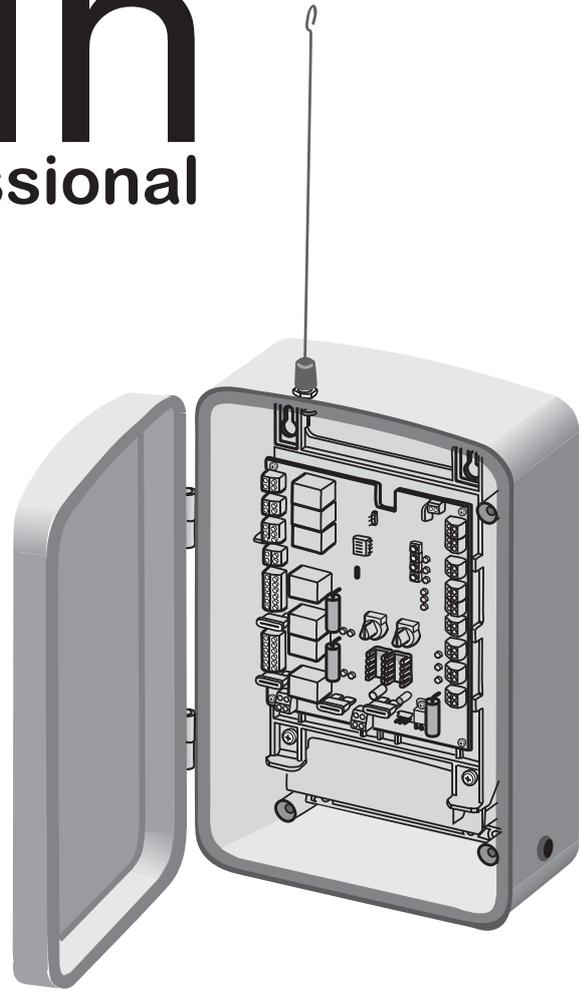


**CHAMBERLAIN**<sup>TM</sup>  
**merlin**<sup>TM</sup>  
professional



Installation and operation instructions  
for CB12ANZ Gate Controller.

With

Appendix A MGL300 MGL400 Manual

Appendix B MGA600 Manual

Chamberlain Australia Pty Ltd  
PO Box 1446  
Lane Cove NSW 1595  
Phone Toll Free 1800 638 234

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## ⚠ WARNING

Mechanical

## ⚡ WARNING

Electrical

## CAUTION

THESE SYMBOLS INSERTED THROUGHOUT THE MANUAL ARE FOR YOUR SAFETY. Failure to comply with these important safety notices could result in possible serious injury or death. Read these warnings carefully. When you see this Signal Word on the following pages, it will alert you to the possibility of damage to your gate and/or the gate operator if you do not comply with the cautionary statements that accompany it. Read them carefully.

## IMPORTANT NOTE

- BEFORE attempting to install, operate or maintain the operator, you must read and fully understand this manual and follow all safety instructions.
- These instructions are intended to highlight certain safety related issues. These instructions are not intended to be comprehensive. Because each application is unique, it is the responsibility of the purchaser, designer, installer and end user to ensure that the total gate system is safe for its intended use.

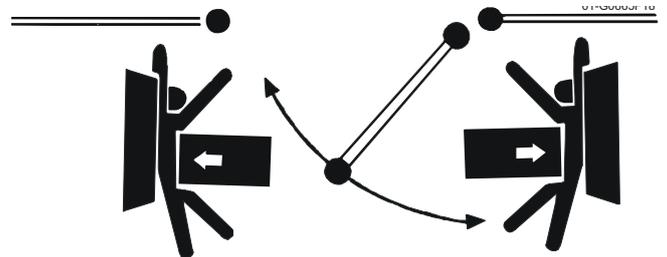
## • Save These Instructions

# INSTALLATION

## SAFETY PRECAUTIONS FOR SWING and ORNAMENTAL "GRILL TYPE GATES"

## ⚠ WARNING

- To prevent SERIOUS INJURY or DEATH from a moving gate:
- Entrapment protection devices MUST be installed to protect anyone who may come near a moving gate.
  - Locate entrapment protection devices to protect in BOTH the open and close gate cycles.
  - Locate entrapment protection devices to protect between moving gate and RIGID objects, such as posts.
  - A swinging gate shall NOT open into public access ways



## CAUTION

An E-lock or Maglock should be used on gates over 2m for added security against vandalism and adverse weather.

# SAFETY INSTALLATION INFORMATION

## Warning - To reduce the risk of SEVERE INJURY or DEATH from an incorrect installation:

1. Vehicular gate systems provide convenience and security. Gate systems are comprised of many component parts. The gate operator is only one component. Each gate system is specifically designed for an individual application.
2. Gate operating system designers, installers and users must take into account the possible hazards associated with each individual component. Poorly designed, installed or maintained gate systems may be dangerous to users and bystanders. Gate installers and designers should therefore take steps to reduce the public's exposure to potential hazards.
3. A gate operator can generate a great deal of force during operation, installers must be mindful of this fact. Safety features must be incorporated into every design. Specific safety features include:
  - Gate Edges
  - Guards for exposed rollers
  - Photoelectric Sensors
  - Screen Mesh
  - Vertical Posts
  - Instructional and Precautionary Signage
4. A gate opener should only be installed where:
  - a. The operator is appropriate for the construction and the usage class of the gate.
  - b. All openings of a horizontal swing gate are guarded or screened from the bottom of the gate to a minimum of 1.2 m (4') above the ground to prevent a 6 cm (2 1/4") diameter sphere from passing through the openings anywhere in the gate, and in that portion of the adjacent fence that the gate covers in the open position.
  - c. All exposed pinch points are eliminated or guarded, and guarding is supplied for exposed rollers.
5. The operator is intended for installation to vehicular gates only, pedestrians should be supplied with a separate access
6. The gate must be installed in a location so that enough clearance is supplied between the gate and adjacent structures when opening and closing to reduce the risk of entrapment. Swinging gates shall not open into public access areas.
7. The gate must be properly installed and work freely in both directions prior to the installation of the gate operator.
8. Controls must be far enough from the gate so that the user is prevented from coming in contact with the gate while operating the controls.
9. Controls intended to be used to reset an operator after 2 sequential activations of the entrapment protection device or devices must be located in the line of sight of the gate, or easily accessible controls shall have a security feature to prevent unauthorised use.
10. Any warning signs must be clearly visible, on each side of the gate.
11. For a gate operator utilising a non-contact sensor:
  - a. Reference owner's manual regarding placement of non-contact sensor for each type of application.
  - b. Care shall be exercised to reduce the risk of nuisance tripping, such as when a vehicle trips the sensor while the gate is still moving.
  - c. One or more non-contact sensors shall be located where the risk of entrapment or obstruction exists, such as the perimeter reachable by a moving gate or barrier.
12. For a gate operator utilizing a contact sensor such as an edge sensor:
  - a. A hard wired contact sensor shall be located and its wiring arranged so the communication between the sensor and the gate operator is not subject to mechanical damage.
  - b. A wireless contact sensor such as the one that transmits radio frequency (RF) signals to the gate operator for entrapment protection functions shall be located where the transmission of the signals are not obstructed or impeded by building structures, natural landscaping or similar obstruction. A wireless contact sensor shall function under the intended end-use conditions.
  - c. One or more contact sensors shall be located at the leading edge, trailing edge and post mounted both inside and outside of a vehicular horizontal slide gate.
  - d. One or more contact sensors shall be located at the bottom edge of a vehicular vertical lift gate.
  - e. One or more contact sensors shall be located on the inside and outside leading edge of a swing gate. Additionally, if the bottom edge of a swing gate is greater than 15cm (6") above the ground at any point in its arc of travel, one or more contact sensors shall be located on the bottom edge.

## CARTON INVENTORY

CB12ANZ KIT  
 1 x Installation & Instruction manual  
 1x PVC – Box  
 1x CB12-Logic Board (pre-mount)  
 1x Charge transformer (pre-mount)  
 1 x 4wire IRBEAMS 100263 (under PCB)  
 2 x Transmitter 3-channel C945 (under PCB)

## BATTERY CARTON

1 x 12Volt Battery (MGB121)  
 2 x 12Volt Batteries (MGB122)

## OPTIONAL ACCESSORIES

1x Antenna	ANT4X-1LM
FLA24-2ANZ	FLASHING LIGHT
K/S	KEYSWITCH

## SPECIFICATION

<b>Main Output (Motor)</b>	12vdc Battery run,Operational between 11.5vdc and 14.5vdc.
<b>Accessory power</b>	12vdc nominal Class II battery (500ma max length conversion)
<b>Power Consumption</b>	30 Watts max (during battery Charging).
<b>Temperature</b>	-20°C to +50°C

<b>Protection Fuse Battery 1</b>	ATC20A
<b>Protection Fuse Battery 2</b>	ATC20A

# CABLE REQUIREMENTS

## **WARNING**

To reduce the risk of SEVERE INJURY or DEATH:

- ANY maintenance to the operator or in the area near the operator **MUST** not be performed until disconnecting the electrical power and locking-out the power via the operator power switch. Upon completion of maintenance the area **MUST** be cleared and secured, at that time the unit may be returned to service.
- Disconnecting power at the fuse box **BEFORE** proceeding. Operator **MUST** be properly grounded and connected in accordance with local electrical codes.
- ALL electrical connections **MUST** be made by a qualified individual.
- **DO NOT** install any wiring or attempt to run the operator without consulting the wiring diagram. We recommend that you Install an optional reversing edge **BEFORE** proceeding with the control station installation.
- ALL power wiring should be on a dedicated circuit and well protected. The location of the power disconnect should be visible and clearly labeled.
- ALL power and control wiring **MUST** be run in separate conduit.
- **BEFORE** installing power wiring or control stations be sure to follow all specifications and warnings described below. Failure to do so may result in SEVERE INJURY to persons and/or damage to operator.

**All power wiring should be on a dedicated circuit and well protected.**

# IMPORTANT SAFETY INSTRUCTIONS

## **WARNING**

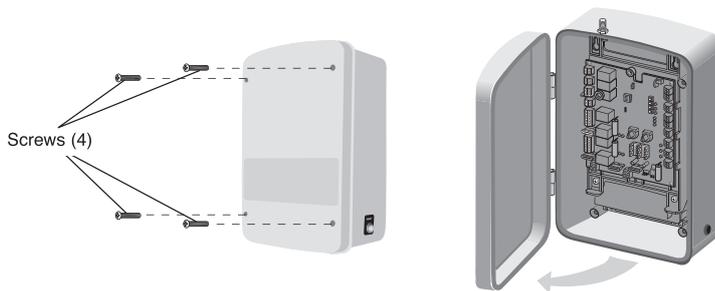
### **To reduce the risk of SEVERE INJURY or DEATH:**

1. READ AND FOLLOW ALL INSTRUCTIONS.
2. NEVER allow children to operate or play with gate controls. Keep the remote control away from children.
3. ALWAYS keep people and objects away from the gate. NO ONE SHOULD CROSS THE PATH OF THE MOVING GATE.
4. Test the gate operator monthly. The gate **MUST** reverse on contact with a rigid object or stop when an object activates the non-contact sensors. After adjusting the force or the limit of travel, retest the gate operator. Failure to adjust and retest the gate operator properly can increase the risk of INJURY or DEATH.
5. Use the emergency release **ONLY** when the gate is not moving.
6. KEEP GATES PROPERLY MAINTAINED. Read the owner's manual. Have a qualified service person make repairs to gate hardware.

**SAVE THESE INSTRUCTIONS.**

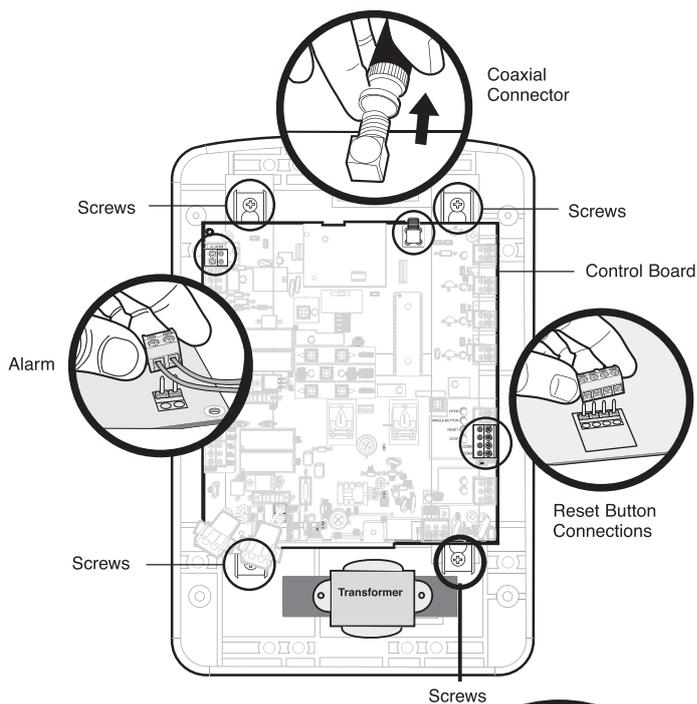
## Mount the Control Box

The control box MUST be mounted within 1.5m of the gate operator. Mount the control box as high as possible for best radio reception



### 1. Open the Control Box

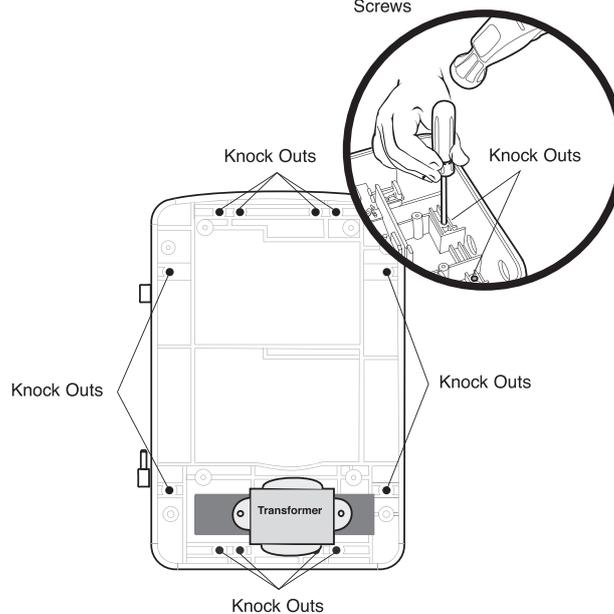
Remove the screws and open the box.



### 2. Remove the Control Board

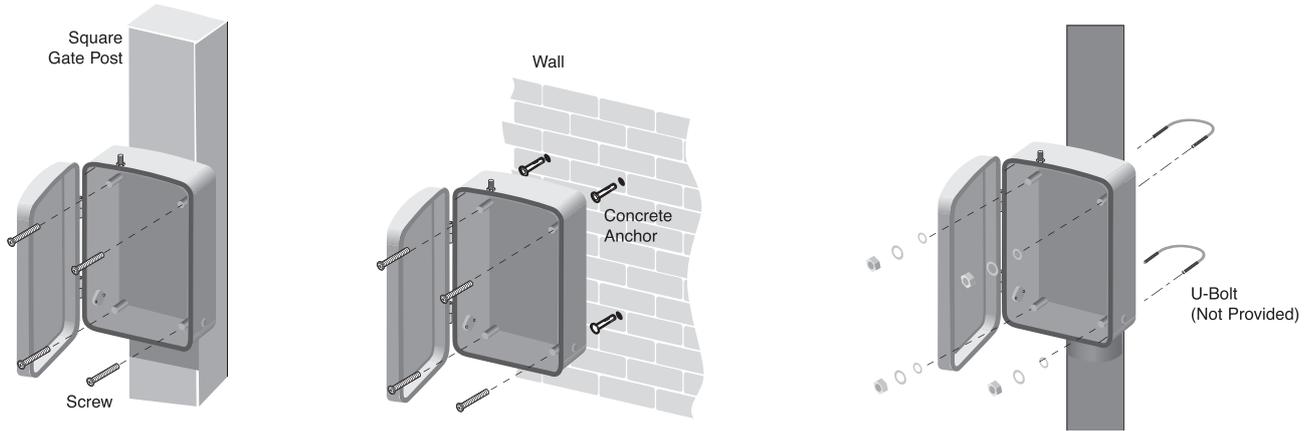
Disconnect reset button, alarm and coaxial connector. Loosen screws and remove control board. Set aside IR beams, remotes, antenna, hardware bag\* and battery looms.

\* Hardware bag includes, cable glands, fixing screws, replacement fuse and three wire nuts.



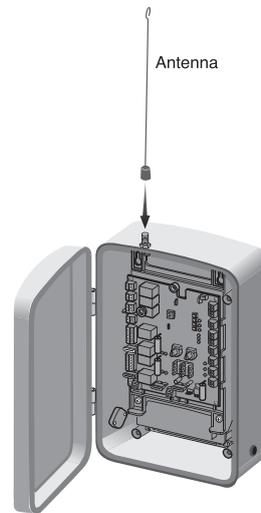
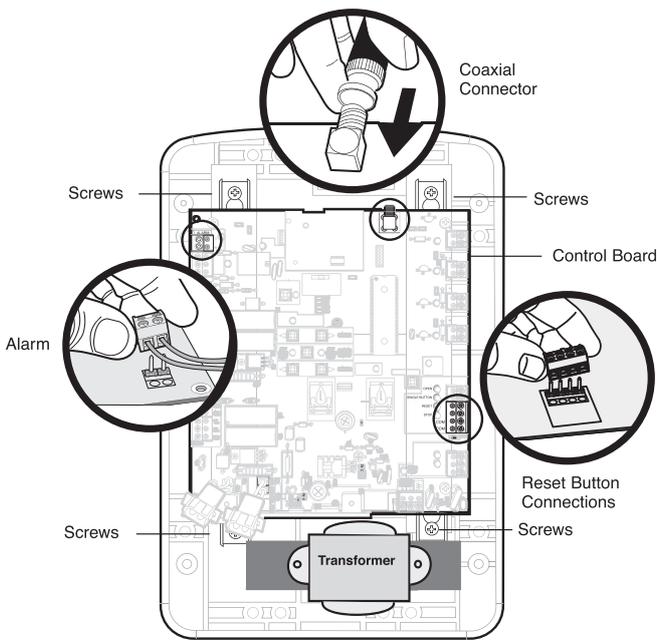
### 3. Select Mounting Holes

Select holes to be used for mounting and knock out using a screw driver and hammer.



#### 4. MOUNT THE CONTROL BOX

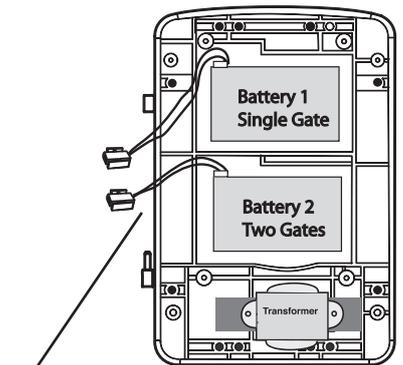
Secure the control box to mounting surface (post, wall, column, etc.) using the four fixing screws provided. If fixing to masonry or tube steel you will require additional hardware (not provided).



#### 5. INSTALL THE BATTERY/BATTERIES AND CONTROL BOARD

Attach antenna. Reinstall batteries and connect battery looms. Install control board, alarm, and reset button. Re-connect coaxial connector.

NOTE: Make sure battery leads are on the left side of the control box and not pinched.



NOTE: Before proceeding to the next page, please install gate motors or arms as detailed in Appendix A or B of this manual.

