

OPERATION MANUAL

<OM-A50G-3AU> MODEL: ULA-50G
THREE-PHASE 200~220V · 380~480V

This operation manual describes only matters related to the operator.
As for handling in a whole shutter system. Please refer to instructions given by the shutter manufacturer.

① ATTENTION OF SECURITY

There are "WARNING" and "CAUTION" to be separated by degree of harm and damage.

WARNING: If the system is wrongly set up or handled, death or serious injury may result.

- (1) In positioning the motor-driven operator properly, carefully read the catalogue.
- (2) The shutter operator is specifically designed for motor-driven shutters. Never use the shutter operator for any other applications.
- (3) Setting up the shutter operator includes works to be done by a well-skilled, qualified electrician. Only such qualified person shall install the shutter operator.
 - Otherwise the operator may not work normally, and the shutter may damage, then an injury may result.
- (4) Please use our exclusive bracket.
 - Otherwise the operator may not work normally, and an injury may result by damaged shutter as the case maybe.
- (5) Firmly fix the sub-brackets in suitable position on structural members referring to the shutter layout (installation drawing).
 - As the sub-brackets bear all shutter weight, an injury may result by damaged shutter if it is not tightly fixed.
- (6) Install the shutter operator in a place not exposed to rain and any other water.
 - Otherwise a fire or an electrical shock may result.
- (7) Be sure to ground the shutter operator.
 - Otherwise a fire or an electrical shock may result.
- (8) Do not disassemble nor temper with the shutter operator. Nor attach any extra components than our specified options.
 - Otherwise an injury may result by abnormal operation.
- (9) Before opening and closing the shutter, make sure there is nobody and no obstacle around.

Be sure to instruct the person in charge of the shutter operator to keep this in mind.

 - Otherwise an injury may result by being caught in the shutter.
- (10) Choose key-locked pushbutton switches.
 - Otherwise an injury may result by being caught in the shutter if any other person being not in charge, e.g. a child, operates.

CAUTION: If the system is wrongly set up or handled, personal injury or property damage may result.

- (1) Be sure to keep the supply voltage within the shutter operator's specified range.
 - Otherwise the operator may damage, and then it may cause a fire or an electrical shock.
- (2) Make sure the shutter's weight and size are within the limit of the door's applicable ratings.
 - Otherwise the operator may not work normally, and the shutter may damage, then an injury may result.
- (3) Before using the manual short-link handchain, make sure the shutter is not moving and never use the pushbutton switches.

