

INSTALLATION MANUAL

FOR

e-Gate SWG-24V-M-S

24V Single Swing Gate Operator



Grant's ✓
Automation

Developers and Manufacturers
of Gate Automation Technology

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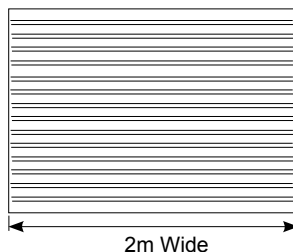
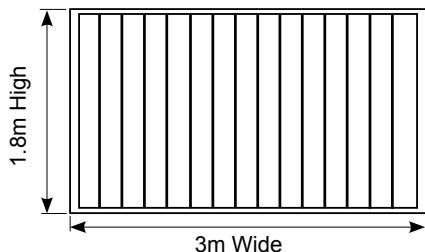
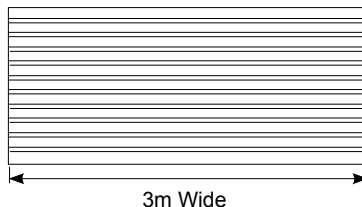
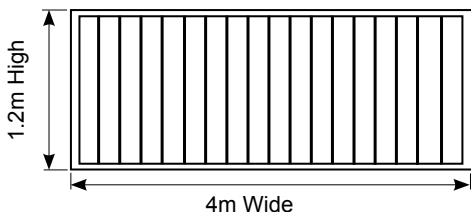
PRE-INSTALLATION CHECK LIST

MAXIMUM SIZE OF GATE FOR THE SWG-24V-M-S

This operator is suitable only for Pedestrian Gates. If installed on a gate that is too large it may not work properly. Gates that have filled in cladding are more prone to wind forces so are NOT recommended.

Open Bar Aluminium and Galvanised Steel Gates:

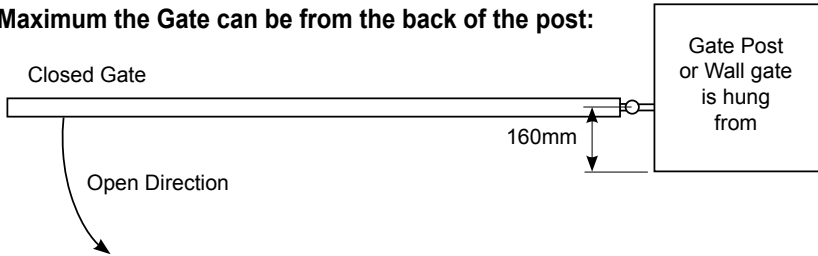
Solid Timber Gates, Gates with sheet metal cladding and Chain Link Gates in areas with light to moderate wind to 110° opening angle:



WILL THE OPERATOR FIT ON YOUR GATE?

The SWG-24V-M-S swing gate operator can be fitted within the following:

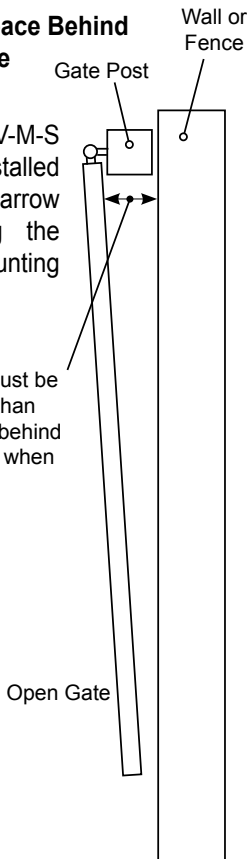
The Maximum the Gate can be from the back of the post:



Minimum Space Behind an open Gate

The SWG-24V-M-S can be installed in a very narrow space using the standard mounting bracket.

There must be no less than 120mm behind the gate when open



Gates that are set higher off the ground to clear a sloping driveway

The SWG-24V-M-S doesn't require hard stops so the each leaf can be as high as you like off the ground and it won't effect the operator.

Gates that use a rising hinge to clear a sloping driveway

The SWG-24V-M-S can be installed on a rising gate so long as the each leaf is less than 20kg and the gate doesn't rise more than 120mm for a 2m wide gate.

Gates that are outward opening.

The SWG-24V-M-S can be installed on an outward opening gate with the supplied mounting bracket unless the gate has a very narrow Post then a special mounting bracket will need to be made up.

Maximum Gate Opening Angle is 120°

The SWG-24V-M-S can be installed on gates with an opening angle up to 120° but does not hold the gate as well as 90° when closed so an electric lock is recommended.

GATE OPERATOR FREQUENCY OF USE

This Gate Operator is rated for **RESIDENTIAL AND LIGHT COMMERCIAL PEDESTRIAN GATES ONLY.**

The warrantee does not cover wear and tear due to average use of more than 60 operations per day.

If higher frequency of use is required consider using an industrial sliding gate operator rated for continuous use. Gates that have a lot of users are more likely to be treated roughly so need to be an industrial grade operator.

Battery Powered System Maximum Frequency of use

A Battery operated system with a Charge transformer can handle:

- Up to 60 operations per day.
- If charge power goes off the operator will run on battery for a day or two depending on frequency of use.
- If the battery runs flat it should be allowed to recharge overnight before the operator is used.

Solar Powered Systems

The size of the Solar Panel and Battery depends very strongly on the weather conditions in the area, the size of the gate and amount of use the gate gets. The amount of sun also varies with the time of the year so the worse case senerio must be considered.

In areas that get a lot of sun all year round, have a light weight gate and have no more than 20 operations per day a 10 Watt Solar panel and 14Ah Battery will do. For up to 60 Operations per day, heavy gate or area's that don't get a lot of sun allow for a 20 Watt or 40 Watt solar panel and 26Ah Battery.

Normally Solar systems are only economic for larger rural properties that don't have power near the gate.

IMPORTANT SAFETY INSTRUCTIONS!

CONSIDERING THE GENERAL PUBLIC:

The Gate must be installed in a location that provides adequate clearance between it and adjacent structures when opening and closing to reduce risk of entrapment. **Swing gates must not open into public access areas!**

Install the Gate Operator on the inside of the property and fence line. **DO NOT** install an opener on the outside of the gate where the public has access to it.

The Gate and Gate Operator must comply with any applicable local council regulations.

CONSIDERING THE USERS:

If push buttons, key switches or Digital Keypads are installed, they should be within sight of the gate but not placed so the user will be tempted to reach through the gate to activate the gate operator.

USER AWARE NESS:

It is important to make sure everyone that will be using the gate is aware of the following dangers associated with automatic Gates: do not contact any part of the gate or walk in the path of the gate while it is moving. Never let children play with the gate controls. Do not attempt to "beat the gate" while it is closing. This is extremely dangerous.

In the event you sell the property, make sure the new owners have a copy of these instructions. If you lose the instructions they can be downloaded from: www.grantsautomation.com.au.

TOOLS AND HARDWARE REQUIRED

THE TOOLS YOU'LL NEED INCLUDE:

A basic set of hand tools will be required including: side cutters, pliers, wire strippers, a range of phillips head screw drivers, a small flat head screw driver for terminal block screws, a Socket Set or Shifting Spanner and a metal file.

You'll also need a tape measure, adjustable square, fixed square, marking pen, an electric drill with hammer action and variable speed control and a selection of drills bits. An angle grinder is also handy although a hacksaw will do if you don't have one.

If you're going to be doing your own low voltage cabling a pair of conduit cutters are handy although a hacksaw can also be used. If you wish to run cabling across the driveway you will need either a 230mm angle grinder with masonry grinding disc or a hand held concrete cutter. You can hire these if necessary. If you'll be running cabling across a lawn or garden you'll need a spade and mattock for digging a low trench. If it's a long run then a small trench digger can be hired to do the job.

YOU MAY ALSO NEED THESE ITEMS BEFORE INSTALLATION

For Battery Powered Systems and systems with accessories added **Low Voltage Cable is required** between the Transformer and the Gate operator see "Cabling Requirements" for more information.

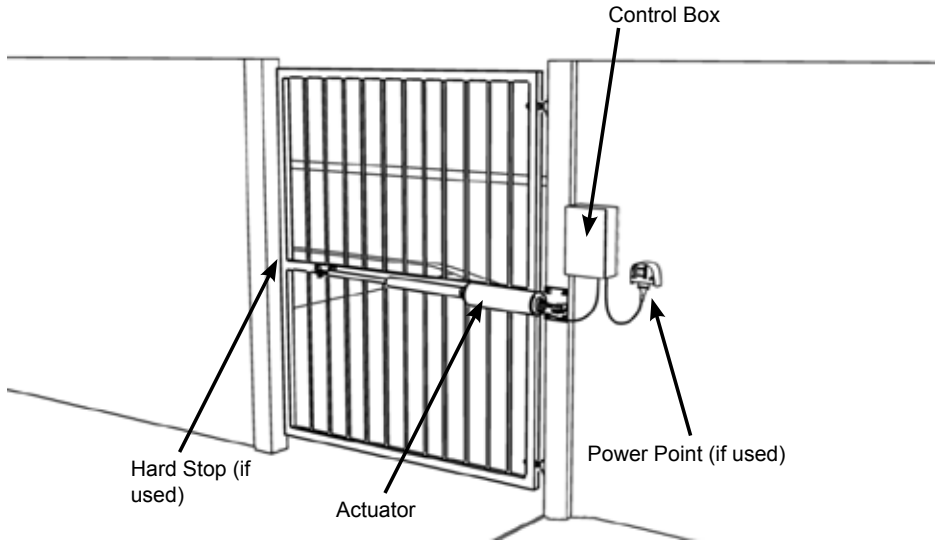
You may also need conduit, which is available from Electrical trade suppliers and hardware stores.

For Mains Powered Systems you will require a power point fitted on the Hinge side of the gate. Check with local regulations before installing a mains voltage power point yourself, you may need a registered electrician to do this for you.

ENVIRONMENT SUITABLE FOR OPERATOR

The SWG-24V-M-S is suitable for outdoor use so long as it is NOT exposed for long periods to salty air or other corrosive substance or contaminants that may cause fouling of the gate, gate operator, any of the gate operators components or accessories that may be connected to the operator.

PREPARING THE GATE



Make sure that the gate has been properly installed and swings freely in both directions. Repair or replace all worn or damaged gate hardware prior to installation. Gate posts less than 150mm wide should be made from steel not timber. Replace posts where necessary. A freely moving gate will require less force to operate and will enhance the performance of the operator and give a long working life.

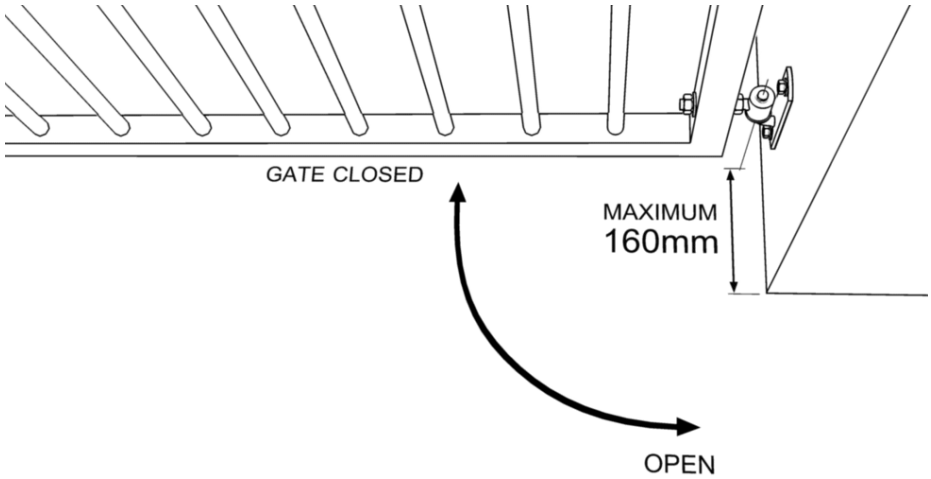
The Gate **MUST** be plumb, level and swing freely on its hinges (with the exception of rising gates that are not plumb). **WHEELS MUST NOT BE ATTACHED TO SUPPORT THE WEIGHT OF THE GATE.** The gate must move throughout its arc without binding or dragging on the ground. *Note: gates over 100kg should have ball bearing hinges with grease fittings.*

Gate posts must be secured into the ground with concrete so to minimize twist or flex when the operator is activated.

Brick or concrete block posts should have a solid concrete footing, be core filled with concrete and should have steel reinforcing tying the concrete footing with the core filling.

