

# **(((APC)))** **Automation Systems**

## **APC-790/890 V3C Installation Guide**



### **Attention Installer**

The manual should be read cover to cover at least once prior to beginning installation

## Preliminary Checks

To ensure safety and an efficient automation make sure the following requirements are met:

1. The gate structure must be suitable for automation.
2. Make sure that the gate leaves move properly and uniformly without any irregular friction during their entire travel.
3. The gates hinges must be in good condition with no biting, no rust and must be well greased.
4. The gates should be able to be freely opened and closed before installing the gates automation system.
5. It is strongly suggested to have a gate stop installed for the closed position.

## Important Safety Information

Installer and owners should observe the following:

1. Make sure that there is sufficient space for the gate(s) to swing open fully to the desired opening angle.
2. The control Panel Box must be installed in the area within 9 meters maximum cable distance from motor and cannot be damaged.
3. Do not change with parts or components not supplied by the manufacturer, this includes sensors, buttons, solar panels, transformers and any component not listed in the compatibility list.
4. Make sure all wiring works are correct and in good condition before connecting the battery, solar panel or transformer to the control panel.
5. Turn off the power and disconnect the battery when doing any maintenance.
6. Ensure the control panel box is free from water leakage to avoid short circuiting of the control panel.
7. Do not supply mains power directly to the motor, control box or any accessories.
8. Do not install the operating system if in doubt. Contact the manufacturer.
9. Do not cross the gate while it is operating, Safety sensors are only to prevent accidents or injuries.
10. Keep the remote controls in safe place and away from children.

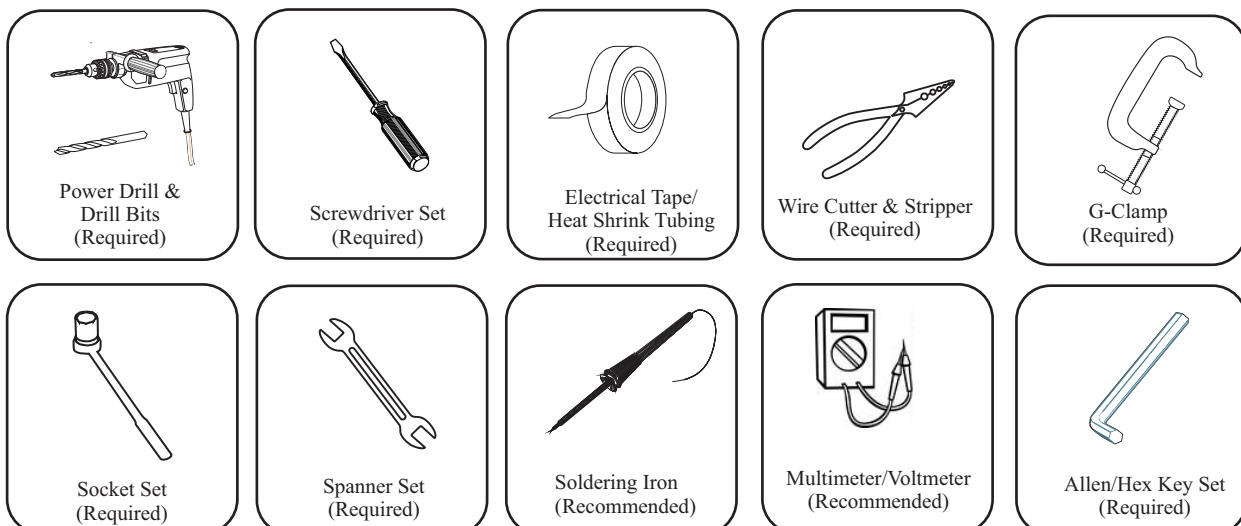
Before beginning installation the manual should be read thoroughly concerning all aspects of the installation including all precautions and safety information.

Proper steps should be taken to ensure efficient and safe installation for vehicles, property and persons within the operators working radius.

The system is fitted with an over current sensing feature to assist in preventing damages, injuries and death. All precautions must be taken by the installer that adjustments are set correct based on the gates weight, height and length. The system sensitivity should be set to allow consistent operation of the gates under normal operating conditions. This does not include operating against wind. The system may not detect (Over current sense) against light loads such as small object, young children and animals. It is the operators duty to ensure that the area is clear prior to operation. Photo sensors or Reflective sensors should always be installed to assist in accident or death prevention. Rubber edging should be installed onto the gates to assist in dampening any accidents or damages.

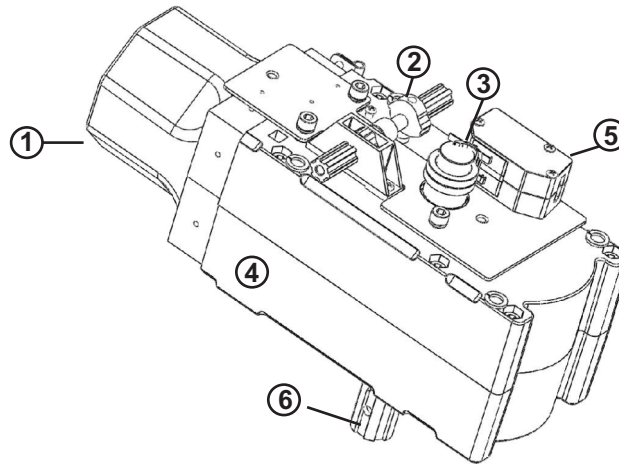
You agree to install this product following any and all safety requirements listed in this manual or required under local, state or national regulations. APC Australia, its distributors, stockist or sellers are not liable for any direct, indirect, incidental, special or consequential damages or loss of profit wether based in contract or any other legal theory during the course of warranty or afterwards. If you do not feel capable of properly installing the operator based on the above information or otherwise do not proceed.

