

K207A SWING GATE OPENER USER'S MANUAL

ZHEJIANG XIANFENG MACHINERY CO., LTD.

Important safety information

Read the entire user's manual before beginning installation, and carefully obey the following instructions:

- To prevent the risk of electrocution, be sure to turn off all power to the K207A until installation is complete.
- The Gate Opener should be installed by a qualified technician. Otherwise, serious personal injury or property damage may occur.
- Before installation, all the locks of the gate should be unlocked.
- The auto-reverse function must be checked during installation to ensure that the gate can auto-reverse in the event of obstruction.
- This auto-reverse function should be regularly inspected and adjusted, if necessary.
- When opening or closing the gate, do not attempt to walk or drive through the gate. Do not touch the gate while in operation.
- Children should not be allowed to play near or operate automatic gates.
- The maximum force that the gate opener can provide is 1500N.
- An electric lock is provided for installation for gate lengths greater than 5 feet (1.5 meters).
- This unit uses a current feedback system to stop. Do not operate the opener without a solid stop block in place. This could cause injury, damage to the opener or other personal property.
- Do not install the gate too close to the limit of travel; install the stop block with at least three inches margin.
- The automatic gate opener must be grounded.
- Be careful when in close proximity to moving parts where hands or fingers could be pinched.
- Do not allow control devices to be placed so that a person can access them by reaching through the gate.
- In the event of power failure, an emergency release key allows you to operate the gate manually.
- The opener should be switched off before repairing it or opening its cover.
- Please erase and reset the code after installing the opener.

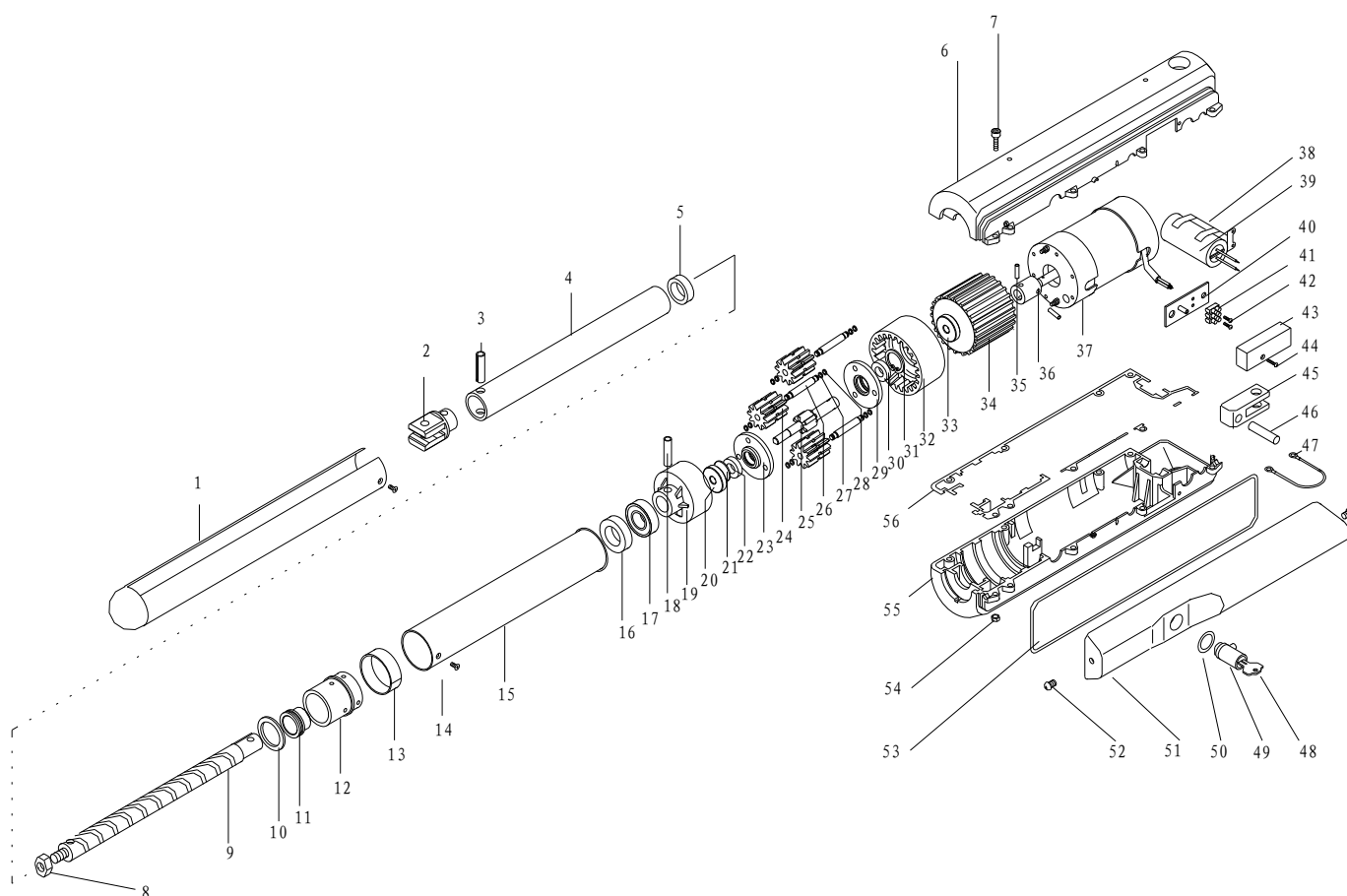
Additional features

- Supports gate leafs up to 440 lbs or 8.2 feet.
- Supports up to 25 RF remotes, 2 included.
- User programmable and user erasable remote codes.
- RF hopping code technology prevents thieves from guessing your remote code.
- Auto-close feature is available for this opener.
- Solid steel lock.
- Push to open or pull to open configurable.
- Opening and closing time have been preset in 24 sec.
- Aluminum and cast metal housing.
- For your safety, the K207A will stop and reverse if it encounters an obstruction during closing and stop when it encounters an obstruction during opening.
- Manual key release design for emergency purposes.

