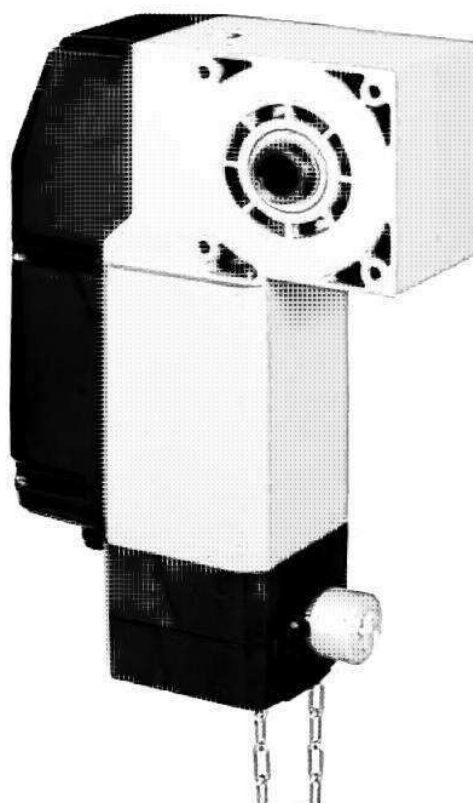


DOOR OPERATOR FOR INDUSTRIAL USE INSTALLATION AND HANDLING MANUAL



RSI-60/RSI-120



CE Approved



ISO9001:2000

WARNING

Please read the manual carefully before installation and use. The installation of your new door opener must be carried out by a technically qualified or licensed person. Attempting to install or repair the door opener without suitable technical qualification may result in severe personal injury, death and / or property damage.

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1. Safety instructions

It is important that you read all the following instruction:

- The door operator should be installed and put into operation by qualified personnel. Otherwise, serious personal injury or property damage may occur.
- The door operator must be grounded.
- Open and close the door manually, make sure the door can be moved smoothly.
- The door must be equipped with balance springs, otherwise the operator will be damaged. Before installation of the door operator, the door should be carefully checked for being kept well balance. The door must be in good working order.
- It is recommended to install limit devices on door tracks to prevent the door from sliding out of the tracks.
- Locate any fixed control: within sight of door but away from all moving parts of the door and at a height of more than 1.4m above the ground to avoid children reaching it. Keep remote controls away from children, to prevent the door operator from being activated involuntarily.
- The operator should be switched off before repairing it or opening its cover.
- The operator may only be repaired with the door closed.
- When opening or closing the door, do not attempt to walk or drive through the door.
- The door should only be operated when it can be observed to avoid accidents.
- Do not pull the hand chain during opening or closing the door.
- Our company reserves the right to change the design and specification without prior notification.

2. General description

RSI-60/RSI-120 door operator is applied widely to storehouse, industrial or commercial buildings. It is featured with compact structure, safe and reliable performance.

Main function

- Three buttons (open, close, stop) on the control box control the door separately. The control system is fitted with wiring terminals for photocell, safety edge etc.
- Remote control: hopping code technology prevents thieves from guessing your remote code. Up to 25 remote controls may be used.
- Emergency stop: In an emergency, press the emergency switch on the control box can cut off the power of control unit immediately.
- Auto brake system: it makes the motor stop fast and accurately.
- Rotate the release handle 180°anticlockwise, release the door from the door operator immediately. The operator motor may only be disengaged with the door closed.
- In the event of power failure, a release hand chain allows you to operate the door manually.
- It has double limit switches to ensure the operator safety and reliability.

3. Main technical parameters

<i>Model</i>	<i>RSI-60</i>	<i>RSI-120</i>
Max. door area	Up to 35 m ²	Up to 45 m ²
Max. continues working	S3 = 30%	S3 = 30%
Power supply, frequency	220 V / 50 Hz	380 V / 50 Hz
Max. door height	Depends on door construction, at 20 rpm of the output shaft	
Output shaft aperture	Ø25,4 mm	Ø25,4 mm
Motor power	550 W	750 W
Rated current consumption	3 A	3 A
Max. output torque	60 N·m	120 N·m
Output shaft rotation speed	24 rpm	24 rpm
Motor rotation speed	1400 rpm	1400 rpm
Ratio	59:1	59:1
Chain length	12 m	12 m
Operating temperature	-20°C ~ +60°C	-20°C ~ +60°C
Thermal protection	120°C	120°C
Weight	22 kg	22 kg
Dimensions	447mm x 295mm x 124mm	447mm x 295mm x 124 mm

