



## OPERATING MANUAL

### 2-Phase Stepping Motor

### PKP Series Electromagnetic brake

## Introduction

This manual explains descriptions about the electromagnetic brake for the "2-phase stepping motor PKP Series with electromagnetic brake." Refer to the operating manual of the PKP Series for the motor itself.

## Safety precautions

The precautions described below are intended to prevent danger or injury to the user and other personnel through safe, correct use of the product. Use the product only after carefully reading and fully understanding these instructions.

### ! WARNING

Handling the product without observing the instructions that accompany a "WARNING" symbol may result in serious injury or death.

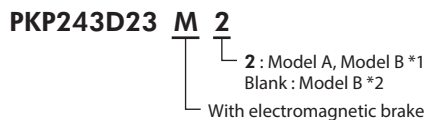
- Do not use the electromagnetic brake to reduce speed or as a safety brake. Do not use the electromagnetic brake as means to decelerate and stop the motor. The brake hub of the electromagnetic brake will wear significantly and the braking force will drop. Since the power off activated type electromagnetic brake is equipped, it helps maintain the position of the load when the power is cut off, but this brake cannot securely hold the load in place. Accordingly, do not use the electromagnetic brake as a safety brake. To use the electromagnetic brake to hold the load in place, do so after the motor has stopped.

## Preparation

### Items included with the motor with electromagnetic brake

- Varistor..... 1 pc.
- OPERATING MANUAL ..... 1 copy (this document)

### How to identify the product model



\*1 Motor frame size 28 mm (1.10 in.)

\*2 Motor frame size 35 mm (1.38 in.), 42 mm (1.65 in.), 56.4 mm (2.22 in.)

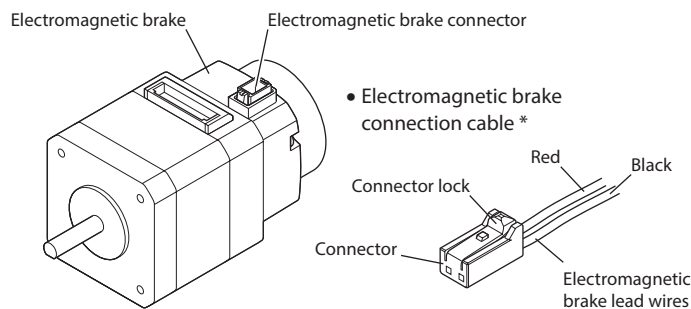
Thank you for purchasing an Oriental Motor product.

This manual describes product handling procedures and safety precautions.

- Please read it thoroughly to ensure safe operation.
- After reading the manual, keep it in a convenient place where it is readily available.

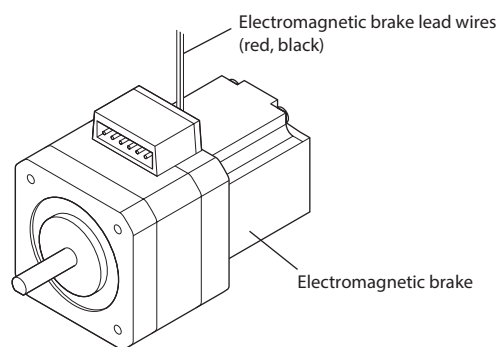
## Names of parts

### Motors of Model A (connector type)



\* This cable is provided as our product.

### Motors of Model B (lead wire type)

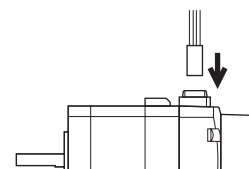


## Connection

### Notes about the connector type

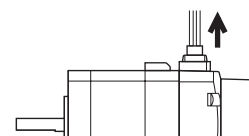
#### When inserting the connector

Hold the connector main body, and insert it in straight securely. Inserting the connector in an inclined state may result in damage to connector or a connection failure.



