


POWERTECH

Best Quality
GATE OPENERS
 The strongest solution
 for swing gates

Powertech Electronics Inc. (Taiwan)



DESIGNED FOR RESIDENTIAL APPLICATION

KIT PW320/PW330 SWING GATE OPENERS USER MANUAL

PW320/PW330 electro-mechanical swing gate operators are designed for residential application. Stylish appearance of the gear motors with innovative design of motor release by specialized key in case of power failure. The equipment of the hall sensor imbedded in the gear motor provides intelligent operation of the gate movement. Over-current function with adjustable torque setting provides various choices for the gate installation.


PW320
 Gear motors

PW330
 Gear motors

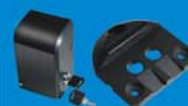
PC200
 Control box

PF-1
 Flashing light

PH-1
 Photocells

PR-1
 Transmitter

PKS-1
 Key Selector

PPB-1
 Push Button

PEL-1
 Electric Latch

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1 Product Description

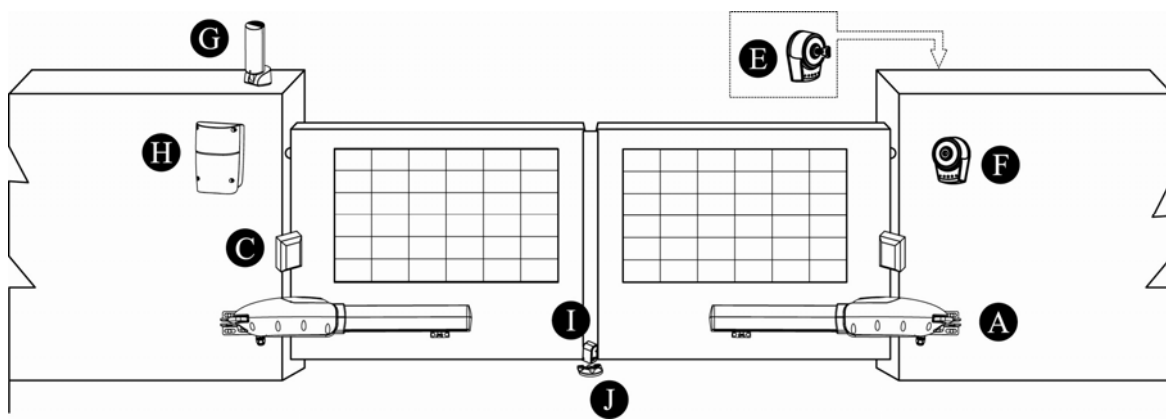
1.1 Applications

PW320/PW330 is applied for residential automation of single or dual leaf gate. PW320/PW330 has to be operated with electricity and it's forbidden to be operated by back-up batteries for normal use. Back-up batteries are only allowed for emergent operation when there is a power failure, and the gear motors can be released by special keys to move the gate manually.

1.2 Description of the Automation

The following diagram of PW320/PW330 typical installation describes some terms and accessories of a gate automation system:

Figure 1



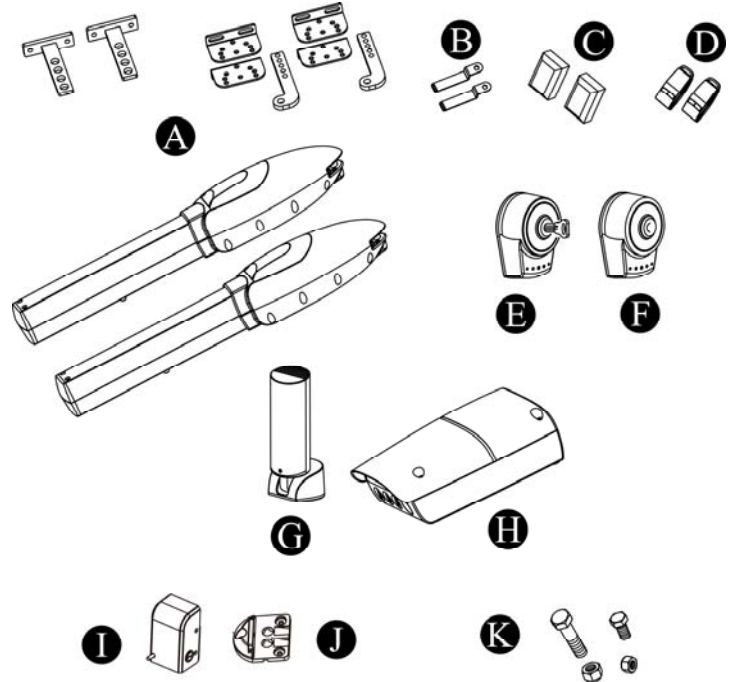
1.3 Description of Devices

PW320/PW330 includes the accessories shown in **Figure 2**. Please check the accessories the same as the package provided.

Attention: Some accessories of PW320/PW330 are not included due to local regulations or customized order.

- A) 2 PW320/PW330 electromechanical gear motors with mounting brackets.
- B) 2 release keys.
- C) 1 pair of PH-1 photocells.(one TX and one RX)
- D) 2 PR-1 radio transmitters.
- E) 1 PKS-1 key selector with two keys.
- F) 1 PPB-1 push button switch.
- G) 1 PF-1 warning light with incorporated aerial.
- H) 1 PC200 control box
- I) 1 PEL-1 electric latch.
- J) 1 PS-1 stopper.
- K) Various small parts: screws, nuts, etc. See Tables 1, 2, 3, 4, 5, 6.

Figure 2



1.3.1 PW320/PW330 Electromechanical Gear motors

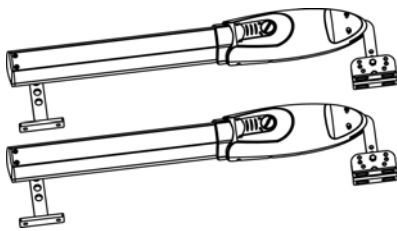
PW320/PW330 consists of a worm screw reduction gear and a 24V direct current motor. The gear motor could be released manually by special release keys when there is a power failure.

The gear motor is installed with three mounting brackets (one at the front and two at the rear) and one adjustable stop (fix on the teeth to adjust the opening and closing stroke) that provide various choices for the installation.

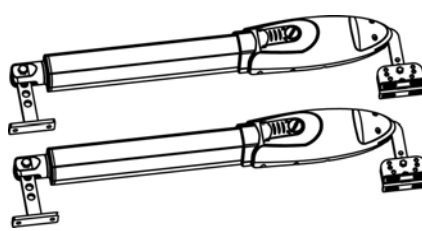
Table 1: List of small parts	PW320	PW330
Front plates	2pcs	2pcs
Rear plates	2pcs	2pcs
Mounting brackets	4pcs	4pcs
M8*25L hex-head screws	4pcs	4pcs
M8 self-locking nuts	4pcs	4pcs
M12 self-locking nuts	2pcs	4pcs
Release Keys	2pcs	2pcs

Figure 3

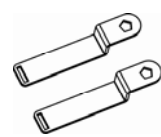
1)PW320



2)PW330



3)Release Key



1.3.2 PC200 Control Box

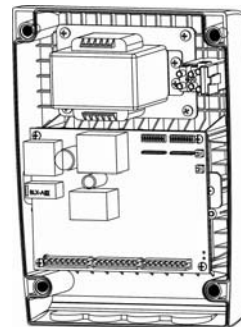
PC200 control box consists of one control panel with incorporated receiver, one transformer and two back-up batteries.