Specifications

- Power Supply: AC220 \times (1 \pm 10%)V, 50Hz
- Motor Speed: 1400 rpm
- Motor Output: AC220V, 110W
- Electronic Lock Output: DC12V 2A
- Relay Coil Voltage: DC12V
- MCU Voltage: DC5V
- Remote Control Range: 30m, Hopping Code
- Control Box Weight: 2kg
- Control Box Dimension: 276 mm (L) x 211 mm (W) x 112mm(H)
- Environment Temperature: -10°C~+50°C
- Auto Close Timer: 30 \pm 3 seconds
- Opening Time: < 24 seconds
- Working Angle of Gate: 90° or 105°
- Max. Gate Section Weight: 440 lbs. (200kg)
- Max. Gate Section Width: 8.2 feet (2.5 meters)
- Duty Cycle: 25%
- Noise: <65dB(A)

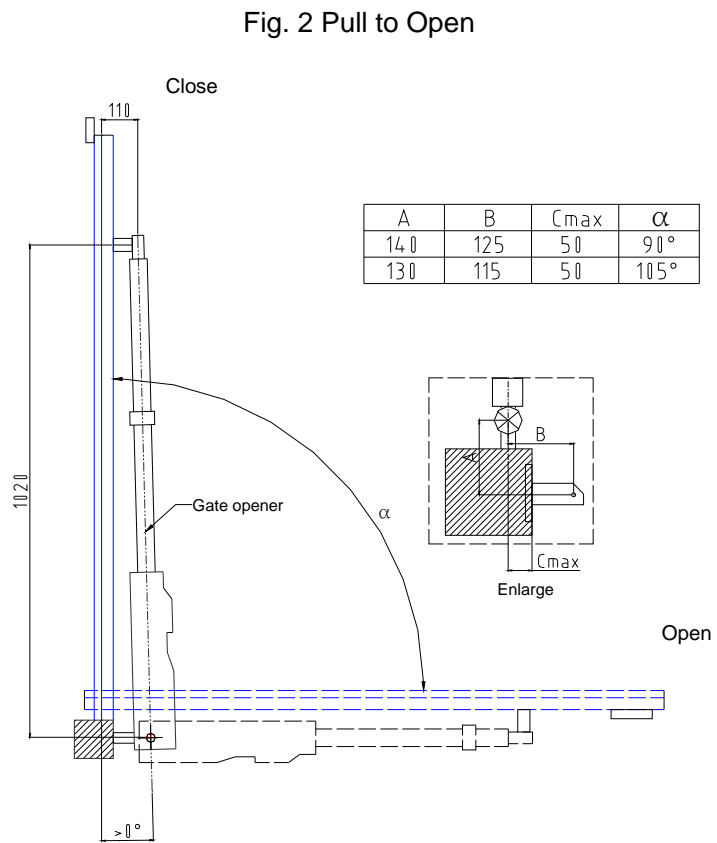
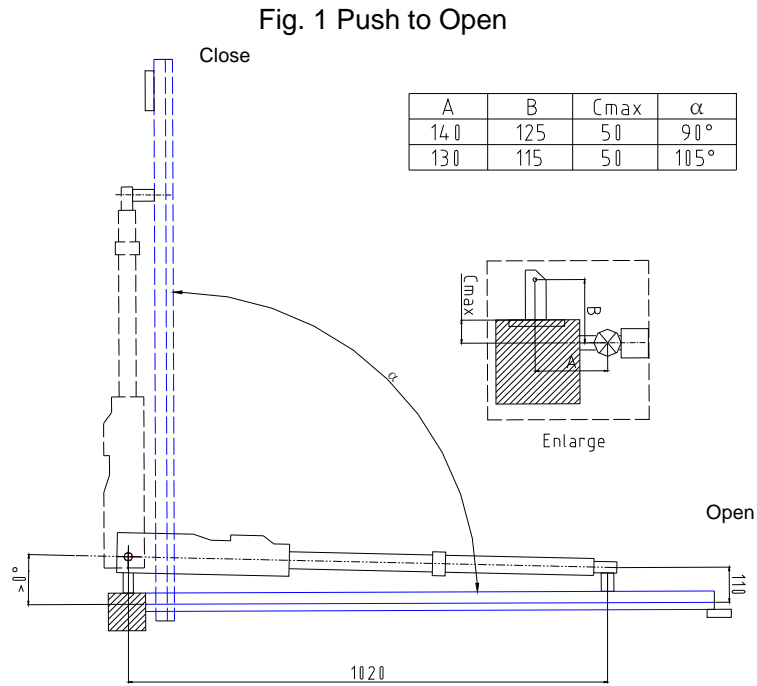
Exploded View and Parts List



- | | |
|----------------------------|-------------------------|
| 1.Hood pipe | 29.24T planet carrier |
| 2.End joint | 30.Bearing 61800 |
| 3.Pin 10x40 | 31.Elastic circlip 19 |
| 4.Steel tube | 32.24T ring gear |
| 5.Small support ring | 33.Bearing 61800 |
| 6.Right housing | 34.Locating shield |
| 7.Screw M5x20 | 35.Pin 4x20 |
| 8.Locknut | 36.Coupling joint |
| 9.Screw shaft | 37.Motor |
| 10.O seal ring 21.2x2.65 | 38.Capacitor bracket |
| 11.Bush | 39.Capacitor |
| 12.Connecting sleeve | 40.Wiring base |
| 13.Plastic split ring | 41.Wiring terminal |
| 14.Tapping screw ST2.9X6.5 | 42.Screw M4x8 |
| 15.Outer tube | 43.Wiring cover |
| 16.Large support ring | 44.Tapping screw ST3x13 |
| 17.Bearing 6004 | 45.Joint block |
| 18.Pin 8x35 | 46.Axle pin |
| 19.27T ring gear | 47.Earth wire |
| 20.27T axle sleeve | 48.Release key |
| 21.Elastic circlip 14 | 49.Lock |
| 22.Bearing 618/7 | 50.Seal 17x2.65 |
| 23.27T planet carrier | 51.Upper cover |
| 24. Planetary gear | 52.Screw ST4.2x9.5 |
| 25. Central gear | 53.Waterproof seal |
| 26. Planetary spindle | 54.Hexagonal nut M5 |
| 27.Corrugated gasket | 55.Left housing |
| 28.Circlip | 56.Waterproof seal |

