TOSO

59610516

# Curtain Motors

# Powerful 3L•3L-HM•3L-HL 220V Motor Set
# Powerful 4P•4P-HM•4P-HL 220V Motor Set

No.N–260011 First edition

## Instruction Manual（For Installation Contractors）

Thank you for purchasing TOSO products. To ensure safe use of this product, please read the following thoroughly and keep this manual stored.

**Guide for Distributors and Installation Contractors**

This manual contains information for a user to safely operate this product.
Please provide this manual to a customer.

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## CAUTIONS

- **This document illustrates the dangers of using this product without taking necessary precautions. Please refer to the symbols below for different types of safety points.**
- **WARNING: Important safety instructions. It is important for the safety of persons to follow these instructions. Save these instructions.**

| | |
|---|---|
| ⚠ **Warning** | Illustrates that if this product is misused, there are dangers of serious injuries or possible fatal accidents. |
| ⚠ **Caution** | Illustrates that if this product is misused, there are dangers of casualties or possible physical damage of the establishment or home furniture. |

- **This document illustrates safety points to be followed using the symbols below.**

| | |
|---|---|
| ⊘ | Illustrates specific actions which are prohibited. |
| ❗ | Illustrates specific guidelines which must be followed. |

### ■ Precautions upon installing the product (Please read before installation.)

#### ⚠ Warning

Follow all the instructions described below. Incorrect installation can lead to severe injury.

❶ Before installing the motor, remove any unnecessary electric wires and disable any equipment not required for powered operation.

❷ Curtain load and bracket intervals have to meet the specifications of each curtain track and motor.

### ■ Safety in Use (Please read thoroughly)

#### ⚠ Caution

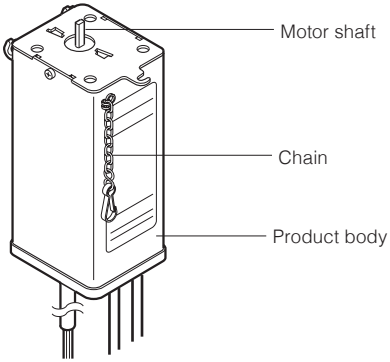
❶ This motor series is for indoor operations and not for outdoor operations.

❷ These motors are designed for open/close operation of curtains. If you discover that these motors are used for any purposes other than open/close operation of curtains, be sure to contact our business office.

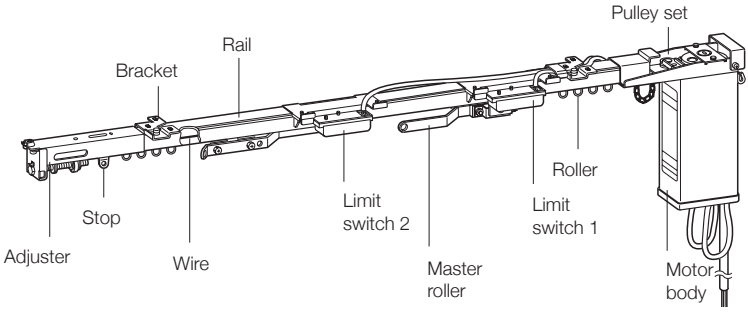
❸ Do not disassemble any of these products.

# General Drawing of Products and Names of Parts

## ■ Product Body




## ■ Completion Drawing of Assembly



## General Drawing of Products and Names of Parts

### ⚠ PRECAUTIONS

❶ When attaching curtain rails, never damage the power line of the limit switch with an attaching screw, etc. Otherwise, it will cause a short circuit.

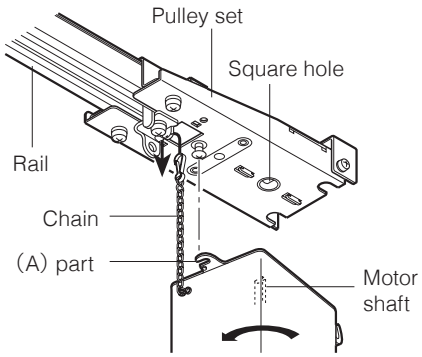
❷ Set the motor on a firmly attached curtain rail.

### ■Setting the motor

❶ Align the motor shaft with the square hole of the pulley set. Then, insert the shaft into the hole in a vertical position.

❷ Turn the motor on the motor shaft, and firmly attach (A) part with a screw.

❸ Hang the chain onto the hole of the pulley set as shown in the drawing.

