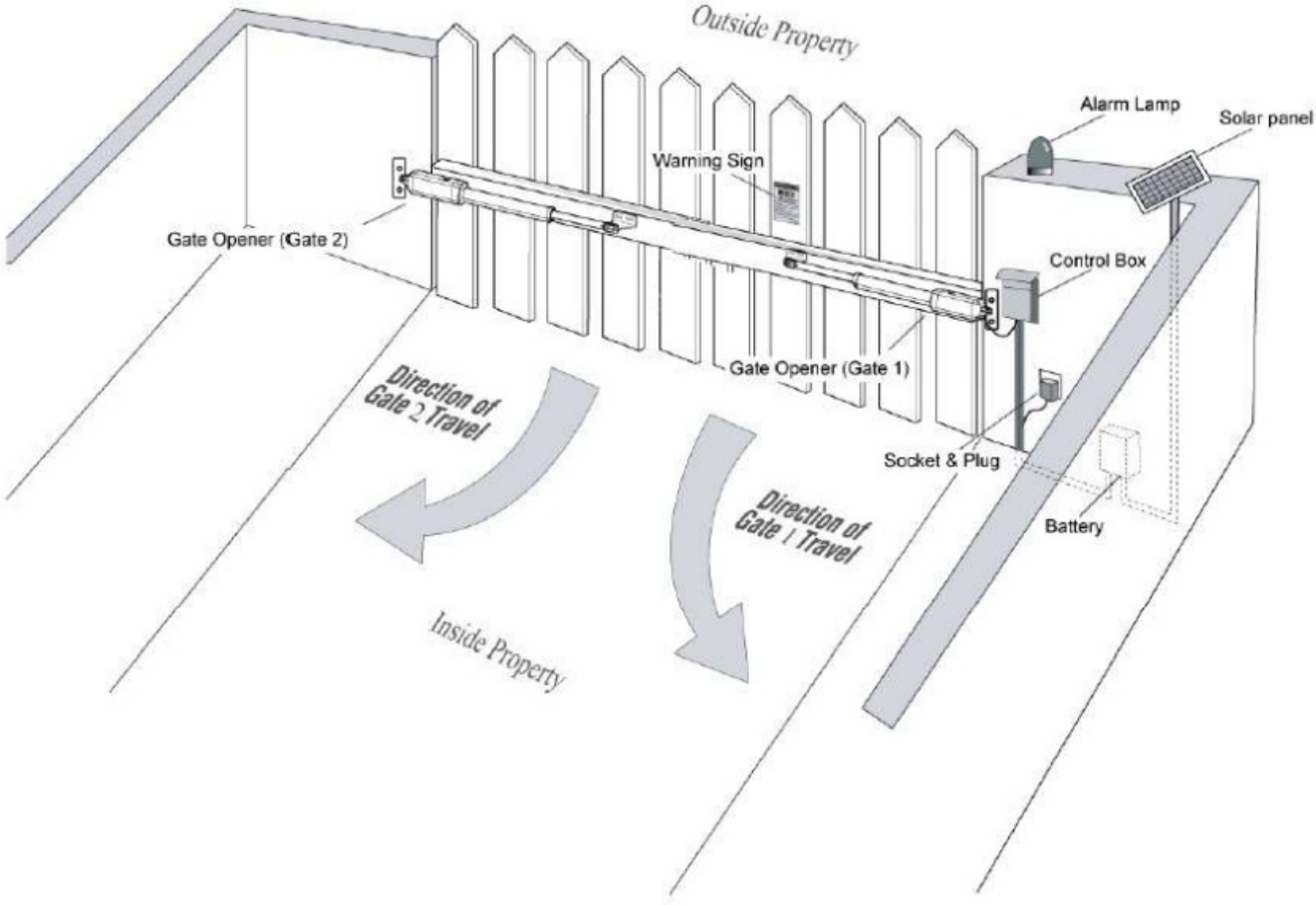
DOORADO SGO-0141-US-BNHD-1 Automatic Single Arm Gate Operator Kit User Manual

Swing Gate Opener
User Manual



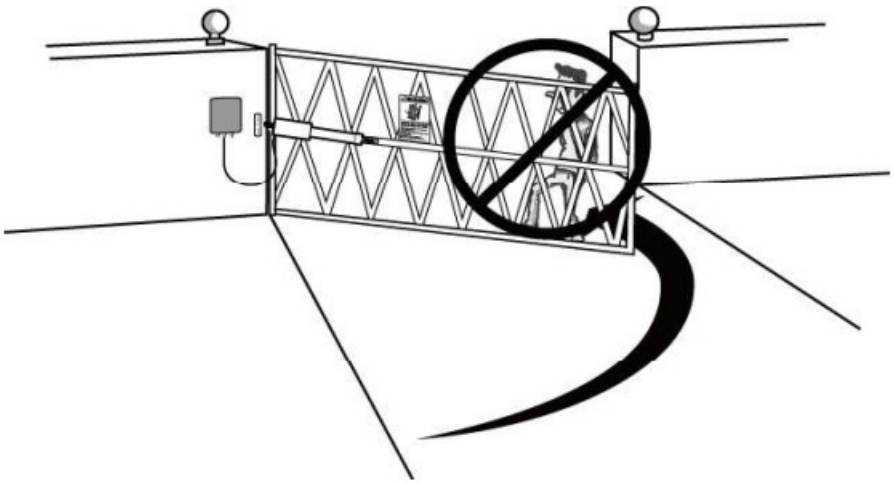
Read carefully before use & keep for future reference.

Contents

Safety Information

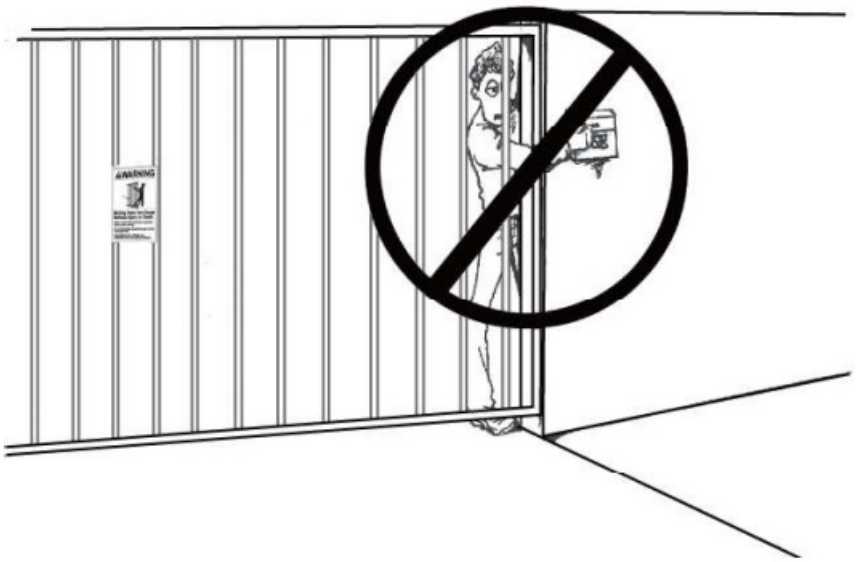
Warnings

- Design, installation, and use of gate opening systems pose unique risks to bystanders and users. Particular attention needs to be given to reduce public exposure to potential hazards as well as guarding all exposed pinch points present in the gate opening system.
- Prior to installation of the gate opening system, failure to verify this may lead to property damage.
- The gate must be installed such that enough clearance exists between it and adjacent structures. The range of motion of the gate should not overlap with public access areas.
- The gate opener is ONLY intended for use on gates intended for vehicular traffic. Pedestrians should be provided with a separate access point which ensures pedestrians do not come into contact with the moving vehicular gate.