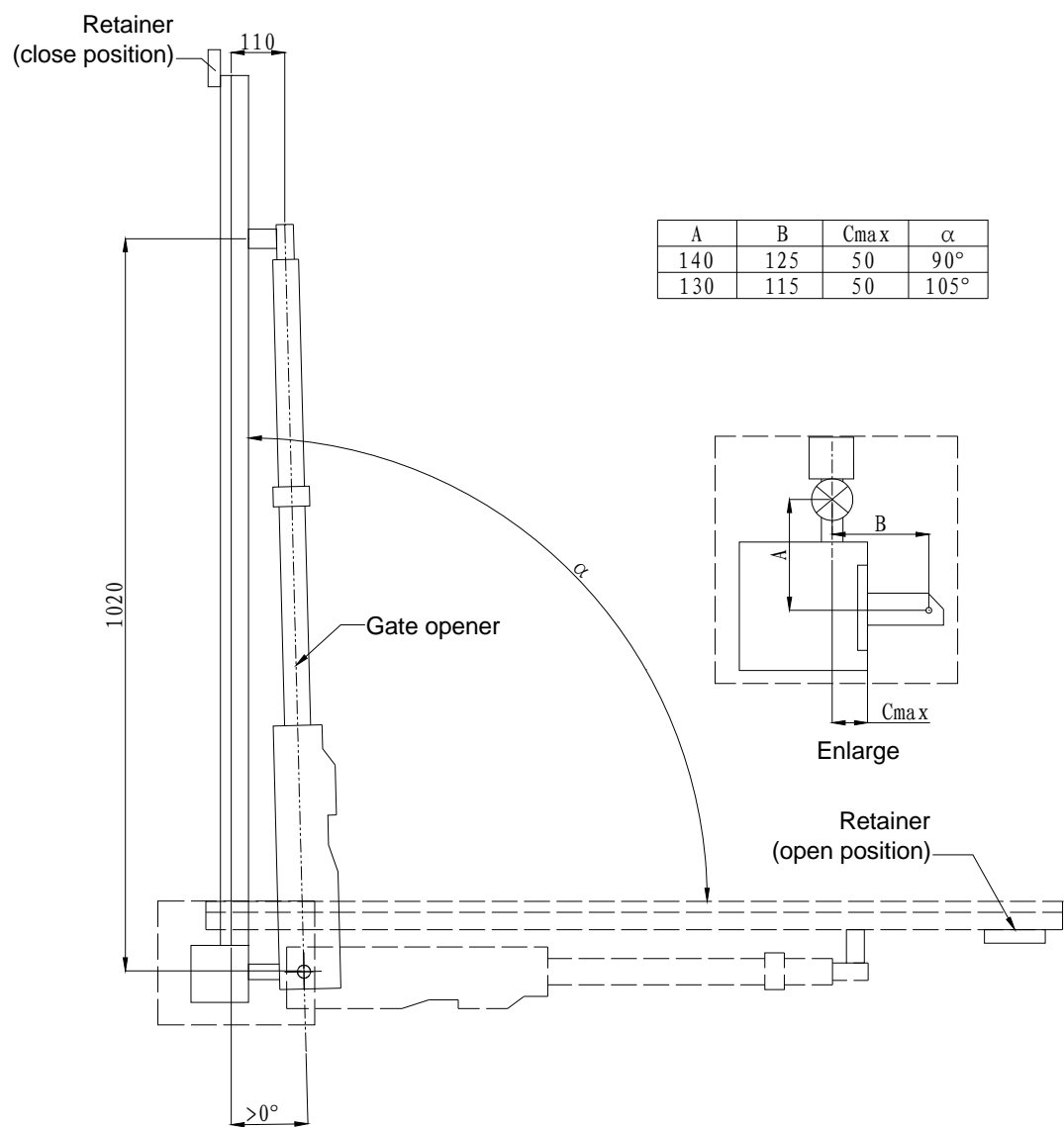
Mechanical Installation

Begin with both openers unlocked. Next identify if this will be a “push to open” or a “pull to open” installation. In either configuration, the gate is mounted on one face of the mounting post, and the opener is mounted on the face 90 degrees from it. Below are schematics of both “push to open” and “pull to open” configurations.



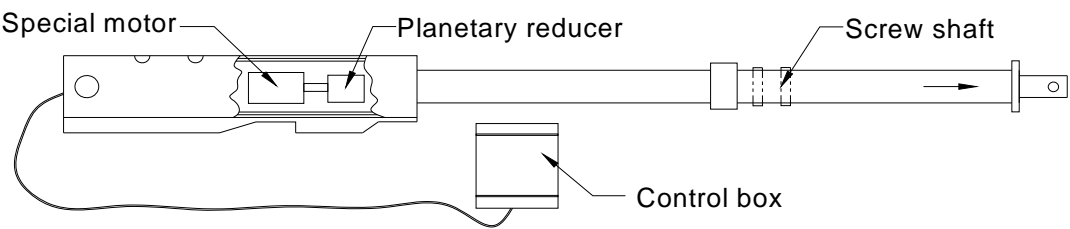
The installation should meet the specifications shown in figure 3. See Fig. 3.