# WIRING

## **WARNING**

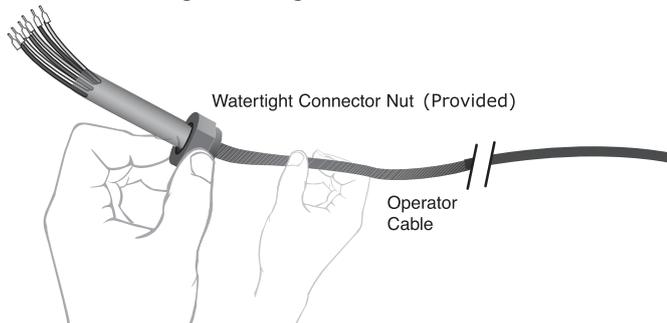
To reduce the risk of SEVERE INJURY or DEATH:

- ANY maintenance to the operator or in the area near the operator MUST not be performed until disconnecting the electrical power and locking-out the power via the operator power switch. Upon completion of maintenance the area MUST be cleared and secured, at that time the unit may be returned to service.
- Disconnect power at the fuse box BEFORE proceeding. Operator MUST be properly grounded and connected in accordance with local electrical codes.
- ALL electrical connections MUST be made by a qualified individual.
- DO NOT install ANY wiring or attempt to run the operator without consulting the wiring diagram. We recommend that you install an optional reversing edge BEFORE proceeding with the control station installation.
- ALL power wiring should be on a dedicated circuit and well protected. The location of the power disconnect should be visible and clearly labeled.
- ALL power and control wiring MUST be run in separate conduit.
- BEFORE installing power wiring or control stations be sure to follow ALL specifications and warnings described below. Failure to do so may result in SEVERE INJURY to persons and/or damage to operator.

## Connect Gate Operator (Gate 1) to Control Box

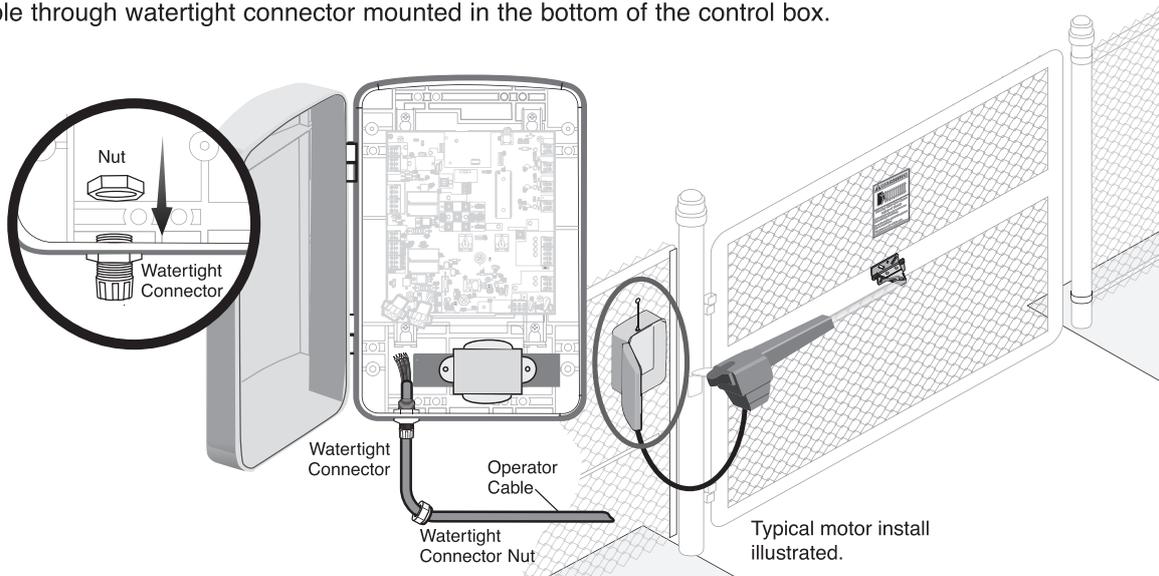
### 1 WATERTIGHT CONNECTOR NUT

Insert operator cable through watertight connector nut.



### 2 INSERT OPERATOR CABLE

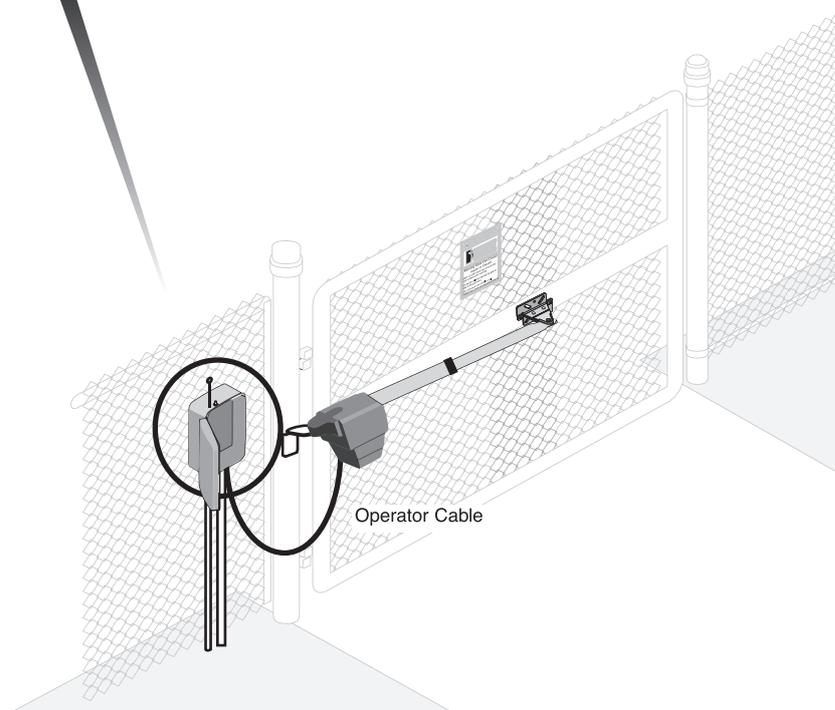
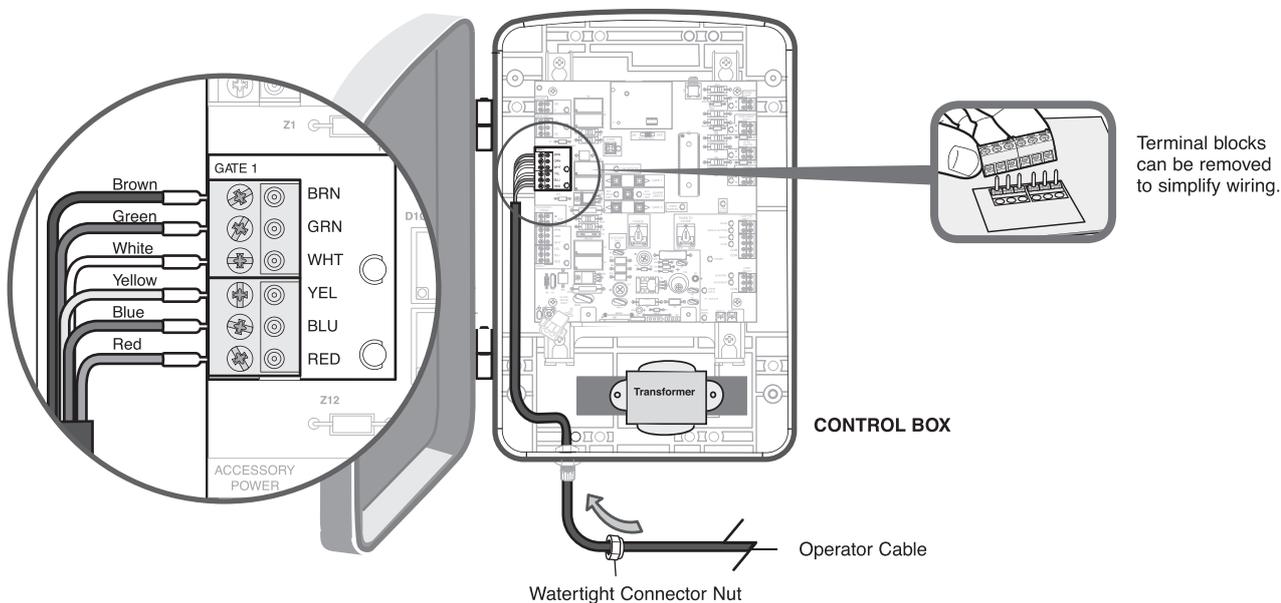
Insert watertight connector into the bottom of the control box and tighten with nut. Insert operator cable through watertight connector mounted in the bottom of the control box.



### 3. CONNECT OPERATOR TO CONTROL BOARD

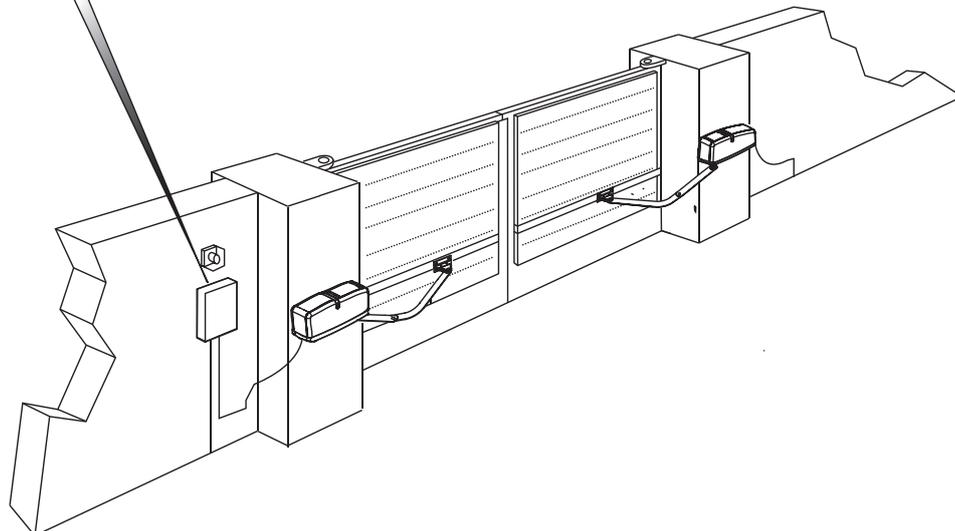
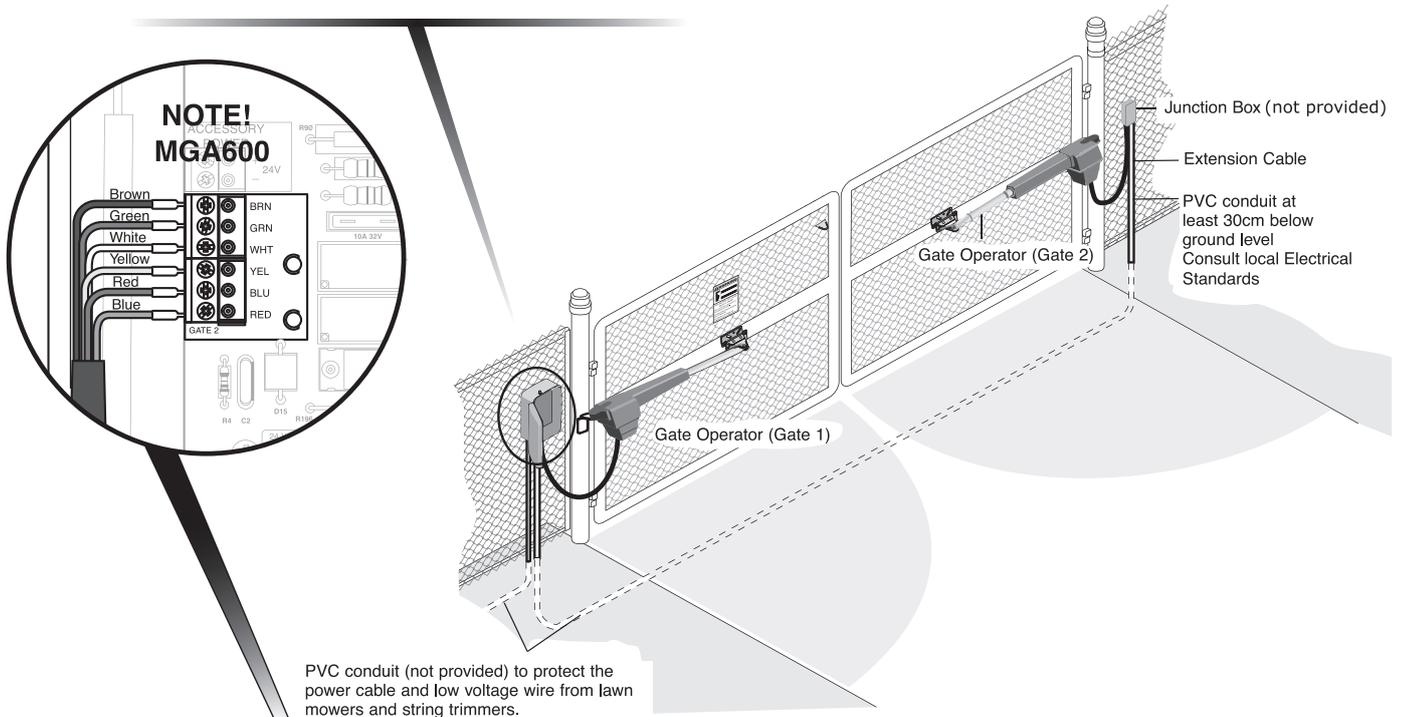
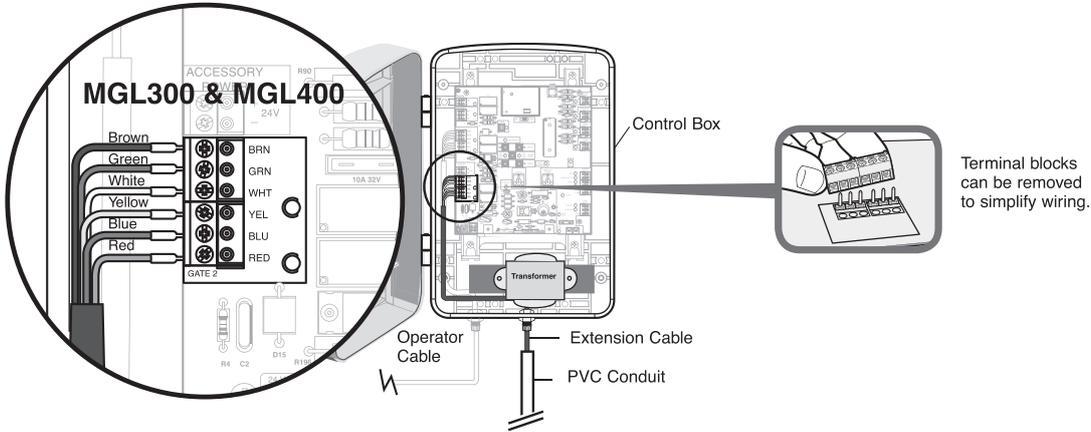
Extend operator cable and wires to GATE 1 connector and connect as shown. Tighten watertight connector nut.

If installing one operator, proceed to page 11.  
If installing two operators, continue to the next page.



# 1. CONNECT SECOND OPERATOR TO CONTROL BOARD (MODEL MGL300/400D or MGA600)

- Before digging, contact local underground utility locating companies.
- Trench across driveway to bury the extension cable.
- Use PVC conduit to prevent damage to cables.
- Insert extension cable through watertight connector nut and through an available watertight connector mounted in the control box.
- Extend cable and wires to GATE 2 connector and connect as shown.
- Secure extension cable to control box using watertight connector nut.



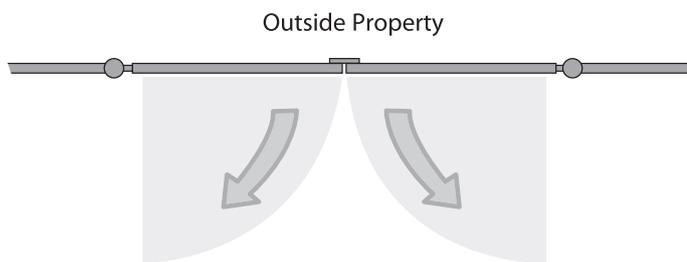
## Connect Gate Operator (Gate 2) to Control Box

Occasionally in dual gate installations, one gate would need to open first and close second. This would happen if there was an ornamental overhang on one gate or if using a solenoid lock, for example. This gate is called the Primary gate and needs to be connected to Gate 1 connections on the control board. Thus, it is preferred that the control box be installed on the same side as this gate. If there is no appropriate location on that side for the control box, then mount the control box on the opposite side, but connect the operator closest to the control box to the Gate 2 connector and the operator on the opposite side to the Gate 1 connector.

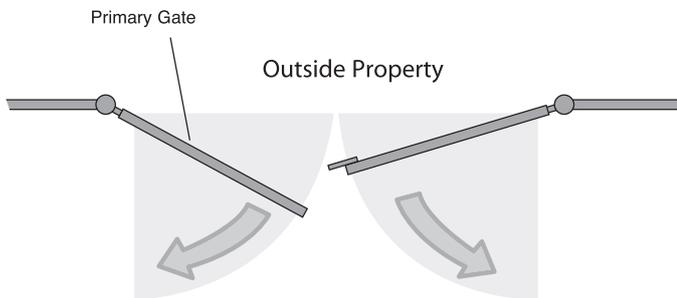
### SET THE LOCK/BIPART DELAY

The **LOCK/BIPART DELAY** switch on the control board needs to be set to the ON position.

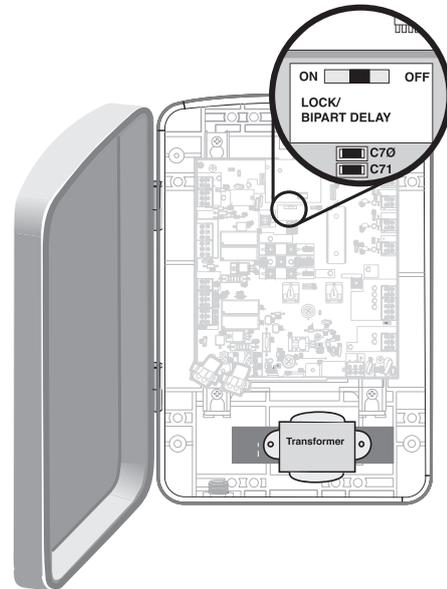
The following illustration shows a dual gate configuration with a decorative overlapping piece on the outside of the gate.



Primary Gate - Connect to Gate 1 Connector on Control Board.



If a solenoid lock is being used on a gate, the gate with the lock attached to it would be the primary gate.