4. Main structure

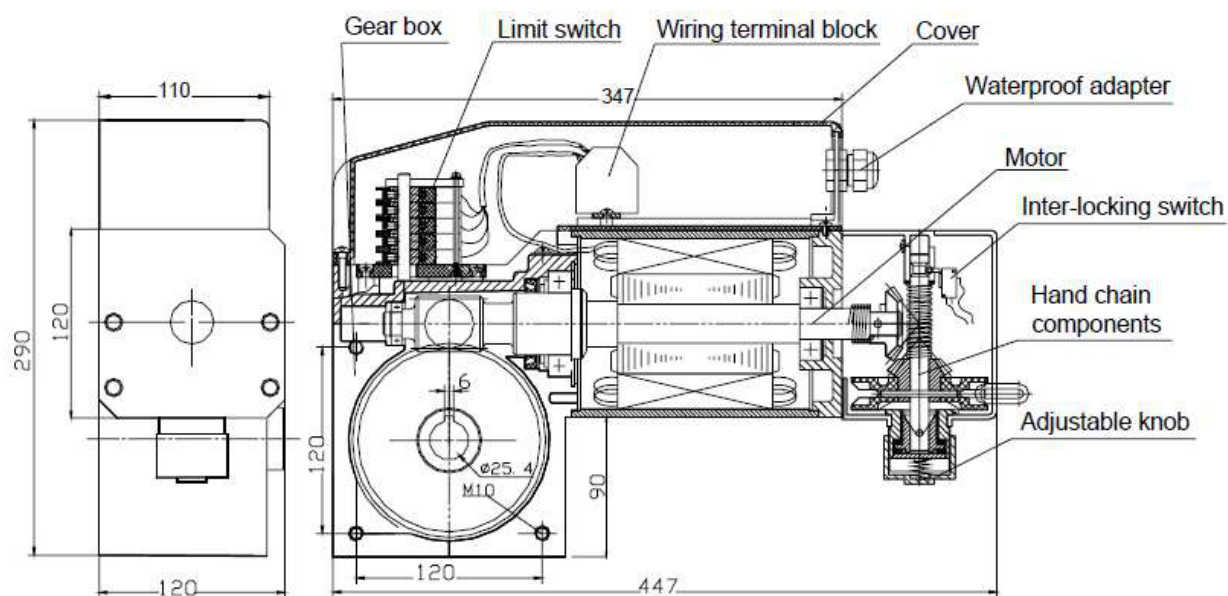


Fig.1

5. Installation

Before installing, make sure the door is in good working order. We advise to install the operator as follow see “**direct installation**” section or “**indirect installation**” section.