PC200 provides the complete automation of the gear motors and other accessories of PW320/PW330 kit.

To connect separate terminals on the control panel and activate the gear motors and other accessories, the installation manual has to be carefully read beforehand.

Table 2: List of small parts for PC200	Quantity
5*30 Screw	4pcs
Nylon screw anchor	4pcs

Figure 4

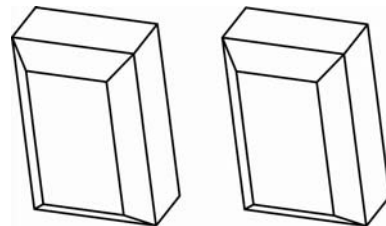


1.3.3 PH-1 Photocells

The pair of PH-1 photocells has to be installed on the wall and connected to the control panel. The function of the photocells is to detect the obstacles found on the optical axis between the transmitter (TX) and the receiver (RX).

Table 3: List of small parts for PH-1
Refer to the installation manual of PH-1

Figure 5



1.3.4 PKS-1 Key Selector

The PKS-1 key selector is used for opening the gate outdoors without the radio transmitter. PKS-1 key selector is supplied with two keys

Figure 6

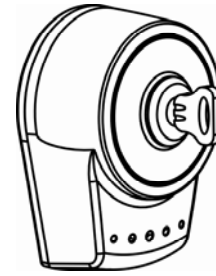


Table 4: List of small parts for PKS-1	Quantity
3*20 Screw	3pcs

1.3.5 PPB-1 Push Button

The PPB-1 push button is used for opening the gate indoors without the radio transmitter.

Figure 7

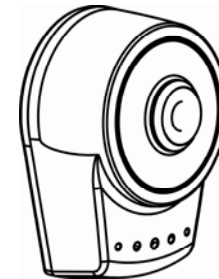


Table 5: List of small parts for PPB-1	Quantity
3*20 Screw	3pcs

1.3.6 PF-1 Flashing Light with incorporated Antenna

PF-1 flashing light is controlled by PC200 control box and blinks when the gate is moving. There is an antenna inside the flashing light to reinforce the transmission of the radio receiver.

Figure 8

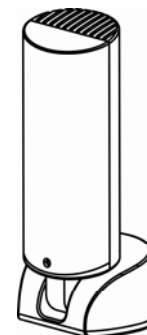


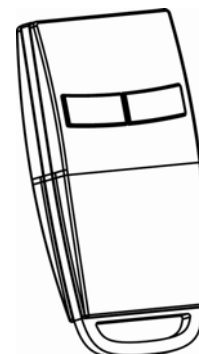
Table 6: List of small parts for PF-1	Quantity
3*20 Screw	3pcs

1.3.7 PR-1 Radio Transmitters

PR-1 radio transmitter is used for the remote control of the gate movement.

Figure 9

There are two buttons on the transmitters for operating one leaf or two leaves opening and closing.



2. Installation:

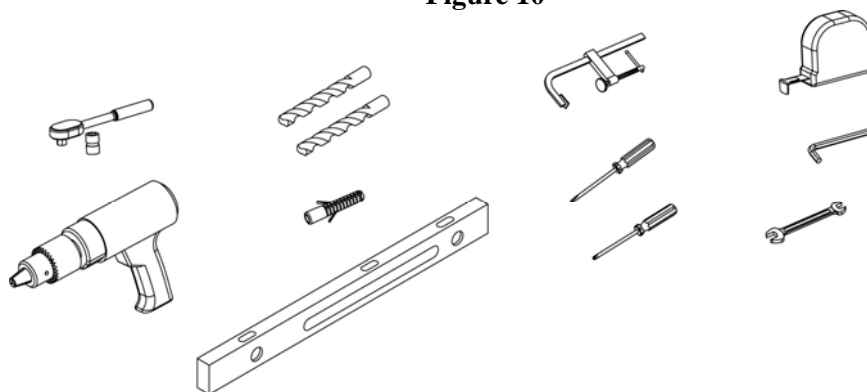
2.1.1 Notes of Motors in operation

The PW320/PW330 gate openers are applicable to per leaf of 3.0/4.0 meters in width and 250/350 kg in weight which can be opened up to 120 degrees primarily for residential use; where the performance shall be influenced by the factors such as gate dimension, weight and climate that the driven torque is necessarily to be adjusted properly.

2.1.2 Tools in installing

Please make sure all tools and cables are ready and conform to the industrial safety standard before installation. Please refer to **Figure 10**.

Figure 10

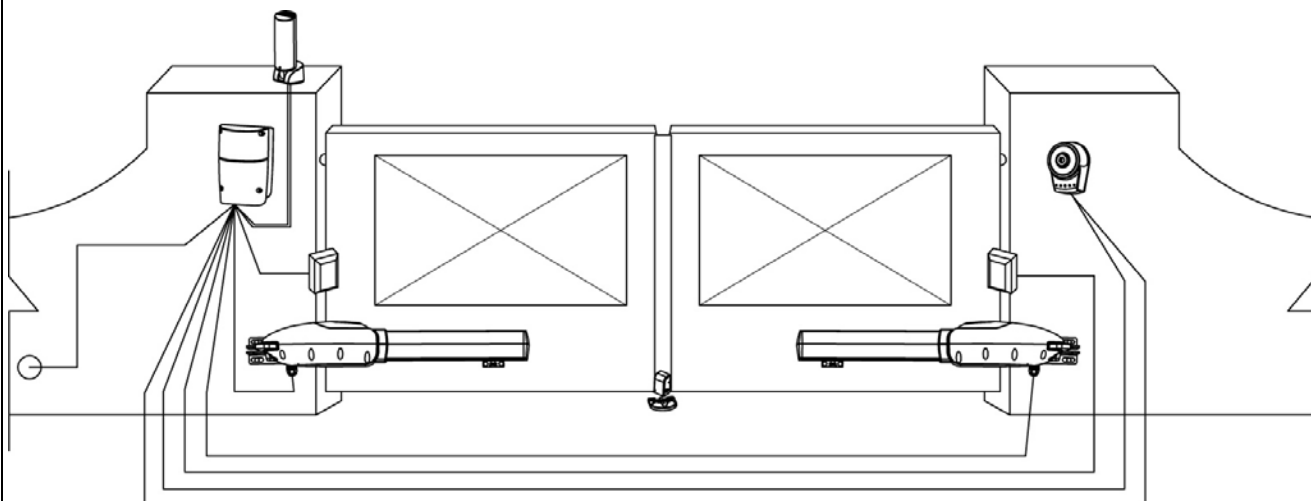


2.1.3 Motors, Components and its installation in illustration

The installation procedure of PW320/PW330 may be changed due to various accessories and quantities installed. The basic wiring diagram is shown in **Figure 11**.

No wiring cables for accessories are supplied with KIT PW320/PW330.

Figure 11



2.2 Power connection

PW320/PW330 comes with two power cables of 2m and 7m long, which requires very low voltage that no professionally trained personnel is required in installation; however, the users are advised to read the installation manual carefully before going for it. After getting to know all accessories and their positions, suggest start from cable conduit arrangement to prevent the cables from being broken or damaged.