- DO NOT let children play on or around the gate and keep controls out of their reach at all times.
- Individuals should not be in physical contact with the gate while it is mobile in order to avoid possible injury.

- DO NOT install any device that operates the gate sensor within 6′ (1.8 m) of where an individual can reach over, under, around, or through the gate.



Specifications

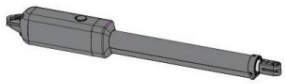
Gate Capacity

300 lb. (140 kg)	√	NR	NR	NR	NR
250 lb. (110 kg)	√	√	√	NR	NR
200 lb. (90 kg)	√	√	√	NR	NR
150 lb. (70 kg)	√	√	√	√	NR
100 lb. (50 kg)	√	√	√	√	√
	4 ft. (1.2 m)	6 ft. (1.8 m)	8 ft. (2.4 m)	10 ft. (3 m)	12 ft. (3.6 m)

Max. Single-Leaf Length

Model	MK701/702
Input Voltage	110V/60Hz
Power	30W
Current	1.5 A
Actuator Speed	0.63 in./sec. (16 mm/s)
Max. Motor Operation	50 sec.
Max. Auto-Close Timing	99 sec.
Max. Actuator Travel Distance	15.16 in. (38.5 cm)
Operational Temperature	-4 to 122°F (-20 to 50°C)
Protection Class	IP44

Parts List

 Gate Opener × 1		 Warning Sign × 2	Fasteners	
			 Ø10 mm Washer × 5	 M10×200 mm Bolt × 2
			 Ø10 mm Lock Washer × 5	 M10×75 mm Bolt × 2
 Control Box × 1	 Remote Control × 2	 Release Key × 1	 Ø8 mm Washer × 1	 M10×30 mm Bolt × 1
			 M10 Nut × 5	 M8×30 mm Bolt × 1
 Post Bracket × 1	 Post Pivot Bracket × 1	 Gate Bracket × 1	 M8 Nut × 1	 12×40 mm Clevis Pin × 1
			 Hairpin Clip × 2	 12×30 mm Clevis Pin × 1

Optional Accessories List

 Solar Controller	 Retro reflective Photocell	 Wall Push Button	 Wireless Push Button
 Wireless Keypad	 GSM Remote Control Switch	 Photocell Beam System	 External Receiver
 Solar panel	 Wired Keypad	 Alarm Lamp	

Solar Controller
The solar controller connects the solar panel to its battery, controlling its charging.
Retro-reflective Photocell
The infrared sensor detects obstructions in order to prevent collisions during use.
GSM Remote Control Switch
Using the GSM remote control lets the user control the gate using a cellphone or landline
External Receiver
The external receiver is used to pair up to 200 remote controls to the system.

Installation

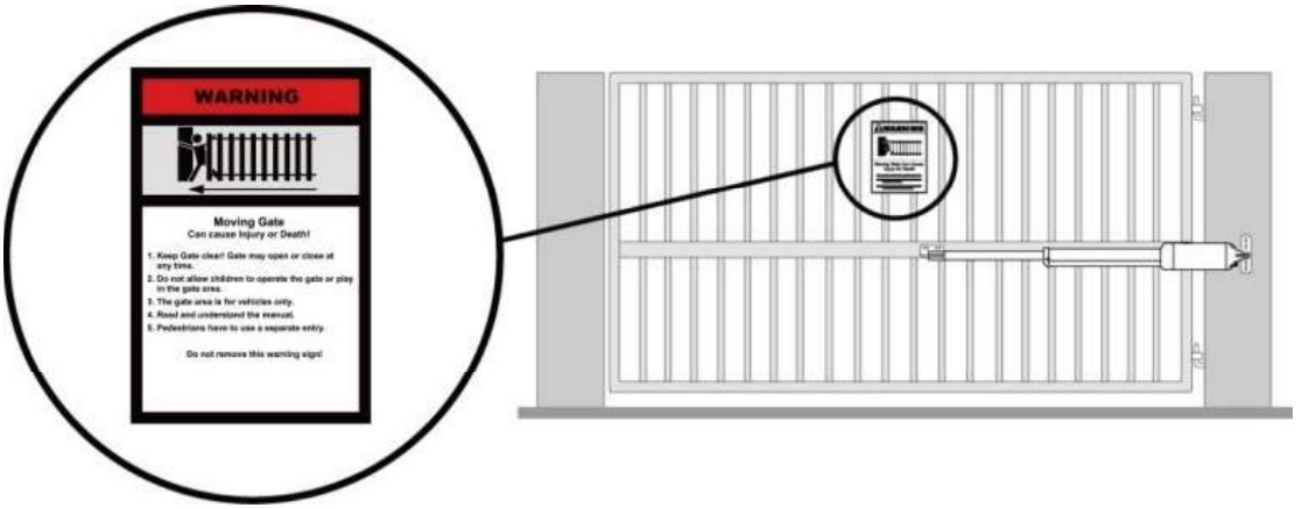
Required Tools

- Power Drill
- Tape Measure

- 14-17 mm Wrenches or Adjustable Wrench
- Wire Strippers
- Small, Medium, & Large C-Clamps
- Level
- Hacksaw or Heavy-Duty Bolt Cutters
- Phillips Head Screwdriver

Installation Preparation

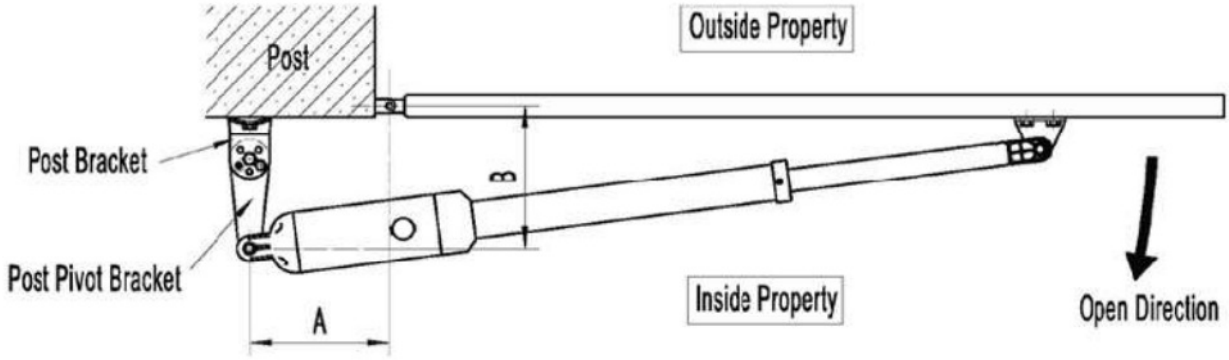
- There are two kinds of installation for this gate opener: Pull-To-Open and Push-To-Open. Push-To-Open refers to installation where the gate will open outwards from the property. Such installation requires a post pivot bracket for each gate. Make sure that the gate does not open into public access areas.
- The gate opener can be mounted on both round and square posts due to its curved post brackets.
  When installing the post brackets, use bolts long enough to pass through the entire post. M10×200 bolts are included.
- To ensure stability when using wooden gate posts, a larger-size washer or metal plate should be used between the bolts and the post.