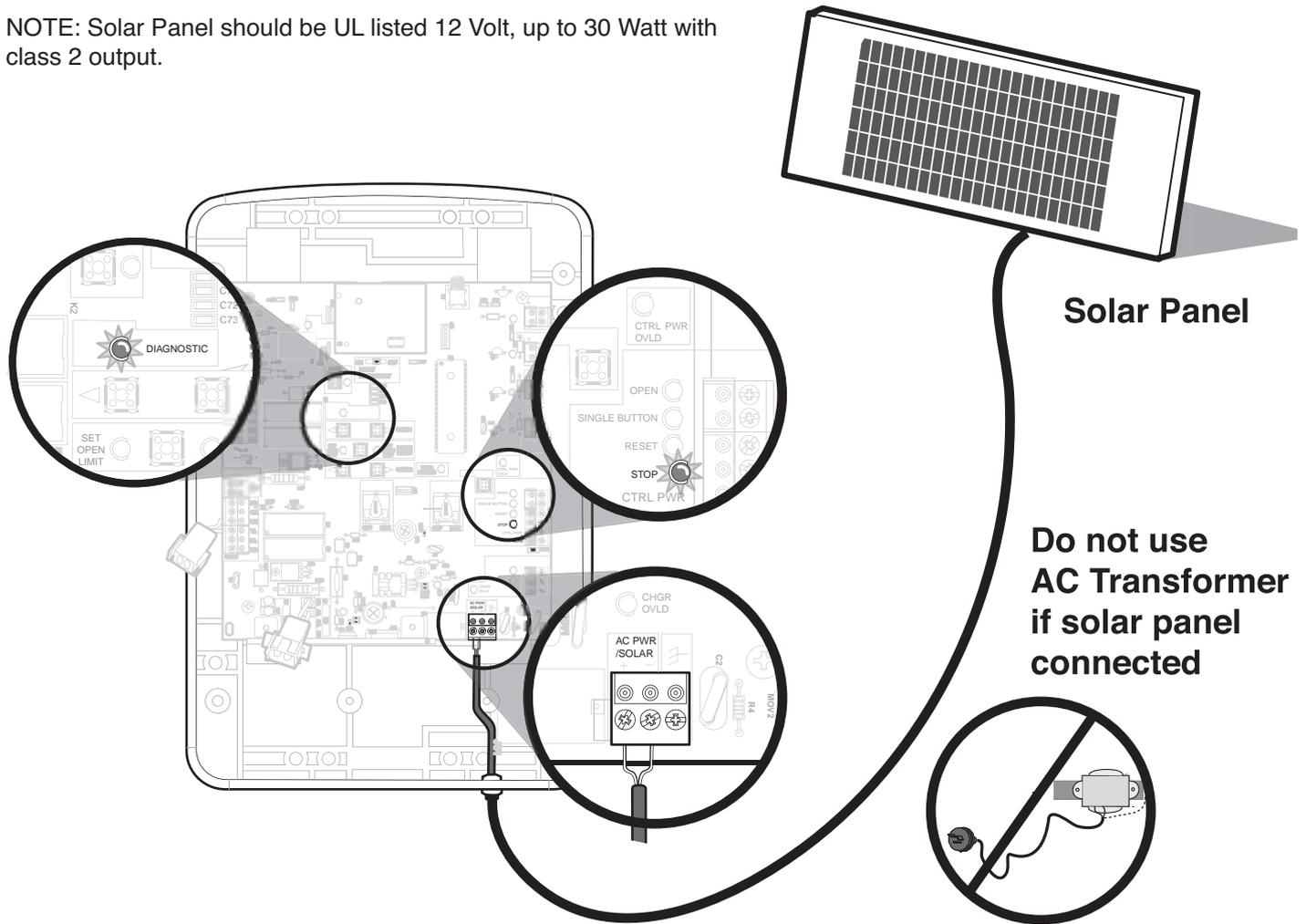


### CONNECTING OPTIONAL SOLAR PANEL (NOT SUPPLIED)

If you are using a SOLAR PANEL, the Transformer MUST be unplugged and removed.

Terminate the Solar Panel into the AC PWR/SOLAR Terminals as illustrated below.

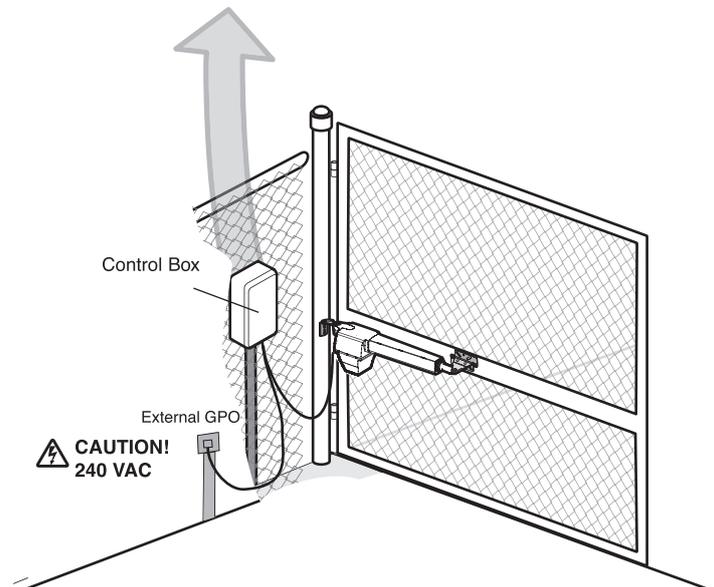
NOTE: Solar Panel should be UL listed 12 Volt, up to 30 Watt with class 2 output.



### CONNECTING POWER TO THE UNIT

For outdoor connection, a properly earthed WEATHER PROOF POWER POINT MUST BE USED.

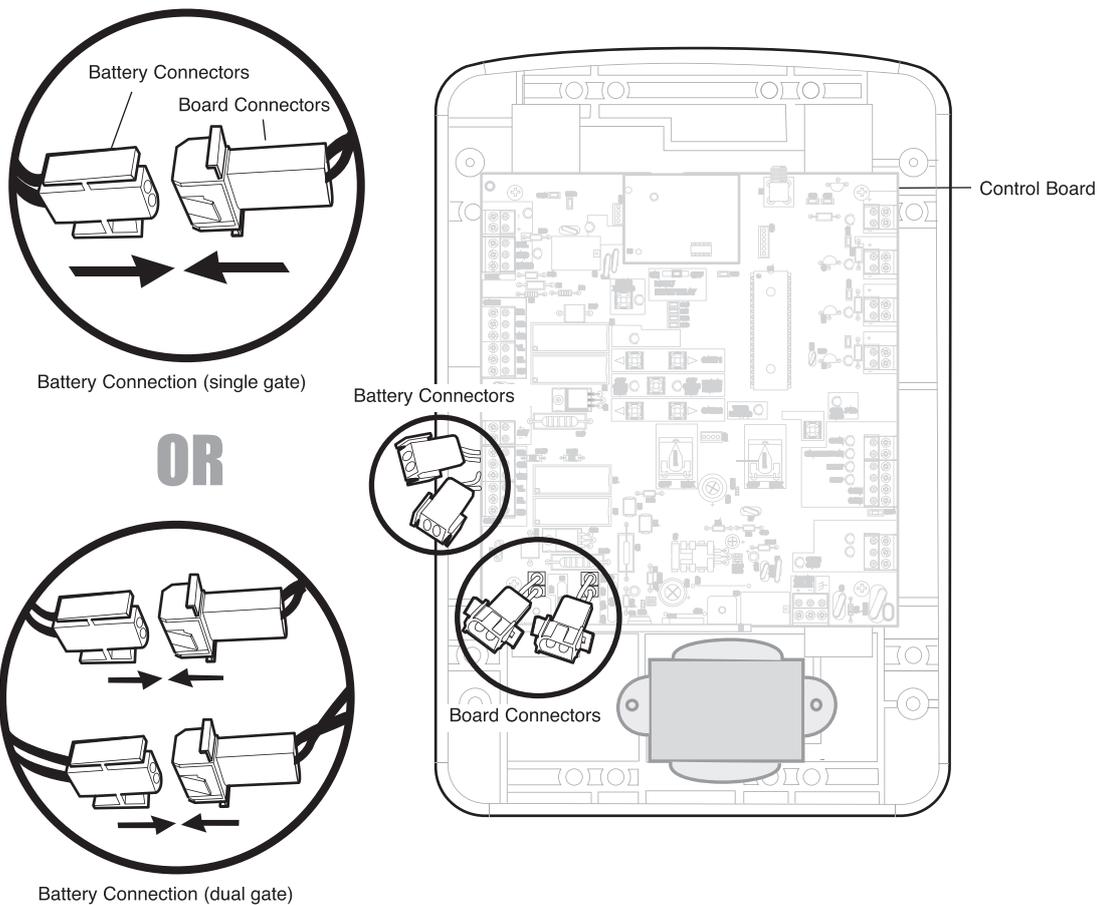
NOTE: Connection of Power must comply to local electrical standards.



## 2.CONNECT BATTERIES

The batteries are charged in circuit by using the transformer (provided). Locate the two white battery plugs on the left-hand side of the control box. Connect the plug from the battery to connector on the control board.

**NOTES:** Batteries will degrade over time depending on temperature and usage. For best performance, the batteries should be changed every 3 years. Batteries do not perform well in extremely cold temperatures. For locations where the temperatures are below -20° C (-4°F) contact technical support.



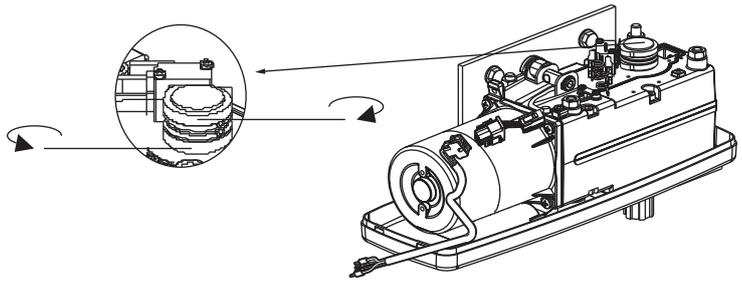
## PREPARING THE CAM SWITCHES FOR MGA600

The CAM switches must be set before proceeding with any programming.

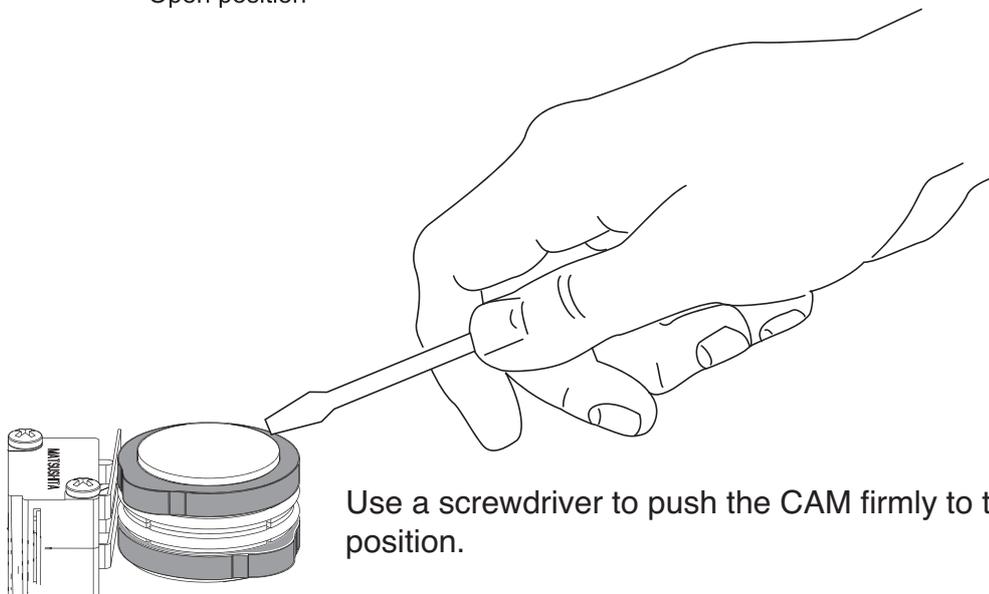
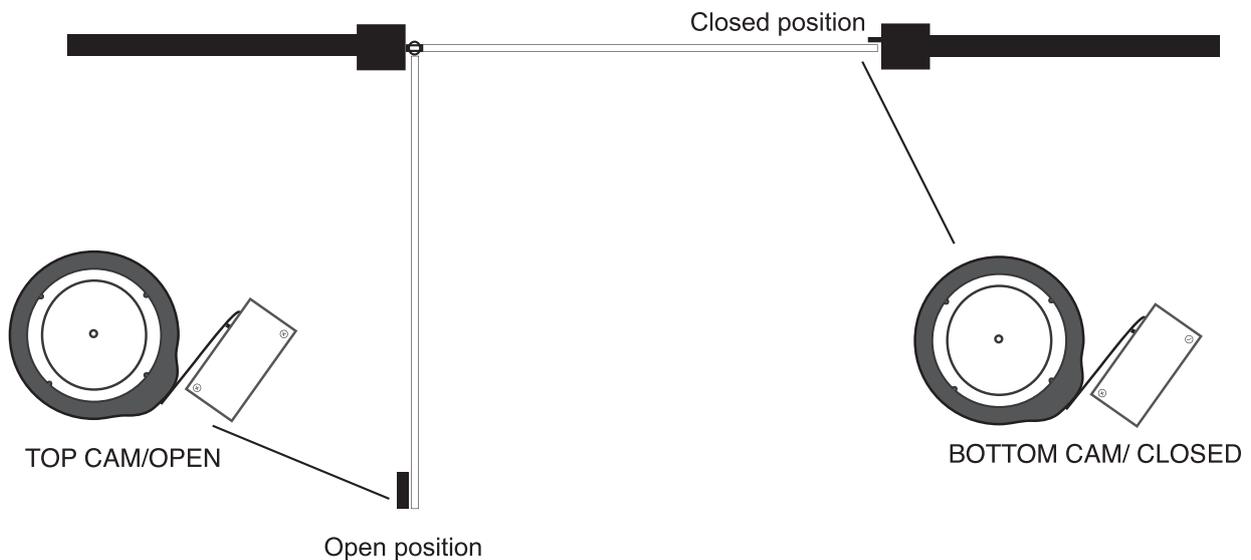
To set the CAM switches, disengage the motor using the Hex key provided (appendix B4, step 5).

Remove the top cover of the motor to allow access to the CAM located at the top of the motor.

Manually move the gate through one complete action taking note of the factory set CAM positions. Set cams as illustrated below.



**NOTE: The cams are set for use as passpoints (references) NOT ACCURATE STOPPING POSITIONS. Limit programming detailed on pages 14 and 15.**



Use a screwdriver to push the CAM firmly to the position.

Note: Firmly push the holes on top of the CAM to adjust. To avoid burring the CAM do not push directly on the cam lobe.

# PROGRAMMING

## Program Limits

The limits are internal settings that indicate when the gates are in the fully open position and the fully closed position. For proper functionality, the limits must be learned during the installation process. The programmed limit process uses a combination of buttons on the control board.

The specific buttons used for programming depends on which side of the gates the control box is mounted on and how many operators the installation includes.

If a mistake is made during the programming process press the **RESET** button on the outside of the control box to start over.

### SINGLE ARM LEFT-HAND SIDE

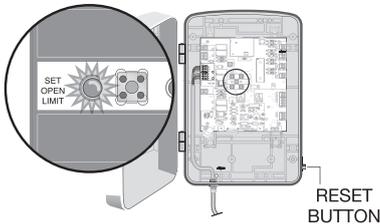
NOTE: The "Learn Limits" mode can be exited at any time by pressing the RESET button.

The mode will time-out automatically after 60 seconds of inactivity.

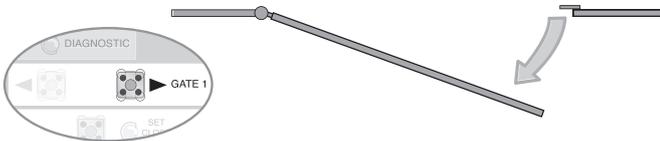
#### PROGRAM OPEN

With the gate in the **closed** position, press the **LEARN LIMITS** button (**SET OPEN LIMIT** LED will blink).

LEARN LIMITS button

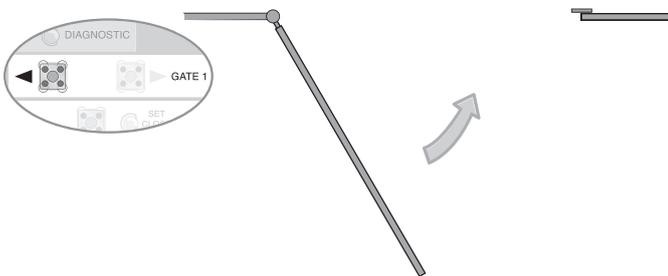


Press the **GATE 1** right button to move gate to the desired OPEN position. When gate is in the desired position, press the **LEARN LIMITS** button again. Control board will beep.



#### PROGRAM CLOSE

Press the **GATE 1** left button to move gate to the desired CLOSED position. When gate is in the desired closed position, press the **LEARN LIMITS** button again.



The control board beeps and the **SET OPEN LIMIT** and **SET CLOSE LIMIT** LEDs stop blinking, programming is now complete.

Test the limits by pressing the SBC (Single Button Control) on the board to open and close the gate

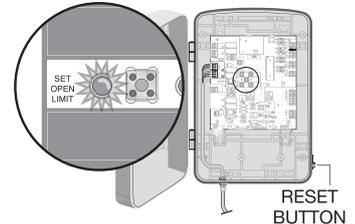
NOTE: If the SET OPEN LIMIT LED is still blinking, the limits were not programmed successfully. Repeat the programming making sure the gate is fully opened and closed for each respective limit. If the problem persists, refer to the Troubleshooting section.

### SINGLE ARM RIGHT-HAND SIDE

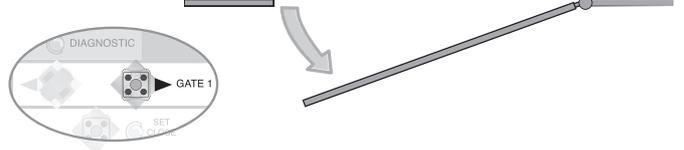
#### PROGRAM OPEN

With the gate in the **closed** position, press the **LEARN LIMITS** button (**SET OPEN LIMIT** LED will blink).

LEARN LIMITS button

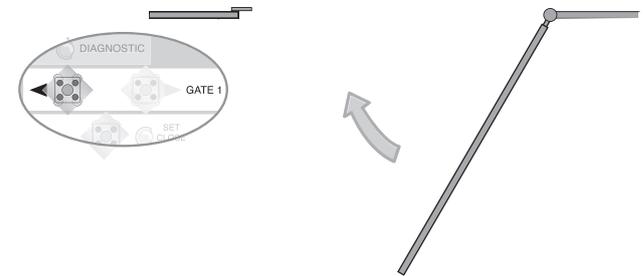


Press the **GATE 1** left button to move gate to the desired OPEN position. When gate is in the desired position, press the **LEARN LIMITS** button again. Control board will beep.



#### PROGRAM CLOSE

When the **SET CLOSE LIMIT** LED blinks, press the **GATE 1** right button. When gate is in the desired closed position, press the **LEARN LIMITS** button.



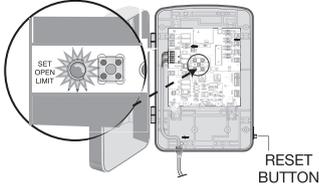
**NOTES:**

- If one gate is overlapping the other, the gate that is overlapping must be connected to GATE 1 so it will start moving before the other gate; gate 2 may need to be closed first if there is overlap or a gate lock is being used.
- The programming can be exited at any time by pressing the RESET button. Programming times-out automatically after 60 seconds of inactivity.

**DUAL GATE (LEFT-SIDE PRIMARY OPERATOR)**

**PROGRAM OPEN**

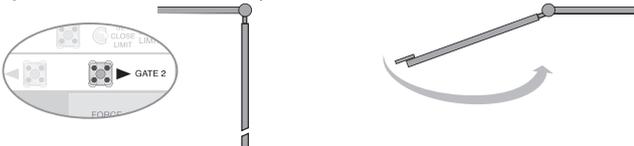
With the gate in the **CLOSED** position, press the **LEARN LIMITS** button (**SET OPEN LIMIT** LED will blink).



