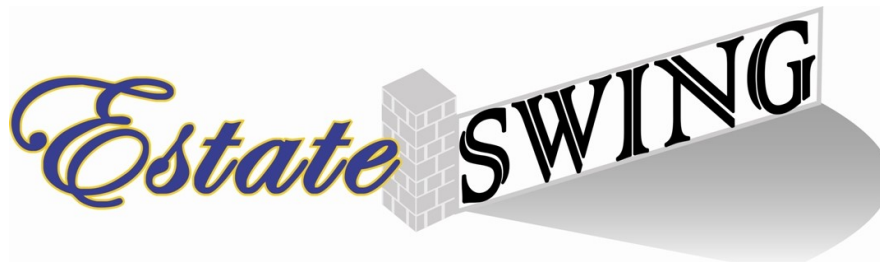
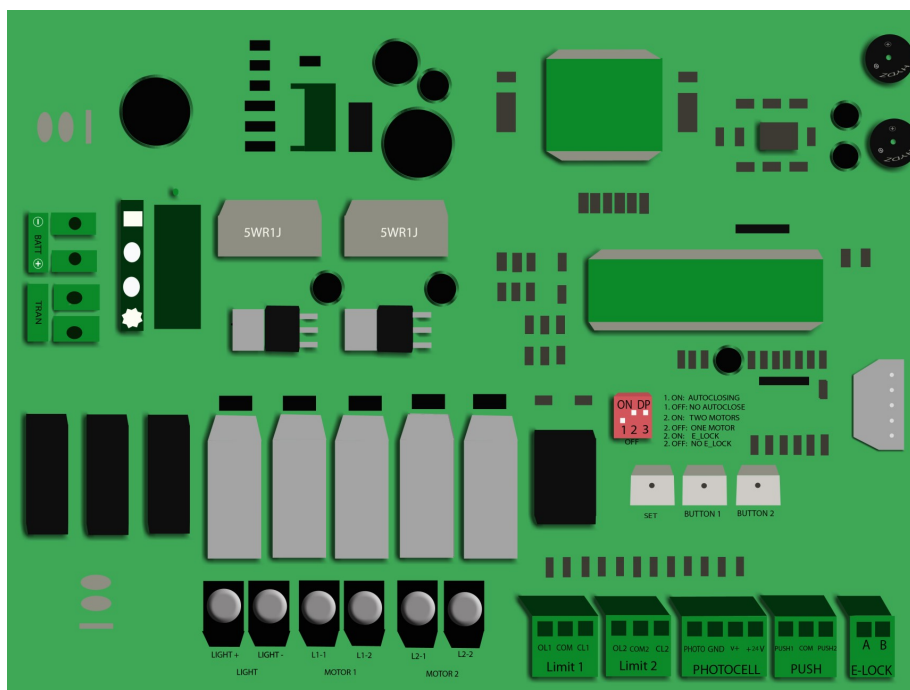


# Instruction Manual for the



## E-SC 1600 / E-SC 1602 Series



**WARNING - Read all instructions before beginning installation or use of this gate opener. This operator exerts a high level of force. Exercise caution at all times and stay clear of the system during operation.**

## Estate Swing Summary of Functions

The Estate Swing is only to be used for vehicular swing gates in a Class I setting.

**Class I:** A vehicular gate opener (or system) intended for use in a home of one-to-four single family dwelling, or a garage or parking area associated therewith.

The Estate Swing automated system was designed and built for controlling vehicle access. Do not use for any other purpose.

The external automation with articulated arms automates residential swing-leaf gates with leaves of up to 16' in length, and is ideal for applications on large pilasters without the need to provide niches (sometimes required to observe the installation dimensions of piston driven devices). It consists of an irreversible electro-mechanical operator with guard and an articulated-arm activation system to be fitted to the gate with the appropriate accessories. The irreversible system ensures the gate is mechanical locked when the motor is not operating. A lock still needs to be installed if security of high winds are a concern. A manual release makes it possible to move the gate in the event of a power-cut or fault.

*For Your Assistance*

**Keep this manual safely stored after installation.**

**Serial Number** \_\_\_\_\_

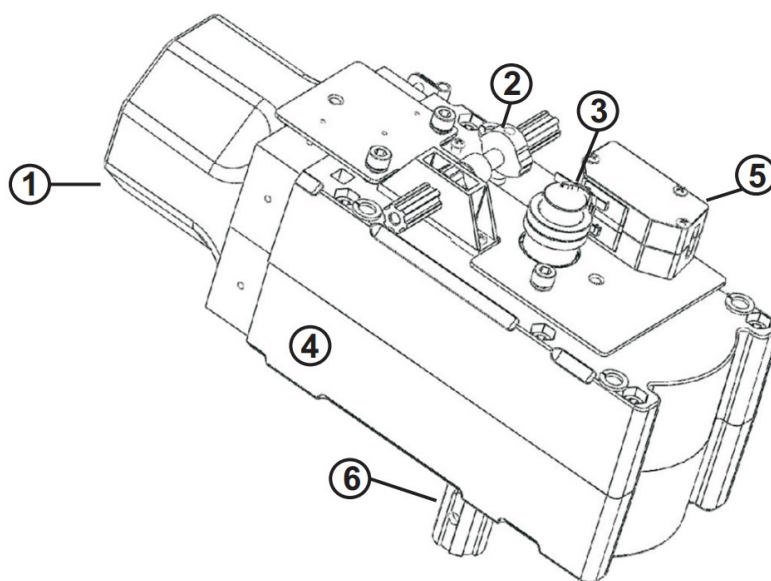
**Date of Purchase** \_\_\_\_\_

**Place of Purchase** \_\_\_\_\_

Have this information on hand while handling all service and warranty issues.

# Specifications

| MODEL  | Estate Swing E-SC 1600             |
|--|------------------------------------|
| Power Supply   | 24VAC 50VA transformer (120VA max) |
| Rated Absorbed Power (Amperage pull on a 120V AC outlet) | 3 Amp/single<br>5 Amp/dual         |
| Max Torque (Nm)  | 200                                |
| Use frequency (cycles/hour)                              | > 100                              |
| Operating ambient temperature                            | -4 to 131 Deg F                    |
| Gearmotor weight (lbs)                                   | 35                                 |
| Protection class   | IP44                               |
| Gate leaf max length (ft.)                               | Up to 16                           |
| Gate leaf max weight (lbs.)                              | Up to 800                          |
| Operator overall dimensions LxHxD(in.)                   | 12 5/8" x 6 7/8" x 6 3/8"          |

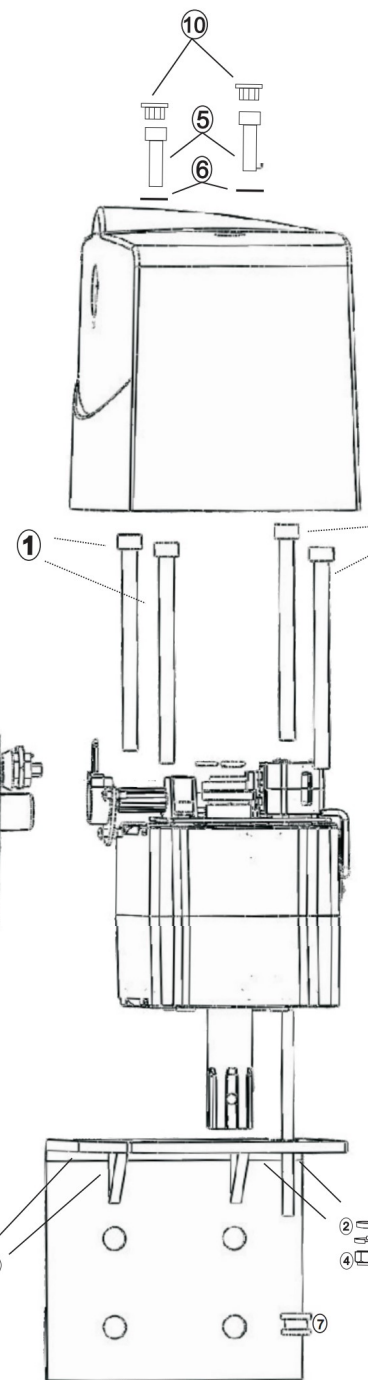
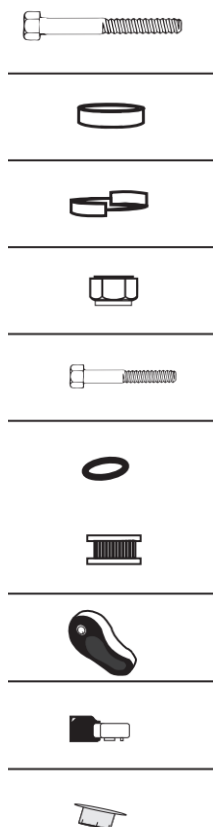


- 1) Motor
- 2) Manual Release Clutch Cam
- 3) Limit Switch Cams
- 4) Gear Box
- 5) Limit Switches
- 6) Transmission Shaft

