

# FS100 OPTIONS INSTRUCTIONS

## FOR BILINGUAL FUNCTION

---

Upon receipt of the product and prior to initial operation, read these instructions thoroughly, and retain for future reference.

---

### MOTOMAN INSTRUCTIONS

- MOTOMAN-□□□ INSTRUCTIONS
- FS100 INSTRUCTIONS
- FS100 OPERATOR'S MANUAL
- FS100 MAINTENANCE MANUAL

Part Number: 159640-1CD  
Revision: 0



## MANDATORY

- This manual explains the bilingual function of the FS100 system. Read this manual carefully and be sure to understand its contents before handling the FS100.
- General items related to safety are listed in Chapter 1: Safety of the FS100 Instructions. To ensure correct and safe operation, carefully read the FS100 Instructions before reading this manual.



## CAUTION

- Some drawings in this manual are shown with the protective covers or shields removed for clarity. Be sure all covers and shields are replaced before operating this product.
- The drawings and photos in this manual are representative examples and differences may exist between them and the delivered product.
- YASKAWA may modify this model without notice when necessary due to product improvements, modifications, or changes in specifications. If such modification is made, the manual number will also be revised.
- If your copy of the manual is damaged or lost, contact a YASKAWA representative to order a new copy. The representatives are listed on the back cover. Be sure to tell the representative the manual number listed on the front cover.
- YASKAWA is not responsible for incidents arising from unauthorized modification of its products. Unauthorized modification voids your product's warranty.

---

## Notes for Safe Operation

Read this manual carefully before installation, operation, maintenance, or inspection of the FS100.

In this manual, the Notes for Safe Operation are classified as "WARNING," "CAUTION," "MANDATORY," or "PROHIBITED."



### WARNING

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury to personnel.



### CAUTION

Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury to personnel and damage to equipment. It may also be used to alert against unsafe practices.



### MANDATORY

Always be sure to follow explicitly the items listed under this heading.



### PROHIBITED

Must never be performed.

Even items described as "CAUTION" may result in a serious accident in some situations. At any rate, be sure to follow these important items.



To ensure safe and efficient operation at all times, be sure to follow all instructions, even if not designated as "CAUTION" and "WARNING."



## WARNING

- Before operating the manipulator, check that servo power is turned off when the emergency stop button on the programming pendant is pressed.  
When the servo power is turned off, the SERVO ON LED on the programming pendant is turned off.

Injury or damage to machinery may result if the emergency stop circuit cannot stop the manipulator during an emergency. The manipulator should not be used if the emergency stop buttons do not function.

*Fig. : Emergency Stop Button*



- In the case of not using the programming pendant, be sure to supply the emergency stop button on the equipment. Then before operating the manipulator, check to be sure that the servo power is turned OFF by pressing the emergency stop button.  
Connect the external emergency stop button to the 5-6 pin and 16-17 pin of the robot system signal connector (CN2).
- Upon shipment of the FS100, this signal is connected by a jumper cable in the dummy connector. To use the signal, make sure to prepare a new connector, and then input it.

If the signal is input with the jumper cable connected, it does not function, which may result in personal injury or equipment damage.

- Once the emergency stop button is released, clear the cell of all items which could interfere with the operation of the manipulator.  
Then turn the servo power ON.

Injury may result from unintentional or unexpected manipulator motion.

*Fig. : Release of EM*



- Observe the following precautions when performing teaching operations within the P-point maximum envelope of the manipulator:
  - View the manipulator from the front whenever possible.
  - Always follow the predetermined operating procedure.
  - Ensure that you have a safe place to retreat in case of emergency.

Improper or unintended manipulator operation may result in injury.

The emergency stop button is located on the programming pendant.



## WARNING

- Confirm that no person is present in the P-point maximum envelope of the manipulator and that you are in a safe location before:
  - Turning on the power for the FS100.
  - Moving the manipulator with the programming pendant.
  - Running the system in the check mode.
  - Performing automatic operations.