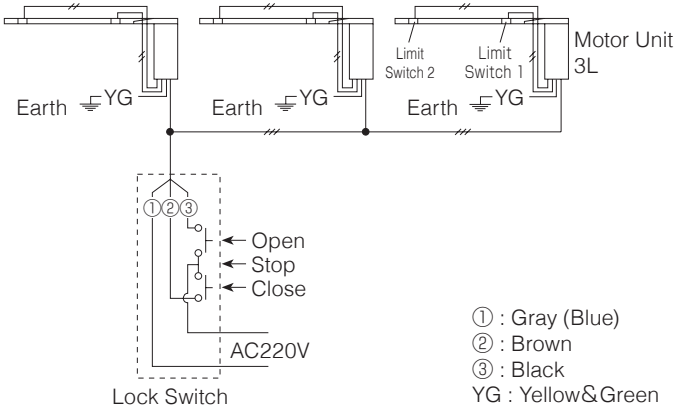


## Connection Procedures

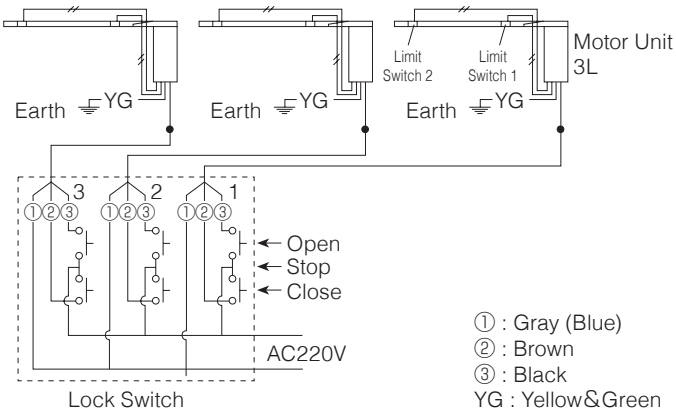
For the power lines and operating lines, consult with one of our staff members and an electrician.

### ■ POWERFUL 3L · 3L-HM · 3L-HL 220V

**<For Simultaneous Open / Close Control>**

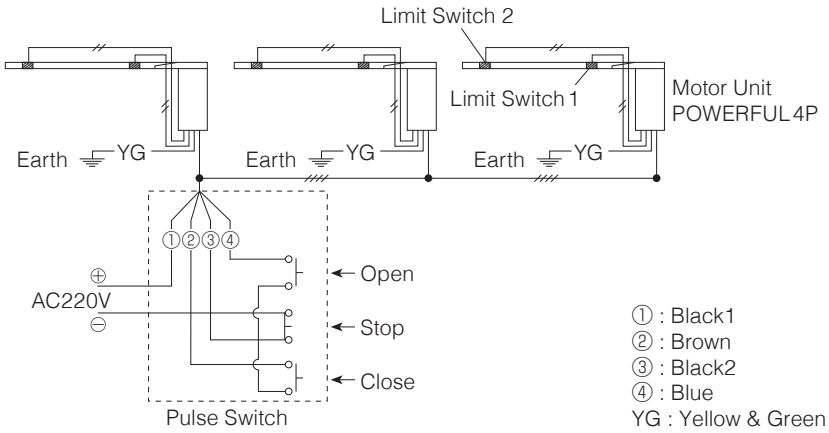



**<For Selective Open / Close Control>**

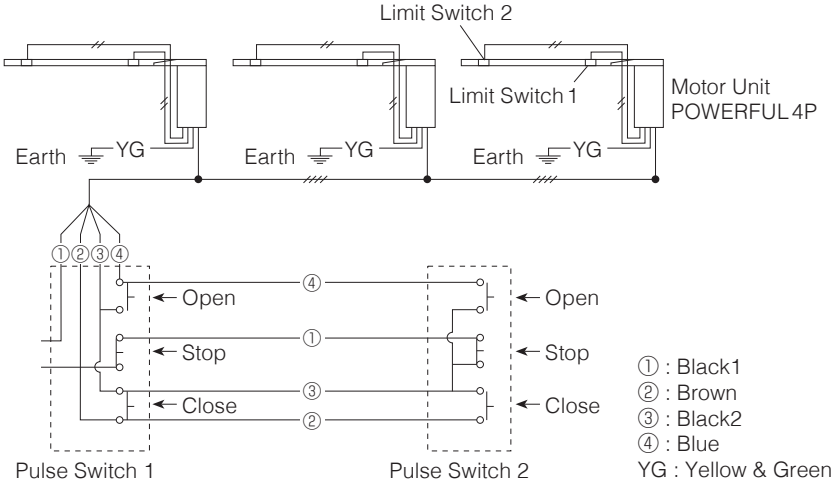


## ■ POWERFUL4P, POWERFUL4P-HM · 4P-HL 220V

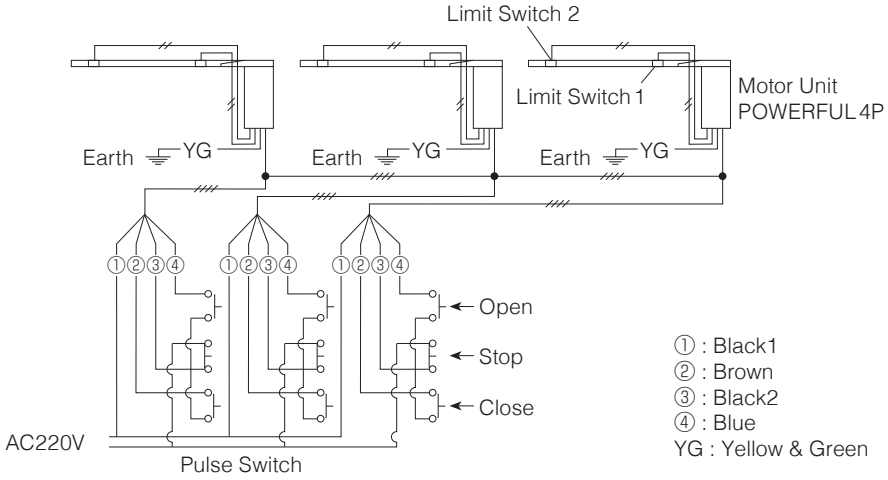
**<For Simultaneous open / close Control>**




