INDUSTRIAL DOOR OPERATOR

USER'S MANUAL

KG50-8/KG50S-8

KG75-8/KG75S-8

KG40-8/KG70S-8

WARNING!

ONLY QUALIFIED AND EXPERIENCED TECHNICIANS SHOULD ATTEMPT INSTALLATION OR SERVICE TO THIS UNIT, OTHERWISE, SERIOUS PERSONAL INJURY, DEATH, OR PROPERTY DAMAGE MAY OCCUR.

PLEASE KEEP THESE INSTRUCTIONS FOR FURTHER REFERENCE.

OUTLINE

1. Safety instructions

It is important that you read all the following instruction:

- Read carefully this manual.
- The door operator should be installed and put into operation by qualified personnel. Otherwise, serious personal injury or property damage may occur.
- Open and close the door by hand, make sure that it moves 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 necessary to install the mechanical stops on guides, in order to avoid the exit of the door from the guides.
- The operator motor may only be disengaged with the door closed. This must be carried out by specialist personnel for maintenance purpose only.
- 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 or button switch 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.
- 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 electrically.
- Permanently fix the safety labels against equipment in a prominent place or near any fixed controls.
- Our company reserves the right to change the design and specification without prior notification.

2. Main function

Door operator is applied widely to garages, industrial or commercial buildings.

- Three buttons (open, close, stop) on the control unit 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 button can cut off the power of control unit immediately.
- Auto brake system 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.
- Chain box can be rotated 360° .

3. Main technical parameters

Model	KG50-8	KG50S-8	KG75-8	KG75S-8	KG40-8	KG70S-8
Power supply	AC220V	AC380V	AC220V	AC380V	AC220V	AC380V
Max. output torque	30N.m	50N.m	40N.m	75N.m	40N.m	70N.m
Rotation speed	32rpm	32rpm	24rpm	24rpm	24rpm	24rpm
Motor power	300W	400W	300W	400W	300W	400W
Door	≤18m²	≤25m²	≤20m²	≤30m²	≤20m²	≤30m²
Output shaft aperture	25.4 mm					
Max. limit switch travel	Output shaft rotates 28 circuits					
Environment temperature	-20° C ~+45° C					
Work duty	S2, 20%（continuous working time no more than 10min）					

4. Tools required

- Spanners
- Slotted and cross screwdrivers
- Electric drill
- Pliers
- Hacksaw
- Tape measure

Use a helper if possible to assist with the installation.

5. Dimension

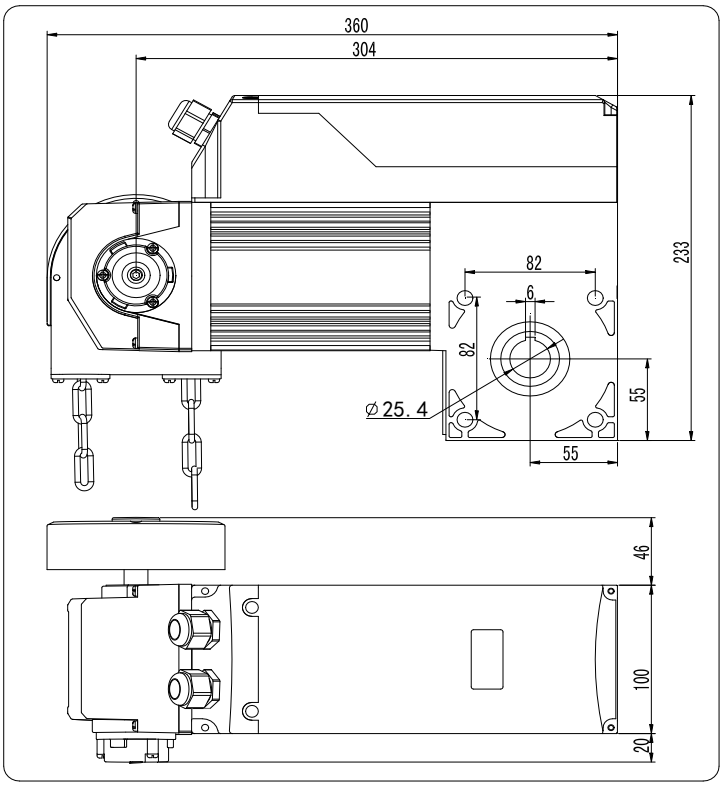
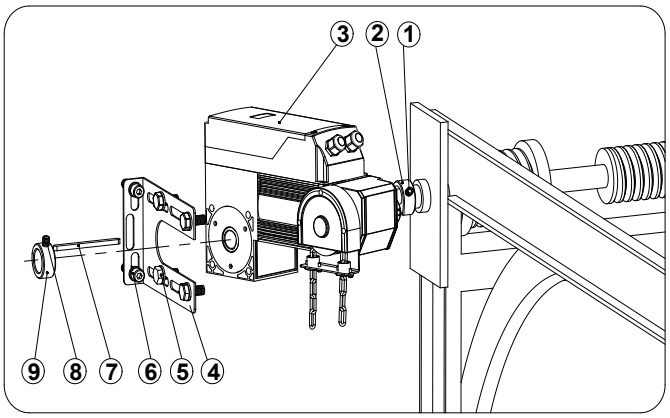


Fig.1

6. Installation

Before installing, make sure the door is in good working condition and torsion springs balance its leaf. We advise to install the operator as described below see '**on-shaft mounting**' section or '**mounting via chain drive**' section.

