KGL35 INDUSTRIAL DOOR OPERATOR

USER'S MANUAL

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.

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1. Safety instructions

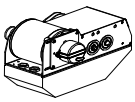
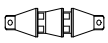
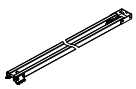
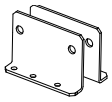
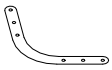
Carefully read and follow all safety precaution, warnings before attempting to install and use this door operator, incorrect installation can lead to severe injury.

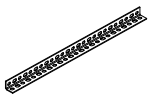
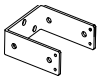
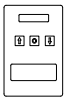
- The installation should be carried out by a qualified technician. DO NOT in any way modify the components of the door operator.
- To avoid electrical shock, disconnect the power cord from the mains power outlet before doing any repairs or removing the cover.
- Always keep people and objects away from the door when it is operated.
- The door should only be operated when it can be observed to avoid accidents.
- Keep remote controls or button switch away from children, to prevent the door operator from being activated involuntarily.
- Be sure the RELEASE FUNCTION contained in this brochure is distributed to all persons authorized to use your door.
- For service, contact a qualified service person.
- An Infrared device is required to be installed for safety.
- Locate any fixed control: within sight of door but away from all moving parts of the door and at a height of more than 1.5m above the ground to avoid children reaching it.
- Our company reserves the right to change the design and specification without prior notification.

Failure to comply with the instructions above may result in personal injury or property damage. Our company does not accept responsibility for damage or injury resulting from installing this operator.

2. 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:

Item	Diagram	Quantity		Item	Diagram	Quantity
Door operator		1		Chain coupler		1
Rail		1		Connecting bracket		1
Rail bracket		2		Chain bolt		2
Mounting bracket		4		Supporting plate(L&R)		1 pair
`Elbow arm		1		Shuttle		1

Straight arm		1		Chain		1
Angle iron		4		Chain connector and master link		3
Door bracket		1		Remote control		2
Wall bracket		1		Wall remote control		1
Pin		3		Release cord		1
Return pulley		1		User's manual		1

Standard accessories	Quantity		Standard accessories	Quantity
Tapping screw ST4.8x19	8		Hexagon socket head cap screw M5X10	6
Hexagon headed bolt M8X20	2		Spring washer 5	6
Lock nut M8	2		Pin 8x40	1
Hexagon socket head cap screw M6X16	6		Pin 8x20	1
Plain washer 6	6		Split pin 3x25	2
Spring washer 6	6		Hex wrench	1
Nut M6	6		Hexagon flange bolt M8X16	6
Nut M8	4		Locknut M8	2

3. Technical specifications

Power supply	AC220V 50Hz
Rotation speed of chain wheel	84.5rpm
Speed	0.2m/s
Max. open & close force	1400N
Limit switch	N.O. or N.C. (adjusted by DIP 1#)
Infrared photocell	N.O. or N.C. (adjusted by DIP 2#)
Working temperature	-20°C ~ 50°C
Radio frequency	433.92MHz
Transmitter	Rolling code
Transmitter battery	23A 12V