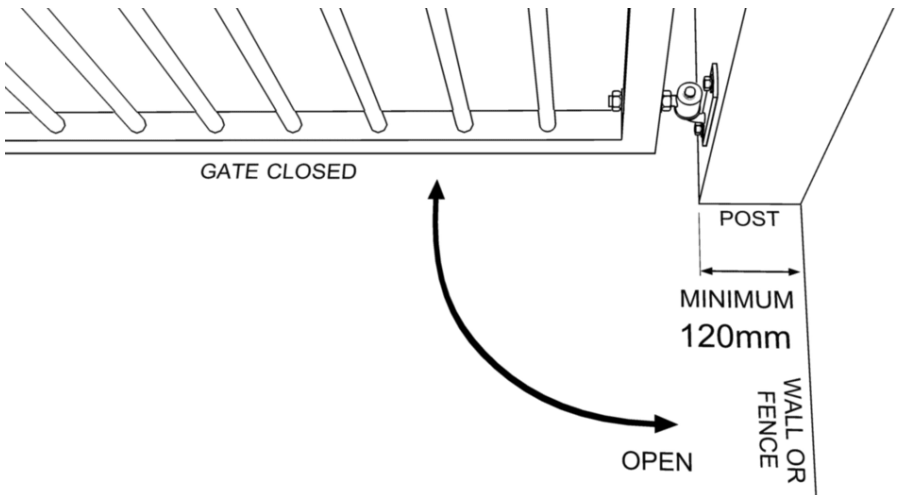
The Gate Operator holds the gate firmly when closed but an electric lock is recommended for gates with a lot of flex wider than 2m or rigid framed gates wider than 3m.

GATE POSITION ON POST



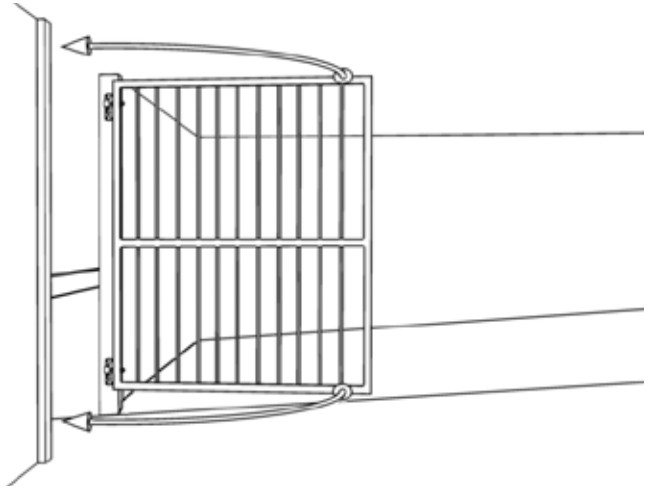
The Gate must be no more than 160mm from the back of the post.

GATES THAT OPEN UP AGAINST A FENCE OR WALL



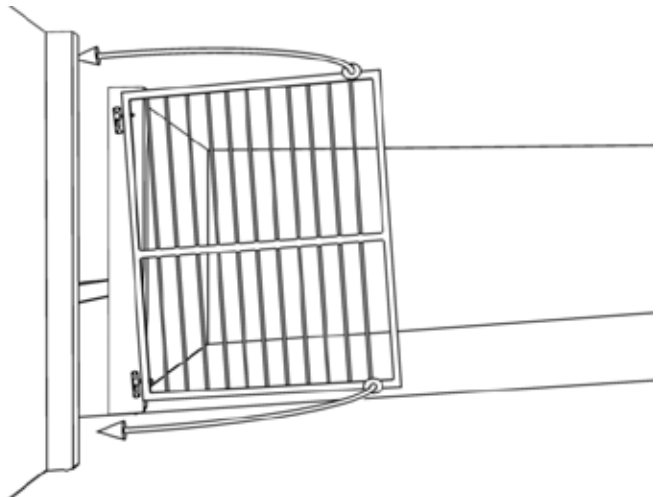
There must be at least 120mm behind the gate if it opens up against a fence or wall.

LIFTING GATE FOR SLOPING DRIVEWAY



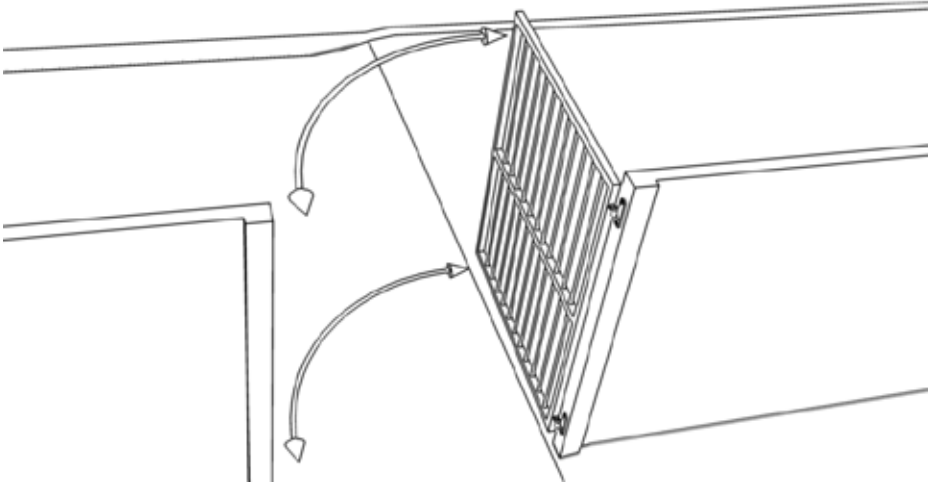
For pathways that slope up as you walk in the gate leaf can be lifted so it clears the ground when it opens. The steeper the pathway the larger the gap under the gate when it is closed.

RISING GATE FOR SLOPING DRIVEWAY



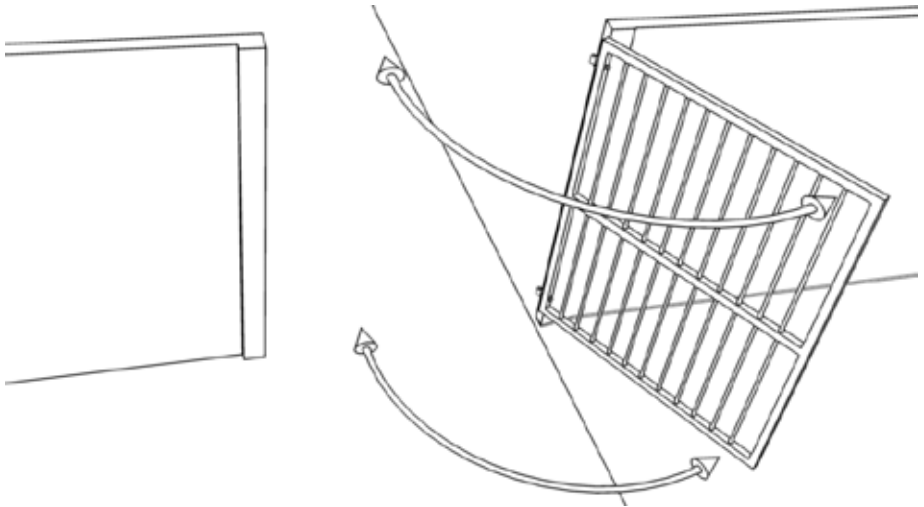
For pathways that slope up as you walk in the gate can have rising hinges fitted. The steeper the pathway the more the gate must rise. The SWG-24V-M-S will only handle a rise of 120mm over 2m with a 20kg gate.

OUTWARD OPENING GATE FOR SLOPING DRIVEWAY



For pathways that slope up as you walk in the gate can be made to swing outwards but should be set back off the road so it doesn't open out onto a public thoroughfare. The automatic operator should be installed inside of the gate so it won't be tampered with.

GATE WITH WIDE OPENING ANGLE

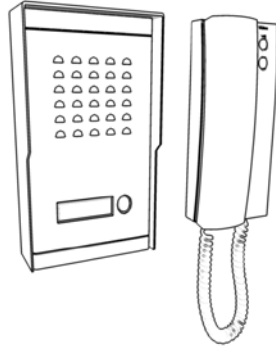
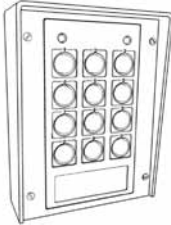


Gates opening up to 120° can be automated but the installation of an automatic operator is a lot more critical, quite often requiring special post mounting brackets to be made up.

ACCESSORIES THAT CAN BE ADDED

DIGITAL KEYPAD AND/OR INTERCOM

To allow access to visitors or tradesman any brand of digital keypad and/or intercom can be installed (provided the intercom has a door release feature).

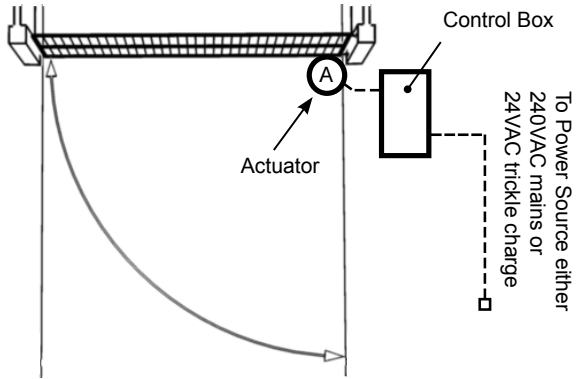


A Digital Keypad allows access to anyone with the correct pin number.

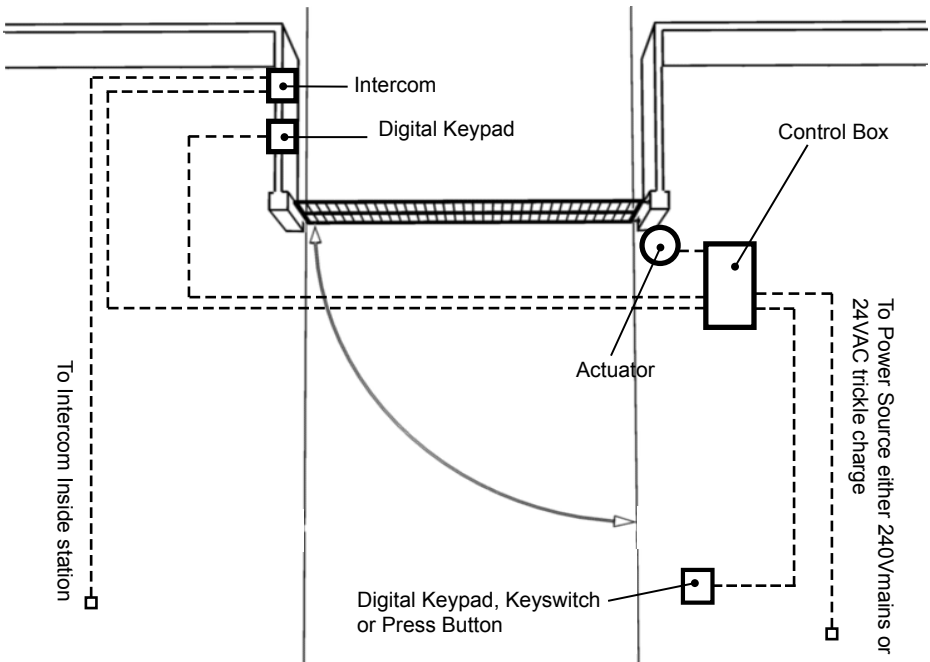
An Intercom allows visitors to call the house and speak with the occupier. If the occupier wishes to let the visitor in they can press a button on the intercom inside to open the gate.

CABLING REQUIREMENTS

BASIC CABLING GUIDE



FULL CABLING GUIDE



For a gate swung from the left side the Operator and Power cable will be on the opposite side. The 240VAC Mains should be kept at least 100mm away from any low voltage cabling.

TYPE AND SIZE OF CABLE

For the non Battery Version Power

Power is supplied by an Outdoor Power point fitted next to the control box or hard wired. Check with local regulations before installing a mains voltage power point yourself, you may need a registered electrician to do this for you. **DO NOT pull the power transformer out and run full 24VDC power out to the gate as the voltage drop may prevent adequate power getting to the operator!** If you wish to run Low Voltage out to the gate use the Battery Powered Option.

For the Battery Powered Option

Power comes from the Battery, but this must be kept charged using a charge transformer where 240V mains voltage is available and a 24VAC trickle charge run out to the gate.

Low Voltage Cable from the Charge Transformer must be large enough to allow for voltage drop. Use the following guide for Cable size for different distances.

