

E4000 SAFETY RELAY BOX



取扱説明書 / OPERATION MANUAL

日本語：P1 - P7 / English：P8 - P16

Thank you for purchasing E4000 SAFETY RELAY BOX. The E4000 <CONTROLLER>, <Motor> and <Spindle> are required to drive this SAFETY RELAY BOX. Read this Operation Manual carefully before use. Also read E4000 <CONTROLLER>, <Motor> and <Spindle> Operation Manuals.

1. CAUTIONS FOR HANDLING AND OPERATION


- Read these warnings and cautions carefully and only use in the manner intended.
- These warnings and cautions are intended to avoid potential hazards that could result in personal injury or damage to the device. These are classified as follows in accordance with the seriousness of the risk.

Class	Degree of Risk
 WARNING	A safety hazard could result in bodily injury or damage to the device if the safety instructions are not properly followed.
 CAUTION	A hazard that could result in light or moderate bodily injury or damage to the device if the safety instructions are not followed.

WARNING

- ① The SAFETY RELAY BOX is not a hand tool. It is designed to be used on CONTROLLER.
- ② Never connect, disconnect or touch the Power Cord Plug, Motor Cord Connector, Relay Cord Connector and Emergency Stop Connector with wet hands. This may cause an electric shock.
- ③ Never operate or handle the SAFETY RELAY BOX until you have thoroughly read the owner's manual and safe operation has been confirmed.
 - 1) To prevent injuries / damages, check the SAFETY RELAY BOX for proper installation, before operating the CONTROLLER.
 - 2) Before disconnecting the SAFETY RELAY BOX, always turn the control power off and turn the compressed air supply to the CONTROLLER off. Then it is safe to remove the SAFETY RELAY BOX.
- ④ Make sure to turn OFF the Main Power Switch of the CONTROLLER before install the SAFETY RELAY BOX to the CONTROLLER.
- ⑤ There is a grounding screw on the rear of the product. Be sure to connect the grounding conductor when installing the product.
- ⑥ Do not use in dangerous environments. Protect the CONTROLLER and the SAFETY RELAY BOX from moisture and other contaminants.
Failure to CONTROLLER and SAFETY RELAY BOX can result in damage to internal components and injury to the operator.

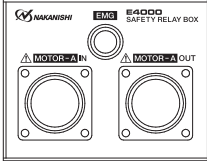
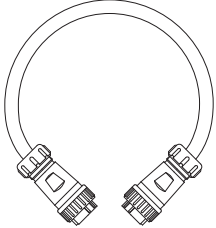
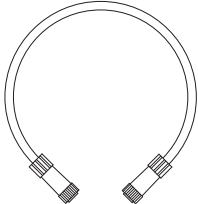



CAUTION

- ① Do not drop or hit the SAFETY RELAY BOX, as shock can damage to the internal components.
- ② Do not disassemble, modify or attempt to repair this SAFETY RELAY BOX. Additional damage will occur to the internal components. Service must be performed by NSK NAKANISHI or an authorized service center.
- ③ Attach the provided Connector Cap A, Connector Cap EMG to the MOTOR-IN connector, MOTOR-OUT connector and EMG connector for safety and dust proofing when not using the SAFETY RELAY BOX.
- ④ Note that  symbols are shown on the rear panel (for 2 parts). Be careful when handling these parts because a high voltage is input and output at them.

2. BASIC PACKAGE

When opening the package, check if it includes all items listed in " Table 1. Packing List Contents ".
In the event of any shortage, please contact either NAKANISHI (see the " 4. CONTACT US " section) or your local dealer.

Table 1. Packing List Contents

<p>E4000 SAFETY RELAY BOX main body • • 1pc.</p> 	<p>Relay Cord (Motor Power Line) • • 1pc.</p> 	<p>Emergency Stop Cord • • 1pc.</p> 
<p>Connector Cap A • • 2pcs.*</p> 	<p>Connector Cap EMG • • 1pc.*</p> 	<p>Operation Manual • • 1set.</p> 

* The Connector Cap A, Connector Cap EMG are attached to the SAFETY RELAY BOX.

3. WARRANTY

We provide a limited warranty for our products. We will repair or replace the products if the cause of failure is due to the following manufacturers defects. Please contact us or your local distributor for details.