4. Installation and adjustment

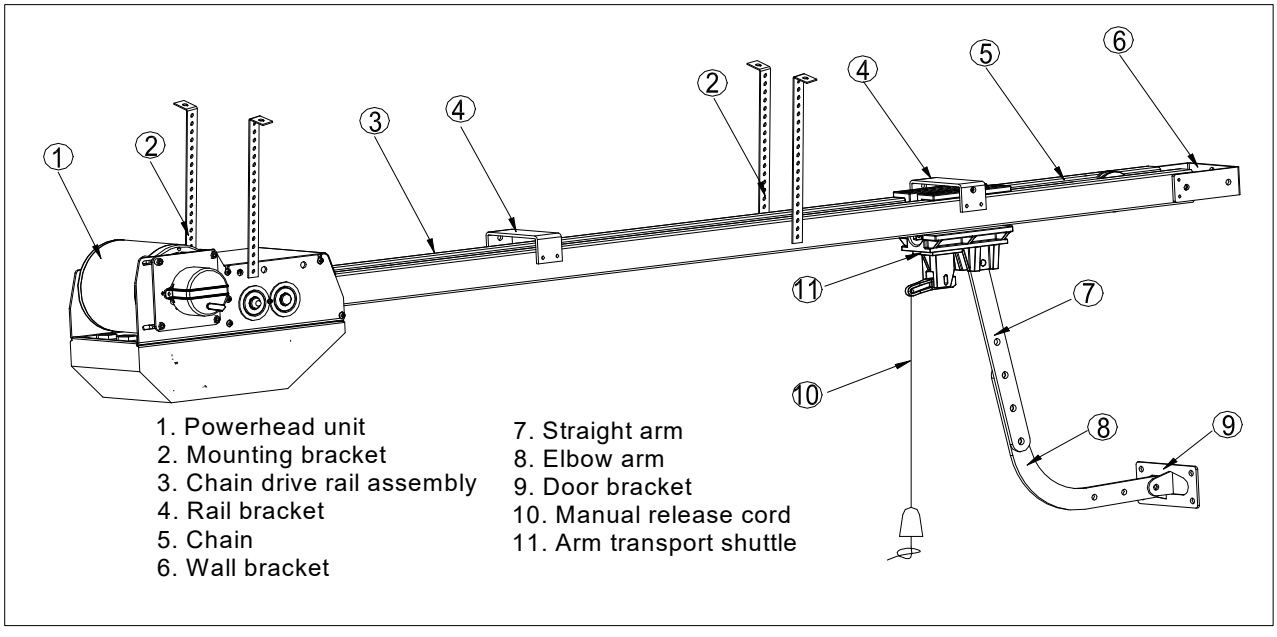


Fig.1

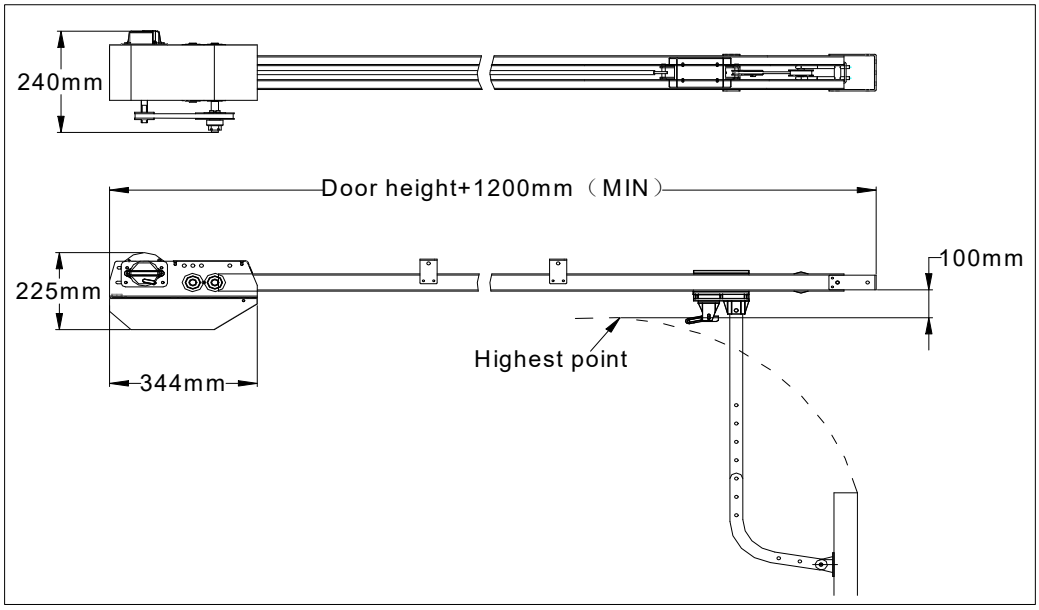


Fig.2

Step 1

- Check the door is in good working condition, manually open and close the door to make sure the door operates smoothly and freely.
- The door must be well balanced.

Step 2

- Connect the rail as shown in Fig.3.