Fig. 3



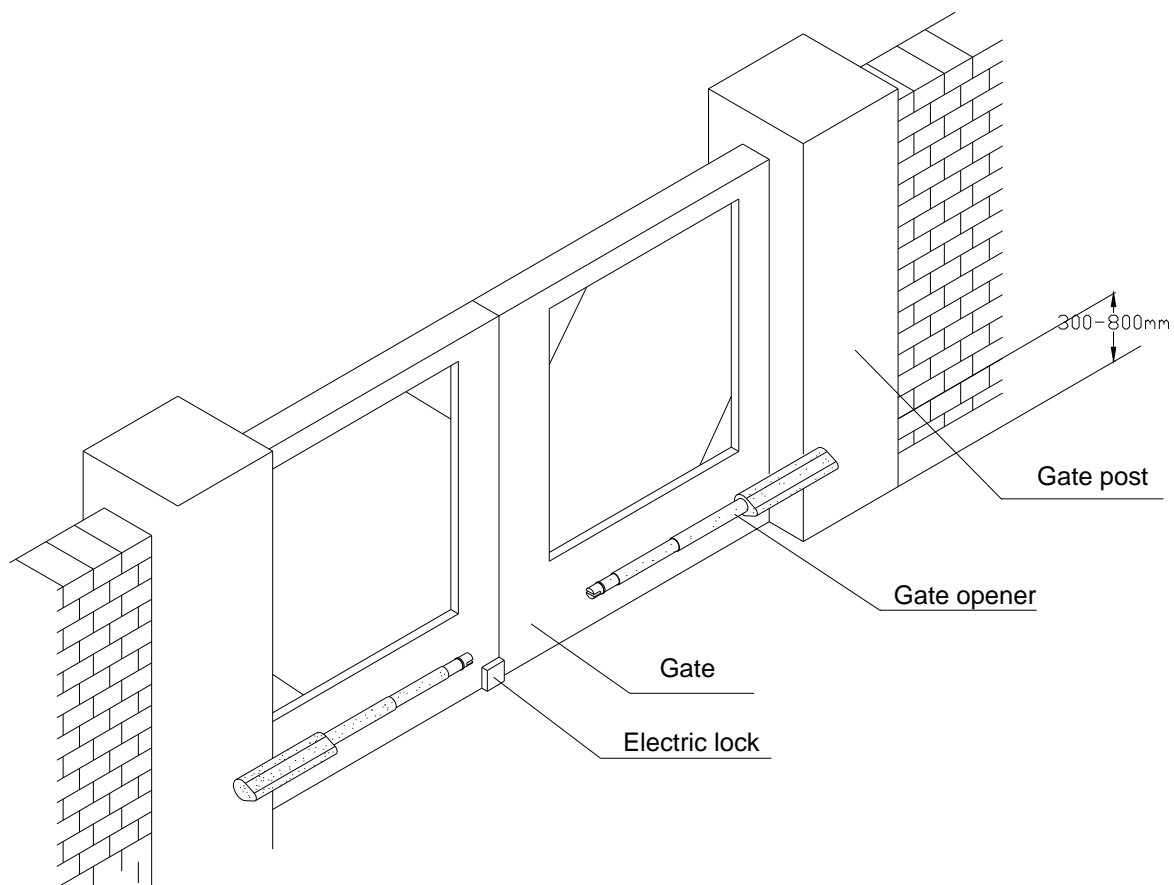
Main Structure

Fig. 4



The installation height range is 1.18 – 3.15 inches (300 – 800mm). See Fig. 5.

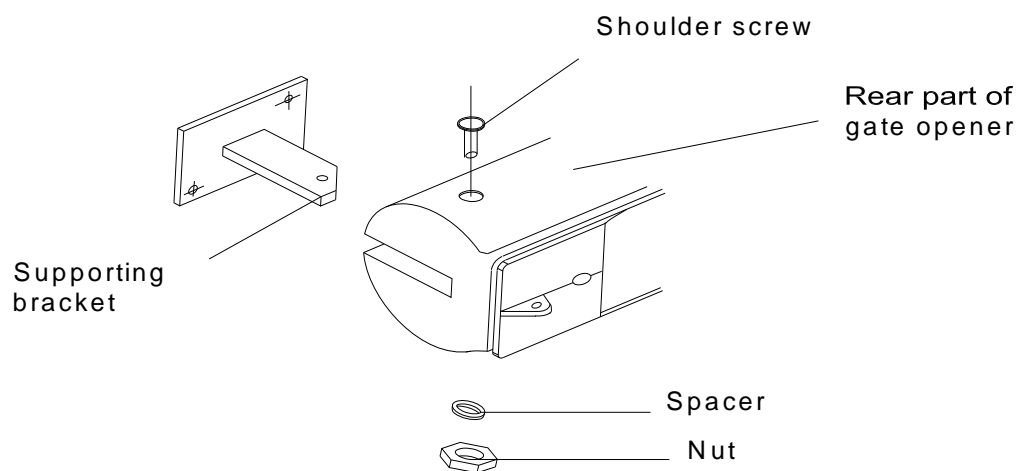
Fig. 5



Front and Rear Parts of Gate Opener

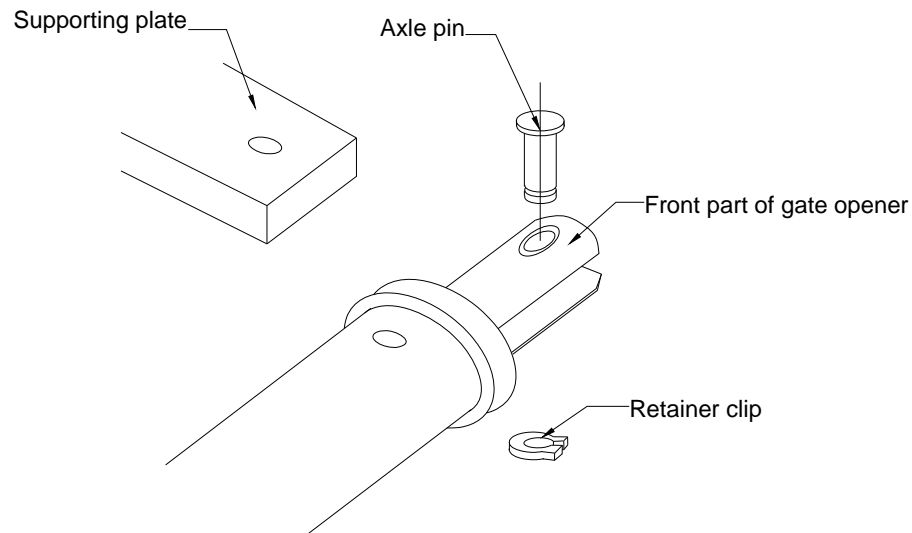
To install the rear part of the gate opener, insert shoulder screw and spacer, then tighten with the nut. See Fig. 6.