On-shaft mounting



1 Screw
2 The 1st spacer ring
3 Door operator
4 Wall bracket
5 Bolt
6 Expansion bolt
7 Key
8 Screw
9 The 2nd spacer ring

Fig.2

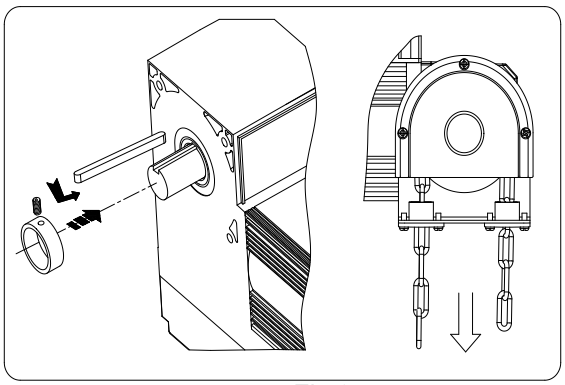


Fig.3

- Slot the door operator onto the door shaft, check the mounting position of the wall bracket, Mark the line on the wall using a pencil.
- Remove the door operator.
- Slot the 1st spacer ring② onto the door shaft, tighten the screw①.
- Slot the door operator③ back onto the door shaft (ensure correct position of the key⑦ see Fig.3) and screw the wall bracket on the operator with four bolts⑤ M10×20 and plain washers.
- Mount the wall bracket (L-shaped iron fitting) onto the wall using expansion bolts⑥. The wall bracket can be placed from the left or from the right of the operator.
- Slot the 2nd spacer ring⑨ onto the door shaft and push it close to the door operator. Push the 1st spacer ring close to the operator and fix both rings with two screws①⑧ M8×15.

Mounting via chain drive see Fig.4

- Mount the sprocket wheel① onto the door shaft end②.
- Fix the bracket ⑥on the wall with expansion bolts according to the length of the chain③.
- Attach the door operator⑦ on the bracket with four bolts M10×20. tension the chain,

having adjusted the position of the operator.

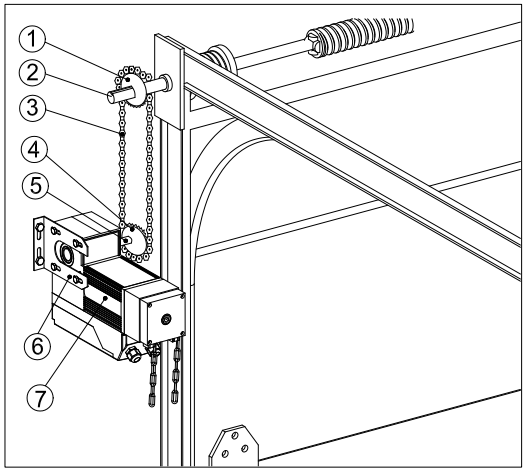
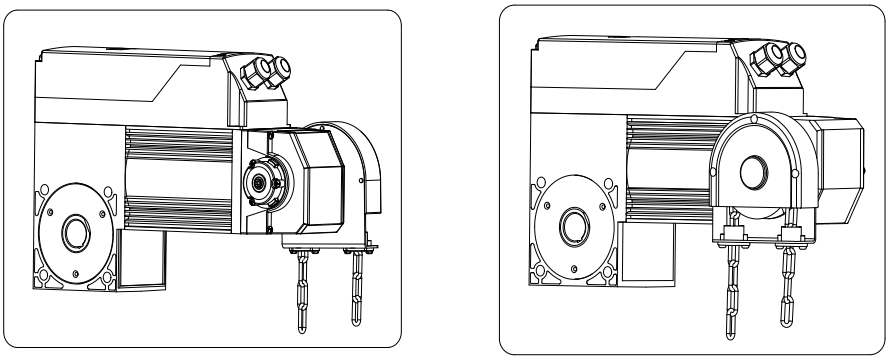


Fig.4

Install the chain box as show in Fig.5



Right side Left side

Fig.5

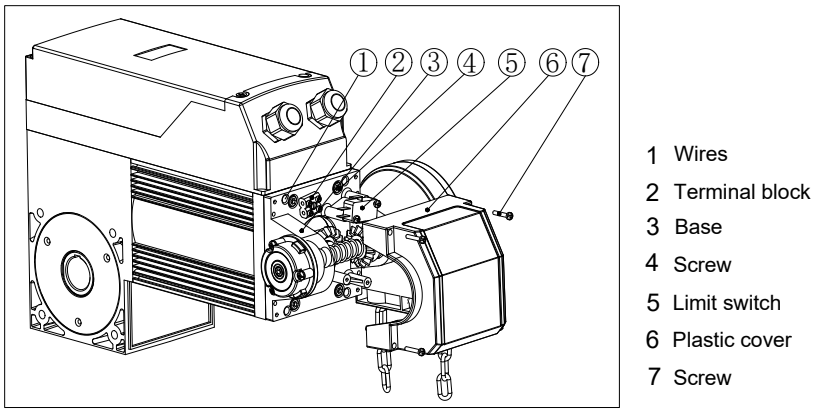


Fig.6

The chain box is normally delivered in right side, if you need to change it from right side to left side proceed as follows see Fig.6:

- Loose the 4 screws⑦, remove the plastic cover⑥.
- Unscrew the 4 socket hexagon screws④ by spanner.

- Pull out the wires from terminal block②.
- Remove the terminal block② and limit switch⑤.
- Turn the base③ 180º.
- Fix the limit switch and terminal block to base.
- Connect the wires to terminal block, thus change the chain box from A to B see Fig.7.