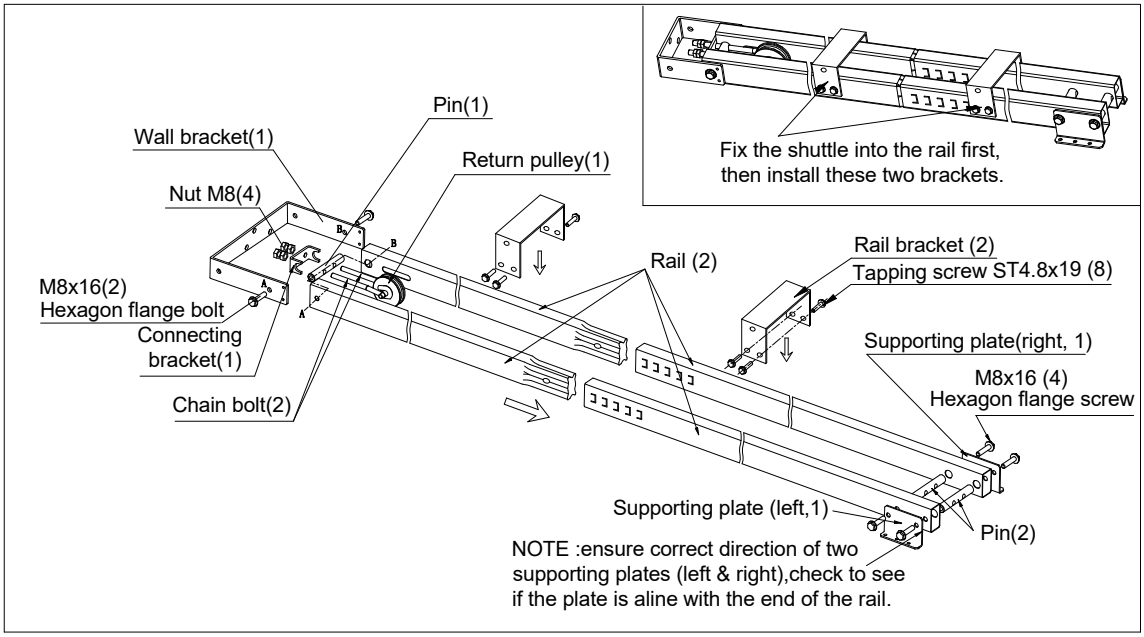


Fig.3

Step 3

- Insert the arm transport shuttle between the two rails. Be sure it faces the right direction (the release lever on the shuttle faces towards the powerhead).
- Move the whole shuttle assembly and ensure it slides freely.

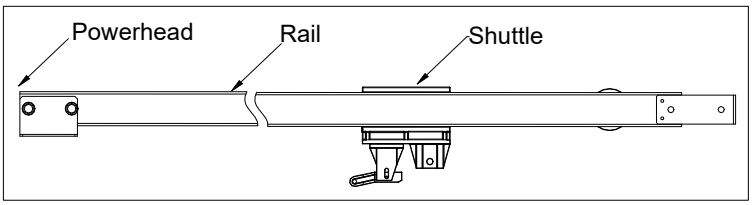


Fig.4

Step 4

- Place the powerhead on the floor, add cardboard packing to protect the powerhead from scratching by the floor. Open the cover, attach the powerhead unit to the rail with 6 screws (M5X10) and spring washers.

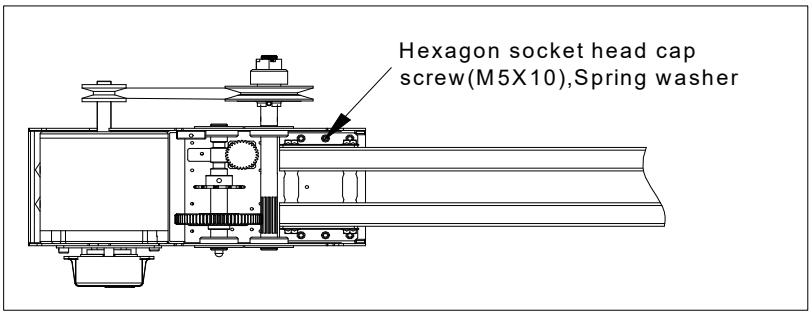


Fig.5

Step 5

- Lay chain out on the floor.
- Attach the one end of the chain to the chain coupler with a chain connector and uncoil the chain towards the powerhead and wrap it around the chain sprocket.
- Take the chain back down the rail to the return pulley and feed the chain through the return pulley assembly and shuttle and connect it to the chain coupler with another chain connector.
- Adjust the chain tension by turning the two locknuts with spanner. see Fig.3.
- Slide the shuttle along the rail until it locks into position 1. see Fig.7