## Tools Required

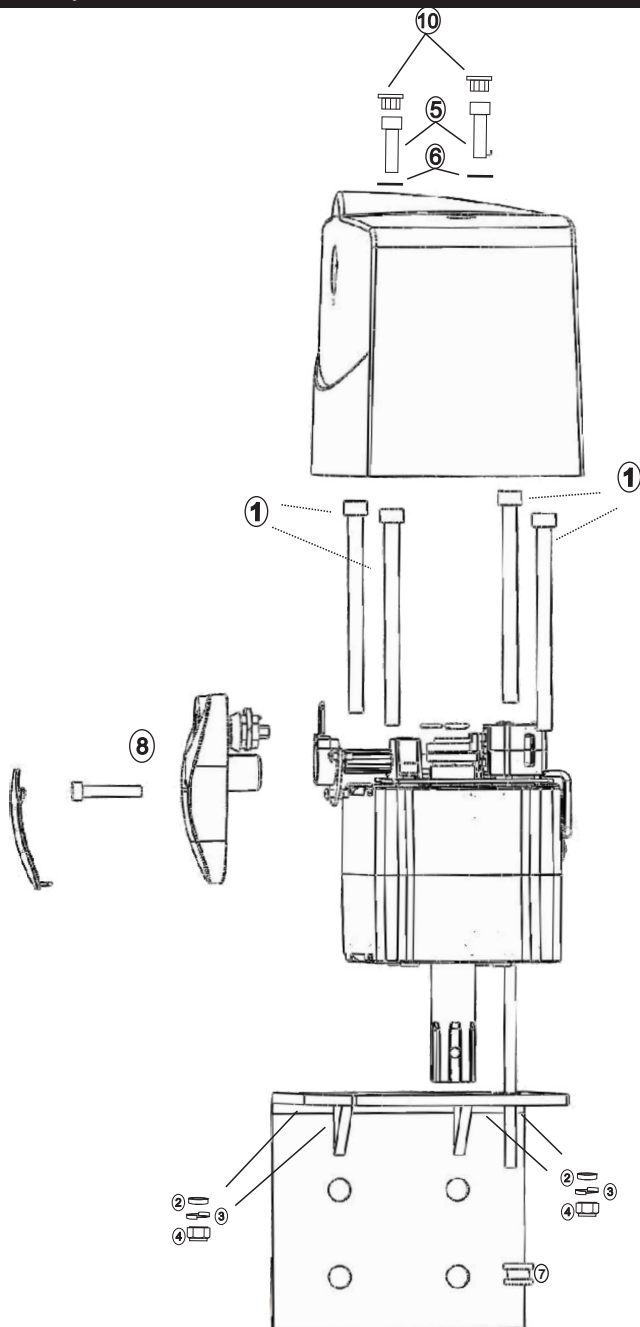


## Motor Layout Explained

1. DC Motor
2. Manual Override Cam
3. Limit Switch Cams
4. Internal Gearing
5. Limit Switch
6. Motor Output Spline



## Assembly Overview

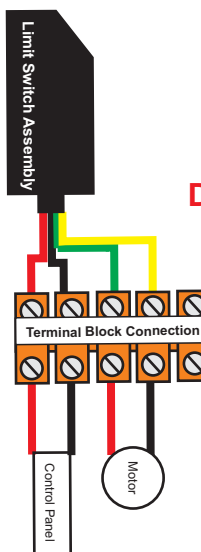


①	Hex Head Bolt 137mm (4 pcs)	
②	Washer (4 pcs)	
③	Spring Washer (4 pcs)	
④	Lock Nuts (4 pcs)	
⑤	Hex Head Bolt 39mm (2 pcs)	
⑥	O Ring(2 pcs)	
⑦	Cable Grommet (1 pc)	
⑧	Override assembly (1 pc)	
⑨	Override Key (2 pcs)	
⑩	Plastic Cover Cap (2 pcs)	

### Limit Switch Wiring

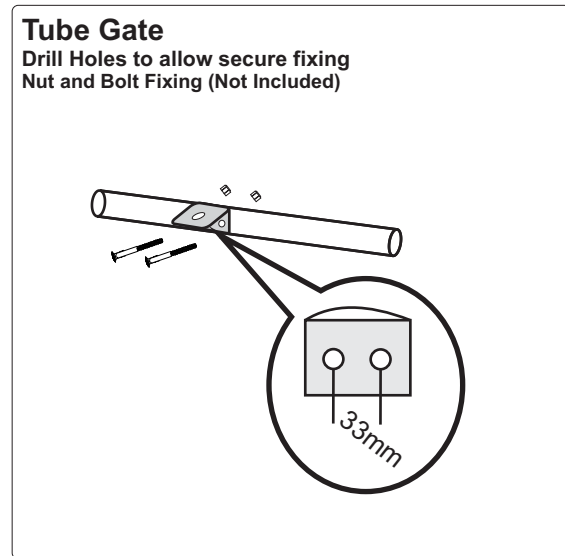
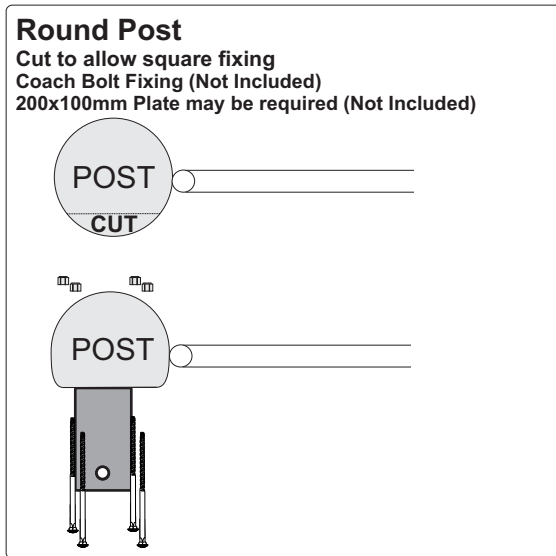
Limit Switch Assembly & Wiring Terminal Block  
(Located on motor assembly)

**DO NOT ADJUST**

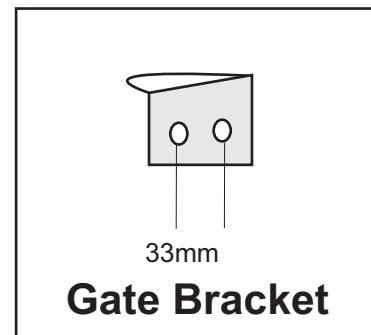
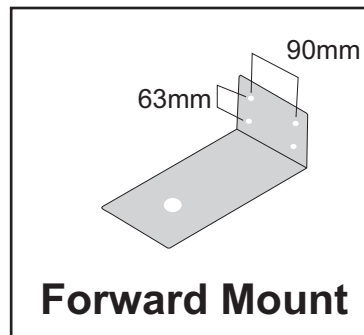
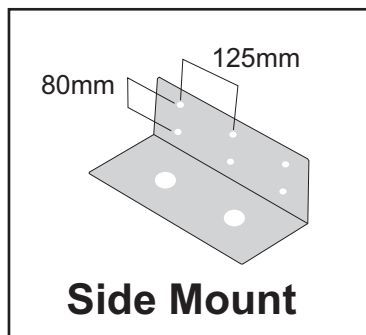


### IMPORTANT

Part #6 (O Ring) must be installed to prevent water leakage into the motor.