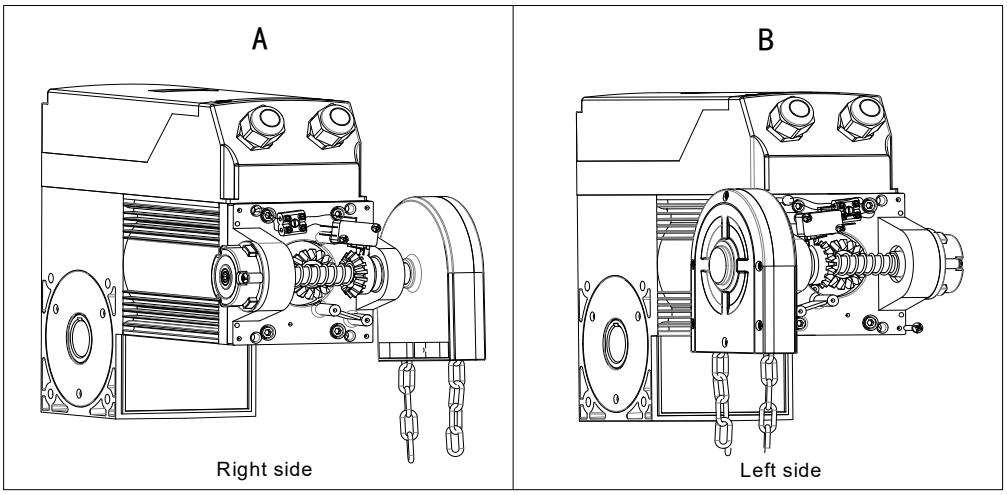
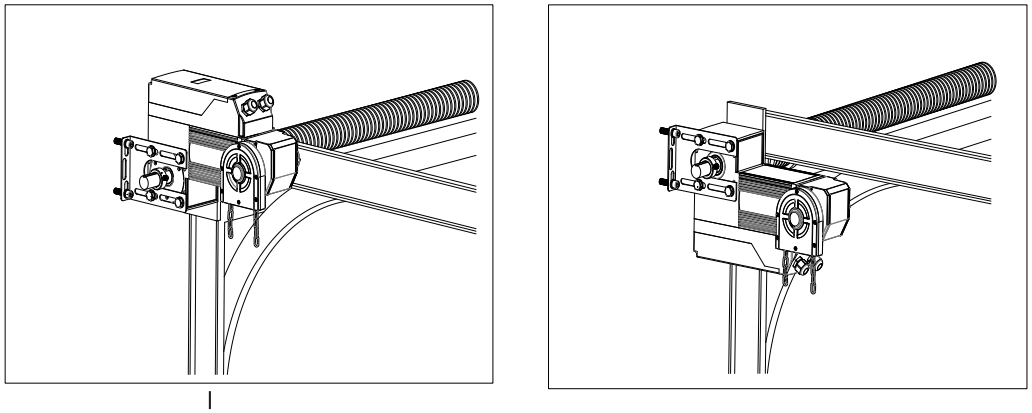


Fig.7

Fix the door operator as shown in fig.8, Before installing, make sure that the space available above the door are suitable, it is recommended that you should better install the operator as shown in fig.8 (Ⅰ)



Ⅰ

Ⅱ

Fig.8

Information:

The optional accessories are not included in the standard package, they can be purchased separately.

7. Manual operation and release function

Manual operation

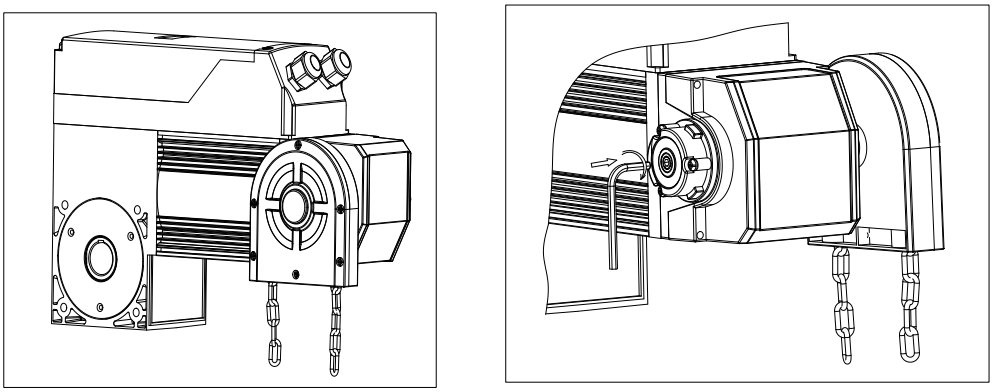
The operator is equipped with a manual chain, which is used for lifting/lowing of the door

in case of power cut.

Operation with hand chain

In case of power failure, move the door in the OPEN or CLOSE direction by pulling on the hand chain.

The door fails to move if pull the hand chain, rotate the bolt clockwise by hex wrench (4mm) see Fig.9(II).



I II

Fig.9 Operation with hand chain

Information:

If the operator does not work electrically and the close indicator light on the control unit flashes, pull one side of hand chain lightly until a reset is carried out see Fig.10 (1), the light turns off, now the electronic control unit can be used.

Warning:

- Intensive and continuous use of the hand chain is forbidden, it may be used only in emergency.
- Do not pull the chain too hard, otherwise the chain components will be damaged.
- 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 recommended to fix the lower part of the chain as shown in Fig.10 (2), to avoid hindrance to people and equipment move.

