrg 2 Jog Pulse Sleep Long press to execute Zero 1 Zero 2 Jog Speed < > ^ v	Disconnect Long press Teach Select Lock Long press to unlock Start/Pause Sleep Long press to execute One Step Mode Long press Stop
>		Busy Error Cancel	Busy Error Cancel
+		-	-
—		-	-
None		-	-
Limit error Emergency stop Overflow error		Busy Error Cancel	Busy Error Cancel
Other error		-	-

(2) EMERGENCY switch (Local, Remote, Teach)



Emergency stop switch. Used to stop the stage operation immediately. Can be used in all modes. When the power is supplied to the instrument, pressing the switch locks the button in the on position, turns on the lamp in the button, and executes an emergency stop. To cancel, press the switch again to turn it off, and press the Busy Error Cancel button. The EMERGENCY switch can be used even if power is not supplied to this instrument as long as it is connected to the stage controller. In this case, the lamp does not turn on even if the switch is in the On position and an emergency stop is performed. To release from this state, perform the above release operation after reconnecting this equipment and supplying power, or cancel the busy error from the stage controller. For details, see the instruction manual for the stage controller.

(3) Mode button (Local, Remote, Teach)



The mode button switches the stage controller mode each time the button is pressed. The buttons that can be used in each mode are different. See "Display" for details.

(4) Org1, Org2 button (Local, Remote)



Return the stage to the mechanical origin. Org1 is the first axis and Org2 is the second axis. During execution, the green lamp lights. One axis can be homed while the other axis is moving. Press again during execution to stop the stage. The mechanical origin mode and operation speed depend on the setting of the stage controller. For details, see the instruction manual for the stage controller.

(5) EOrg1, EOrg2 button (Local, Remote)



Returns the stage to the coordinate zero position (electric home return). EOrg1 is the first axis and EOrg2 is the second axis. The green lamp lights during execution. One axis can be homed while the other axis is moving. Press again during execution to stop the stage. The operating speed depends on the setting of the stage controller. For details, see the instruction manual for the stage controller.

(6) Zero1, Zero2 button (Local, Remote)

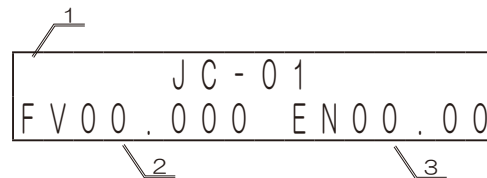


Sets the coordinate value to zero (electric origin setting). Zero1 zeros the first axis, and Zero2 zeros is the second axis.

(7) Lock button (Local, Remote, Teach)



Disables button operations other than the EMERGENCY button and this button. During execution, the red lamp lights. If this button is pressed once (single click) during execution, information such as the model name of this equipment is displayed. Press and hold to cancel.



No	Item	Contents
1	Model name	Model
2	FV	Firmware Version
3	EN	Equipment Number

(8) Busy Error Cancel button (Local, Remote, Teach)



Executes the positioning status (BUSY) and error cancellation (busy error cancellation). Use this button to cancel positioning errors. See the table below for errors that can be canceled. To release the emergency stop, set the EMERGENCY switch to Off before executing.

Cancelable error		
Limit error	Emergency stop	Overflow error

(9) Sleep button (Local, Remote, Teach)



Puts the JC-01 and the attached controller in SLEEP mode. Press and hold when positioning is completed, no error has occurred, and teaching execution has been completed. During execution, the green lamp lights. During operation, this equipment cannot operate any button other than the Sleep button. Press it again to return. The EMERGENCY button can be operated during execution, but it will not enter the emergency stop state until returning from sleep.

(10) Jog Pulse button (Local, Remote)



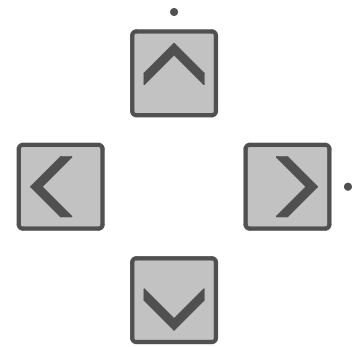
Select the command pulse amount when the Jog button is pressed once (single click). It is 1 at startup and switches each time it is pressed. The lamp flashes during operation. Press this button again to stop. The operating speed depends on the setting of the stage controller. For details, see the instruction manual for the stage controller.

(11) Jog Speed button (Local, Remote)



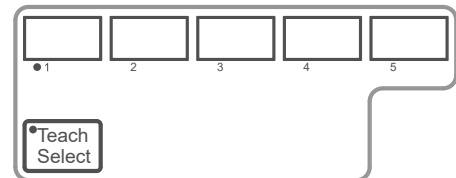
Select the speed step when the Jog button is held down. It is 1 at startup and switches each time it is pressed. The operating speed of each speed step depends on the setting of the stage controller. For details, see the instruction manual for the stage controller.