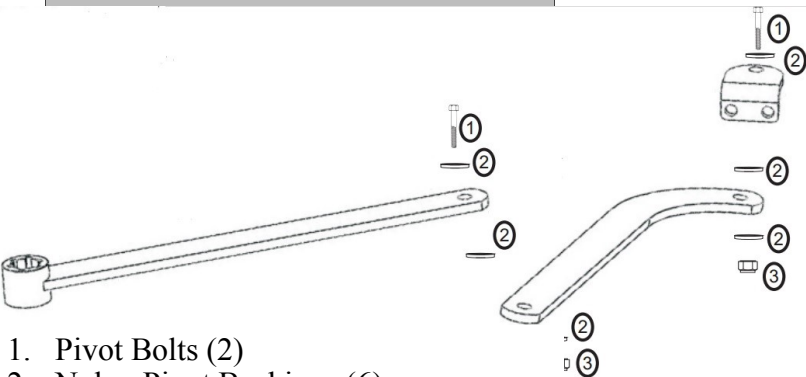
**Motor Box Contents**

1. Motor Mount Bolts (4)
2. Motor Mount Washers (4)
3. Motor Mount Spring Washers (4)
4. Motor Mount Lock Nut (4)
5. Cover Bolts (2)
6. Cover Bolt O-Rings (2)
7. Motor Wire Gasket (1)
8. Manual Clutch Assembly (1)
9. Clutch Keys (2)
10. Cover Bolt Plugs (2)

3/8 Concrete anchors for column (4)



**Motor Arm Contents**

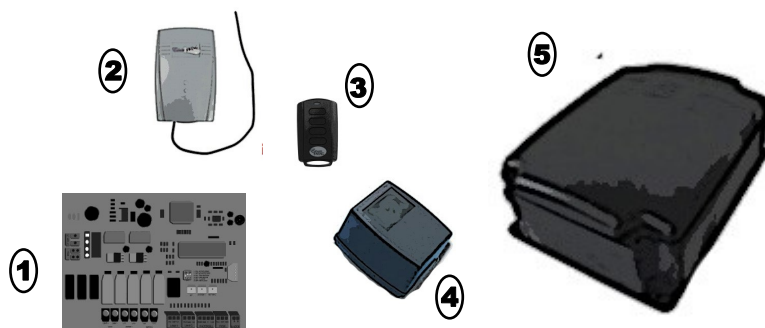


1. Pivot Bolts (2)
2. Nylon Pivot Bushings (6)
3. Lock Nuts (2)

5/16" hex bolts for gate (cut to size) (2)

**Control / Power Contents**

1. Control Board
2. Receiver
3. Transmitter
4. Transformer
5. Control Box



## Standard System Overview and Safety Zones

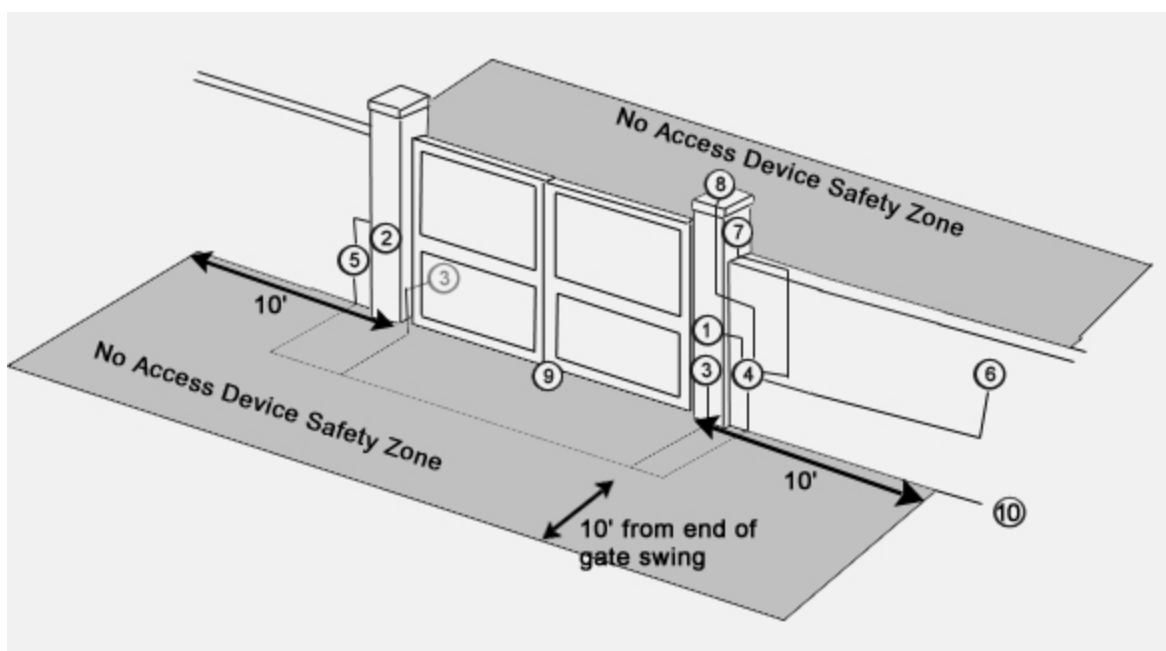
A standard system includes the provided components of the gate opener. It also should include safety and security accessories, such as photo cells or safety loops, that are right for the individual installation (not included).

- 1,2 Estate Swing Operator
- 3 Photocells (not included)
- 4 Master control board
- 5 N/A
- 6 Push button opening device (not included)
- 7 Receiver extension (not included)
- 8 12Vdc flashing lamp (not included)
- 9 Positive stop
- 10 AC transformer



### Notes:

- 1) When laying electrical cables, use appropriate rigid and/or flexible tube.
- 2) Do not run any wires in the same conduit as 110 AC power that may be in the area. This will cause unwanted interference.



## IMPORTANT Preliminary Checks:

To ensure a safe and efficient automated system, make sure the following conditions are observed.

- The gate and post must be suitable for being automated. Check that the structure is sufficiently strong and rigid, and its dimensions and weights conform to those indicated on page 1.
- Make sure the leaves move smoothly without any irregular friction during entire travel.
- Make sure the hinges are in good condition. Ball bearing hinges are ideal for gates weighing over 200 lbs. or over 10' in length.
- Make sure the gate is plumb and level.
- The gate post must be secured in the ground with concrete. This will prevent the gate from shifting during installation.

## Tools Needed



- Phillips Head Screwdriver
- Tape Measure
- Level
- Wire Strippers
- C-clamps
- Carpenters Clamps
- Power Drill and appropriately sized bits.
- Crescent Wrench
- Flat Head Screwdriver
- Nuts, Bolts, Anchors and Washers (see below)
- C-Ring Pliers

## Diagnostics

### Other items that may be needed prior to commencing installation.

- Start and stop post, bracket or door stop. Although the Estate Swing E-SC 1600 features soft start/stop and uses limit switches, it is still best to have the gate(s) close against positive stops.
- **16, 14 or 12 gauge, 2 conductor stranded direct burial low voltage wire will be required to run power to your operator.** Length is determined by distance between transformer power supply and the control box.
- A voltage meter and digital camera may be necessary to run diagnostic checks.
- **Hardware to attach control box to fence or column.**
- If your transformer is going to be plugged into an outdoor outlet you will need to weatherproof that outlet and transformer. **Electrical boxes or plug covers** can be obtained from a local hardware store to accommodate both the plug and transformer.
- Protect all ingoing and outgoing wires with a surge suppressor. Consult your local dealer for more information.

## Manual Operation Mode

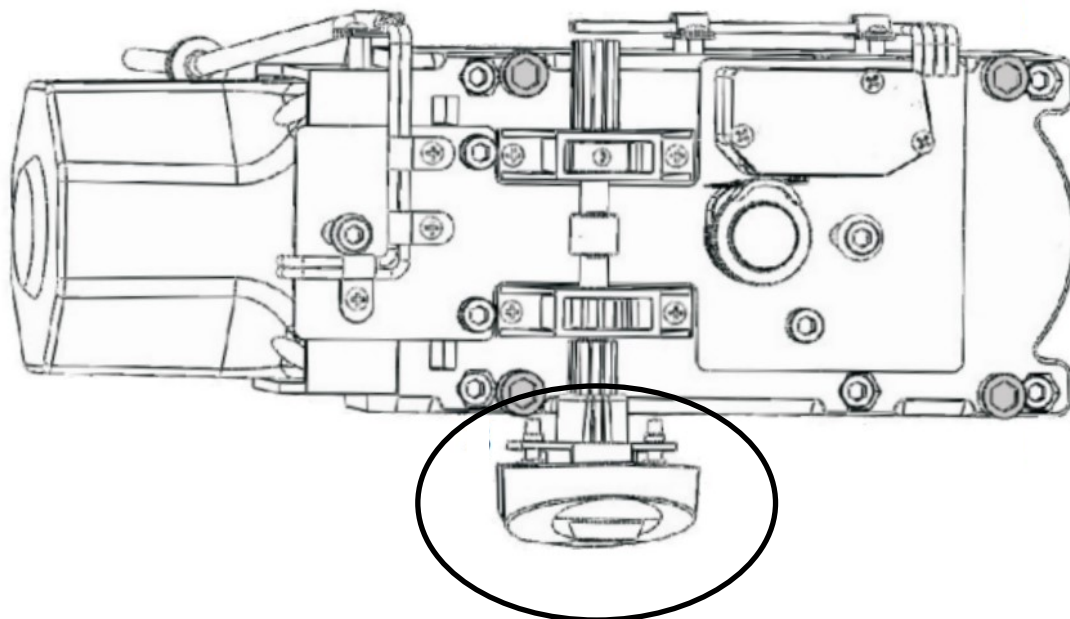
For manual release of the operator:

Insert the provided key to unlock the manual release handle.