Gate Opener Positioning

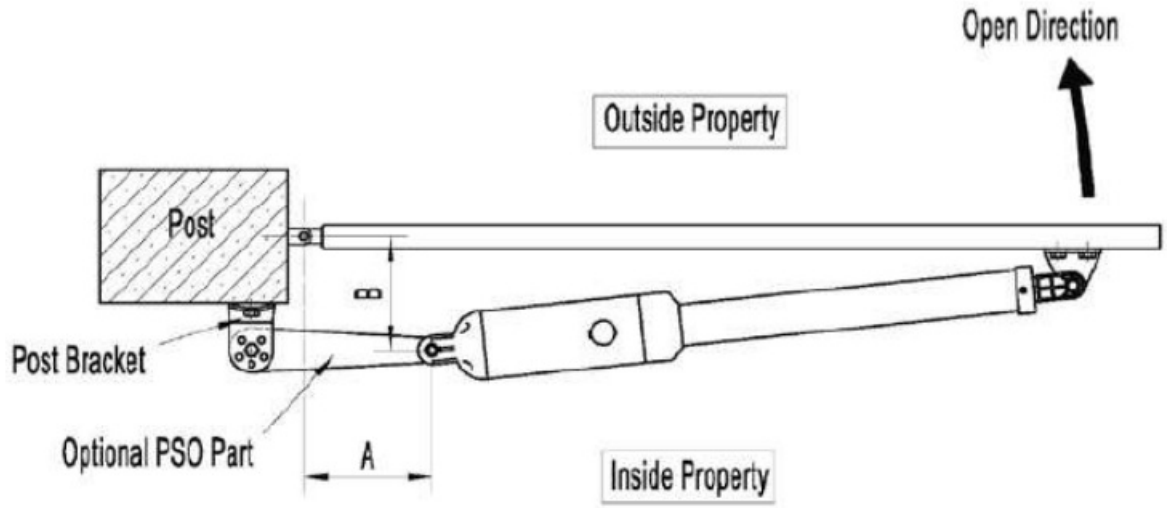
The positioning of the post bracket is very important. Refer to the following tables to determine the appropriate mounting positioning for the post bracket. The table shows the maximum opening angle for a given horizontal (A) and vertical (B) distance between bracket joints and gates in inches.

Pull-to-Open Bracket Positioning and Range of Motion



	A=3.15	A=3.5	A=3.9	A=4.33	A=4.7	A=5.11	A=5.5	A=5.9	A=6.3	A=6.7	A=7	A=7.4	A=7.9	A=8.27	A=8.66
B=7.4	90°	93°	96°	98°	101°	104°	106°	108°	110°	105°	102°	98°	95°	93°	91°
B=7.9	91°	93°	95°	98°	100°	103°	107°	110°	104°	99°	96°	94°	92°	90°	89°
B-8.27	91°	93°	95°	97°	100°	103°	106°	103°	99°	96°	93°	91°	89°	88°	
B=8.66	92°	94°	95°	97°	99°	101°	103°	98°	95°	92°	90°	89°	87°		
B=9	90°	94°	96°	98°	100°	103°	98°	94°	92°	90°	87°	86°			
B=9.4	90°	92°	95°	97°	99°	97°	93°	91°	88°	87°	84°				
B=9.8	90°	92°	94°	97°	96°	92°	90°	87°	85°	84°					
B=10.2	90°	92°	94°	95°	91°	88°	86°	84°							
B=10.6	90°	92°	95°	90°	87°	85°									
B=11	90°	92°	89°	86°	84°										

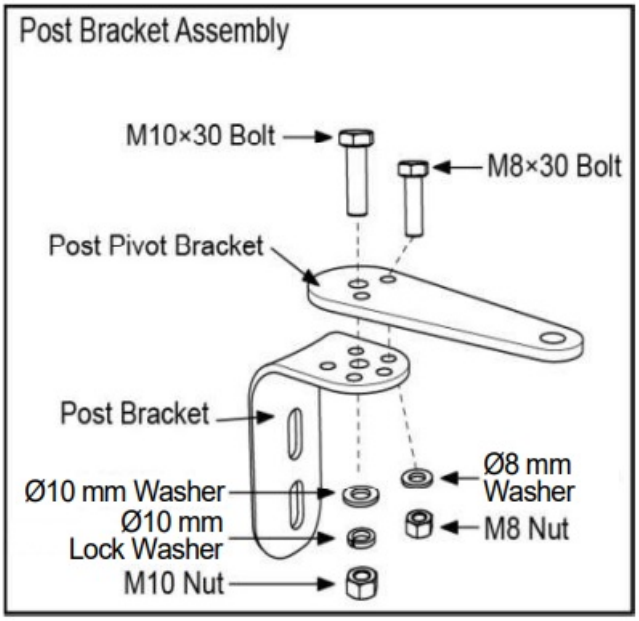
Push-to-Open Bracket Positioning and Range of Motion



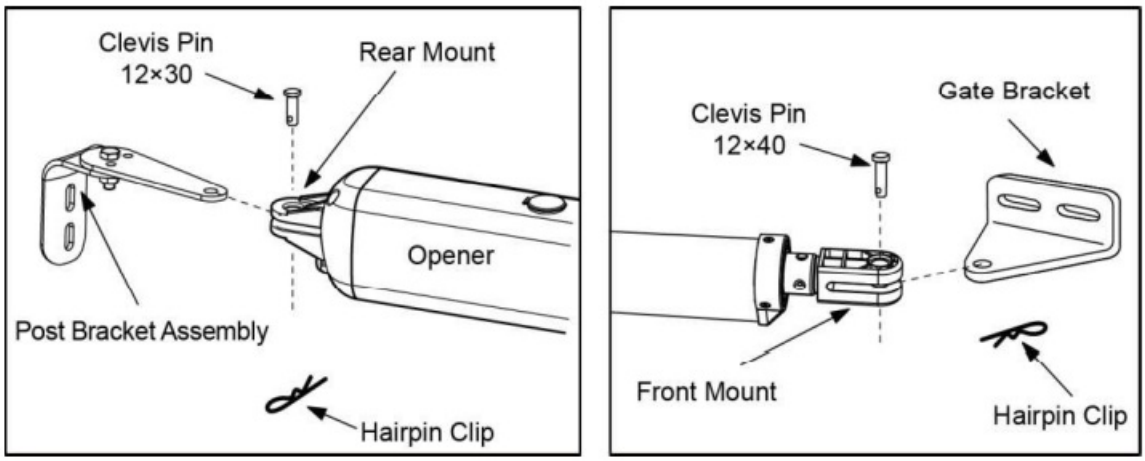
	A=3.9	A=4.7	A=5.5	A=6.3	A=7	A=7.9	A=8.66	A=9.4	A=10.2
B=4.3	90°	100°	111°	120°	125°	117°	108°	99°	90°
3=5.1	90°	98°	107°	115°	120°	111°	100°	92°	86°
3=5.9	90°	97°	104°	110°	114°	104°	94°	87°	
3=6.7	90°	98°	105°	112°	109°	97°	89°		
3=9.8	90°	96°	101°	108°	101°	91°	83°		
B=7.4	90°	95°	100°	106°	93°	85°			
B=8.2	90°	94°	99°	97°	87°				
B=9	90°	93°	97°	90°	81°				
B=9.8	90°	93°	94°	83°					
B=10.6	90°	92°	86°						