Handy Dimensions



Gate Stop Installation

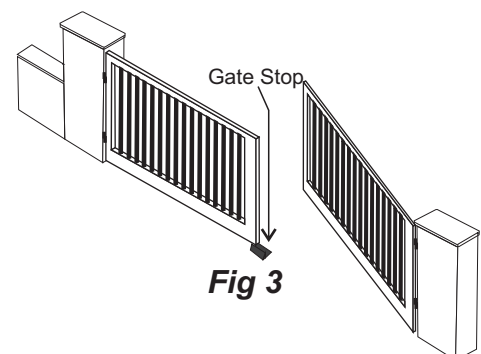
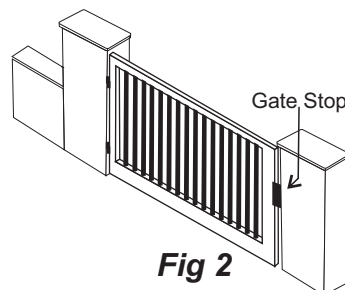
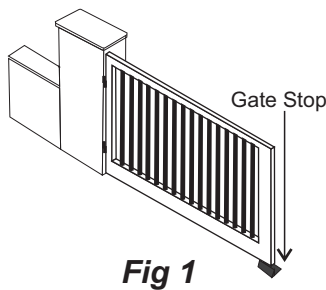
Before beginning the installation of the gate motors a physical gate stop must be installed at the closed position.

For Single gate systems the gate stop can be installed in two different methods.

1. On the driveway itself at the furthest point from the hinge as illustrated in the diagram below (Fig 1).
2. On the post that the gate will close too (Fig 2).

For Double gate systems the gate stop must be installed in the center of the driveway stopping both gates (Fig 3).

When installing on the driveway itself it is recommended to use a rubber floor stop to prevent damage to vehicle entering and exiting. When installing on the post for single gate installations a 90° angle can be used with a rubber padding to dampen or soften the close and prevent damage to the gate.



# 1 Marking The Installation Levels for the post and gate

**A** Using a Spirit Level/Bubble Level Draw a horizontal line across the desired gate rail, this line should continue across the gate post as shown in Fig2.

**This red line here is a guideline for:**

- At the post end the line is the base measurement required for the post bracket.
- At the gate end the line is the top of the gate mounting bracket

**Note:** The post mounting brackets can be installed as illustrated in Fig 2, Standard or Reversed. Please choose the method that suits your installation requirement and proceed with the below.

**B** Using the line drawn in Step 1A mark another horizontal line 40mm (4cm) above the original line. This line will be the mounting height for the centre of the 90° bend on the post bracket.

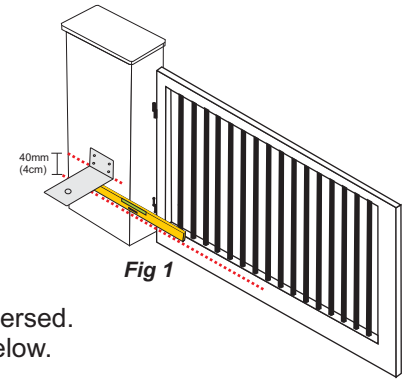


Fig 1

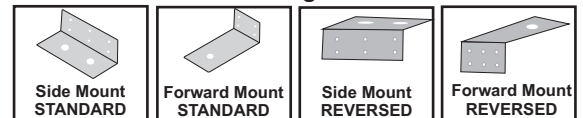


Fig 2

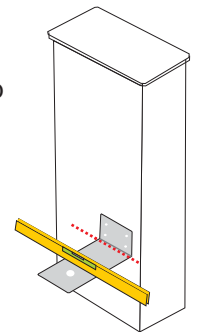
# 2 Post Bracket Installation

**A** Position the motor mounting bracket on the post or pier using the mark line created in the previous step (the corner of the 90° bend on the line). Remember to use a spirit level/bubble level on top of the bracket.

**B** Mark the fixing holes whilst holding the bracket in position.

**C** Drill the required fixing holes.

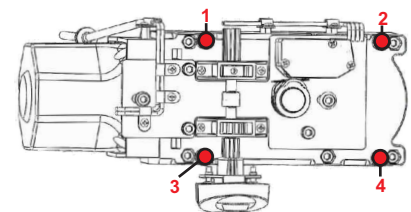
**D** Use the appropriate fixing hardware to fix the bracket to the post or pier.



# 3 Installing the motor(s)

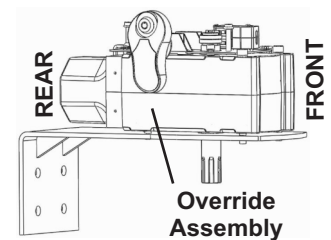
Mount the motor onto the post bracket and install using the 4x Nuts and Bolts provided.

**NOTE:** The motor(s) are identical and can be installed on either side.



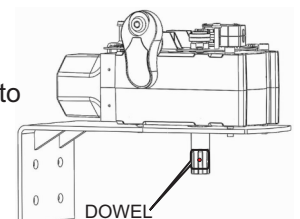
# 4 Manual Override

Insert the manual override assembly onto the override spline and turn the assembly by 45° towards the front of the motor, this will disengage the motor and allow the motors spline shaft to be turned once the primary arm has been connected.



# 5 Installing the Primary Arm

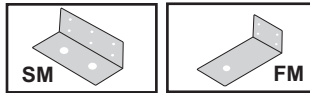
Attach the Primary arm to the motor spline shaft and tighten the grub screw on the primary arm into the dowel on the motor spline shaft (as illustrated below) so that the units are locked together.