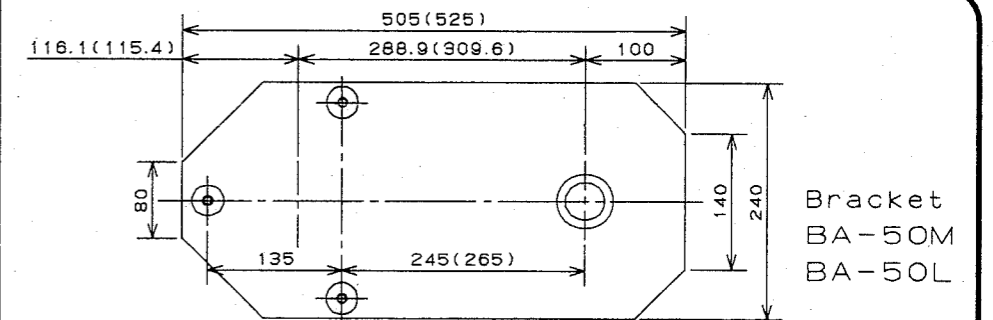
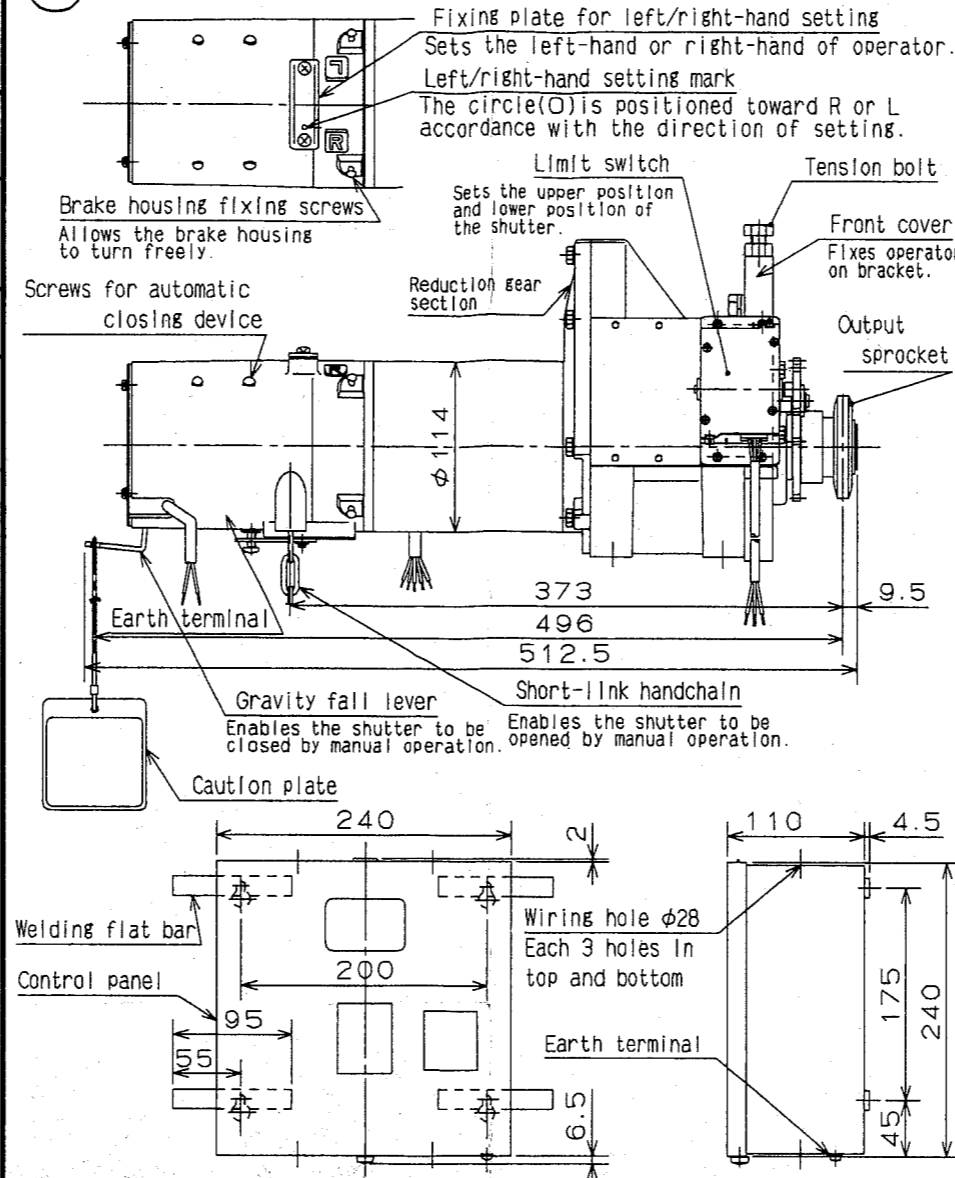
Be sure to instruct the person in charge of the shutter operator to keep this in mind.

 - Otherwise the manual short-link handchain will be pulled into the operator, then the operator may result in damage.
- (4) Before using the gravity fall lever, make sure the shutter is not moving and never use the pushbutton switches.

Be sure to instruct the person in charge of the shutter operator to keep this in mind.

 - Otherwise the operator may not work normally, then the shutter may damage.
- (5) Make proper limit switch settings. And be sure to check the stop position.
- (6) Inspect the shutter operator periodically. If anything unusual is found, repair or replace. For periodic checks, keep the number of times or period for inspection given in the INSPECTION clause on this operation manual.