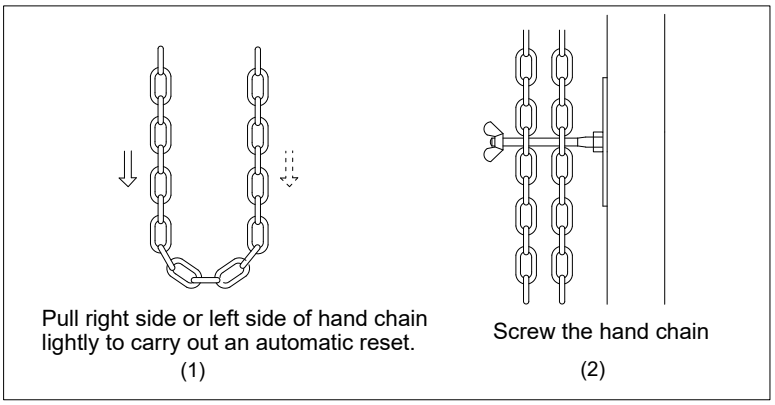
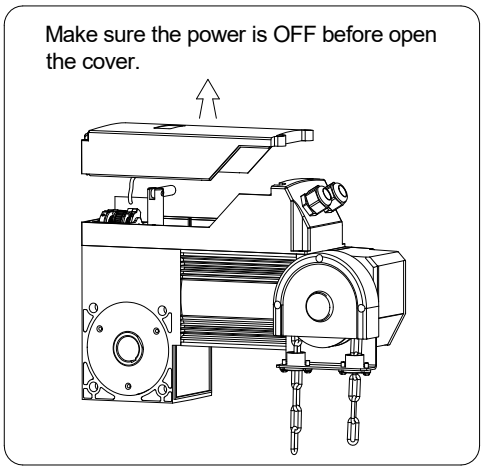


Fig.10

8. Wiring

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

- Locate control unit: 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.
- Feed the cables through the screw fitting into the operator, connect all the cables required.
- Connect the cables to control unit in the same color. See **wiring chart**
- 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 screw fitting must be tightened by turning the plastic nut.



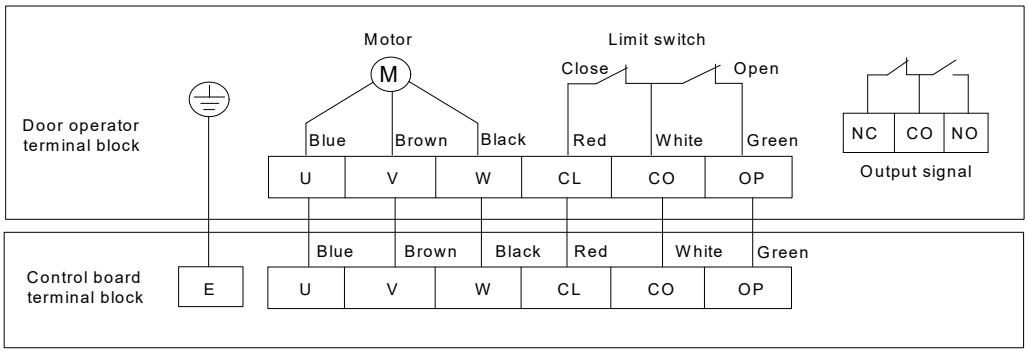


Fig.11 Wiring Chart

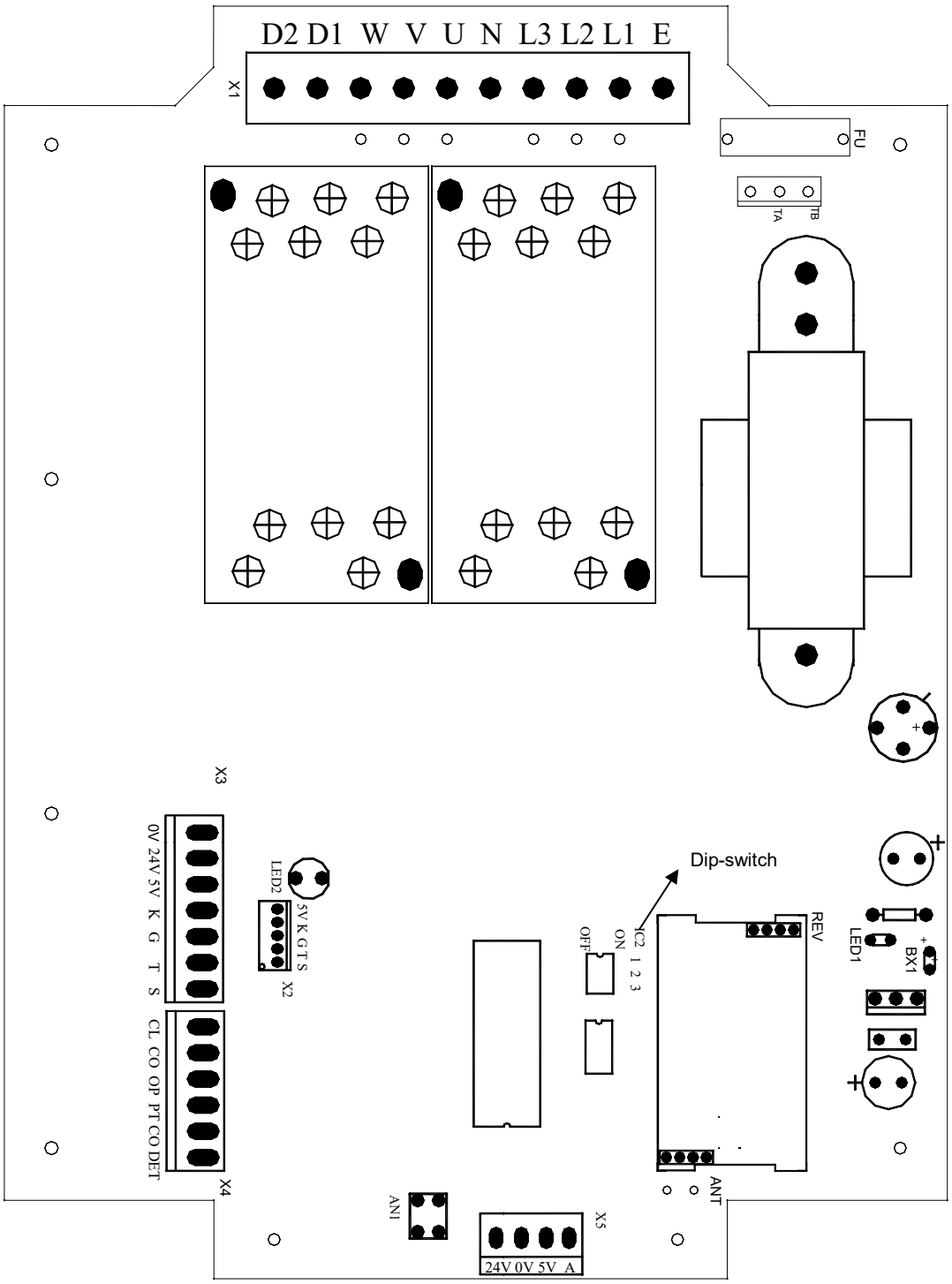


Fig.12 Control Board Diagram (380V)