Press the **GATE 1** right button to open the left side operator.



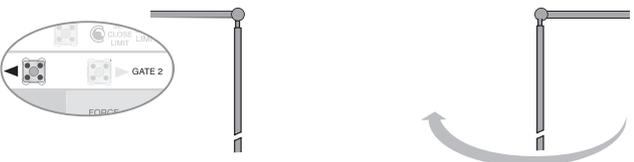
Press the **GATE 2** right button to move the right side operator into the OPEN position.



Press the **LEARN LIMITS** button. Control board will beep.

**PROGRAM CLOSE**

When the **SET CLOSE LIMITS** LED blinks, press the **GATE 2** left button to close the right operator.



Press the **GATE 1** left button to close the left operator.

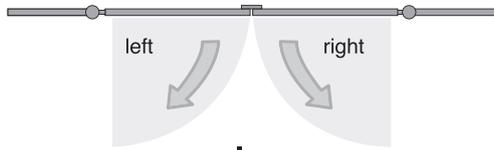


Press the **LEARN LIMITS** button.

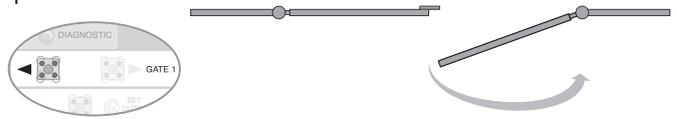
**DUAL GATE (RIGHT-SIDE PRIMARY OPERATOR)**

**PROGRAM OPEN**

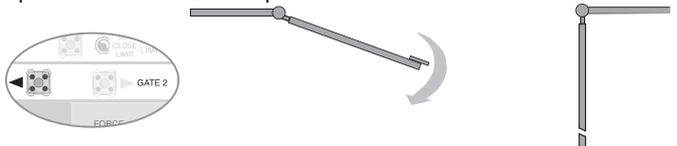
With the gate in the **CLOSED** position, press the **LEARN LIMITS** button (**SET OPEN LIMIT** LED will blink).



Press the **GATE 1** left button to open the right side operator.



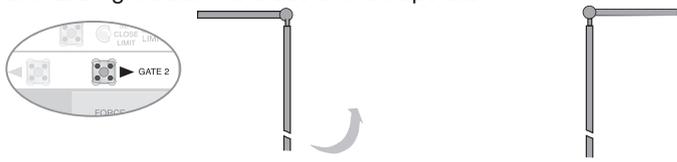
Press the **GATE 2** left button to move the left side operator into the OPEN position.



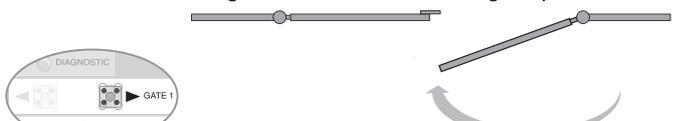
Press the **LEARN LIMITS** button. Control board will beep.

**PROGRAM CLOSE**

When the **SET CLOSE LIMITS** LED blinks, press the **GATE 2** right button to close the left operator.



Press the **GATE 1** right button to close the right operator.



Press the **LEARN LIMITS** button.

The control board beeps and the **SET OPEN LIMIT** and **SET CLOSE LIMIT** LEDs stop blinking, programming is now complete.

Test the limits by pressing the SBC (Single Button Control) to open and close the gate.

**NOTE:** If the **SET OPEN LIMIT** LED is still blinking, the limits were not programmed successfully. Repeat the programming making sure the gate is fully opened and closed for each respective limit. If the problem persists, refer to the Troubleshooting section.

## Force/Timer to Close/Party Mode Controls

### FORCE ADJUSTMENT

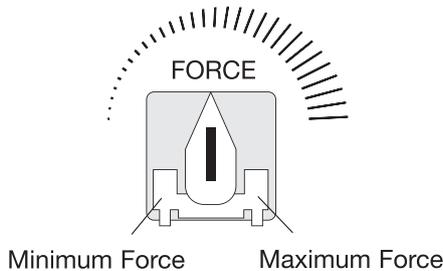
The operator is equipped with an obstruction sensing feature. If the gate encounters an obstruction the operator will automatically reverse direction and stop. Based on the length and weight of the gate it may be necessary to make force adjustments. The force adjustment should be high enough that small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

#### To adjust the force:

Using the 3-button remote or the Single Button Control (SBC) button on the control board, open and then close the gate.

If the gate stops and or reverses before reaching the fully open or closed position increase the force by turning the force control slightly. Run operator through a complete cycle.

NOTE: Weather conditions can affect the gate movement, so seasonal adjustment may be required. The force control is factory set to the mid position.



### TIMER-TO-CLOSE (TTC)

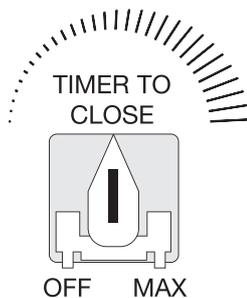
The **TIMER TO CLOSE** feature can be set to automatically close the gate after a specified time period.

If the TTC is set to the OFF position, then the gate will remain open until the operator receives another command from a remote control or SBC.

#### To set the TIMER TO CLOSE:

Rotate the **TIMER TO CLOSE** dial to the desired setting. The range is 0 to 180 seconds, 0 seconds is OFF.

NOTE: Any radio command, SBC, or CLOSE command on the control board prior to the TTC expiring will close the gate. The TTC is reset by any signals from the loops, close edges, and close safety sensors (IR's).



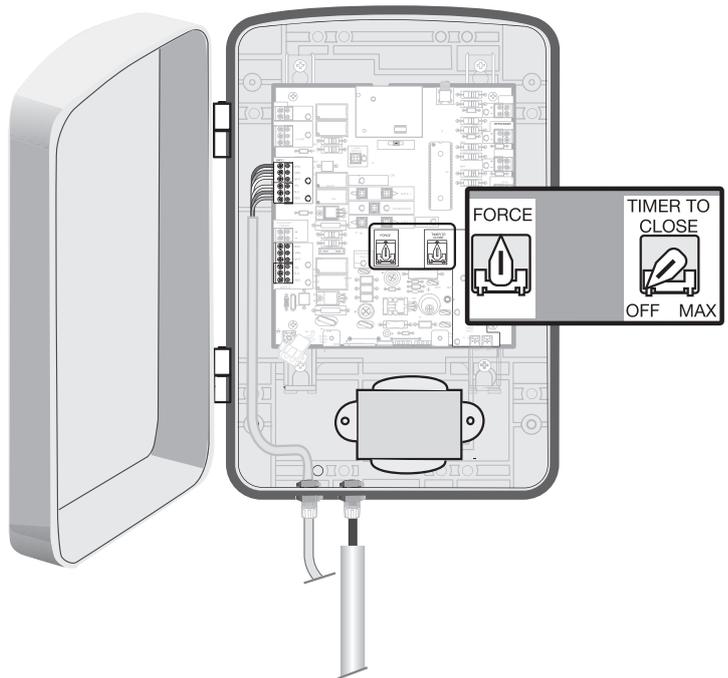
## ⚠ WARNING

Without a properly installed safety reversal system, persons (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 retested. Gate **MUST** reverse on contact with a rigid object.

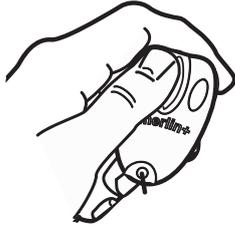
### PARTY MODE

TTC can be temporarily disabled by pressing RESET button (located on the outside side of the control box) when the gate is fully open. This will allow the gate to remain open until another command is received. Following this command, TTC is re-enabled at the previously set time period.



## To Add or Reprogram a Remote Control (not provided)

1. Press **LEARN XMITTER** button and release (LED will light up).
2. Press remote button, the LED will flash, alarm output will activate twice.
3. Repeat steps 1 and 2 until all remote controls are programmed (9 remote controls maximum).



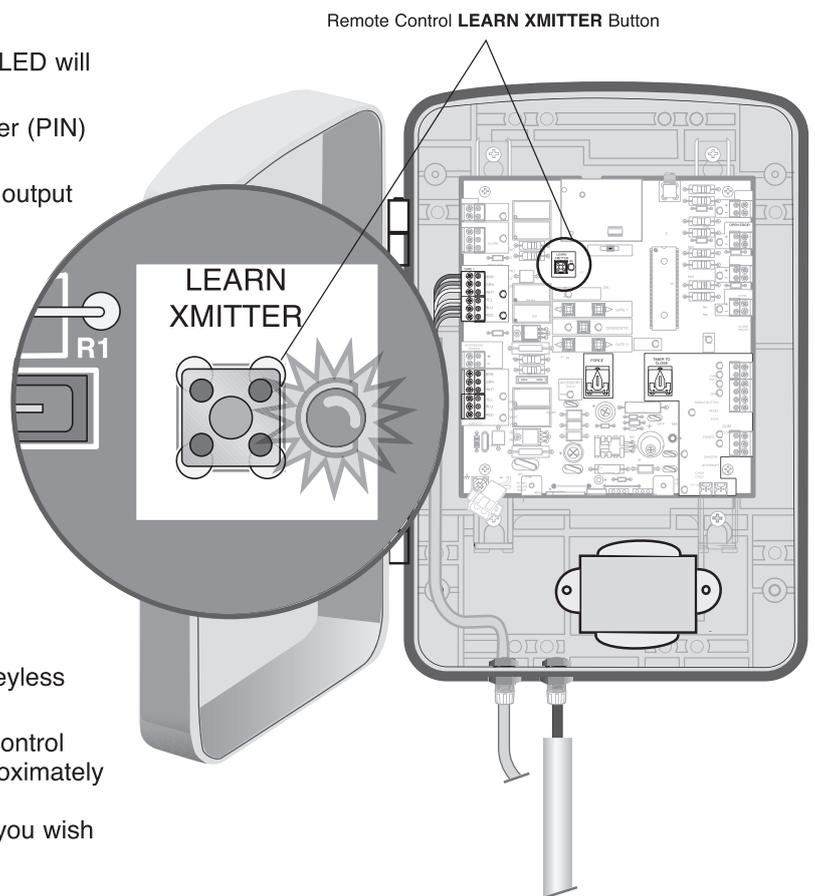
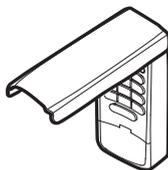
## WARNING

To prevent possible **SERIOUS INJURY** or **DEATH** from a moving gate or garage door:

- **ALWAYS** keep remote controls out of reach of children. **NEVER** permit children to operate, or play with remote control transmitters.
- Activate gate or door **ONLY** when it can be seen clearly, is properly adjusted, and there are no obstructions to door travel.
- **ALWAYS** keep gate or garage door in sight until completely closed. **NEVER** permit anyone to cross path of moving gate or door.

## To Add a Wireless Keyless Entry (not provided)

1. Press **LEARN XMITTER** button and release (LED will light up).
2. Enter a four digit personal identification number (PIN) of your choice on the keypad.
3. Then press **ENTER**, the LED will flash, alarm output will activate twice.



## TO ERASE ALL CODES

To deactivate any unwanted remote controls or keyless entries, first erase all codes:

Press and hold the **LEARN XMITTER** button on control board until the learn indicator light goes out (approximately 6 seconds). All previous codes are now erased.

Reprogram each remote control or keyless entry you wish to use.

Make sure the rubber seal around the cover is intact and close the cover. Secure the control box cover with screws (4). Installation is complete.

# OPERATION AND MAINTENANCE

## IMPORTANT SAFETY INSTRUCTIONS

### ⚠️ ⚠️ WARNING

### To reduce the risk of SEVERE INJURY or DEATH:

1. READ AND FOLLOW ALL INSTRUCTIONS.
2. NEVER let children operate or play with gate controls. Keep the remote control away from children.
3. ALWAYS keep people and objects away from the gate. NO ONE SHOULD CROSS THE PATH OF THE MOVING GATE.
4. Test the gate operator monthly. The gate MUST reverse on contact with a rigid object or stop when an object activates the non-contact sensors. After adjusting the force or the limit of travel, retest the gate operator. Failure to adjust and retest the gate operator properly can increase the risk of SEVERE INJURY or DEATH.
5. Use the emergency release ONLY when the gate is not moving.
6. KEEP GATES PROPERLY MAINTAINED. Read the owner's manual. Have a qualified service person make repairs to gate hardware.
7. Disconnect ALL power BEFORE performing ANY maintenance.

SAVE THESE INSTRUCTIONS.

## Using Your Gate Operator

Your operator will operate with up to nine Security+® remote controls and one Security+® Keyless Entry System. If you purchase a new remote, or if you wish to deactivate any remote, follow the instructions in the Programming section.

Activate your operator with any of the following:

**Hand Held Remote Control (See Accessories):** Hold push button down until the gate begins to move. While gate is moving, the next command sent from the remote will stop the gate. Next command will reverse the gate direction.

**Keyless Entry (See Accessories):** If provided with your gate operator, it must be programmed before use. See Programming .

**Vehicle Exit Sensor:** See accessory page.

### ENTRAPMENT FEATURES

When the operator is activated (with the safety sensors correctly installed and aligned) and the safety sensors encounter an obstruction, the following will occur:

**Opening Cycle:** Gate will stop, reverse direction for approximately 2 seconds and then stop. The next command will continue the gate in the close direction.

**Closing Cycle:** Gate will stop, reverse direction for approximately 2 seconds and then stop. The next command will open the gate.

### ALARM SOUNDS

The operator alarm will sound under the following condition: If gate encounters two consecutive obstructions, the operator will stop, the alarm will sound (up to 5 minutes) and the control board will require resetting. Reset the control board by pressing the "Reset Button" located on the outside of the control box. No commands at this time will operate gate. After the operator is reset, normal functions will be available.

### AUTOMATIC TIMER TO CLOSE FEATURE

The Timer-To-Close (TTC) Feature comes from the factory in the OFF setting.

The "TIMER RUNNING LED" will flash once for every second of adjusted time. The gate(s) must fully open for the timer feature to be active and close the gate(s). Any radio command or pressing the single button on the control board prior to the TTC time expiring will close the gate. The TTC is reset by any signals from the loops, close edges, and close safety sensors (IR's).

TIMER TO  
CLOSE



### PARTY MODE

If the Timer-to-Close feature is enabled and you would like the gate to remain open, simply push the reset button (located on the outside of the control box). The next command given to the operator will close the gate and return the operator to normal operation.

### SLEEP MODE (BATTERY CONSERVATION)

**Sleep Mode (Battery Conservation):** The operator enters sleep mode 10 seconds after the last command is given. The diagnostic LED will blink in this mode. The safety sensors (photo eyes) indicator LEDs will not be on. The next operation command will return the operator to normal operation.



# Wiring Diagram

## ⚠ WARNING

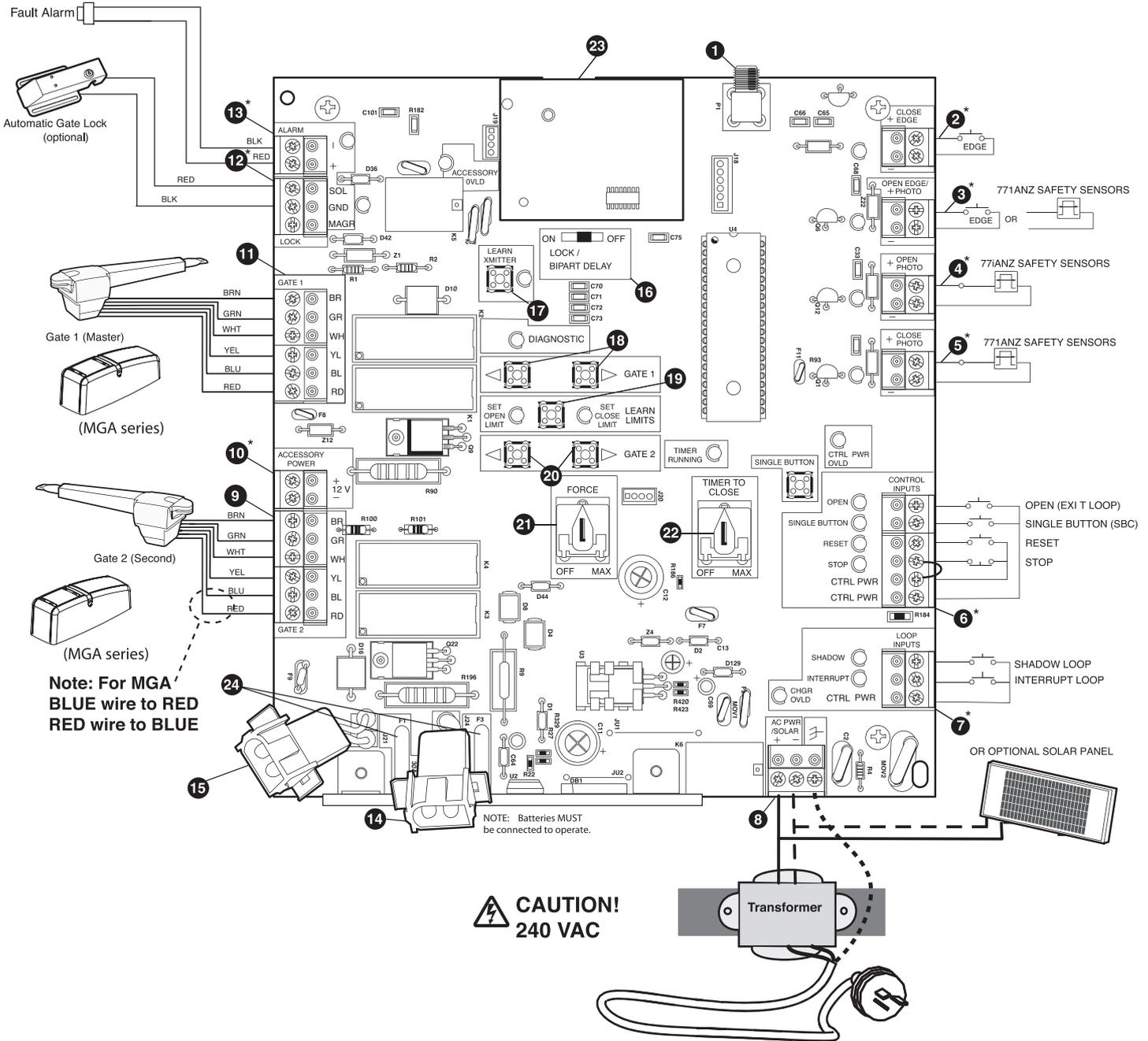
To protect against fire and electrocution:

- DISCONNECT power and battery BEFORE installing or servicing operator.

For continued protection against fire:

- Replace ONLY with fuse of same type and rating.

- |                     |                                     |                        |
|---------------------|-------------------------------------|------------------------|
| 1. Antenna Input    | 9. Gate 2                           | 17. Learn Xmitter      |
| 2. Close Edge*      | 10. Accessory Power*                | 18. Primary Gate Jog   |
| 3. Open Edge/Photo* | 11. Gate 1                          | 19. Learn Limits       |
| 4. Open Photo*      | 12. Lock (Solenoid/Maglock) Output* | 20. Secondary Gate Jog |
| 5. Close Photo*     | 13. Alarm Output*                   | 21. Force              |
| 6. Control Inputs*  | 14. Battery 1 Connector             | 22. Timer To Close     |
| 7. Loop Inputs*     | 15. Battery 2 Connector             | 23. Receiver Module    |
| 8. AC PWR/SOLAR     | 16. Lock/BiPart Delay               | 24. Fuses (20 Amp)     |
- \*Class 2 circuit 15 V maximum output



## Diagnostic Chart

Your gate operator is programmed with self-diagnostic capabilities. The diagnostic LED will flash a number of times then pause signifying it has found a potential issue. Consult Diagnostic Chart below.