Cable size versus Distance for Low Voltage Charge Cable

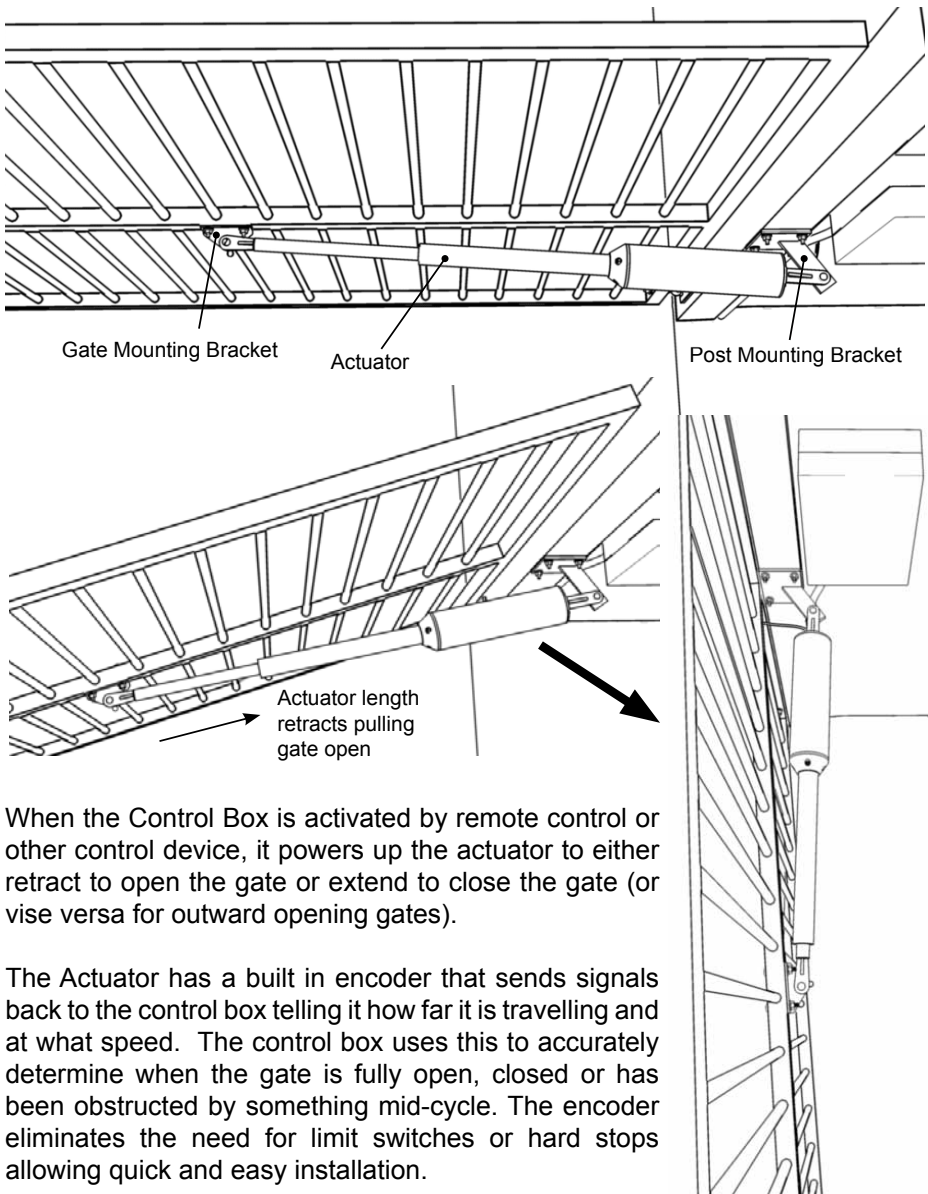
Distance	Cable Size (mm ²)	Cable Type
30m	0.24	Telephone cable - 2 x pairs doubled up
50m	0.4	Cat 5 - 2x pairs doubled up
80m	0.66	Heavier Telephone cable - 2x pairs doubled up
120m	1.0	TPS or Automotive cable
300m	2.5	TPS or Automotive cable

For Accessories

0.4mm Diameter (0.12mm²) or 0.65mm Diameter (0.33mm²) Outdoor telephone cable is ideal for Connecting Digital Keypads and Intercoms as this cable has a tough outer sheath and is gel filled to protect it from moisture. Cat 5e and indoor phone cable is fine to use so long as it isn't exposed to moisture for prolonged periods. If using security cable this must be a conduit that is fully sealed to prevent any exposure to moisture.

HOW IT WORKS

The SWG-24V-M-S Linear Swing Gate Operator consists of an Electro-mechanical Actuator, mounting brackets, electronic Control Box and remote controls.



When the Control Box is activated by remote control or other control device, it powers up the actuator to either retract to open the gate or extend to close the gate (or vice versa for outward opening gates).

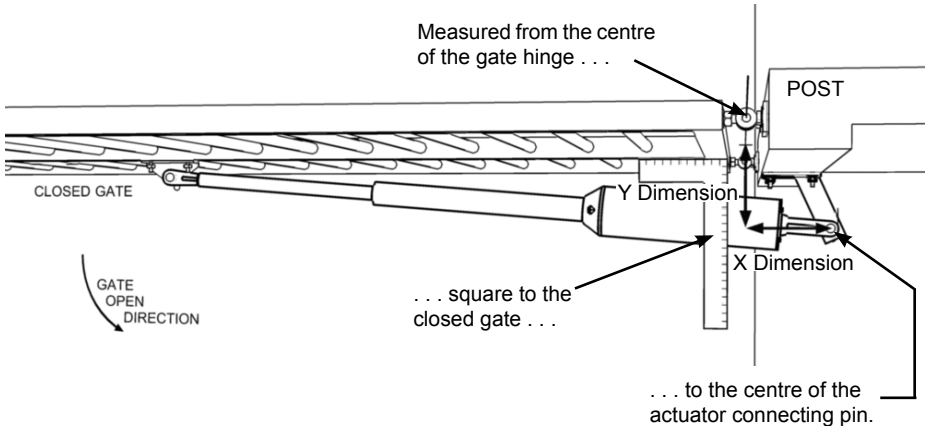
The Actuator has a built in encoder that sends signals back to the control box telling it how far it is travelling and at what speed. The control box uses this to accurately determine when the gate is fully open, closed or has been obstructed by something mid-cycle. The encoder eliminates the need for limit switches or hard stops allowing quick and easy installation.

9 STEPS TO INSTALLING THE SWG-24V-M-S

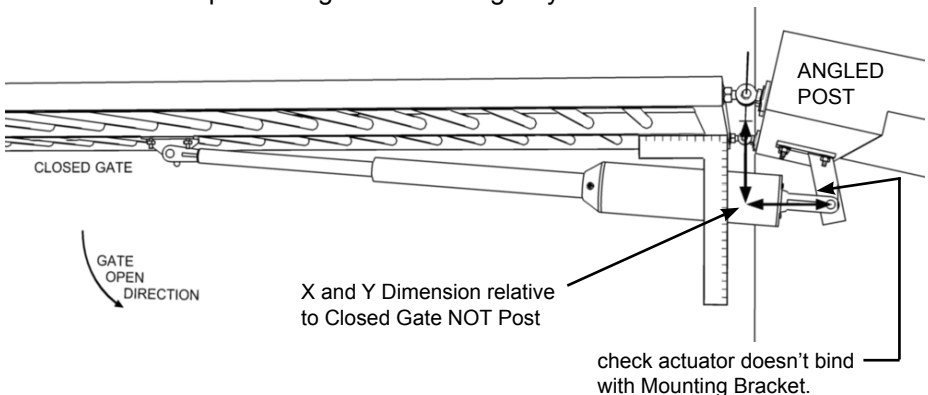
STEP 1 - INSTALL THE POST MOUNTING BRACKET

Each Gate Actuator must be **SET BACK** from the gate Hinge to work properly. The SET BACK is measured as an X and Y Dimension, **SQUARE TO EACH CLOSED GATE**. The X and Y dimensions determine the opening angle and other variables as outlined in the following pages:

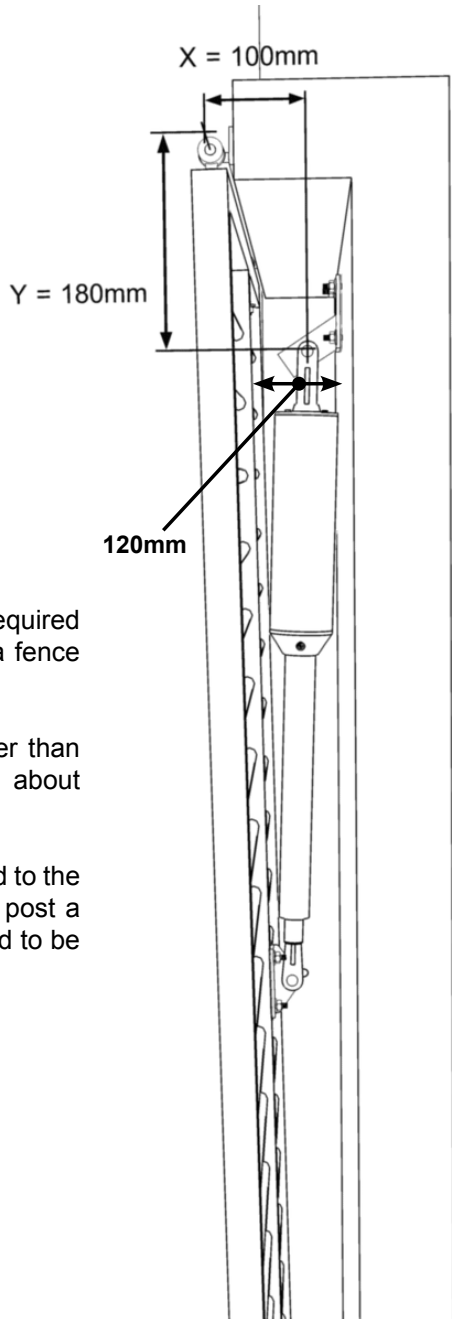
Measuring the Set back for an Inward Opening Gate viewed from above:



If either post is angled - the SET BACK must still be the same **RELATIVE TO THE CLOSED GATE NOT THE POST!**. This may require turning the Post Mounting Bracket around, modifying it or making a special one to fit. **CAUTION!**: If making a special bracket, it cannot angle back too far, otherwise it may bind with the actuator preventing it from closing fully.



OPENING UP AGAINST A WALL OR FENCE

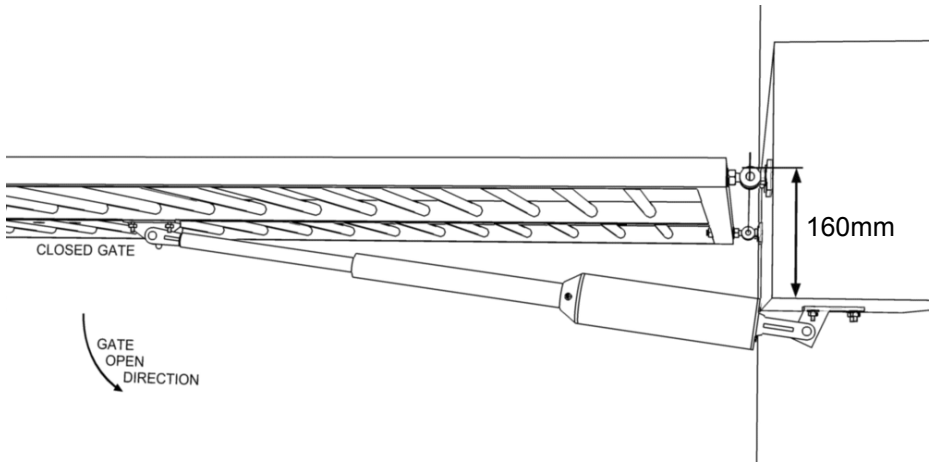


A minimum clearance of 120mm is required behind a gate that opens up against a fence or wall.

The X Dimension should be no smaller than 100mm and Y Dimension should be about 180mm

The Post Mounting Bracket is best fitted to the fence or wall, otherwise if fitted to the post a special Post Mounting Bracket will need to be made up.

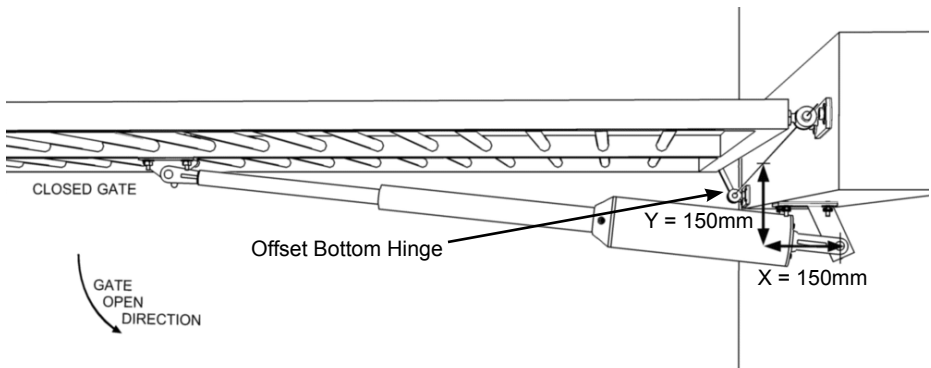
WIDE GATE POSTS



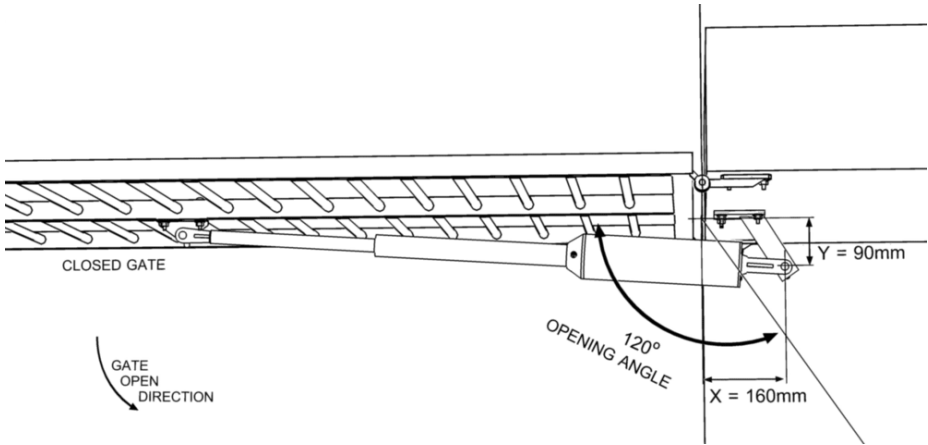
Each gate leaf must be within 160mm from the back of the Post so if the gate is set in the middle the widest the post can be is 320mm, otherwise each gate leaf must be moved further back. The Y Dimension will be about 210mm and X Dimension 100mm. The Post Mounting Brackets may need to be reversed to keep them away from the edge and cut short so they don't bind with the actuator.