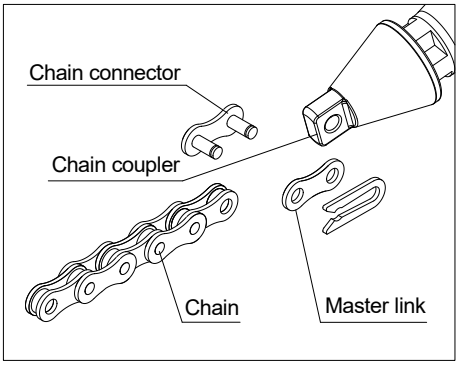


Fig.6

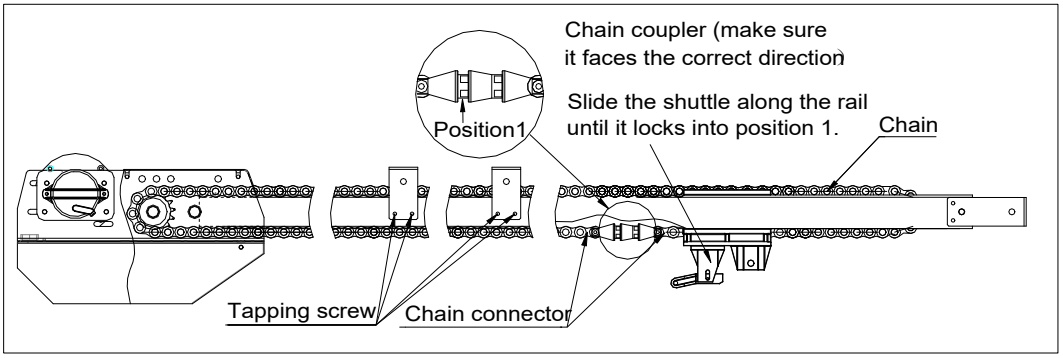


Fig.7

Step 6

- Check to see if there is a solid frame in the wall above the center of the door.
- Close the door.
- Measure the door width, mark the centerline of the door using a pencil, and extend the line down to the door surface, then up the wall above the door.
- Check the installation height of the operator. Slowly open door and observe the highest point of door while moving. Close the door again and mark this highest point on the wall, mark a horizontal line across the vertical centerline around 100mm above the highest point. (Note: there should be 100mm space between this horizontal line to the ceiling. If there is not enough space, please use the max. height possible to allow the header bracket to be fitted properly.)

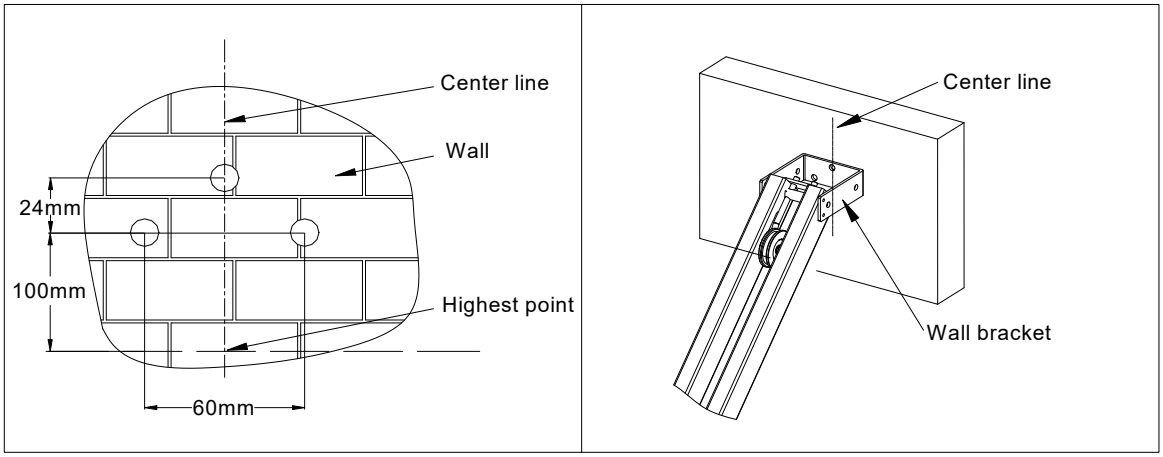


Fig.8

Step 7

- Close the door.
- Loose the two flange screws.
- Place the operator in the center of the floor. Lift the front end of the rail up to the wall, fit the bracket to the wall with 3 expansion bolts (not supplied in accessories) above the door, the centerline of the door should align with the centerline of the bracket, the bottom edge of the bracket should align with the horizontal line.
- Tighten the flange screws finally.
- Raise and support the powerhead with a ladder and line up the rail with the centerline marked on the door. The rail must be level.