Installation Proper

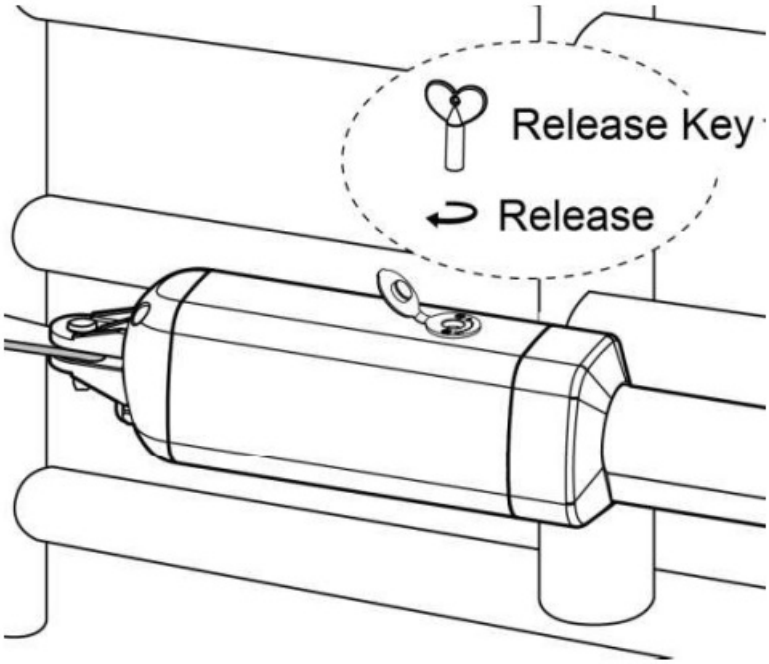
1. Insert a M10×30 mm bolt through the center hole of the post bracket and post pivot bracket as shown. Place a Ø10 mm washer, Ø10 mm lock washer, and M10×10 mm nut on the bottom of the bolt and hand tighten.



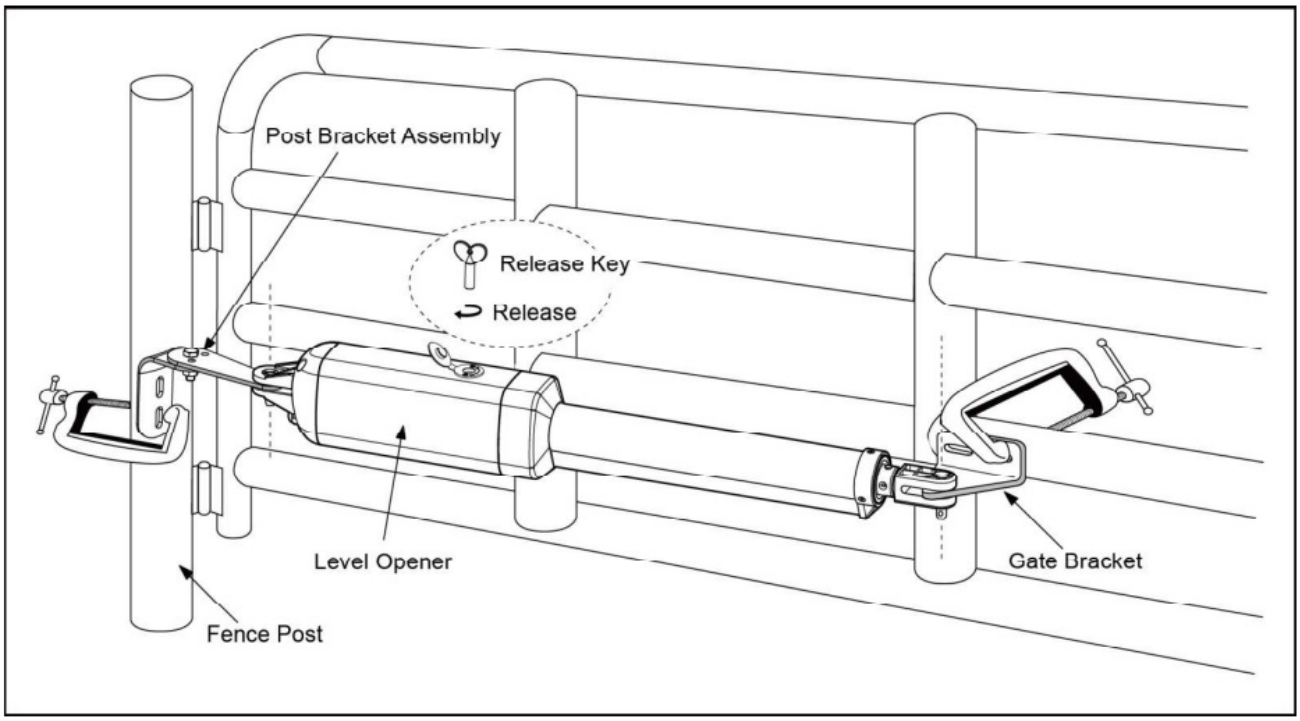
2. Attach the gate bracket and post bracket assembly by passing a clevis pin through the opener. Secure the clevis pin with a hairpin clip.