Fig. 6



To install the front part, fit the hole in the front part with the hole in the supporting plate, and push the axle pin into the holes (using hands or a hammer), and finally fit the retainer clip. See Fig. 7.

Fig. 7

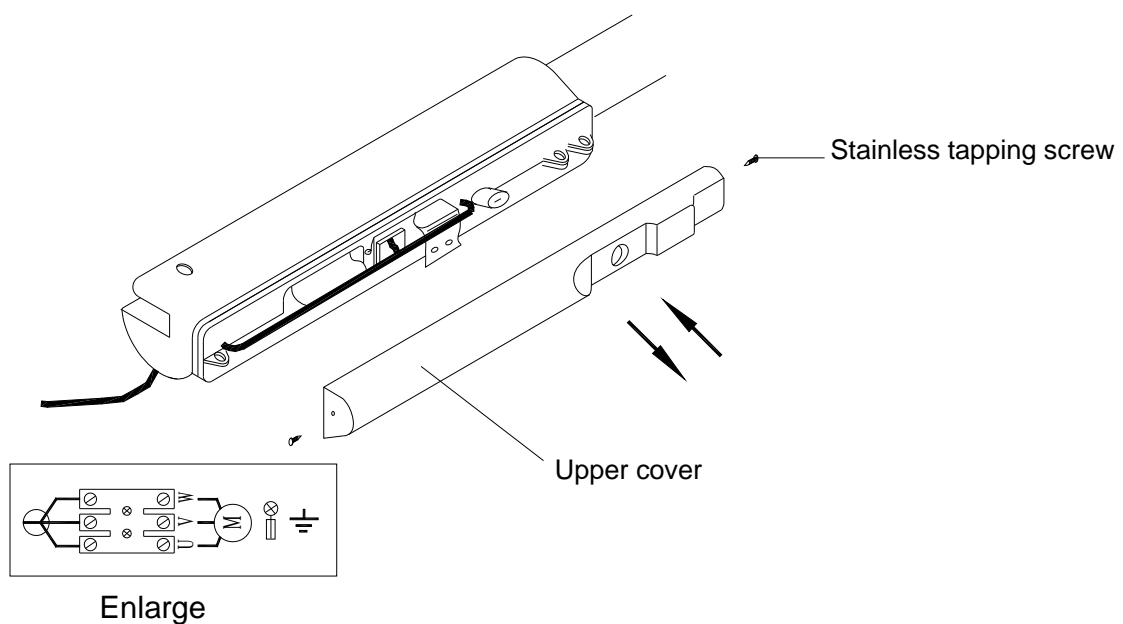


Wiring

Screw off the two stainless tapping screws, and then remove the cover and wiring as shown in Fig. 8.

WARNING: Follow the wiring diagram precisely. Failure to do so could cause damage to the gate opener controller.

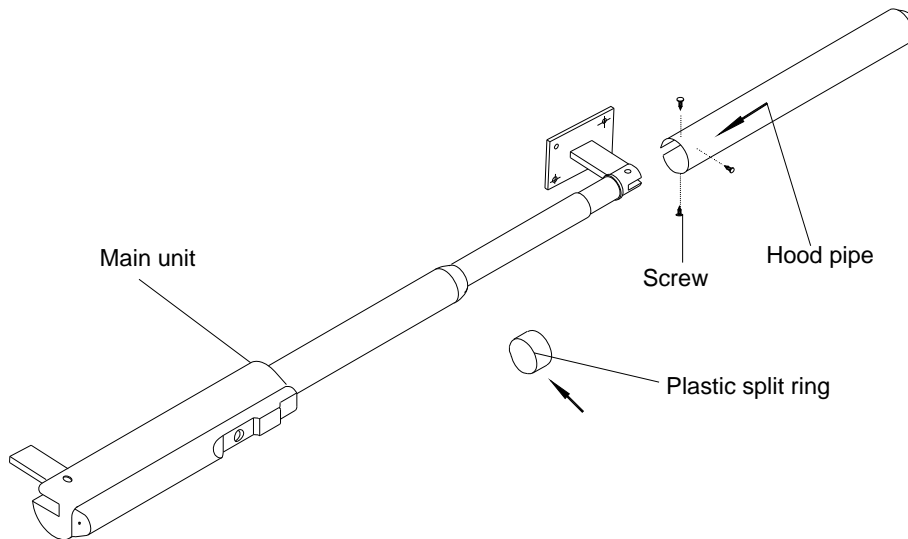
Fig. 8



Hood Shield

Install the hood pipe, tighten the screws into the opener and cover the plastic split ring over the joint. See Fig. 9.

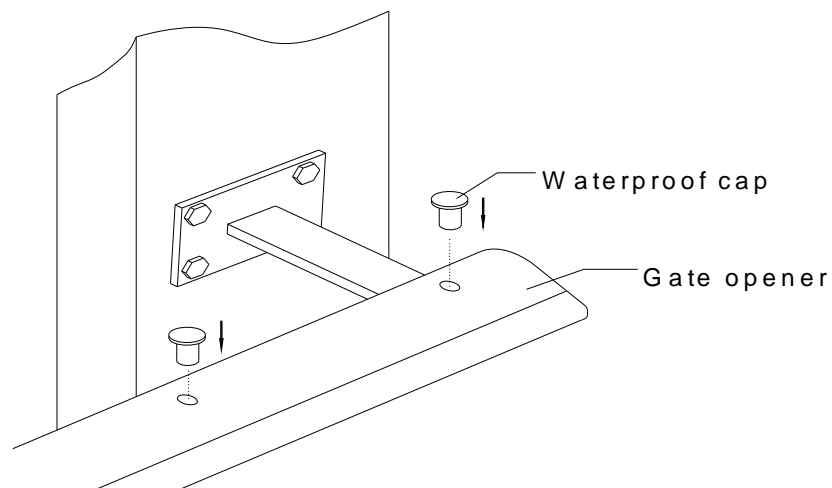
Fig. 9



Waterproof caps

There are 8 caps in total 4 to be used and 4 spares. When the gate opener is installed, the caps are used to cover the upper holes of the unit to avoid leakage. See Fig. 10.