<b>1 FLASH</b> <b>Power ON</b>	<ul style="list-style-type: none"> <li>● Normal Operation</li> </ul>
<b>2 FLASHES</b> <b>STOP not connected</b>	<ul style="list-style-type: none"> <li>● Stop is not connected.               <ul style="list-style-type: none"> <li>• Press the RESET button and make sure the STOP LED turns on.</li> <li>• Check to make sure the jumper wire is connected between the COM and STOP input on the control board. Stop is a normally closed input.</li> </ul> </li> </ul>
<b>3 FLASHES</b> <b>Low Battery Voltage</b>	<ul style="list-style-type: none"> <li>● Battery voltage is below the recommended operating level.               <ul style="list-style-type: none"> <li>• Battery may not be properly charged. Disconnect all batteries and make sure AC power or solar power is connected. Verify AC power outlet.</li> <li>• Verify that the battery fuses are intact and not blown. Replace blown fuses with same type and rating.</li> <li>• Batteries are no longer capable of holding a charge due to age or excessive depleting of the battery. Replace the batteries (see accessories page). Dispose of old batteries properly.</li> </ul> </li> </ul>
<b>4 FLASHES</b> <b>Low Battery Capacity</b>	<ul style="list-style-type: none"> <li>● Battery voltage is below the recommended operating level.               <ul style="list-style-type: none"> <li>• Battery may not be properly charged. Disconnect all batteries and make sure AC power or solar power is connected. Verify AC power outlet.</li> <li>• Verify that the battery fuses are intact and not blown. Replace blown fuses with same type and rating.</li> <li>• Batteries are no longer capable of holding a charge due to age or excessive depleting of the battery. Replace the batteries (see accessories page). Dispose of old batteries properly.</li> </ul> </li> </ul>
<b>5 FLASHES</b> <b>RPM Reversal Gate 1 or Arm Disconnected</b>	<ul style="list-style-type: none"> <li>● Gate 1 has encountered an obstruction or the arm is disconnected.               <ul style="list-style-type: none"> <li>• Make sure the path of the gate is clear and the gate moves freely.</li> <li>• Incorrect or poor connection to Gate 1 arm. Check the green and white wires on the motor arm to make sure connections are correct and secure.</li> <li>• Bad arm or control board. Press the LEARN LIMITS button and press the GATE 1 buttons to move the arm. If the arm does not move continuously, disconnect arm from Gate 1 and connect the arm to the Gate 2 connector and repeat the attempt to move the arm. If the arm does not move continuously on either Gate 1 or 2, replace the arm.</li> </ul> </li> </ul>
<b>6 FLASHES</b> <b>Force Reversal Gate 1</b>	<ul style="list-style-type: none"> <li>● Gate 1 has encountered an obstruction.               <ul style="list-style-type: none"> <li>• Make sure the path of the gate is clear and the gate moves freely.</li> <li>• If there is no obstruction the force adjustment is set too low. Increase the force setting and verify that the gate moves without reversing and will reverse if an obstruction is encountered.</li> </ul> </li> </ul>
<b>7 FLASHES</b> <b>RPM Reversal Gate 2 or Arm Disconnected</b>	<ul style="list-style-type: none"> <li>● Gate 2 has encountered an obstruction or the arm is disconnected.               <ul style="list-style-type: none"> <li>• Make sure the path of the gate is clear and the gate moves freely.</li> <li>• Incorrect or poor connection to Gate 2 arm. Check the green and white wires on the motor arm to make sure connections are correct and secure.</li> <li>• Bad arm or control board. Press the LEARN LIMITS button and press the GATE 2 buttons to move the arm. If the arm does not move continuously, disconnect arm from Gate 2 and connect the arm to the Gate 1 connector and repeat the attempt to move the arm. If the arm does not move continuously on either Gate 1 or 2, replace the arm.</li> </ul> </li> </ul>
<b>8 FLASHES</b> <b>Force Reversal Gate 2</b>	<ul style="list-style-type: none"> <li>● Gate 2 has encountered an obstruction.               <ul style="list-style-type: none"> <li>• Make sure the path of the gate is clear and the gate moves freely.</li> <li>• If there is no obstruction the force adjustment is set too low. Increase the force setting and verify that the gate moves without reversing and will reverse if an obstruction is encountered.</li> </ul> </li> </ul>
<b>9-11 FLASHES</b> <b>Potential chip failure</b>	<ul style="list-style-type: none"> <li>● Potential RAM, Flash, or EPROM failure.               <ul style="list-style-type: none"> <li>• Turn power off and on.</li> <li>• If problem does not resolve itself by turning power off and on, replace the control board.</li> </ul> </li> </ul>

## Troubleshooting

SYMPTOM	POSSIBLE SOLUTION
Operator does not run. Diagnostic LED not on.	<ul style="list-style-type: none"> <li>• Power not connected. Make sure the AC/Solar input is connected and that at least one battery is connected with the corresponding fuse intact.</li> <li>• Low or defective battery. Check the battery to make sure that the red wire goes to the positive terminal of the battery and the black wire goes to the negative terminal of the battery. Replace the battery if the open circuit voltage is below 11.5Vdc.</li> <li>• Bad control board. Call technical support for more options.</li> </ul>
Operator powers up but does not run.	<ul style="list-style-type: none"> <li>• Low or defective battery. At least one charged battery must be connected for the unit to operate. Verify the battery fuse is intact. Check battery connections and battery voltage to be above 11.5V. Replace batteries if necessary.</li> <li>• STOP button connection loose or disconnected. Press the RESET button and verify that the STOP LED lights up and then turns off after 10 seconds. Verify the wire connects between the STOP and CTRL PWR terminals.</li> <li>• Obstruction blocking safety sensors. Press the RESET button and verify that all the safety LEDs (OPEN EDGE/PHOTO, OPEN PHOTO, CLOSE PHOTO) are OFF. If any are ON, clear any obstructions and verify the LED turns off. NOTE: The RESET button may need to be hit multiple times since the LEDs turn off after 10 seconds when the unit goes to sleep.</li> <li>• (Optional Accessory) Safety edge is damaged or on an obstruction. Press the RESET button and verify that the Safety LEDs (OPEN EDGE and CLOSE EDGE/PHOTO) are OFF. If either is ON, clear any obstructions and verify the LED turns off. NOTE: The RESET button may need to be hit multiple times since the LEDs turn off after 10 seconds when the unit goes to sleep.</li> <li>• (Optional Accessory) Interrupt loop or Shadow loop is obstructed. Press the RESET button and verify that the INTERRUPT and SHADOW LEDs are OFF. If either is on, check the loop detector and its wiring to insure that it is not incorrectly being triggered.</li> </ul>
Relays “click” when remote control or single button control (SBC) command is given, but the operator does not move.	<ul style="list-style-type: none"> <li>• Bad control board. Call technical support for help with replacement parts.</li> <li>• Battery not connected. At least one charged battery must be connected for the unit to operate. Verify battery fuse is intact. Check battery connections and battery voltage to be above 11.5V. Replace batteries if necessary.</li> <li>• Arm cable loose or disconnected. Verify that all of the wires, especially the red and blue wires, going to the arm are secure and that the connector is properly mated to the header.</li> <li>• Arm is jammed or incorrectly installed. Disconnect the motor housing from the arm and verify that the arm moves freely. With the motor housing still disconnected, enter the Learn Limits mode and verify that the motor spins. Reconnect the motor housing to the arm and make sure that all 4 screws are securely tightened and that the motor seats correctly against the worm drive. Relearn limits for the operator.</li> <li>• Bad control board. Call technical support for help with replacement parts.</li> </ul>

SYMPTOM	POSSIBLE SOLUTION
The arm moves but cannot exit Learn Limits mode. Cannot learn limits.	<ul style="list-style-type: none"> <li>• Arm does not extend or contract enough during travel. The arm piston must extend and contract close to its full length to Learn Limits. Adjust the arm mounting so that this can be achieved.</li> <li>• Motor cable wire not connected. Make sure that all the motor wires are connected properly.</li> <li>• Motor housing is not properly seated. Make sure that the motor housing for the arm(s) is properly seated so there are no gaps between the motor housing and arm assembly. Make sure all 4 screws are tightened.</li> </ul>
Gate does not fully open or close when trying to learn limits.	<ul style="list-style-type: none"> <li>• Over extending or contracting arm. Disconnect the motor housing from the arm and make sure that the arm moves freely throughout the full length of travel. Adjust arm mounting and positioning if necessary.</li> <li>• Arm is interfering with the gate mount bracket. Examine the hinge point where the arm mounts to the gate post. Make sure that the arm housing does not hit or interfere with the gate post or mounting bracket throughout the full length of travel. Adjust the arm mounting and positioning if necessary.</li> <li>• 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.</li> </ul>
Unit does not respond to single button control (SBC) command.	<ul style="list-style-type: none"> <li>• Battery not connected. At least one charged battery must be connected for the unit to operate. Verify the battery fuse is intact. Check battery connections and battery voltage to be above 11.5Vdc. Replace batteries if necessary.</li> <li>• STOP button connection loose or disconnected. Press the RESET button and verify that the STOP LED lights up and then turns off after 10 seconds. Verify the wire connects between STOP and CTRL PWR terminals.</li> <li>• Single Button Control (SBC) button connection loose. Check wiring for SBC button. Use the on-board single button to verify operator will respond.</li> <li>• Bad control board. Call technical support for help with replacement parts.</li> </ul>
Unit does not respond to remote control command.	<ul style="list-style-type: none"> <li>• Battery not connected. At least one charged battery must be connected for the unit to operate. Verify battery fuse is intact. Check battery connections and battery voltage to be above 11.5V. Replace batteries if necessary.</li> <li>• STOP button connection loose or disconnected. Press the RESET button and verify that the STOP LED lights up and then turns off after 10 seconds. Verify the wire connects between the STOP and CTRL PWR terminals.</li> <li>• Radio module not plugged in. Verify the green Radio module (located next to the coaxial connector) is properly mated with both 4-pin connectors.</li> <li>• Antenna not connected. Verify the antenna and coaxial cable are properly connected to the control board.</li> <li>• Transmitter not learned. Refer to Programming Remote Control section for steps to program the transmitter.</li> <li>• Bad control board. Call technical support for help with replacement parts.</li> </ul>
Gate stops and reverses immediately after it starts moving.	<ul style="list-style-type: none"> <li>• Obstruction sensed. Check safety devices and gate for obstructions.</li> <li>• A fault has occurred. Check Diagnostic LED for possible error codes.</li> <li>• Force set too low. Adjust FORCE setting until gate completes a full open/close cycle without reversing. The force setting may need to be adjusted in cold weather, as the gate will not move freely.</li> <li>• Loops are reversed. Make sure that the Safety loop and Shadow loop are connected properly. The gate may trigger the Shadow loop as it moves, so it must be connected to the correct input.</li> <li>• Low or defective battery. At least one charged battery must be connected for the units to operate. Verify battery fuse is intact. Check battery connections and battery voltage to be above 11.5V. Replace batteries if necessary.</li> </ul>

SYMPTOM	POSSIBLE SOLUTION
Gate opens but does not close.	<ul style="list-style-type: none"> <li>• An open input is continuously activated. Check the open loop or vehicle probe to make sure they are clear of objects. Verify connections and operation for these devices.</li> <li>• Low battery. Measure the voltage across the battery. Voltage should be above 11.5Vdc. Replace battery if required.</li> <li>• (Optional Accessory) Entry system output is connected to the OPEN input, and is “stuck” opening. Verify entry system connections and operations.</li> <li>• Obstruction blocking close photo eyes, shadow loop, or safety loop. Check eyes for alignment and verify all connections and operation for safety devices.</li> <li>• (Optional Accessory) Close safety edge is damaged or on an obstruction. Verify operation and connection of close edge.</li> </ul>
Gate does not close automatically with Timer to Close enabled.	<ul style="list-style-type: none"> <li>• Verify that the Timer to Close is ON and adjusted to desired delay.</li> <li>• Gate opened by a force obstruction reversal. Check the Diagnostic LED and clear gate path of any obstructions.</li> <li>• The Interrupt loop or Shadow loop is obstructed (optional accessories).</li> <li>• Obstructed close safety sensor or safety edge (optional accessory). Check connections and operations of safety devices.</li> <li>• Low battery. Measure the voltage across the battery. Voltage should be above 11.5Vdc. Replace battery if required.</li> <li>• An open input is continuously activated. Check the open loop or vehicle probe to make sure they are clear of objects. Verify connections and operation for these devices.</li> <li>• (Optional Accessory) Entry system output is connected to the OPEN input, and is “stuck” opening. Verify entry system connections and operation.</li> <li>• Operator in “Party” mode after RESET button pressed while at the OPEN limit. Use a remote or the SBC to close the gate and reopen it. Verify that the TIMER RUNNING LED is flashing.</li> </ul>
Alarm constantly sounds for 5 minutes. Sounds whenever a command is issued.	<ul style="list-style-type: none"> <li>• Double entrapment occurred. Two successive obstructions were encountered while moving the gate. Press the RESET button and ensure that the gate path is clear of all obstructions. Check the FORCE setting to make sure it is properly set.</li> </ul>
Alarm is beeping 3 times on a command.	<ul style="list-style-type: none"> <li>• Low battery. Measure the voltage across the battery. Voltage should be above 11.5Vdc. Replace battery if required.</li> </ul>
Gate runs too slow.	<ul style="list-style-type: none"> <li>• Open and Close Limits are set too close together. If the Open and Close Limits are set within the ramp down distance of each other, the gate will run at slow speed all the time.</li> <li>• The gate is starting within the ramp down distance from the Open or Close Limit. Gate will run slow to limits if motion is started within the ramp-down distance from the limit.</li> </ul>
Gate 2 closes before Gate 1.	<ul style="list-style-type: none"> <li>• Lock/Bipart Delay not set. Slide the Lock/Bipart Delay switch to ON. Verify that Gate 1 starts moving first on open and last on close.</li> <li>• 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.</li> <li>• Gate is unbalanced. Disconnect the arms and verify that both gates swing easily in both directions. If the gates are harder to move in one direction verses the other, the gate is not properly balanced and the hinges must be adjusted.</li> <li>• Bad motor connection. Check the motor wires and connections for possible loose or corroded terminals.</li> </ul>
Alarm beeps when running.	<ul style="list-style-type: none"> <li>• Low battery. Measure the voltage across the battery. Voltage should be above 11.5Vdc. Replace battery if required.</li> </ul>
Gate does not open/close at the same place each time.	<ul style="list-style-type: none"> <li>• In windy areas, an automatic gate lock for close and a hard stop for open is recommended to ensure the gate stops in the same place each time.</li> <li>• Periodic limit adjustments may be necessary.</li> </ul>

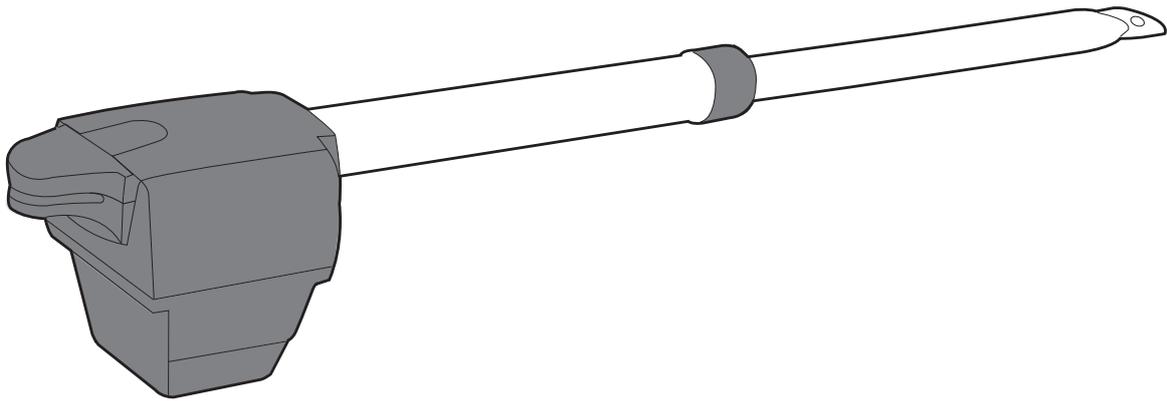
# **APPENDIX A**

## **MGL300 and MGL400**

### **Installation Manual**

**CHAMBERLAIN™**

**merlin™**  
**professional**



Appendix A  
Installation and operation  
instructions  
for MERLIN MGL300/MGL400  
gate openers.

Chamberlain Australia Pty Ltd  
PO Box 1446  
Lane Cove NSW 1595  
Phone Toll Free 1800 638 234

Chamberlain New Zealand Ltd  
PO Box 100-221  
North Shore 0745  
Phone Toll Free 0800 637 546

[www.chamberlainanz.com](http://www.chamberlainanz.com)



**N2966**

Important safety instructions inside please keep in a safe place

## ATTENTION!

### IMPORTANT FITTING AND OPERATING INSTRUCTIONS

PLEASE START BY READING THESE IMPORTANT SAFETY RULES • SAVE THESE INSTRUCTIONS



This safety alert symbol means "Caution" - failure to comply with these instructions may result in personal injury or property damage. Please read these warnings carefully.

This gate drive mechanism is designed and tested to offer appropriately safe service provided it is installed and operated in strict accordance with the following safety rules.



*Incorrect installation and/or failure to comply with the following instructions may result in serious personal injury or property damage.*



*Be careful when using tools and small parts to install or repair gates. Do not wear rings, watches or loose fitting clothing.*



Installation and wiring must comply with your local building and electrical installation codes.



Power cables must only be connected to a properly earthed supply.



*Where a risk of entrapment exists between a moving wing and walls, safety edges or IR-sensors must be installed.*



Please remove any locks fitted to the gate in order to prevent damage to the gate.



After installation is complete a final test of ALL functions and SAFETY systems must be carried out.



Where a secondary gate (wicket door) or other access is incorporated in the gate's construction a safety switch must be installed.



Prior to installation, ensure that the gate runs smoothly. If gate sticks or jams it must be repaired immediately. *This must be carried out by a Gate Technician. Do not attempt to repair the gate/s yourself.*



*Gates can be dangerous! Please ensure that all accessories and remote control devices are kept away from children. Never allow children to play near an operational gate.*



*Before servicing, removing covers or repairing any gate motor, disconnect electric power.*



An isolation switch must be installed if your gate motors or control boards are hard wired.



These instructions should be kept in a safe place and provided to any electrical contractors or gate installer servicing your unit.