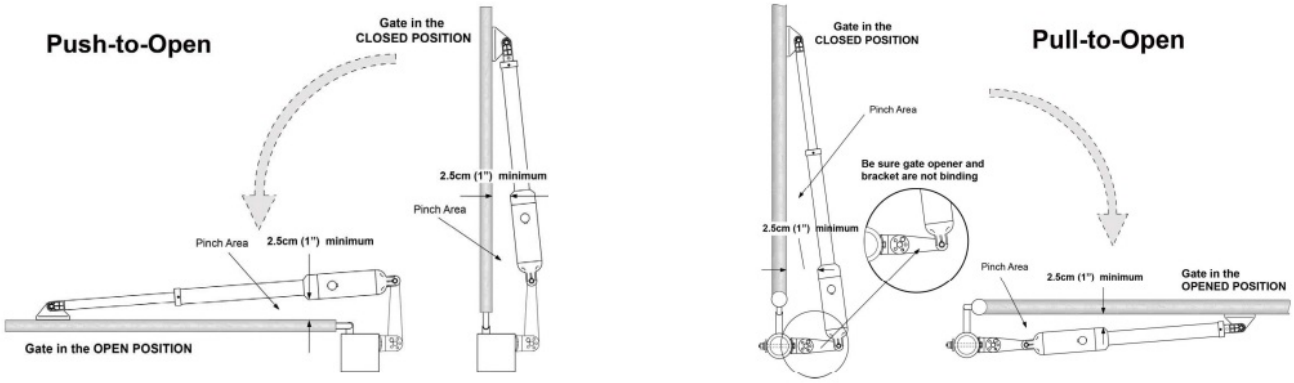
3. Open the release hole plug on top of the gate opener. Insert the release key and turn it 90° clockwise. This will release the motor and allow for manual extension and retraction of the push-pull rod. To re-lock the system, turn the key 90° counterclockwise.



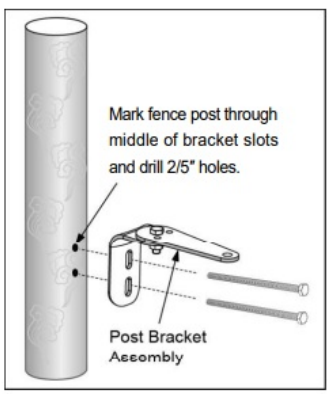
4. For pull-to-open installation, fully retract the opener and fully open the gate. Next, place the gate bracket on the gate and gate post. Secure the gate opener to the gate and gate post temporarily by using two C-clamps. Make sure that the gate opener is level.

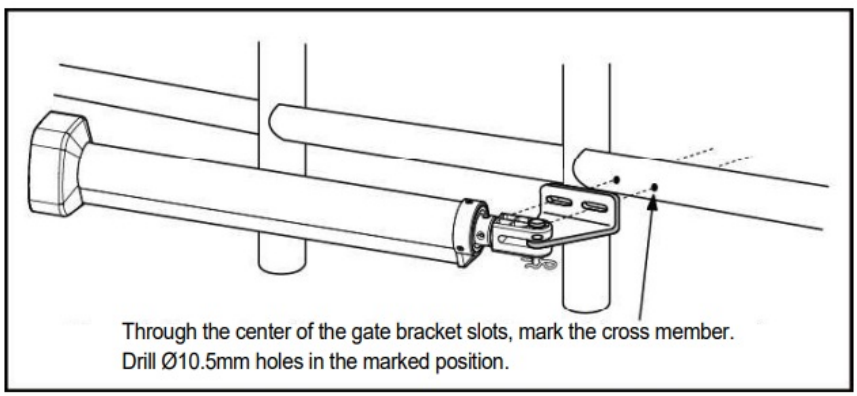


5. Confirm that there is at least 0.4 inches (2.5 cm) between the gate and the gate opener and that the post pivot bracket and gate opener are not touching. If the opener and post pivot bracket are touching, rotate the post pivot bracket such that the minimum clearance is achieved. Insert a M8×30 mm bolt through both remaining peripheral holes on the post bracket and post pivot bracket. Place a Ø8 mm washer and M8 nut on the bottom of the bolt and hand tighten.



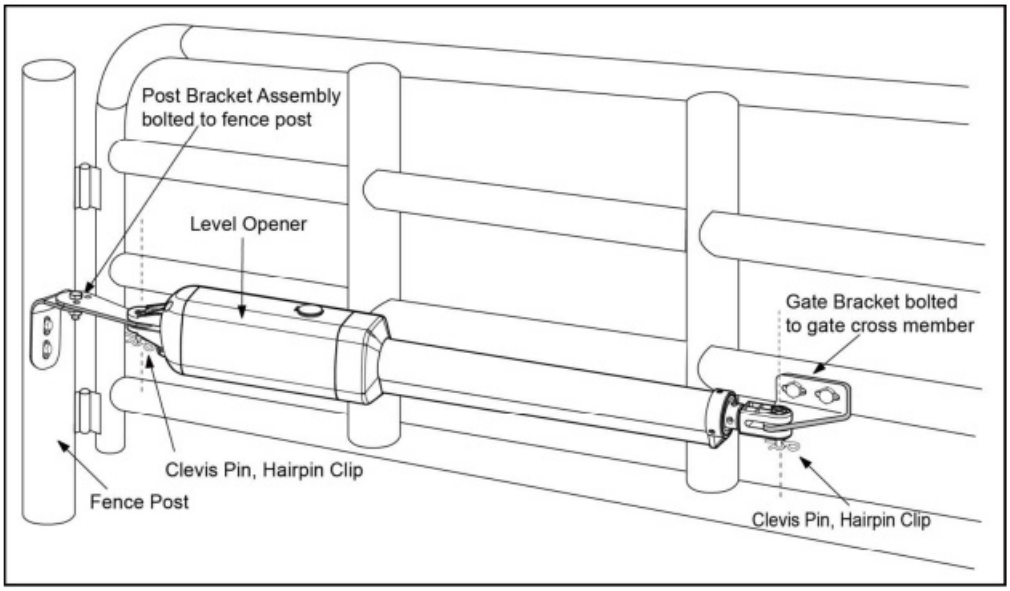
6. Mark the location of the gate bracket hole bolts on the gate and post by making a punch mark or sign in the middle of each bolt slot. Next, drill a 2/5 inch (10.5 mm) diameter holes through the post at the marked locations. Attach the gate bracket to each gate by inserting two M10×75 mm bolts through the gate brackets and the drilled holes in the gate. Place a Ø10 mm washer and Ø10 mm lock washer and Ø10 mm nut at the end of each bolt and hand tighten. Cut off any part of the bolts that are sticking out past the nut.





7. For pull-to-open installation, fully retract the gate opener and fully open the gate. Attach the gate opener to the

post bracket assembly and the gate bracket by inserting clevis pins through the gate opener and the post pivot bracket and insert another clevis pin through the gate opener and gate bracket. Secure both clevis pins with hairpin clips. For a push-to-open installation, do the same assembly but with the gate in the fully closed position.