# Installation Examples

Choose the installation configuration to suit the APC-790/890 model purchased.

APC-790	Single Gate Kit	FM	Forward Mount Bracket
APC-890	Double Gate Kit	SM	Side Mount Bracket

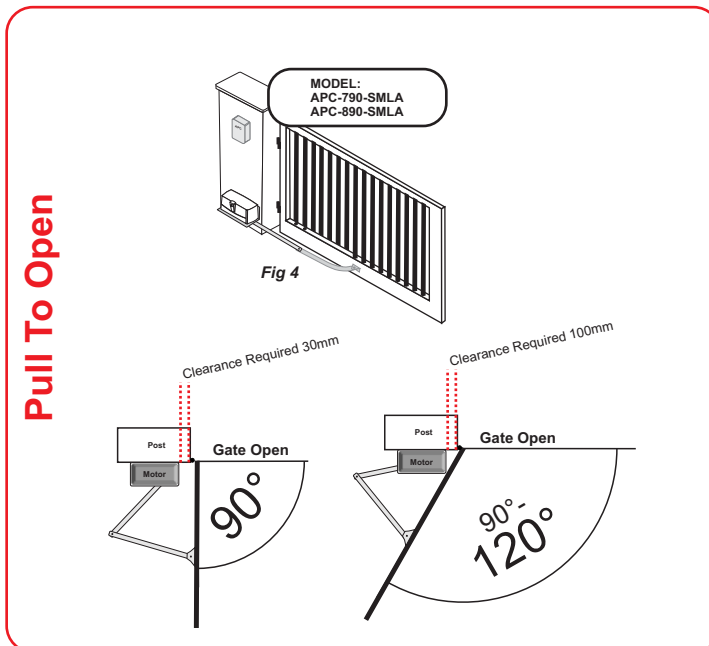
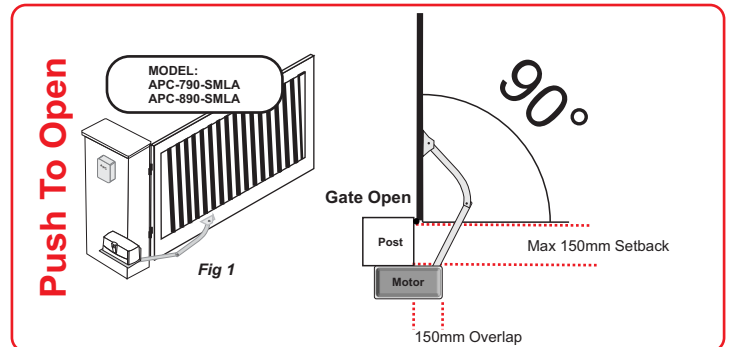
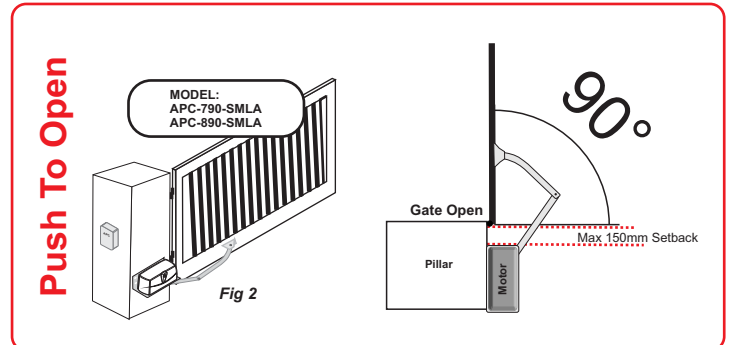
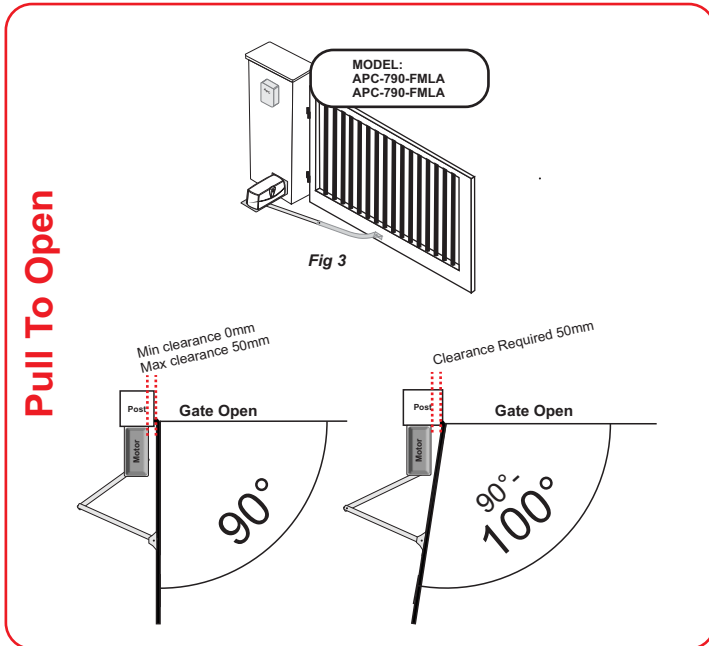


