

# MOTOMAN MH1605-505TR POSITIONER INSTALLATION AND OPERATION INSTRUCTIONS

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

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## MOTOMAN INSTRUCTIONS

- MOTOMAN MANIPULATOR INSTRUCTIONS
- MOTOMAN MH-SERIES POSITIONER MANUAL
- MOTOMAN CONTROLLER MANUAL
- MOTOMAN MAINTENANCE MANUAL
- MOTOMAN OPERATOR'S MANUAL FOR ARC WELDING
- MOTOMAN CONCURRENT I/O PARAMETER MANUAL

The operator's manual above corresponds to specific usage.  
Be sure to use the appropriate manual.

Part Number: 162069-1CD  
Revision: 0



## Notes for Safe Operation

Read this manual carefully before installation, operation, maintenance, or inspection of the MH1605-505TR.

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 MH1605-505TR, check that servo power is turned OFF by pressing the EMERGENCY STOP buttons on the operator station or Programming Pendant (refer to *Figure 1*). When 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 positioner during an emergency. The positioner should not be used if the EMERGENCY STOP buttons do not function.

*Figure 1: EMERGENCY STOP Button*



- Release the EMERGENCY STOP button (refer to *Figure 2*). Once this button is released, clear the cell of all items which could interfere with the operation of the positioner then, turn servo power ON.

Injury may result from unintentional or unexpected positioner motion.

*Figure 2 : Release of EMERGENCY STOP Button*



- Observe the following precautions when performing teaching operations within the working envelope of the positioner:
  - View the positioner from the front whenever possible.
  - Always follow the predetermined operating procedure.
  - Ensure that there is a safe place to retreat to in case of emergency.

Improper or unintended manipulator operation may result in injury.

- Confirm that no person is present in the working envelope of the positioner and that you are in a safe location before:
  - Turning on the power for the controller.
  - Moving the positioner 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 positioner during operation. Always press an EMERGENCY STOP button immediately if there is a problem. The EMERGENCY STOP buttons are located on the operator station and on the Programming Pendant.



## CAUTION

- Perform the following inspection procedures prior to conducting positioner teaching. If problems are found, repair them immediately and be sure that all other necessary processing has been performed.
  - Check for problems in positioner movement.
  - Check for damage to insulation and sheathing of external wires.
- Always return the Programming Pendant to the hook on the cabinet of the controller after use.
- The Programming Pendant can be damaged if it is left in the work area, on the floor, or near fixtures.
- Read and understand the Explanation of Warning Labels in the *Controller Manual* before operating the MH1605-505TR.

## Definition of Terms Used Often in This Manual

The positioner usually consists of the controller, the Programming Pendant, and supply cables.

In this manual, the equipment is designated as follows:

Equipment	Manual Designation
Controller	Controller
Programming Pendant	Programming Pendant
Cable between the positioner and the controller	Power cables

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# 1 Introduction

## 1.1 About This Document

This manual is intended as an introduction and overview for personnel who have received operator training from Motoman, and who are familiar with operation of the MH1605-505TR positioner kit. For more detailed information, refer to the manuals listed in *Chapter 1.3 Reference Documentation*. This manual contains the following chapters:

### ■ CHAPTER 1 - INTRODUCTION

This section provides general information about the MH1605-505TR positioner and its components, a list of reference documents, and customer support information.

### ⚠ CHAPTER 2 - SAFETY

This section provides information regarding the safe use and operation of the MH1605-505TR positioner.

### ■ CHAPTER 3 - INSTALLATION

This section provides instructions for set up and installation of the MH1605-505TR positioner.

### ■ CHAPTER 4 - MAINTENANCE

This section contains a table listing periodic maintenance requirements for the components of the MH1605-505TR positioner.

## 1.2 System Overview

The MH1605-505TR positioner kit features a two-axis positioner rated at 505 kg payload. The MH1605-505TR provides both tilt and rotation axes for flexible part positioning with the ability to provide coordinated motion with the robot. The tilt/rotate positioner is a combination of the MH1605 and MH505 headstock modules and features integral weld ground brushes and position switches. The positioner kit includes a dual external axis kit for the Sigma 5 motors and 7-meter cables. Up to three external axis drives can be mounted inside the controller; therefore, two tilt/rotate positioners will require the addition of an external cabinet.



















## 4 Maintenance

Maintenance of the MH1605-505TR components should be performed by authorized personnel who are familiar with the design and construction of this product. Refer to the *MH Series manual* for headstock maintenance details.



### WARNING

Ensure power is off before performing the following procedures.  
Observe standard lockout/tagout practices.

### 4.1 Ordering Parts

Contact the Motoman service staff at (937) 847-3200 to order spare parts. Please have the following information ready before you call:

- Machine type (Positioner)
- Machine Name (MH1605-505TR)
- Motoman Part No.
- Part(s) name
- Number of parts

Place orders with:

Motoman Customer Service  
Telephone (937) 847-3200  
Telefax: (937) 847-3211

For additional information on the MH1605-505TR positioners please refer to the *MH-Series Positioner Manual* that is included with the MH1605-505TR system documentation package.

# MOTOMAN MH1605-505TR POSITIONER INSTALLATION AND OPERATION

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

DRAFT 7-18-2012-R1