- (1) Defect in manufacturing.
- (2) Any shortage of components in the package.
- (3) Where damaged components are found when initially opening the package.
(This shall not apply if the damage was caused by the negligence of a customer)

4. CONTACT US

For safe use / purchase of our products, we welcome your questions.

If you have any questions about operation, maintenance and repair of the product, please contact us.

Contact Us

● For U.S. Market

Company Name : **NSK America Corp.**
Industrial Div.
Business Hours : 8:00 to 17:00 (CST)
(closed Saturday, Sunday and Public Holidays)
U.S. Toll Free No. : +1 800 585 4675
Telephone No. : +1 847 843 7664
Fax No. : +1 847 843 7622
Website : www.nskamericacorp.com

● For Other Markets

Company Name : **NAKANISHI INC.** 
Business Hours : 8:00 to 17:00 (JST)
(closed Saturday, Sunday and Public Holidays)
Telephone No. : +81 289 64 3520
e-mail : webmaster-ie@nsk-nakanishi.co.jp

6 - 3 Outside View

① SAFETY RELAY BOX main body

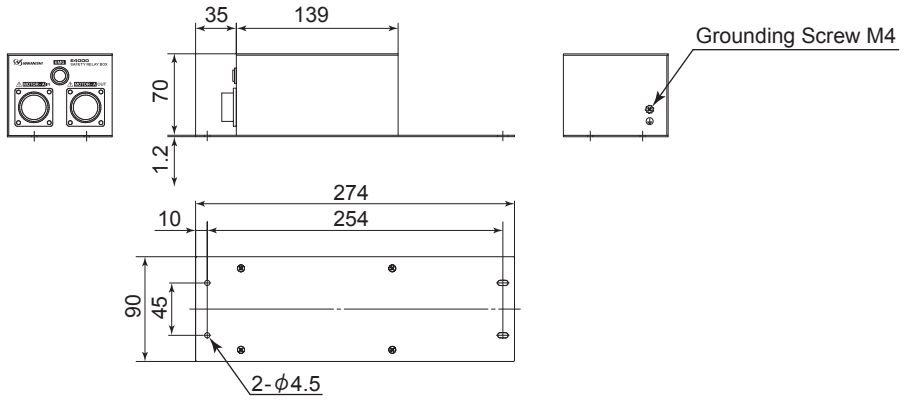


Fig. 1

② Placing CONTROLLER horizontally with SAFETY RELAY BOX

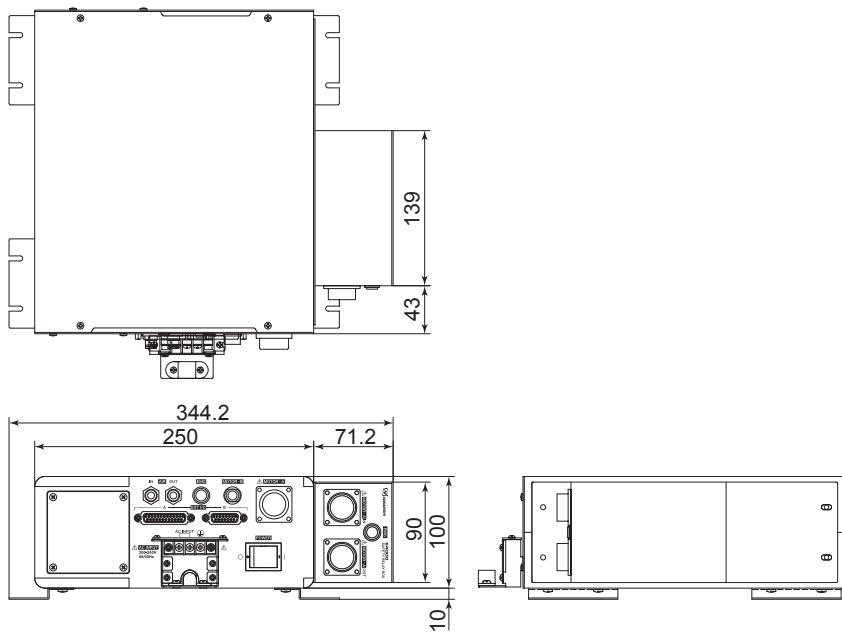


Fig. 2

③ Placing CONTROLLER vertically with SAFETY RELAY BOX

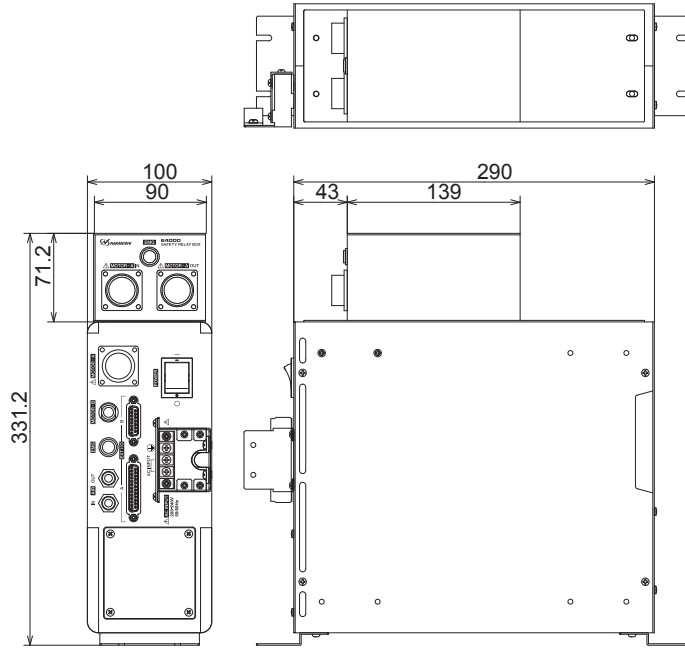


Fig. 3

7. INSTALLATION

⚠ WARNING