## Pull To Open

Opening towards the gate motor

## Push To Open

Opening away from the gate motor

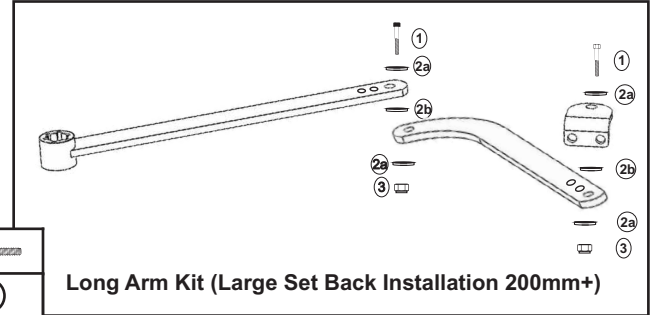
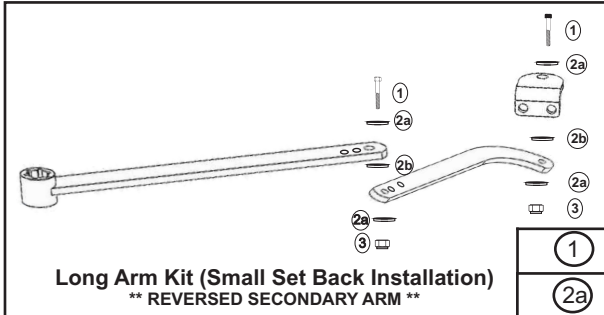
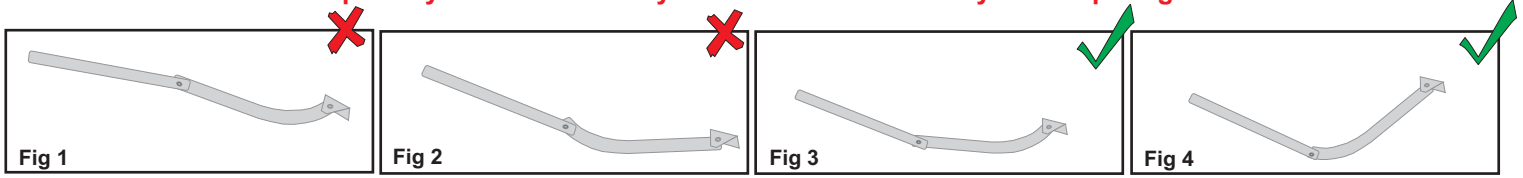


# 6 Arm and Gate Bracket Assembly and fitting

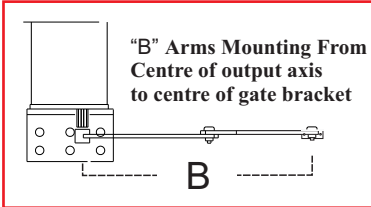
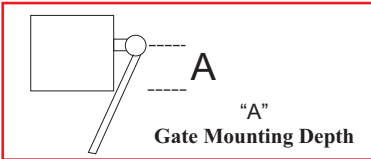
Below is example installation dimension based on motor installation bracket and Arm length, each installation is different and it is suggested to **Clamp the arm connection to the gate before fixing to test the operation.**

**Never install the arms with an inversion of the primary arm towards the gate as per fig 1 and 2.**

**The primary arm should always flow into the secondary arm as per fig 3 and 4.**



1	BOLT	
2a	NYLON WASHER	
2b	NYLON WASHER	
3	LOCK NUT	



### Suggested Formula to obtain your "B" Distance

1. Take the "B" FLUSH dimension for your installation bracket and arm.
2. Subtract **YOUR** gate mounting depth from the "B" dimension obtained in Step 1. eg. "B" FLUSH dimension MINUS **YOUR** "A" Dimension = xxx mm.
3. The final dimension is where the centre of the gate bracket will be installed from the centre of the motors output axis, this is your "B" dimension

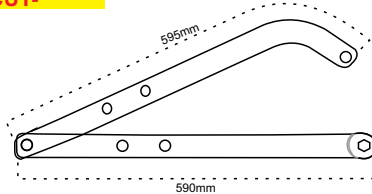
**\*For Push to open the arm is installed in the Open Position**

**\*For Pull to Open the arm is installed in the Closed Position**

### Option 1

Suitable for 1.3m-5.0m gates

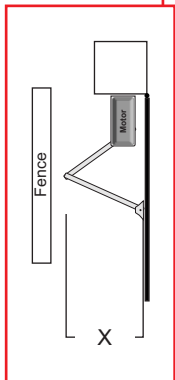
**RECOMENDED METHOD -DO NOT CUT-**



**Forward Mount Long Arm**

Gate Mounting Depth (A)	Arm Mounting From Output Axis to Gate (B)	MAX Opening Angle	Approximate Clearance Required (X)
250mm	750mm	90°	<b>550mm or greater</b>
0mm (FLUSH)	1000mm	120°	
300mm	850mm	90°	
250mm	900mm	90°	
0mm (FLUSH)	1150mm	120°	

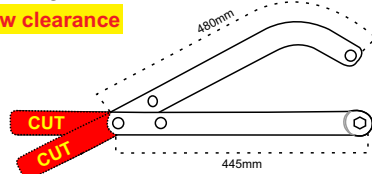
**Side Mount Long Arm**



### Option 2

Suitable for 1.3m-2.0m gates

**Only used for low clearance**



**Forward Mount Medium Arm**

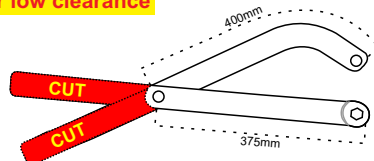
Gate Mounting Depth (A)	Arm Mounting From Output Axis to Gate (B)	MAX Opening Angle	Approximate Clearance Required (X)
50mm	520mm	90°	<b>400mm or greater</b>
0mm (FLUSH)	570mm	120°	
100mm	630mm	90°	
0mm (FLUSH)	730mm	120°	

**Side Mount Medium Arm**

### Option 3

Suitable for 1.3m-1.75m gates

**Only used for low clearance**



**Forward Mount Short Arm**

Gate Mounting Depth (A)	Arm Mounting From Output Axis to Gate (B)	MAX Opening Angle	Approximate Clearance Required (X)
50mm	490mm	90°	<b>350mm or greater</b>
0mm (FLUSH)	540mm	90°	
100mm	500mm	90°	
0mm (FLUSH)	600mm	90°	

**Side Mount Short Arm**

# 7A PULL TO OPEN Limit Switch Adjustment

*Push to Open installations please see next page*

The limit switches are used to set the switch off point for each direction of the motors travel. It is crucial that the limit switches are set correctly as per the diagrams below and tested using the batteries to ensure they stop at the open and closed positions.

## Adjusting the Opening limit switch

Starting from a closed position release the manual override using the supplied override assembly, turn the lever 45° then open the gate fully to the desired opening position, loosen the specified cam, then turn the cam until the limit switch clicks, now gently re-tighten the cam screws evenly.