For Right hand mounting turn the handle counter clock-wise

For Left hand mounting turn the handle clock-wise

In either case when you turn the handle there will be two audible clicks as it is released.

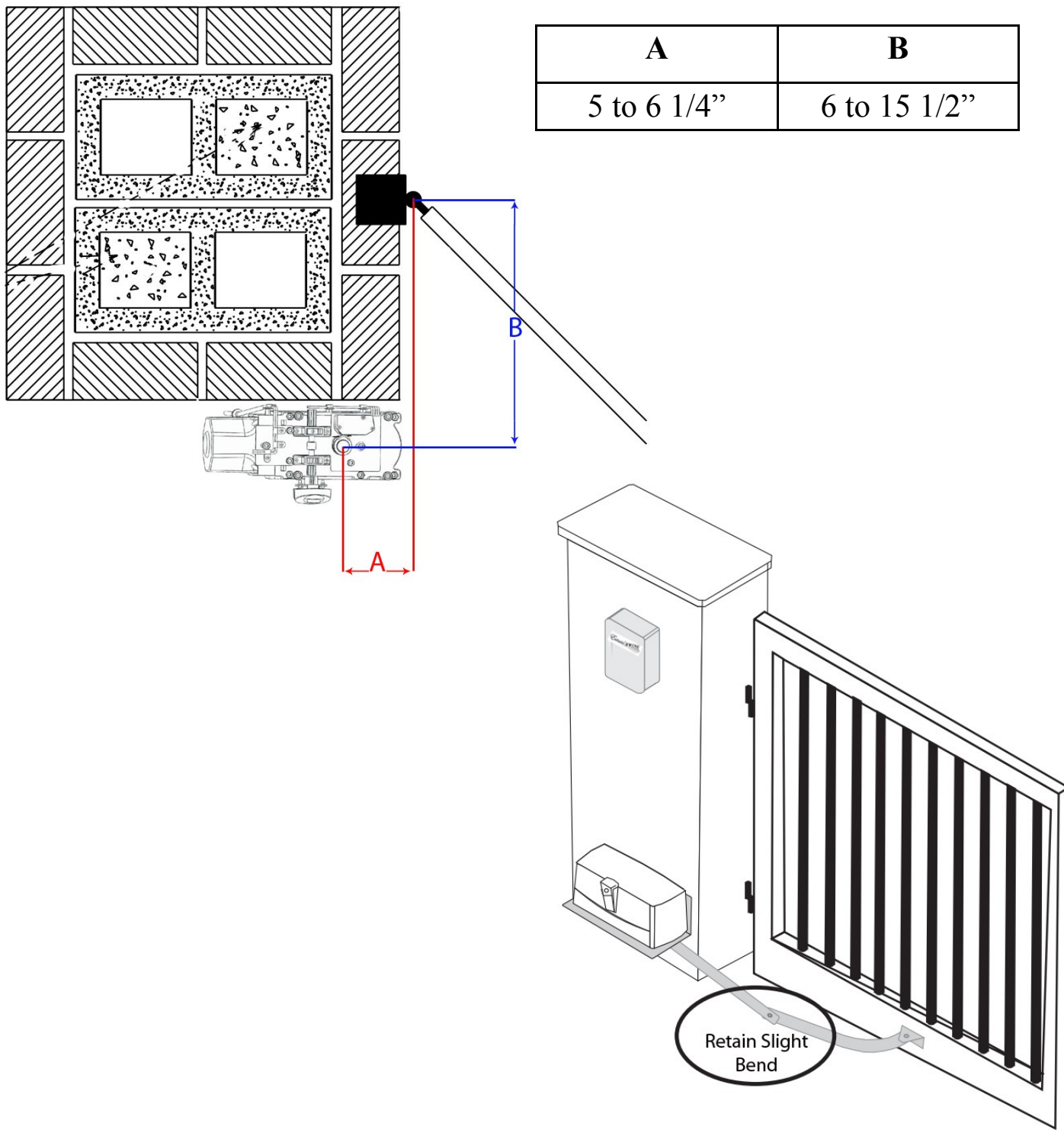


**Disconnect power prior to re-engaging the manual release. If the board is active injury from unexpected motor movement can occur.**



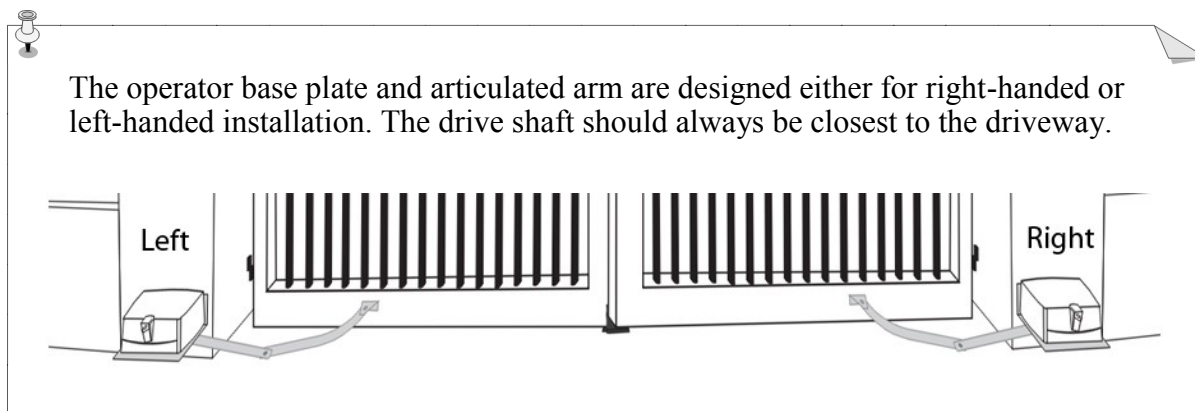
## IMPORTANT: Determining Correct Setback

**PULL TO OPEN** - operation only. This means the gate operator is mounted on the inside of the property and pulls your gate in towards the property.

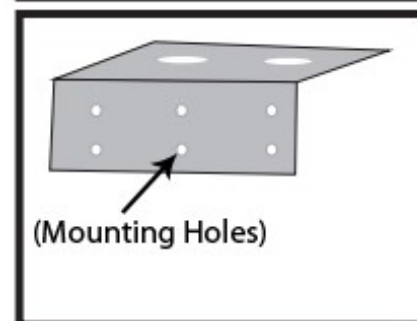
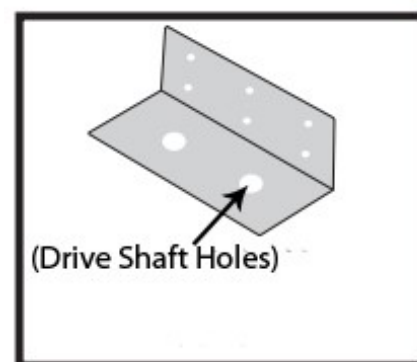




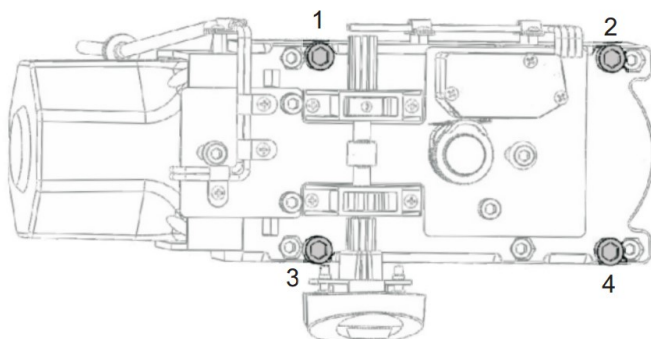
## Installation of Operator



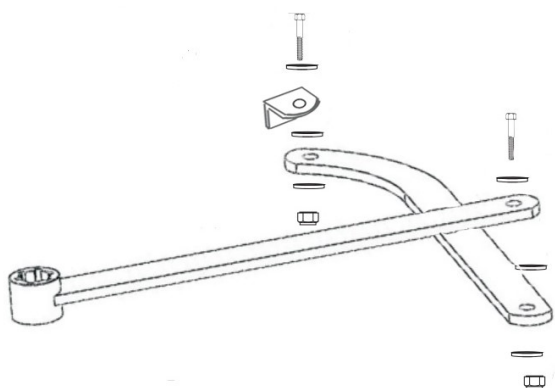
1. Utilizing the center of the drive shaft hole in the base plate, find your correct setback from the previous page. The base plate can be mounted with the mounting flange facing up or down (see right).
2. Secure the base plate to the column using screws and a proper anchoring system for your type of column material. If using the provided anchors drill holes using a 5/8" concrete bit and a hammer drill. For added strength we suggest filling the hole with epoxy prior to hammering in the anchor.
3. Fit the gear motor back onto the base plate and secure it with 4 long bolts.



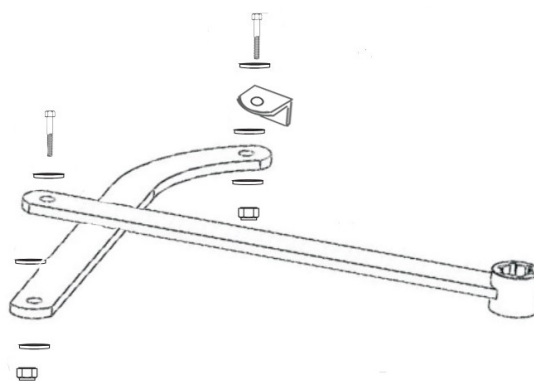
**Important: The transmission shaft must always face downward.**



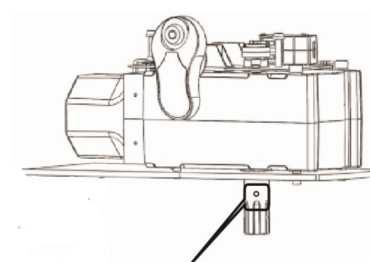
4. Assemble the articulated arm and front coupling as shown below. Do not over tighten the lock nuts, the arms should be able to pivot without resistance.