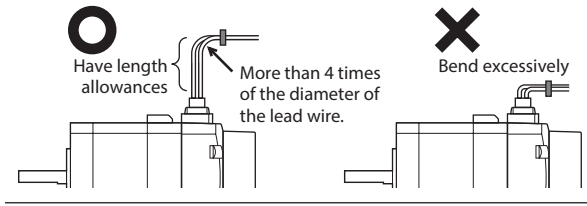
#### When unplugging the connector

Pull out the connector in straight while releasing the lock of the connector. Having the lead wires or pulling out the connector in a state of being locked may damage the connector.





Secure the lead wires at the connection part to prevent the connection part from receiving stress due to the flexing of the lead wires or the lead wires' own mass. Also, do not excessively bend the lead wires near the connection part of the connector. Applying stress on the lead wires may cause poor contact or disconnection, leading to malfunction or heat generation.



## Specifications for electromagnetic brake connection cable

### Connector pin assignments

Pin No.	Lead wire color
1	Red
2	Black

### Applicable connector and lead wire

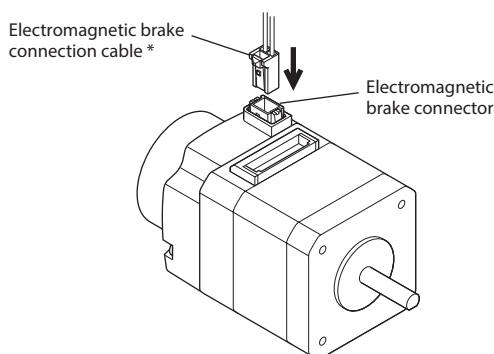
Type	Model
Connector housing	DF62C-2S-2.2C (HIROSE ELECTRIC CO., LTD.)
Contact	DF62-22SCA (HIROSE ELECTRIC CO., LTD.)
Designated crimping tool	HT801/DF62-22(10) (HIROSE ELECTRIC CO., LTD.)
Applicable lead wire	AWG22 (0.3 mm <sup>2</sup> ) Outer sheath diameter: ø1.2 to 1.45 mm (ø0.047 to 0.057 in.) Stripping length of wire insulation: 1.7 to 2.3 mm (0.067 to 0.091 in.)

## Specifications of a power supply for electromagnetic brake

Model	Motor type	Power supply voltage	Current capacity
A (connector type)	PKP24	24 VDC±5%	0.07 A or more
	PKP26		0.18 A or more
B (lead wire type)	PKP22		0.05 A or more
	PKP23, PKP24		0.07 A or more
	PKP26		0.23 A or more

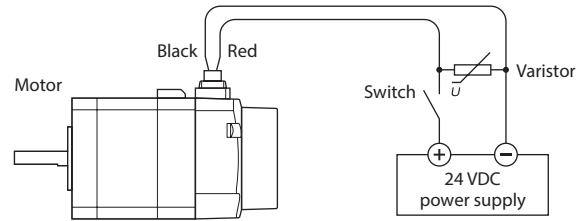
## Connecting a power supply for electromagnetic brake and releasing the electromagnetic brake

- For the Model A (connector type), connect the electromagnetic brake connection cable to the electromagnetic brake connector.



\* This cable is provided as our product.

- Connect the varistor (included) in parallel between the 24 VDC terminal and GND terminal.  
The varistor does not have polarity.
- Connect the electromagnetic brake lead wires to the 24 VDC power supply.  
Connect the red lead wire to 24 VDC terminal, and the black lead wire to GND terminal.



- Turn on the 24 VDC power supply.  
The electromagnetic brake is released.



- Do not apply the voltage beyond its specifications. Doing so may increase heat generation in the electromagnetic brake, resulting in damage to the motor. Conversely, insufficient voltage may prevent the brake from releasing.
- Be sure to connect the varistor to protect the contact of the switch or to prevent electrical noise.  
[Recommended varistor: Z15D121 (SEMITEC Corporation)]
- The electromagnetic brake lead wires have polarities, so connect them in the correct polarities. If the lead wires are connected with their polarities reversed, the electromagnetic brake will not operate properly.

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Published in July 2021

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