



Articulated Swing Gate Opener User's Manual

Model:

KNL502+



- ★ Please read and follow all warnings, precautions and instructions before installation and use
- ★ Periodic checks of the opener are required to ensure safe operation.
- ★ For residential use only
- ★ Save this manual

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Thank you for purchasing our gate opener. We are sure that the products will be greatly satisfying as soon as you start to use it.

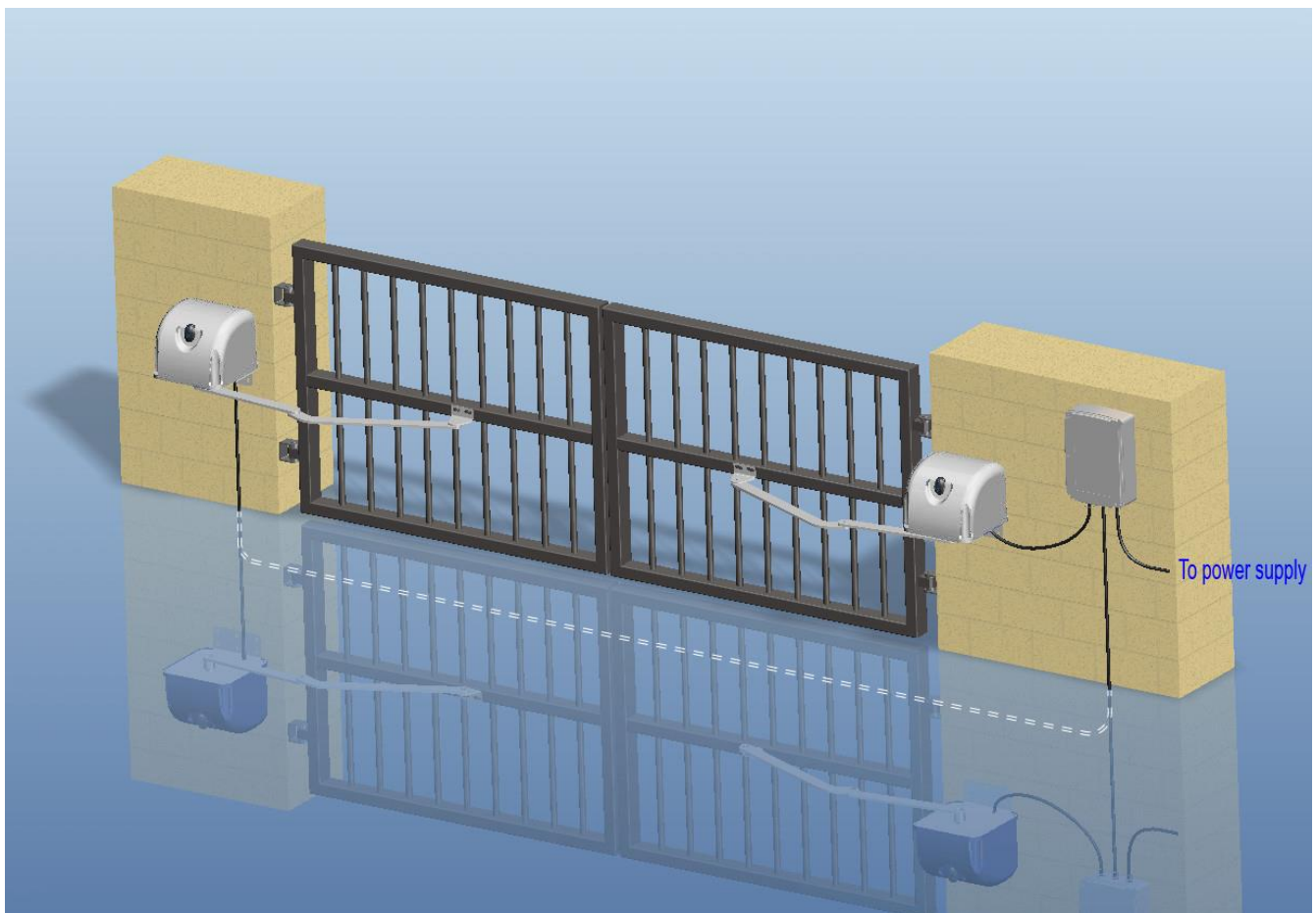
The product is supplied with a user's manual which encloses installation and safety precautions. These should be read carefully before installation and operation as they provide important information about safety, installation, operation and maintenance. This product complies with the recognized technical standards and safety regulations.

IMPORTANT SAFETY INSTRUCTIONS

WARNING – To reduce the risk of severe injury or death:


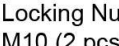


1. READ AND FOLLOW ALL INSTRUCTIONS.
2. Installation should be performed by a professional installer.
3. Should electricity be required, use a certified electrician only.
4. Never let children operate or play with gate controls. Keep the remote control away from children.
5. Always keep people and objects away from the gate. NO ONE SHOULD CROSS THE PATH OF THE MOVING GATE.
6. Do not operate the gate unless area around gate is in full view.
7. Always disconnect the battery or power source when making adjustments or repairs to any part of the opener.
8. Use the manual release only when the gate is not moving.
9. The entrance is for vehicles only. Pedestrians must use separate entrance.
10. SAVE THESE INSTRUCTIONS.

Installation Overview



Parts List

< Single Gate Opener Parts List >

 Gate Opener (1 pc)	 Release Key(1 pc)	 Control Box (1 pc)	 Warning Signs (2 pcs)
	 Remote Control (3 pcs)		
 Drive Arm (1 pc)		 Φ10 Plain Washer (6 pcs)	 M10×75 Bolt (2 pcs)
 Linking Arm (1 pc)		 Φ10 Lock Washer (2 pcs)	 Cup head square neck bolt M10×30 (2 pcs)
 Gate Bracket (1 pc)	 Expansion Bolt M8×75 (6 pcs)	 M10 Nut (2 pcs)	 Locking Nut M10 (2 pcs)
 Φ8 Lock Washer (1 pc)	 Inner Hexagon Screw M8×20 (1 pc)	 Photocell Beam System (1 set) (KNL102)	

< Dual Gate Opener Parts List >

 Gate Opener (2 pcs)	 Release Key(2 pcs)	 Control Box (1 pc)	 Warning Signs (4 pcs)
	 Remote Control (3 pcs)		
 Drive Arm (2 pcs)		 Φ10 Plain Washer (12 pcs)	 M10×75 Bolt (4 pcs)
 Linking Arm (2 pcs)		 Φ10 Lock Washer (4 pcs)	 Cup head square neck bolt M10×30 (4 pcs)
 Gate Bracket (2 pcs)	 Expansion Bolt M8×75 (12 pcs)	 M10 Nut (4 pcs)	 Locking Nut M10 (4 pcs)
 Φ8 Lock Washer (2 pcs)	 Inner Hexagon Screw M8×20 (2 pcs)	 Photocell Beam System (1 set) (KNL102)	

Optional Accessories Parts List

Optional				
 Back up battery (1 set) (KNL125)	 GSM Remote Control Switch (1pc)(KNL180)	 Wall push button (1 pc) (KNL147)	 PSO Part (1 pc) (KNL112)	
 Back up battery box(1 pc) (KNL130)	 Alarm Lamp (1 pc) (KNL140)	 Solar Controller (1 pc) (KNL118)	 Electric Lock (1 set) (KNL149)	
 Wireless Push Button (1pc)(KNL 173)	 Solar panel (1 pc) (KNL109)	 Supporting frame for solar panel (1 pc) (KNL115)	 Bracket for solar panel (1 pc) (KNL116)	
 Wireless Keypad (1 pc) (KNL172)	 Wired Keypad (1 pc)(KNL106) ID card (KNL170)	 Mounting post for keypad (1 pc) (KNL107)	 External Receiver (1 pc) (KNL138)	
 Loop Detector (1 pc) (KNL155)	 Exit Wand (1 pc) (KNL157)	 5-core wire (KNL150 Wire A)	 2 x 0.3 sq.mm (KNL151 Wire B)	 2 x 0.75 sq.mm (KNL152 Wire C)
 Retro-reflective Photocell (1pc)(KNL 104)				

Tools Needed

- Power Drill
- Tape Measure
- Level
- Hammer
- C-Clamps
- Wire Strippers
- Phillips Screwdriver
- Hex Key Wrench – 6mm
- Open End Wrenches - 14# & 17# or Adjustable Wrenches
- An extra person should be needed

Technical Specifications & Features

Specifications	
	KNL502+
Input:	240V/50Hz
Motor voltage:	24VDC
Motor Power:	120W each actuator
Current:	3A
Speed:	90°approximately 18 seconds
Max. Gate Open angle:	120°
Max. Gate Weight:	600 kgs
Max. Gate Length:	6 m
Duty Cycle:	75%
Ambient Temperature:	-20°C~ +50°C (-4°F to 122°F)
Protection class:	IP44

Notice:Max.Weight and Max.Width per a gate effects only when the gate is correctly and properly installed and in good smooth.

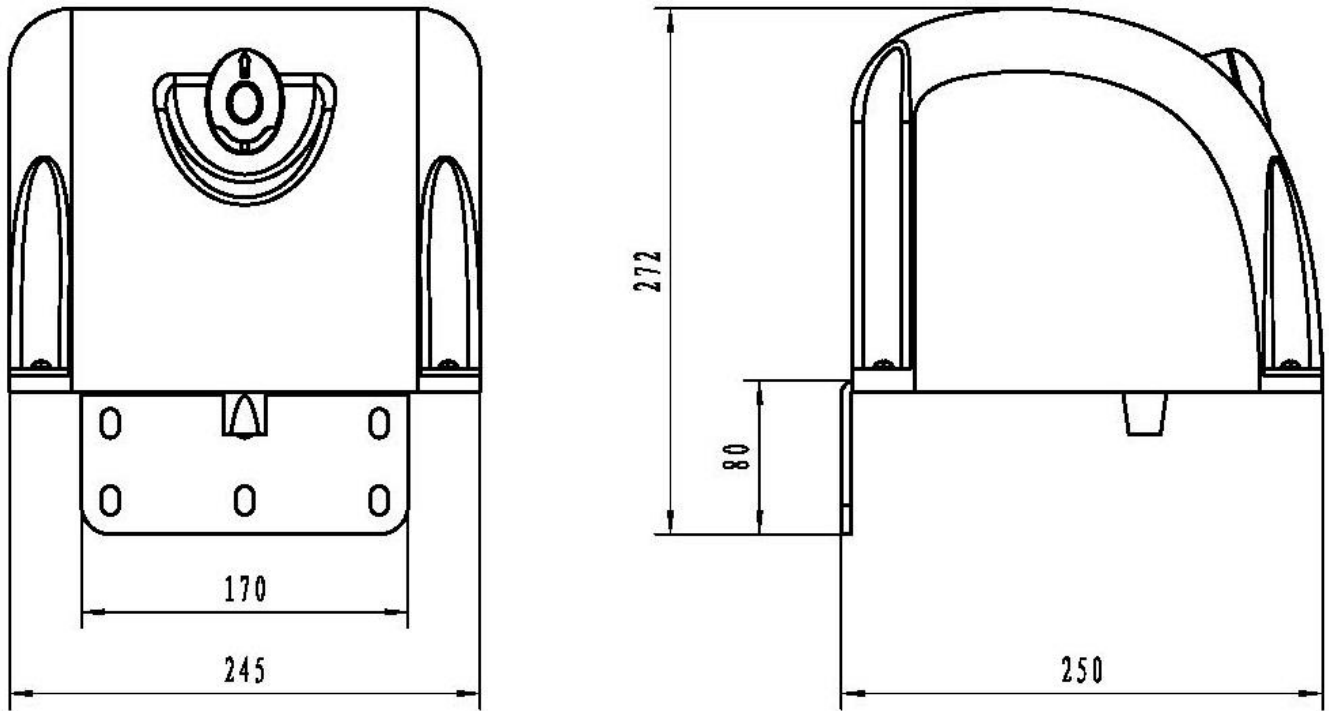
Features:

- Soft start and soft stop
- Emergency release key in case of power failure
- Dual/Single gate running mode
- Adjustable opening/closing interval between master and slave gate
- Stop/Reverse in case of obstruction during gate opening/closing.
- Built in adjustable auto-close (0-99 seconds)
- Built in max. Motor running time (MRT) adjustable for multiple safety protection (1-50 seconds)
- Digital display indicates the running situation and setting menu
- Reliable microswitch limit for easy adjustment
- Can be equipped with a wide range of accessories

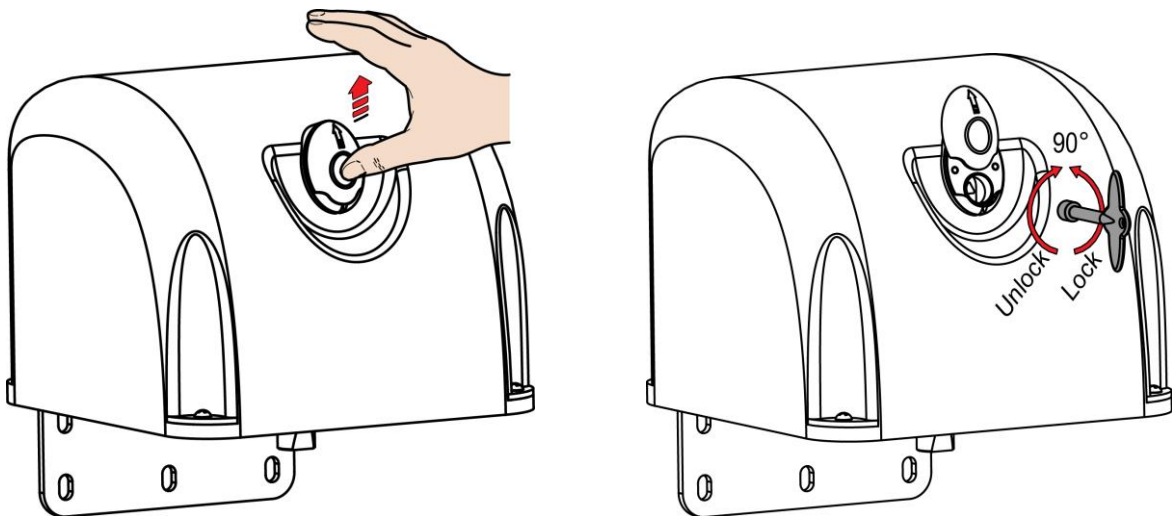
Opener Installation

Prior to beginning the installation of swing Gate opener, We suggest that you become familiar with instructions and illustrations in this manual. This will help insure that your installation is performed in an efficient and professional manner.

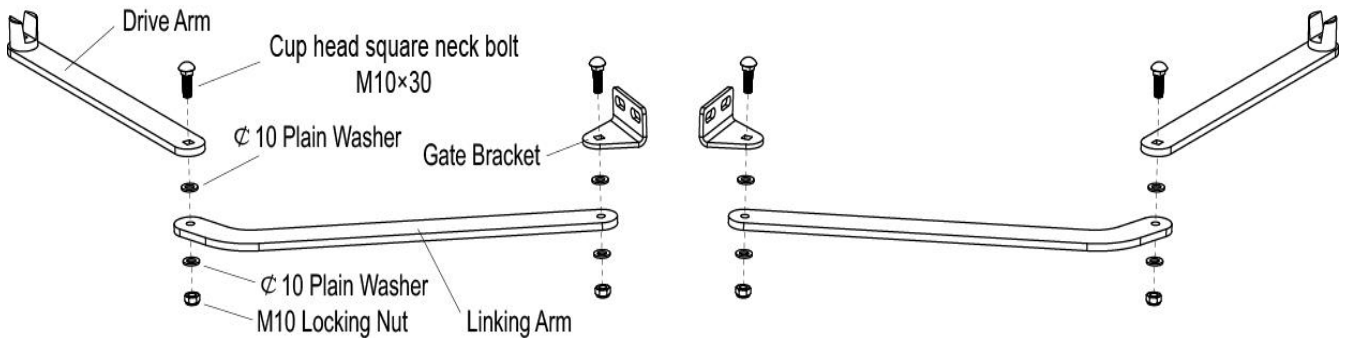
Opener Dimensions



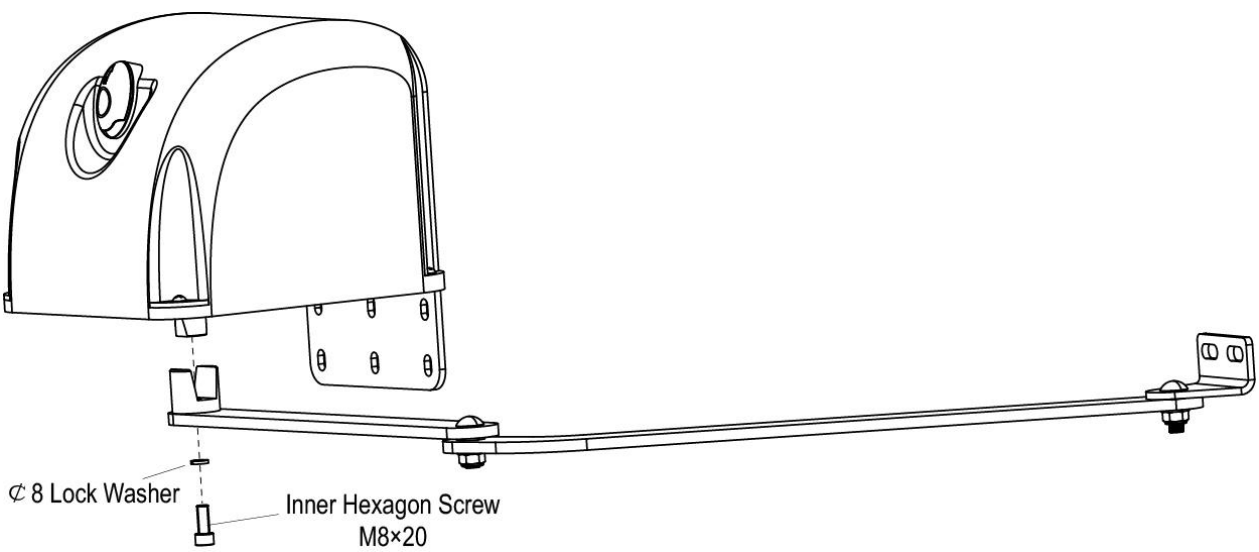
Step 1: Release the opener



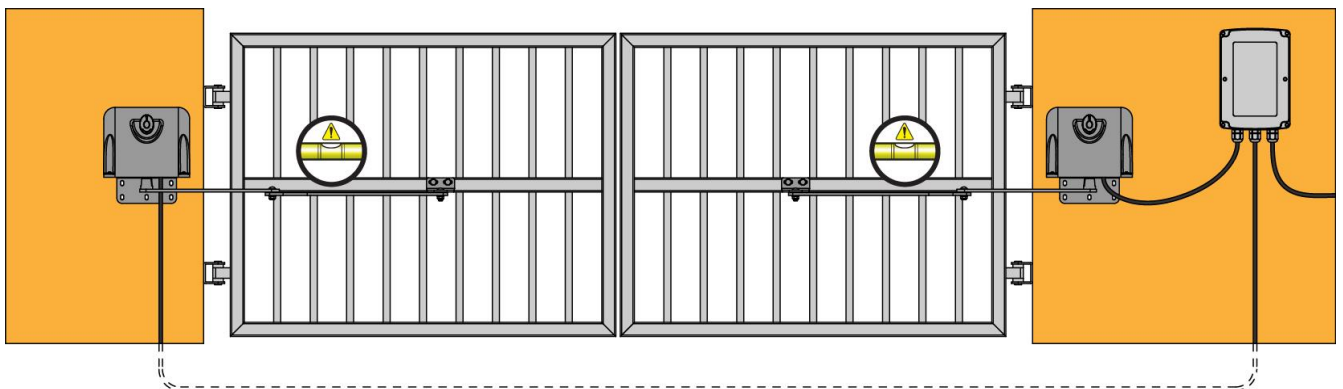
Step 2: Assemble Arms

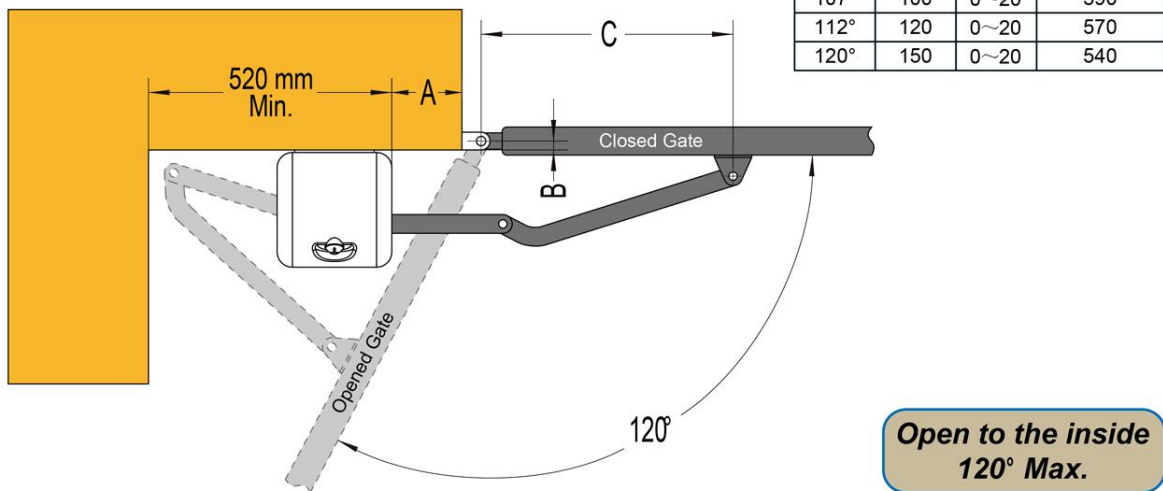
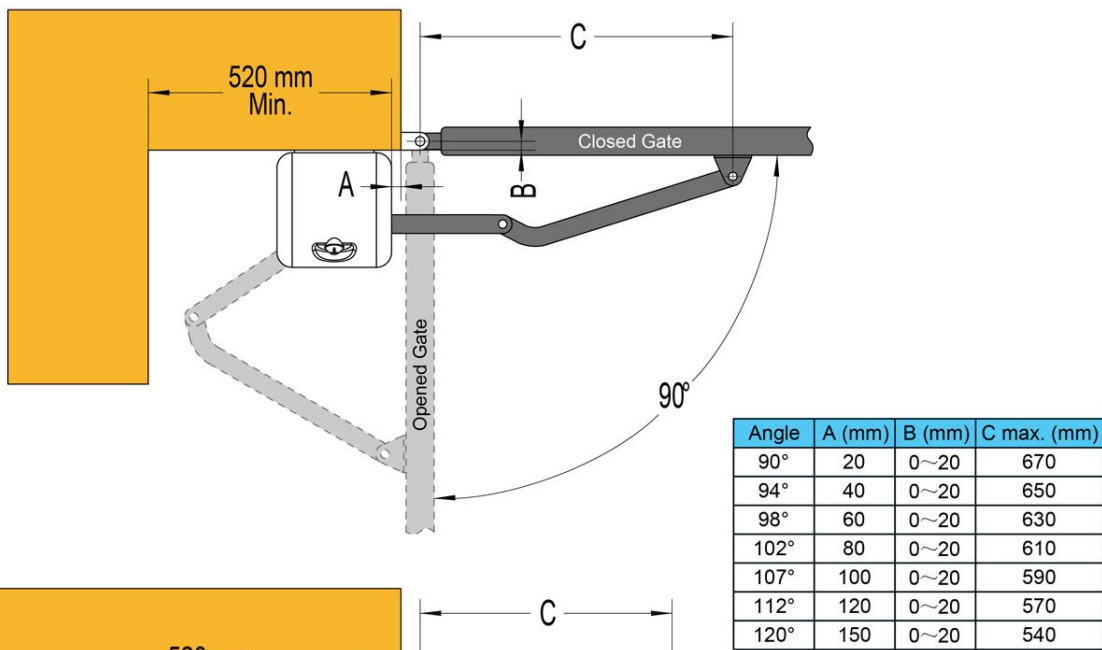
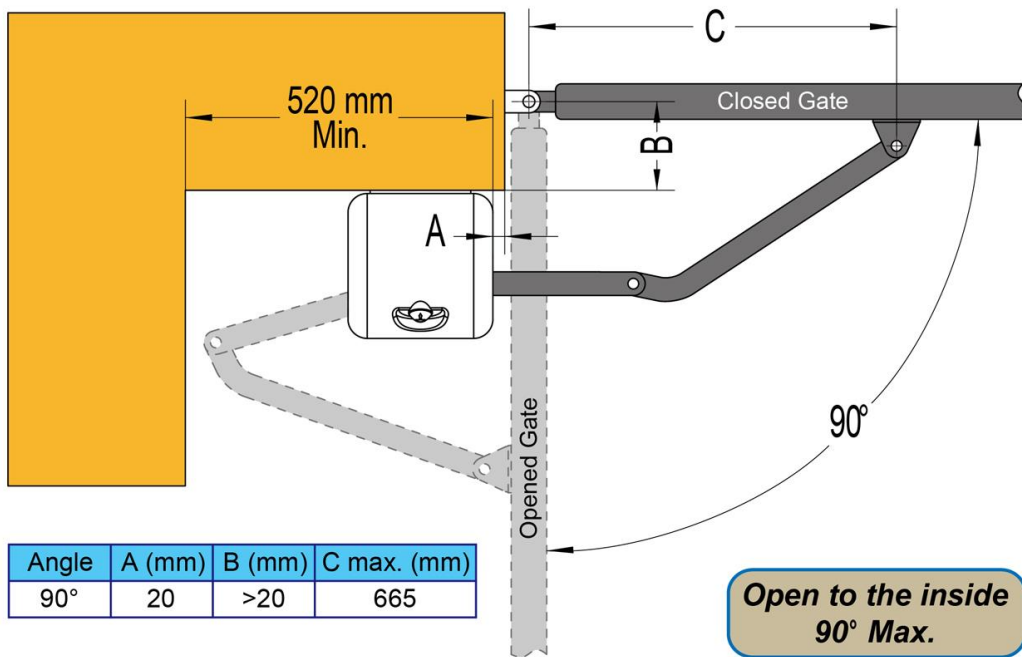