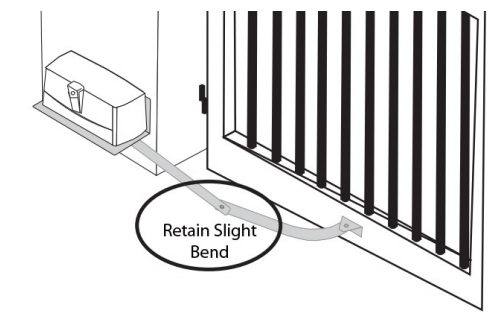
Left Hand Assembly  
Hand Assembly



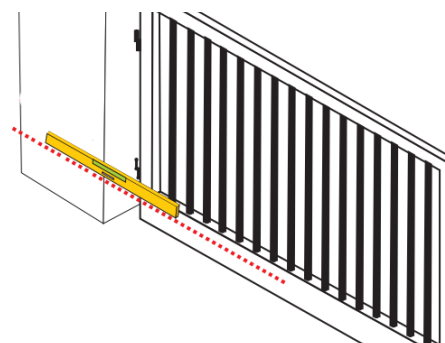
Right



5. Attach the straight arm on the motor drive shaft spline and secure it in place
6. Manually release the operator and swing the arm assembly so the gate bracket is on the gate in the closed position. The arm should be almost straight with a slight bend in the elbow of the arm assembly.



7. Ensure the arm is level and attach the gate bracket using the 5/16 bolts. Once the bolts are attached the remainder can be cut off.



8. Relock the operator and assemble the motor housing.

## Easy Wiring Under Driveway

This portion of the manual will explain how to create an easy conduit for the wires for dual gates.

This is what you would need to get started:

- Narrow shovel.
- $\frac{3}{4}$ ' water pipe no more that 5' in length (you would need a total number of pipes that would equal your driveway width plus 1')
- $\frac{3}{4}$ ' electric rigid pipe couplings (one for each joint in the water pipe)
- 1  $\frac{3}{4}$ ' "Tee"
- 1  $\frac{3}{4}$ ' Plug.
- 1  $\frac{3}{4}$ ' male galvanized pipe X female hose fitting (usually in Brass)
- Large hammer.

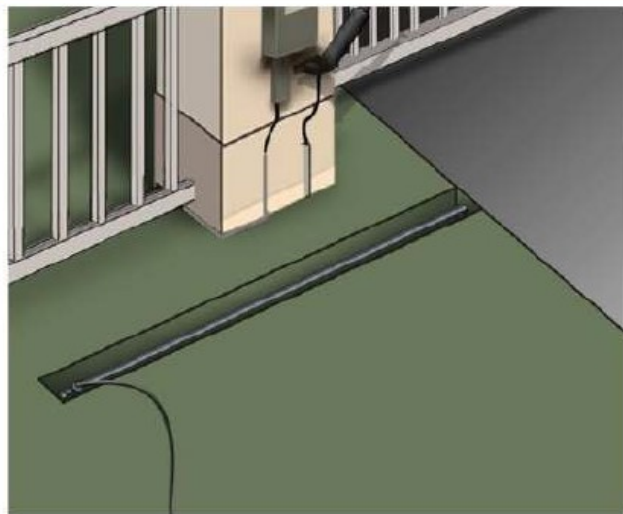
All the above items could be found in a local home supply store.

Dig a trench perpendicular to the driveway approximately 6 to 8 inches deep and 6' long.

Hook up a typical garden hose assembled to the first length of pipe as shown.

Turn on water and push the pipe under the driveway, matching the pitch of the driveway. If you hit a rock use the hammer to force the pipe past the rock.

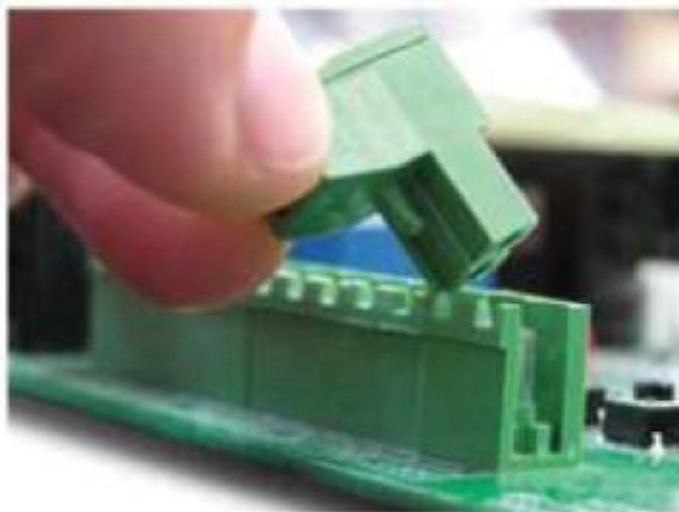
Attach additional pieces of pipe to the initial length by removing the tee and using the coupling to add the additional length of pipe, reassemble the tee and repeat the above steps until only 6 inches of pipe is sticking out from under the driveway. On the opposite side of the driveway look for a wet spot or water bubbling up, dig to find the end of the pipe.



**This process is good for driveways up to 24' in width.**

## For Your Convenience

The green terminal strips on the control board are easily removed for wiring. Simply pull straight out on the terminal strip to remove it from the board. It will slide right off. Slide it back on when you are finished with your wiring connections.



Be sure you are placing your wires in the terminal block correctly.

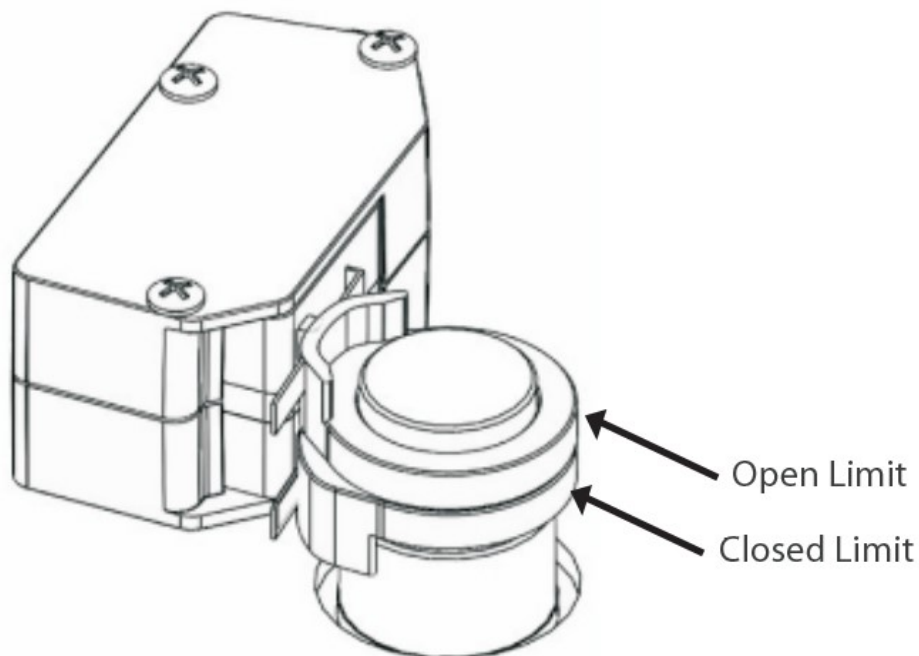
Take the terminal block off of the control board to insert wires. Hold with screw terminals facing upward.

Turn the screw counter-clockwise to open the terminal and clockwise to close the terminal.

The terminals come closed. Be sure not to mistake this for open and insert the wires below the terminal clamp. This will lack the conductivity to complete the circuit.



## Setting Limit Switches



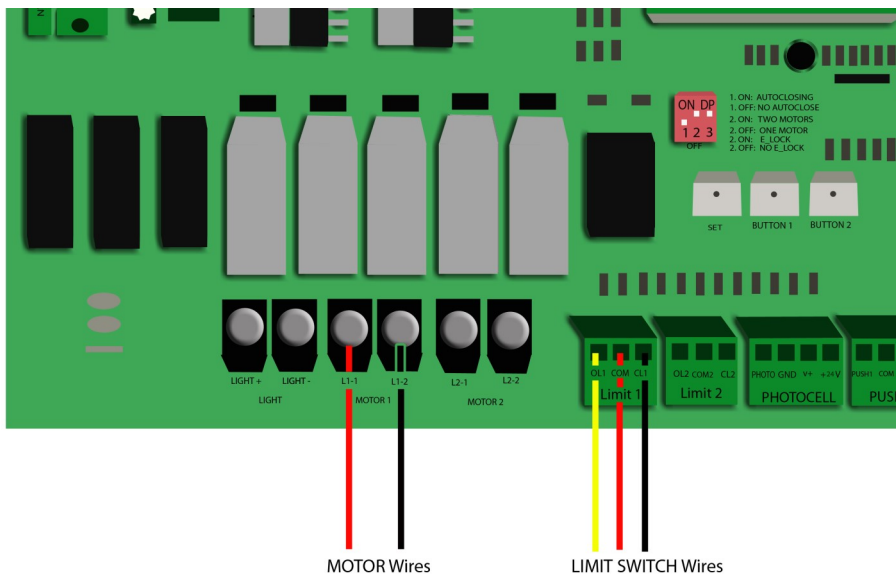
1. Loosen the screw that holds the limit switch rings in place.
2. Move the gate into the full open position. Move the top ring until it is pushing the switch on the top limit switch in.
3. Move the gate to the closed position. Move the bottom ring until it is pushing the switch on the bottom limit switch.
4. Retighten the limit switch ring screw to hold the rings in the correct place on the driveshaft.