**<For Two-Locations open / close Control>**



**<For Selective open / close Control>**




## Confirmation of Operation

❶ Make sure that there is no erroneous connection.

❷ Power ON

❸ Use the switch to confirm the open/close operation of the master rollers.

> If the open/close operation is abnormal, refer to **TROUBLESHOOTING.**

❹ Confirm operation is normal before installing curtains.

❺ Install the curtains to confirm the operation is normal.

## Troubleshooting

### ■ Before you decide that the trouble is a malfunction, perform the following check.

| TROUBLE | CHECK POINT |
|---|---|
| No operation at all. | Check power supply. Confirm plugs for Limit Switches are securely plugged into terminals "1" and "2" on the motor. |
| Operates only open or close. | Check plugs for Limit Switches. Confirm designated plugs are properly located in terminals "1" and "2" on the motor. |
| Operates either open or close and stops at Limit Switch but no reverse movement. Inside of the motor box buzzes when a push-button switch is pressed. | Reconnect Blue-or Black2-colored wire instead of Black1 wire in the terminal or in the switch. Holding down buzzerly noise may defect magnet relay in motor. |
| Reverse operation for a push-button switch. | Reconnect the Brown and Blue wires to the terminal or the switch if they are reversed. |
| Repeating movement between the Master Roller and Limit Switch. | At closing end(in the middle of rail)<br>Width of curtain is shorter than distance of the Master Roller traverse way. Relocate Limit Switch to bring motor box closer<br>At opening end(beside motor)<br>Check distance shortage of the rollers store. Also check repulsive force from gathered pleats of thick curtain, when used. Relocate Limit Switch to keep motor away. |
| No movement of Master Roller while the motor and Pulley Set are rotating. | Check tension of wire for Master Rollers. Retight tension at wire fixing, right hand of Master Roller, or readjust tension adjuster.<br>Confirm wire is correctly on the Pulley. |
| No opening when making shock noises. | Check locking of curtain hooks on arms of Master Rollers at right-and-left crossing point. Reform curtain hooks to escape from locking. |
| Motor does not stop when Master Roller pressing Limit Switch and anomalous noise in motor. | Check plugs "1" and "2" for Limit Switches and terminals "1" and "2" on motor. Insert plugs in the terminals correctly. |
| Motor does not rotate after repeating a long time running. | Wait 5 to 10 minutes. Motor is equipped with overheating protection. |
| Roller travel is not smooth or produces noise. | Check wires. Confirm wires are not being crossed, nor interfering with Pulley Set, Roller, or Adjuster stopper. Rearrange wires and reset rollers. |
| Dragging noise during open or close operation. | Check for high wire tensioning. Readjust tension by loosening the screw on the Adjuster or loosening the wire-securing screw of the Master Roller (R). |

## Product Specifications

| Item | | | Powerful 4P／3L | Powerful 4P-HM／3L-HM | Powerful 4P-HL／3L-HL |
|---|---|---|---|---|---|
| Power source voltage | | V | AC220 | AC220 | AC220 |
| Frequency | | Hz | 50 | 50 | 50 |
| Power source current | | A | 0.4 | 0.4 | 0.4 |
| Power consumption | | W | 85 | 85 | 85 |
| Operating voltage | | V | same as power source | same as power source | same as power source |
| Operating current | | A | | | |
| Rated torque | | N・m | 1.4 | 2.5 | 4.9 |
| Rotation speed | | r.p.m | 84 | 42 | 21 |
| Time rating | | min. | 5 | 5 | 5 |
| Overheating protection operating temperature | | ℃ | 120±5 | 120±5 | 120±5 |
| Opening and closing time | New Delac rail | sec/m | 5 | 9 | 18 |
| | Supertrac | | 5 | 9 | 18 |
| | Theatrac | | 3 | 6 | 12 |
| Maximum curtain weight | New Delac rail | kg | 30 | — | — |
| | Supertrac | | 80 | Straight 80<br>Sloping angle 15° 20° 30° 45°<br>kg 16 13 10 8 | Straight 80<br>Sloping angle 15° 20° 30° 45°<br>kg 18 15 12 10 |
| | Theatrac | | 80 | 100 | 120 |
| Maximum rail length | New Delac rail | m | 10 | — | — |
| | Supertrac | | 20 | 10 | 10 |
| | Theatrac | | 20 | 20 | 10 |

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