Fig. 10



Retainer – Closed and Opened Positions

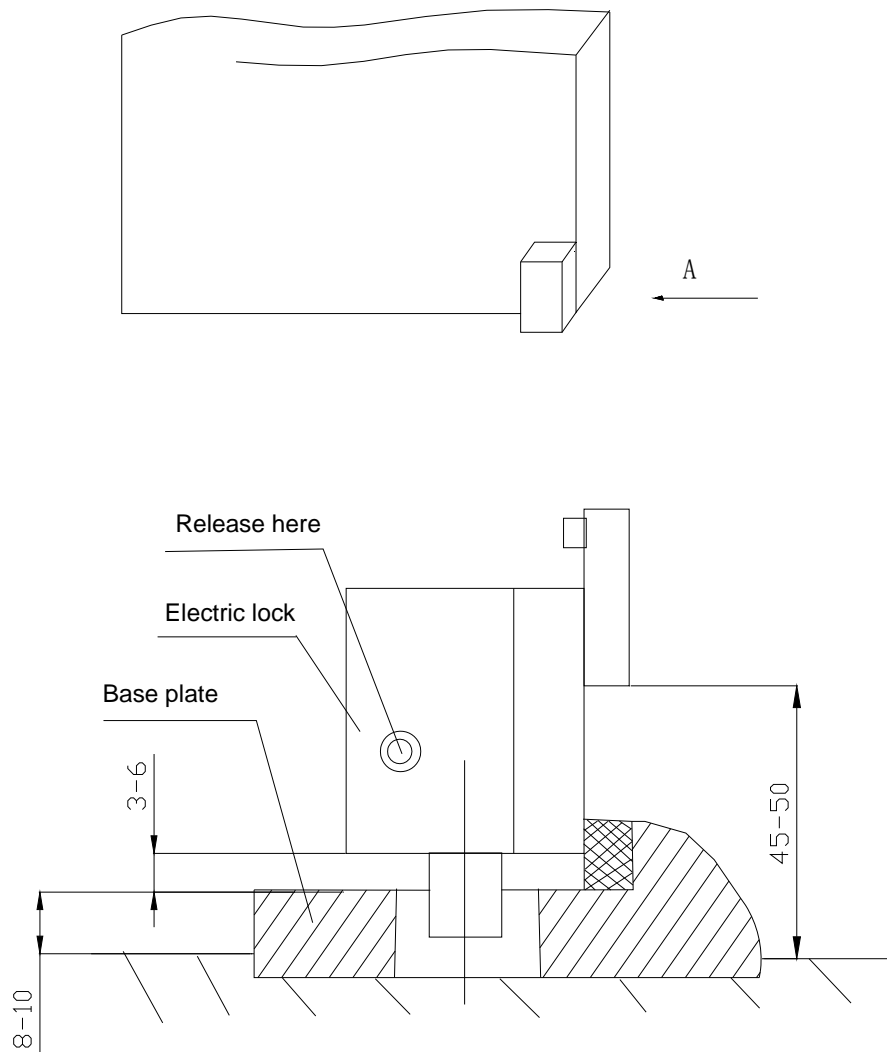
Close the gate section to its fully closed position; fix the retainer according to the position of the gate section. NOTE: Each section is completed separately. See Fig. 3.

If the maximum angle for installing is 105° , the retainer should be installed on the ground at approx. 100° . If the installing angle is 90° , the retainer should be installed at 90° . See Fig. 3.

Electric Lock

If the gate section is >5 feet (1.5 meters), it is recommended that you install the electric lock. Weld the steel plate of the lock to the gate, and then fix the lock. See Fig. 11 to determine the height of the plate.

Fig. 11



To install the base plate of the lock, fix the plate to the ground with 3 screws and make sure that the lock pin can fit tightly in the hole in the plate.

Adjustment

The pair of gate sections will not start simultaneously. The gate section with the lock will start to open earlier than the other gate section, so that both sections can be locked properly. A plate or tab

can be welded on the gate section with the lock so that when it closes, it will trap the gate section without the lock between itself and the center stop block, thus locking both gate sections.

Mechanical Maintenance

- Check the screw lubricant and add #1 grease regularly to both gate actuators.
- Regularly verify that the gate swings freely and add grease regularly.
- Keep opener clean at all times.

Electrical and Control Box Installation

1. Installation

(1) Install the cable

- In order to protect the wires, between the gate opener and the control box, armored cable, galvanized cable or PVC pipe must be set into the concrete when it is poured. Wires within the cable shall be located or protected so that no damage can result from contact with any rough or sharp part. The diameter of the cable should be more than 20mm, the wire size inside the cable should be more than 1.0mm².

(2) Install the control box

- The control box circuit should be equipped with single-phase breaker (10A).
- Make sure that power is OFF before making any electrical connections.
- Open the cover of the control box, remove the control board, and fix the control box on the wall.
See Fig. 12
- Perform the wiring and replace the cover. (See table 1 and Fig.14)

Note: (1) we regard the gate with the electrical lock as No.1 gate, the other gate as No.2 gate. (2) If you want to use auto-close function, the gate opener must be equipped with the infrared device.