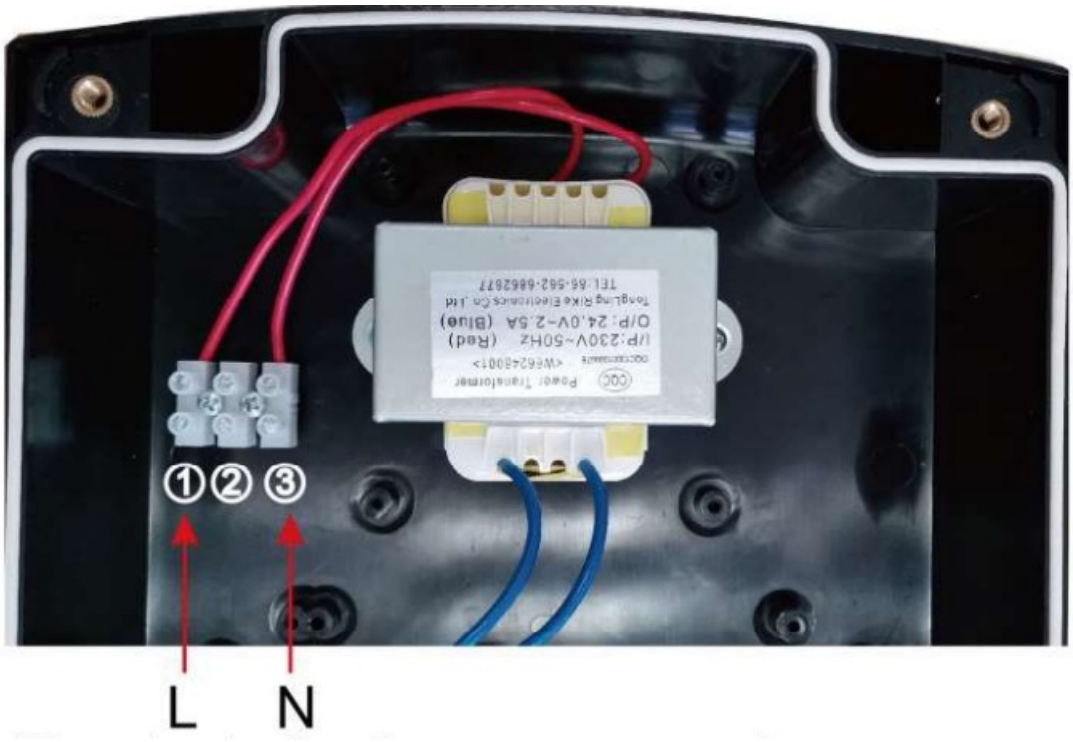
Mounting the Control Box

1. To affix the control box, use a sturdy surface and secure the control box to it by using mounting holes and screws (not included). While the control is waterproof, for safety reasons it is best to install it in an enclosed area at least 40 inches (100 cm) off the ground to avoid damage by floods or snow.
2. Insert the power cable and cable for the first gate opener through the front strain relief and into the control box by loosening the strain screw located in the leftmost bottom of the control box and feeding the cables into the control box.

3. Insert the cable of the second gate opener and alarm lamp cables into the control box through the middle strain relief and repeat step 2.
4. Insert cables for optional parts into the control box through other the other strain relief then repeat step 2.

Connecting the Power Supply

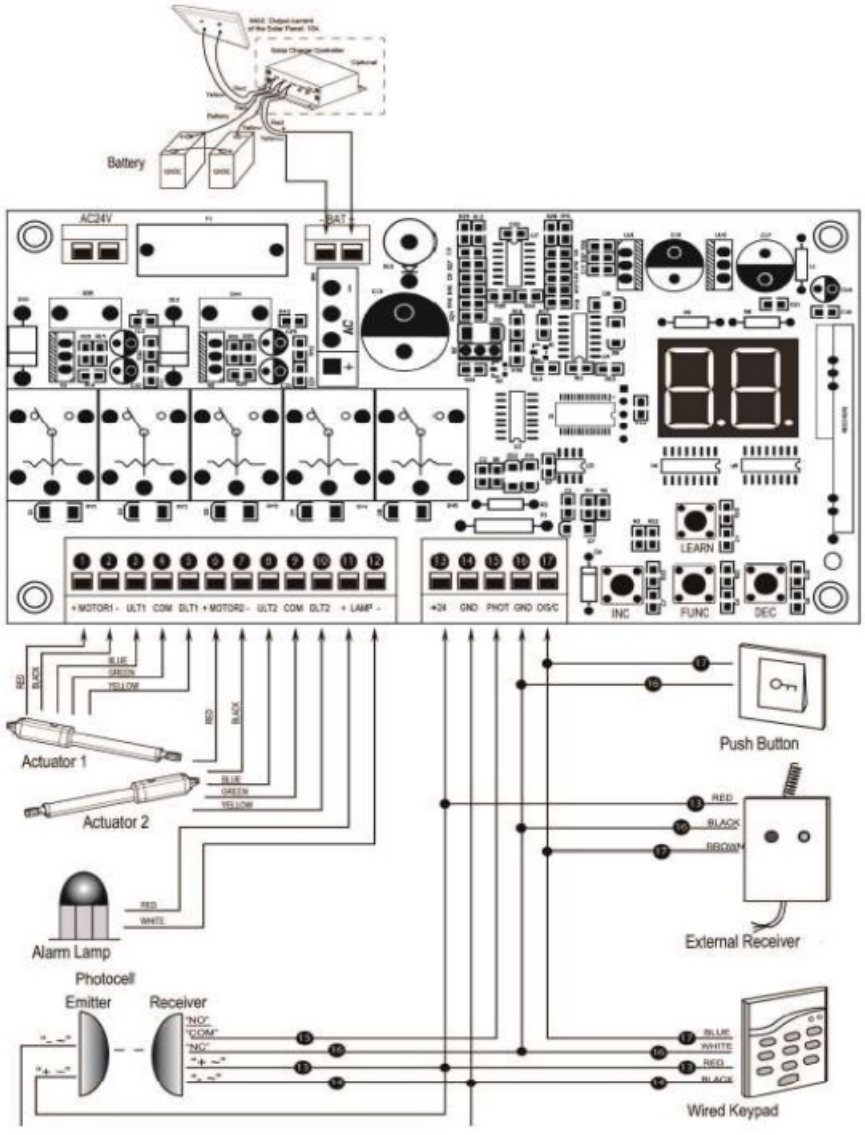
1. Use copper conductors to connect to the power supply terminals.
2. The wire (not provided) used to connect to the supply should at least 18 AWG in size.
3. Run the wires through a conduit to the control box to protect them.
4. The fuse in the control board is interchangeable. A 10A 250V AC 5×20mm fuse is suitable for the control board.