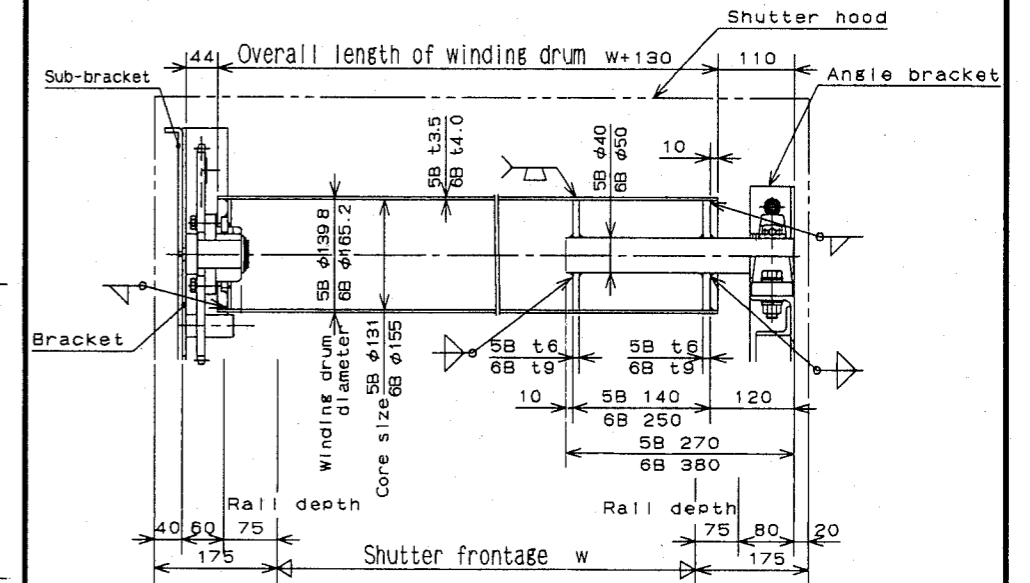
② PARTS DETAILS OF OPERATOR



*Bracket is for BA-50M, and dimensions in parentheses are for BA-50L.
*Dimensions of sub-bracket and shutter hood are for BA-50M use and dimensions in parentheses are for BA-50L use.

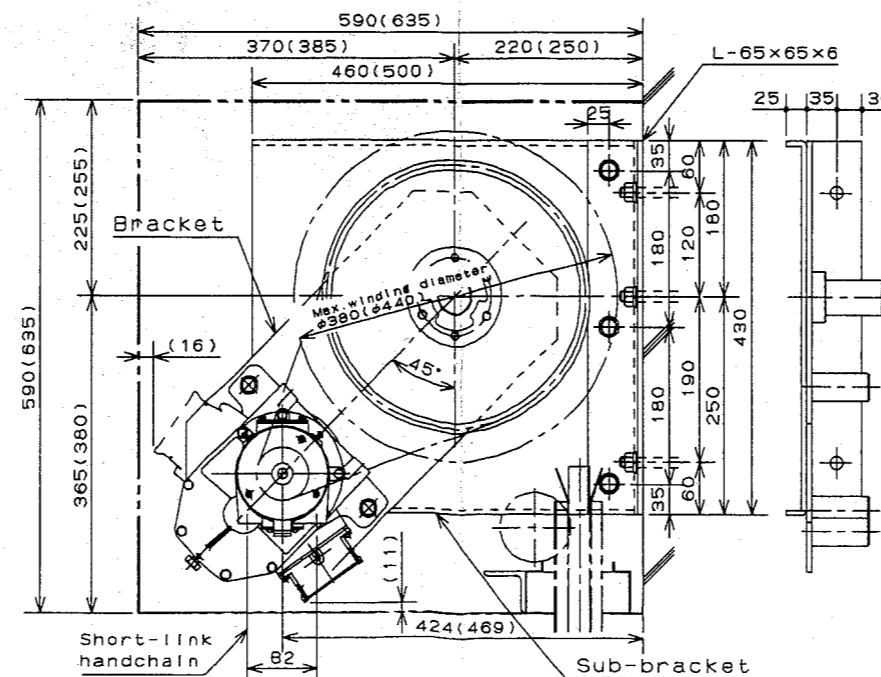
(2) Winding drum dimensions

Manufacture the winding drum in accordance with the undermentioned drawing. If the rail depth is not 75 mm, change the winding drum dimensions (W+130) in accordance with the rail depth.



③ REFERENCE OF INSTALLATION

(1) Bracket dimensions



④ PACKAGE CONTENTS

Operator pack and bracket pack are described below respectively. Be sure any damage did not occur in transit, or any shortage was not found in the package.

(1) Operator package

- Power operator (incl. gravity fall cord with caution plate) . . . × 1
- Limit switch . . . × 1
- Control panel (incl. grommets and welding flat bars) . . . × 1
- Operation manual . . . × 1

(2) Bracket package

- Bracket (BA-50M or BA-50L, Incl. drum sprocket #60-T50) . . . × 1
- Roller chain (#60-63 links(BA-50M), #60-65 links(BA-50L)) . . . × 1
- Drum frame (5B or 6B) . . . × 1
- Hexagon head bolt (M10×L50) with spring & plain washer . . . × 3

5 INSTALLATION OF POWER OPERATOR

(1) BEFORE INSTALLATION OF POWER OPERATOR

According to the shutter layout (installation drawing), weld our exclusive bracket on a sub-bracket, which has an equivalent or more strength to our specified one. And firmly fix them in suitable position on structural members.

▲WARNING

The right-hand/left-hand setting plate should be set before mounting operator on the bracket.

Fix the drum sprocket in a suitable position on the drum shaft, referring to the shutter layout (installation drawing).