2.2.1 Notes for power connection

1. The installation of power supply cable to the motor should be carried out by a qualified professional electrician.
2. The power supply cable of the motor should be equipped with short circuit protection and leakage protection. Please make sure to shut off the power before going installation or maintenance.

2.3 Installation

2.3.1 Preparation for Motor Installation

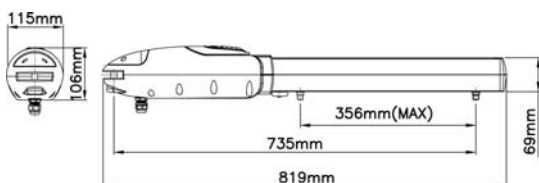
PW320/PW330 is not applicable to a gate which is inefficient or unsafe, neither to solve the defects due to incorrect installation or poor maintenance.

Check the following items before going for installation:

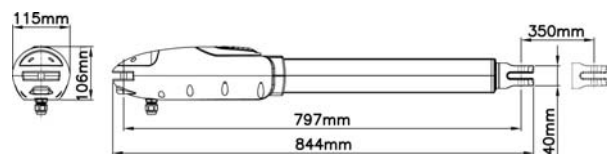
1. Make sure the weight and dimensions of the gate conform to the operation range of PW320/PW330. Don't use PW320/PW330 if the gate specifications do not meet the requirement.
2. Make sure the gate structure conform to the criteria of automatic operation and force regulations.
3. Make sure there is no serious friction existing in the opening or closing travel of the gate leaves.
4. Make sure the gate is in horizontal level that the gate will not move aside at any position.
5. Make sure the gate can bear the impact of the motor torque when it is installed on any hole of the bracket which the surface is sufficiently sturdy.
6. Make sure the photo sensor is installed on the flat surface to ensure the two ends of receiving and transmitting corresponded to each other.
7. Check the dimensions of the motors as below.

Figure 12

(1) Dimension of PW320



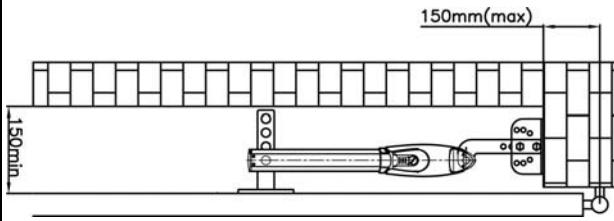
(2) Dimension of PW330



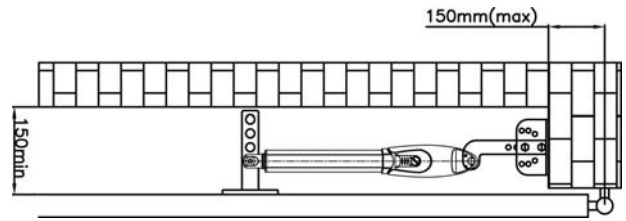
8. Make sure to leave enough space when the gate is opening.

Figure 13

(1)PW320



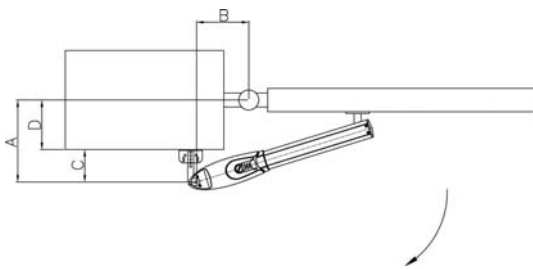
(2)PW330



9. Using the leaf opening angle as criteria to make sure all criteria in Figure 14 can be met.

Figure 14

(1) PW320



(2) PW330

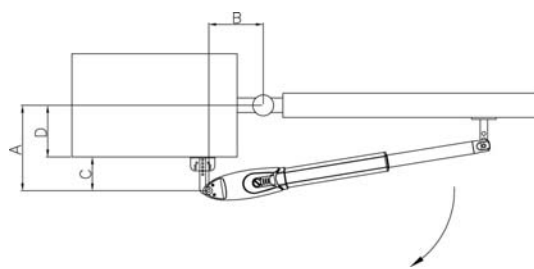
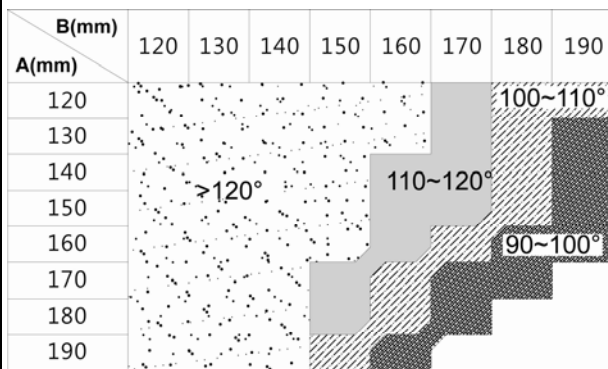


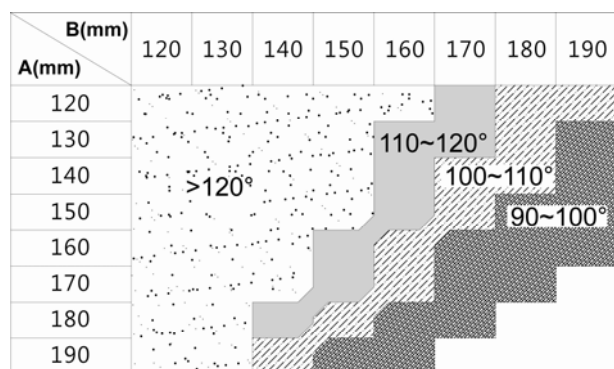
Figure 15

(1) PW320



Model:PW320

(2) PW330



Model:PW330

10. "C" value is 139mm.

11. "D" can be measured from the gate easily.

12. "A" = "C" + "D"

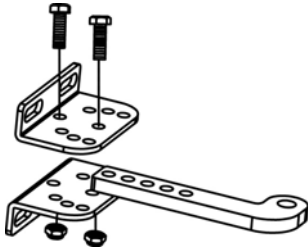
13. The value of "B" can be calculated from the value of "A" and the leaves opening angle. Ex. If "A"=160mm with the leaves opening angle of 100 degrees, then the value of "B" is approximate 190mm.

**Please make sure "B" and "A" are similar or the same in value that the leaves can be operated smoothly, also to reduce the burden of the motor.

2.3.2 Installation of the Gear Motors

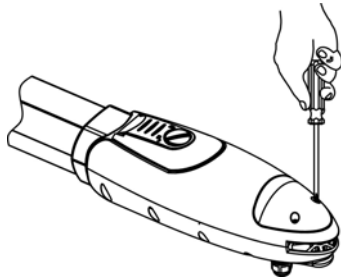
1. Choose the correct dimensions of the motors and position to be installed.
2. Check if the mounting surface the brackets to be installed is smooth, vertical and rigid.
3. Arrange the cable conduit for power supply cable of the motors.
4. In order to obtain the optimal supporting from the rear plate, please assemble two brackets and rear metal plate according to **Figure 16**.