Injury may result if anyone enters the working envelope of the manipulator during operation. Always press an emergency stop button immediately if there are problems.



## CAUTION

- Perform the following inspection procedures prior to conducting manipulator teaching. If problems are found, repair them immediately, and be sure that all other necessary processing has been performed.
  - Check for problems in manipulator movement.
  - Check for damage to insulation and sheathing of external wires.
- Always return the programming pendant to the hook on the FS100 cabinet after use.

The programming pendant can be damaged if it is left in the P-point maximum envelope of the manipulator, on the floor, or near fixtures.

- Read and understand the Explanation of Warning Labels in the FS100 Instructions before operating the manipulator.

## Definition of Terms Used Often in This Manual

The MOTOMAN is the YASKAWA industrial robot product.




The MOTOMAN usually consists of the manipulator, the FS100 controller, manipulator cables, the FS100 programming pendant (optional), and the FS100 programming pendant dummy connector (optional).

In this manual, the equipment is designated as follows:

| Equipment  | Manual Designation                  |
|--|-------------------------------------|
| FS100 controller                                 | FS100                               |
| FS100 programming pendant                        | Programming pendant                 |
| Cable between the manipulator and the controller | Manipulator Cable                   |
| FS100 programming pendant dummy connector        | Programming pendant dummy connector |

FS100

Descriptions of the programming pendant keys, buttons, displays and keyboard of the PC are shown as follows:

| Equipment           |                             | Manual Designation  |
|---------------------|-----------------------------|---|
| Programming Pendant | Character Keys              | The keys which have characters printed on them are denoted with [ ].<br>ex. [ENTER]   |
|                     | Symbol Keys                 | The keys which have a symbol printed on them are not denoted with [ ] but depicted with a small picture.<br>ex. PAGE key <br>The Cursor is an exception, and a picture is not shown.                             |
|                     | Axis Keys<br>Numeric Keys   | "Axis Keys" and "Numeric Keys" are generic names for the keys for axis operation and number input.  |
|                     | Keys pressed simultaneously | When two keys are to be pressed simultaneously, the keys are shown with a "+" sign between them,<br>ex. SHIFTkey  +COORD key  |
|                     | Mode Key                    | Three kinds of modes that can be selected by the mode key are denoted as follows:<br>REMOTE, PLAY, or TEACH   |
|                     | Button                      | Three buttons on the upper side of the programming pendant are denoted as follows:<br>HOLD button<br>START button<br>EMERGENCY STOP button  |
|                     | Displays                    | The menu displayed in the programming pendant is denoted with { }.<br>ex. {JOB}   |
| PC Keyboard         |                             | The name of the key is denoted<br>ex. Ctrl key on the keyboard  |

## Description of the Operation Procedure

In the explanation of the operation procedure, the expression "Select •••" means that the Cursor is moved to the object item and the SELECT key is pressed, or that the item is directly selected by touching the screen.

## Registered Trademark

In this manual, names of companies, corporations, or products are trademarks, registered trademarks, or brand names for each company or corporation. The indications of (R) and TM are omitted.

---


|                           |     |
|---------------------------|-----|
| 1 Bilingual Function..... | 1-1 |
|---------------------------|-----|