## Wiring the Operator Arm(s)

Single gate opener:

### LEFT MOUNT

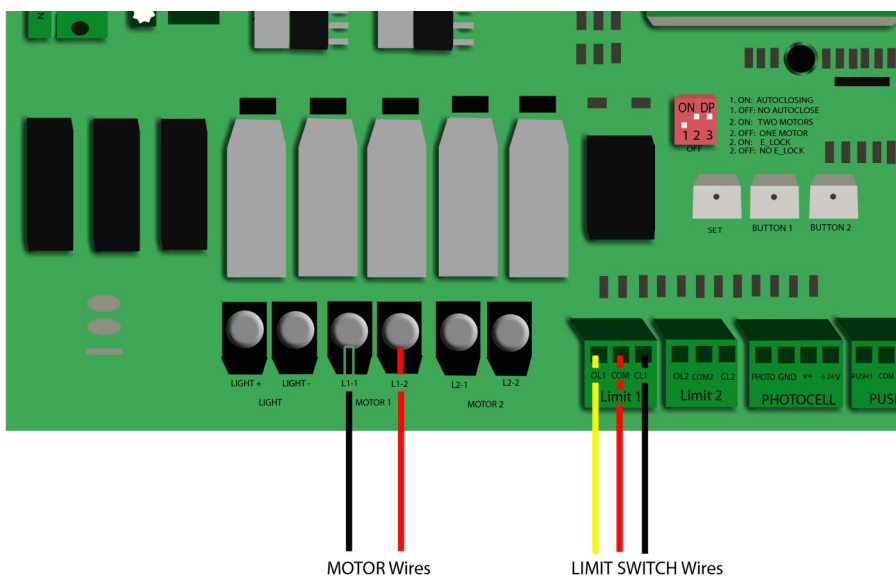
Motor1 L1-1: 16 AWG Red  
 Motor1 L1-2: 16 AWG Black  
 Limit1 OL1: Yellow  
 Limit1 COM1: Red  
 Limit1 CL1: Black



Single gate opener:

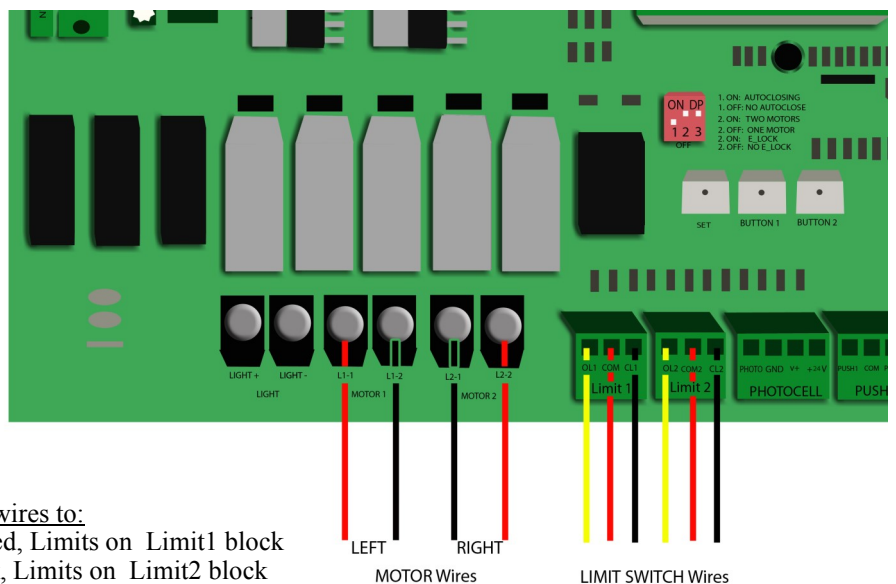
### RIGHT MOUNT

Motor1 L1-1: 16 AWG Red  
 Motor1 L1-2: 16 AWG Black  
 Limit1 OL1: Yellow  
 Limit1 COM1: Red  
 Limit1 CL1: Black



Dual gate opener:

Motor1 L1-1: 16 AWG Red  
 Motor1 L1-2: 16 AWG Black  
 Motor2 L2-1: 16 AWG Black  
 Motor2 L2-2: 16 AWG Red  
 Limit1 OL1: Yellow  
 Limit1 COM1: Red  
 Limit1 CL1: Black  
 Limit2 OL2: Yellow  
 Limit2 COM2: Red  
 Limit2 CL2: Black



If you require the Right mounted gate to open first change wires to:

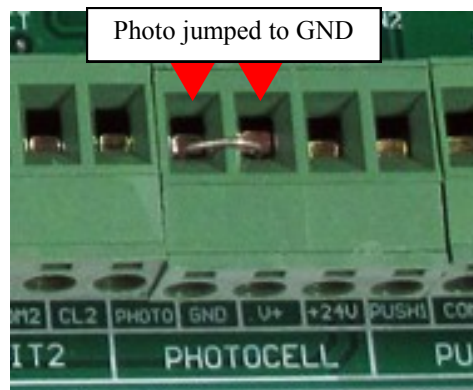
**Right hand motor:** Motor1 L1-1: Black, Motor1 L1-2: Red, Limits on Limit1 block

**Left hand motor:** Motor2 L2-1: Red, Motor2 L2-2: Black, Limits on Limit2 block

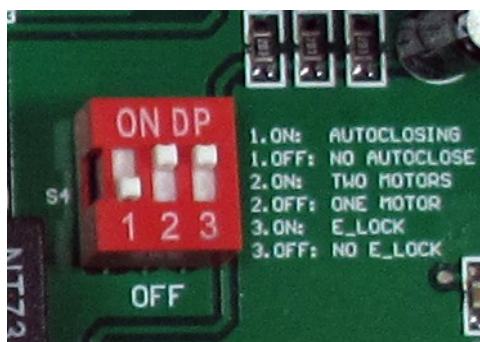


## Temporary Safety Jumpers & Dip Switch Settings

If you are not using a safety device like a photo eye or safety loop the Photocell terminal must remain jumped to the GND terminal.



**Dip Switches**—To change any dip switches, you must turn the power off before changing the setting.



1. **ON:** Auto-close on (the gate will re-close from the open position after a time set in the programming section)  
**OFF:** Auto-Close off
2. **ON:** Dual gate opener (2 motors)  
**OFF:** Single gate opener (1 motor)
3. **ON:** Electric Lock being used  
**OFF:** Electric Lock not used

**IMPORTANT:** We recommend before turning the gate opener on for the first time to have dip switch 1 OFF. If the dip switch is set to on, the gate will auto-reclose after turning it on without any intentional activation on your part.



Need more help?  
Scan this code with your smartphone to view a supplementary video. Or go to:  
<http://youtu.be/ql3plsw6DxM>





## Power

The Estate Swing E-SC 1600 comes with 1) 24V transformer. The transformer supplied has 2 screw terminals to connect to. You may locate the transformer up to 200' away from the control board using 16 gauge, 2 conductor stranded direct burial low voltage wire. Do not use solid core wire.

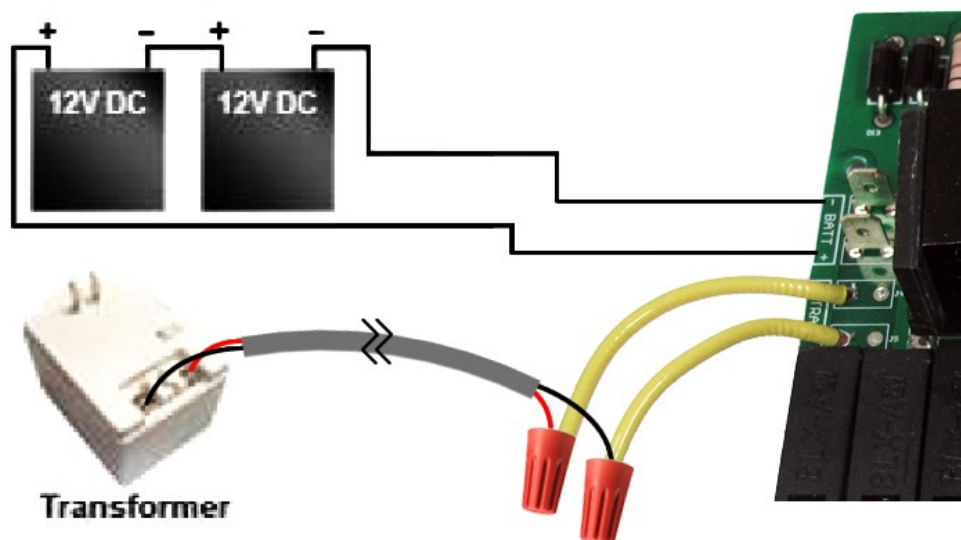
**Allow a minimum of 4' of wire between the transformer and the control board.**

**Using the provided wire nuts, connect the wire (not provided) from the transformer to the two yellow wires on the control board marked TRAN. There is no polarity.**



### **Never run 110VAC power directly to the Estate Swing.**

This will destroy the Estate Swing control board. Never connect the power wire with the transformer plugged in. Contact between the two lead wires, even for a second, will destroy the transformer. Transformers are only warranted if the internal fuse is not blown. If the fuse is blown an outside factor (shorting, surge, water, etc) has caused the transformer not to function.



