

Radford.

Installation Manual

Prepared by Dominic Casey for
Woolworths

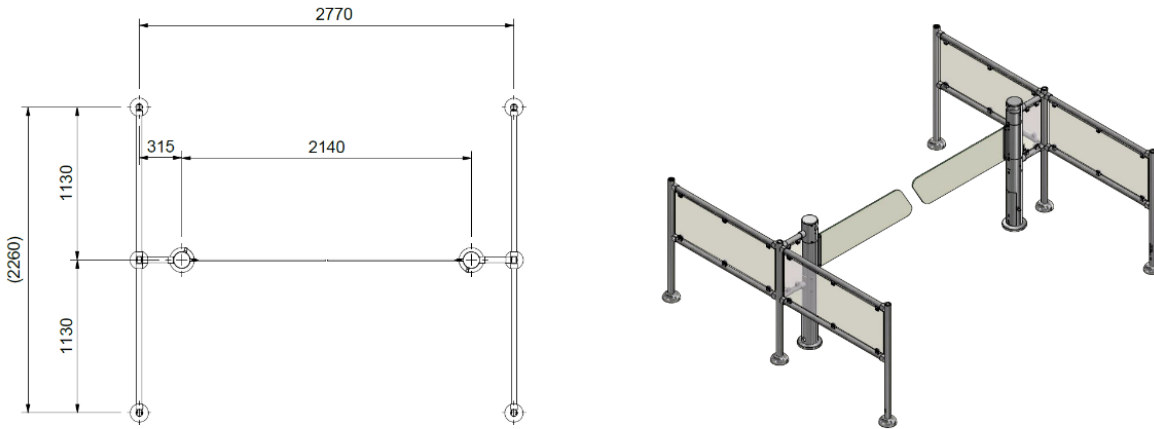
(01/11/2021)

Revision 2.1

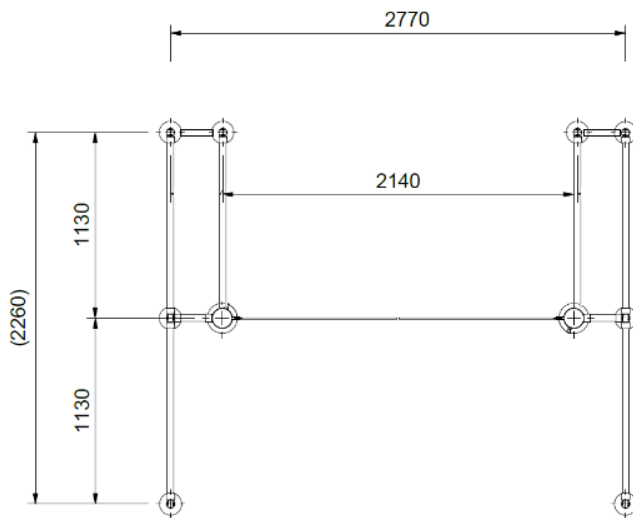
Woolworths Itab Alphagate
Kit 6 Manual

The aim of kit 6 is to upgrade an existing Phase 2 welcome gate layout. This manual shows existing and new dimensions and illustrates what components need to be moved in order to carry out this upgrade. When the upgrade is complete the gate arms will now be protected while the gate is in the open position while new bumper rails contained in kit 6 will allow for an area to be free of obstruction around the bollards to allow for Childsafe sensor operation to continue uninhibited.