(12) Jog button (Local, Remote)



Move the stage to any position. There are two types of operation: specified pulse amount operation (Jog button once press) and continuous operation (Jog button long press). The pulse amount for the specified pulse amount operation can be set with the Jog Pulse button. The speed during continuous operation can be set with the Jog Speed button. When entering the stage limit sensor, the red lamp of the target axis blinks. Each axis can be operated simultaneously (2 directions). The operation direction of the stage with respect to the button depends on the setting of the connected stage controller. For details, see the instruction manual for the stage controller.

(13) Teach Select button (Teach, Remote)



Select a teaching channel. It switches each time it is pressed. The green lamp inside this button lights up for the channel where the teaching contents are registered. If the lamps of all channel numbers are blinking, the contents of teaching are being registered, so the Teach Select button, Start / Pause button, One Step button, Stop button, and Mode button cannot be used. Use the frame above the channel number as a memo area.

(14) Start/Pause button (Teach)



Starts and pauses teaching. When pressed during execution, pauses without executing the next operation after the operation currently being executed. Press again to resume execution. The method of lighting the green lamp according to the execution status is shown below.

State	Lamp
Running	Lighting
Paused	Flashing
One step running, stopped	Off

(15) One Step button (Teach)



Execute the teaching contents one step (one line at a time). The green lamp flashes during execution. It can be used during pause and stop. If pressed during pause, one-step execution will return to pause. If it is pressed while stopped, one step is executed from the first line of the teaching content and paused.

(16) Stop button (Teach)



Stop the execution of teaching. This turns off the Start / Pause button or One Step button lamp.

(17) Disconnect button (Local, Remote, Teach)

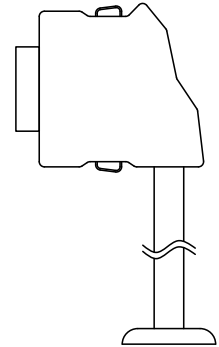
Disconnect



Shut off the power supply of this equipment. It can be used only when positioning has been completed or the stage has stopped due to an error. When removing this instrument from the stage controller, be sure to perform this operation before removing it. To supply power again, reconnect the connection cable described in the next section or perform power supply operation from the stage controller. In addition, the power supply of this equipment can be cut off from the stage controller. For details, see the instruction manual for the stage controller.

3-2.Cable

(1) Connection cable



Cable with connector for connecting to stage controller. It cannot be removed from this equipment. It can be connected even when the power to the stage controller is on. However, when removing this equipment from the stage controller, be sure to operate the Disconnect button before disconnecting, or shut off the power supply from the stage controller. For details, see the instruction manual for the stage controller.



CAUTION Do not connect other than our stage controller. Failure to do so may cause damage to this equipment and connected equipment.

1	2	3	4	5	6	7
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4.Specification

These are the specifications for this equipment.