## Adjusting the Closing limit switch

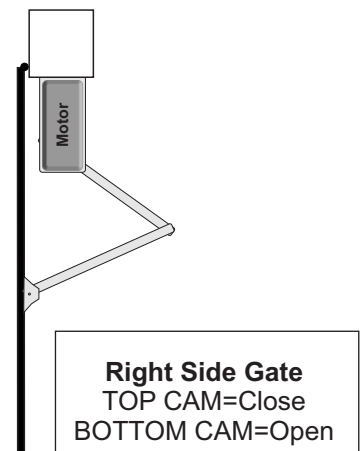
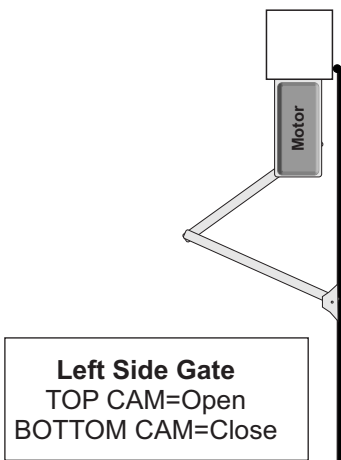
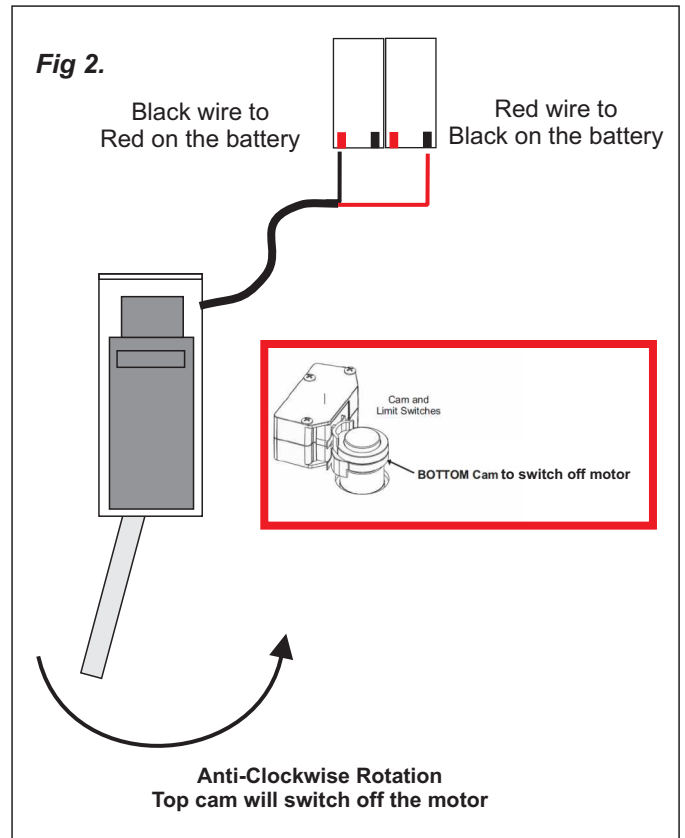
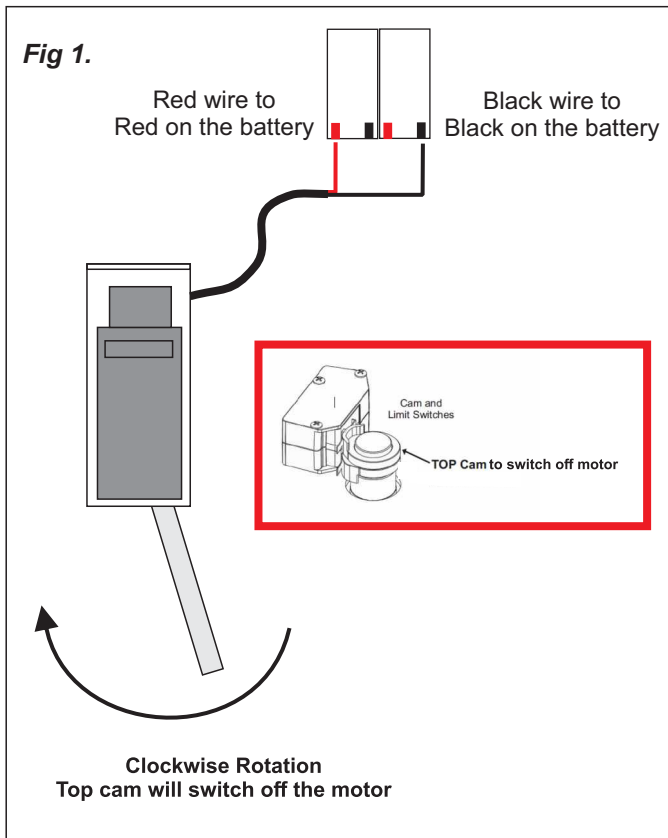
Manually close the gate to the desired position, adjust the specified cam as described above and when all done gently re-tighten the screws evenly.

Re-engage the manual override.

### Pull-To-Open

Motor will be pulling the gate towards it for **OPENING**.

Gates (Left and Right) are based on observation of the gates from the same side the motors will be installed on.





# 7B **PUSH TO OPEN** Limit Switch Adjustment

*Pull to Open installations please see previous page*

The limit switches are used to set the switch off point for each direction of the motors travel. It is crucial that the limit switches are set correctly as per the diagrams below and tested using the batteries to ensure they stop at the open and closed positions.

## Adjusting the Opening limit switch

Starting from a closed position release the manual override using the supplied override assembly, turn the lever 45° then open the gate fully to the desired opening position, loosen the specified cam, then turn the cam until the limit switch clicks, now gently re-tighten the cam screws evenly.