Please isolate power supply to welcome gates before removing any gate components

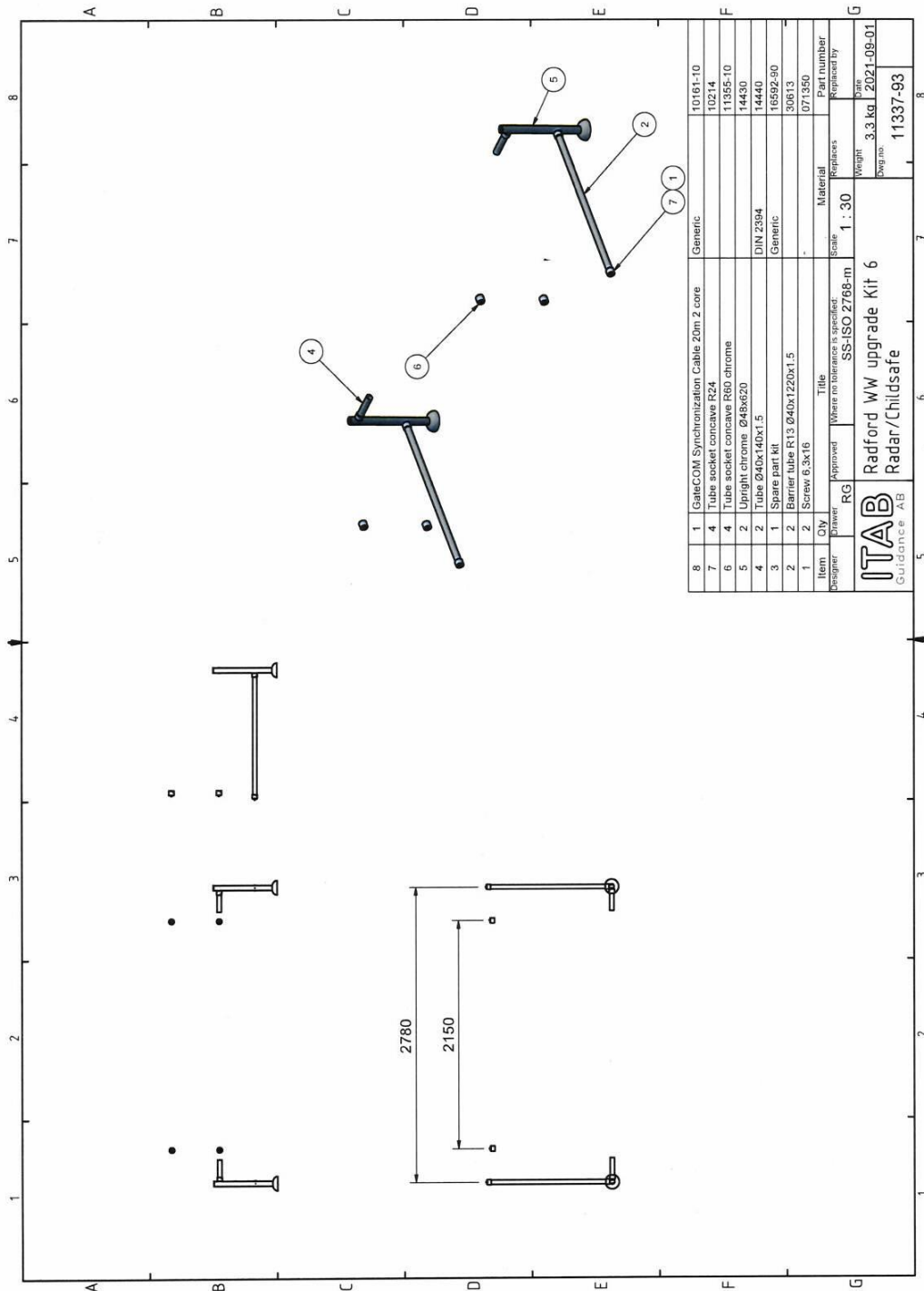


Existing Phase 2



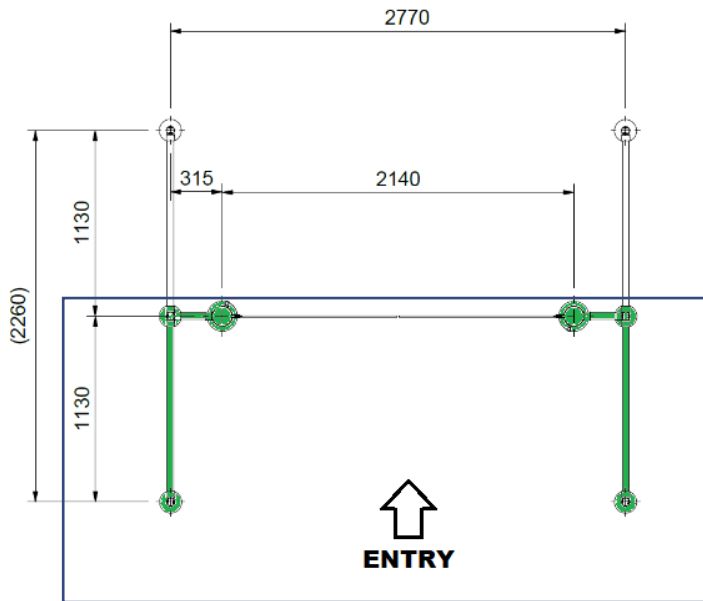
Finished Phase 2 U/G after applying kit 6 components