Fig. 12 mounting size

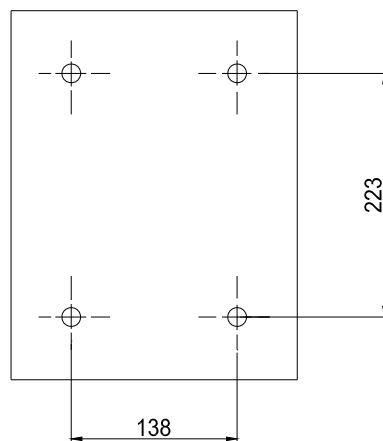


Table 1 wiring between control box and gate opener

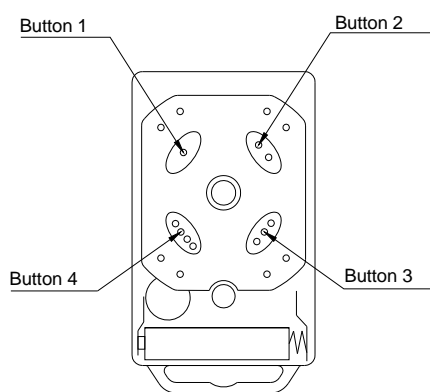
Position	Tab	Remark
21 (Terminal X12)	L	Connect live wire
21 (Terminal X12)	N	Connect neutral wire
21 (Terminal X12)	E	Connect ground wire
19 (Terminal X11)	U1	Connect No.1 motor COM/U
19 (Terminal X11)	V1	Connect No.1 motor V
19 (Terminal X11)	W1	Connect No.1 motor W
19 (Terminal X11)	C1, C1	Connect No.1 motor capacitor
18 (Terminal X10)	U2	Connect No.2 motor COM/U
18 (Terminal X10)	V2	Connect No.2 motor V
18 (Terminal X10)	W2	Connect No.2 motor W
18 (Terminal X10)	C2, C2	Connect No.2 motor capacitor
17 (Terminal X9)	LAMP	Connect alarm lamp
16 (Terminal X8)	LOCK	Connect electronic lock

(3) Install the External Keypad/Button Switch

The K207A is equipped with an interface for an external button switch or keypad. To install the keypad attach two wires of your keypad to the O/S/C terminal. The keypad will function in single channel mode. For three-button switch installation, use the terminals for multi-channel mode. Three-button mode: The port 'GND' is the common port, the port 'OP' is used to open the gate, 'CL' is used to close the gate, and 'ST' is used to stop the gate. Single-button mode: connect two wires of button switch to 'O/S/C' (see Fig.14 terminal X7 No.15) of control board.

(4) Safe guard (Infrared device)

If the infrared beam is broken during closing, the gates will reverse and open immediately. During opening, the beeper will ring. The control box is not factory equipped with an infrared device. Connect signal wire of infrared device to 'IR' (see Fig. 14 terminal X6, No.14), connect common wire (i.e. 'power supply -') of infrared device to 'GND' (terminal X6, No.14), and connect 'power supply +' of infrared device to '12V' (terminal X6, No.14).

2. Adjustment**Fig. 13**

(1) Learn / erase remote controls

Adding extra remote controls (Learn): Press red button on the control board (see Fig.14 No.12), then the 'LED' (see Fig. 14 No.11) will be on, it will turn off when you press any remote control button.

Press the same button, the 'LED' will flash at 2Hz frequency and then turn off; this indicates the learning process is finished. If it fails to set, the 'LED' will turn off automatically after flashing for 1 second, you should follow the steps above to reset.

Up to 25 remote controls may be used.

To erase all remote controls: press and hold the red button on the control board until 'LED' turns on and then turns off. This indicates that all the remote controls have been erased completely. You should reprogram the remote control if you want to control this opener (see Adding extra remote controls section).

(2) The remote control works in a single channel mode. It has four buttons. See Fig. 13. With each press of the remote control button which has been programmed, the gate will close, stop, open or stop cycle.

Warning: Notify the users that the gate is never to be operated unless it is in full view.

(3) Operation of the gates

The gates can be controlled by using remote control, single-button mode or three-button mode external button switch.

- Unlock the gate opener with the key. Push the gates to the opened (retracted) position manually. Lock the gate opener with the key
- Turn the power on.
- Close the gates by using remote control, single-button mode or three-button mode external button switch. The No.2 gate-leaf will close first, and then the No.1 gate-leaf with electrical lock will close after 3 seconds.
- The gates will stop at its closed position automatically, or you can stop the gates at its closed position by remote control, single-button mode or three-button mode external button switch. If gates do not stop or bind before stopping, verify that the stop is firmly in place, and the force adjustment knob for that gate on the control board is adjusted correctly. Adjust counter-clockwise to reduce binding.
- Open the gates by remote control, single-button mode or three-button mode external button switch. Firstly, the electrical lock will be opened, the No.1 gate-leaf with lock will open, and then the No.2 gate-leaf will open after 3 seconds.
- The gates will stop at its opened position automatically, or you can stop the gates at its opened position by remote control, single-button mode or three-button mode external button switch. If gates do not stop or bind before stopping, verify that the stop is firmly in place, and the force adjustment knob for that gate on the control board is adjusted correctly. Adjust counter-clockwise to reduce binding.
- Total working time: 24 seconds.

Note: The gate will return to open if press 'OPEN' button on the three-button mode external button switch during closing, the beeper will ring. We call this **Open priority**.

(4) Auto-reverse function

Turning the auto-reverse safety function: Rotating the 'FORCE ADJ' (see Fig.14 No.4 and No.5) with a screwdriver, No.4 force adjustor can be used to adjust No.1 gate-leaf which has lock, No.5 force adjustor can be used to adjust No.2 gate-leaf.

It is very important that you tune the safety reverse function on your gate opener. Power the control box if it is not already and verify that you have completed the remote programming exercise. When properly adjusted, the gate should close and stop when it hits the stop block without overly forcing the gate, and reverse if it strikes an object before it reaches its stop. An alarm should sound if it activates the auto reverse. Use a screw driver to rotate the Force Adj. knob. Rotating clockwise will increase the resistance needed to trip the safety reverse function. Rotating counter-clockwise will decrease the resistance. If the gate does not move when activated, or auto reverses without striking an obstacle, then the resistance setting may be too little. If the gate does not stop when an obstruction is placed in its path, then the setting may be too high.

(5) Auto-close function

Turn on the fourth dip-switch (See Fig.14 No.13) to ON position, the gates will stay open for 30 ± 3 seconds before automatically closing. Factory preset: the fourth dip-switch is in the OFF position, i.e. the auto-close function is shut off. An Infrared device is required to be installed for safety if the auto-close feature is enabled.

(6) Safe guard (Infrared device)

If infrared beam is broken during closing, the gates will reverse and open immediately.

During opening, the beeper will ring. The control box is not factory equipped with an infrared device.

(7) Control board diagram see Fig.14.