Plug the transformer into a 110 V AC outlet.

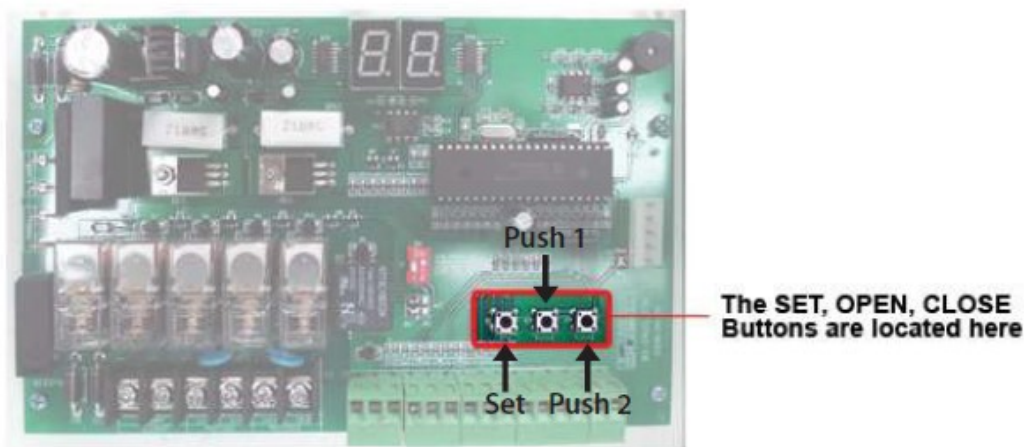
The transformer is not weather proof and must be kept in a covered area. Plug covers are available from your dealer, contact 1-800-640-GATE for a dealer in your area.

Two 12V DC batteries (Max 5 a/h per battery) may be run in series as backup to the 24V transformer power. Running two 12V batteries in series creates a 24V system, you cannot run them in parallel (see diagram above)

When you install new batteries - manually open the gate and allow the batteries to charge for 12 hours through the system before using the gate opener.

## First Run

This is our recommended procedure to run the gate for the first time.



PUSH 1 or PUSH 2 to increase or decrease the parameter. Then press SET button to move to the next parameter.

1. Press SET button to begin.
2. LED shows P1: Press Push 1 to get P1 setting to 30.
3. Press SET button.
4. LED shows P2: Press Push 1 to get P2 setting to 10.
5. Press SET button.
6. LED shows P3: Press Push 1 to get P3 setting to 30.
7. Press SET button.
8. LED shows P4: Press Push 1 to get P4 setting to 3.
9. Press SET button.
10. LED shows P5: Press Push 1 to get P5 setting to 2.
11. Press SET button.
12. LED shows P6: Press Push 1 to get P6 setting to 10.
13. Press SET to finish. You should hear 3 beeps; this indicates parameter programming is finished.



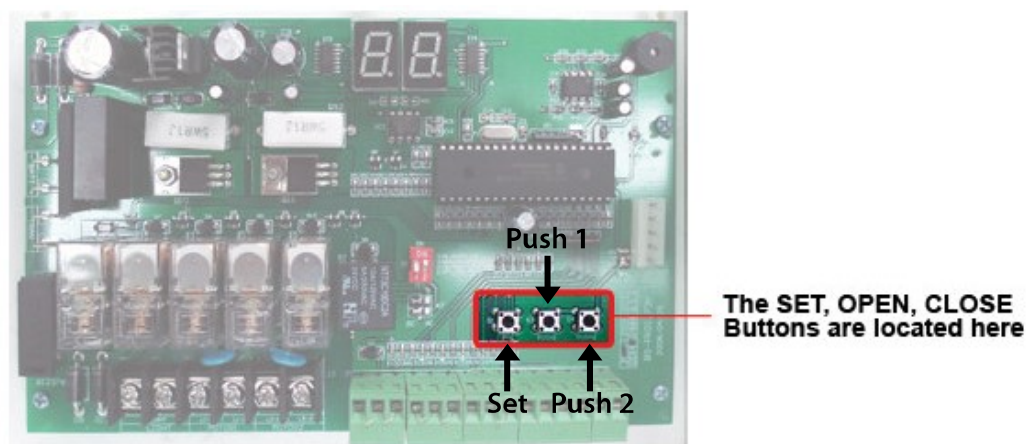
Manually unlock the gate, then move it half-way and re-engage. Activate using Push 1 button (as shown above) The gate should run open. Press Push 1 again and it should run closed. The gate is now set up for regular usage.



Need more help?  
Scan this code with your  
smartphone to view a  
supplementary video. Or go to:  
<http://youtu.be/ttgmyqDEixE>



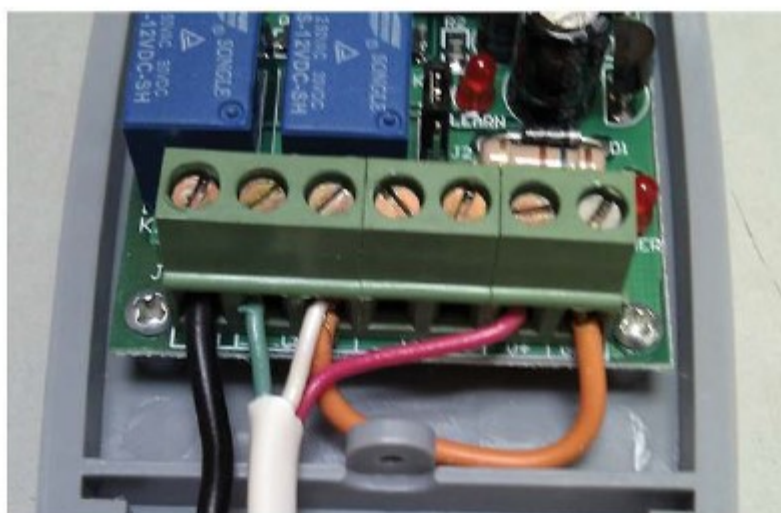
## Operating Parameters Customization



1. LED shows P1: **P1 is for setting your run time.** The run time will be determined from the time you had determined during the set up of the limit switches. Take that determined run time and add 1 second. So if it takes 10 seconds to get from closed to open between limit switches; set the run time to 11 seconds. The options are 0-99 seconds.
2. LED shows P2: **P2 is for setting your slow down time.** The gate opener will slow down to half speed after the time set on P2 expires. If you wish to have the gate open and close faster make the slow down start time a longer period of time. If you want to put less stress on the gears and gate set the slow time shorter to slow the momentum sooner. The options will adjust to match the previously set run time. NOTE: motor must be in slow down to detect limits—be sure this number does not exceed the time the motor take to move from one limit to the other.
3. LED shows P3: **P3 is the force setting,** the lower the number the easier the gate will reverse directions when it meets resistance. This number may have to be changed to a higher setting if your gate is obstructing unexpectedly. The number should be set to the highest number during initial setup and reduced to the point of reliable operation that takes into account change in gate resistance through out the year. The options are 0-32.
4. LED shows P4: **P4 is for setting a delay between leafs** if you have overlapping gates or a gate lock. The motor wired into the master terminals (1) opens first if there is a delay and closes second. It is recommended to have a delay of 3 seconds to avoid any jamming issues between leafs.
5. LED shows P5: **P5 is the release for the gate lock** – this option determines the length of time 24VDC will be sent out of terminals E\_LOCK. The options are 1-4 seconds.
6. LED shows P6: **P6 is the delay for automatic re-close** from the open position – this option needs to be turned on using the dip switch on the board. The options are 0-99 seconds.

## Estate Swing 433 Plug-in Receiver

1. With the red plug already inside the control box, run the grey receiver wire out of the box through one of the water tight connections.
2. Find a location for the receiver box on the gate post or a fence post that is within the length of the receiver wire.
3. Using a #6 screw attached the top of the receiver to the post. If you are happy with this position use the small provided set screw in the bottom hole to secure the receiver in place.
4. Attach the receiver wire to the terminals as seen below. Please note that you will find a factory installed jumper wire connected on the receiver. Leave this jumper wire in place. One of the terminals that has the jumper wire will have the White wire added to the terminal.



Green = CH1    White = CH1    Red=V+



## Estate Swing 433 Plug-in Receiver (cont.)

5. Plug the red clip inside the control box into the control board. The groove in the red clips should snap into the guide on the 5 prong connector. (Fig 1)

6. The red power light should come on the receiver. (Fig 2)

7. Program your remotes to the receiver:

A. Press and release the LEARN1 button at the top of the receiver board (ex 1). The learn LED will illuminate steady (ex 2). (Fig 3)

B. Press and hold the button on the remote you wish to program to the receiver.

C. Hold the remote button until the Learn LED flashes and then turns off. (caution your gate opener may be triggered during this process)

D. Repeat A through C for all additional remotes.

### NOTES ABOUT REMOTES:

You can program up to 400 codes into the receiver. This could mean 1 button on 400 different remotes or this could mean all 4 buttons on 100 remotes or anything in between. Some choose to program all 4 buttons to a single receiver if they are not using multiple gates to eliminate pressing the incorrect button on the remote. To do so follow the programming above with each button of the remote. You can erase all programmed codes by holding Learn 1 until the Learn LED comes ON and then turns OFF.