Control Board (380V) see Fig.12

- Connect phase wires (380V) to 'L1', 'L2', 'L3'. Connect neutral wire to 'N', connect ground wire to 'E'. See terminal X1

  Note: turn the power on, if the 'LED2' is flashing, disconnect from mains supply, then reverse any two phase wires.
- Connect motor wire (blue, brown, black) to 'U', 'V', 'W', ground wire to 'E'. If door running direction is wrong, please exchange wires 'U' and 'V'. See terminal X1
- D1, D2: alarm lamp(AC220V). See terminal X1
- Connect close limit wire (red) to 'CL', connect common wire (white) to 'CO', connect open limit wire (green) to 'OP'. See terminal X4
- Connect signal wires of photocell (N.O.) to 'PT' and 'CO', power wires to '24V' and '0V'. See terminal X3 and X4
- Connect safety edge switch wires to 'PT' and 'CO'. See terminal X4
- Connect wicket door(N.C.) wires to 'DET' and 'CO', if connected, the short bridge must be removed. See terminal X4
- Connect external button switch (N.O.) to 'K', 'G', 'T' and 'S'. K-open (white), G-close (yellow), T-stop (red), S-common wire (green). See terminal X3

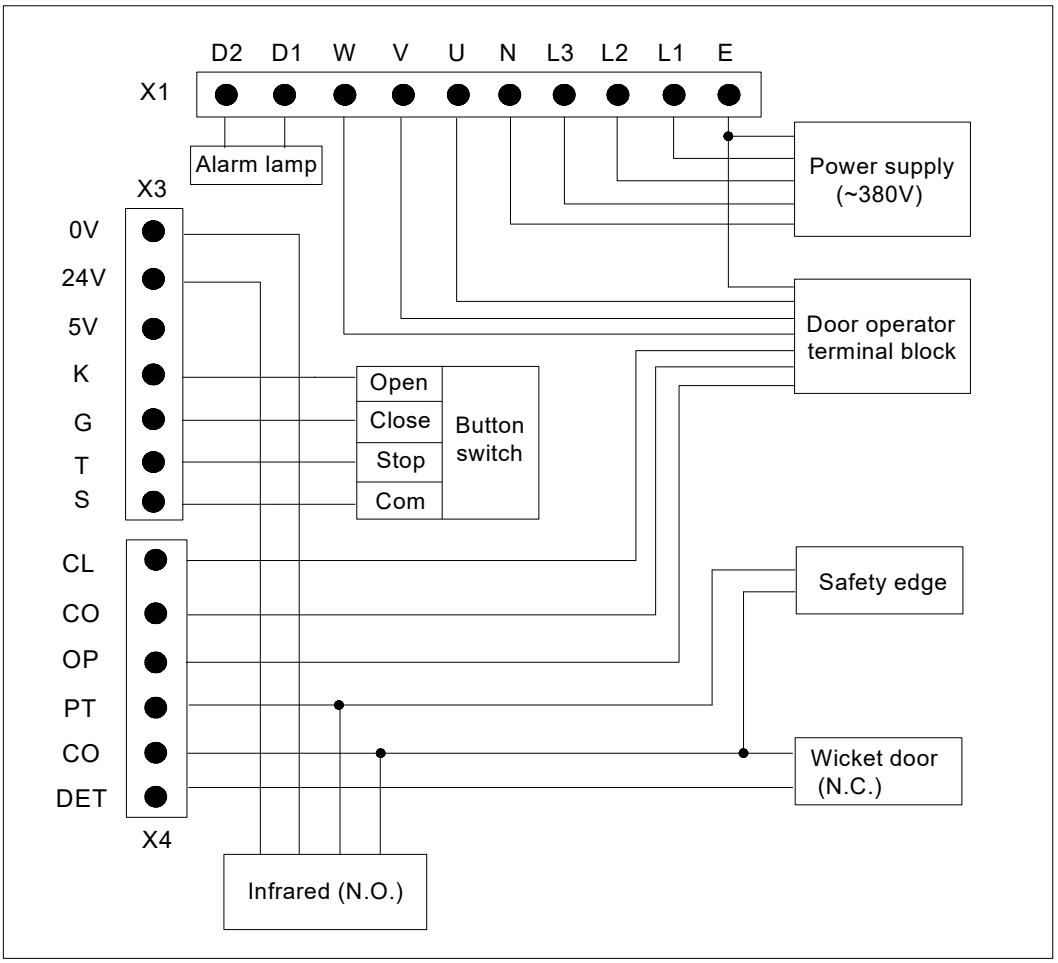


Fig.13

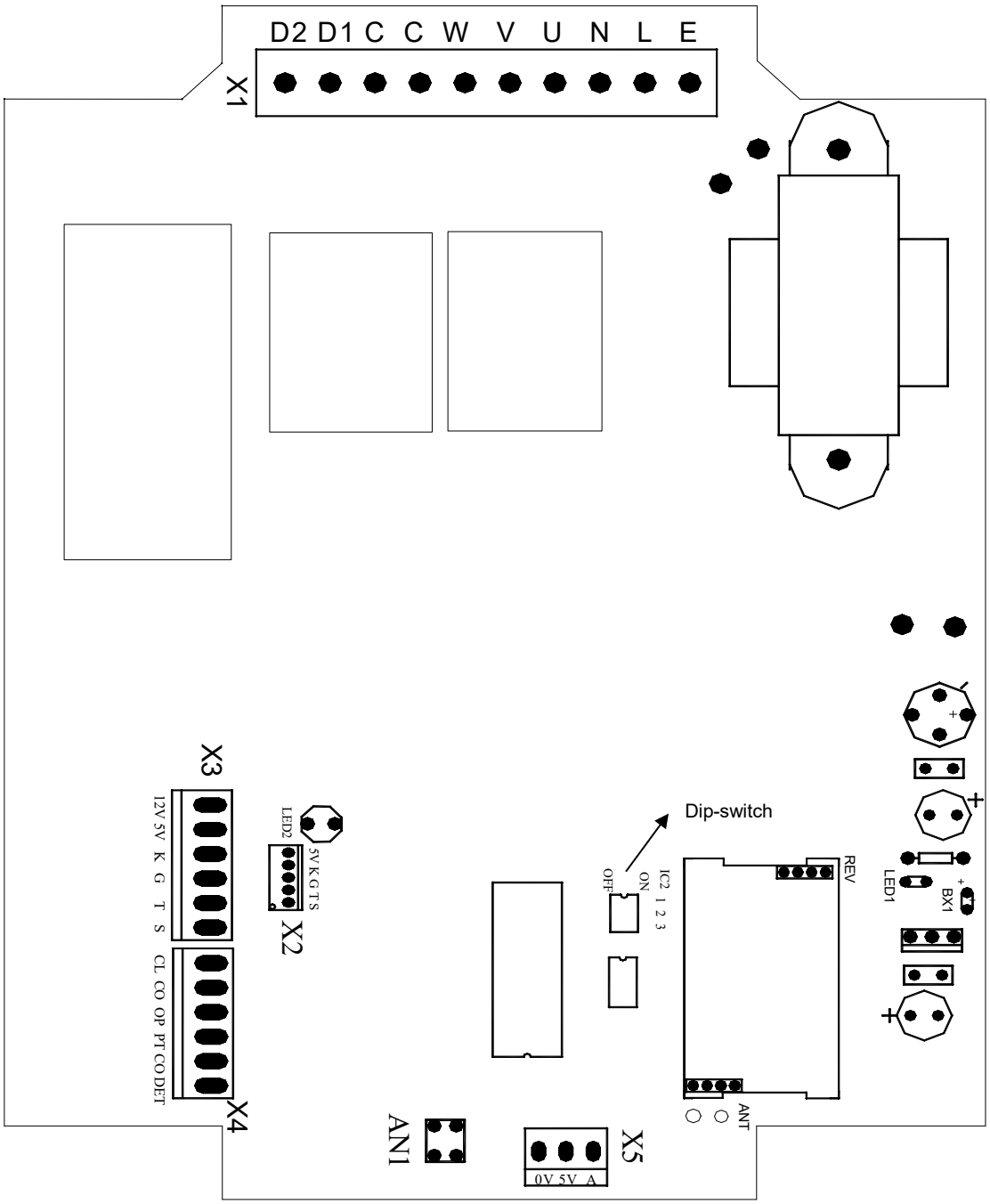


Fig.14 Control Board Diagram (220V)

Control Board (220V) see Fig.14

- Connect power wires (220V) 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 terminal X1
- D1,D2: alarm lamp(AC220V). See terminal X1
- Connect close limit wire (red) to 'CL', connect common wire (white) to 'CO', connect open limit wire (green) to 'OP'. See terminal X4
- Connect signal wires of photocell (N.O.) to 'PT' and 'CO' and power wires to '12V' and 'S'. See terminal X3 and X4
- Connect safety edge switch wires to 'PT' and 'CO'. See terminal X4
- Connect wicket door (N.C.) wires to 'DET' and 'CO', if connected, the short bridge must be removed. See terminal X4
- Connect external button switch (N.O.) to 'K', 'G', 'T' and 'S'. K-open (white), G-close (yellow), T-stop (red), S-common wire (green). See terminal X3