1) *Direct installation (standard accessories see page 13 “Packing list”)*

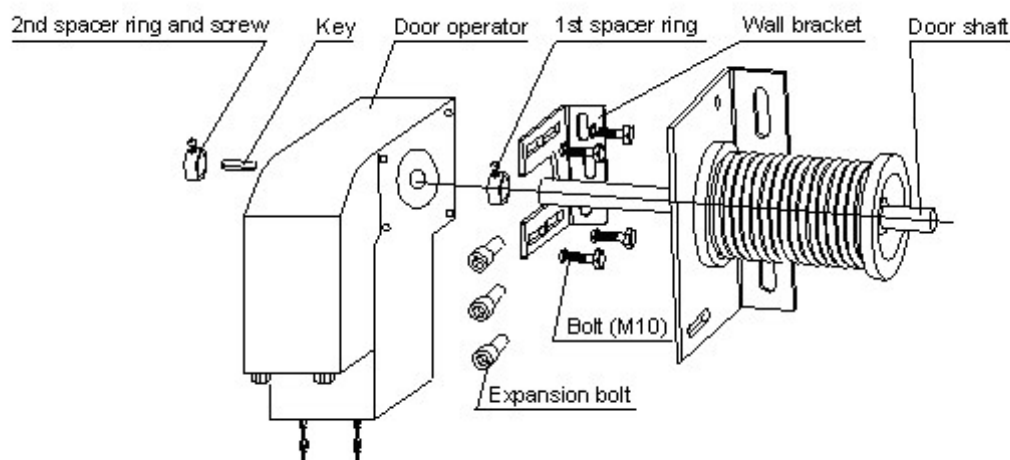


Fig.2

- Screw the wall bracket (L-shaped iron fitting) onto the wall with expansion bolt. You may install the wall bracket to left side or right side of operator.
- Slot the 1st spacer ring onto the door shaft.
- Slot the door operator onto the door shaft (ensure correct position of the key) and screw onto the wall bracket.
- Slot the 2nd spacer ring onto the door shaft and push against the door operator, make sure the chain hangs vertically. Push the 1st spacer ring against the door operator and fix both rings.

2) Indirect installation (chain drive)

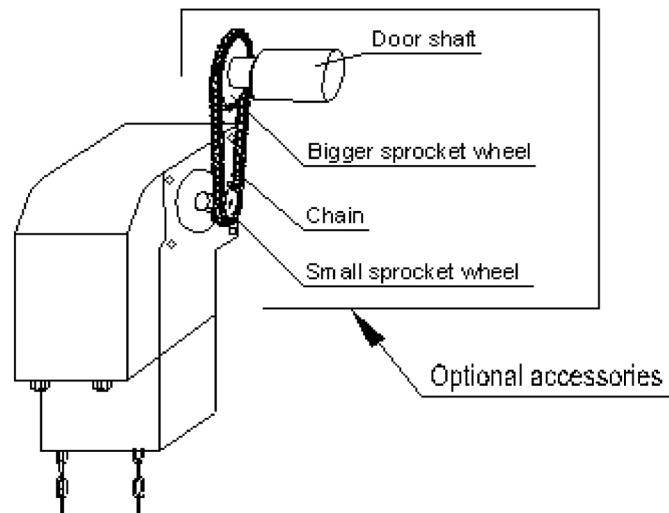


Fig.3

- Install the bigger sprocket wheel onto the door shaft end.
- Fix the bracket on the wall with expansion bolts according to the length of the chain. (In order to install the door operator firmly, we advise you to fix two pieces of wall brackets on left and right sides of the operator).
- Attach the door operator on the brackets with bolts (M10) and ensure the hand chain hangs vertically. Thread up the chain by adjusting the position of the operator.

6. Wiring

- Locate control box: within sight of door but away from all moving parts of the door and at a height of more than 1.4m above the ground to avoid children reaching it.
- Connect ground wire from operator to terminal 'E' on control board. The operator must be well grounded.
- Wires within the cable shall be protected so that no damage can result from contact with any rough, sharp part. In order to protect electrical elements from water, waterproof adapter must be tightened by turning the plastic nut.
- In an emergency, press the red emergency switch on the control box can cut off the power of control unit immediately. Rotate the switch in arrow direction to make the switch return to its original position and resume normal operation.