*Where safety devices are installed, it is essential that these devices are functioning before leaving the site.*



**DO NOT APPLY POWER** until all safety devices are functioning properly.

**Contents: General advice on installation and use:**

**Carton content:** Page A2

**Before you begin:** Page A2

**Checklist:** Page A3 (fig 3)

**Gate types:** Page A3 (fig 4)

**Gate configuration:** Page A3 (fig 6)

**Gate stops:** Page A4 (fig 7)

**Post bracket/Gate fixing bracket:**

Page A4, (fig 8 A-E)

**Remove the Motor from Arm** Page A5 (fig 9)

**Installing the drive arms:** Page A6, (fig 3 A-B)

**Release of drive arms:** Page A5, (fig 11)

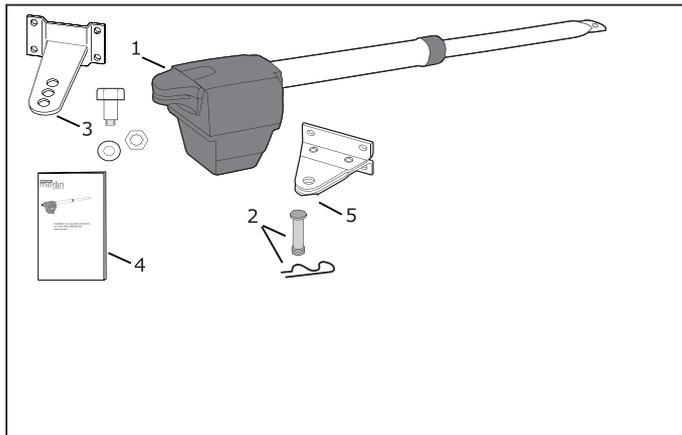
**Wiring:** Page A7, (fig 14)

**Maintenance work:** Page A7 (fig 14)

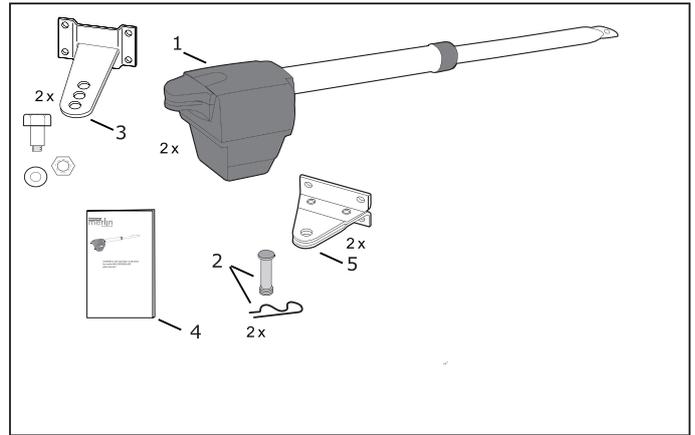
**Technical Data:** Page A7 (fig 15)

**Spare Parts:** page A7 (fig 16)

## 1 MGL300 / MGL400



## 2 MGL300D / MGL400D



### CONTENT OF THE CARTON MGL300/MGL400 1

- (1) Motor
- (2) Clevis pin and rings
- (3) Postbracket
- (4) Manual
- (5) Gate fixing bracket

### CONTENT OF THE CARTON MGL300D/MGL400D 2

- (1) Motor x2
- (2) Clevis pins and rings
- (3) Postbracket x2
- (4) Manual
- (5) Gate fixing bracket x2

### BEFORE YOU BEGIN

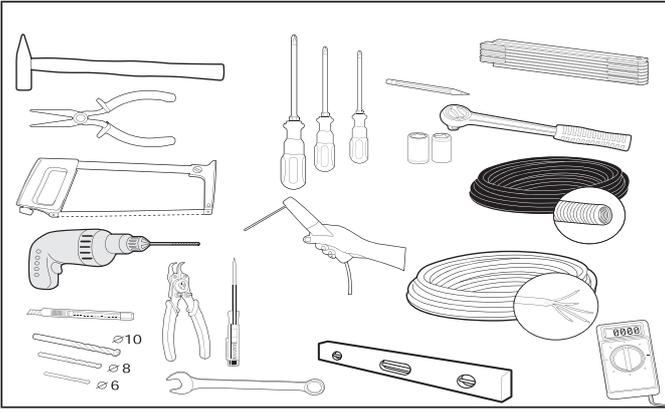
Ensure there is enough room between the gate and the walls to accommodate the motor. Please consult manual page 4 for minimum clearances. Where gates may be affected by high wind loads or for added security an (electric) lock or magnetic lock should be installed.

#### Consider the following factors before proceeding with gate arm mounting.

- **Gate size:** Gate size is a very important factor. Please also consider environmental factors. Wind resistance can exert great force on a gate and its opener, thereby considerably increasing the amount of force needed to move it.
- **Gate weight:** The weight of the gate is not as relevant as the size, ease of operation and wind resistance.
- **Effect of temperature:** Low outdoor temperatures can alter the geometry of the gate and its installation making initial startup more difficult or even impossible. High outdoor temperatures along with frequent use can trigger thermal protection prematurely (approx. 135 °C).
- **Operating frequency (Duty Cycle):** Drive mechanisms are designed for a maximum "Duty Cycle" of approximately 30% (e.g. 30% during any one hour).

**IMPORTANT:** The drive mechanism is not designed to operate continuously. Excessive use may cause the drive mechanism to become too hot, thereby engaging the unit's thermal overload circuit until the motor cools. Extremes in outdoor temperatures can affect the gates operation and actual operating time.

3



### INSTALLATION CHECKLIST - PREPARATIONS

Check the carton contents and read the instructions carefully. Make sure your gate equipment operates well, with no sticking or tightening at any point. You should allow for some changes in clearances caused by environmental conditions and make any necessary adjustments. The gate should be stable and as free of bounceback in order to prevent any unwanted movement. The smoother the gate wings run, the more sensitive the force adjustment can be.

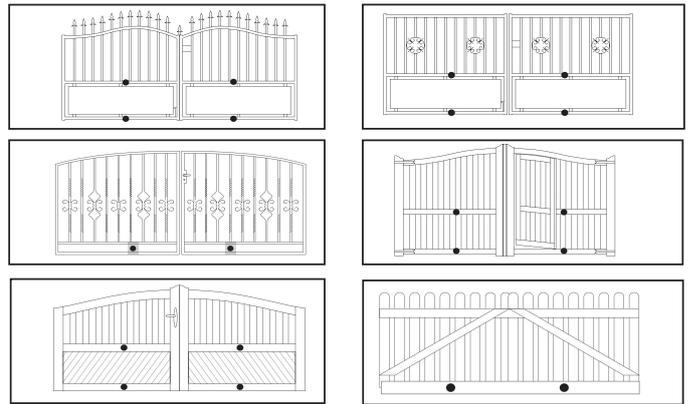
Take a moment to write down any materials you still need and obtain them before starting to install. Heavy-duty plugs, bolts, gate stops, cables, distribution boxes, tools, chemical anchor etc.

### GATE TYPES

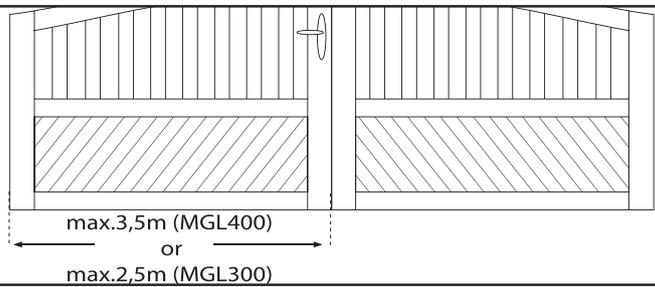
The type of gate will determine the installation location of the drive mechanism. If a gate stop is installed in the ground, ensure the gate motor is installed as low as possible to prevent excessive gate twisting. Motor arm must be fixed to suitable fastening point of the gate frame. For steel gates, the gate fitting must be attached to the main frame. If you are uncertain whether the available support is sufficiently stable, reinforce it.

For wooden gates, the gate fittings should be bolted through. It is advisable to fit a plate on the outside so that the fixing brackets do not loosen with use. Thin wooden gates **MUST** also be reinforced to help withstand the force applied by the gate operator.

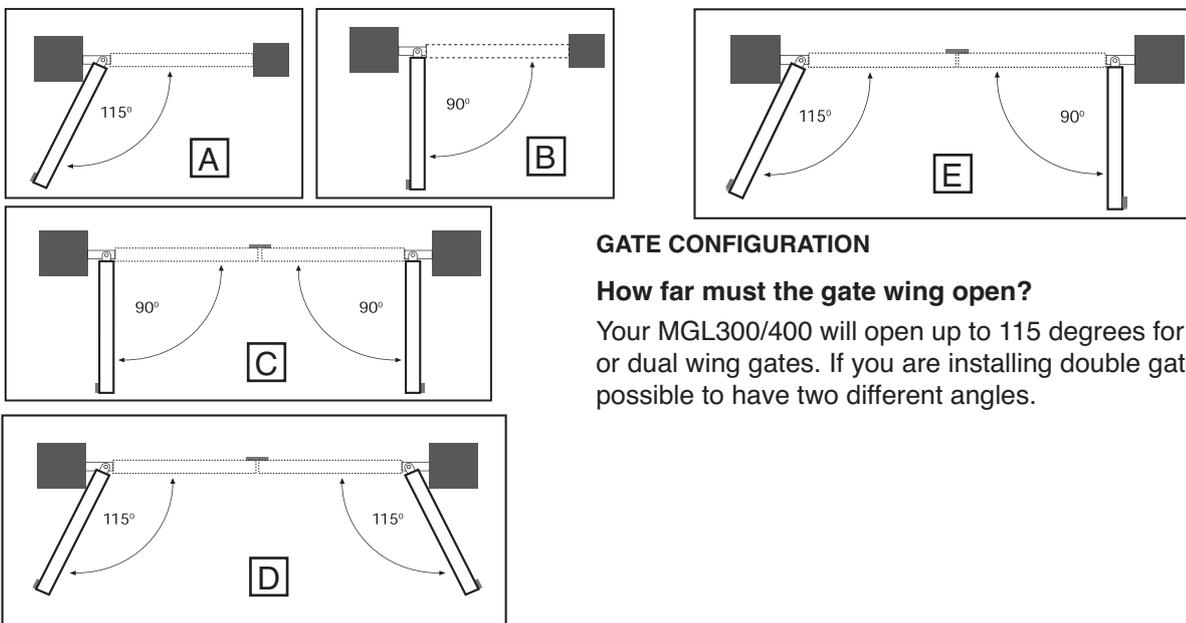
4



5



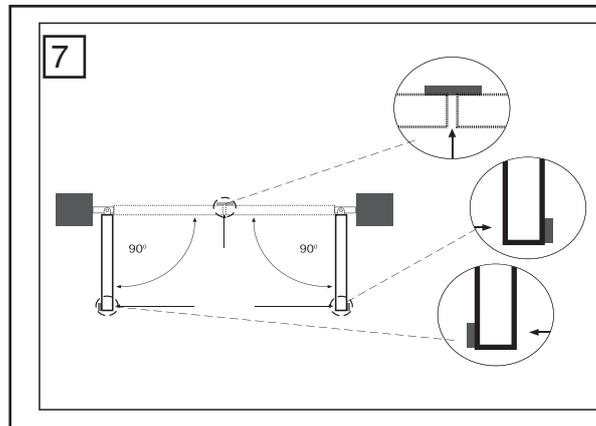
6



### GATE CONFIGURATION

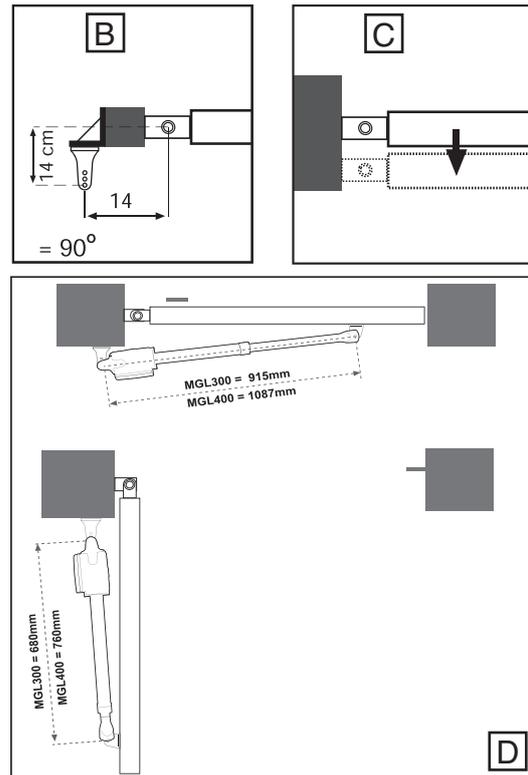
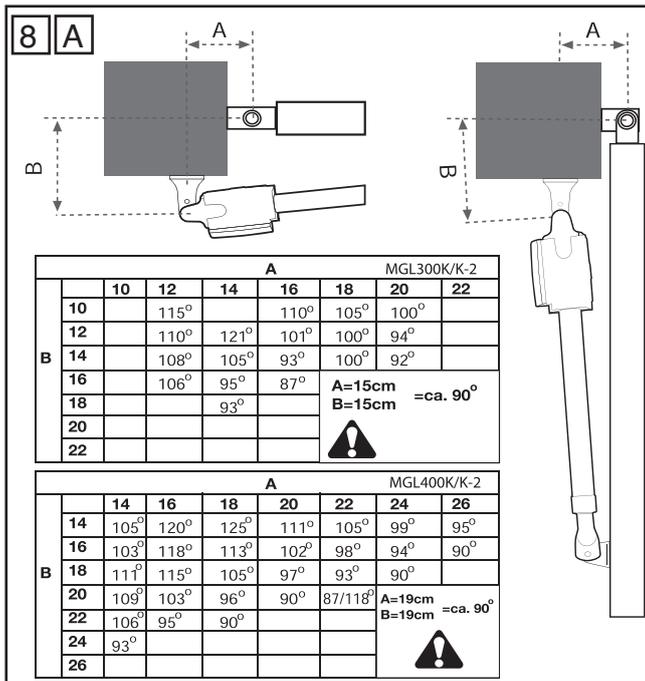
#### How far must the gate wing open?

Your MGL300/400 will open up to 115 degrees for single or dual wing gates. If you are installing double gates it is possible to have two different angles.



## GATE STOPS

**A SWING GATE NEEDS A FIXED GATE STOP IN BOTH THE OPEN AND CLOSE POSITIONS.** Gate stops save wear and tear on the motor, gate and fittings. Operating a gate without fixed limit stops may compromise your gate's operation causing unnecessary wear and tear. This may also affect your warranty!

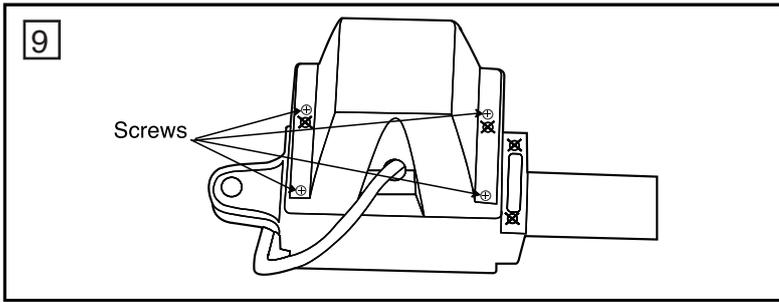


## POST FIXING BRACKET

**Choosing the correct location for the post fixing bracket has a decisive impact on the function of the system.** It determines the distance between the motor's centre of motion and the gate's centre of motion and hence the opening angle. These dimensions are referred to as **dimension A** and **dimension B**. These dimensions are the most critical factor when installing the motor. Incorrect positioning will affect the function and operation of your gate. Try to achieve the best possible dimension for your opening angle that is suitable for all circumstances. See Table for dimensions A/B.

If the post is not wide enough, an extension piece must be fitted. If the post is too thick, cut out part of it to make it thinner or offset the gate.

To obtain ideal dimensions, it may be necessary to shorten or lengthen the supplied hinge plate. In the case of gates that are to be custom made, if the gate hinges are fitted on the posts appropriately, it is possible to influence dimensions A and B. Before the final mounting dimensions are determined, you should always check if there is any possibility that the corner of the drive mechanism will hit the post as the gate swings.



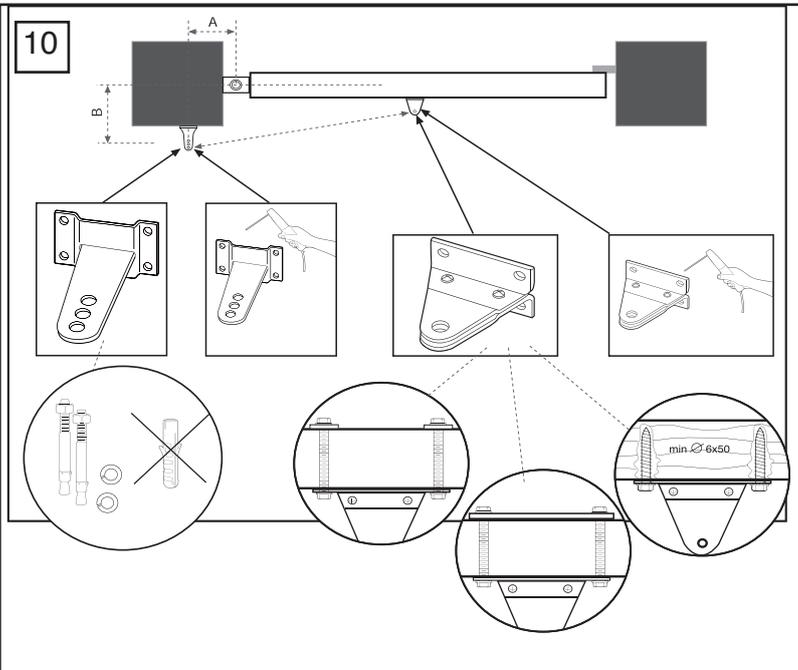
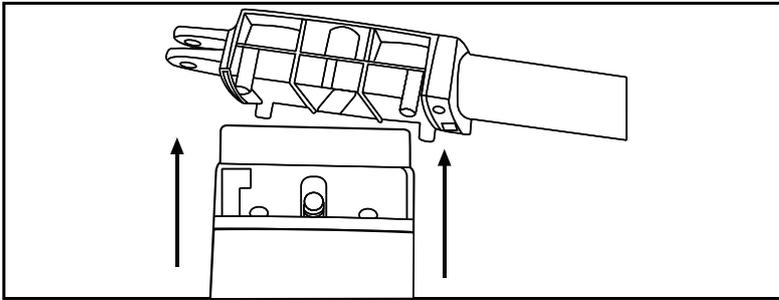
### Remove the Motor from the ARM

TO ALLOW FOR MANUAL MANIPULATION OF THE ACTUATOR THE ARM/S MUST BE REMOVED BEFORE PROCEEDING WITH INSTALLATION.

Using a Phillips head screw driver, undo the four screws indicated on the base of the motor.

Carefully remove the motor and place back into the carton or set it aside in a clean area whilst installing the gate hardware.

Note: Take care to ensure the arm does not come into contact with any dirt or foreign particles whilst motor is removed.

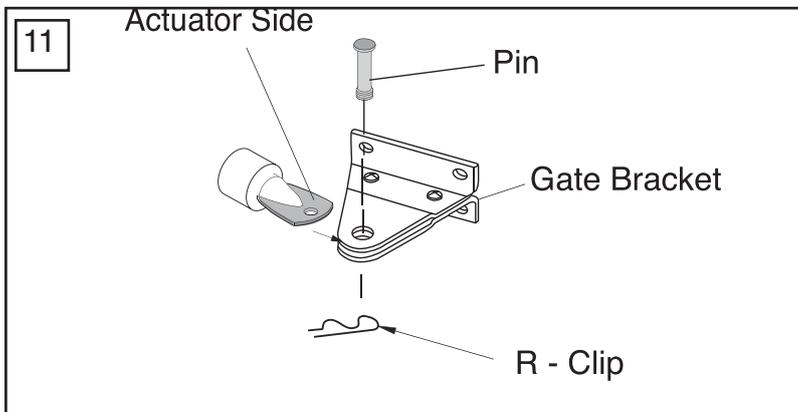


### GATE BRACKET FITTING

The gate bracket must be installed so that it is horizontal relative to the post bracket. The distance between the gate bracket and post bracket is referred to as the "arm span". When the gate is closed, the drive mechanism should not exceed 99% of its travel. When the gate is opened, the drive mechanism should have a minimum of 1% extension left. Over extending the plunger/spindle the opener may damage the drive mechanism and void the warranty.