RISING GATES

A rising gate has the bottom hinge offset so the gate will rise in the air as it opens to allow for a sloping driveway. The automatic gate Operator is required to lift some of the gates weight so is best set at the maximum torque by using X and Y Dimensions of 150mm. Also because the X and Y Dimensions are measured from the centre of the gate hinge then this will be the bottom hinge if the actuator is on the bottom rail, top hinge for the top rail or somewhere in between for the middle rail.



OPENING ANGLE MORE THAN 90°



For wider opening angles the Y Dimension needs to be made smaller and the X larger.

The Extreme Limits for X and Y Dimensions for different Opening Angles are as follows:

Opening Angle	X Dimension	Y Dimension	Maximum X + Y
90°	150mm +/- 10mm	150mm +/- 10mm	320mm
100°	150mm +/- 10mm	140mm +/- 10mm	310mm
110°	150mm +/- 5mm	120mm +/- 5mm	280mm
120°	160mm +/- 2mm	90mm +/- 2mm	254mm

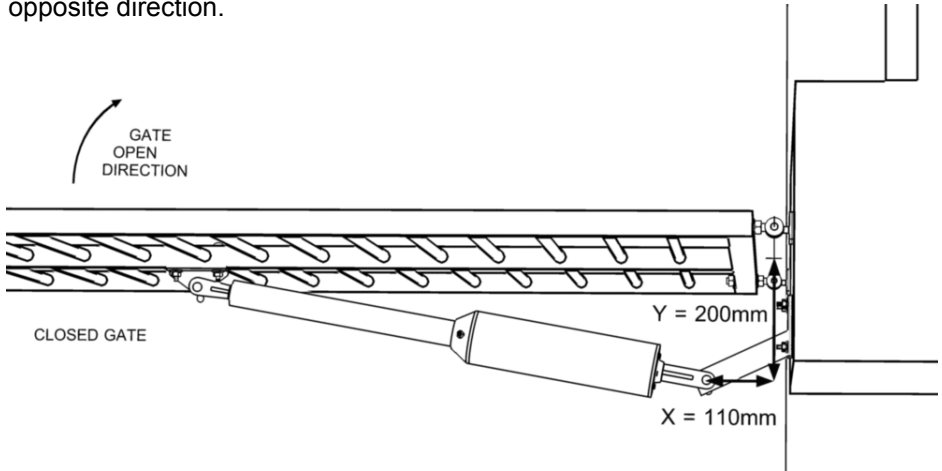
Opening angles less than 90° have the same X and Y Dimensions as 90° but have their open limit set to the smaller angle (see Step 8).

Note: Opening Angles wider than 110° will reduce the operators ability to hold the gate when closed so an electric lock is recommended to lock the gate to the ground or to the other side if its opening angle it less then 110°. If a strike lock is used there must be allowance for any ground movement to prevent the gate from jamming.

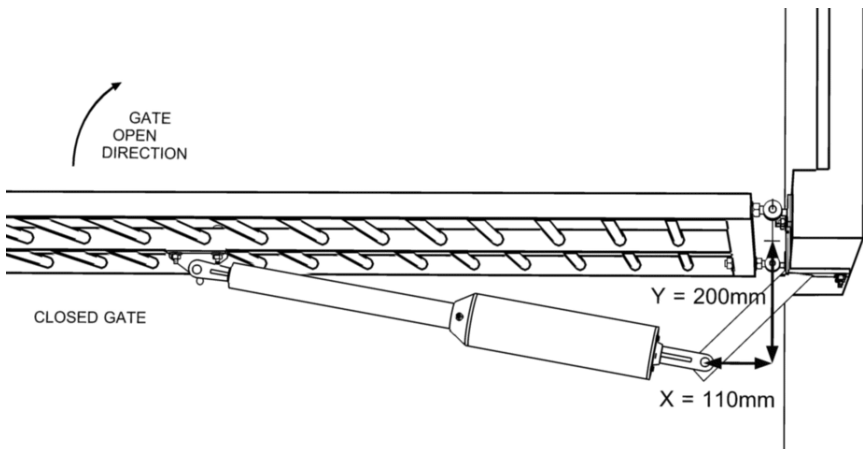
If the gate post is narrow with wider opening angles a special Post mounting Bracket may need to be made up.

OUTWARD OPENING GATES

An Outward Opening Gate is one that opens out towards the road with the Gate Operator inside the property, so instead of pulling each gate leaf open the actuators push them open. This puts the Actuators Set Back inside the gate opening, rather than behind the post, so the X Dimension is measured in the opposite direction.

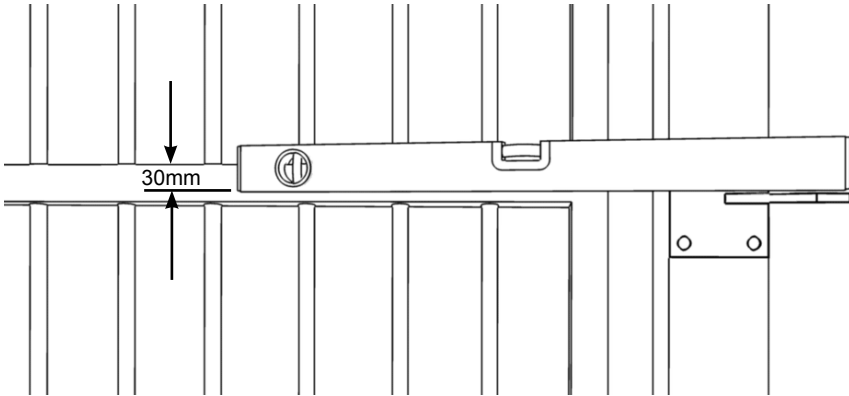


X Dimension should be no smaller than 110mm. Any more than 110mm will protrude further into the gate opening. Y Dimension should be 230mm for maximum speed or 330mm for maximum torque.



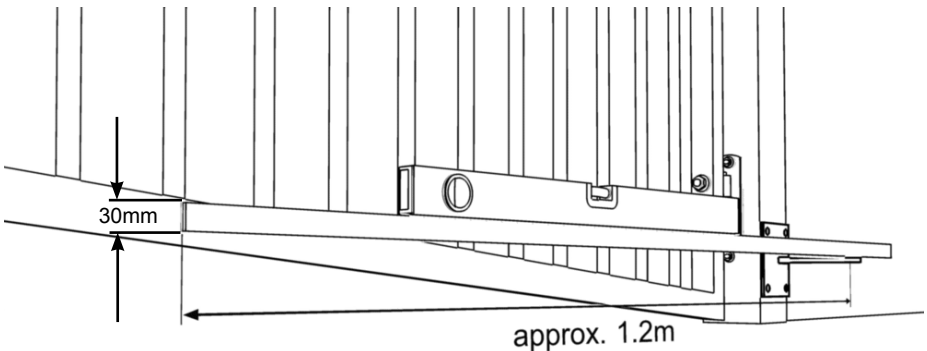
If the Post is very narrow for outward opening gates then a special Post Mounting Bracket will need to be made up as the standard one won't give enough Y dimension.

THE HEIGHT OF THE POST MOUNTING BRACKET



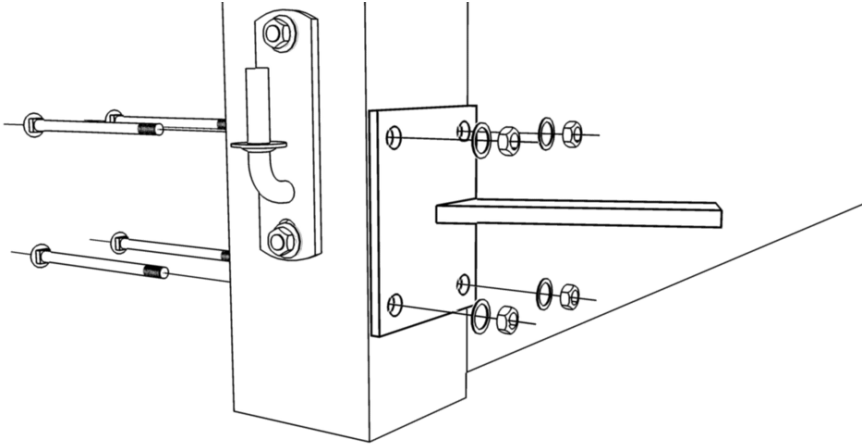
The Actuator may be installed on any strong horizontal rail of the gate. If on the middle rail the gate will twist less if someone attempts to force it open although an actuator looks better on the bottom rail and sometimes will only fit on the top.

Use a spirit level to run a line 30mm down from the top edge of the chosen Gate rail to the top of the 'Post Mounting Bracket' to get the height correct.

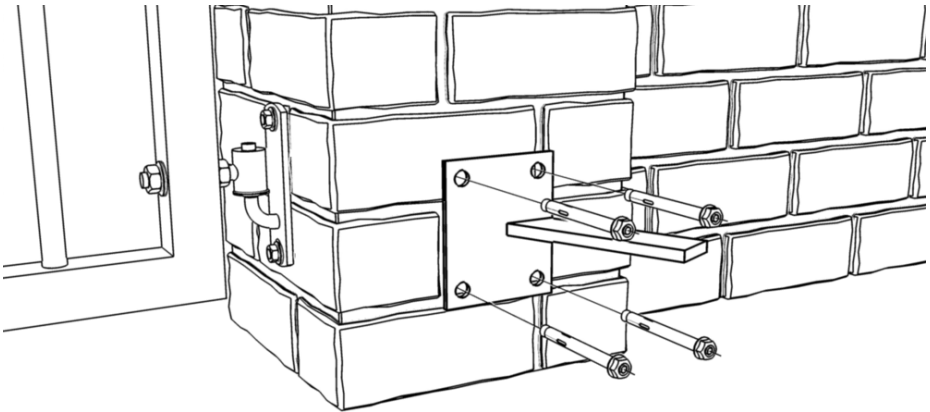


If either gate rail is not square because the driveway slopes across, then you will need to find the approximate position on the gate where the 'Gate Mounting Bracket' will fit, then use a straight edge and level or laser level to find the Height of the Post Mounting Bracket from there. To find the approximate position of the 'Gate Mounting Bracket' measure 1.2m for inward opening gates or 900mm for outward opening gates from the point where the actuator is supposed to connect to the 'Post Mounting Bracket' and the gate rail.

FIXING THE POST MOUNTING BRACKET TO THE POST.



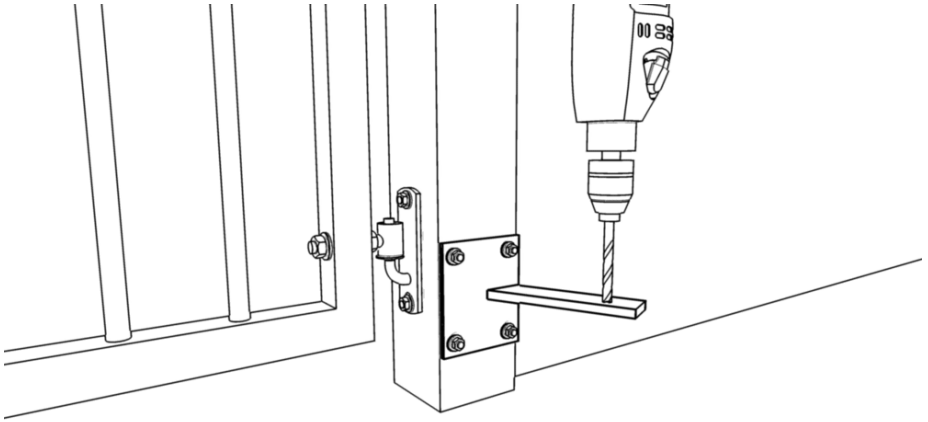
For metal or timber posts it's best to bolt right through the post for the strongest holding. Cup head bolts look more presentable from the front.



For Core filled Concrete block posts Coach Screws + Wall Plugs, M10 x 100mm Dyna Bolts or Chemset fastenings can be used.