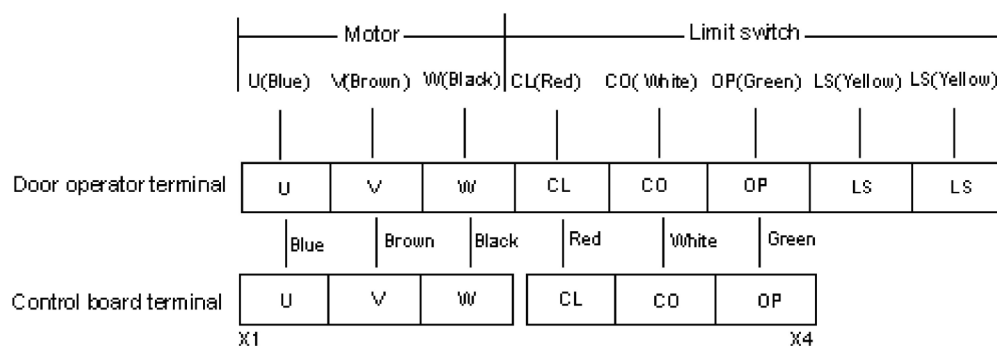


Fig. 4 Wiring chart

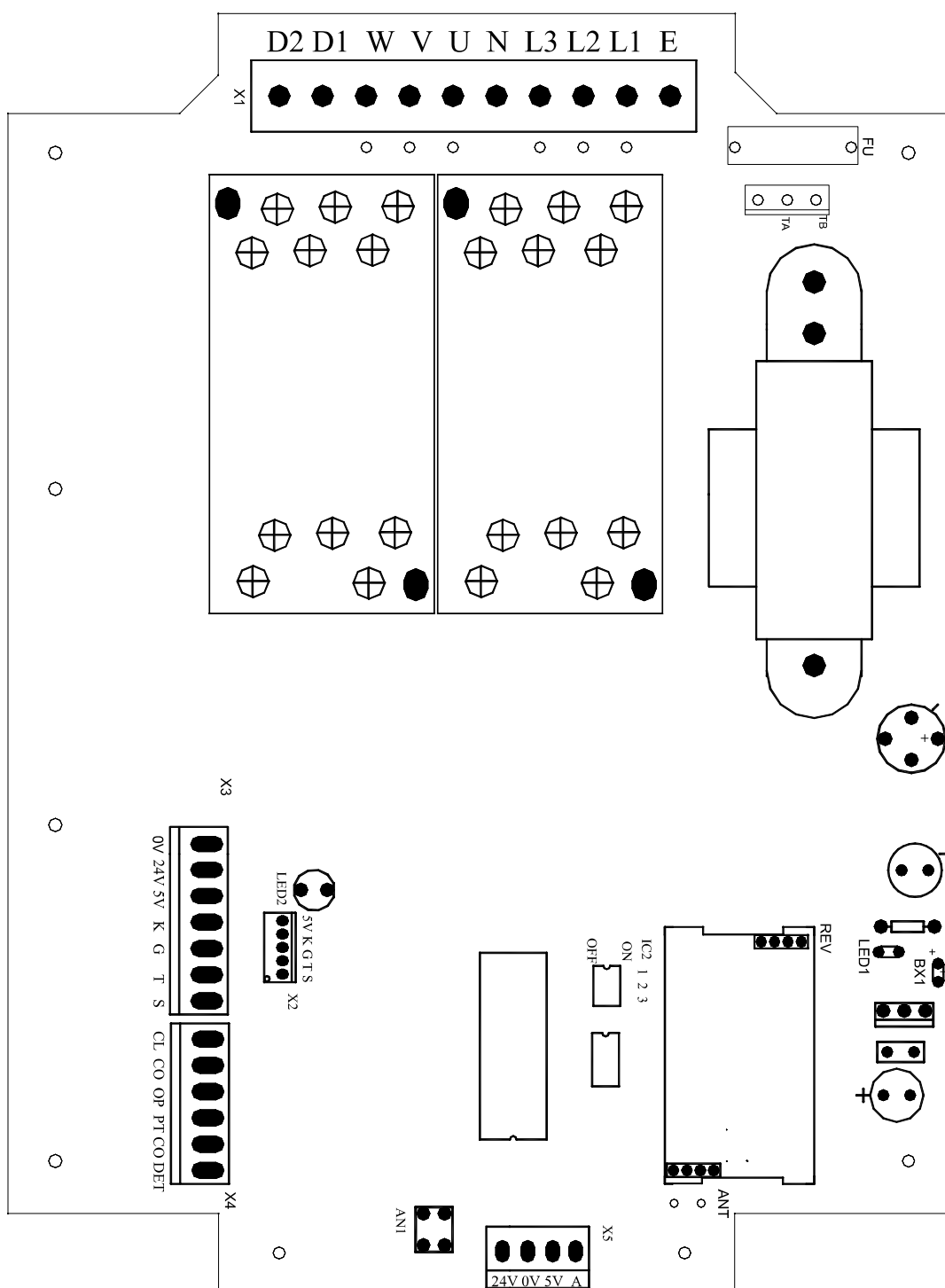


Fig.5 RSI-120 (380V) Control board diagram