Step 3: Attach the Arms to Gate Opener

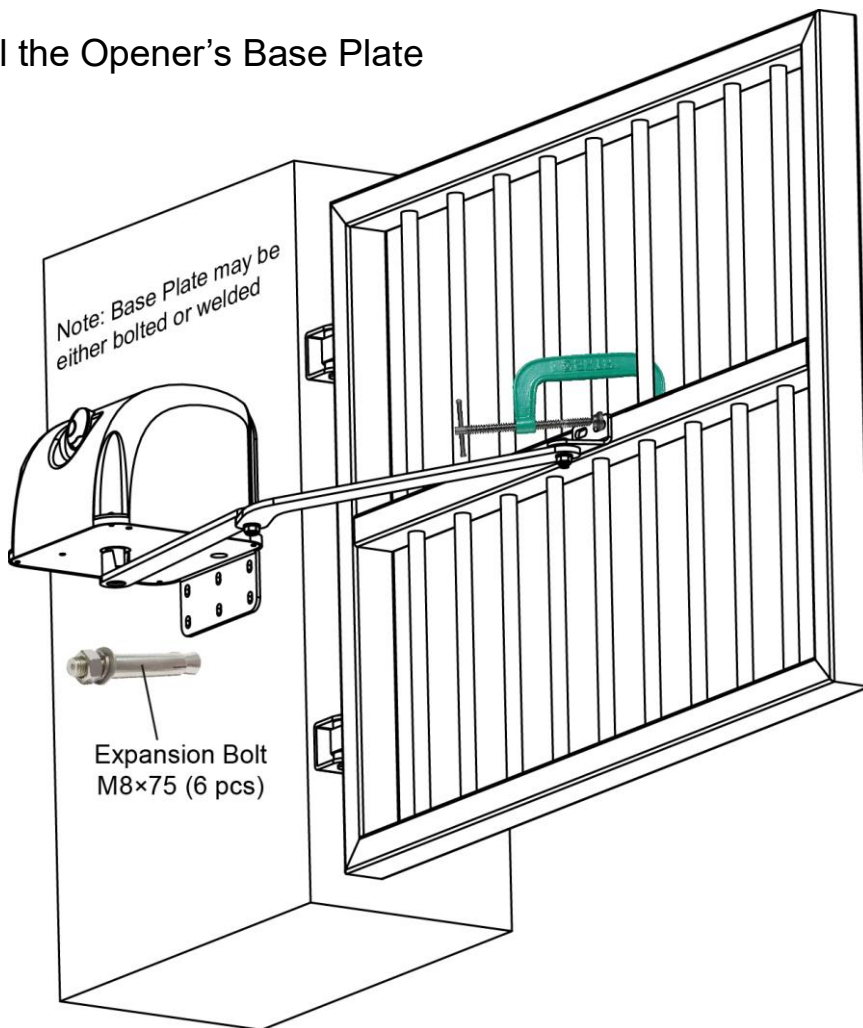


Step 4: Determining the mounting positions

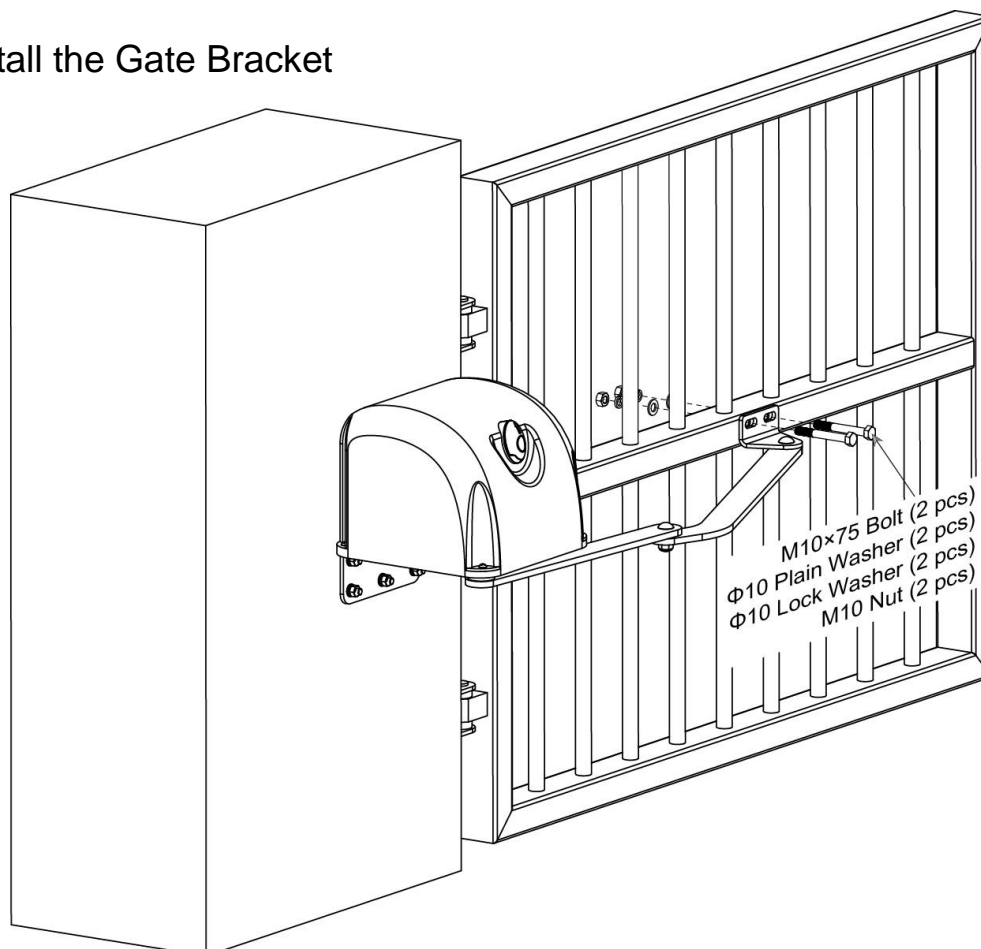




Step 5: Install the Opener's Base Plate



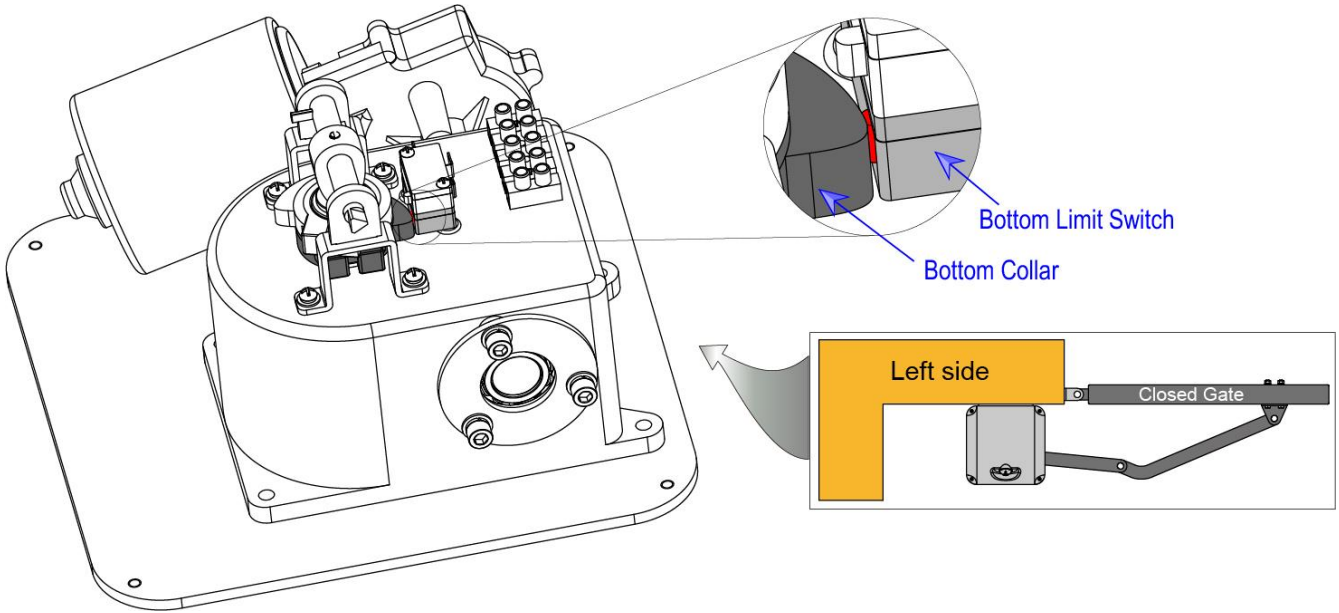
Step 6: Install the Gate Bracket



Step 7: Set the Limit Switches of the opener at left side

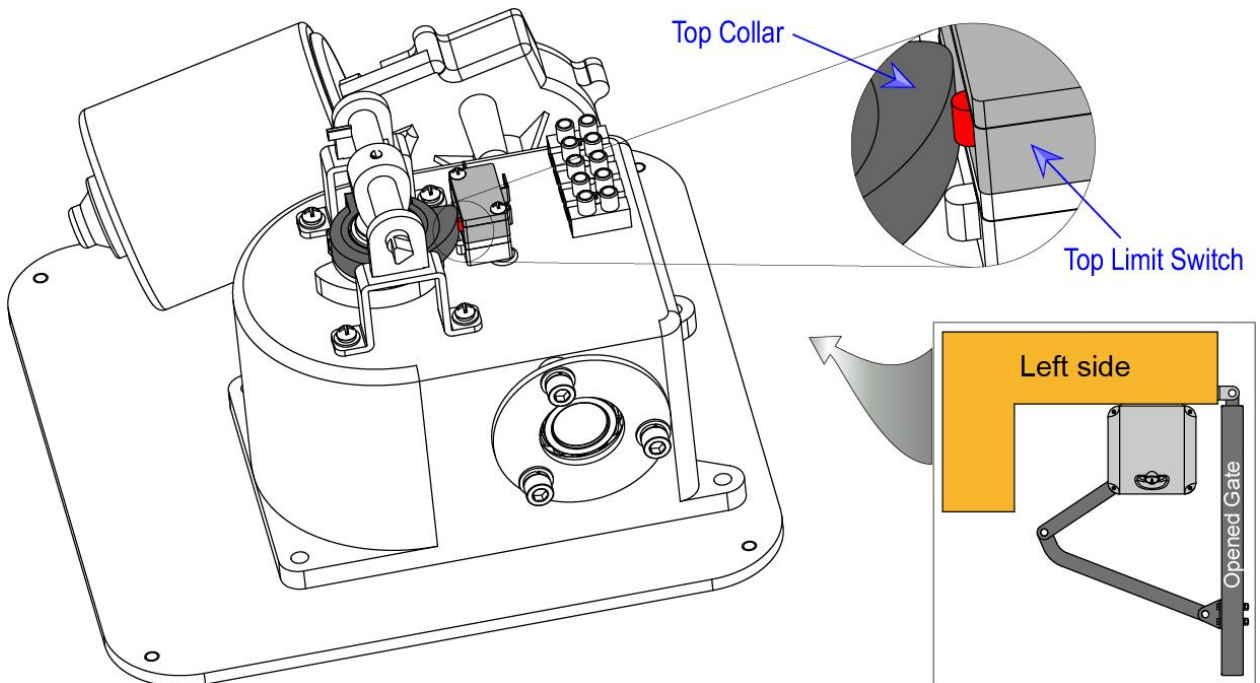
Set the left closed Limit Switch:

Loosen the screw of Bottom Collar. Push the left gate to closed position. Rotate the Bottom Collar until after hearing a click of Bottom Limit Switch's contact. And then tighten the screw of Bottom Collar.



Set the left opened Limit Switch:

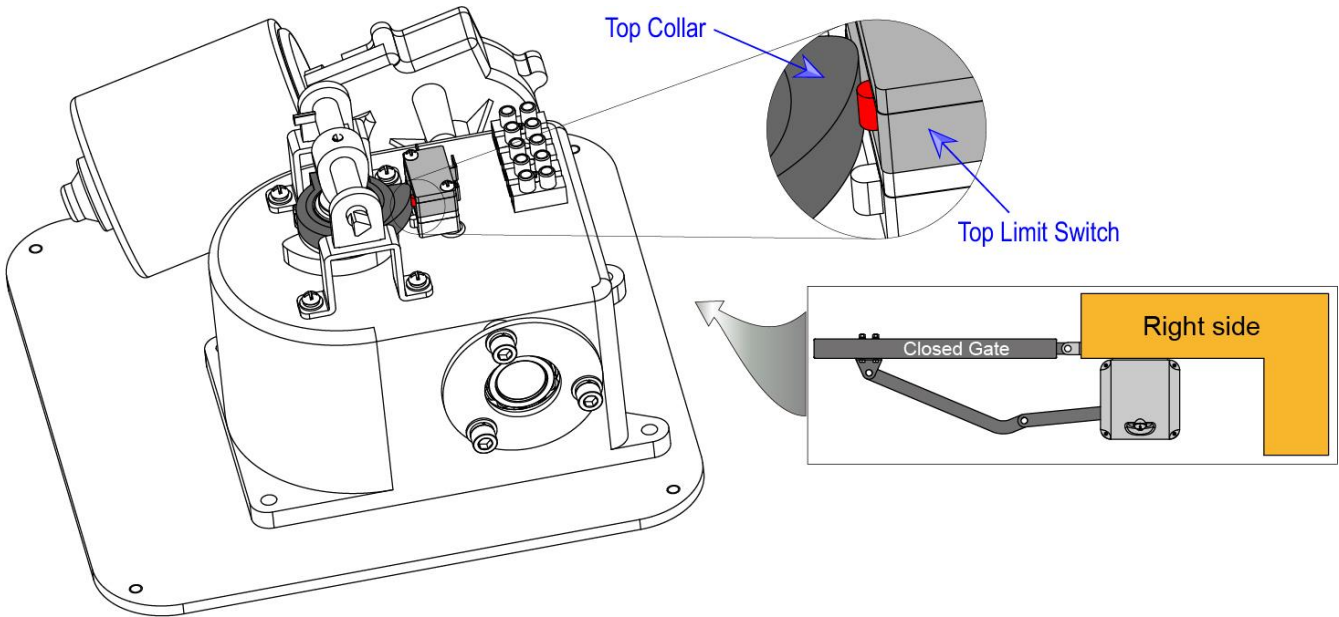
Loosen the screw of Top Collar. Push the left gate to desired open position. Rotate the Top Collar until after hearing a click of Top Limit Switch's contact. And then tighten the screw of Top Collar.



Step 8: Set the Limit Switches of the opener at right side

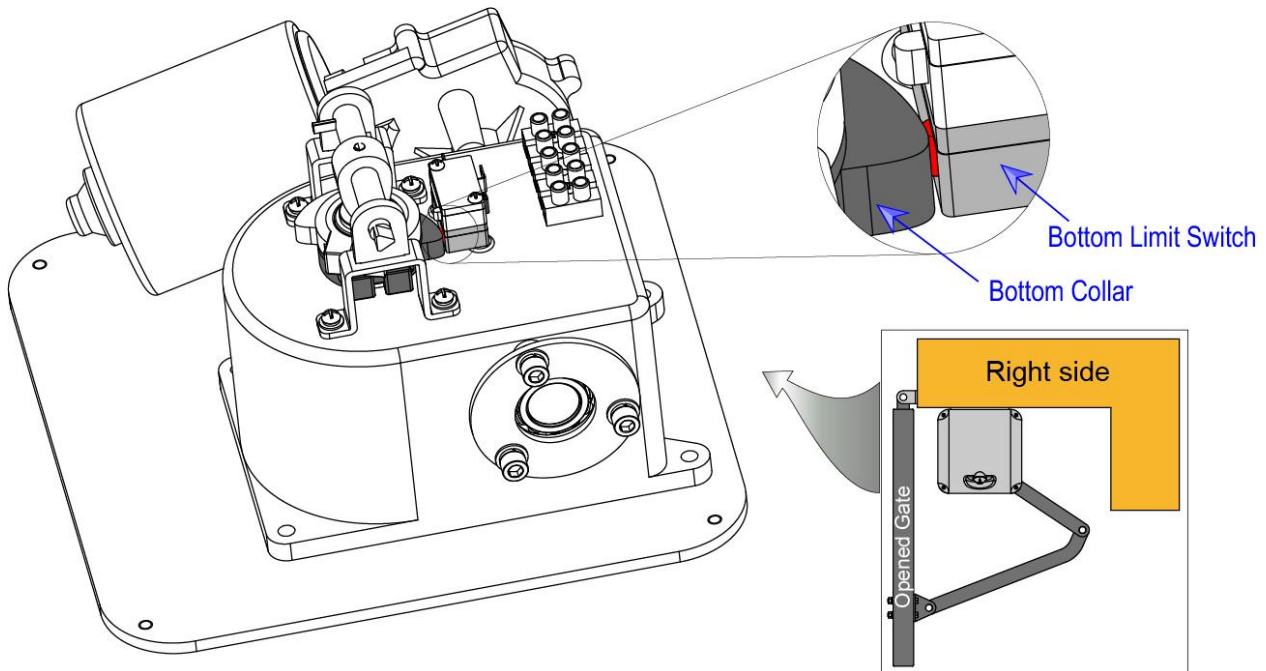
Set the right closed Limit Switch:

Loosen the screw of Top Collar. Push the right gate to closed position. Rotate the Top Collar until after hearing a click of Top Limit Switch's contact. And then tighten the screw of Top Collar.



Set the right opened Limit Switch:

Loosen the screw of Bottom Collar. Push the right gate to desired open position. Rotate the Bottom Collar until after hearing a click of Bottom Limit Switch's contact. And then tighten the screw of Bottom Collar.

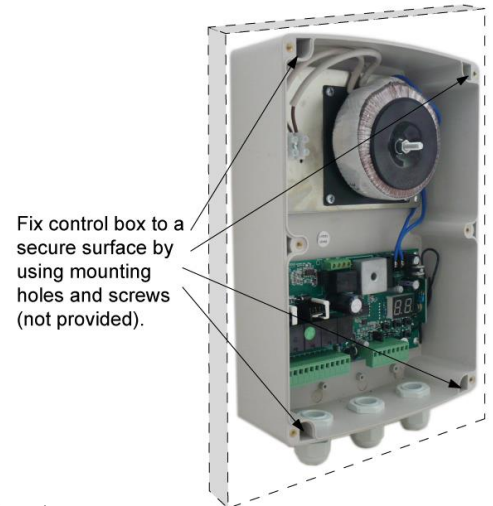


Mounting the Control Box

Step 1

To install the control box use the deck screws (not provided). Ensure the control box is installed in a secure surface and at least 100 cm (40 inches) above the ground to protect it from rain, snow, etc. which probably cause damage to the control box.

Warning: Before connecting the AC power cable to the control box, check the plug of power cable is disconnected from AC power socket.

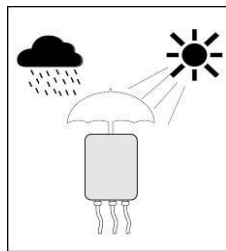


Step 2

Insert the power cable and cable of the first gate opener through the front strain relief and into the control box by loosening the strain relief screw located in the leftmost of outside bottom of the control box and feeding the cables into the control box. Check the length of cables is long enough to their respective terminal block in control box. Retighten the sealing nut so that cables are well locked.



Strain Relief	
	Lock Nut
	Hub
	Sealing Nut



CAUTION: Install the Control Box in a well ventilated place protected against rain and sunlight.