## Adjusting the Closing limit switch

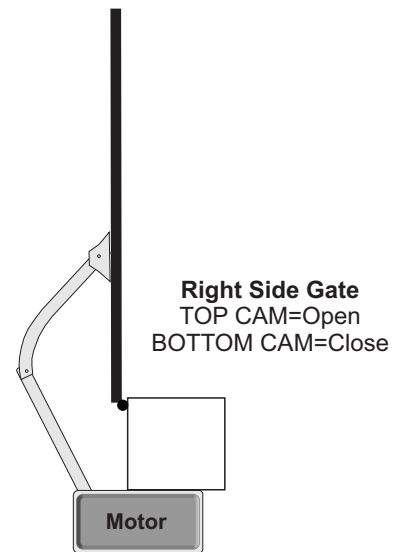
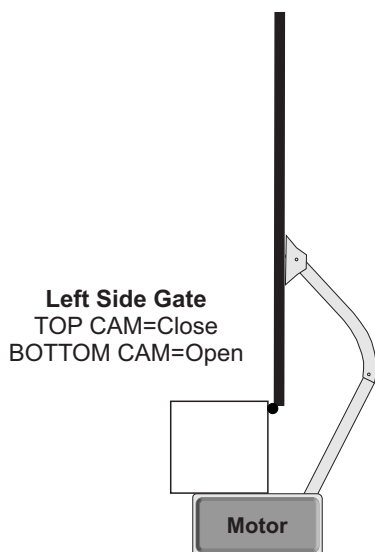
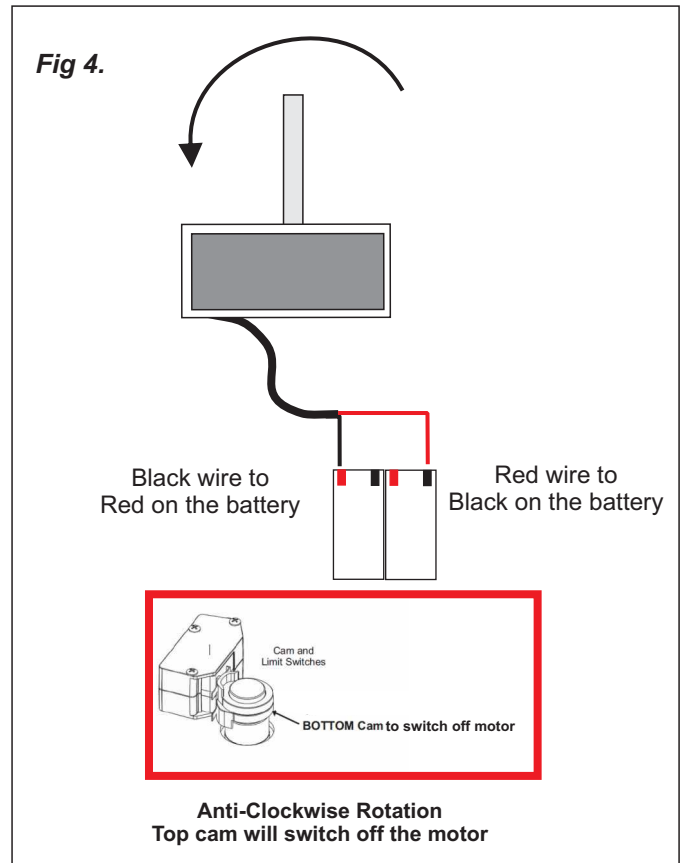
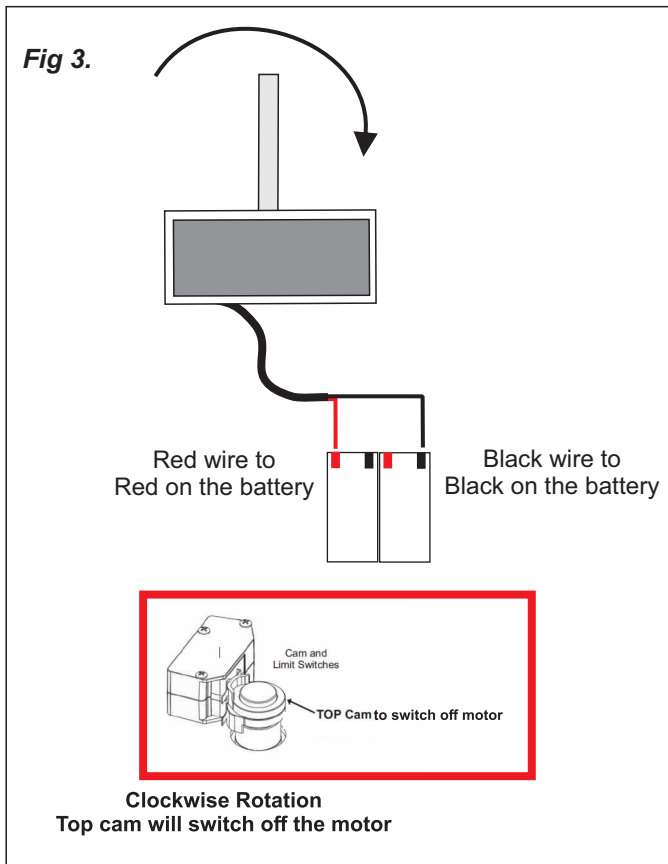
Manually close the gate to the desired position, adjust the specified cam as described above and when all done gently re-tighten the screws evenly.

Re-engage the manual override.

### Push-To-Open

Motor will be pulling the gate towards it for **CLOSING**.

Gates (Left and Right) are based on observation of the gates from the same side the motors will be installed on.



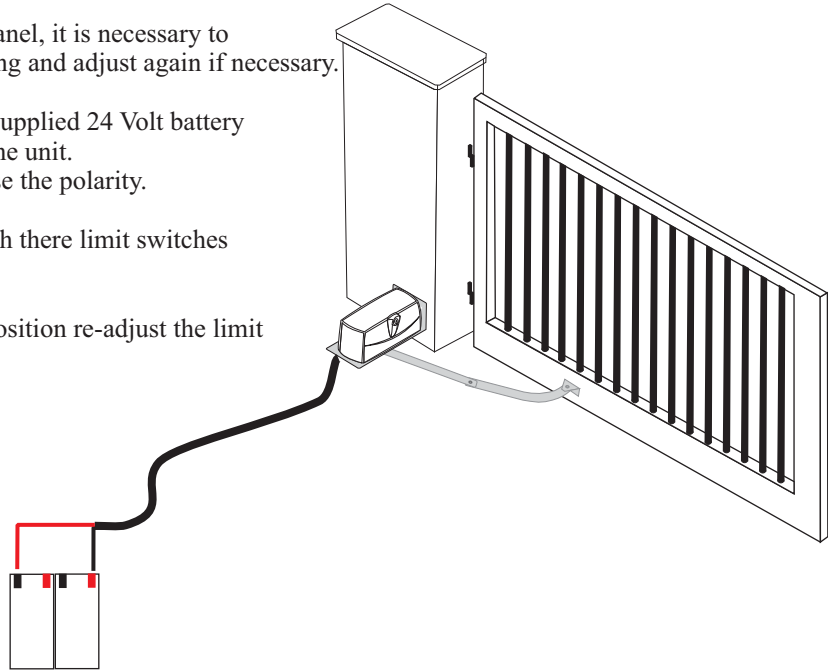
## 8 Re-testing the Limit Switches

BEFORE connecting the motor(s) to the control panel, it is necessary to re-test the limit switches for the opening and closing and adjust again if necessary.