Figure 16



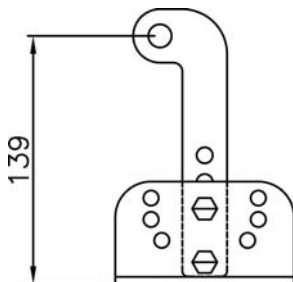
5. Loosen the two screws and remove the back cover of the motor as shown in **Figure 17**.

Figure 17



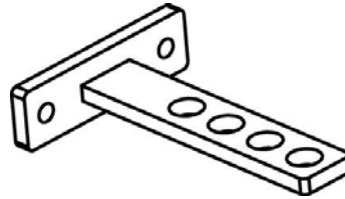
6. Place the leaves at the closed position.
7. Refer to the distance of "B" in Figure 14, place the J-shape plate in the correct position on the mounting surface. Inspect if the distance is proper as shown in Figure 19i.e. the position the front plate of the motor to be installed.
8. Place two brackets on the surface to be installed and mark the drilling points, then drill minimum diameter of 8mm holes by four on the mounting surface to be installed and fasten up the brackets with screws and washer.

Figure 18



9. Please make sure the plate is installed completely in horizon.

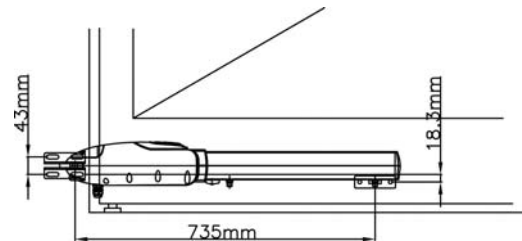
Figure 19



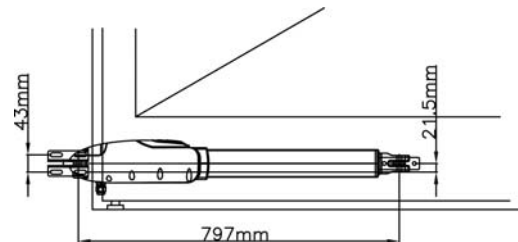
10. Refer to **Figure 20**, the distance between front plate of the motor and rear bracket is 735mm (PW320) / 797mm (PW330), the difference in height is 18.3mm (PW320) / 21.5mm (PW330).

Figure 20

- (1) PW320



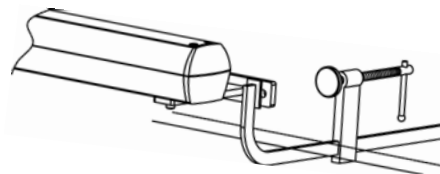
- (2) PW330



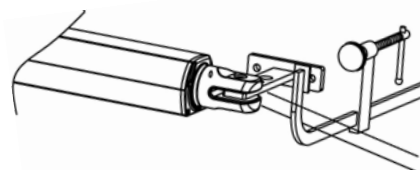
11. Clamp and fix the motor front plate on the door temporarily.

Figure 21

- (1) PW320

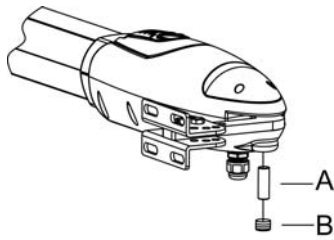


- (2) PW330



12. Lift up the motor and insert the screws into the front plate.
13. Lift the motor overhead and push the gate to the end until the screw holes of the motor end matches the holes on the J-shape plate. Fasten the motor to the J-shape plate with the screw (A) and nut (B) as shown in **Figure 22**.

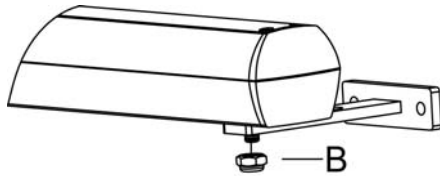
Figure 22



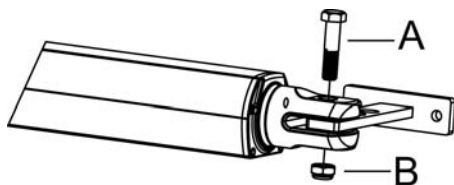
14. Fasten the screw nut tightly and loosen for half round for motor supporting in rotating.
15. Fasten the motor front end to the front plate with screw (A) and nut (B) tightly. Fully tighten the screw.

Figure 23

- (1) PW320

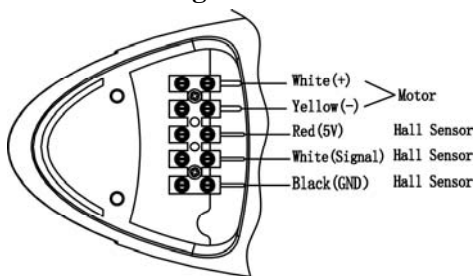


- (2) PW330



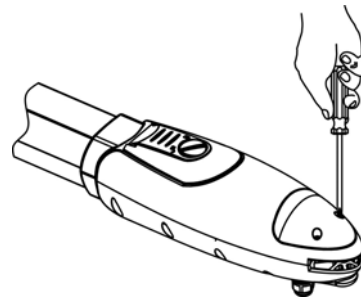
16. Use appropriate release key to release the gear motor.
17. Try to push the released gate and make sure the motor can be manually moved easily.
18. Make sure the motor front plate can be fastened on the gate to be installed permanently.
19. Use the appropriate release key to fasten the gear motor again.
20. Loosen the plastic screw nut under the power cable of the motor end, and penetrate the power cable through the nut and screw it up.
21. Connect the motor power cable as shown in **Figure 24**.

Figure 24



22. Close the gear motor cover by tightening the two screws as shown in **Figure 25**.

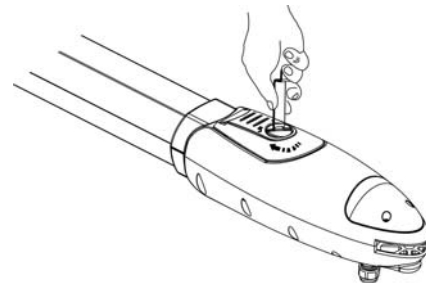
Figure 25



23. Gear Motor Release

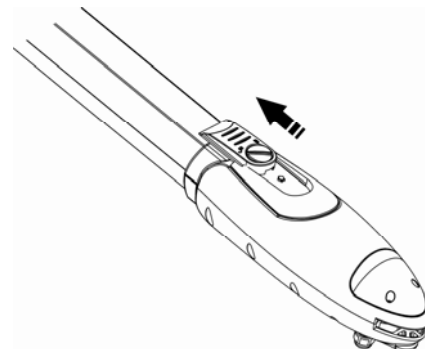
- 1) Turn the round plate on the release part to "OPEN" position. See **Figure 26**.

Figure 26



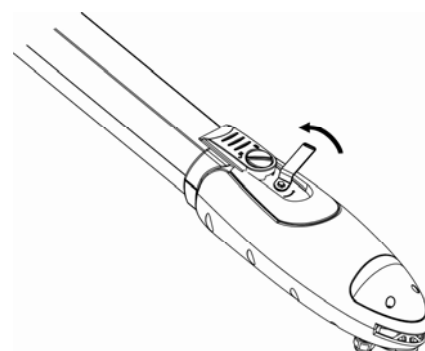
- 2) Push out the release part to the end. See **Figure 27**.