For steel gates, brackets should be welded on or through bolted. When bolting through the gate, use large washers or a plate on the other side. The drive mechanism exerts an extremely high force on this joint.

Fixings must be through bolted for wooden gates. It is recommended that metal plates be fitted on either side of the gate, to prevent the fixings from becoming loose.



### Releasing the arm:

In the event your gate system fails, you will need to manually release the gate arm.

To release the arm, locate and remove the R-Clip and pin as illustrated in fig 11. Then carefully move the gate arms past the open position clear of the gate opening path.

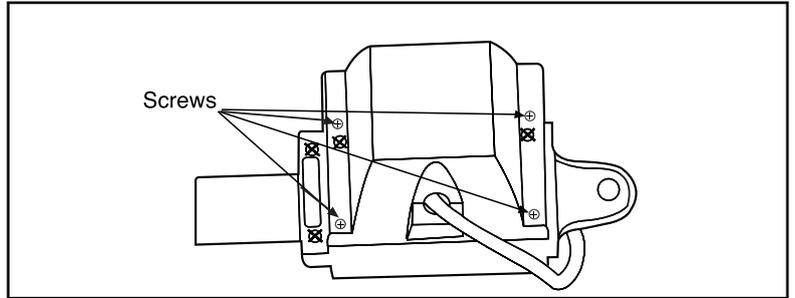
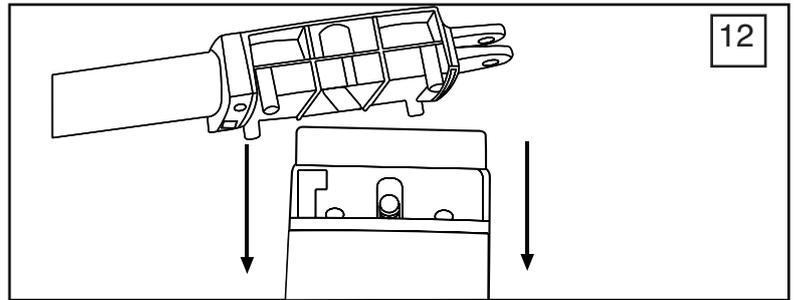
Your gate can now be operated manually.

## Reinstall the Motor to the ARM

BEFORE PROCEEDING WITH INSTALLATION THE MOTOR MUST BE RE-INSTALLED to THE ARM.

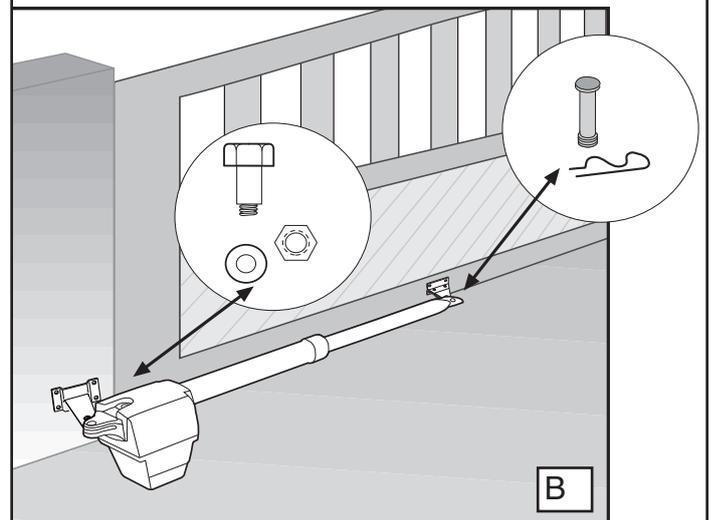
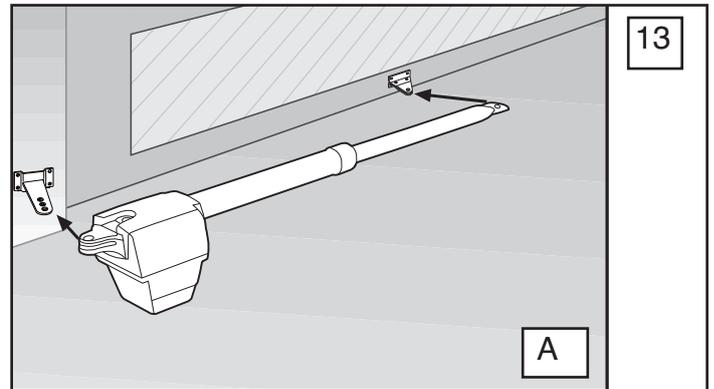
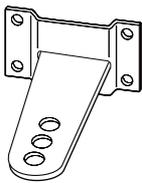
Place the motor back onto the arm. Ensure the drive shaft is completely engaged.

Using a Phillips head screw driver, tighten the four screws indicated on the base of the motor.

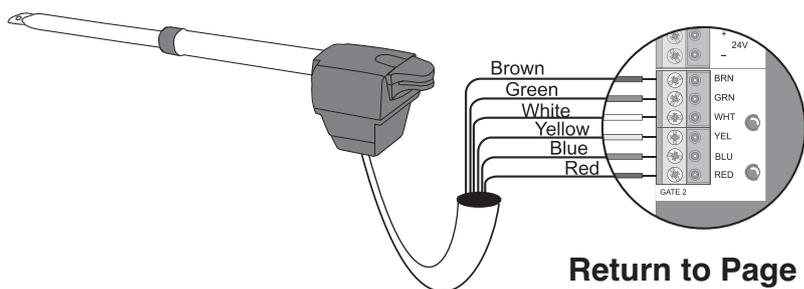
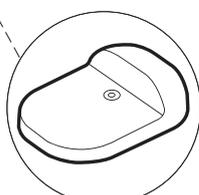
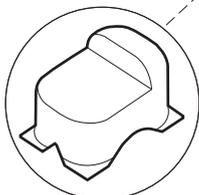
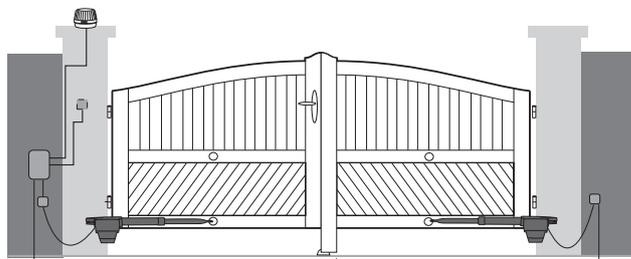
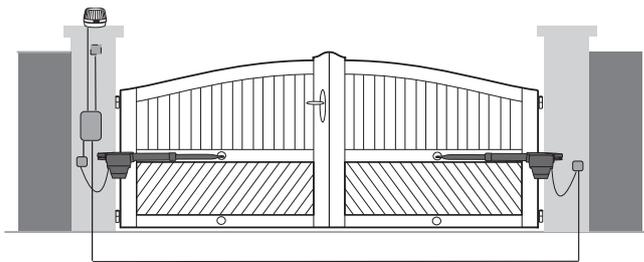


## INSTALLING THE DRIVE ARMS

Release the drive. Push the released drive onto the fittings and secure it by using the supplied nut, bolt and washer provided. If the centre or inner hole, on the hinge plate, is used to fix the post fixing bracket, you **MUST** cut away the remaining section of the hinge plate before activating the arms. Failure to do so will result in breaking the fixing bracket.



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**WIRING**

The unit is supplied with a 6 core connecting cable (approx 80 cm in length). Where possible this cable should be connected directly between the CB12ANZ controller and the gate motor. For double gates or where the control box can't be located adjacent to the motor, cable should be installed in conduit and run underground. Allow for extra cables where IR, safety or lock devices are required.

**MAINTENANCE WORK**

The drive mechanism is maintenance free, however you should routinely check your gates operation to ensure it is moving smoothly and without impedance. Check that the gate fittings and the drive mechanism are securely fixed at regular intervals (monthly). Release the drive and check that the gate functioning properly. The gate motor can not compensate for a poorly fitted or malfunctioning gate.

**TECHNICAL DATA**

15

	MGL300	MGL400
Max. wing width:	2.5m	3.5m
Max. wing weight:	200Kg	200Kg
Column width:	19cm	19cm
Rated thrust:	~250N	~250N
Motor weight:	6.5Kg	7Kg
Power:	220W	220W
Motor:	18V	18V
Current:	1.3A	1.3A

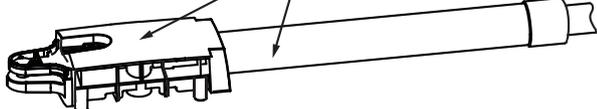
Return to Page 7 for Electrical connection and.

16 Spare Parts

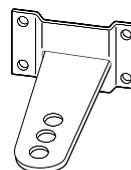
041ADBL-0004



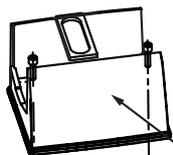
041ADBL-1008SA(MGL300)  
041ADBL-1009SA(MGL400)



041ASWG-0092 +  
041ASWG-0090

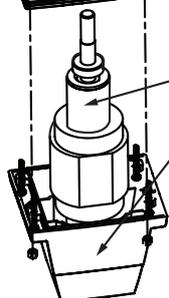


041ASWG-0098



041ADBL-1012SA (MLG300/MGL400)

041ADBL-0097SA

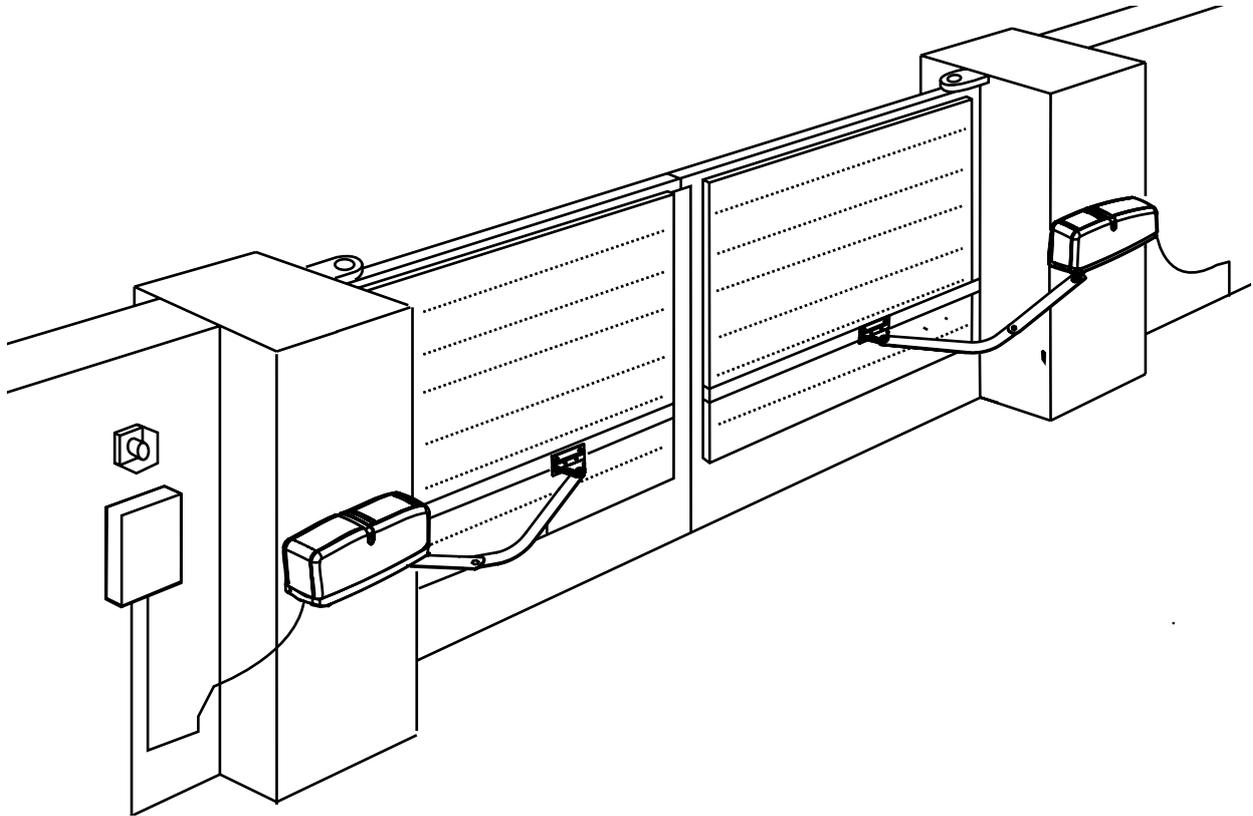


# **APPENDIX B**

## **MGA600**

### **Installation Manual**

**CHAMBERLAIN™**  
**merlin™**  
professional



Appendix B  
Installation and operation instructions  
for MGA600 ARTICULATED gate Motor.

Chamberlain Australia Pty Ltd  
PO Box 1446  
Lane Cove NSW 1595  
Phone Toll Free 1800 638 234

Chamberlain New Zealand Ltd  
PO Box 100-221  
North Shore 0745  
Phone Toll Free 0800 637 546

## WARNING

**IMPORTANT ADVICE: THESE INSTRUCTIONS ESSENTIALLY DESCRIBE THE INSTALLATION OF THE MGA600 DRIVE WITH THE ACCESSORY ARM ART-3, FOR INSTALLATION ON A SWING DOOR.**

**IF THE ART-1 FOLDING DOOR ARM OR THE SPACE-SAVING ART-2 DOOR ARM ARE INSTALLED IT IS ESSENTIAL TO FOLLOW THE INSTRUCTIONS INCLUDED WITH THOSE ITEMS, INSTALLATION VARIES FROM THESE INSTRUCTIONS AT SOME POINTS.**

**WARNING AND SAFETY ADVICE IS EXCEPTED FROM THIS.**

### PLEASE START BY READING THESE IMPORTANT SAFETY RULES • SAVE THESE INSTRUCTIONS



This safety alert symbol means "Caution" - failure to comply with such an instruction involves risk of personal injury or damage to property. Please read these warnings carefully.

This gate drive mechanism is designed and tested to offer appropriately safe service provided it is installed and operated in strict accordance with the following safety rules.

*Incorrect installation and/or failure to comply with the following instructions may result in serious personal injury or property damage.*



Do not wear rings, watches or loose clothing while servicing or installing a gate opener.



Installation and wiring must be in compliance with your local building and electrical installation codes. Power cables must only be connected to a properly earthed supply.



Entrapment between the moving gate and walls due to the opening movement must be avoided by using safety edges or IR sensors when necessary.



Please remove any locks fitted to the gate in order to prevent damage to the gate. A special E-Lock is available as accessory.



After installation, ensure that the gate opener system is properly adjusted and that the safety system and the manual release function correctly.



This drive **must not** be used with a gate incorporating a wicket door.



The actuating member of a biased-off switch, if installed, is to be located within direct sight of the gate but away from moving parts. Unless it is key operated, it is to be installed at a minimum height of 1.5m and not accessible to the public.



It is important to make sure that the gate always runs smoothly. Gates which stick or jam must be repaired immediately. Employ a qualified technician to repair the gate, never attempt to repair it yourself.



Keep additional accessories away from children. Do not allow children to play with any controls. Keep remote controls away from children. Operate gate when it is in full view and no one is near the gate. A gate can cause serious injuries or death as it opens or closes.



Disconnect electric power to the system before making repairs or removing covers. Install an all pole disconnect switch in the permanent wiring if one is not present.



Make sure that people who install, maintain or operate the gate drive follow these instructions. Keep these instructions in a safe place so that you can refer to them quickly when you need to.



The gate drive system is to be regularly examined for any signs of wear and tear or damage. The gate drive system must not be used if repair or adjustments are needed.

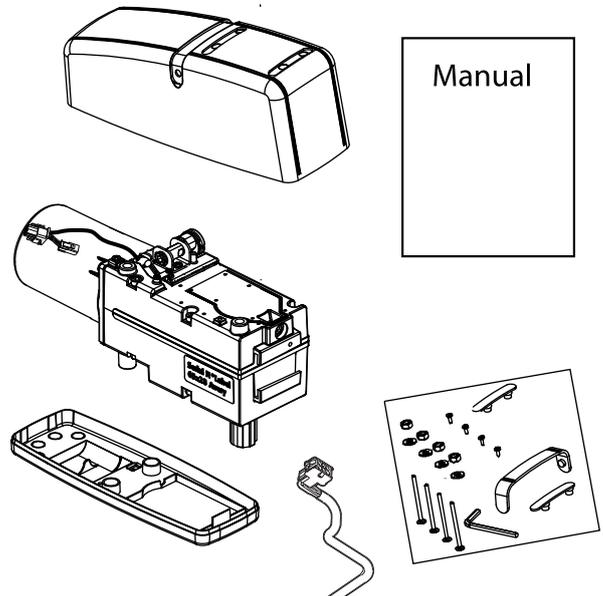
### BEFORE YOU BEGIN

The MGA is suitable for use with wide pillars, up to about 30cm in width. The maximum recommended opening angle of the gate is 125 degrees. Ensure that ample space is available next to the drive for the arms and assembly. Gates exposed to a high wind load must be fixed with an electric lock for additional protection. While the drive is fitted with internal limit switches, stops should also be mounted on the ground to prevent gate rattle or flutter. There are many factors to consider when choosing the right drive mechanism. Assuming that a gate functions properly, "startup" is the most difficult phase, once the gate is in motion, significantly less force is usually required to move it.

- **Gate size:** The gate size for this drive must not be more than 3.0m. Wind can brake or distort the gate, thereby increasing the amount of force needed to move it considerably.
- **Gate weight:** The weight of the gate must not be more than 300kg.
- **Effect of temperature:** Be sure that the ambient temperature where the drive is installed will be between -20 to +55C° deg since low outdoor temperature can prevent the motor from starting. High outdoor temperatures along with frequent use can cause the motor thermal protection to operate. Wait 15 minutes if this has occurred.

Carton Contents.:

- Motor x1
- Release key x1
- Hardware bag x1
- Manual x1



## INSTALLATION CHECKLIST - PREPARATIONS

Check the carton contents and read the instructions carefully. Make sure your gate equipment operates perfectly. The gate must run evenly and smoothly and must not stick at any point. Remember that the ground level may be several centimetres higher in winter. The gate must be stable and as free of backlash as possible in order to prevent any unwanted to and fro movement. The more smoothly the gate leaf runs, the more sensitive the force adjustment must be.