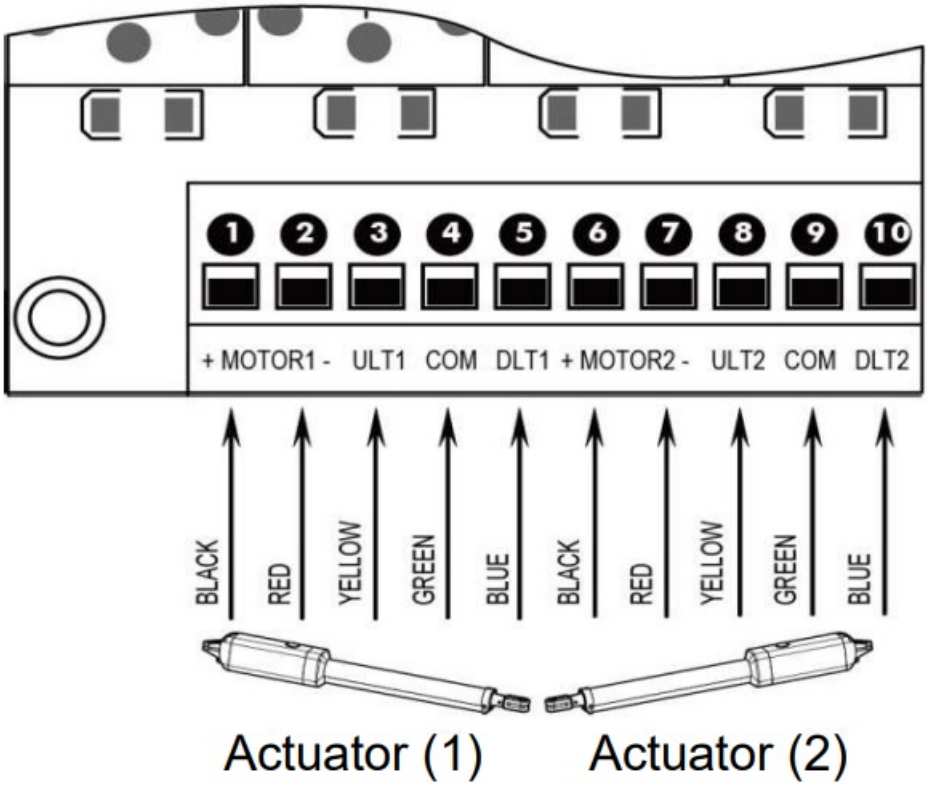
Terminals for the power supply. Connect the liveline and neutral line to the L (#1) and N (#3)terminals respectively.

Connecting The Control Board

Motor Connection for Pull-to-Open Gates
Motor 1: Insert the stripped cable wires into the appropriate terminals on the open terminal block.
The red wire should be inserted into the MOTOR1+ terminal. The black wire should be inserted into MOTOR1–. The blue wire should be inserted into ULT1. The green wire should be inserted into COM. The thin yellow wire should be inserted into DLT1.
Motor 2: Similar to Motor 1, insert the stripped cable wires into the appropriate open terminal block. The red wire should be inserted into the MOTOR2+ terminal. The black wire should be inserted into the MOTOR2– terminal. The blue wire should be inserted into ULT2. The green wire should be inserted into COM. The yellow wire should be inserted into DLT2.



Motor Connection for Push-to-Open Gates
The motor's power wires and limit wires connection for a push-to-open setup is different from the pull-to-open setup. Therefore, motor 1 and motor 2 wires should be connected according to the diagram on the right rather than the instruction for the pull-to- open motor. In this case, the black wire should be inserted into the Motor+ terminal.
The red wire should be inserted into the MOTOR1- terminal. The yellow wire should be inserted into ULT. The blue wire should be inserted into DLT1. The green wire should be inserted into COM.



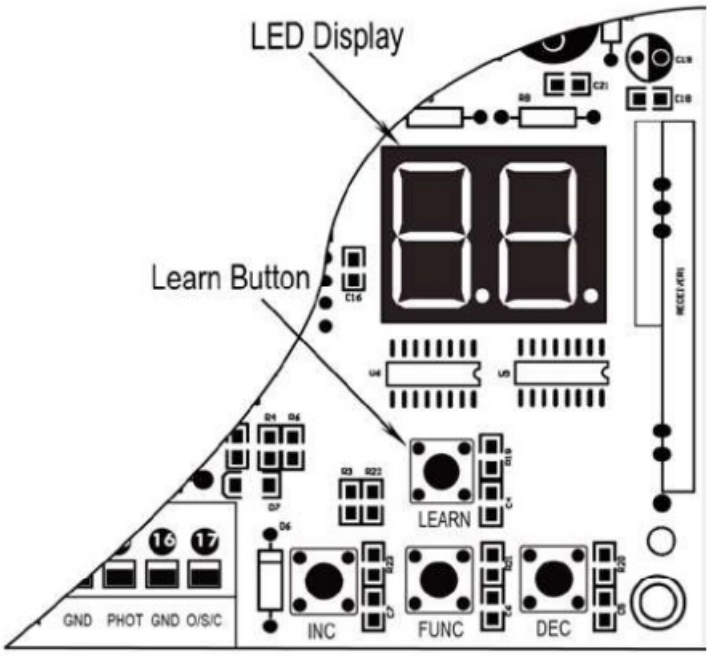
Accessory Connection

Alarm Lamp
The red wire of the alarm lamp should be inserted into the +Lamp (#11) terminal. The white wire should be inserted into the Lamp– (#12) terminal.
Back-up Battery
The positive terminal of the battery should be wired to the BAT+ (#19) terminal. The negative terminal should be wired to the BAT– (#18) terminal.
Photocell Beam System (PBS)
Use a 2-core cable to connect the negative terminal of the photocell's emitter to the 14 terminal.
Connect the positive terminal to the 13 terminal. Connect the negative and positive terminals of the photocell's receiver to the 14 and 13 terminals in parallel. Use another 2-core cable to connect COM to the 15 and NC to the 16 terminals, respectively.
Push Button
The red wire should be inserted into the O/S/C terminal. The white wire should be connected into the
GND terminal.
External Receiver
The brown wire of the external receiver should be connected to the 17 terminal. The black wire of the external receiver should be connected to the 16 terminal. The red wire of the external receiver should be connected into the 13 terminal
Wired Keypad
The red wire of the 24V DC keypad should be connected to the 13 terminal. The black wire of the wired keypad should biconnected to the 14 terminal. The white wire of the wired keypad should biconnected to the 16 terminal. The blue wire of the wired keypad should biconnected to the 17 terminal.

Remote Pairing

Adding Remotes
Press and release LEARN. The LED will display Ln. Press the key on the remote twice within 2 seconds and the LED will flash Ln before returning to –. The remote has been paired successfully and can be used to control the gate.
Removing Remotes
Press and hold LEARN until the LED displays dL. Release the button and the LED will go back to –. All of the

previously paired remotes will no longer open the gate.



Setting Operation Parameters

Single/Dual Gate Setting

Press and hold FUNC. The digital display will indicate P1, controlling the number of gates. Using INC and DEC to cycle though different settings. 01 indicates single actuator 1 (one right gate) mode. 10 indicates single actuator 2 (one left gate) mode. 11 indicates dual actuator mode (2 gates). Choose your preference and press FUNC to save it.

Master/Slave Gate Setting

When the digital display show P2, you can set master/slave values. Use INC and DEC to cycle through different settings. 01 indicates gate opener 1 (the right gate) is the master gate. 02 indicates gate opener 2 (the left gate) is the master gate. Choose your preference and press FUNC to save it.

Setting Opening Intervals between Master and Slave Gates

When the digital display shows P3, you can set the opener interval between the master and slave gates. The opening interval between the master and slave gate can be adjusted using INC and DEC. The digital display will show 0-9. 1 indicates that the master gate will open 1 second before the slave gate. Each incremental increase increases the interval time between master and slave gate opening by 1 second. The maximum delay between master and slave gate is 9 seconds.

Choose your preference and press FUNC to save it.