8. Put the cover on the receiver and secure it in place using the provided screw.

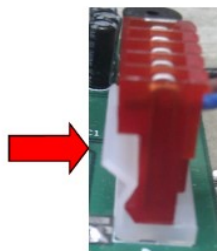


Fig. 1



Fig. 2

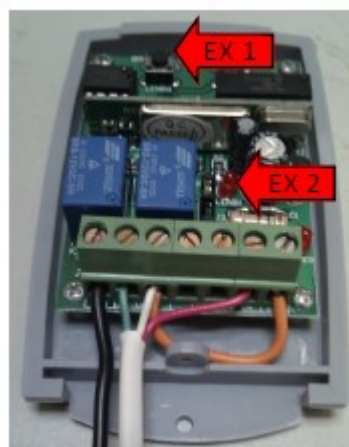


Fig. 3

**IMPORTANT:** The receiver is a drip proof receiver. This means that it is designed to prevent water from accessing the inside of the receiver when the water is moving downward with gravity (rain for example).

**DO NOT** mount the receiver anyplace that water may access it from another angle. For example: Do not mount near sprinklers. Do not mount the receiver horizontally. Do not mount the receiver near a flat surface where water could splash upwards.

## Troubleshooting

### **If the gate opener will not move but the board is counting the run time:**

- Check wiring connections.
- Be sure the arms are locked and not in manual operation.
- If not using slave limit switches, be sure jumpers are in place.
- Check the left hand fuse near the power supply—the proper way to inspect a fuse is to remove it from its clips and check for continuity.

### **If the gate opener moves a few inches or feet and stops or reverses directions:**

- Increase the force setting (P3).
- Check the setback. The setback of the operator is important to correct operation due to leverage the arm will have on the gate.
- Check the battery voltage. Proper voltage should be between 13.4 – 13.8 and drop no more than a quarter of a volt under load.
- Disconnect accessories that may be triggering the gate a second time. The most frequent issues are from exit sensors or other automatic opening devices.

### **The gate does not reach the desired stop points:**

- Adjust the limit switches.
- Lengthen the run time parameter (P1).
- Check setback— if setback is incorrect it will limit how far the gate will move.

### **If the gate will open but will not close:**

- Manually move the gate slightly off the open position and then trigger the gate to go closed. If the gate then moves closed the limits are most likely wired backwards. (Meaning the open limit is wired to closed and closed wired to open)
- If you are not using safety devices the safety jumpers are in place. If PH is on display it is an issue with the safety jumper or a device in the safety terminals.
- If you are using a safety device:
  - Check to make sure you are using the normally closed connection instead of the normally open.
  - Check to be sure there is continuity being provided between the common and normally closed wire of the safety device. If there is not continuity then refer to the installation guide of the device to set up properly.

### **The display of the board will not light up:**

- Check the power supply for 24VAC.
- The arms are not wired in or properly wired on the limit switch connections. Without the limit switch connections being closed the board will not light up.

**More on next page**

## Troubleshooting

### The gate opener is not stopping on the limit switches:

- Remove all pre-installed jumpers from the limit switch terminals that have limits going to them. The slave gate terminals come pre-jumped for single operation, if you are using a dual system pay particular attention to this detail and remove the jumpers when you put your limit switches in.
- The limits are wired incorrectly—be sure that you are following the correct wiring diagram for pull to open or push to open.
- For dual gates check that the delay between leafs is 2 or above. If both limits are triggered simultaneously there is a chance a limit could be missed.

### One or both arms are not moving:

- Check to be sure wiring color pattern matches the installation (Example: push to open wiring for a push to open installation) - If the limits or motor are wiring opposite the installation the board will believe it is closed or open when it is actually the opposite and the arms will never move.
- Check the limit wires are correctly in the terminal blocks. The terminal blocks come with the terminal clamps closed - however when the terminal clamps are closed there is a small space below them one could mistake as place to insert a wire. If this is done then conductivity of the connection will never be reached.
- Push or pull on the gate - if it moves the gears are disengaged and the gate is in manual release mode.

### General fix for user to understand operation:

- Unlock the gate opener arm and move it to the half way position. Change the run time to a low number (example: 2). Run the operator repeatedly.
- The operator should run one direction for a 2 count and then the other for a 2 count. After you feel you have it following the run time correctly and swinging level and easily, then start incrementally lengthening the run time.
- Eventually the run time will allow the operator arm to reach both limit switches and your setup is complete.

### Dual gate - Only one arm moves:

- Check your dual settings - if the dip switch is changed to dual with the power on the setting will not take effect, turn the power off and then back on to have the dual dip switch take effect. *NOTE: If one leaf of a dual gate ever reaches its end limit before the other leaf starts moving, the leaf that hasn't started moving will not begin: correct this by cycling the gates again and let it travel the full stroke or decrease the delay between leafs. The options are 0-9 seconds delay.*



#### Need more help?

Scan this code with your smartphone to view a supplementary video. Or go to:  
<http://youtu.be/3yOSogiSLeY>





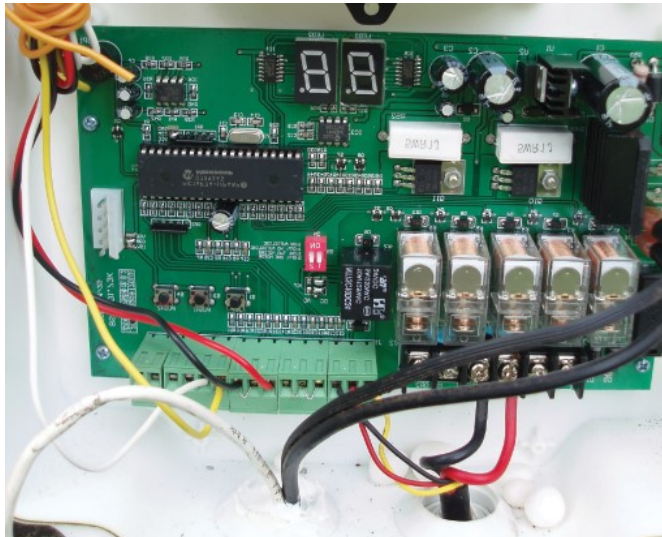
## Troubleshooting



**If you call in for technical support or warranty support:** Before any control board or motor will be permitted to be sent in for testing or warranty you will be required to e-mail digital photos to the technician.

This is done in your best interest to save unnecessary shipping expenses and time lost. Many times we can come up with solutions to issues by seeing pictures that relay information that is impossible to relay through a phone conversation.

Below are examples of control board pictures and motor pictures that we will be looking for:



**Picture shown is actual customer photo**

## Control Board Overview



**CAUTION!** Do not run 110V AC power direct to the board. This will cause permanent damage to both boards and void your warranty. Caution!

Gate Opener reactions to signals:

**PUSH1 and Receiver (PUSH 1 terminal, PUSH 1 button, 5 Prong Receiver):**

**Details:**

- Will activate gate with momentary contact (momentary contact between PUSH1 and V+) or if you momentarily press the PUSH1 button.
- Controls both leaves in 2 leaf mode (Dip switch 2 in the ON position).
- Acts as party mode control to suspend auto-reclose by activating while counting down auto-reclose in the open position.

**Operational Sequence for terminal with auto-close ON (Dip switch 1 in on position):**

1. In closed position - momentary contact will open gates.
2. When opening - momentary contact will stop gates and then it will auto reclose.
3. When stopped mid cycle waiting auto reclose - momentary contact will move the gate in the direction opposite what it was moving before stopped.
4. When open and counting auto-reclose pause time - momentary contact will stop pause time.
5. Stopped in open position from override of auto-reclose from PUSH1 or Receiver - momentary contact will reactivate pause time and close gate.
6. When closing - momentary contact will stop the gate and then it will auto reclose.

**Operational Sequence for terminal with auto-close OFF (Dip switch 1 in off position):**

1. In closed position - momentary contact will open gates.
2. When opening - momentary contact will stop gates.
3. When stopped mid cycle - momentary contact will move the gate in the direction opposite what it was moving before stopped.
4. When open - momentary contact will close gates.
5. When closing - momentary contact will stop the gate.
6. When stopped mid cycle - momentary contact will open the gate.
7. When open with auto-reclose off - momentary contact will have no effect.
8. When closing - momentary contact will re-open the gate.

## Control Board Overview



**CAUTION!** Do not run 110V AC power direct to the board. This will cause permanent damage to both boards and void your warranty. Caution!

Gate Opener reactions to signals:

**PUSH2 (PUSH 2 terminal and PUSH 2 button):**

**Details:**

- Will activate gate with momentary contact (momentary contact between PUSH2 and V+).
- Controls **both** leaves in 2 leaf mode (Dip switch 2 in the ON position)
- **Only opens the gate, never closes it.**
- Pause time is able to be re-set if this terminal is closed through a momentary contact. Then the time will be reset, count down the pause time, and reclose.
- **Ideal for exit wand or exit loop.**

**Operational Sequence for terminal with auto-close ON (Dip switch 1 in on position):**

1. In closed position - momentary contact will open gates.
2. When opening - momentary contact will have no effect.
3. When stopped mid cycle from PUSH 1 or the Receiver - momentary contact will open the gate.
4. When open with auto-reclose on - momentary contact will re-set pause time and will start counting again after release of momentary contact.
5. When pause time countdown is stopped in open from a momentary contact of PUSH 1 or the Receiver - momentary contact will have no effect.
6. When closing - momentary contact will re-open the gate.