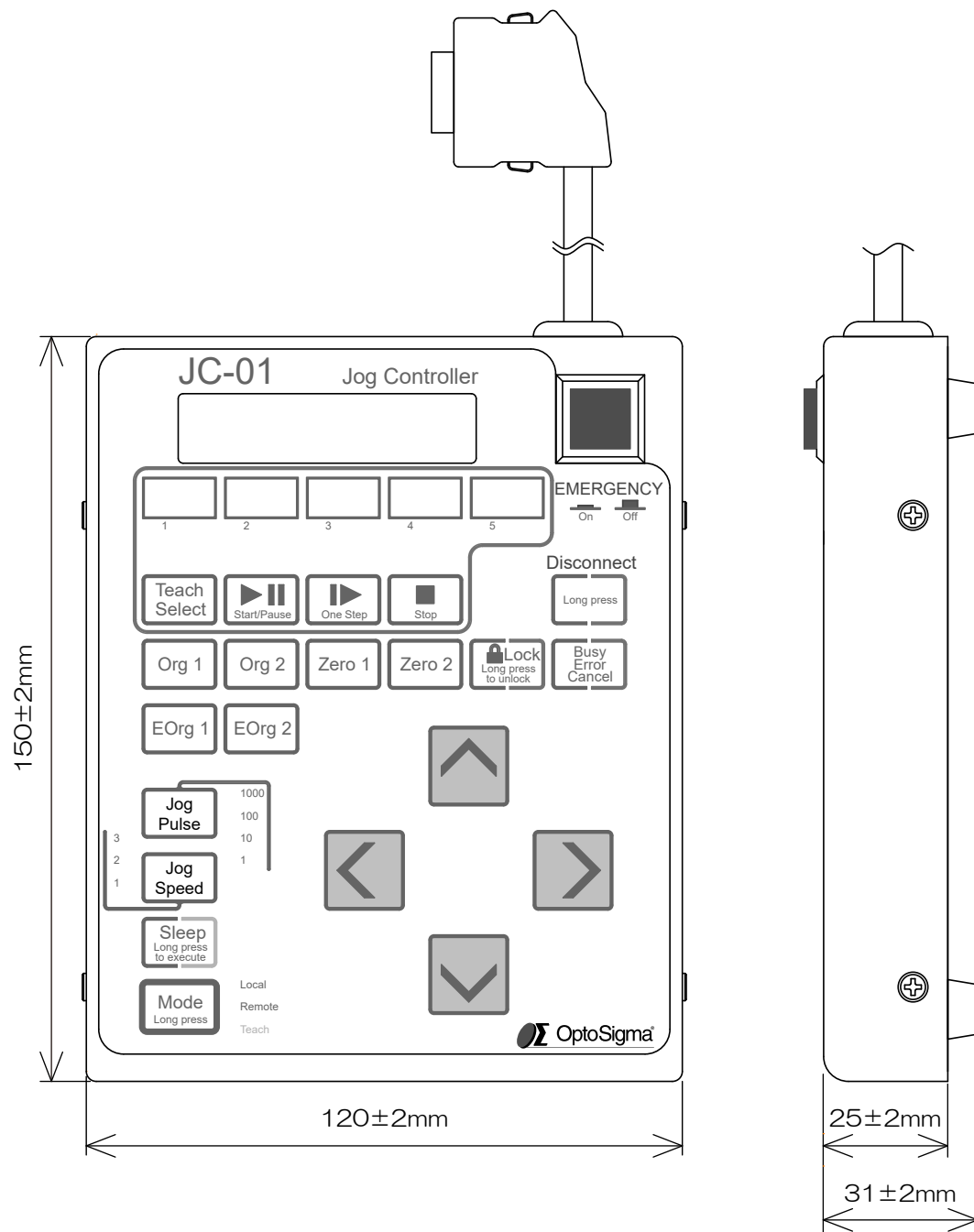
4-1.Basic specifications

Item	Contents
Number of connectable stage controllers	1
Number of control axes	2
Stage movement related	Cross JOG operation
	JOG speed switching
	JOG command pulse amount switching
	Mechanical origin return
	Electric home return
	Coordinate value zero set
Teaching	Busy error cancel
	Teaching channel selection
	Moving start
	Pause
	One step
Other	Stop
	mode change
	Sleep
	button operation invalid
	Power supply cutoff
	Emergency stop

4-2.General specifications

Item	Contents
Power supply	DC5V
External dimensions	W120 × H31 × D150mm (Including rubber feet)
Connection cable length	2m
Weight	0.8kg
Operating temperature	0℃～ 40℃
Operating ambient humidity	20% ～ 80%RH (No condensation)
Storage temperature	-10℃～ 55℃
Ambient storage humidity	20% ～ 80%RH (No condensation)
Place of use	indoor
Storage altitude	up to 2000m
Operating altitude	up to 2000m

5. Dimensions



6. Trouble shooting

If a problem occurs, check the following. If the remedy does not improve the problem, the instrument or stage controller may be faulty. Unplug the power plug of the stage controller from the outlet and contact our company or our distributor.

Contents	Possible cause	Workaround	Page
"Communication Error Disconnected" is displayed.	Connection authentication failed.	After turning off the power supply from the stage controller, perform the power supply operation from the stage controller, or disconnect and reconnect the connection cable.	5
Cannot operate.	Not connected to stage controller.	Connect to the stage controller.	5
	Power supply is shut off.	Operate the power supply from the stage controller. Or disconnect and reconnect the connection cable.	5
	The mode is not correct.	Change to the mode you want to use.	3
	Lock button is pressed.	Release the Lock button.	3
	This equipment is sleeping.	Please return from sleep mode.	4
	EMERGENCY switch is pressed.	After turning off the EMERGENCY switch, press the Busy Error Cancel button.	4
	The positioning status of the display unit is "No display" or ">".	During command operation or positioning operation. Please wait as it is. If the status of ">" continues, the positioning complete status can be forcibly changed to "▶" or "▷" with the Busy Error Cancel button.	2, 4
	An error has occurred.	Please clear the error.	4

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7.Update history

Edition	Document control number	Revision date	Supported FV	Supported EN	Contents
1	MJ-1026-01.01	-	01.000 ~	01.00 ~	-
1	MJ-1026-01.02	2020.08.07	01.000 ~	01.00 ~	Typo correction
2	MJ-1026-02.00	2021.01.07	01.000 ~	01.00 ~	Change the display contents
2	MJ-1026-02.01	2021.08.31	01.000 ~	01.00 ~	Change contact URL

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Memo

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