Figure 27



- 3) Use the release key to turn the pin clockwise or anti-clockwise to the end. See **Figure 28**.

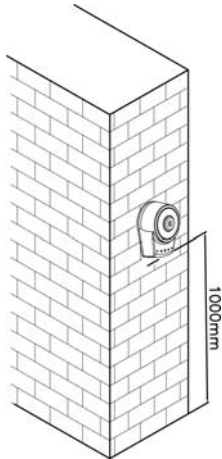
Figure 28



2.3.3 PKS-1 Key-Selector

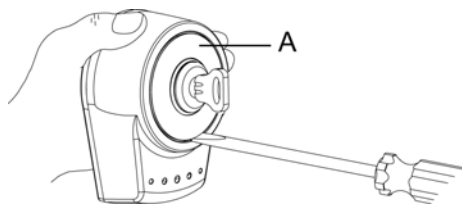
1. PKS-1 key selector is installed outside and close to the gate at the height of about 100cm, so that it could be used by most people. Decide the installation position of PKS-1 first. See **Figure 2.3.3 (1)**.

Figure 2.3.3 (1)



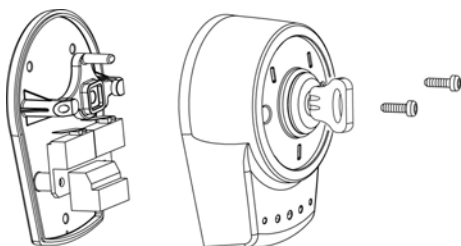
2. Remove the round cover (A) by prizing it out with the tip of the screwdriver. See **Figure 2.3.3 (2)**.

Figure 2.3.3 (2)



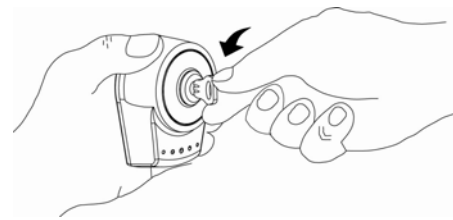
3. Unscrew the two screws beside the lock body. See **Figure 2.3.3 (3)**.

Figure 2.3.3 (3)



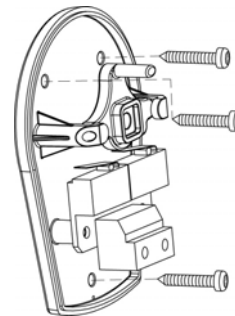
4. Turn the key and separate the bottom of the shell with the lock body. See **Figure 2.3.3 (4)**.

Figure 2.3.3 (4)



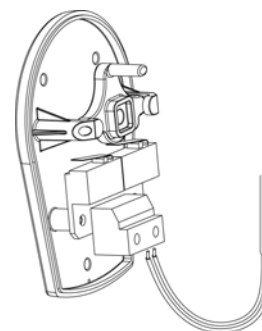
5. Breach the three holes at the bottom and mark the points by the holes as reference.
6. Drill the holes in the wall and fix the bottom to the wall by three screws. See **Figure 2.3.3 (5)**.

Figure 2.3.3 (5)



7. Connect the electric wires to the terminals as shown in Figure 2.3.3(6), and it's not required to distinguish any polarity. The terminals can be removed for connecting the wires easily.

Figure 2.3.3 (6)

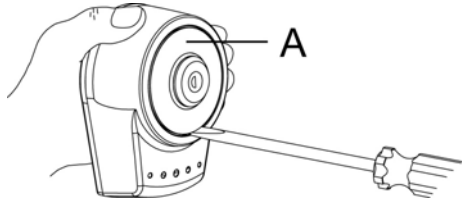


8. Turn the key and insert the shell on the bottom. Turn the key back to the center position and the shell will be fixed to the bottom.
9. Tighten the lock body with the two screws and insert the round cover by pressing it to attach to the whole unit.

2.3.4 PPB-1 Push Button

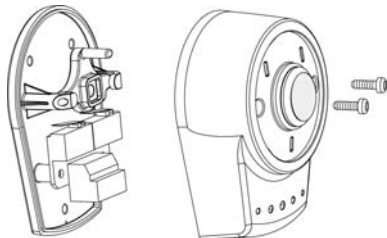
1. PPB-1 push button is installed indoors at the height of about 100cm, so that it could be used by most people.
2. Remove the round cover (A) by prizing it out with the tip of the screwdriver. See **Figure 2.3.4 (1)**.

Figure 2.3.4 (1)



3. Unscrew the two screws beside the button.

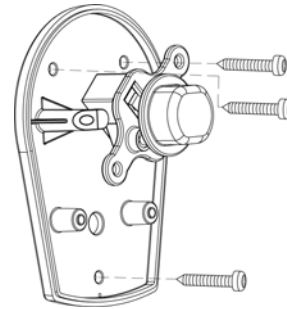
Figure 2.3.4 (2)



4. Separate the upper shell with the bottom. See **Figure 2.3.4 (2)**.
5. Breach the three holes at the bottom and mark the points by the holes as reference.

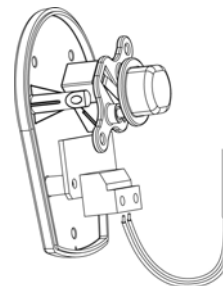
6. Drill the holes in the wall and fix the bottom to the wall by three screws. See **Figure 2.3.4 (3)**.

Figure 2.3.4 (3)



7. Connect the electric wires to the terminals as shown in **Figure 2.3.4 (4)**, and it's not required to distinguish any polarity. The terminals can be removed for connecting the wires easily.

Figure 2.3.4 (4)

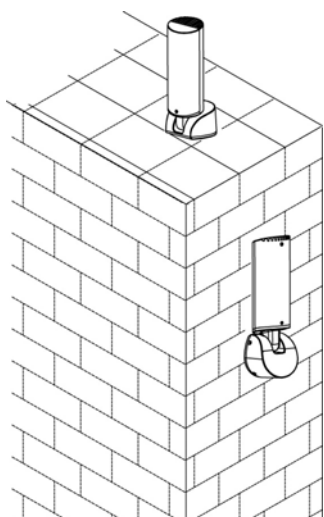


8. Attach the upper shell to the bottom and screw them up by two screws and insert the round cover by pressing it to attach to the whole unit.

2.3.5 PF-1 Flashing Light

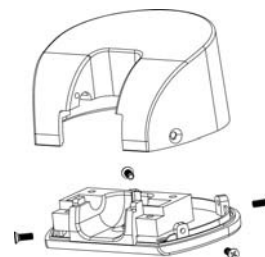
1. Decide the installation position of the flashing light. The flashing light has to be installed near the gate and easy to be seen by users and passersby. The flashing light can be installed horizontally or vertically. See **Figure 2.3.5 (1)**.

Figure 2.3.5 (1)



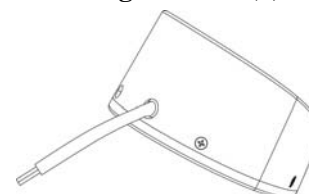
2. Unscrew the four screws on the light base and separate the base with the bottom as shown in **Figure 2.3.5 (2)**.