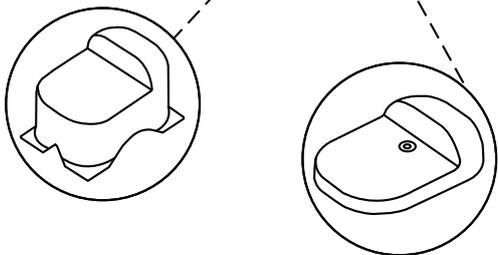
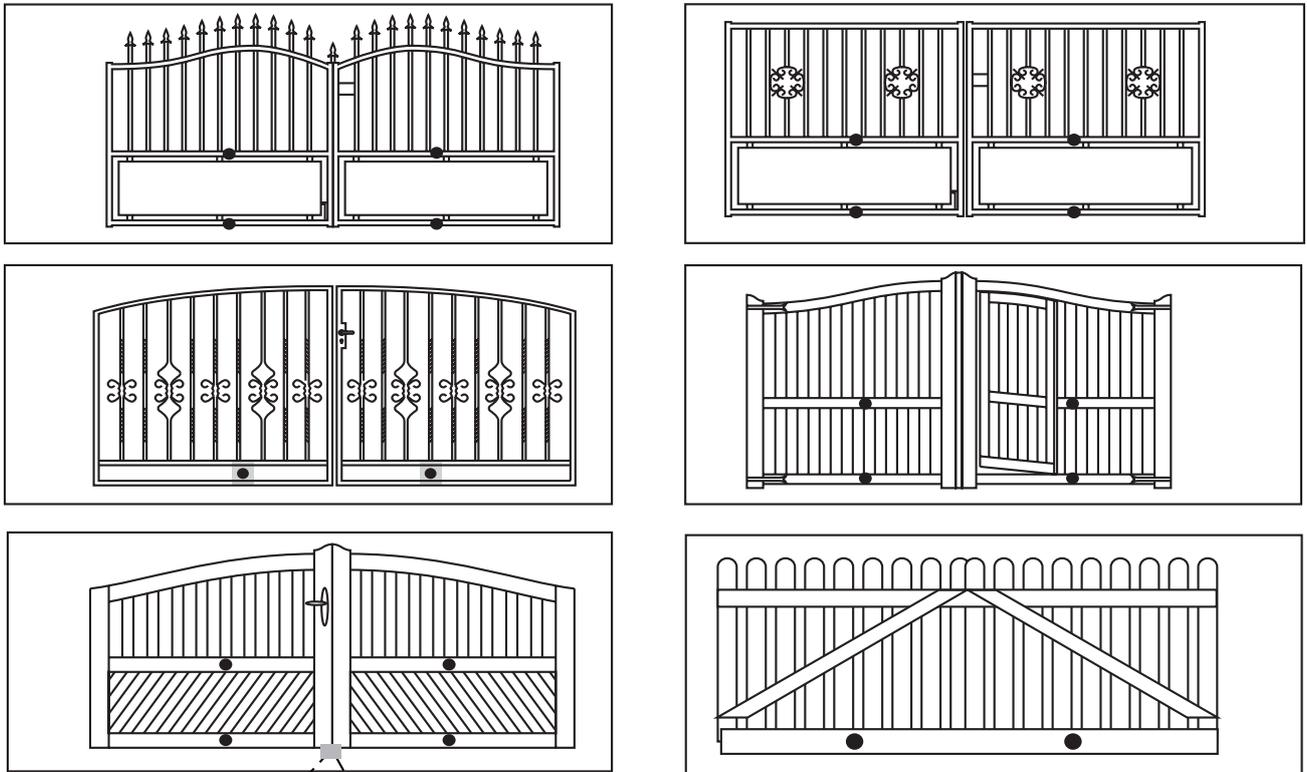
Note down any materials you still need and obtain them before starting to install. Heavy-duty plugs, bolts, gate stops, cables, distribution boxes, tools, etc.

## GATE TYPES

The gate type determines the location where the drive mechanism is installed. If the gate stop is on the ground, the drive mechanism must also be installed at a height that is as low as possible so that it cannot twist the gate. Use only parts of the gate frame for fixing purposes.

For steel gates, the gate fitting must be attached to the main frame. If you are uncertain whether the available support is sufficiently stable, reinforce it.

In the case of wooden gates, the gate fitting must be through bolted. It is advisable to fit a plate from the outside so that the fixing brackets cannot become loose over time. Thin wooden gates must also be reinforced in order to withstand the stresses encountered.

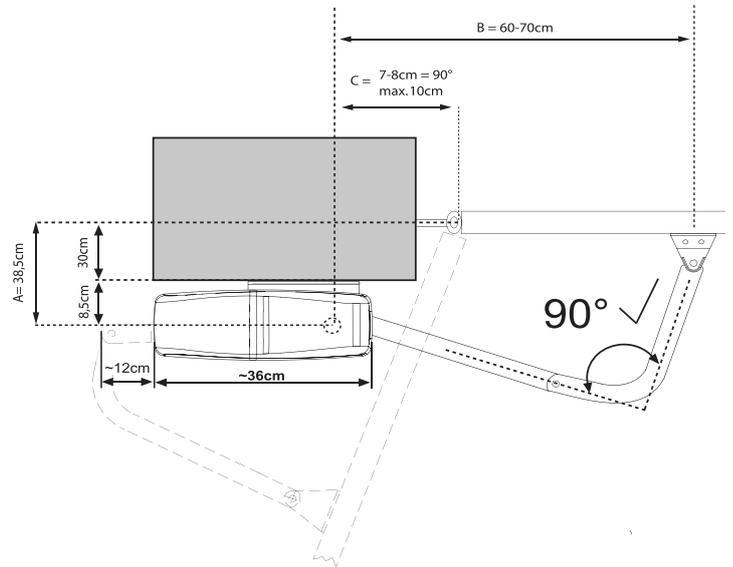


### FOR TWO GATE APPLICATION A FIXED GATE STOP MUST BE INSTALLED.

Gate stops save wear and tear on the drive mechanism, gate and fittings. Operating a gate without fixed limit stops results in poor performance. It is often dangerous, leads to premature wear in the case of heavy gates often exposed to wind stress.

## MOUNTING REQUIREMENTS

The gate drive mechanism is suitable for use in conjunction with pillars with a max. thickness of 30cm. The amount of room around the pier affects the opening angle and the position of the arms. The drive mechanism is equipped with built-in limit stops for both the OPEN and CLOSE directions. A different opening angle can be set for the left-hand wing as compared with the right-hand one.



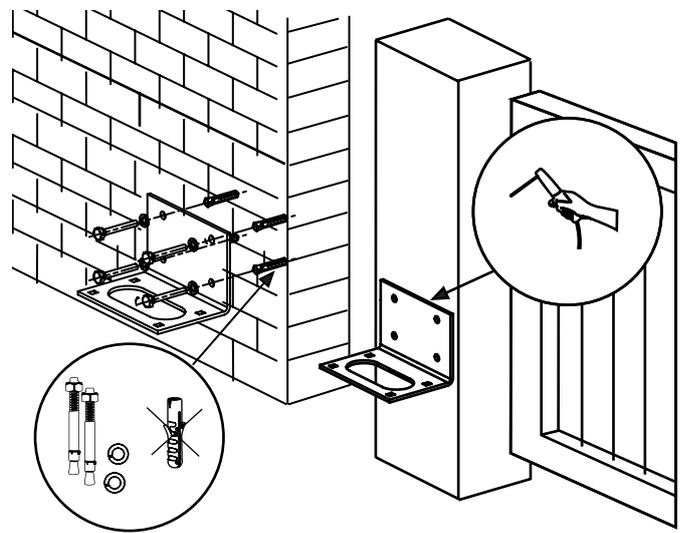
## INSTALLATION

### Step 1 Install Motor Bracket

For stone or reinforced concrete pillars use masonry or chemical anchors (not supplied) to mount the motor support bracket onto the wall at the desired height. The gate motor exerts a considerable force, ensure the wall is suitable. It may be necessary to use metal reinforcing, if so weld the bracket onto the brace to prevent damage to the wall and or motor.

If fastening to brickwork CHEMICAL ANCHORS should be used and metal reinforcing is highly recommended.

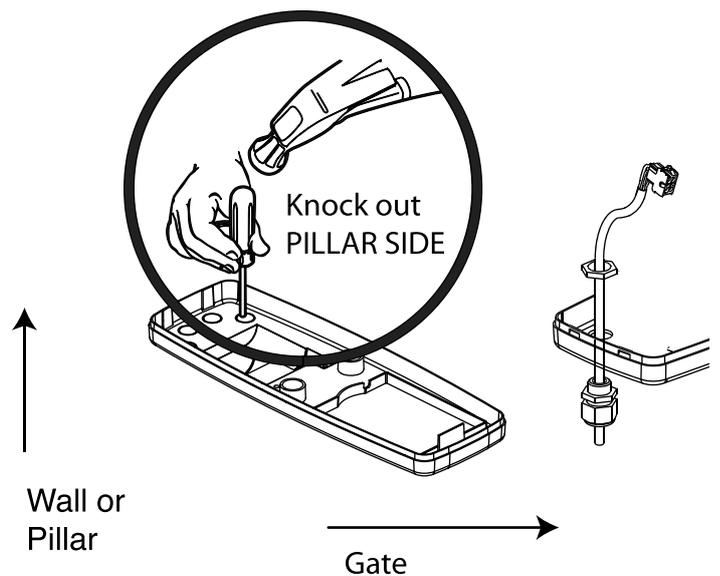
**DO NOT USE PLASTIC ANCHOR TO MOUNT THE BRACKET IN PLACE.**



### Step 2 Prepare the Motor Housing

Taking note of the the motors orientation, carefully knock out one of the four tap in the base Housing as illustrated to allow for cable entry. Several openings for the cable have been pre-punched in the base and need only be broken through. Place the base plate onto a solid surface whilst breaking the holes through to prevent the PVC base plate from breaking. A small, flat screwdriver should be used for breaking the holes through. For this purpose, tap on the screwdriver handle with the palm of the hand from the inside. Repeat this as necessary at several points on the pre-marked circle. The pre-punched area can then be easily removed and the strain relief supplied as standard fitted in its place.

Thread the terminated loom through the gland nut and into the hole knocked out for cable entry. Thread the gland over the cable and through the knockout hole as illustrated. Fasten the gland in place firmly with the nut. Hand tighten the bottom nut, allowing around 200mm of cable to protrude.

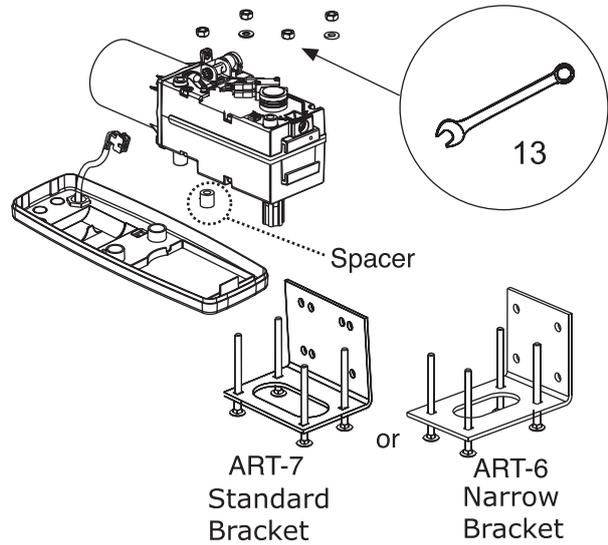


### Step 3 Mounting the motor to the Wall Bracket

Once the standard or narrow bracket has been mounted, the drive can be fitted. The drives can be used left or right without conversion.

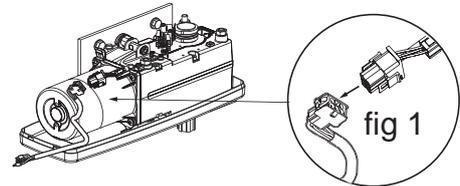
Place the spacer provided into place as illustrated, then insert the bolts provided through the square hole in the standard or narrow bracket.

Ensure the connection cable is correctly positioned, and the bolts are fitted securely. Hand tighten the nuts to secure the motor in position, then use the washers and nuts provided to fasten the motor securely in place using a 13mm spanner (not provided).



### Step 4 Connect Motor to Loom

Connect the cable loom to the motor as illustrated (fig1).



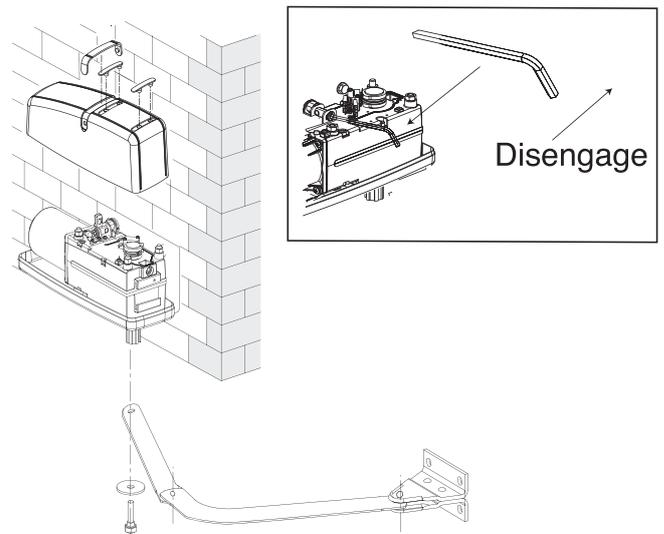
### Step 5 Fit the Gate Arm

Use the Release Key provided in your hardware bag to disengage the motor by turning the hex head nut located on the top of the motor.

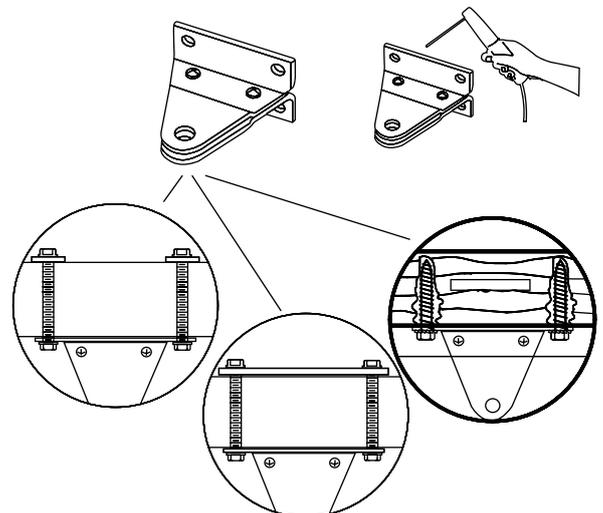
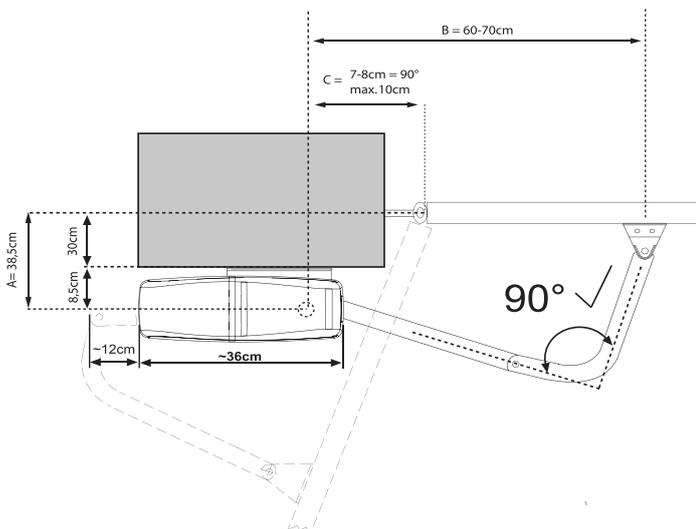
Assemble your gate arm and fasten in place using the bolt and washer provided.

The gate arm exerts considerable forces on the gate and all fixings. For this reason the gate arm **MUST BE FASTENED SECURELY** to the gate frame. Where possible weld the bracket in place for metal gates. For timber gates through bolts should be used.

Use the mounting requirements outlined below for bracket locations.



**Return to Page 7 for Electrical connection and set up.**



## CHAMBERLAIN 2 YEAR LIMITED WARRANTY

**Chamberlain Australia Pty Limited / Chamberlain New Zealand Limited (Seller) warrants to the original purchaser of the Merlin MGL300/MGL400 or MGA600 Gate motor and CB12ANZ Control Board (Unit) that it is free from defects in material and/or workmanship for a period of 2 YEARS from the date of first purchase from the Seller.**

Please retain your proof-of-purchase in the unlikely event you require warranty service.

If, during the limited warranty period, the Unit fails due to defects in materials or workmanship Chamberlain will, provided the defective part or Unit is returned freight and insurance prepaid and well packaged to the nearest Chamberlain office or authorised installer, undertake to repair or, at its option, replace any defective part or Unit and return it to the Buyer at no cost. Repairs and replacement parts are warranted for the remaining portion of the original warranty period.

Limited warranty on motor

Chamberlain will furnish a replacement motor free of charge, if it is found to be defective. Labour costs may apply.

Where the Unit has been installed by an authorised installer, Chamberlain will furnish replacement parts free of charge through the authorised installer. A service fee for on-site service may apply.

In-warranty service

During the warranty period, if the product appears as though it may be defective, call our toll free service before removal of the unit. A Chamberlain technician will diagnose the problem and promptly supply you with the parts for "do-it-yourself" repairs, or provide you with shipping instructions for a factory repair or replacement. If an authorised installer installed your unit you must call them for prompt on-site service.

If our service centre determines that a warranty claim has been made in respect of a failure or defect arising under out of any exclusion set out below, we may charge you a fee to repair and/or return the Unit to you.

Exclusions

This warranty does not cover any failure of the Unit due to:

1. non-compliance with the instructions regarding installation, operation, maintenance and testing of the Unit or of any product with which the Unit is used.
  2. any attempt to repair, dismantle, reinstall or move the Product to another location once the Product is installed by any person other than an authorised installer.
  3. tampering, neglect, abuse, wear and tear, accident, electrical storm, excessive use or conditions other than normal domestic use.
- This warranty does not cover any problems with, or relating to, the gate itself, any of its fittings and hardware, including its alignment and hinges, nor does it cover any problems caused by electrical faults.

### Liability – Australia only

Under no circumstances shall the Seller be liable for consequential, incidental or special damages arising in connection with the use, or inability to use, the Unit. In no event shall the Seller's liability for damages or injury arising from breach of law or contract or for negligence, exceed the cost of repairing or replacing the Unit or refunding the purchase price of the Unit.

Under Division 2 Part V of the Trade Practices Act, 1974, certain warranties and conditions (Implied Terms) are implied into contracts for the supply of goods or services if the goods or services are of a kind ordinarily acquired for personal, domestic or household use or consumption. Liability for breach of those Implied Terms cannot be excluded or limited and the limitations and exclusions above do not apply to the Implied Terms.

Except for the Implied Terms and the warranties set out above, the Seller excludes all warranties and conditions implied by statute, at law, in fact or otherwise.

### Liability – New Zealand only

Except as set out in the Fair Trading Act 1986 and the Consumer Guarantees Act 1993:

- (a) all other guarantees, warranties and representations in relation to the Unit or its supply are excluded to the extent that the Seller can lawfully exclude them; and
- (b) under no circumstances shall the Seller be liable for consequential, incidental or special damages arising in connection with the use, or inability to use, the Unit, other than those which were reasonably foreseeable as liable to result from the failure.

**NOTE:** We request that you attach your sales docket or invoice to this manual to enable you to establish the date of purchase in the unlikely event of a service call being made.

Chamberlain reserves the right to change the design and specification without prior notification. Some features or accessories may not be available in certain markets or areas. Please check with your distributor.

### Chamberlain service centres:

**Australia**

**Phone toll free 1800 638 234**

**Fax toll free 1800 888 121**

**New Zealand**

**Auckland phone 09 415 4393**

**Phone toll free 0800 MERLIN**

**Fax toll free 0800 653 663**

**www.chamberlainanz.com**