- When installing to the SAFETY RELAY BOX, turn the CONTROLLER and machine power supply OFF. If the power is on when installing to the SAFETY RELAY BOX, damage to this product will occur.
- When you use the SAFETY RELAY BOX, install the SAFETY RELAY BOX to the CONTROLLER. There is a grounding screw on the rear of the product. Be sure to connect the grounding conductor when installing the product.

⚠ CAUTION

When connecting the Relay Cord Plug and Emergency Stop Cord Plug, secure the Fastening Ring firmly. If the connection is not made correctly, an intermittent malfunction can occur.

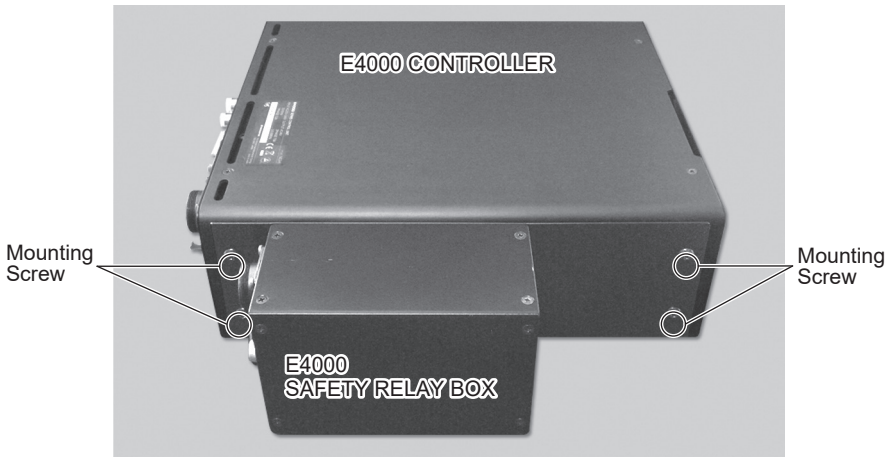
- Install the SAFETY RELAY BOX to one of the CONTROLLER side faces.
 - Installing the SAFETY RELAY BOX, using the mounting screws (4pcs.) attached to the CONTROLLER side face (Fig. 4).
- ① Remove the Mounting Screws (4pcs.) from side of the CONTROLLER.



Mounting Screw (each 4pcs.) attached to the side of the CONTROLLER.

Fig. 4

- ② Install the SAFETY RELAY BOX to the side of CONTROLLER by using removed Mounting Screws (4pcs.) (Fig. 5).



* Attach the SAFETY RELAY BOX to the E4000 CONTROLLER using the removed Mounting Screw.

Fig. 5

- ③ Insert the provided Relay Cord Plug into the MOTOR-A Connector of the CONTROLLER and the MOTOR-A IN Connector of the SAFETY RELAY BOX. Secure the Fastening Ring turn the clockwise (Fig. 6).