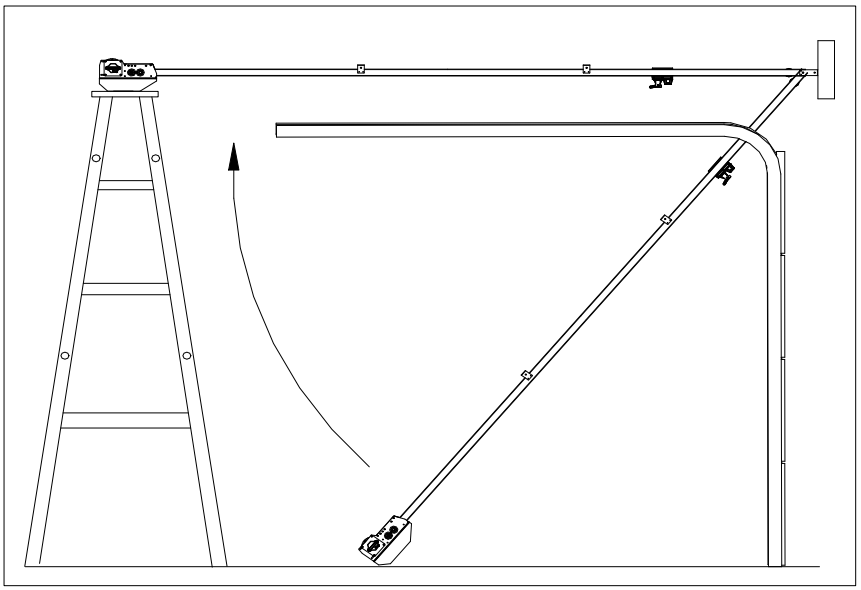


Fig.9

Step 8

- Fix the operator to ceiling with 2 mounting brackets and 2 angle irons by using 6 hexagon socket head cap screws M6X16, plain & spring washers see Fig.10, make sure that the rail is level. Add 2 mounting brackets in the middle if the length of rail is more than 4.5m. If necessary, Check the door does not touch any part of the rail by opening or closing it manually.

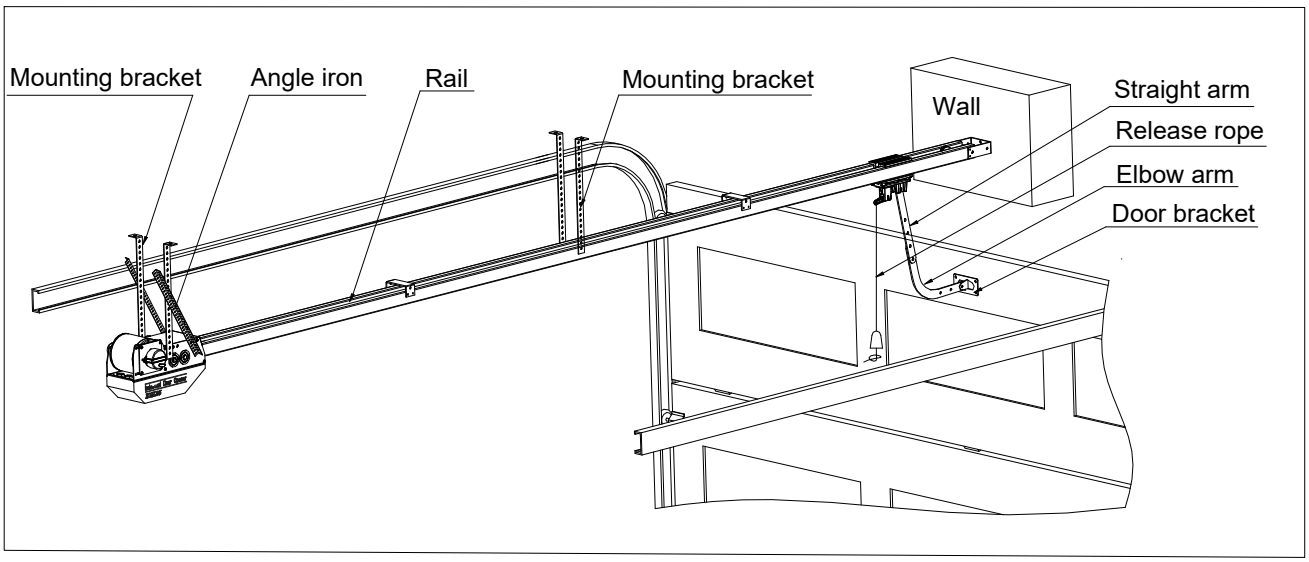


Fig.10

- Fix the door bracket on the top edge of the door with tapping screws (not supply). Link the elbow arm to the door bracket with pin (8x20) and Split pin (3x25). Link the straight arm to the shuttle with pin (8x40) and Split pin (3x25), then connect L arm to straight arm with two bolts (M8X20) and locknuts (M8), ensure the door arm can be moved freely.