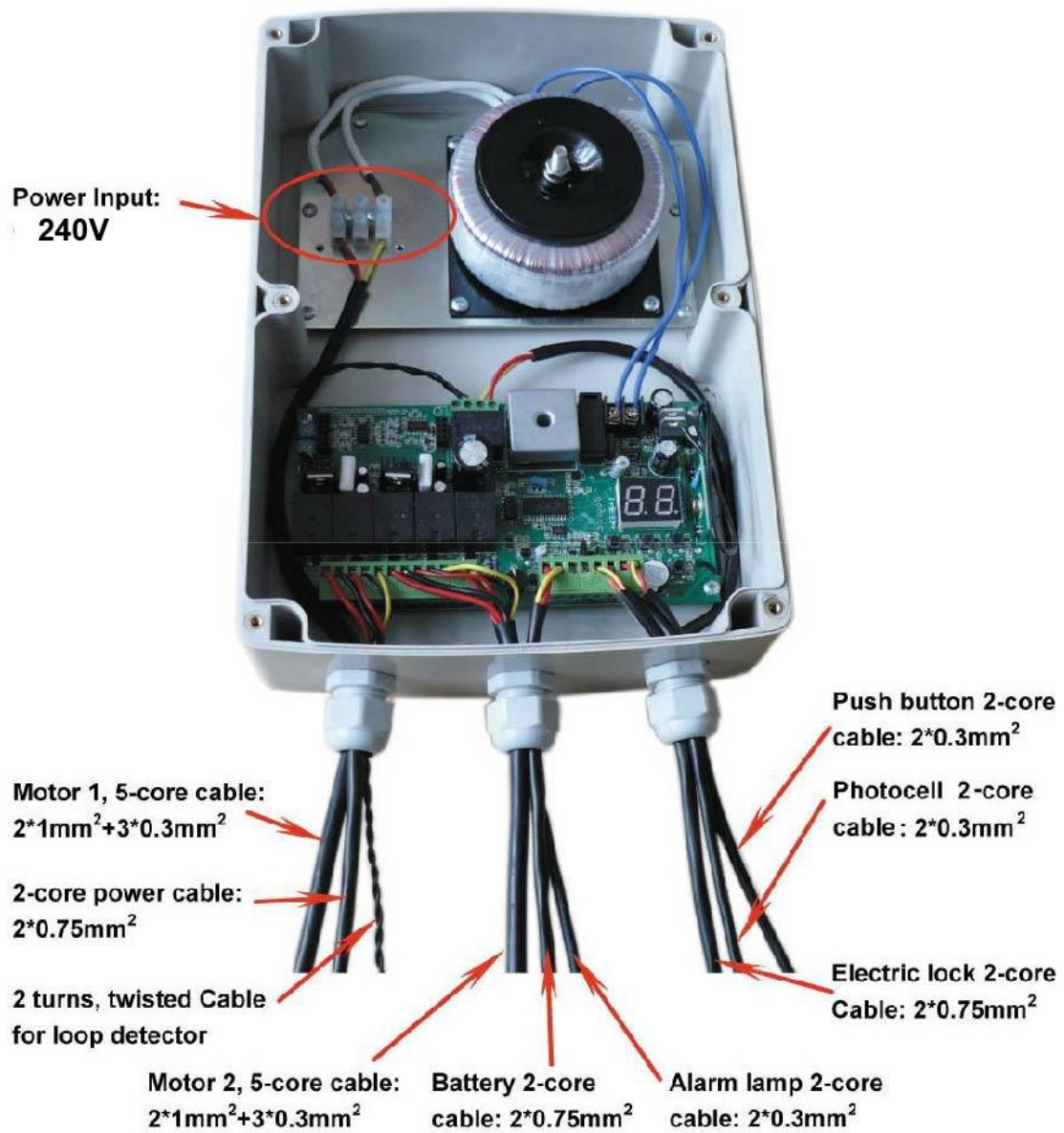
NOTE: It is strongly suggested that the control box should be mounted in the side of Master Gate (Gate 1), so that the electric lock can be installed correctly and work properly (See Page 9).

Step 3

Insert the cable of the second gate opener and alarm lamp cables into the control box through middle strain relief. Then repeat step 2.

Step 4

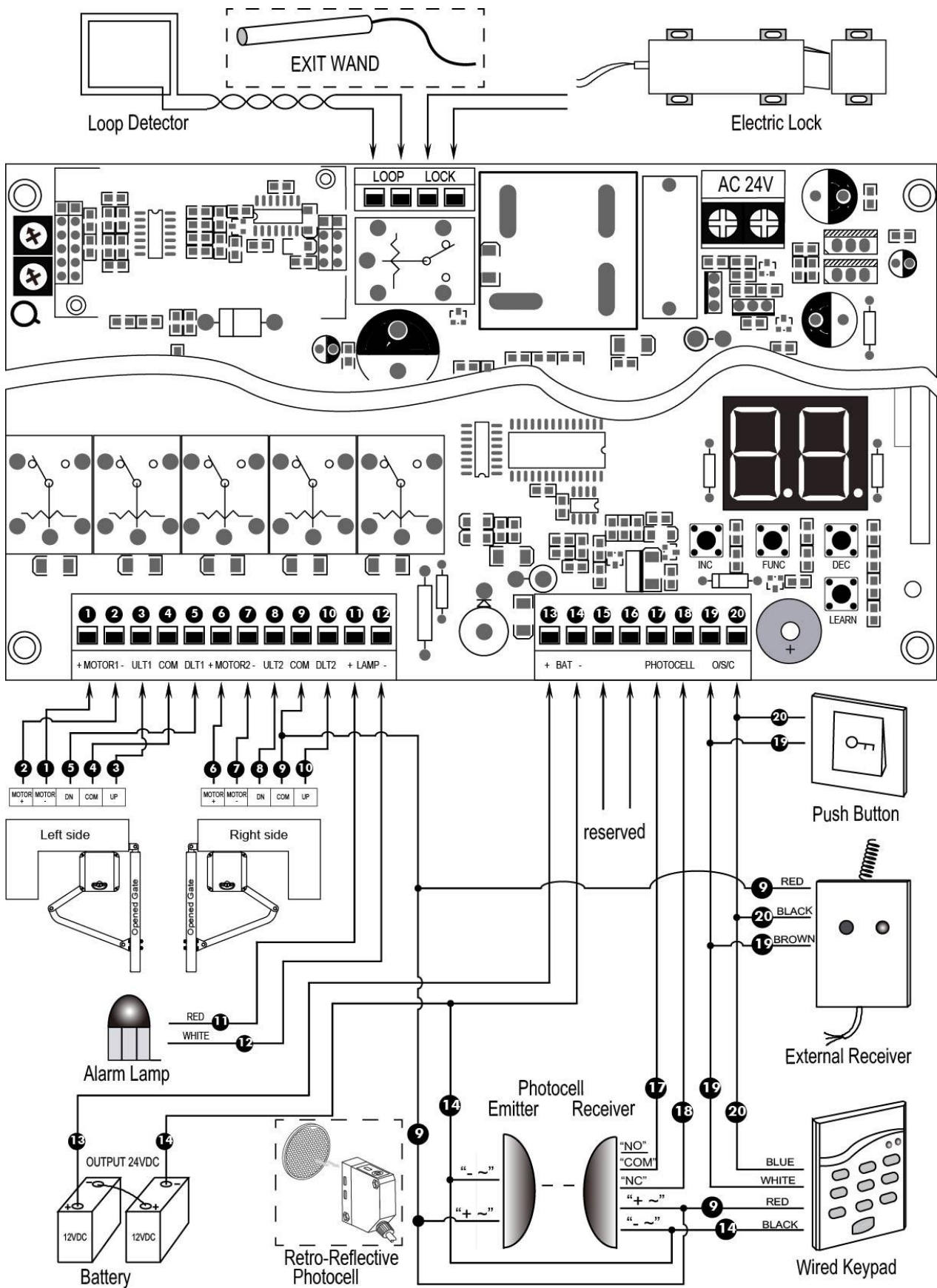
Insert other cables into the control box through rightmost strain relief. Then repeat step 2.



NOTE: Only motor cables (1.5m length) are provided. Other cables are subject to site installation requirement and not provided.

CAUTION: Make sure the cable outlet hole in the Control Box is always down during installation so as to drain off the water.

Connecting of the control board (For Pull to Open)



Note: Ensure the power is OFF before the connecting of the control board.

Note: You should use the five core cable with PVC sheath to connect the articulated arm to the main control board. Wires in the five core cable used to connect the motor should be greater than 1mm² (16AWG). Wires in the five core cable used to connect the limit switches should be greater than 0.3mm² (22AWG).

Arm 1 (Installing in the left side)

Use the five core cable to connect the arm to the control board. The **MOTOR+** terminal of the arm should be connected to the **MOTOR1-** terminal of the control board. The **MOTOR-** terminal should be connected to the **+MOTOR1** terminal of the control board. The **DN** terminal should be connected to the **DLT1** terminal of the control board. The **COM** terminal should be connected to the **COM** terminal of the control board. The **UP** terminal should be connected to the **ULT1** terminal of the control board.

Arm 2 (Installing in the right side)

Use another five core cable to connect the arm 2 to the control board. The **MOTOR+** terminal of the arm should be connected to the **+MOTOR2** terminal of the control board. The **MOTOR-** terminal should be connected to the **MOTOR2-** terminal of the control board. The **DN** terminal should be connected to the **ULT2** terminal of the control board. The **COM** terminal should be connected to the **COM** terminal of the control board. The **UP** terminal should be connected to the **DLT2** terminal of the control board.

NOTE: It is recommended that ARM 1 is installed in the Master Gate, and ARM 2 is installed in the Slave Gate.

Alarm Lamp (optional)

The red wire of the alarm lamp should be inserted into either **LAMP (#11)** terminal, the white wire into the other one (**#12**).

Back-up Battery (optional)

The “**24V+**” of the battery should be wired to the **BAT+ (#13)** terminal, “**24V-**” should be wired to “**BAT-**” (**#14**) terminal.

Recommend strongly to use the controller *KNL118 (WA4004)* to connect Battery with battery's Terminal of control board if the battery is used as the primary power supply in system (such as SOL PLUS KIT). Please refer to the user manual of control *KNL 118 (WA4004)* separated.

Photocell Beam System (PBS) (optional)

Use a 2-core cable to connect the “**- ~**” terminal of the photocell's emitter to the “**14**” terminal, the “**+ ~**” terminal to the “**9**” terminal. Also the “**- ~**” and “**+ ~**” terminals of the photocell's receiver should be connected to the “**16**” and “**17**” terminals in parallel.

Use another 2-core cable to connect the “**COM**” terminal of the receiver to the “**17**” terminal, the “**NC**” terminal to the “**18**” terminal.

Push Button (optional)

The red wire should be inserted into either **O/S/C** terminal, the white wire into the other one.

Loop Detector (optional)

First insert the **LOOP DETECTOR BOARD** into the **CONTROL BOARD**, and then connect the **LOOP DETECTOR** to the control board. Detailed instruction please refers to the manual instruction of **LOOP DETECTOR** separated.

Exit Wand (optional)

First insert the **EXIT WAND BOARD** into the **CONTROL BOARD**, and then connect the **EXIT WAND** to the control board. Detailed instruction please refers to the manual instruction of **EXIT WAND** separated.

Electric Lock (optional)

The electric lock should be wired to the “**LOCK**” terminal.

External Receiver (optional)

The **BROWN** wire of the external receiver should be connected into the “19” terminal.
The **BLACK** wire of the external receiver should be connected into the “20” terminal.
The **RED** wire of the external receiver should be connected into the “9” terminal.

Wired Keypad (24VDC) (optional)

The **RED** wire of the wired keypad should be connected into the “9” terminal.
The **BLACK** wire of the wired keypad should be connected into the “14” terminal.
The **WHITE** wire of the wired keypad should be connected into the “19” terminal.
The **BLUE** wire of the wired keypad should be connected into the “20” terminal.

Solar Panel (optional)

Please refer to the manual instruction of solar panel and controller (K~~N~~L118) separated.

How to learn or erase the remote

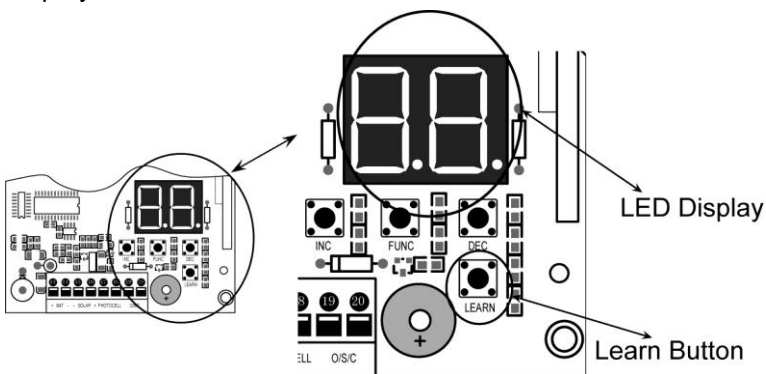
Learn the remote

Press and release the learn button, the **LED** will display “Ln”, then press the key in the remote twice in 2 seconds, the **LED** will flash “Ln” for 4 seconds then back to “- -”. Now the remote has been learnt successfully.

WARNING: Activate the opener only when gate is in full view, free of obstruction and properly adjusted. No one should enter or leave gate area while gate is in motion. Do not allow children to operate push button or remote. Do not allow children to play near the door.
Your swing gate opener receiver and remote control transmitter are set to a matching code. If you purchase additional remote controls, the gate opener must be programmed to accept the new remote code.

Erase all the remote codes

Press and hold the learn button until the **LED** display “dL”, then release the learn button , the **LED** will display back to “- -”. Now all remote codes have been erased.