Figure 2.3.5 (2)



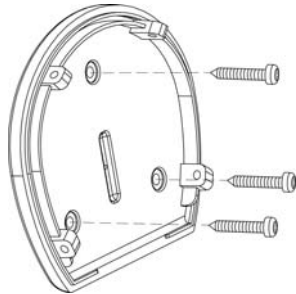
3. Connect the wires and penetrate the wires into the hole of the base.

Figure 2.3.5 (3)



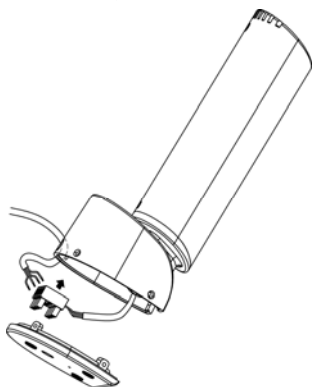
4. Drill the holes in the wall and fix the bottom to the wall by three screws.

Figure 2.3.5 (4)



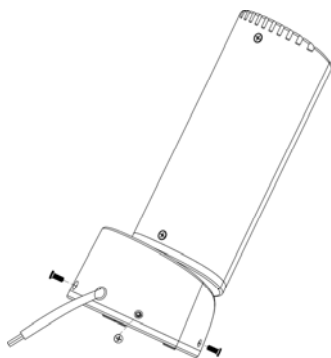
5. Connect the four wires of the light and the antenna to the PCB terminals and place the wires into the conduit if necessary.

Figure 2.3.5 (5)



6. Tighten the four screws back on the light base.

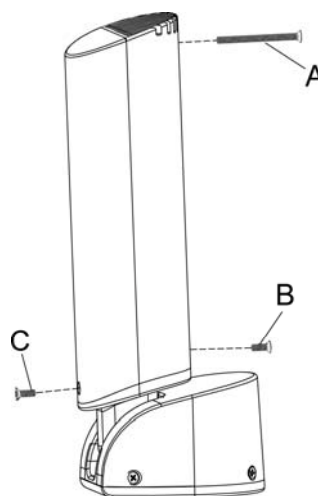
Figure 2.3.5 (6)



7. Replacing the bulb set. See **Figure 2.3.5 (7)**.

- 1) Unscrew the flashing light wires from the PCB terminals and make sure the power of the light is off.
- 2) Release the three screws (A) 、(B) 、(C) of the flashing light cover.
- 3) Separate the flashing light cover and replace the bulb set with a new one.
- 4) Tighten the three screws (A) 、(B) 、(C) of the flashing light cover.

Figure 2.3.5 (7)



2.3.6 PH-1 Photocells

Please refer to the installation manual in PH-1 box.

2.3.7 PC200 Control Box

1. Decide the installation position of PC200 control box first, it is suggested to be installed near the gate and should be protected from possible damage. Be aware of the motor cable length before deciding the installation position.
2. Remove the cover by unscrewing the four screws on the cover. See **Figure 2.3.7 (1)**.
3. Use a screwdriver to puncture the holes beneath the bottom of the control box. See **Figure 2.3.7 (2)**.

Figure 2.3.7 (1)

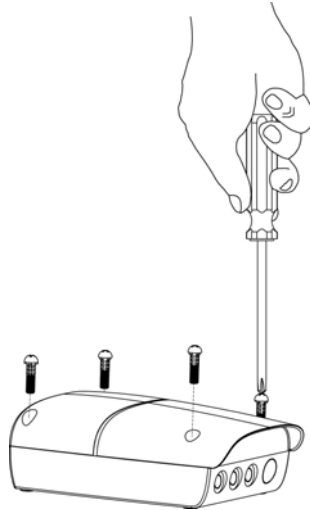
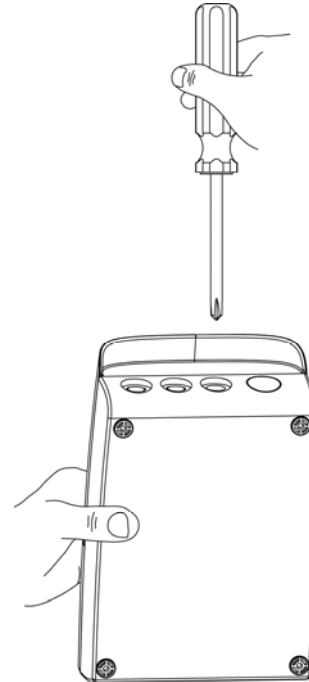


Figure 2.3.7 (2)