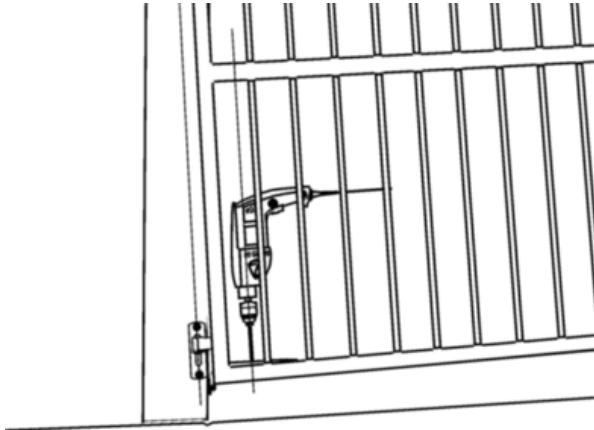
Brick posts must be core filled with concrete and the Post Mounting Bracket **MUST** be fixed to the concrete core filling **NOT** the brick. Brick is very durable in the weather but doesn't have the physical strength required. Bricks are normally 90mm wide so 150mm long Coach Screws, Dyna Bolts or Chemset fastenings are required, which may mean having to go up in size to get the length.

DRILLING THE CONNECTING PIN HOLE



Once the Post Mounting Bracket is fixing in place a 10mm hole should be drilled square to the Post Mounting Bracket for the Actuator connecting pin. Position of the hole is determined by the X and Y Dimensions.

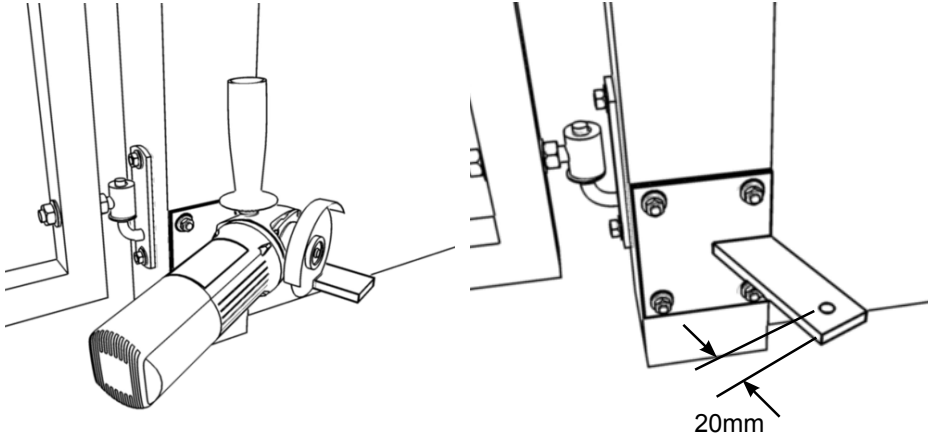
ANGLED HOLE REQUIRED FOR RISING GATES



Rising gates have hinges set at an angle to the post so the gate rises up as it opens, to allow for a sloping driveway.

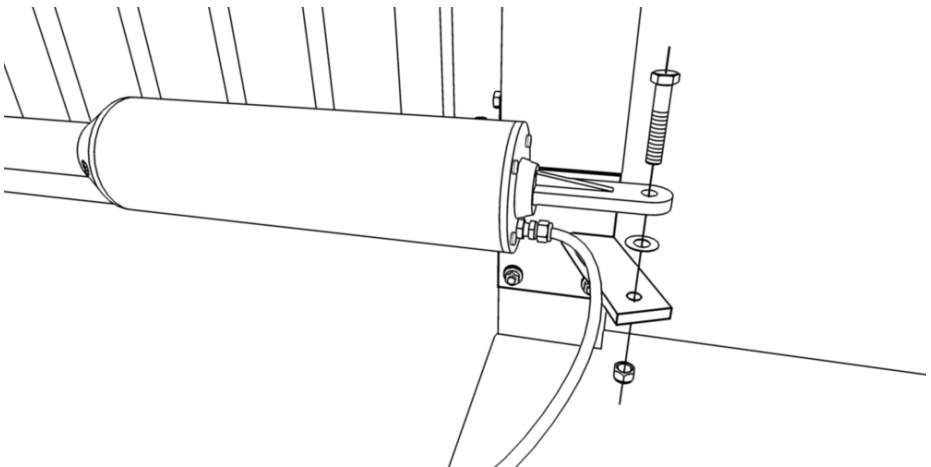
The hole for the Actuators connecting pin **MUST BE DRILLED AT THE SAME ANGLE** as the gate when open, so the Actuator moves in the same plane as the gate, so it doesn't bind when it opens.

CUTTING THE POST MOUNTING BRACKET TO LENGTH



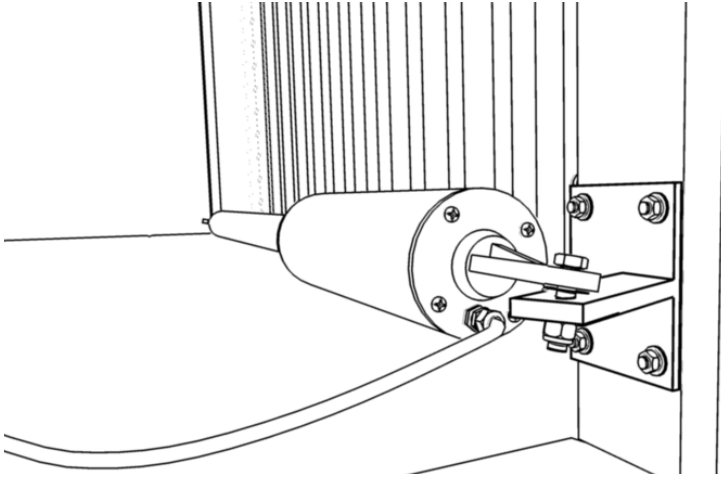
Any excess length of the Post Mounting Bracket should be cut off with a hack saw or angle grinder, then filed smooth. Cut should be 20mm from the centre of the actuator connecting pin hole.

FIT THE ACTUATOR TO THE POST MOUNTING BRACKET



The actuator has a connecting pin, spacer washer and Nylock Nut for fitting to the Post Mounting Bracket. **DO NOT PUT ANY WEIGHT ON THE ACTUATOR UNTIL FITTED TO THE GATE MOUNTING BRACKET!**

FIT THE ACTUATOR TO A RISING GATE



The Connecting Pin for a rising gate will sit at an angle.

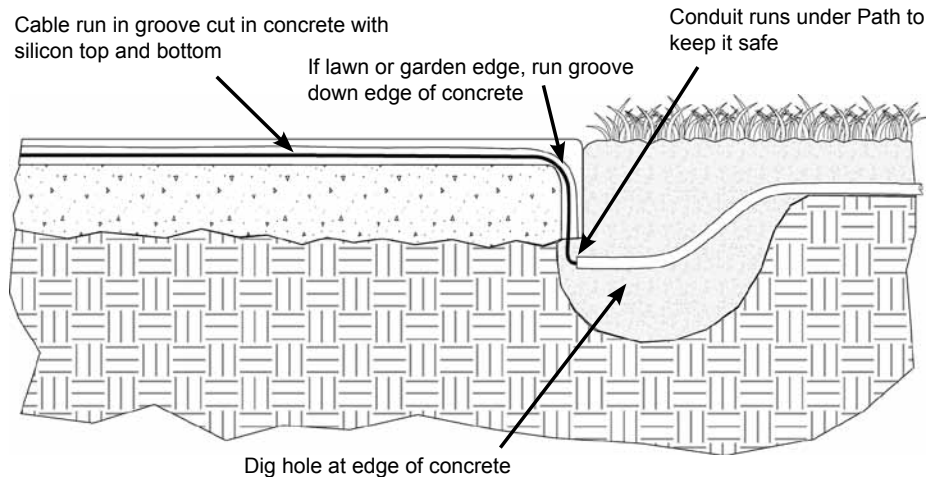
Note: The 'Gate Mounting Brackets' are fitted after all the cabling is installed and terminated, because the actuators must be powered closed to find the exact critical position of the 'Gate Mounting Brackets' on each gate leaf.

STEP 2 - INSTALL CABLING

Check with local regulations before installing a mains voltage power point yourself, you may need a registered electrician to do this for you. Normally any cable for voltage lower than 32VAC or 50VDC you can do your self without a license.

If you need to run Low Voltage Cable across a concrete or bitumen driveway or path you can do this by chasing a groove with a 9" angle grinder with a masonry grinding disc (not a cutting disc). Make it deep enough so there is 5mm or so space above the cable when installed. Use an expansion gap where possible as this requires less work. Make sure the cable will not be pinched if between two slabs of concrete that can shift with ground movement.

Fix the cable into the groove using clear plumbers silicon (non acidic) or other flexible sealer in the clean groove before the cable and again after, making sure it sticks to both sides of the groove. If the path or driveway has lawn or garden edges make sure the cable isn't exposed or accessable to edge trimmers or spades by running the groove down the edge and into conduit just under the edge of the driveway. You'll need to dig a hole next to the driveway to do this.



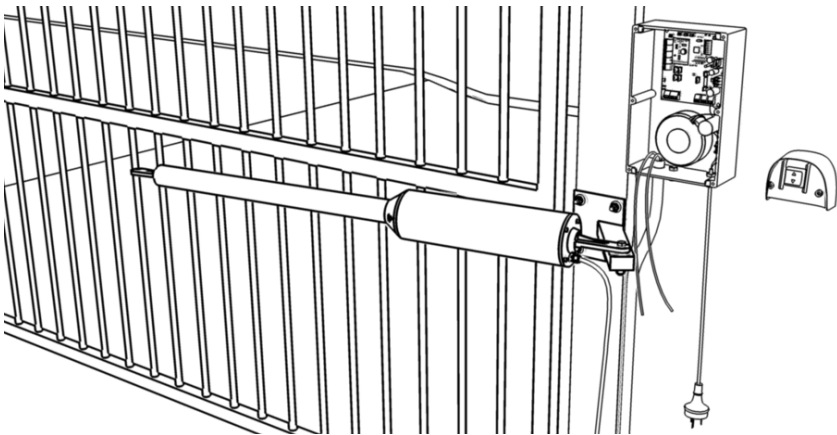
If the driveway meets a post and you need to go around it then chase a groove where you can with the angle grinder then use a rotary hammer drill as a mini jack hammer for the corners and fiddly bits.

TIPS FOR RUNNING LOW VOLTAGE CABLE YOURSELF.

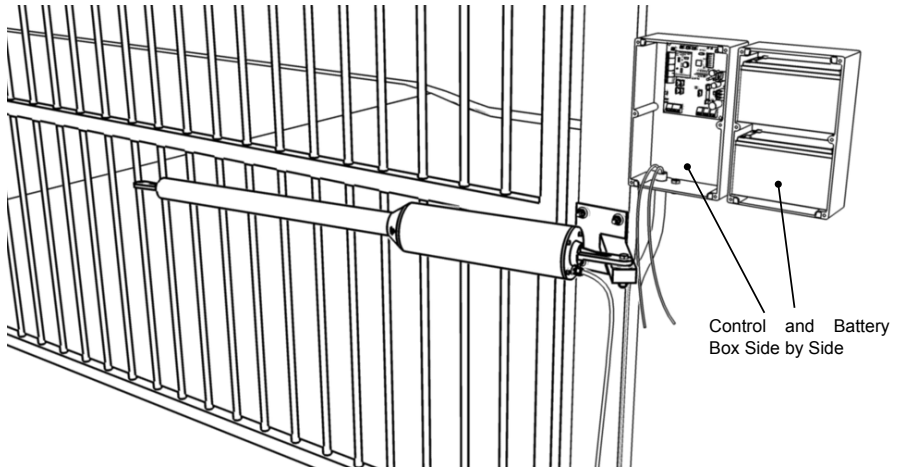
- ⚡ Always use conduit if running cable in grass, open ground, gardens or pebbles.
- ⚡ Conduit should be buried deep enough so it is out of harms way. For existing lawns, pebbled areas or if run along side a driveway then buried just below the surface is fine. For open ground, gardens and areas where there is likely to be other digging going on then conduit should be buried at least 300mm deep.
- ⚡ Never make joints in cable directly in the ground. If you must join cable, either bring it up well above the ground and have the joint protected from the elements by a weather proof junction box or put a pit in the ground to make sure the joint is sitting in the air within the pit and cannot be submerged in water.

STEP 3 - INSTALL ELECTRICAL BOXES

Before fitting any electrical boxes it's a good idea to pre-drill all holes for conduits.