Caution: If you lose one of any remote control, please learn all other remote controls to have a new code for safety.

Setting of the Control Board

1. Check again for completed and correct assembly of your swing gate opener and gate. Plug the Power Cord into the nearest AC outlet. The Digital Display on the Control Board will flash with “- -”. The unit is in standby.

2. Single/Dual Gate Set

Press and hold the “FUNC” button for more than 4 seconds. The Digital Display will indicate “ P1”. Gate opener is on the SINGLE/DUAL Gate setting. Press the “INC” and “DEC” buttons respectively to following modes:

“01” shown in Digital Display, it is Single Arm 1 (Gate 1) mode. “10” shown in Digital Display, it is Single Arm 2 (Gate 2) mode. “11” shown in Digital Display, it is Dual Gate mode.

Press the “FUNC” button to store the data when the single or dual gate is chosen. The Digital Display will indicate “P2”. Now single/dual gate set is finished. (Factory set is “11”)

3. Master/Slave Gate Set

When Digital Display indicates “P2”, the gate opener is on the Master/Slave Gate Setting. Press the “INC” and “DEC” Buttons respectively to follow modes:

“01” shown in Digital Display, which means GATE OPENER 1 (left-hand side) as Master one

“10” shown in Digital Display, which means GATE OPENER 2 (right-hand side) as Master one

Press the “FUNC” button to store the data when the master/slave gate is chosen. The Digital Display will indicate “P3”. Now Master/Slave Gate Set is finished.

(Factory set is “01”)

4. Set the Open Interval between Master and Slave Gate

When the Digital Display indicates “P3”, the gate opener is on the Open Interval between Master/Slave Gate Setting.

The open interval can be adjusted by pressing the “INC” and “DEC” Buttons respectively. The Digital Display will show “0”-“9”, which indicates the interval time “0” means the Master and Slave gates open simultaneously. “1” means the Master Gate starts to open 1 second before Slave gate starts to open. Max. open interval is 9 seconds. Each time you press and release the “INC” button, the figure increases by 1, and the Master gate starts to open 1 more second earlier. Each time you press and release the “DEC” button, the figure decreases by 1, and the interval decreases by 1 second.

(Factory set is 3 seconds)

Press the “FUNC” button to store the data when the open interval is set. The Digital Display will indicate “P4”. Now Open Interval Set is finished.

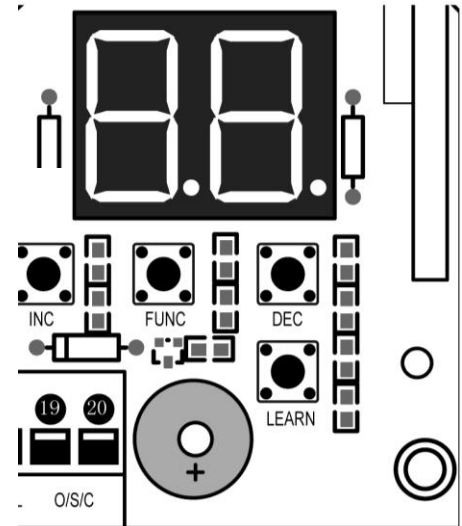
5. Set the Close Interval between Master and Slave Gate

When the Digital Display indicates “P4”, the gate opener is on the Close Interval between Master/Slave Gate Setting.

The close interval can be adjusted by pressing the “INC” and “DEC” buttons respectively. The Digital Display will show “0”-“9”, which indicates the interval time “0” means the Master and Slave gates open simultaneously. “1” means the Slave Gate starts to close 1 second before Master gate starts to close. Maximum close interval is 9 seconds. Each time you press and release the “INC” button, the figure increases by 1, and the Slave gate starts to close 1 more second earlier. Each time you press and release the “DEC” button, the figure decreases by 1, and the interval decreases by 1 second.

(Factory set is 3 seconds)

Press the “FUNC” button to store the data when the close interval is set. The Digital Display will indicate



“P5”. Now Close Interval Set is finished.

6. Adjust the Obstruction Sensitivity/Stall Force

When the Digital Display indicates “P5”, the gate opener is on the Stall Force Adjustment.

Without a properly installed safety reversal system, person (particularly small children) could be SERIOUSLY INJURED or KILLED by a closing gate.

*Too much force on gate will interfere with proper operation of safety reversal system.

*NEVER increase force beyond minimum amount required to close gate.

*NEVER use force adjustments to compensate for a binding or sticking gate.

* If one control (force or travel limits) is adjusted, the other control may also need adjustment.

* After ANY adjustments are made, the safety reversal system MUST be tested. Gate MUST BE TESTED. Gate MUST reverse on contact with a rigid object.

The opener is equipped with an obstruction sensing feature. If the gate encounters an obstruction the opener will automatically reverse direction and stop. Based on the length and weight of the gate it may be necessary to make force adjustments. The force adjustment should be high enough that small objects such as branches or wind will not cause nuisance interruptions but low enough to prevent serious injury to a person or a vehicle.

6-a Adjust Stall Force of Gate Opener 1

Now we adjust the stall force of gate 1

The stall force of gate opener1 is adjusted by pressing “INC” and “DEC” buttons respectively. The Digital Display will show “1”-“9” which indicates the stall force levels. “1” means the minimum force, and “9” is the maximum force. Each time you press and release the “INC” button, the figure increase by 1, and the force increases to a higher level. Each time you press and release the “DEC” button, the figure decreases by 1, and the force decreases to a lower level. Press “FUNC” to store the data. The Digital Display will indicate “P6”. Now stall force of gate opener 1 is finished.

(Factory set is Level 3)

6-b Adjust Stall Force of Gate Opener 2

When the Digital Display indicates “P6”.you can adjust force of gate opener 2.

Please perform the same procedure as gate opener 1 (6-a).

Press the “FUNC” button to store the data when stall force of gate opener 2 is set. Then “P7” will be shown on the Digital Display.

NOTE: You may need to increase the stall force in cold weather due to increased resistance from gate hinges. The gate opener’s opening/closing force is adjusted automatically according to stall force adjustment.

7. Adjust the Max Motor Running Time (MRT) of the MOTOR for gate opener

The maximum running time of the MOTOR can be set to make the motor stop running after a specified period even if the limit switch is invalid or the clutch is detached.

7-a. Adjust the MRT of MOTOR1

When the Digital Display indicates “P7”, you can adjust the **MRT** of MOTOR1.

The **MRT** of MOTOR1 is adjusted by pressing “INC” and “DEC” buttons respectively. The Digital Display will show “01”-“50” which indicates the **MRT** of MOTOR1 from 1 to 50 seconds.

You can hold pressing the “INC” or “DEC” button for more than 1 second to speed up the setting. Press the “FUNC” button to store the data when you finish setting. The Digital Display will indicate “P8”.

(Factory default setting is “40” seconds)

7-b. Adjust the MRT of MOTOR2

When the Digital Display indicates “P8”, you can adjust the **MRT** of MOTOR2.

Please perform the same procedure as adjusting MOTOR1 (7-a).

Press the "FUNC" button to store the data when you finish setting. The Digital Display will indicate "P9". Now MOTOR2 adjustment is finished.

8. Set the Safety Photocell Beam System (PBS) (Optional)

When the Digital Display indicates "P9", the gate opener enters PBS set mode.

You can press and release the "INC" or "DEC" button to set or shut off the PBS function. The Digital Display indicates "11", the PBS is available. The Digital Display indicates "00", the PBS is null.

Note: If the "11" is be set, the gate opener won't work until the PBS system is equipped. The PBS system works only when gate opener is closing. The gate opener will return to its open position when the obstruction blocks the beam from photo eye.

Press the "FUNC" button to store the data when the PBS is set. The Digital Display will indicate "PA".

(Factory set is "00")

9. Set the Automatic Closing Time

When the Digital Display indicates "PA", the gate opener enters into the setting of automatic closing time mode. Press and release the "INC" or "DEC" button, the Digital Display will show a "01"- "99" which indicates the current automatic closing time. The minimum time is 1 second, 99 seconds maximum. Each time you press and release the "INC" button, the figure increases by 1, and the timing increases by 1 second. Each time you press and release the "DEC" button, the figure decreases by 1, and the timing decreases by 1 second. When the timing is "00", the automatic closing function is shut off and the gate will stay open.

(Factory set is 60 seconds)

Press the "FUNC" button to store the data when the desired automatic closing time is set. The Digital Display will indicate "Pb"

10. Set the Period of Soft Start

When the Digital Display indicates "Pb", the gate opener is ready for setting period of soft start.

You can press the "INC" or "DEC" button to set the period of soft start. There is 1-9 seconds available in setting. Press the "FUNC" button to store the data when the period is set. The Digital Display will indicate "PC".

(Factory set is 3 seconds)

11. Set the Fast Running Period (FRP) to Achieve Soft Stop Function (SPP)

When the Digital Display indicates "PC", the Fast Running Period for opening or closing gate is adjustable by pressing "INC" and "DEC" buttons respectively, and the Soft Stop Function is achieved simultaneously. The Soft Stop means the gate opener runs at slow speed during the last period before the gate completely closes. The Soft Stop Period is unavailable by direct adjust but available through adjusting the Fast Running Period.

There are two running speeds designed in program, i.e. Fast Running Speed and Soft Running Speed. The Fast Running Period is adjustable from 1 to 28 sec. Factory default setting is 15 sec.

Since the GATE OPENING OR CLOSING RUNING PERIOD (GRP) = SOFT START PERIOD (STP) + FAST RUNNING PERIOD (FRP) + SOFT STOP PERIOD (SPP), the SPP could be extended by shortening the FRP when the GRP and STP are fixed. In other words, $SPP = GRP - STP - FRP$.

Similarly, the Soft Stop Period (SPP) can be shortened through extending the Fast Running Period (FPP).

E.g. When the Soft Start Period (STP) is set at 3 sec, and the GRP is 23 sec, how can we get 4 sec of Soft Stop Period (SPP) to meet the requirement? The answer is clear, i.e. we may set the Fast Running Period (FRP) at 16 sec ($23 - 3 - 4 = 16$ sec).

12. Return to Factory Set

When the Digital Display indicates "Pd", press and release the "INC" or "DEC" button. All data will return to factory set, the Digital Display indicates "dF".

13. If all of data is set and no other change needed, press “FUNC” Button. “- -” appears on the Digital Display, and the opener enters standby mode.

Indicate Illustration on the Digital Display When Gate Opener is

Running

The RIGHT image on Digital Display symbolizes motor of ARM 1 when the gate opener is running. The LEFT image on Digital Display symbolizes motor of ARM 2.

When the motor is run to gate -open direction or gate -close direction, the image on Digital Display indicates “n” or “u” respectively.

When the motor is not running, the Digital Display indicates “- -”.

When Gate Opener 2 is set as Master gate (i.e. when “10” indicated at P2 set mode in the Control Board), the Digital Display flashes “-n” before the gate completely opens and closes.

How to Operate

The user may operate the opener once all adjustment setting is finished.

With the gate in its closed position, press and release the remote control, the gate will move to the programmed opening position and stop.

With the gate in its opened position, press and release the remote control, the gate will move to the programmed closing position and stop.

While the gate is moving, press and release the remote control, the gate will stop moving immediately. The next command from the remote will reverse the gate direction and the gate will stop at its programmed opening/closing position.

The gate will stop in case of obstruction during opening. The command from the remote control will reverse the gate direction and the gate will stop at its programmed closing position.

The gate will reverse in case of obstruction or stall force during closing, and it will move to the programmed opening position.

NOTE: The Obstruction Sensitivity /Stall Force is adjustable in 9 levels.