**Operational Sequence for terminal with auto-close OFF (Dip switch 1 in off position):**

1. In closed position - momentary contact will open gates.
2. When opening - momentary contact will have no effect.
3. When stopped mid cycle - momentary contact will open the gate.
4. When open with auto-reclose off - momentary contact will have no effect.
5. When closing - momentary contact will re-open the gate.

**PUSH 1 and PUSH 2** – these terminals can hold as many normally open connections as needed, they will be wired in parallel. They are used for keypads, push buttons, universal receivers, etc.

## Control Board Overview

**Light:** Sends pulses of 24VDC only while gate is running, and whether it is open or closed.

**Motor 1:** L1-1, L1-2 = 24VDC power to single motor or master motor

**Motor 2:** L2-1, L2-2 = 24VDC power to slave motor

**Limit 1:** OL1 = Open limit for single motor or master (normally closed)  
V+ = Common for limits, +12VDC  
CL1 = Closed limit for single motor (normally closed)

**Limit 2:** OL2 = Open limit for slave motor (normally closed)  
V+ = Common for limits, +12VDC  
CL2 = Closed limit for slave motor (normally closed)

**Photocell:** Photo = Input for safety eye photo beam connection (normally closed)  
GND = Ground for photocell power/ground for photo connection  
V+ = +12VDC, Max 100 milliamps for photocell power  
+24V = +24VDC, Max 200 milliamps for accessory power

**Button:** PUSH 1 = Ground for Push 1 Accessory  
*\*PUSH 1 / V+ is for push buttons, keypads, receivers, or any other dry and momentary contact.*

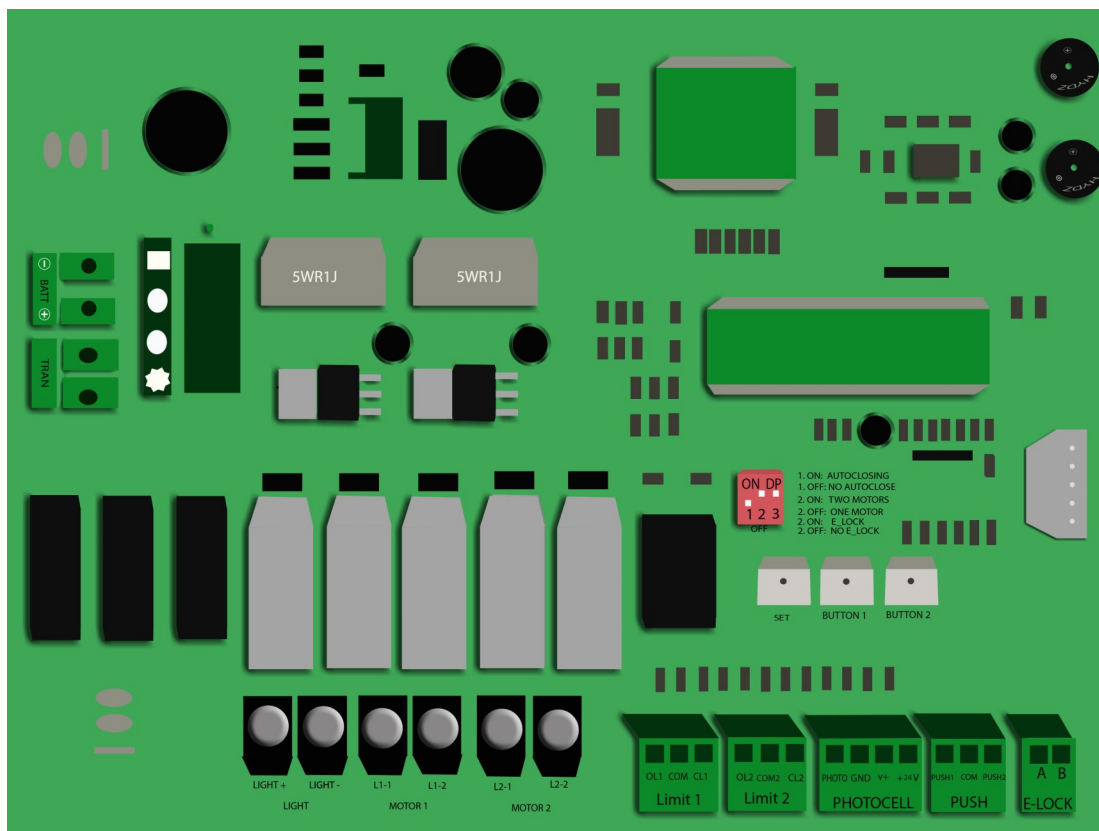
COM = Positive voltage +12VDC for Push 1 or Push 2 accessory (relay only, not main power)

PUSH 2 = Ground for Push 2 accessory  
*\*PUSH 2 / V+ is for exit wand, exit loops or other open only dry contact and momentary contact*

**E\_Lock:** Solenoid lock output - 12VDC (4 Amp max)  
A = Positive B = Negative

**Fuses:** F1 = 8A 250V, protects motor 1  
**(Right to left on board)** F2 = 8A 250V, protects motor 2  
F3 = 2A 250V, protects accessory output +24V

## Control Board Overview



**CAUTION!** Do not run 110V AC power direct to the board. This will cause permanent damage to both boards and void your warranty. Caution!

### Display Indicators:

Lights off on board & stand by / normal operation

### Lower right hand “dots” flashing normal pace:

Active / Awaiting command

**EL:** Sending voltage to EL terminals (electric lock)

**OP:** Opening cycle

**AU:** Auto-reclose countdown

**CL:** Closing cycle

**PH:** Photo cell disruption

### Buzzer / Obstructions:

If the gate(s) come in contact with an obstruction the gate(s) will reverse direction for 2 seconds and stop to allow the obstacle to be cleared from the gate path.

If the gate(s) obstructs 3 times in a row the gate(s) will go into a hard shutdown mode and a buzzer alarm will sound. At this point no accessories or remotes will be able to activate the gate opener until the gate opener is reset by disconnecting primary power battery.

## Accessory Wiring

The manufacturer instructions that come with your accessory should have markings for wires or terminals to connect to the gate opener. Please look for terminals named below in the instructions for the accessory.

### Keypads, Receivers:

**Normally Open (NO) or Input (INP) or Relay of entry device** = COM terminal (to right of PUSH1) of PUSH block on gate opener control board.

**Common (COM) or Ground (GND) or Relay of entry device** = PUSH1 terminal of PUSH block on gate opener control board.

**NOTE:** If the power for the accessory shares a Ground wire/terminal with the relay – Do Not power that accessory off this control board (example: WKP-P keypad). Instead power that device with batteries.

**24V Power positive (+) or (24V) or (PWR) of entry device** = +24V terminal of PHOTO block on gate opener control board.

**24V Power Negative (-) or (GND) or (PWR) of entry device** = GND terminal of PHOTO block on gate opener control board.

### Push Button, Intercoms:

**Normally Open (NO) or Input (INP) or Relay of entry device** = COM terminal (to right of PUSH1) of PUSH block on gate opener control board.

**Common (COM) or Ground (GND) or Relay of entry device** = PUSH1 terminal of PUSH block on gate opener control board.

Push buttons do not require power and Intercoms draw too much power to power from the gate opener.

### Exit Wand/Sensor, Exit Loop Detector, Exit Device:

**Normally Open (NO) or Input (INP) or Relay of exit device** = COM terminal (to right of PUSH2) of PUSH block on gate opener control board.

**Common (COM) or Ground (GND) or Relay of exit device** = PUSH2 terminal of PUSH block on gate opener control board.

**24V Power positive (+) or (24V) or (PWR) of exit device** = +24V terminal of PHOTO block on gate opener control board.

**24V Power Negative (-) or (GND) or (PWR) or Shield wire of exit device** = GND terminal of PHOTO block on gate opener control board.

## Accessory Wiring

### Photo Eye, Safety Edge, Safety Loop:

**Normally Closed (NC) of safety device** = Photo terminal of PHOTO block on gate opener control board.

**Common (COM) or Ground (GND) of safety device** = GND terminal of PHOTO block on gate opener control board.

**12V Power positive (+) or (12V) or (PWR) of safety device** = V+ terminal of PHOTO block on gate opener control board.

**12V Power Negative (-) or (GND) or (PWR) of safety device** = GND terminal of PHOTO block on gate opener control board.

*\*Remove safety jumper from PHOTO terminal if using a safety device.*

*\*12V is not a misprint, the V+ terminal has a 12V output.*

### Solenoid Gate Lock:

**Positive Lead of lock** = A terminal of E\_LOCK block on gate opener control board.

**Negative Lead of lock** = B terminal of E\_LOCK block on gate opener control board.

**Magnetic Gate Lock:** *Magnetic gate locks must have their own power supply and their own relay.*

**Coil of relay for magnetic lock** = A terminal of E\_LOCK block on gate opener control board.

**Coil of relay for magnetic lock** = B terminal of E\_LOCK block on gate opener control board.

Connect positive lead of the power supply directly to the positive lead of the mag lock.

Connect negative lead of the power supply to the N/C terminal of the relay.

Connect the COM terminal of the relay to the negative lead of the mag lock.