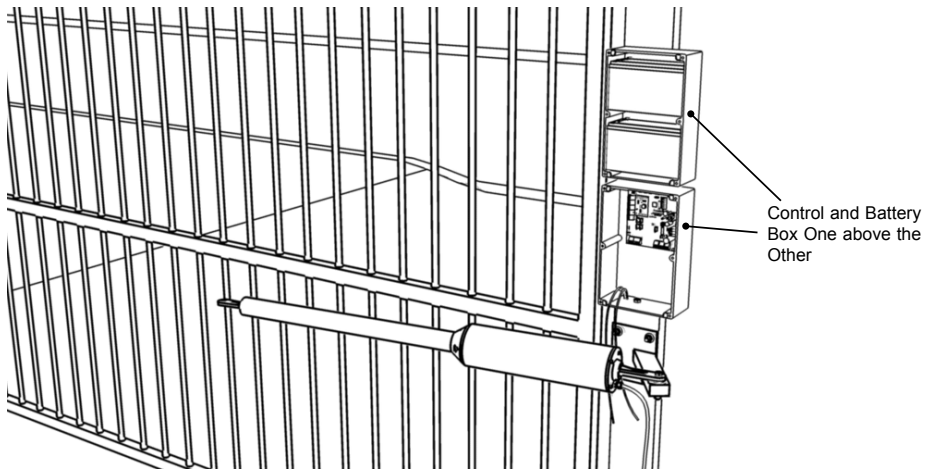


THE NON BATTERY VERSION requires one only box and power point installed as close to one actuator as possible, normally on the fence or wall next to the Gate Post or on the Post if there is room. Cables and conduits should be pulled through the pre-drilled holes while installing the control box. Mounting holes should be drilled in the base of the box and attached to: concrete and brick walls with nail in tappits or small dyna bolts, metal posts with self drilling metal screws and timber fences and posts with self drilling timber screws.



Control and Battery
Box Side by Side

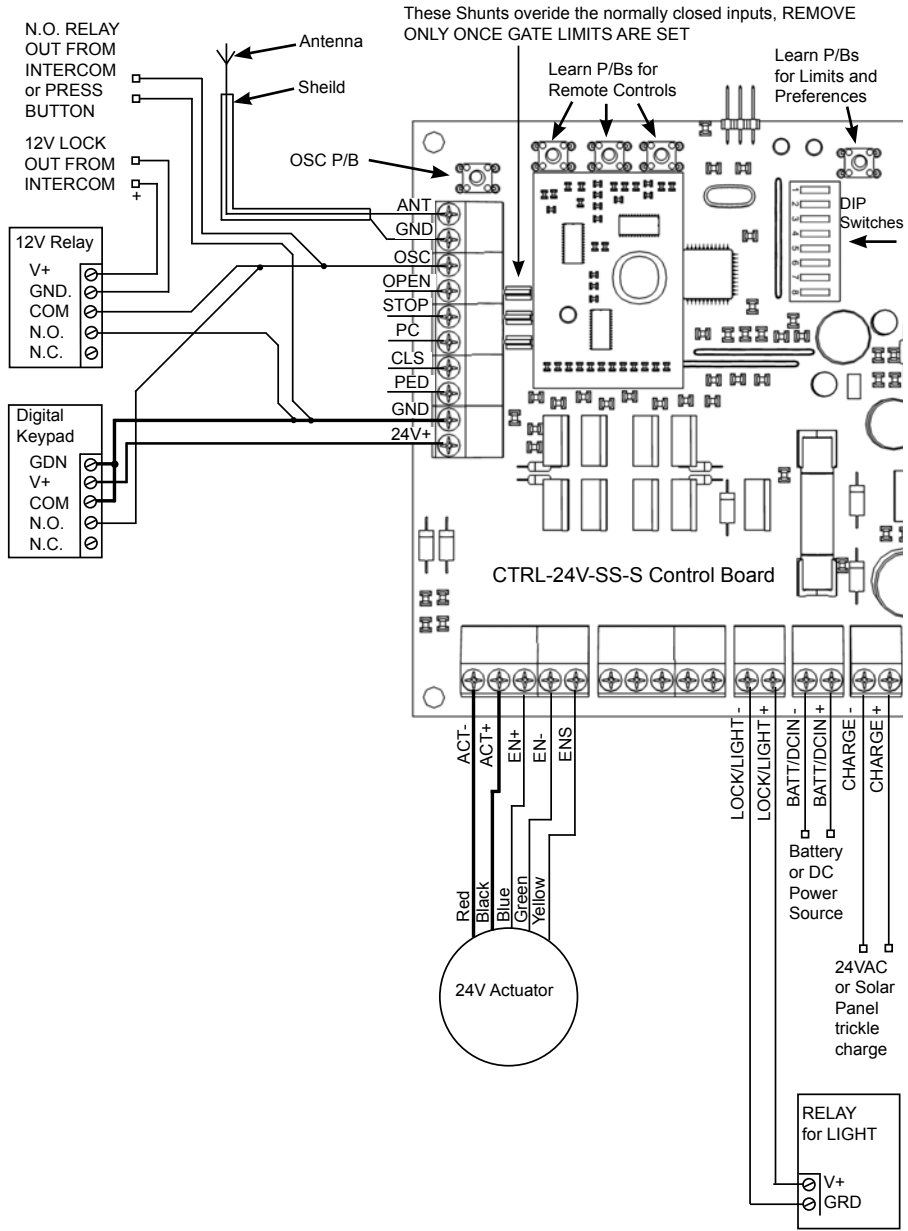
THE BATTERY POWERED VERSION requires one control box, one battery box and a transformer box. The control box and battery box should go as close as possible to the gate and requires a small length of conduit run in between them. They may go side by side on a fence next to the gate or one above the other if fitted on a post. The transformer box should be fitted in a nearby building where there is a spare power point or can be hard wired into a mains supply.



Control and Battery
Box One above the
Other

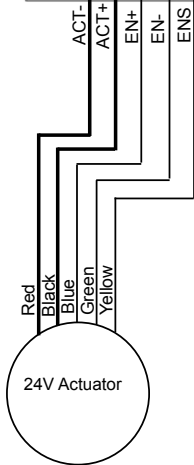
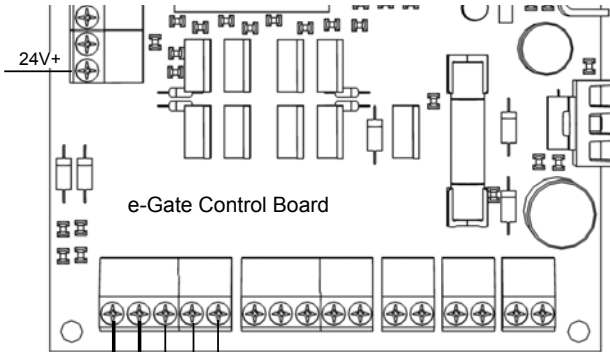
STEP 4 - TERMINATE CABLING

SWG-24V SINGLE GATE GENERAL WIRING DIAGRAM

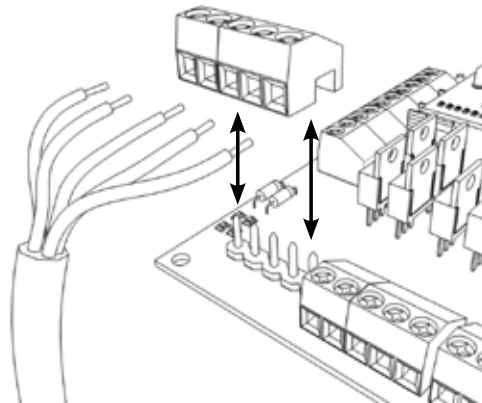


TERMINATING THE ACTUATOR

The Red and Black wires provide the Power to each Actuator.
The Blue wire provides 12V+ to each actuators encoder (position sensor)
The Green wire provides a ground connection for each actuators encoder
The Yellow wire is the data from each actuators encoder.



Note: for Outward Opening Gates the Red and Black Actuator Power wires must be reversed so Black goes to ACT- and Red to ACT+

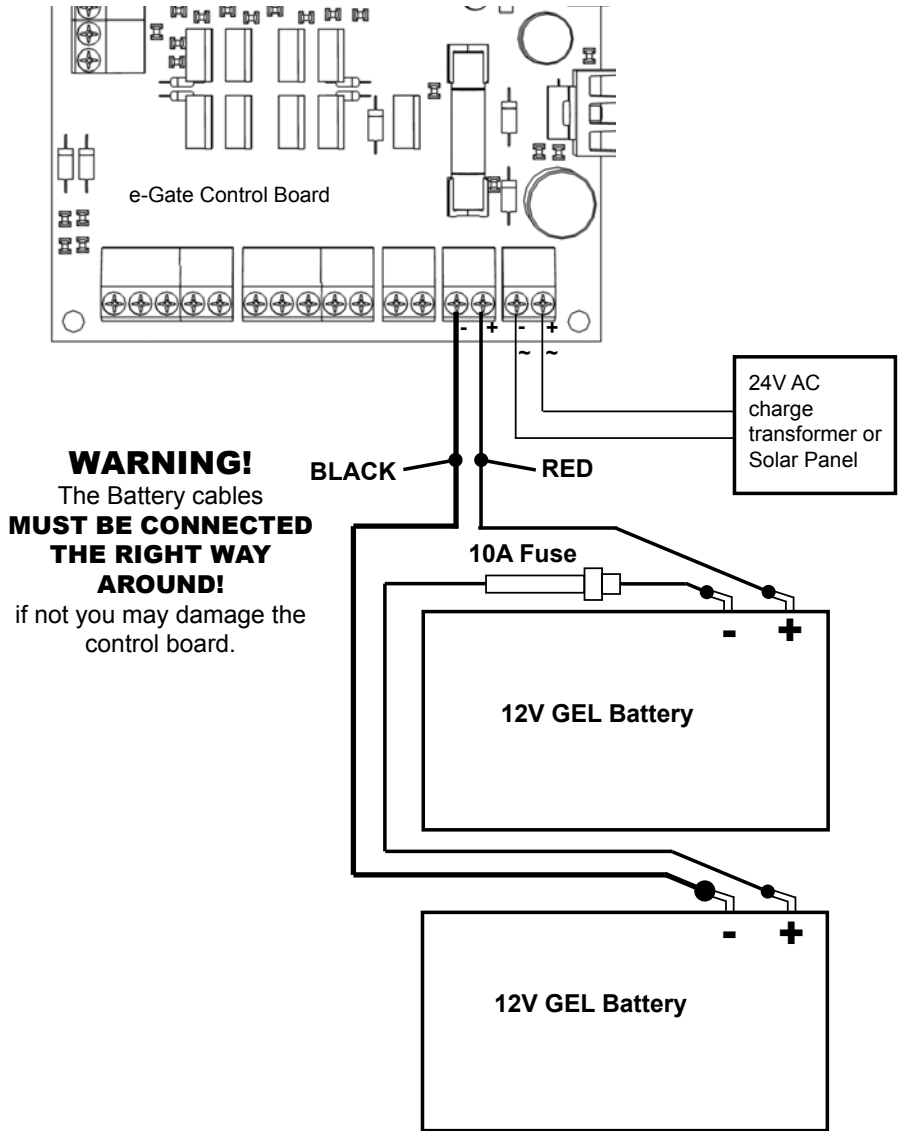


The terminal blocks on the control board unplug to allow easier and better connections.

Make sure all strands of the wire are tightly held by the terminal block. Stray strands can cause a short circuit.

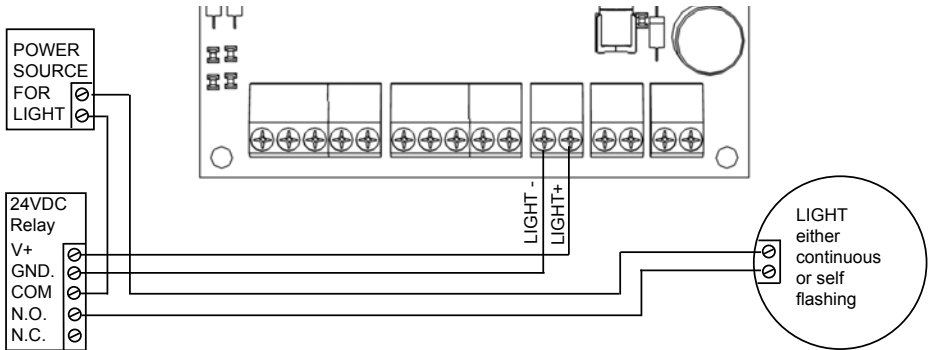
TERMINATING THE BATTERY AND CHARGER (BATTERY VERSIONS ONLY)

Unplug the Battery and charge terminals and connect the necessary cables. Leave them unplugged until such time as you are ready to Power up.



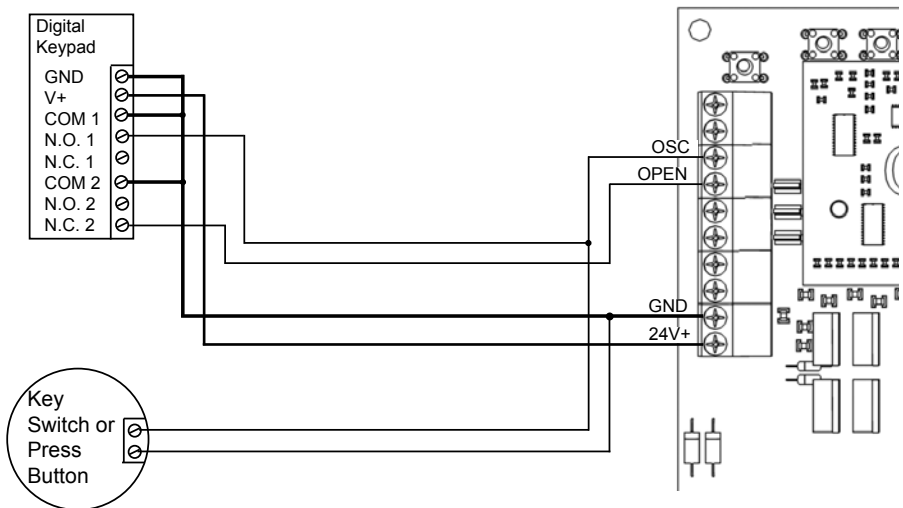
TERMINATING A LIGHT

By connecting a 24VDC relay to the gate operator it can also activate lights for 1 or 4 minutes when ever the gate is opened. See “Changing the LOCK/LIGHT output” section in Step 9 for information on how to change this.