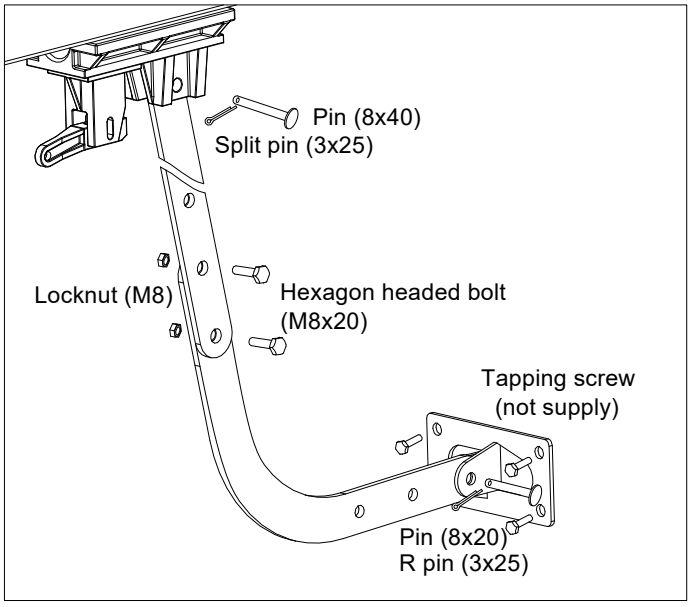


Fig.11

Manual operation

If the door has to be operated manually due to a power cut or malfunction of the automated system, pull the release cord to free up the shuttle, open and close the door manually. To reconnect the door, move the door until the shuttle locks back into the drive chain.

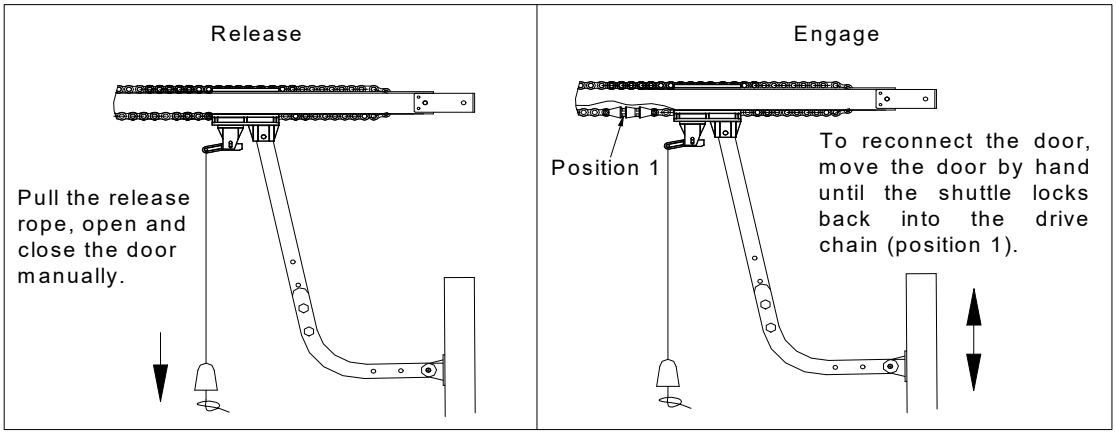


Fig.12

Limit switch

Information:

Each control cam has a locking screw and a fine adjustment screw.

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,

Additional limit cam (A) - signal output.

Set the CLOSED end position

Rough adjusting

- Open the cover
- Make sure that the operator is fixed rigidly.
- Drive the door to the CLOSED end position electrically, observe the rotating direction of red control cams (D/E) during closing.
- Loose the locking screws of red cams.
- Turn the cams in the same direction until the limit switches click.
- Finally tighten the locking screws.
- Repeat this step until the door is less than 20mm 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 20mm), adjust the fine adjustment screws in the red control cams carefully to make the door reach the closed position, anticlockwise to close more, clockwise to close less. Turn 90° is about 20mm of door movement.

Set the OPEN end position

Rough adjusting

- Drive the door to the OPEN end position electrically, observe the rotating direction of the two green control cam (B/C) during opening.
- Loose the locking screws.
- 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 20mm), adjust the fine adjustment screws in the two green control cams, anticlockwise to open more, clockwise to open less. Turn 90° is about 20mm of door movement.