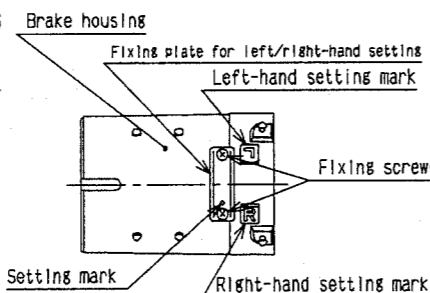
Fix the bed support in a suitable position on the structural members, referring to the shutter layout (installation drawing).

▲CAUTION

It is unable to set roller chain after installing the winding drum because of its endless (without joint).

(2) FIXING PLATE FOR LEFT/RIGHT-HAND SETTING

The operator is usable for either of left-hand and right-hand setting by reversing the direction of fixing plate. The fixing plate is usually set for right-hand setting at the factory, so be sure the setting in the site and reverse the fixing plate in case of left-hand settings.



▲WARNING

The fixing plate should be reversed before the operator is set up. If the fixing plate is removed from the brake housing under the condition that the operator is loaded, the shutter may fall by the gravity without effective braking, or an injury may result by the removed fixing plate.

(3) BRAKE HOUSING

When mounting the operator on the bracket, beforehand loosen 4 fixing screws on brake housing and turn the angle of brake housing to 135 deg (or 225 deg). After adjusting the position of the brake housing, press it by hand from behind to tighten up the brake housing fixing screws so that there be no gap between the motor rear flange and the brake housing. For lightly working, pull the gravity fall lever when pressing the brake housing. And also tighten up two fixing screws in order along each diagonal line.

▲WARNING

The brake housing should be adjusted before the operator is set up. If it is adjusted under the condition that the operator is loaded, the brake housing may turn by the load, or an injury may result when the shutter falls by its gravity.

▲CAUTION

Make sure without fail there be no gap between the motor rear flange and the brake housing. If there be any gap, the brake performance may be decreased, then an injury may result when the shutter falls by its own gravity.

(4) INSTALLATION OF POWER OPERATOR

Install the power operator in the following procedure.

- Mount roller chain on output sprocket of shutter operator.
- Fix shutter operator on bracket with 3 hexagon head bolts supplied into the bracket package.
- At this time, adjust operator position with tension bolt so that roller chain has approximately 6 mm slack.
- Tighten up hexagon bolts with wrench on an average and securely.
- Remove wire from bound short-link handchain to enable manual operation.

(5) CHECK

Make sure of the following matters after finally setting up operator.

- Roller chain is mounted on output sprocket and drum sprocket.
- 3 hexagon bolts are securely tightened up to fix the operator.
- When pulling short-link handchain being outside against slats, the sprocket and winding drum rotate toward roll-up direction.
- When trying to pull short-link handchain being inside against slats, it dose not go down (it is locked).

▲WARNING

Be sure to check the above matters after finally setting up operator and any abnormality should be corrected.

- If shutter is used without the above checking or with any abnormality, it may result in falling down and serious accident.

6 WIRING

▲WARNING

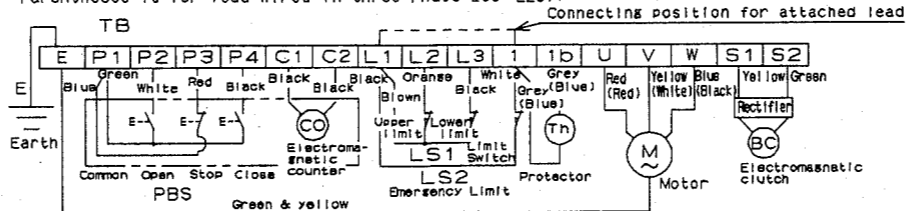
At electric work, to avoid fire, electrical shock or abnormal operation, be sure to keep the following matters.

- Only qualified person shall do electric work.
- Electric work shall be done based on an internal wiring regulation of an electrical equipment engineering standard or the like in each region.
- Disconnect power supply before electric work.
- All leads shall be connected securely.
- Be sure of grounding work between control panel and operator using earth terminal of control panel. (Use earth terminal of brake case for three phase 200~220V and earth wire of motor for three phase 380~480V respectively.)

(1) CONNECTION DIAGRAM

The following figure shows connections for terminal board on the control panel.

- Directly connect power supply to Safety circuit breaker
- The figure shows the connection diagram for right-hand side set-up.
- In case of the left-hand side set-up, replace Red and Blue(or Red and Black) of the motor wires and Orange and Black of the limit switch wires.
- Anti-phase relay is incorporated into the control panel.
- If the motor does not run, reverse any two of the three power leads.
- When an emergency limit switch is not used, short-circuit with the attached lead between L1 and 1 on terminals.
- Each colour is for lead wires in three phase 380~480V and the colour in parentheses is for lead wires in three phase 200~220V.