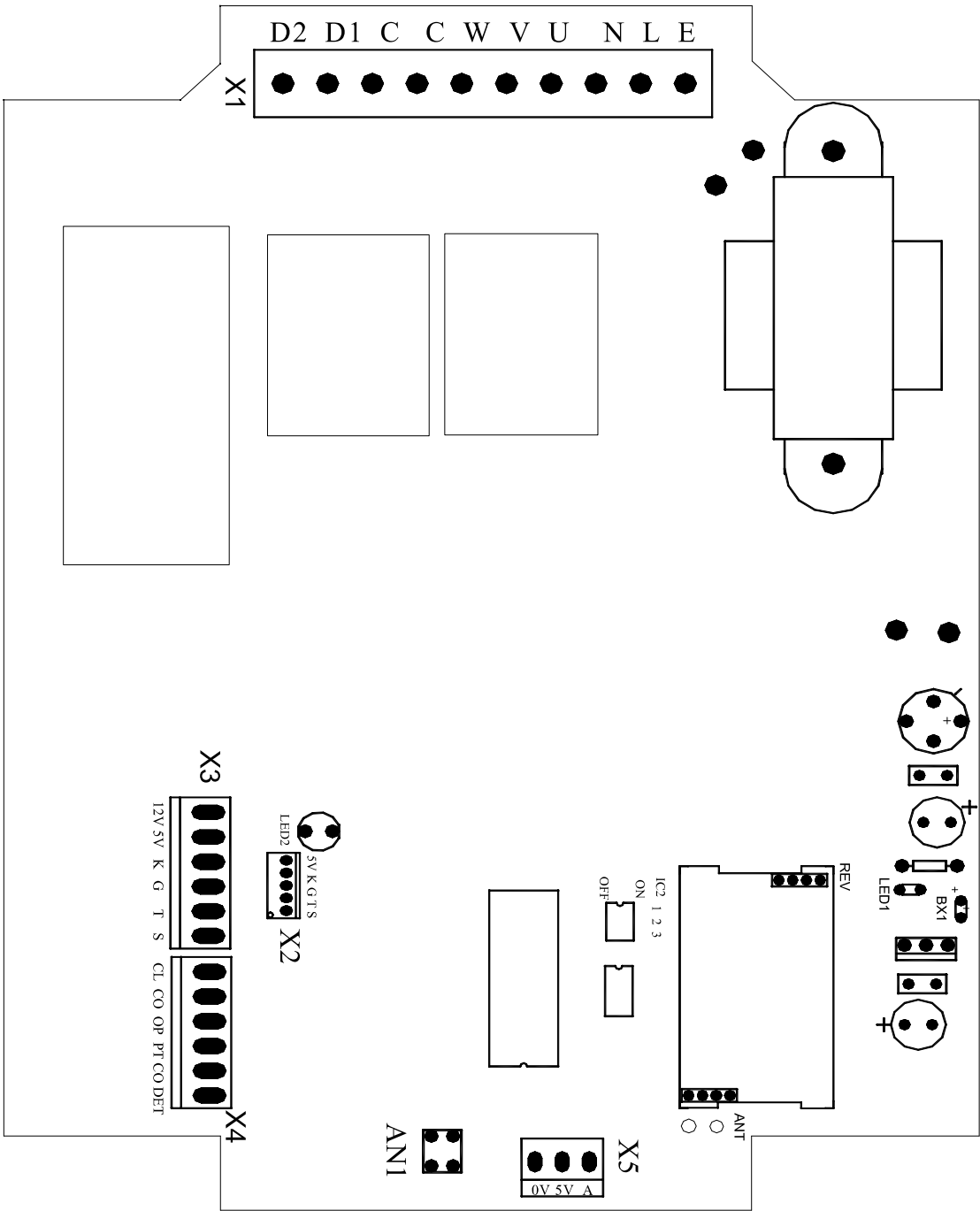


Fig.6 RSI-60 (220V) Control board diagram

Before carry out any wiring work, it is essential to disconnect the control unit from the mains supply.