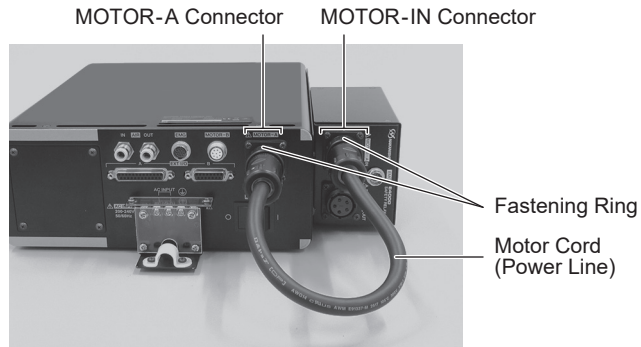


Fig. 6

- ④ Insert the provided Emergency Stop Cord Plug into the EMG Connector (EMG) of the CONTROLLER and EMG Connector (EMG) of the SAFETY RELAY BOX. Secure the Fastening Ring turn the clockwise (Fig. 7).

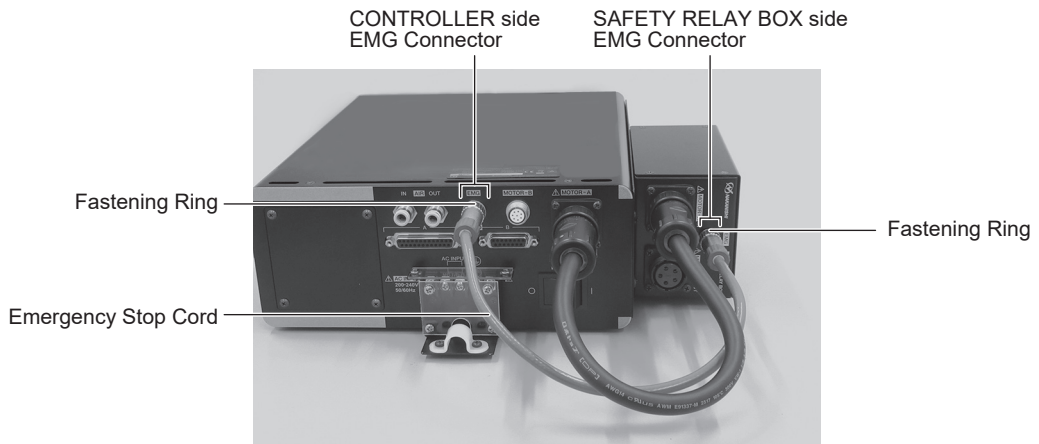


Fig. 7

- ⑤ Insert the Motor Cord Plug (Motor Power Line) into the MOTOR-OUT Connector of the SAFETY RELAY BOX, Secure the Fastening Ring turn the clockwise (Fig. 8). Insert the Motor Cord Plug (Motor Signal Line) into the MOTOR-B Connector of the CONTROLLER, Secure the Fastening Ring turn the clockwise (Fig. 8).

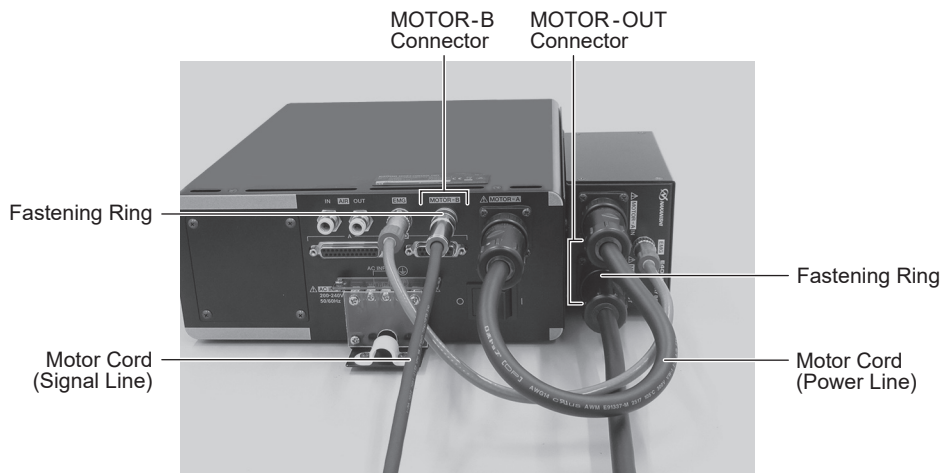


Fig. 8

8. INPUT SIGNAL

⚠ CAUTION

When using the SAFETY RELAY BOX, never rotating the motor without inputting Emergency Stop Signal (terminals No. 1, No.9) of the external Input / Output connector B. This should be checked in both AUTO mode and MANUAL modes.