Installation for Push-to-Open Gates

 **Ensure the gate does not open into public areas.**

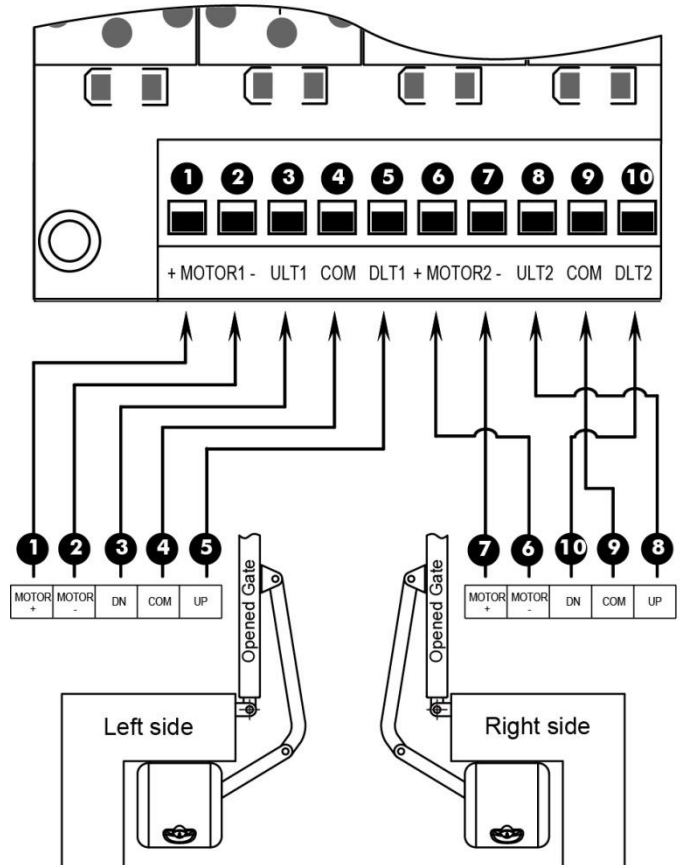
The connection by “**Push to Open**” is different from the connection by “**Pull to Open**”.

Connection of arm 1(Installed in the left side)

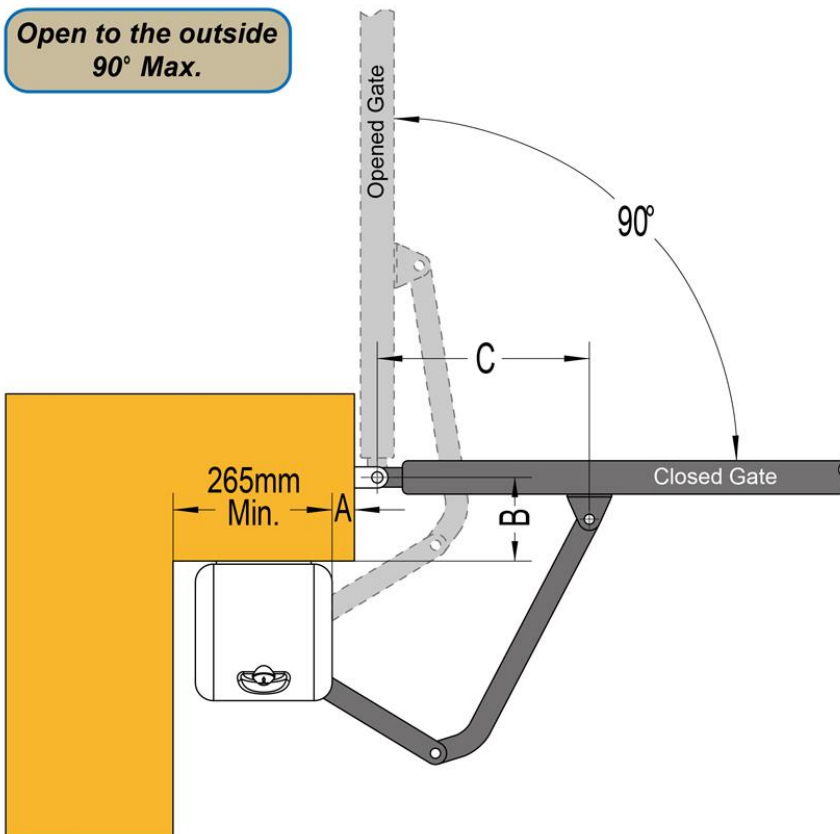
The **MOTOR+** terminal of the arm should be connected to the **+MOTOR1** terminal of the control board. The **MOTOR-** terminal should be connected to the **MOTOR1-** terminal of the control board. The **DN** terminal should be connected to the **ULT1** terminal of the control board. The **COM** terminal should be connected to the **COM** terminal of the control board. The **UP** terminal should be connected to the **DLT1** terminal of the control board.

Connection of arm 2(Installed in the right side)

The **MOTOR+** terminal of the arm should be connected to the **MOTOR2-** terminal of the control board. The **MOTOR-** terminal should be connected to the **+MOTOR2** terminal of the control board. The **DN** terminal should be connected to the **DLT2** terminal of the control board. The **COM** terminal should be connected to the **COM** terminal of the control board. The **UP** terminal should be connected to the **ULT2** terminal of the control board.



**Open to the outside
90° Max.**



Angle	A (mm)	B (mm)	C max. (mm)
90°	40	0	540
		50	500
		100	460
		150	420
		200	380
		250	340
		300	300
90°	0	0	580
		50	540
		100	500
		150	460
		200	420
		250	380
		300	340
90°	-40	0	620
		50	580
		100	540
		150	500
		200	460
		250	420
		300	380

Maintenance

 **Warning:** *Disconnect power before servicing.*

1. Using a clean, dry cloth, wipe the gate opener shaft, and then apply a silicone spray to reduce its friction. In cold climates where temperatures reach 1°C (30°F) or less, spray silicone on the actuator every 4~6 weeks to prevent freeze up.
2. Regularly check gate hinges to make sure gate is swinging smoothly and freely. Grease hinges if needed.
3. Check your installation periodically, as hardware and posts will shift. Brackets may need to be adjusted or hardware may need to be tightened.
4. Maintain the area around your gate. Keep the areas free of objects that can prevent the gate swinging freely.

NOTES:

1. *Inspection and service should always be performed anytime a malfunction is observed or suspected.*
2. *It is suggested that while at the site voltage readings be taken at the operator. Using a Digital Voltmeter, verify that the incoming voltage to the opener it is within ten percent of the opener's rating.*
3. *Refer to Page 21 for instructions on how to check gate force and sensitivity adjustments.*

Trouble Shooting

1. Opener does not run. Digital Display indicator is not on.
Check if all motor are properly connected and color coded. Make sure the AC input is connected.
Check if the fuse in control board is bad.
2. Opener powers up but does not run.
Arm cable loose or disconnected. Verify that all of the wires going to the arm are secure and that the connector is properly mated to the header.
Arm is incorrectly installed. Disconnect the motor housing from the arm and verify that the arm moves freely.
Gate is excessively heavy or hinges are bad. Verify that the gate is within the ratings for this product. Disconnect the arms and verify that both gates swing easily. Lubricate or replace hinges as necessary.
Bad control board. Call technical support for help with replacement parts.
3. Gate stops immediately after it starts moving.
Obstruction sensed. Check safety devices and gate for obstructions.
Force set too low. Adjust FORCE setting until gate completes a full open/close cycle without stop. The force setting may need to be adjusted in cold weather, as the gate will not move freely.
Check if the MRT period is too short. Refer to page 21.
Incorrect power.
4. Gate opens but does not close.
Photocell (PBS) is set in Control Board but is not equipped (optional). Please cancel the PBS set. Refer to page 22.
Obstruction blocking close photo eyes, Check eyes for alignment and verify all connections and operation for safety devices.
5. Gate ignores the limit switches
Check that the limit switch is not faulty
Check that wires to the limit switch are not shorted.

Ensure that the motor cable is away from sources of electrical interference, such as electric fences, power lines etc.

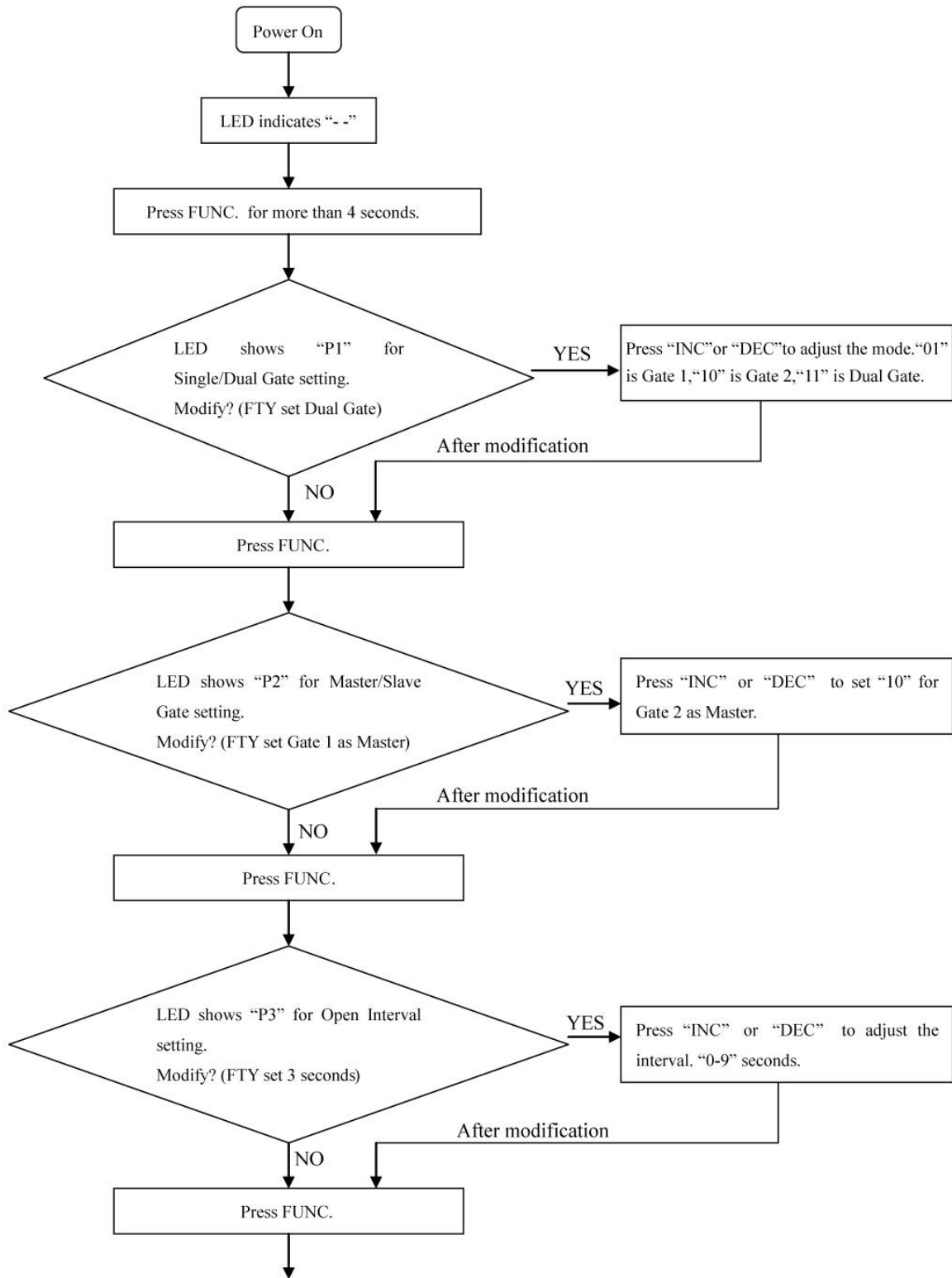
6. Gate opens, closes or stops on its own

Ensure that the key for manual release is in the lock position. Refer to page 24.