Fig.14 control board diagram

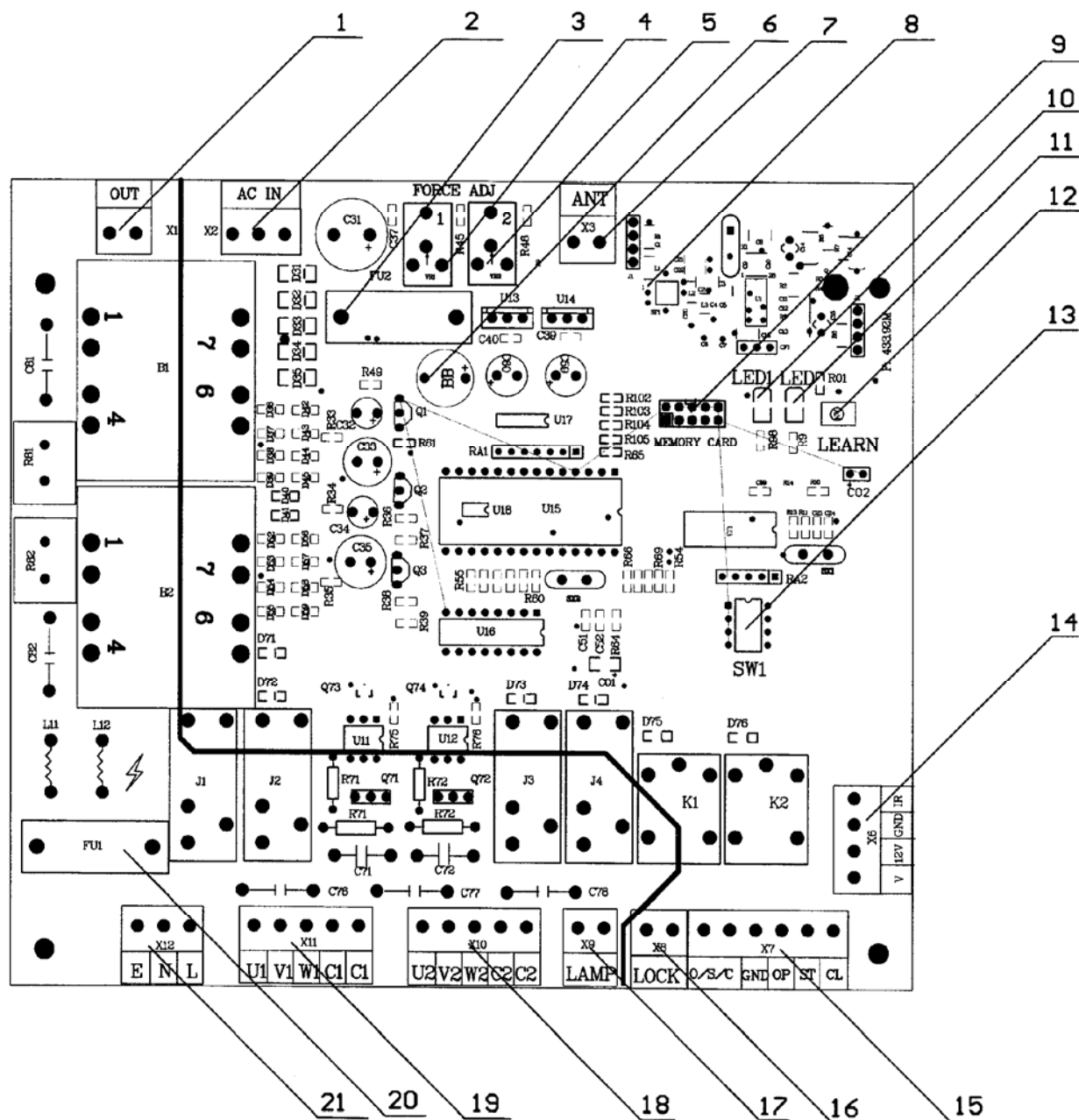


Table 2 wiring notes of control board

Position	Function	Remark
1	Transformer input	AC220V
2	Transformer output	AC12V
3	Fuse	5×20 2A
4	Force adjustor (for No.1 gate-leaf with electrical lock)	The resistance may be increased or decreased by rotating clockwise or anticlockwise.
5	Force adjustor (for No.2 gate-leaf)	The resistance may be increased or decreased by rotating clockwise or anticlockwise.
6	Beeper	12V
7	Antenna	Impedance: 50 Ω
8	Receiver panel	Receive signals
9	Memory card	It can be unplugged, it is used to store signals.
10	Power indicator light (LED1)	1206 green
11	Indicator light (LED)	1206 red
12	Learn button	6×6 red
13	Dip-switch	Set auto-close function
14	External device interface	Connect infrared device
15	External button switch/keypad interface	Connect external button switch/keypad
16	Electrical lock interface	DC12V
17	Alarm lamp interface	AC220V
18	Motor and Capacitor interface	Connect No 2 motor
19	Motor and Capacitor interface	Connect No 1 motor
20	Fuse	5×20 10A
21	Power supply	AC220V 50Hz

3. Troubleshooting (see Table 3)**Table 3 Troubleshooting**

Symptoms	Possible cause	Remedy
Gate will not open or close	(1) Power is OFF. (2) The gate is obstructed. (3) Force Adj. is set too low.	(1) Make sure that power is ON. (2) Remove obstructions. (3) Rotate force adjustment knob clockwise
Gate fails to reverse.	(1) The 'FORCE ADJ' is adjusted too high.	(1) Adjust 'FORCE ADJ' anticlockwise to decrease force.
Gate begins to close, then reverses.	(1) The 'FORCE ADJ' is adjusted too low. (2) The gate is obstructed.	(1) Adjust 'FORCE ADJ' clockwise to increase force. (2) Remove obstructions.
Remote control does not work	(1) The indicator light of remote control does not light. (2) Remote control is not suitable for receiver. (3) Receiver panel.	(1) Battery level may be low, replace the battery inside the remote control. (2) After making sure the codes are correct, erase remote controls and then re-program the remote control. (3) Check the receiver panel, make sure it is plugged in at the control board.
Gate running direction is not correct, or gates run in different directions.	(1) Wiring is incorrect.	(1) Please change wires "V1 and W1" or "V2 and W2". If the wiring between two gates is wrong and the gates cannot work, please check the wiring between "U1, V1, W1" and "U2, V2, W2".