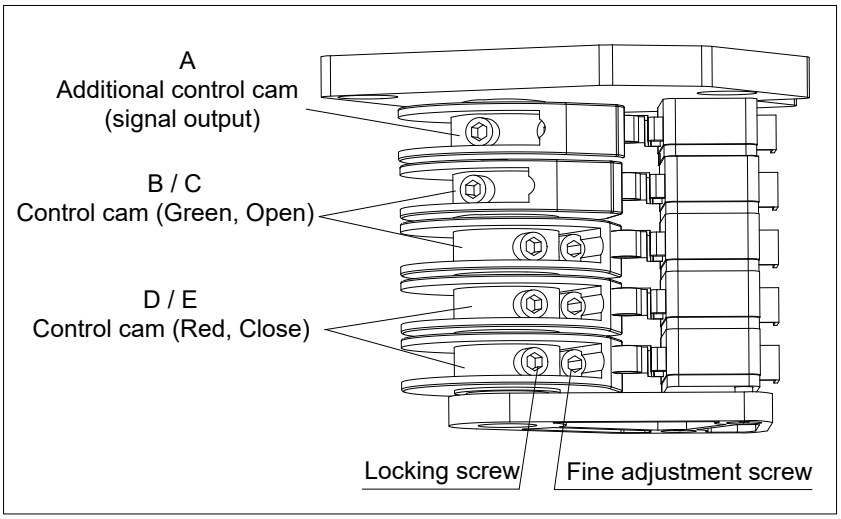


Fig.11

5. Electrical

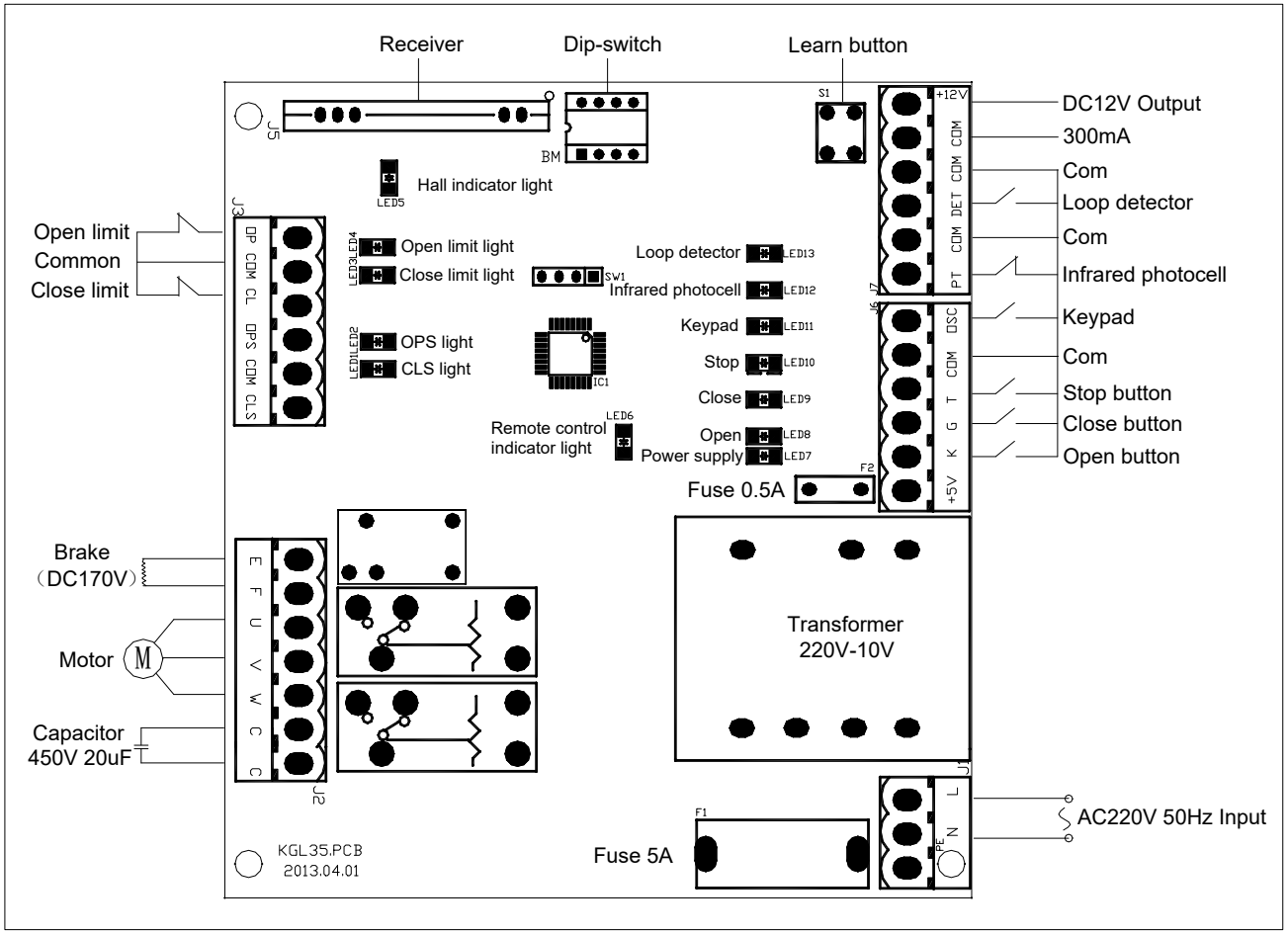


Fig.12

- The remote control works in three-channel mode (1-OPEN, 2-CLOSE, 3-STOP, 4- not used).
- The wall remote control works in three-channel mode (↑-OPEN, ↓ -CLOSE, ○-STOP).
- **<u>Adding extra remote controls (Learn)</u>**: Press the learn button 'S1' on the control board about 2 seconds (see Fig.12), release the button till the 'LED6' turns on. Press any remote control button twice, the 'LED6' will flash about 3 seconds at 1/2Hz frequency and then turn off, this indicates the learning process is finished.
  Up to 25 remote controls may be used.
- **<u>To erase all remoter controls</u>**: press and hold 'S1' button on the control board about 8 seconds, release the button once 'LED6' turns off. This indicates that all the remote controls have been erased completely.
- Additional remote controls can be purchased through your dealer. If you have any problem, please contact the dealer.