Refer to "16 - 2 - (1) Details of External Input / Output Connector B Signals " section of the CONTROLLER Operation Manual and Fig. 9.

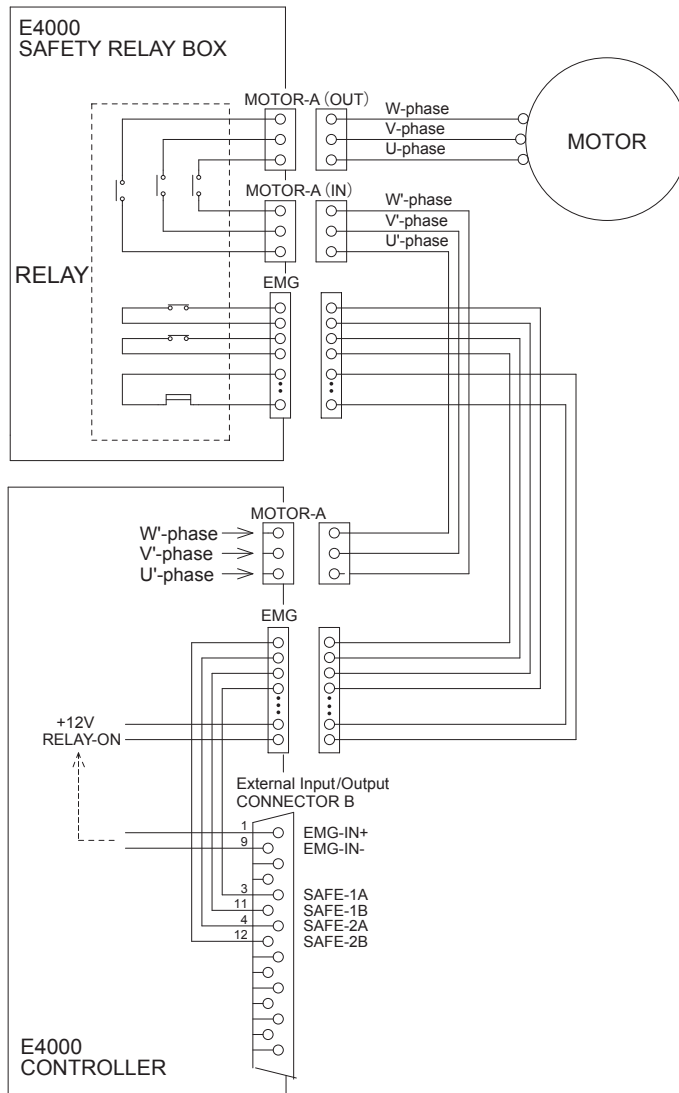


Fig. 9

9. TROUBLESHOOTING

If a problem or concern occurs, please check the following prior to consulting your dealer.

Trouble	Cause	Inspection / Corrective Action
Emergency Stop function is not function properly.	Relay Cord Plug is not connected to the MOTOR-A Connector of the CONTROLLER and MOTOR-IN Connector of the SAFETY RELAY BOX.	Connect to the Relay Cord Plug correctly to the MOTOR-A Connector of the CONTROLLER and MOTOR-IN Connector of the SAFETY RELAY BOX.
	Emergency Stop Cord Plug is not connected to the EMG Connector of the CONTROLLER and the SAFETY RELAY BOX.	Connect to the Emergency Stop Cord Plug correctly to the EMG Connector of the CONTROLLER and the SAFETY RELAY BOX.
	Motor Cord plug is not connected to the MOTOR-OUT Connector of the SAFETY RELAY BOX.	Connect to the Motor Cord Plug correctly to the MOTOR-OUT Connector of the SAFETY RELAY BOX.
External Input / Output Signal is not output correctly.	Emergency Stop Cord is disconnected.	Replace the Emergency Stop Cord. (Return to NAKANISHI dealer service.)

10. DISPOSAL OF THIS PRODUCTS

When disposal of a E4000 SAFETY RELAY BOX is necessary, follow the instructions from your local government agency for proper disposal of electrical components .

取扱説明書のダウンロード ▶
Download operation manual



ウェブサイト ▶
Our website



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