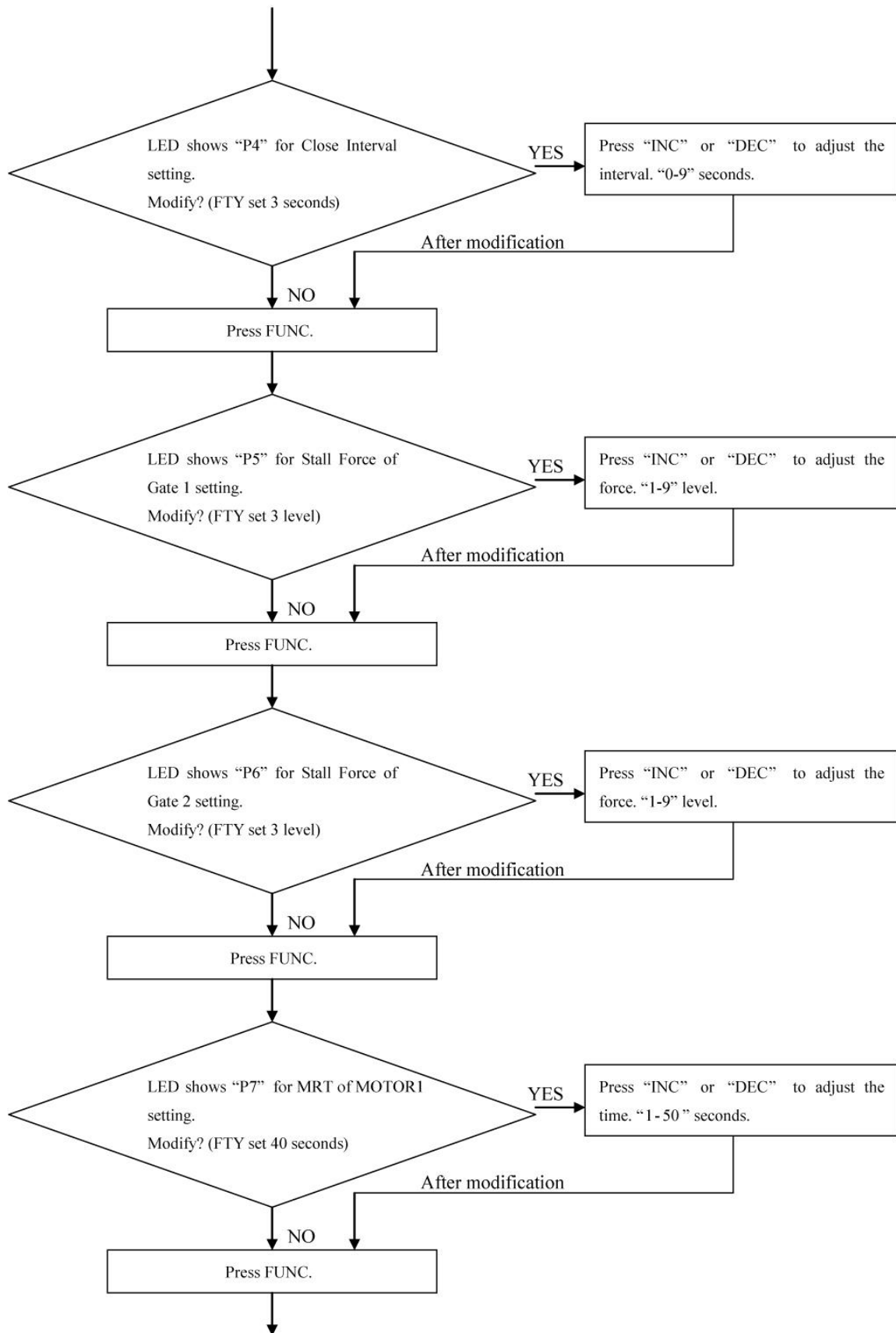


According to Waste of Electrical and Electronic Equipment (WEEE) directive, WEEE should be separately collected and treated. If at any time in future you need to dispose of this product please do NOT dispose of this product with household waste. Please send this product to WEEE collecting points where available.

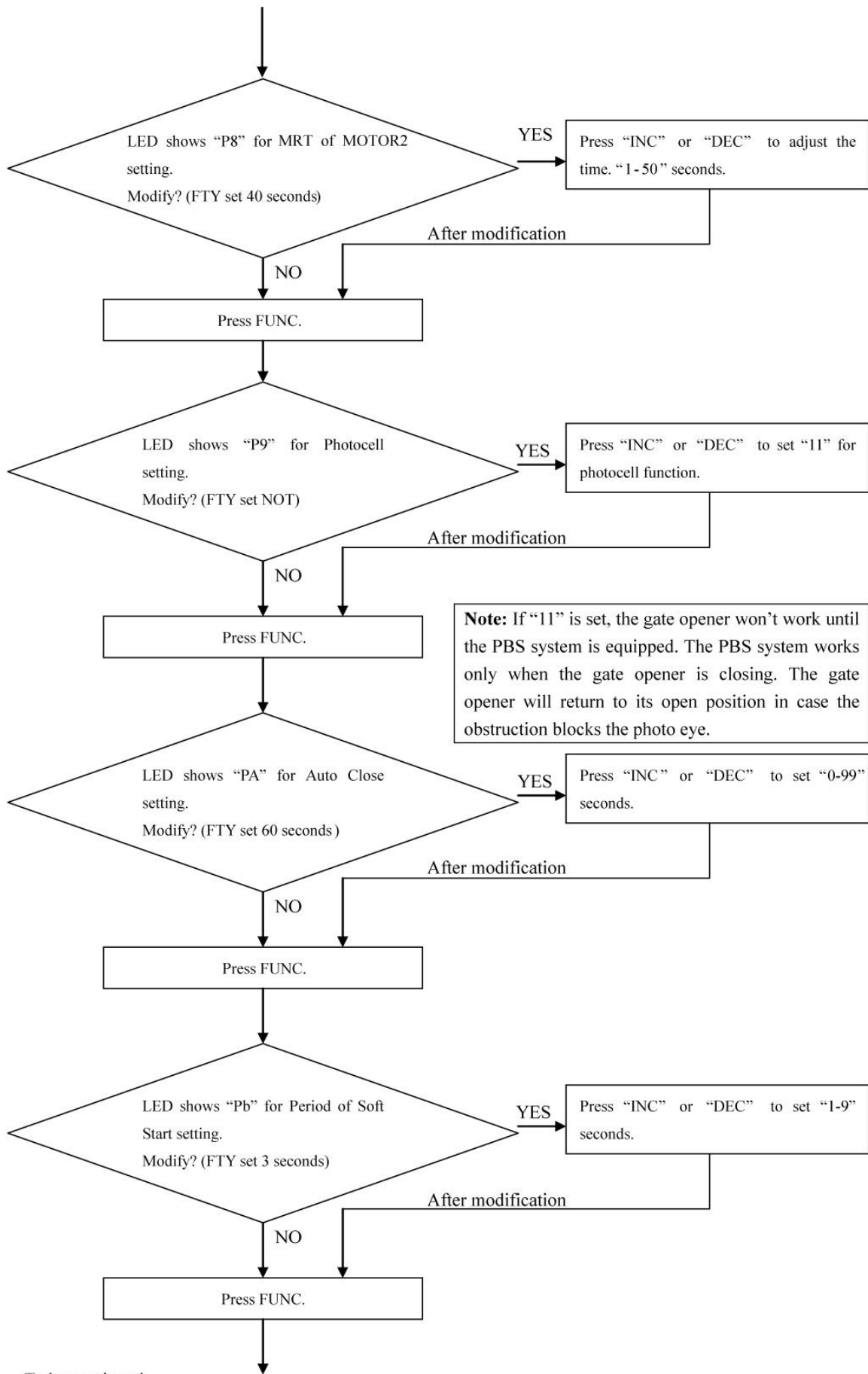
Quick-Setting Guide

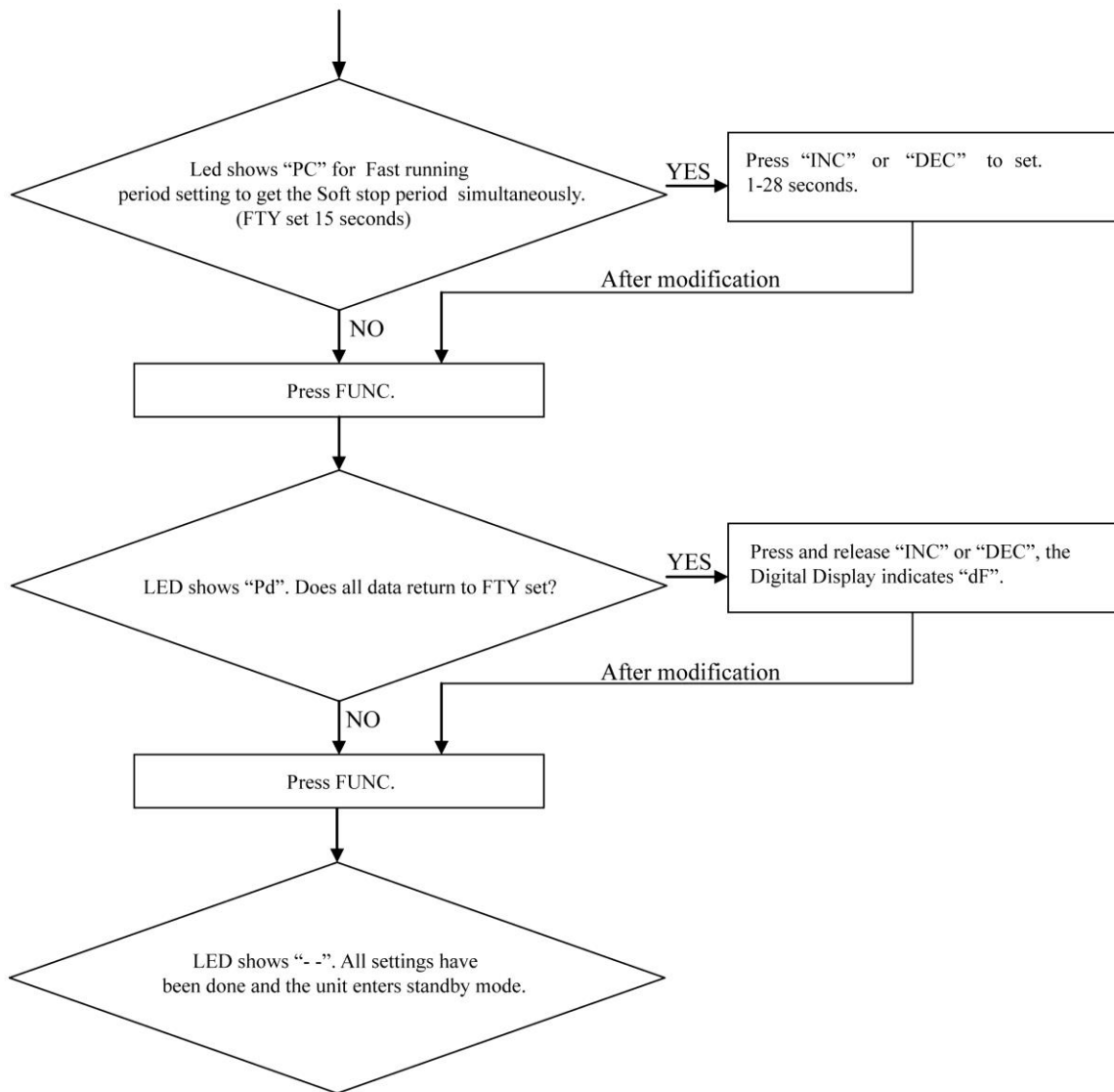


To be continued ...



To be continued ...





IMPORTANT NOTICE TO USERS:
 To maintain the proper working condition of your new automatic gate opener, we recommend that you spray the actuator shaft every 4~6 weeks with silicone. This will keep the actuator working freely and prevent problems.

NOTICE

We strongly recommend using AC power for this gate opener system in a daily operation. The SOL KIT (24V /7AH battery and 20W solar panel packed in the case) is for temporary backup power source only.

Charge the battery before the first use of the solar system to make sure there is enough electricity to power the gate opener.

If you are going to use battery and solar panel as a daily power source, please purchase extra powerful 16 AH battery and 40W solar panel in addition to your 20W solar panel from local dealer.

If there isn't plenty of sunshine but bountiful wind in your area, you may also purchase (WGS) wind generator system as an auxiliary wind-solar hybrid power source from local dealer. At least 60-100 AH capacity battery should be put into use for 200W-300W wind-turbine generator system.