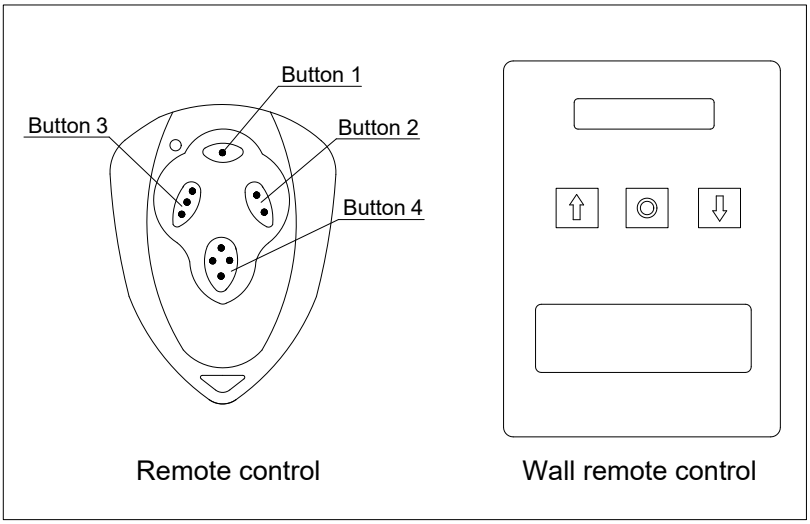


Fig.12

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

Verify open direction

If the door does not move in the desired direction, then you will need to reverse the motor operating direction, you can do this by exchanging wires 'V' and 'W', 'OP' and 'CL'.

External button switch (N.O.)

Connect external button switch to 'K' -open, 'G' -close, 'T' -stop and 'COM' -common wire.

Keypad (N.O.)

Attach one lead of your keypad to 'OSC' and the other to the 'COM'. The keypad will function in single channel mode.

Auto-close time

This feature can be selected to make the door stay open for some seconds before it automatically closes. The auto-close time can be adjusted to between 1 and 30 seconds.

Time / Dip-switch	1 second	10 seconds	30 seconds	Cancel auto-close (factory preset)
Position 3	ON	OFF	ON	OFF
Position 4	OFF	ON	ON	OFF

Infrared photocell (N.C.)

Turn on the second DIP-switch to ON position, infrared photocell is N.O., return the DIP-switch to OFF position, infrared photocell is N.C..

Connect signal wires of photocell to 'PT' and 'COM', power wires to '+12V' and 'COM'. If not used, the short bridge must be connected.

If infrared beam is interrupted during closing, the door will reverse and go open immediately. This feature will not function if the door is in fully opened and closed positions or during opening.

The door will keep opening if infrared beam is interrupted during opening.

Limit switch

Turn the first DIP-switch to ON position, the limit switch is N.O., turn the first DIP-switch to OFF position, the limit switch is N.C. (factory preset).

Connect close limit wire to ‘CL’, connect common wire to ‘COM’, connect open limit wire to ‘OP’.

Brake

Connect the electromagnet to ‘E’ and ‘F’, the output voltage between ‘E’ and ‘F’ is DC170V during opening or closing, the motor works. The output voltage between ‘E’ and ‘F’ is 0V, the motor stops work.

Open priority

The door will return to open if press ‘OPEN’ button of external button switch & remote control during closing.

Loop detector (N.O.)

Connect loop detector to ‘DET’ and ‘COM’.

If loop detector detects vehicles during closing, the door will reopen immediately and stay open until the vehicles move out of the loop. After vehicles move out of the loop, the door will continue to close.

If loop detector detects vehicles when the door stops, the door will open. After vehicles move out of the loop, the door will close.

The door will keep opening if loop detector detects vehicles during opening. After vehicles pass through the loop, the door will close.

6. Maintenance

The following maintenance procedures should be taken regularly:

- 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.
- Periodically test the safety device to make sure they are functioning correctly, if they are not, replace immediately.
- Every 3 months, check the chain and add grease regularly.
- Every 6 months, check the belt, fasteners, and make sure the release function perfectly.