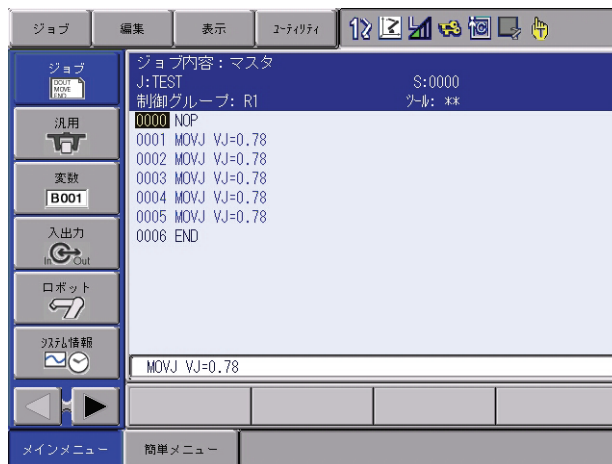
## 1 Bilingual Function

FS100

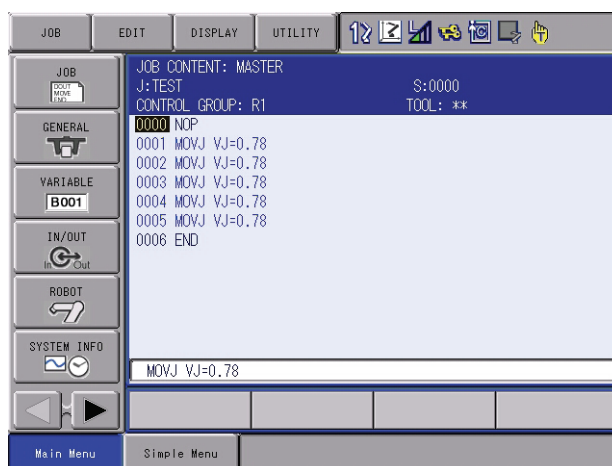
## 1 Bilingual Function

When the bilingual function (optional) is enabled, two languages can be displayed alternately by ONE-TOUCH operation.

Press [SHIFT] + Area Key 



English and Japanese can be switched each time the Area Key and the [SHIFT] are pressed simultaneously.



The two languages cannot be displayed alternately in the following conditions.



- During character or number input operations, and when a confirmation dialog is on the window.
- During axis operation, next-back or test mode in the teach mode.
- Actual job names, other names and comments: the registered names and comments would remain.



# FS100 OPTIONS INSTRUCTIONS

## FOR BILINGUAL FUNCTION

---

### HEAD OFFICE

2-1 Kurosakishiroishi, Yahatanishi-ku, Kitakyushu 806-0004 Japan  
Phone +81-93-645-7745 Fax +81-93-645-7746

YASKAWA America Inc. MOTOMAN Robotics Division  
805 Liberty Lane, West Carrollton, OH 45449, U.S.A.  
Phone +1-937-847-6200 Fax +1-937-847-6277

YASKAWA Nordic AB  
Verkstadsgatan 2, PO Box 504, SE-385 25 Torsås, Sweden  
Phone +46-480-417-800 Fax +46-486-414-10

YASKAWA Europe GmbH Robotics Div.  
Kammerfeldstr. 1, 80591 Allershausen, Germany  
Phone +49-8166-90-0 Fax +49-8166-90-103

YASKAWA Electric Korea Co., Ltd  
9F, KYOBO Securities Bldg., 26-4, Yeoido-Dong Yeoungpo-ku, Seoul, KOREA  
Phone +82-2-784-7844 Fax +82-2-784-8495

YASKAWA Electric (Singapore) PTE Ltd.  
151 Lorong Chuan, #04-02A, New Tech Park, Singapore 556741  
Phone +65-6282-3003 Fax +65-6289-3003

YASKAWA Electric (Thailand) Co., Ltd.  
252/246, 4th Floor. Muang Thai-Phatra Office Tower II Rachadaphisek Road, Huaykwang Bangkok, 10320 Thailand  
Phone +66-2-693-2200 Fax +66-2-693-4200

Shougang MOTOMAN Robot Co. Ltd.  
No.7, Yongchang-North Road, Beijing E&T Development Area, China 100176  
Phone +86-10-6788-0548 Fax +86-10-6788-0548-813

YASKAWA ELECTRIC (SHANGHAI) Co., Ltd.  
No.18Xizang Zhong Road, 17F, Harbour Ring Plaza, Shanghai 200001, CHINA  
Phone +86-21-5385-0655 Fax +86-21-5385-2770

YASKAWA Robotics India Ltd.  
#426, Udyog Vihar, Phase- IV, Gurgaon, Haryana, India  
Phone +91-124-475-8500 Fax +91-124-414-8016

---

Specifications are subject to change without notice  
for ongoing product modifications and improvements.