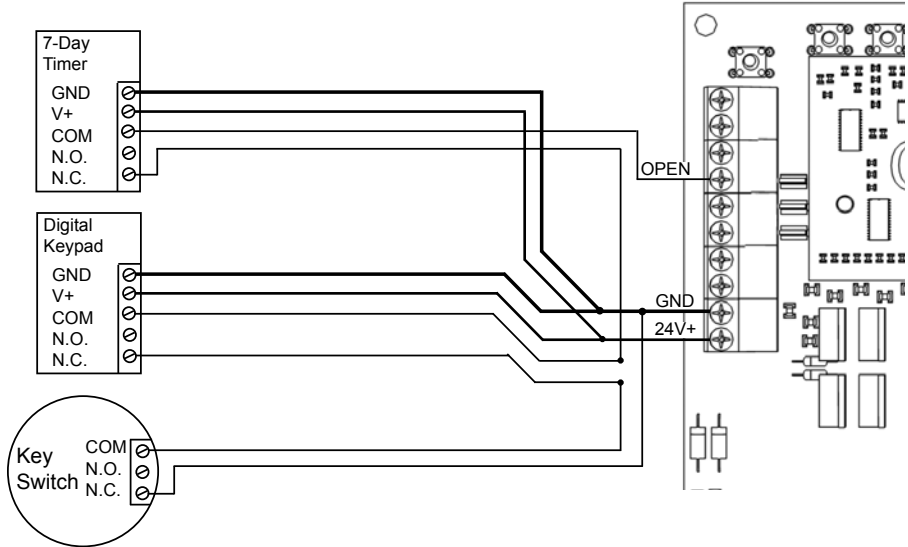
TERMINATING DIGITAL KEYPAD, KEY SWITCH OR PRESS BUTTON

A Digital Keypad, Key switch, Press Button or any other clean contact normally Open (NO) device can be used to activate the gate. If a Digital keypad has two relay outputs, then these can be used for different operational functions such as open with manual close or open with auto-close.



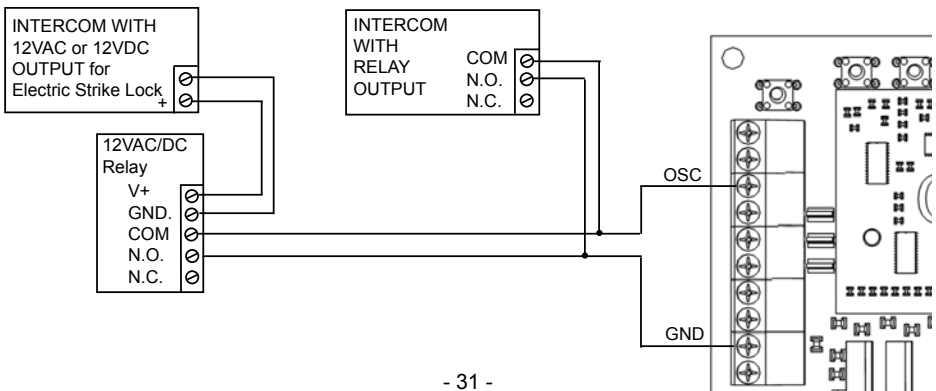
TERMINATING A 7-DAY TIMER, DIGITAL KEYPAD OR KEYSWITCH TO HOLD THE GATE OPEN.

A 7-Day Timer, Digital Keypad, Key switch or any other clean contact normally closed (NC) device can be used to hold the gate open. Because this is a normally closed connection all devices must be OFF (contact closed) before the gate will close. To hold the gate open any one device must remain ON (contact open). Gate closure will occur once all contacts are closed and the auto-close delay has timed out.



TERMINATING AN INTERCOM

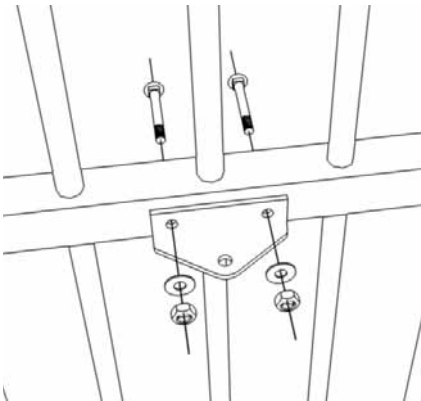
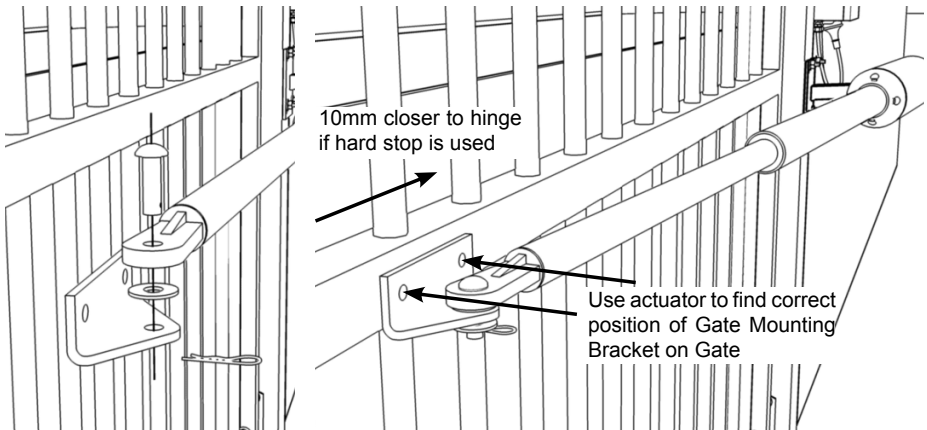
Intercoms also use a normally open connection to the control board. Intercoms will either have a relay output with clean contacts or output 12VAC or 12VDC to directly operate an electric strike lock. The later requires a relay available as an accessory and will work with both 12VAC or 12VDC.



STEP 5 - FIT THE GATE MOUNTING BRACKETS

Before you can do this you must Power the Gate operator up for the first time. **Make sure the control board input shunts are ON.** When powered up the operator will pause for a moment then start closing at slow speed. Because you haven't yet fitted the Gate mounting bracket the actuator will just drive out to full extension then stop for inward opening gates or remain fully retracted for outward opening gates. If it doesn't do this then check the actuator wires are terminated properly.

Once the actuator has been driven to its fully closed position then it can be used to find the correct **position of the Gate Mounting Bracket on the gate.**



With the Gate held in the close position and the Gate mounting Bracket fitted to the actuator the position of the mounting holes on the gate can be marked.

IF YOU WISH TO USE A CLOSE STOP make the marks 10mm or so closer to the hinge of the gate.

Use the supplied cup head bolts to fix the Gate Mounting Bracket to the gate. Do not use self drilling screws from the inside as these can pull out. Using bolts right through the gate frame is the strongest.

STEP 6 - TUNE THE REMOTE CONTROLS IN

If an on board receiver is used (not a stand alone receiver)

Button A is the main button on the remote control for opening the gate. The other buttons can be used for other options or opening a garage door (e-Gate RX-1 receiver required).

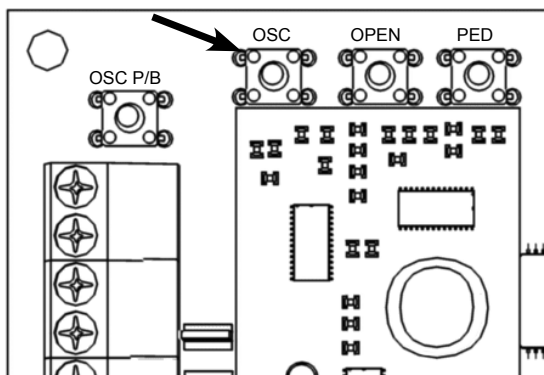


Each remote control transmits a unique digital code. Before the control board can respond, it must first **learn this code and know what action to take.**

REMOTE CONTROL WITH OPEN, STOP AND MANUAL CLOSE

At the top right hand corner of the Control Board are three press buttons used for Learning the remote controls codes for different actions.

For Opening the gate with Manual Stop and Close Press the “OSC” Learn Button, a beeper will start beeping, then press a button on the remote control within range of the gate and the beeper will beep more



rapidly for a second to confirm it has been learned. This button should now operate the gate. Repeat the same with all remote controls.

REMOTE CONTROL OPEN WITH AUTO-CLOSE.

If you do as above but use the “OPEN” Learn Button, the remote control will now open the gate only and it will close automatically after auto-close delay or close with an OSC or CLOSE input.

You can use one remote control button to open the gate with manual close (OSC) and a second with auto-close (OPEN) if you like. Button A is handy to have with open only and auto-close for normal use and button B with Open, Stop and Manual close in case you want to back a trailer in and don't want the gate closing on you.

The control board can Learn up to 60 separate remote control buttons.

REMOVING REMOTE CONTROLS

To remove one remote control button press the OSC LEARN button, a beeper will start beeping, then press the already learned remote control button you wish to remove, the beeper will beep more rapidly for a second to confirm removal.

If you don't have the remote control then you must remove all remote controls and re-Learn the ones you have. If you have a lot of remote controls then consider using the RX-Mega stand alone receiver as it can learn up to 1000 remote controls and individual remote controls can be removed even if it has been lost.

To remove all remote controls press and hold OSC LEARN button for more than 10 seconds (beeps) and the beeper will beep more rapidly indicating that all remote controls have all been removed.

REMOTE CONTROLLED PEDESTRIAN ENTRY

If your automatic gate is the only way in or out of your property you can allow user access on foot only, by having the remote control open the gate part way and closing automatically after a pre-set delay. This delay can be set independently from the vehicular entry auto-close delay see "Changing the Pedestrian-close Delay" section in step 9.

Use the "PED" Learn Button on the control board and any unused button on the remote control as you did above. To set the amount the gate will open see Step 7.

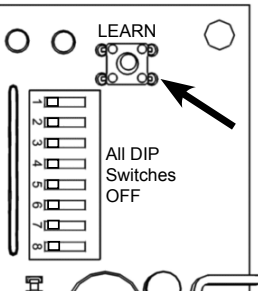
USER ADDING REMOTE CONTROLS AT LATER DATE

If you have at least one remote control that operates your gate you can use this to tune in new remote controls without having to open the control box up. This is done by pressing combinations of buttons together on the working remote control within range of the gate. Pressing Buttons A and D together is the same as pressing the "OSC" Learn Button on the control board, A and C together is the same as pressing the "OPEN" Learn button and B and D for "PED" Learn Button. Once you press any of these combinations you'll hear the beeper in the control box beeping. You can now press a button on a new remote control to get it to operate the gate.

Remote control buttons can also be deleted from memory this way. As a safe guard not all remote control buttons can be deleted, using this method, there will always be one left working, so the end user can't accidentally delete them all and not know how to get it working again.

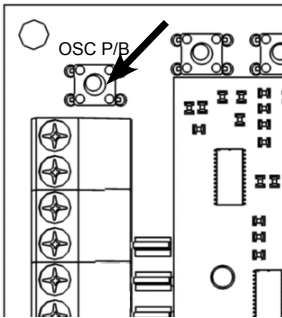
STEP 7 - LEARN GATE OPEN AND CLOSE LIMITS

Top RH corner of control board



THE GATE OPEN AND CLOSE LIMITS MUST BE LEARNED BEFORE THE OPERATOR WILL WORK PROPERLY. The control board has a special function for Learning the Gate Limits automatically. Hard stops are optional with the SWG-24V operators.

Top LH corner of control board



IF YOU WISH TO USE THE PEDESTRIAN ENTRY FEATURE then start by opening the gate by this amount using the OSC P/B on the control board, other wise any position will do.

TO START THE LEARN GATE LIMITS FUNCTION make sure all DIP Switches are OFF then press the LEARN button and the Beeper will start beeping. Now press the OSC P/B on the control board or remote control to start the function running.

ONCE STARTED the gate will start closing slowly as it searches for the close stop or the very end of the actuator travel.

WHEN IT FINDS THE CLOSE LIMIT it will beep rapidly for a second to confirm then start opening to find the open limit.

IF YOU'RE NOT USING AN OPEN HARD STOP IT'S UP TO YOU TO STOP THE GATE AT THE DESIRED OPEN LIMIT, you can do this using the OSC P/B on the control board or remote control or just stop the gate with your hand or foot, it's running at slow speed so is safe.

ONCE THE OPEN LIMIT IS SET the controller will beep rapidly for a second to confirm then go back to normal operation leaving the gate open.