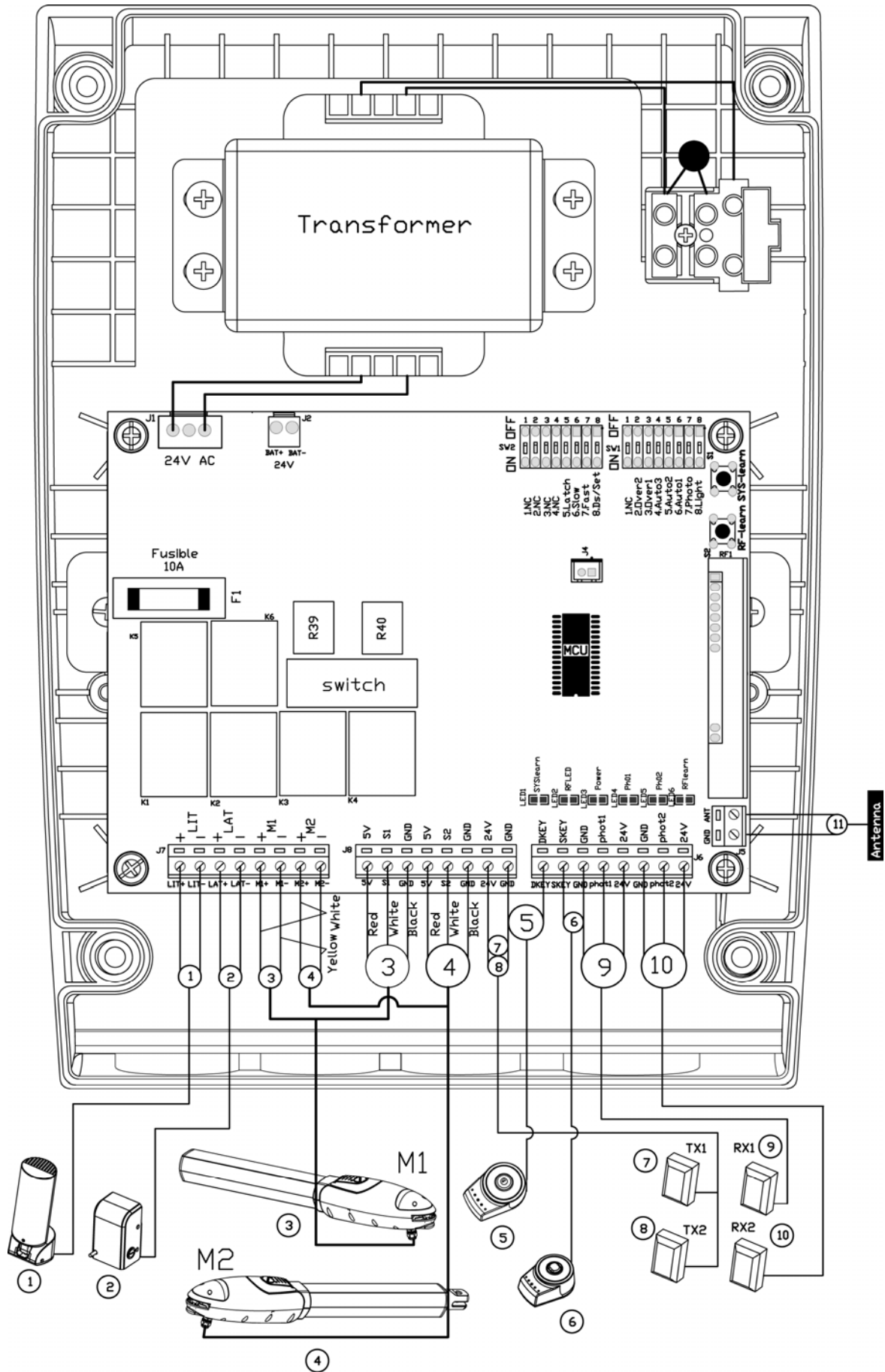


4. Wiring Connection:

Prepare all the wires of the accessories beforehand and connect the wires to the gear motors and accessories on the PCB as shown in **Figure 2.3.7 (3)**. All of the wiring connections of the accessories are not requested to distinguish the positive (+) and the negative (-) polarity.

- 1) **PF-1 Flashing light:** Connect the two wires from the flashing light to the terminal LIT (+) and LIT (-) on the PCB.
- 2) **PEL-1 Electric Latch:** Connect the two wires from the electric latch to the terminal LAT (+) and LAT (-) on the PCB.
- 3) **PKS-1 Key Selector:** Connect the two wires from the key selector to the terminal SKEY and GND on the PCB.
- 4) **PPB-1 Push Button:** Connect the two wires from the push button to the terminal DKEY and GND on the PCB.
- 5) **PH-1 Photocells:**
Remove the jump wire from the PCB terminals "Phot1 GND" and "Phot2 GND" before the wiring connection.
(A) See the installation manual in PH-1 box first and proceed with the following (B), (C) steps.
(B) TX: Connect the (1) and (2) terminals on the transmitter with the terminals GND and 24V on the PCB.
(C) RX: Connect the (1), (2) and NC terminals on the receiver with the terminals GND, 24V and Phot1 on the PCB.
- 6) **PW320/PW330 Gear Motors:** Refer to **Figure 2.3.7 (3)** and connect the wires separately to the terminals on the PCB.
M1: Connect the motor wires (+) and (-) to the terminals M1 (+) and M1 (-).
Connect the hall sensor wires red, white, and black to the terminals 5V, S1, and GND.
M2: Connect the motor wires (+) and (-) to the terminals M2 (+) and M2 (-).
Connect the hall sensor wires red, white, and black to the terminals 5V, S2, and GND.

Figure 2.3.7 (3)



3. Dip Switch Setting

Before powering on the control unit, the following dip switch setting must be decided by gate weight and installation environment first. See **Figure 3.1 (1)**

Figure 3.1 (1)



3.1 SW1 Dip Switch Setting

3.1.1 Over-Current Adjustment

OVER1	OVER2	Current (Amp)
Dip Switch 3 OFF	Dip Switch 2 OFF	2A
Dip Switch 3 ON	Dip Switch 2 OFF	3A
Dip Switch 3 OFF	Dip Switch 2 ON	4A
Dip Switch 3 ON	Dip Switch 2 ON	5A

3.1.2 Gate Auto-close Adjustment

Auto-close 1	Auto-close 2	Auto-close 3	Effect
Dip switch 6 OFF	Dip Switch 5 OFF	Dip Switch 4 OFF	No auto-close
Dip switch 6 ON	Dip Switch 5 OFF	Dip Switch 4 OFF	3 sec.
Dip switch 6 OFF	Dip Switch 5 ON	Dip Switch 4 OFF	10 sec.
Dip switch 6 ON	Dip Switch 5 ON	Dip Switch 4 OFF	20 sec.
Dip switch 6 OFF	Dip Switch 5 OFF	Dip Switch 4 ON	40 sec.
Dip switch 6 ON	Dip Switch 5 OFF	Dip Switch 4 ON	60 sec.
Dip switch 6 OFF	Dip Switch 5 ON	Dip Switch 4 ON	120 sec.
Dip switch 6 ON	Dip Switch 5 ON	Dip Switch 4 ON	300 sec.

Note: Auto-close mode activates when the gates move to the end position or stopped manually. If the transmitter, push button, or the key selector is activated before the auto-close counting, the gate will close immediately.

3.1.3 Photocells Adjustment (Dip 7)

ON: The gate will stop when encountering the obstacles during opening and closing phase.

OFF: The gate will stop when encountering the obstacles during closing phase.

3.1.4 Flashing Light Adjustment (Dip 8)

ON: The flashing light blinks 5 seconds before the gate moves.

OFF: The flashing light blinks and the gate moves simultaneously.

3.2 SW2 Dip Switch Setting

3.2.1 Electric Latch Adjustment (Dip 5)

ON: The electric latch functions when dip switch is set to “ON”.

OFF: The electric latch does not function when dip switch is set to “OFF”.

3.2.2 Slow Speed Adjustment of the Gear Motors (Dip 6)

ON: The speed is 70% output of the full speed.

OFF: The speed is 50% output of the full speed.

3.2.3 Fast Speed Adjustment of the Gear Motors (Dip 7)

ON: The speed is 100% output of the full speed.

OFF: The speed is 70% output of the full speed.

3.2.4 Single and Dual Gate Operation Adjustment (Dip 8)

ON: Dual Gates operation in system learning and normal operation.

OFF: Single Gate operation in system learning and normal operation.

3.3 LED Indication

LED1 System Learning: LED1 blinks once when single gate learning is completed. LED2 blinks twice when dual gate learning is completed.

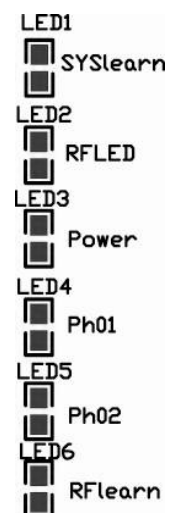
LED2 RF : If the switch of the transmitter, key selector, and the push button is activated, LED2 will be on.

LED3 Power-on : LED3 will be on when the 230VAC power is connected to AC terminal and the 24VAC transformer is connected to J1 and back-up batteries connected to J2.

LED4 Photocells 1 : LED4 will be on when the first pair of the photocells are activated.

LED5 Photocells 2 : LED5 will be on when the second pair of the photocells are activated.

LED6 RF Learning: LED6 will be on when S4 RF-learn button is pressed.



3.4 System Learning Process

Step1: Connect the master motor wires to M1 terminals and the slave motor wires to M2 terminals correctly. If only one gate is installed, the motor wires have to be connected to M1 terminals.

Step2: Press the system learning button S3 on the PCB and the press the button on the transmitter to choose single gate or dual gates operation.

In system learning mode, the gates will proceed with the following procedure.

(A) Dual Gates Mode: Slave Gate closes→Master Gate closes→Master Gate opens→Slave Gate opens→Slave Gate closes→Master Gate closes.