You can test the limit switches by connecting the supplied 24 Volt battery directly to the long pre-wired cable connected to the unit.  
To reverse the direction of the motors travel reverse the polarity.

You should be powering the motor(s) till they reach there limit switches in the open and closed positions.

If the motor(s) does not switch off in the correct position re-adjust the limit switch and test again.



**DO NOT LEAVE BATTERY CONNECTED LONGER THAN 20 SECONDS**  
**DO NOT TEST THE MOTOR WHILST CONNECTED TO THE CONTROL PANEL**  
**DO NOT PROCEED TO CONTROL PANEL CONNECTION UNTIL LIMITS ARE SET CORRECTLY**

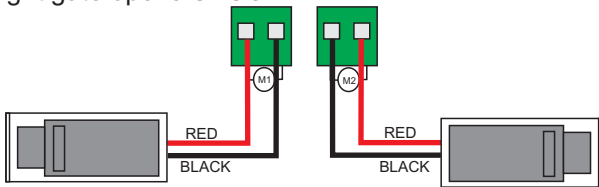
## 9 Pull-To-Open

Motor will be pulling the gate towards it for **OPENING**.

Gates (Left and Right) are based on observation of the gates from the same side the motors will be installed on.

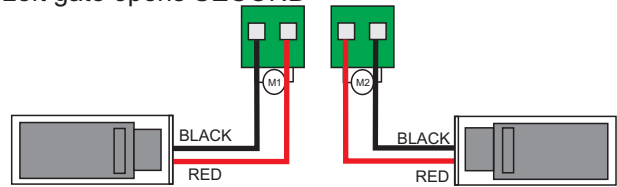
### Pull-To-Open Configuration 1

Left gate opens **FIRST**  
Right gate opens **SECOND**



### Pull-To-Open Configuration 2

Right gate opens **FIRST**  
Left gate opens **SECOND**



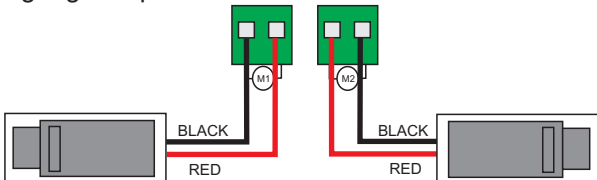
### Push-To-Open

Motor will be pulling the gate towards it for **CLOSING**.

Gates (Left and Right) are based on observation of the gates from the same side the motors will be installed on.

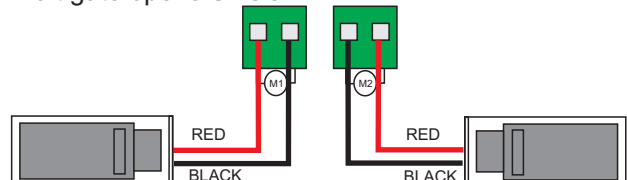
### Push-To-Open Configuration 1

Left gate opens **FIRST**  
Right gate opens **SECOND**



### Push-To-Open Configuration 2

Right gate opens **FIRST**  
Left gate opens **SECOND**



# (((APC))) Automation Systems

## **APC WARRANTY**

APC warrants the original purchasers or the APC gate(s) opening system for a period of twelve months from the date of purchase (not installation), the product shall be free of defects in materials and workmanship under normal use.

During the warranty period, APC shall, as its option, repair or replace any defective product upon return of the product to its factory, at no charge for labour and materials.

Any replacement and/or repaired parts are warranted for the remainder of the original warranty,

The original owner must promptly notify APC in writing that there is defect in material or workmanship, such written notice must be received in all events prior to expiration of the warranty.

## **International Warranty**

APC shall not be responsible for any freight fees, taxes or customs fees.

## **Warranty Procedure**

To obtain service under this warranty, AND AFTER CONTACTING APC, please return the item(s) in question to the point of purchase.

All authorized distributors and dealers have a warranty program, anyone returning goods to APC must first obtain an authorization number. APC will not accept any shipment for which prior authorization has not been used.

## **Conditions to Void Warranty**

This warranty applies only to defects in parts and workmanship relating to normal use. It does not cover:

- Damage incurred in shipping or handling
- Damage caused by disaster such as fire, flood, wind, earthquake or lightning
- Damage due to causes beyond the control of APC such as excessive voltage, mechanical shock or water damage
- Damage caused by unauthorized attachment, alterations, modifications, or foreign objects.
- Damage caused by peripherals (unless such peripherals were supplied by APC)
- Defects caused by failure to provide a suitable installation environment for the products
- Damage caused by usage of the products for purpose other than those for which it was designed.
- Damage from improper maintenance
- Damage arising out of any other abuse, mishandling, and improper application of the products.

Under no circumstances shall APC be liable for any special, incidental, or consequential damages based upon breach of warranty, breach of contract, negligence, strict liability, or any other legal theory. Such damages include, loss of profits, loss of the product or any associated equipment, cost of capital, cost of substitute or replacement equipment, facilities or services, down time, purchaser's time, the claims of third parties, including customers, and injury to property.

## **Disclaimer of Warranties**

This warranty contains the entire warranty and shall be in lieu of any and all other warranties, whether expressed or implied (including all implied warranties of merchantability or fitness for a particular purpose). And of all other obligations or purporting to act on its behalf to modify or to change this warranty, nor to assume for it any other warranty or liability concerning this product.

## **Out of Warranty Repairs**

APC will at its option repair or replace out-of-warranty products which are returned to its factory according to the following conditions. Anyone returning goods to APC must first obtain an authorization number.

APC will not accept any shipment whatsoever for which prior authorization has not been obtained. Products which APC determines to be repairable will be repaired and returned. A set fee which APC has been predetermined and which may be revised from time to time will be charged for each unit repaired. Products which APC determines not repairable will be replaced by the nearest equivalent product available at that time. The current market price for the replacement product will be charged for each replacement unit.