Type	Wiring												
RSI-60	<ul style="list-style-type: none">Connect power wires (AC220V) to 'L'. Connect neutral wire to 'N', connect ground wire to 'E'.Connect motor wire (blue, brown, black) to 'U', 'V', 'W'. If door running direction is wrong, please exchange wires 'V' and 'W'. (See Fig.6 X1 terminal block)Connect close limit wire of limit switch (red) to 'CL', connect common wire (white) to 'CO', connect open limit wire (green) to 'OP'. (See Fig.6 X4 terminal block)Connect signal wires of photocell (N.C.) to 'PT' and 'CO' and power wires to '12V' and 'S'. (See Fig.6 X3 and X4 terminal blocks)Connect signal wires of safety edge switch (N.O.) to 'PT' and 'CO'. (See Fig.6 X4 terminal block)Connect external single button switch (N.O.) wires to 'DET' and 'CO', if connected, the short bridge must be removed. (See Fig.6 X4 terminal block)Connect external three button switch (N.O.) to 'K', 'G', 'T' and 'S'. K-open (white), G-close (yellow), T-stop (red), S-common wire (green). (See Fig.6 X3 terminal block)D1-D2: Alarm lamp (AC220V)LS-LS (yellow): opened signal outputDIP-switch												
	<table><tr><th>Position</th><th>ON</th><th>OFF</th></tr><tr><td>1</td><td>Auto-close enable</td><td>Auto-close disable</td></tr><tr><td>2</td><td>Inching close (auto-close disable)</td><td>Continuous close</td></tr><tr><td>3</td><td>Auto-close time delay: 7 seconds. Note: DIP-switch 1 must be set ON.</td><td>Auto-close time delay: 20 seconds. Note: DIP-switch 1 must be set ON</td></tr></table>	Position	ON	OFF	1	Auto-close enable	Auto-close disable	2	Inching close (auto-close disable)	Continuous close	3	Auto-close time delay: 7 seconds. Note: DIP-switch 1 must be set ON.	Auto-close time delay: 20 seconds. Note: DIP-switch 1 must be set ON
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RSI-120	<ul style="list-style-type: none">Connect phase wires (AC380V) to 'L1', 'L2', 'L3'. Connect neutral wire to 'N', ground wire to 'E'.Connect motor wire (blue, brown, black) to 'U', 'V', 'W'. If door running direction is wrong, please exchange wires 'U' and 'V'. (See Fig.5 X1 terminal block)Connect close limit wire of limit switch (red) to 'CL', connect common wire (white) to 'CO', connect open limit wire (green) to 'OP'. (See Fig.5 X4 terminal block)Connect signal wires of photocell (N.C.) to 'PT' and 'CO' and power wires to '24V' and '0V'. Connect signal wires of safety edge switch (N.O.) to 'PT' and 'CO'. (See Fig.5 X3 and X4 terminal blocks)Connect external single button switch (N.O.) wires to 'DET' and 'CO', if connected, the short bridge must be removed. (See Fig.5 X4 terminal block)Connect external three button switch (N.O.) to 'K', 'G', 'T' and 'S'. K-open (white), G-close (yellow), T-stop (red), S-common wire (green). (See Fig.5 X3 terminal block)D1-D2: Alarm lamp (AC220V)LS-LS (yellow): opened signal output.Note: turn the power on, if the 'LED2' is flashing, disconnect from mains supply, then reverse any two phase wires.DIP-switch												
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7. Adjustment

Adding extra remote controls (Learn): Press the button 'AN1' on the control board, the 'LED2' will be on and then turn off. Press any remote control button, the 'LED2' will be on and then turn off. Press the same button again, the 'LED2' will flash about 4 seconds at 1/2Hz frequency and then turn off, this indicates the learning process is finished.

Up to 25 remote controls may be used.

To erase all remoter controls: press and hold 'AN1' button on the control board, release the button once 'LED2' turns off automatically. This indicates that all the remote controls have been erased completely.

The remote control works in three-channel mode, (button 1-open, button 2-close, button 3-stop) See Fig.7.

Warning: For safety and security, we recommend that the factory setting be replaced with a personal code.

The remote control came with your operator depends on your order. Additional remote controls can be purchased through your dealer. If you have any problem, please contact the dealer.