Setting the Closing Interval between Master and Slave Gates

When the digital display shows P4 you can set the closing interval between the master and slave gates. The closing interval can be adjusted using INC and DEC. The digital display will show 0-9. 0 indicates the master and slave gates will close simultaneously. 1 indicates the master gate will close 1 second later than the slave gate. Each incremental increase increases the interval between master and slave gate closing by 1 second. The maximum interval between master and slave gate is 9 seconds. Choose your preference and press FUNC to save it.

Adjusting Obstruction Sensitivity

When the digital display shows P5, you can set gate 1's sensitivity to obstructions. It can be adjusted by pressing INC and DEC. The digital display will show 1-9 where 1 indicates minimal sensitivity and 9 indicates maximum sensitivity. Choose your preference and press FUNC to save it. The digital display will then show P6 and can set the obstruction sensitivity for gate 2. This is adjusted in the same way. Choose your preference and save it by pressing FUNC.

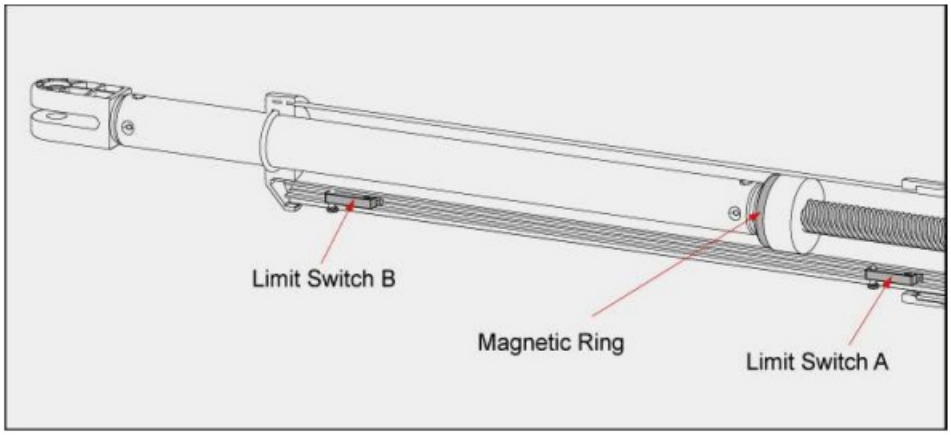
Adjusting the Max Motor Running Time

When the digital display shows P7, you can set the maximum running time of motor 1 to make the motor stop running after a specified period. The MRT can be adjusted by pressing INC and DEC. The digital display will show 1-50, indicating the MRT in seconds. Choose your preference and press FUNC to save it. The digital display will then show P8 and can adjust the MRT for motor 2. This is adjusted in the same way. Choose your preference and press FUNC to save it.

Setting Up the Photocell Beam System (Optional)
When the digital display shows P9 you can set the board to use a photocell beam system. Adjust the settings using INC and DEC. If the digital display indicates 00, the PBS is deactivated. Choose your preference and press FUNC to save it.
Setting Automatic Closing Time
When the digital display indicates PA you can set automatic closing time. Press either INC or DEC and the digital display will show a number 01-99 indicating the current automatic closing time. The minimum closing time is 1 second and the maximum is 99 seconds. IF the digital display shows 00 the automatic closing function is off and the gate will remain open after opening until manually instructed to closed. Choose your preference and press FUNC to saveit.
Setting Soft Start
When the digital display shows Pb you can set the length of the gate's soft start. Pressing INC and DEC changes the soft start period. The digital display will show a number 1-9. Each number indicates one second of soft start. Choose your preference and press FUNC to save it.
Setting the Fast Running Period
When the digital display shows PC you can set the length of the gate's fast running period. Pressing INC or DEC can adjust the fast running time period. When desired, a soft stop can be achieved by shortening the FRP time. Choose your preference and press FUNC to save it.
Resetting Preferences
When the digital display shows Pd, press and release INC and DEC to reset all parameters back to their factory default.

Operation

Once all adjustments are finished, the opener can be operated. With the gate in its closed position, press and release the remote control button and the gate will move to the programmed opening position and stop. With the gate in its fully open position, press the remote control button and the gate will move to the programmed closing position and stop. While the gate is moving, pressing the remote control button will make it stop. Pressing the button again will make the gate reverse direction and the gate will stop in its programmed position. The gate will also stop in case of obstructions. Following such a stop, the remote button will reverse the gate direction. It will stop in its programmed position, giving you time to remove the obstruction.
Adjusting the Limit Switch of Actuator 1
Pull gate 1 to its fully open position. Use a Phillips head screwdriver to loosen limit switch B and slide it to the desired position, then tighten the limit switch back.
Similarly, with the gate still in its fully open position, use a Phillips head screwdriver to loosen limit switch A and slide it into the desired position, then retighten it. However, it is not recommended to adjust limit switch A. Please make sure the Magnetic Ring is located between the Switch A and Switch B.



Adjusting the Limit Switch of Actuator 2
Follow the same procedures to change the limit settings on gate 2. Be sure to always place the magnetic ring between the limit switches.

Maintenance

- Disconnect the gate's power before performing any maintenance.

- In climates where temperatures reach 30°F (1°C) or less, spray silicone on the actuator every 4–6 weeks to prevent freezing.
- Regularly check gate hinges to make sure the gate is swinging smoothly and freely. Grease hinges if needed.
- Check the gate's functioning periodically. Hardware may shift with use. Pay particular attention to the brackets and tighten their bolts when needed.

Troubleshooting

The opener does not work and the digital display is not on.
Verify that the motors are properly connected and that the AC power input is connected.
Verify that the fuse in the circuit breaker is not blown.
The opener powers up but does not function.
It may be that the arm cable are 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.
It may be that the arm is improperly installed. Disconnect the motor housing from the arm and verify that the arm moves freely.
It may be that the gate is too heavy for the motor or the hinges are bad. Verify that the gate is not too heavy for the actuator (see p. 1). Disconnect the arms and verify that the gate swings easily. Lubricate the hinges if needed.
The gate stops immediately after it starts moving.
It may be that an obstruction has been sensed. Check the gate for obstructions. If there are none or the obstruction should not be a problem, adjust the obstruction sensitivity (see p. 11). Adjust it until the gate completes a full open/close cycle without stopping. The settings may need to be adjusted in cold weather, as the gate moves less freely.
The gate opens but does not close.
It may be that the photocell is set in the control board but not installed. Cancel the PBS in the settings (See p. 11).
It may be that an obstruction is blocking the photocell. Check its sensors for alignment and verify all connections and operations for its safety devices.
The gate ignores the limit switches.
Check that the limit switch is not faulty.
Check that the 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.

Contact Us

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For a .pdf copy of the latest version of these instructions, use the appropriate app on your smartphone to scan the QR code to the right.

https://sp9c.com/wcf7h
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Documents / Resources

	DOORADO SGO-0141-US-BNHD-1 Automatic Single Arm Gate Operator Kit [pdf] User Manual SGO-0141-US-BNHD-1 Automatic Single Arm Gate Operator Kit, SGO-0141-US-BNHD-1, Automatic Single Arm Gate Operator Kit, Single Arm Gate Operator Kit, Gate Operator Kit, Operator Kit