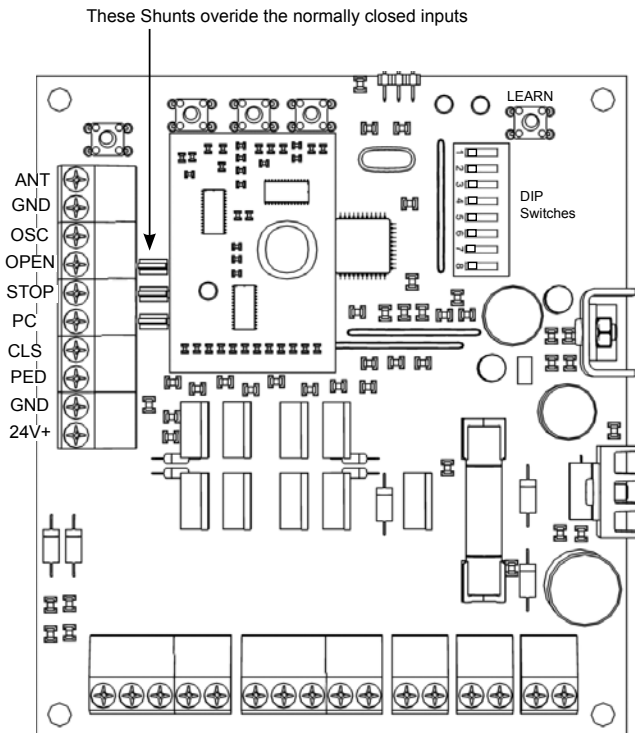
THE CONTROLLER WILL REMEMBER THE OPEN AND CLOSE LIMITS from this time on, even if the power is removed from the operator.

STEP 8 - ACTIVATE AND TEST ACCESSORIES

Any intercoms, key switches, press buttons or digital keypads connected to the OSC or CLOSE inputs can now be tested. The OSC input opens, stops and closes the gate. The CLOSE input closes the gate only.

Any devices connected to the OPEN, STOP or PC inputs require their shunt to be removed before they will be active. The open input opens the gate, will hold it open while ON and will close automatically after auto-close delay once OFF. The STOP input will stop the gate in any direction when ever it is moving. The PC input will reverse the gate while closing only and hold it open while it remains ON and will close automatically after close delay once OFF.

OTHER OPTIONS FOR CONTROL INPUTS



DIP 1 ON - activates auto-close function for the OSC control input or any remote control button that has been activated for OSC operation. Gate will close after preset auto-close delay.

DIP 4 ON - changes the OSC input so it can open the gate only. Ideal when there is a lot of users. Must be used with auto-close or the Close Control input to close the gate.

DIP 5 ON - deactivates the auto-close feature for the OPEN only control input. This is to allow this input to be used for a manual close for commercial installations.

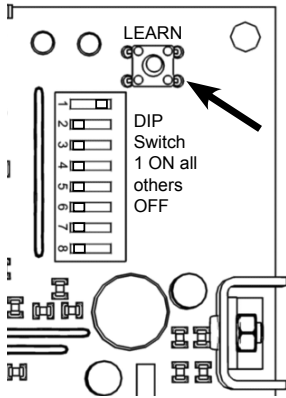
DIPs 2,3 6,7 and 8 are spare and can be used to select special features that may be programmed into the control board.

STEP 9 - FINE TUNE GATE OPERATOR PREFERENCES

The DIP Switch and Learn Button have a secondary purpose, which is to make changes to the Control Boards preferences. Once the preferences have been set the DIP switches should be returned back to the way they were for normal operation.

CHANGING THE AUTO-CLOSE DELAY

Top RH corner of control board



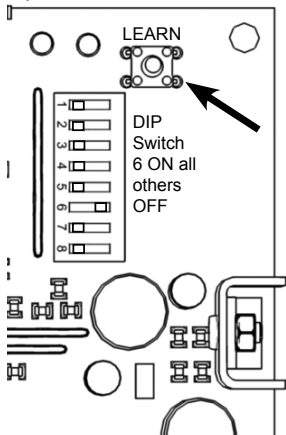
With DIP Switch 1 only ON, press the LEARN button and the Beeper will start beeping, it is not necessary to hold the LEARN button. **Now wait for the desired Auto-close time and press the LEARN button again.** The Beeper will beep more rapidly for a second to confirm the new delay has been learned.

The Beeper beeps once a second, so if you count the beeps you are counting seconds, handy if you want an exact time.

If you leave it beeping it will time out after 4 minutes and set this as the auto-close delay.

CHANGING THE LEVEL OF SOFT START AND SOFT STOP

Top RH corner of control board



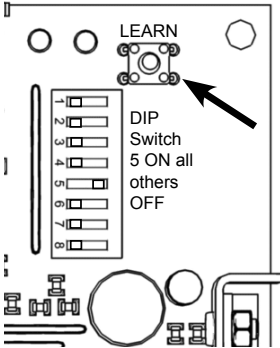
There are 10 levels of Soft Start/Stop numbered from 1 to 10. The factory setting is 5, 1 being least and 10 being the most.

With DIP Switch 6 only ON, press the LEARN button and the control board will beep out the current level ie. if the level is 3 there will be 3 beeps, then there will be a pause for 2 seconds and it will start beeping again. This is when you can change the level by pressing the Learn button at the desired beep ie. if you want to change it to level 5 then press the Learn button during the 5th Beep. The control board will beep more rapidly to confirm the new setting.

If you change your mind half way through just don't press the Learn button again and it will time out after 10 beeps and no change will be made.

CHANGING THE LOCK/LIGHT OUTPUT

Top RH corner of control board



There are 6 modes of operation for the Lock/Light output including:

1. Strike Lock - comes ON for 2 seconds on open
2. Light timer 1 - comes ON for 1 minute on open
3. Light timer 4 - comes ON for 4 minutes on open
4. Open indicator - comes ON when gate is open
5. Brake mode - comes ON when gate is moving
6. Clamp mode - comes ON when gate is closed.

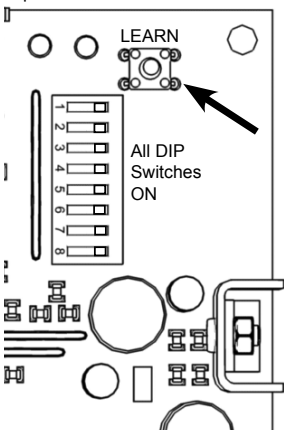
The factory setting for the Lock/Light Output is mode1 for a strike lock

With DIP Switch 5 only ON, press the LEARN button and the control board will beep out the current mode ie. if the mode is 3 there will be 3 beeps, then there will be a pause for 2 seconds and it will start beeping again. This is when you can change the mode by pressing the Learn button at the desired beep ie. if you want to change it to mode 5 then press the Learn button during the 5th Beep. The control board will beep more rapidly to confirm the new setting .

If you change your mind half way through just don't press the Learn button again and it will time out after 6 beeps and no change will be made.

RETURNING TO THE FACTORY SETTINGS

Top RH corner of control board

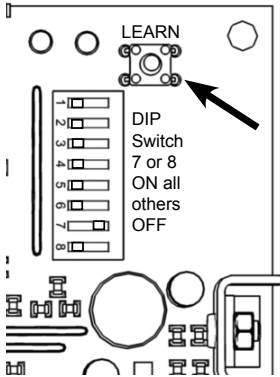


If you get into trouble and want to return everything back to the way it was before you started you can restore the factory settings by turning ALL DIP Switches ON and pressing the LEARN Button. The beeper will beep rapidly for a second to confirm the factory settings have been restored.

You must turn the DIP Switches OFF again before proceeding further.

CHANGING EACH GATES OBSTRUCTION SENSITIVITY

Top RH corner of control board



If the gate is obstructed while operating it will stop and reverse away. There are 10 different levels of Obstruction Sensitivity for each gate leaf that can be set individually numbered from 1 to 10. The factory setting is 5 with 1 being the most sensitive and 10 being the least.

For Gate 1 set DIP Switch 7 only ON and Gate 2 set DIP 8 only ON, then press the LEARN button and the control board will beep out the current level ie. if the level is 3 there will be 3 beeps, then there will be a pause for 2 seconds and it will start beeping again. This is when you can change the level by pressing the Learn button at the desired beep ie. if you want

to change it to level 5 then press the Learn button during the 5th Beep. The control board will beep more rapidly to confirm the new setting.

If you change your mind half way through just don't press the Learn button again and it will time out after 10 beeps and no change will be made.

WHAT HAPPENS IF THERE IS A POWER CUT?

Battery operated version will not be effected by a power cut unless it is longer than a few hours, then the gate should be manually operated until the power is restored and the battery has charged. Over night charging is best.

For non-battery versions if the power is removed from the Gate Operator once power is restored the following will happen:

If the gate is closed - the gate will attempt to close but will be prevented by the close hard stop or end of actuator travel, when next activated it will open normally.

If the Gate is FULLY or PARTLY OPEN, when first powered up the gate will pause for a moment then slowly close until the close hard stop or end of actuator travel is found. Then when next activated it will open normally.

If the Gate is FULLY or PARTLY OPEN and either the OPEN or PC inputs are ON, the gate will remain in the position it was in until both the OPEN and PC inputs are OFF then the gate will slowly close until the close hard stop or end of actuator travel is found.

ACCESSORIES AVAILABLE

TX-4	Extra Remote Controls for either 433.92Mhz (Blue) and 315Mhz (White)
RX-1	Stand alone Receiver - to allow a garage door or another brand of gate operator to be operated with the e-Gate remote control ether 433.92Mhz or 315Mhz.
ANT-1	Antenna for remote control ether 433.92Mhz or 315Mhz.
Batt-TX	Replacement Battery for TX-4 Remote control
Batt-12V-7Ah	Replacement Battery for Gate Operator (two required for 24V)
ST-130	Wired Single Channel Digital Keypad
VCB-12	Voltage Converter Board 16 to 24VAC/DC in and 12V 500mA out
RLY-12	Relay Board 12VAC/DC in and clean contacts rated at 60VDC/125AC 2A
RLY-24	Relay Board 24VAC/DC in and clean contacts rated at 60VDC/125AC 2A
PC-1	Photocell 12/24VAC/DC 15m outdoor

TROUBLE SHOOTING

Gate runs in the wrong direction - check the actuator power wires are correct, if wired the wrong way around the actuator will travel in the wrong direction.

Gate runs for a short distance then stops - check the actuator encoder wiring or isn't being overloaded by a stiff gate.

Operator not working at all - check power cord or battery cable is plugged in. Check there is power at the gate. Check fuse on the control board.

Battery Powered Operator running very slowly - check the battery is connected properly and charged. A fully charged battery should be at 27.6VDC. Anything lower than 24VDC may be too flat to operate properly.

Gate won't work when first powered up - check the OPEN input cable connections, check any device that may be connected to the OPEN input or if nothing connected check the OPEN inputs shunt is in place.

OPEN, PC or STOP inputs won't work - check the shunt for these inputs has been removed. These shunts override the input preventing it from working, which is to save having to add wire loops.

Remote control range drops some times - most likely caused by interference from some other device in the area using a similar frequency. Installing an external antenna can minimize the effects of interference, other wise if this doesn't help the frequency of the remote controls should be changed. Each remote control will need to be changed for a different frequency along with the receiver module plugged into the e-Gate control or stand alone receiver board(s). The receiver module is a small yellow board that plugs into the main board near where the antenna is wired in. Power should be removed from the operator before a receiver module is changed. Both the remote controls and receiver modules come in either 433.92Mhz or 315Mhz, if you have interference problems with one frequency we can send you remote controls of the other frequency, which normally solves the problem.

WARRANTY

A 2 Year Back to Base Warranty is offered by Grant's Automation for any defect in a Gate Operator System manufactured by Grant's Automation or any third party component supplier to Grant's Automation due to faulty workmanship or materials causing the Operator to fail to work as specified in this Installation Manual.

Should any fault occur during the first 2 Years after the operator was purchased, it should be returned to the factory for repair or at the discretion of Grant's Automation replacement at no charge under the following conditions:

1. Proof of purchase is required ie. Invoice or purchase details recorded by Grant's Automation.
2. If an operator is not installed immediately after purchase, at the discretion of Grant's Automation, the warranty may be extended to up to a maximum of 2 Years after the date installed.
3. The operator has been installed according to this Installation Manual and Serviced according to the User Manual.
4. The operator has not been used for a gate larger, of a different type or higher frequency of use than that specified in this Installation Manual. All gate specifications are required before any claims will be accepted.
5. The operator hasn't been used in a highly corrosive environment or has been exposed to contaminants that could cause the operator to fail.
6. The operator has not been used for purposes other that it was intended for.
7. The operator has not been tampered with or modified by any party not authorised in writing by Grant's Automation to do so.
8. The operator has not been damaged by any malicious act, accident, animal infestation or adverse weather conditions beyond the control of Grant's Automation.
9. A reasonable amount of care with handling or using the operator has been be taken.



Developers and Manufacturers
of Gate Automation Technology