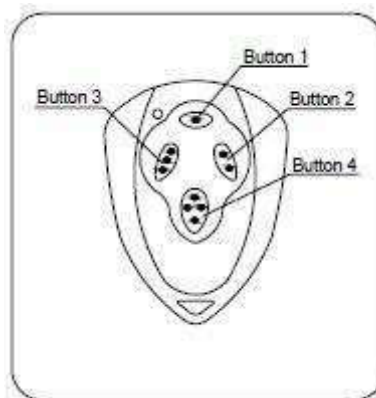


Fig. 7

Limit switch

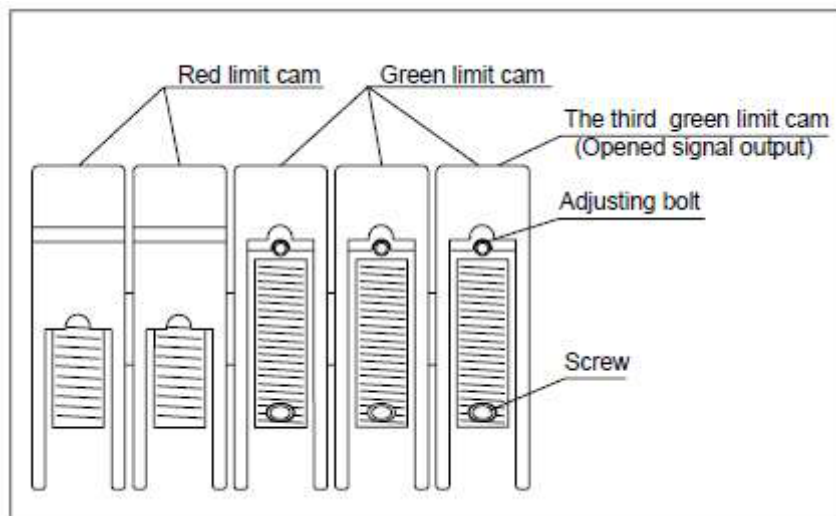


Fig. 8

Rough adjusting

- Check that the operator has firmly installed, open the door to desired position and observe the rotating direction of green limit cams during opening. Loose the screws of green limit cams, then turn three cams in the same direction until the limit switches click (the third green limit cam: opened signal output), finally tighten the screws with supplied hexagonal wrench key.
- Close the door to desired position and observe the rotating direction of red limit cams during closing. Loose the screws of red limit cams, then turn two cams in the same direction (i.e. on the opposite direction of the green cam) until the limit switches click, finally tighten the screws with supplied hexagonal wrench key.

Fine adjusting

- After rough adjusting, you can open/close the door and observe whether the door has successfully reached the desired position. If the door does not reach the desired position, fine adjusting could become necessary.
- The adjusting bolts are used for fine adjustment, one turn is about 150mm of door movement.
- The adjusting bolts in the green limit cams to make the door reach the desired open position, clockwise to open less, anticlockwise to open more.
- The adjusting bolts in the red limit cams to make the door reach the desired close position, clockwise to close less, anticlockwise to close more.

Important note

- Please operate the push button on the control box to adjust the limit switch, do not use remote control.
- When the door reaches fully closed or opened position, ensure that the limit switches are active and the indicator light on the control box turns off. If the light does not turn off, please readjust the limit switch.

Hand chain

You may select hand chain with handle or without handle according to your needs. The hand chain came with your operator depends on your order.

Hand chain (without handle)

- In case of power failure, you may open or close the door manually by operating the hand chain.
- If the close indicator light on the control box flashes and the operator does not work by operating the control box button, pull one side of hand chain lightly until a reset is carried out see Fig.10 (1), the close indicator light turns off, and now the control box can be used.

Hand chain (with handle)

- Pull the red handle, the door operator works in manual operation, you may open or close the door manually by pulling the hand chain.
- Pull the green handle, the door operator works in electrical operation, you may open or close the door electrically.

Note: If the close indicator light on the control box flashes, this means the door operator works in manual operation, please pull the green handle till the indicator light on the control box turns off, now the door operator works in electrical operation.