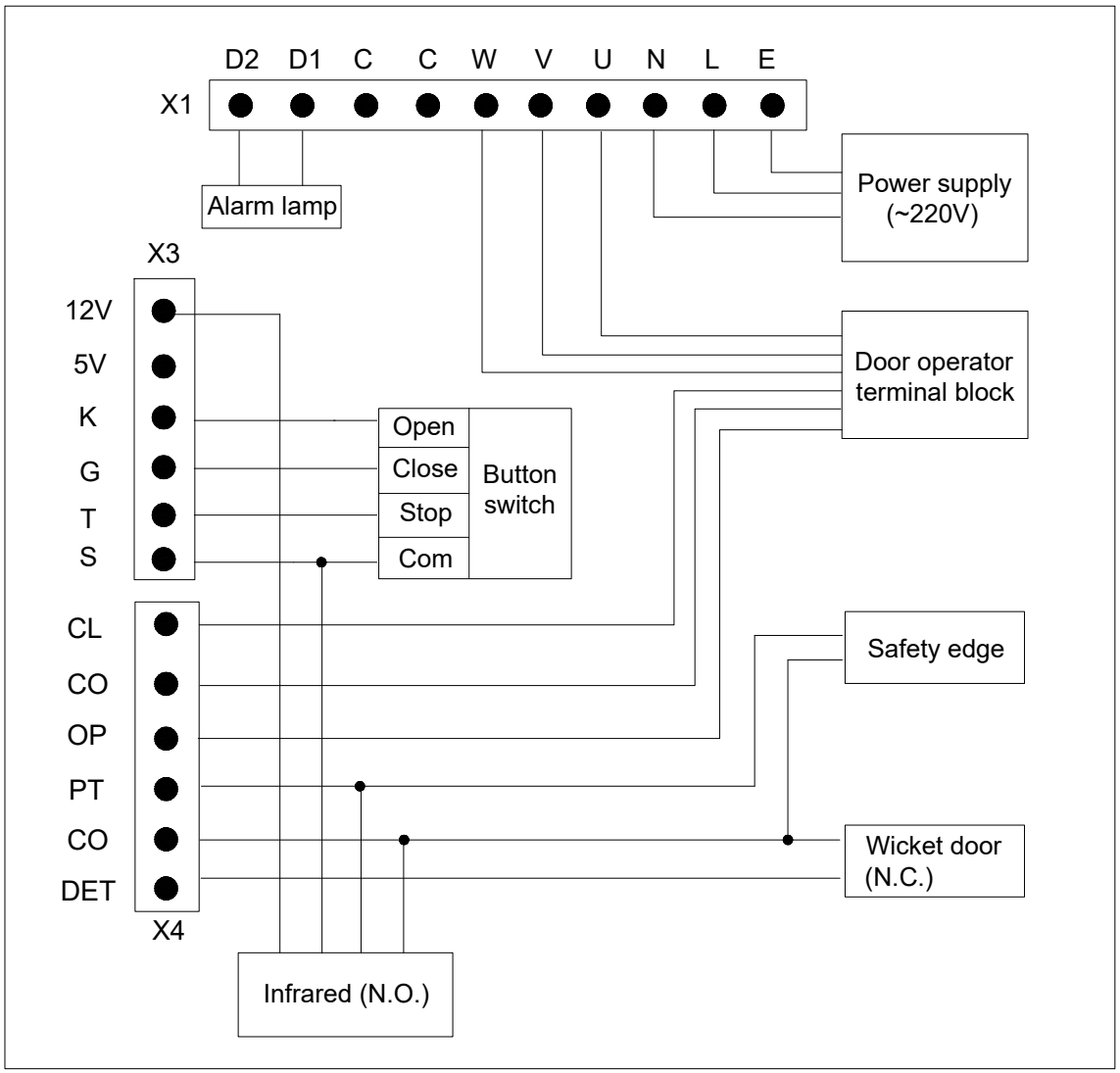


Fig.15

9. Adjustment and programming

Control box

In an emergency, press the red emergency switch on the control unit can cut off the power of control unit immediately. Rotate the switch in arrow direction to make the switch return to its original position.

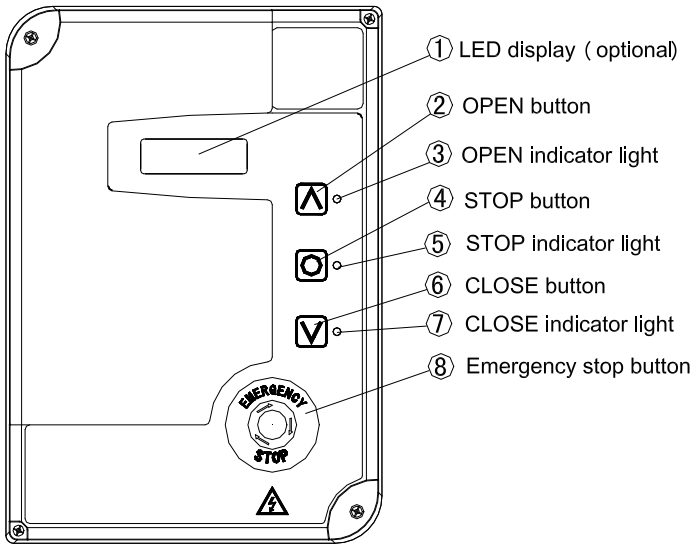


Fig.16

DIP- switch (see Fig.17)

Position	ON	OFF
1	Auto-close enable	Auto-close disable
2	Infrared photocell N.C.	Infrared photocell N.O.
3	Auto-close time delay: 10 seconds Note: DIP-switch 1 must be set ON.	Auto-close time delay: 30 seconds Note: DIP-switch 1 must be set ON.

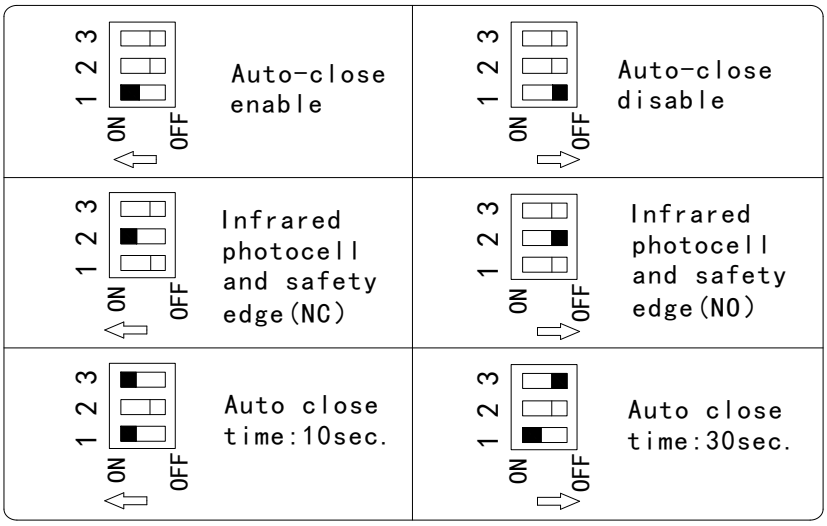
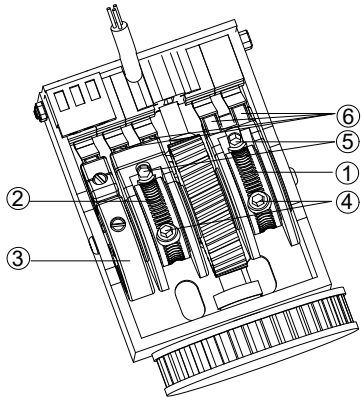


Fig.17

Limit switch



1 : Control cam, CLOSED (Red)
2 : Control cam, OPEN (Green)
3 : Additional control cam, (Yellow) Signal output
4 : Locking screw
5 : Fine adjustment screw
6 : Limit switch

Fig.18

Information:

Each control cam has a locking screw④and a fine adjustment screw ⑤.