(B) Single Gate Mode: Master Gate closes→Master Gate opens→Master Gate closes.

Notes:

- (A) System learning fails and needs to be learned again when there is an unpredictable interruption occurs.
- (B) Once the system learning is completed, there is no need to proceed with the learning process again when there is a power failure.
- (C) The initial movement of the system learning is gate closing. If not, please change the motor wiring terminals positive (+) with negative (-).
- (D) The slave gate opens 3 seconds after the master gate opens and the master gate closes 3 seconds after the slave gate closes.

3.5 Transmitter Memorizing and Erasing Process

(A) Transmitter Memorizing: Press S4 button on the PCB and LED6 is “ON”, and press one of the buttons of the transmitter within 9 seconds after pressing S4 button.

(B) Transmitter Memory Erasing: Press S4 button on the PCB and hold it for ten seconds.

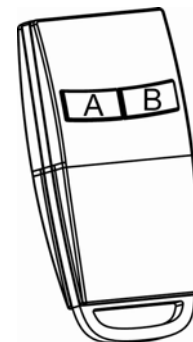
(C) One radio receiver can be memorized with 50pcs transmitters.

3.6 Single Gate Operation

In one leaf installation, press button “A” or “B” on the transmitter and single gate operation can be executed.

In two leaves installation, press button “B” on the transmitter and single gate operation can be executed.

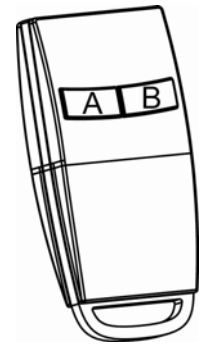
Figure 3.6 (1)



3.7 Dual Gates Operation

Press the button “A” on the transmitter for dual gates operation.

Figure 3.7 (1)



3.8 Gate moving logic

- (A) In gate opening phase: when the transmitter/push button/key selector is activated, the gate stops and closes when the transmitter/push button/key selector is reactivated.
- (B) In gate closing phase: when the transmitter/push button/key selector is activated, the gate stops and opens when the transmitter/push button/key selector is reactivated.
- (C) In opening or closing phase, the gate stops by obstacles and reverses for safety purpose.

4. Trouble Shooting

Overheated Back-up Batteries	Check the wiring connection of the batteries.
The gate doesn't move when pressing the button of the transmitter	<ol style="list-style-type: none"> 1. Check if LED4 is "ON". 2. Check if the voltage of the batteries is below 10.5V. 3. Check if LED1 is "ON". 4. Make sure all the wiring connections are firmly connected to the terminals on the PCB. 5. Make sure the fuse is workable.
The gate only moves a little distance when pressing the button of the transmitter.	Make sure the wiring connection of the hall sensor is firm.
The transmitting distance is too short	Make sure the connecting terminals of the Antenna is firm.
The gear motors run very slowly	Check the dip switch setting of the speed adjustment.
The Flashing light does not work	Check if the wiring connection of the flashing light is correct.
The leaves shall be closed instead of opening	Change the polarity connection of the positive (+) with the negative (-) of the gear motors.
The leaves suddenly stop during moving	<ol style="list-style-type: none"> 1. Check if the "RESET" socket is activated. 2. Make sure the wiring connection of the gear motors is firm. 3. Make sure the hall sensor wiring connection is firm. 4. The GND terminal of the photocells on the PCB must be short-circuited if no photocells installed. 5. Make sure the fuse is workable.
The leaves does not move or only move toward one direction	<ol style="list-style-type: none"> 1. Check if the "RESET" socket is activated. 2. Make sure the wiring connection of the gear motors is firm. 3. Make sure the hall sensor wiring connection is firm. 4. The GND terminal of the photocells on the PCB must be short-circuited if no photocells installed.
The leaves reverse when opening and closing to the end	<ol style="list-style-type: none"> 1. Make sure the hall sensor wiring connection is firm. 2. Activate the "RESET" socket or cut off the AC input power, and cut off the batteries output for five seconds, then power the whole unit by connecting the AC and battery terminals.
The master gate closes to the end first and the slave gate stops, the flashing light blinks fast for five seconds.	Cut off the AC input power and the output of the batteries. Release the master gate and slave gate manually, then open the master to the end and close the slave gate to the end by hand, then power the whole unit by connecting the AC and battery terminals.
The gear motors does not run and the relay is noisy when operating the gate opening and closing	Check if the fuse is burned.

5. Technical Characteristics

5.1 PW320

Motor	24Vdc motor with mechanical release
Gear type	Worm gear
Peak thrust	3000N
Nominal thrust	2500N
Stroke length	356mm with mechanical stop/400mm without mechanical stop.
Power supply	24Vdc
Nominal input power	2A
Maximum operating current	5.5A for maximum 10 seconds.
Maximum gate weight	250 kg per leaf
Maximum gate length	3 meters
Duty cycle	20%
Operating Temperature	-20°C ~+50°C
Dimension	819mm * 115mm * 106mm
Weight	6.0kg

5.2 PW330

Motor	24Vdc motor with mechanical release
Gear type	Worm gear
Peak thrust	3500N
Nominal thrust	3000N
Stroke length	350mm
Power supply	24Vdc
Nominal input power	2A
Maximum operating current	5.5A for maximum 10 seconds.
Maximum gate weight	350 kg per leaf
Maximum gate length	4 meters
Duty cycle	20%
Operating Temperature	-20°C ~+50°C
Dimension	844mm * 115mm * 106mm
Weight	6.25kg

5.3 PC200 Control Box

Application	For PW320/PW330 power supply
Main power supply	230Vac/110Vac, 60Hz
Back-up battery	2pcs for emergency operation
Transformer	6A, 24V
Receiver board	433.92MHz; 50 transmitters memory
Installation	Wall mounted vertically
Operating Temperature	-20°C~+50°C
Dimension	275mm * 195mm * 102mm

5.4 PH-1 Photocells

Detection type	Through beam
Operating distance	30 meters
Response time	100ms
Input voltage	AC/DC 12~24V
Operating Temperature	-20°C~+60°C
Protection class	IP66
Dimension	59mm * 87mm * 38mm

5.5 PKS-1 Key Selector

Application	For outdoor use
Installation	Wall mounted vertically
Operating Temperature	-20°C~+50°C
Dimension	85mm*60.5mm*40.5mm

5.6 PPB-1 Push Button

Application	For indoor use
Installation	Wall mounted vertically
Operating Temperature	-20°C~+50°C
Dimension	85mm*60.5mm*40.0mm

5.7 PF-1 Flashing Light

Application	For warning purpose during leaves movement
Lamp	24Vdc Halogens bulb
Antenna	Incorporated antenna
Operating Temperature	-20°C~+50°C
Installation	horizontally or vertically installed
Dimension	205mm * 80mm * 75mm

5.8 PR-1 Transmitter

Application	Radio transmitter for remote control of PW320/PW330
Frequency	433.92Mhz
Coding	Rolling code
Buttons	2, for one leaf or two leaves operation
Power Supply	6V with two CR2016 type lithium batteries
Operating Temperature	-20°C~+50°C
Dimension	71.5mm * 33mm * 14mm



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THE STRONGEST SOLUTION
FOR SWING GATES

- Worm gear provides durability and silence in motor operation.
- Slowdown during opening and closing phase.

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