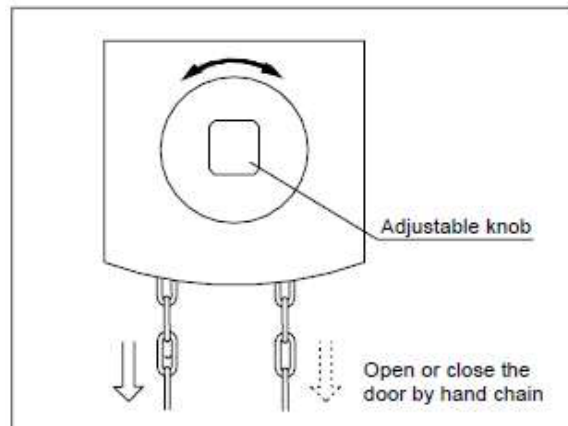


Fig. 9

Warning:

- Tighten or loose the knob by rotating clockwise or anticlockwise until the hand chain can open or close the door easily. See Fig.9
- After using the hand chain for some time, the knob will become very hot. It is recommended to adjust it with a spanner.

Note:

- Use the hand chain only in case of power failure, NOT for normal use. Do not pull the chain during closing or opening the door, otherwise, serious personal injury or property damage may occur.
- It is important to ensure that the chain is not fitted twisted. If the chain is twisted, malfunctions may occur when the hand chain is used. It is essential to screw the hand chain firmly in place as shown in Fig.10 (2).

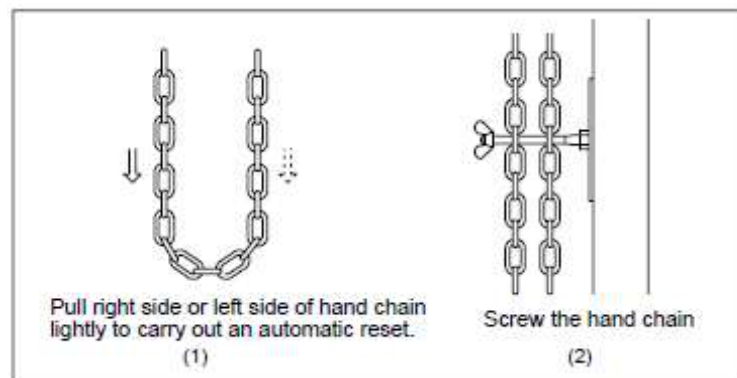


Fig. 10

8. Maintenance

- Make sure the door is in good working order and that is correctly balanced.
- The door operator should be checked and maintained by a qualified technician.
- Keep operator clean at all times.

9. Troubleshooting

Error	Cause for error	Remedies
The operator does not work.	(1) Power is OFF. (2) The door is obstructed. (3) The wires become loose. (4)The emergency switch was pressed. (5) The door is too heavy.	(1) Make sure that power is ON. (2) Remove obstructions. (3) Fasten the wires. (4) Rotate the emergency switch to ensure that the button returns to its original position. (5) Replace or readjust the balance springs.
The close indicator light on the control box flashes and the operator does not work by pressing the control box button or remote control.	An automatic reset is not carried out.	Pull one side of hand chain to carry out an automatic reset.
The operator stops working suddenly.	Thermal overload protection in motor is active.	Allow the motor to cool down.
The door cannot be opened or closed fully.	Wrong adjusting of limit switch.	Readjust the limit switch.
Remote control does not work.	(1) Battery level may be low. (2) Remote control is not suitable for receiver. Wrong programming of remote control coding.	(1) Replace the battery inside the remote control. (2)Erase remote controls and then re-program the remote control.

10. Packing list

After receiving the product, you should make an unpack-inspection, in which you should check whether the product was damaged. If you have any problem please contact our sales agent. You should find the following items in our standard packing:

No.	Item	Quantity
1	Door operator	1
2	Wall bracket	1
3	Spacer ring and screw	2
4	Hexagonal wrench key	1
5	Control box	1
6	Remote control	2
7	Four cores wire 7m	1
8	Six cores wire 7m	1
9	Key	2
10	Bolt	4
11	Plain washer	4
12	User's manual	1