The locking screw is used to lock the corresponding control cam in the desired position. Fine adjustment can be made with the fine adjustment screw.

Set the CLOSED end position

Rough adjusting

- Make sure that the operator is fixed rigidly.
- Loose the locking screws ④of red cams.
- Drive the door to the CLOSED end position, observe the rotating direction of red control cams ① during closing.
- Turn the red cams① in the same direction until the limit switches⑥click.
- Finally tighten the locking screws.
- Repeat this step until the door is less than 20-30mm from the closed position.

Fine adjusting

- After rough adjustment, you can close the door and observe whether the door has successfully reached the closed position.
- If the door does not reach the fully closed position (less than 20-30mm), adjust the fine adjustment screws⑤ in the red control cams carefully to make the door reach the closed position, anticlockwise to close more, clockwise to close less.

Set the OPEN end position

Rough adjusting

- Loose the locking screws.
- Drive the door to the OPEN end position, observe the rotating direction of the two blue control cams or green control cam② during opening.
- Turn them in the same direction (i.e. on the opposite direction of the red cam) until the limit switches click.
- Finally tighten the locking screws.

Fine adjusting

- If the door does not reach the fully open position (less than 20-30mm), adjust the fine adjustment screws in the green control cam, anticlockwise to open more, clockwise to open less.

Information:

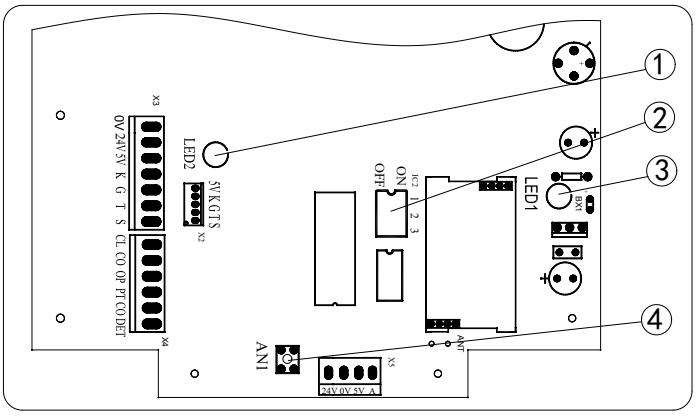
When the door reaches fully closed or open position, make sure that the limit switches are active and the indicator on the control unit shall dim out. If the indicator does not dim out, repeat adjustment.

Warning: Please use the control unit to adjust the end positions, DO NOT use remote control.

Adding / erase remote controls see Fig.19

- **Adding extra remote controls (Learn)**: Press the button 'AN1' ④ on the control board, the 'LED2' will be on and then turn off. Press any remote control button, the 'LED2'① will be on and then turn off. Press the same remote control 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 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.



1 LED2 learn indicator light
2 Dip-switch
3 LED1 power indicator light
4 AN1 learn button

Fig.19

- The remote control works in three-channel mode, (1-open, 2-close, 3-stop, 4-not used) See Fig.20.

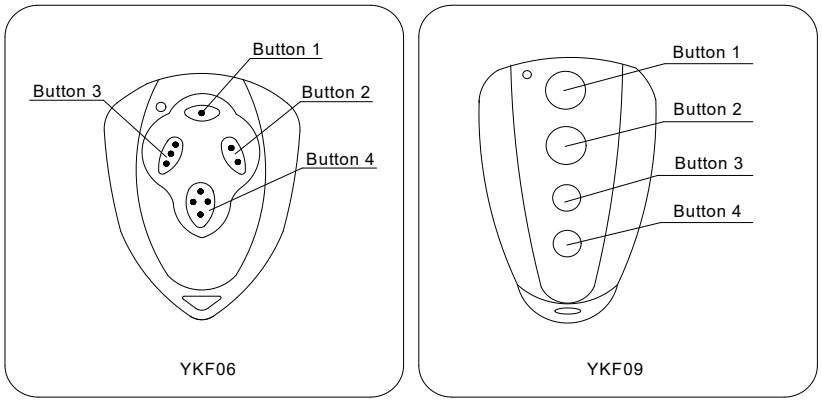


Fig.20

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

10. Maintenance

- Make sure the door is in good working order and that is correctly balanced.
- Have qualified technicians to service this operator.
- Keep operator clean at all times.
- Our company reserves the right to change the design and specification without prior notification.

11. Troubleshooting

Error	Cause for error	Remedies
The operator will not work.	1.Power is OFF. 2. The door is obstructed. 3.The wires become loose. 4.The emergency switch was pressed. 5.The release handle is disengaged.	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. Engage the release handle.
After using the hand chain, the operator does not work after you press control unit button or transmitter.	An automatic reset is not carried out.	Pull the hand chain see Fig.10 (1) to carry out an automatic reset. (See **Hand chain** section)
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.

12. 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	2
4	Screw (M8X15)	2
5	Key (6X5X70)	1
6	Bolt (M10×20)	4
7	Plain washer	4
8	Cable (6m)	2
9	Hexagonal wrench key （for limit switch only）	1
10	Safety label	1
11	Remote control (optional)	2
12	Control unit	1
13	User's manual	1