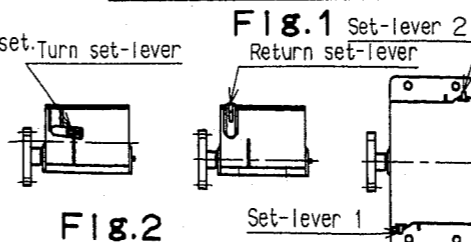
7 ADJUSTMENT OF LIMIT SWITCH

HOW TO SET THE LIMIT SWITCHES

In case of right-hand installation, the upper limit is set by set-lever ① and the lower limit is set by set-lever ②. In case of left-hand installation, set-lever ① is contrarily replaced with set-lever ②. (Refer to Fig.1)

- Turn both set-levers ① and ② until they are locked (approx. 90°).
- In case of right-hand installation, first run shutter up to the required upper limit position under the condition of (1), then return set-lever ① (to be as Fig.2), and the upper limit position is completely set. Turn set-lever ② and the required lower limit position can be set.
- In case of left-hand installation, the lower limit position is set by set-lever ① and the upper limit position is set by set-lever ②.

SET-LEVER	右勝手 RIGHT-HAND	左勝手 LEFT-HAND	接点構成 CONTACT COMPONENT
①	上限 UPPER LIMIT	下限 LOWER LIMIT	赤 Red 黒 Black
②	下限 LOWER LIMIT	上限 UPPER LIMIT	青 Blue 黒 Black



(4) Be sure Set-lever is turned 90° to the arrow of direction (Inside). (Refer to Fig.3)

Please never turn Set-levers outside. If Set-lever is turned outside, the operator dose not operate and limit switch cannot be adjusted.

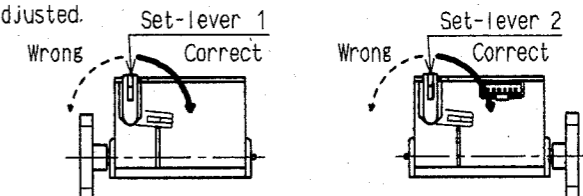


Fig.3

8 OPERATION

▲WARNING

Be sure there is no obstacle on the closing line, in advance of operation. Do not enter on the closing line during shutter is running. Do not be away from the push button switch until open/close operation finishes. Be sure the shutter finally stops, because moving shutter can injure people.

(1) POWER OPERATION (WITH PUSH BUTTON SWITCHES)

For opening shutter, press 'OPEN' (or '開') button and for closing shutter, press 'CLOSE' (or '閉') button until the shutter begins to move. The shutter automatically stops at the fully opening/closing position. For stopping shutter at a desired position, press 'STOP' (or '停') button, and it stops at the position. For reversing a moving shutter, once press 'STOP' (or '停') button, before pressing 'OPEN' (or '開') button or 'CLOSE' (or '閉') button. Reverse operation is rejected while shutter is moving.

(2) MANUAL OPERATION

This operation is used for opening shutter in the case of power failure or the like.

Open shutter hood to hang short-link handchain. Slowly pull short-link handchain being outside against slats, and shutter will open in proportion to pulling.

(Required force for operation is approximately 90 N. Shutter will rise up to approximately 4~11 mm by handchain operation for 1 m. This value will change depending on the number of drum sprocket teeth.)

(3) GRAVITY FALL OPERATION

This operation is used for closing shutter in the case of power failure or the like.

Open shutter hood and pull the gravity fall cord, and shutter will close by its own gravity.

For stopping shutter, release the gravity fall cord.

(Required force for operation is approximately 50 N. The shutter speed falling via gravity is approximately 1.5 times of the closing speed with power, because rate of descent is controlled by a speed governor.)

9 CONFIRMATION

Confirm the next items after the installation is completed.

- A shutter should open and close by the operation of the push button switch.
- A counter should count once per one operation for closing shutter.
- A shutter should stop at each positions of the upper and lower limit where it was set up with a limit switch.
- A shutter should stop by hauling the handchain or turning the crankhandle.
- A shutter shouldn't work with the powered motor during the operation of the emergency switch.
- A shutter should move down when the gravity fall cord is pulled.

10 INSPECTION

The inspection must be carried out at the time when the operator reached to either the following number of times or period.

1000 OPEN/CLOSE 6 MONTHS

Carry out inspection after you confirm the numbers of operation of opening and closing by using the push-button switch with the counter.

If you have any question, please contact the shutter manufacturer.

FOR CONTACT