Kit 6 components

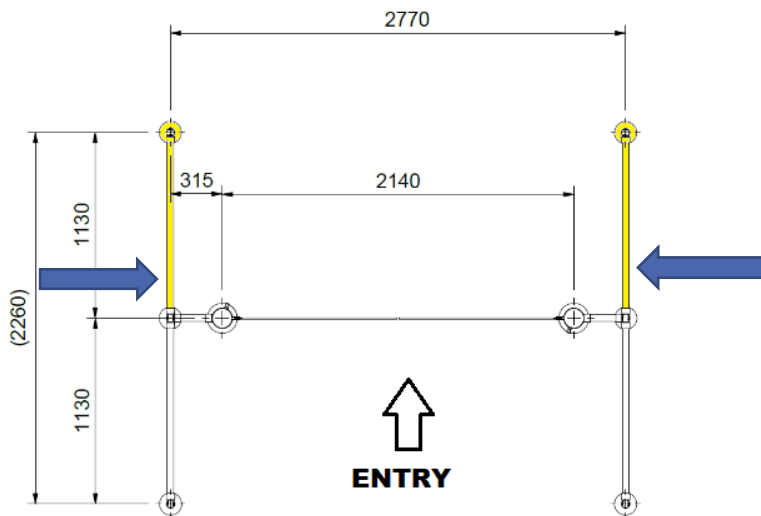


ALL MATERIAL MUST BE RoHS COMPLIANT
 This drawing is the property of ITAB Shop Products and shall be returned to us upon request. It may not be used to harm the interests of ITAB Shop Products.

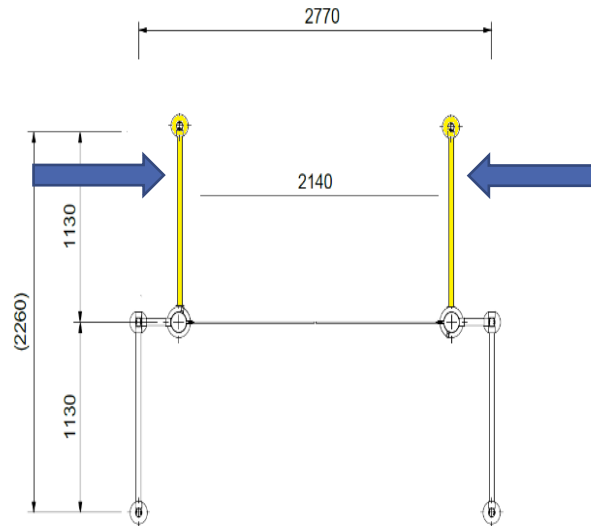
8	1	GateCOM Synchronization Cable 20m 2 core	Generic	10161-10
7	4	Tube socket concave R24		10274
6	4	Tube socket concave R60 chrome		11365-10
5	2	Upright chrome Ø48x620		14430
4	2	Tube Ø40x140x1.5	DIN 2394	14440
3	1	Spare part kit	Generic	16592-90
2	2	Barrier tube R13 Ø40x1220x1.5		30613
1	2	Screw 6.3x16		071350
Item Qty		Title	Material	Part number
Designer		Approved	Where no tolerance is specified:	Scale
RG		Planner	SS-ISO 2768-m	1 : 30
ITAB		Radford WW upgrade Kit 6		Replaces
Guidance AB		Radar/Childsafe		Weight
				3.3 kg
				Date
				L2021-09-01
				Part no.
				11337-93



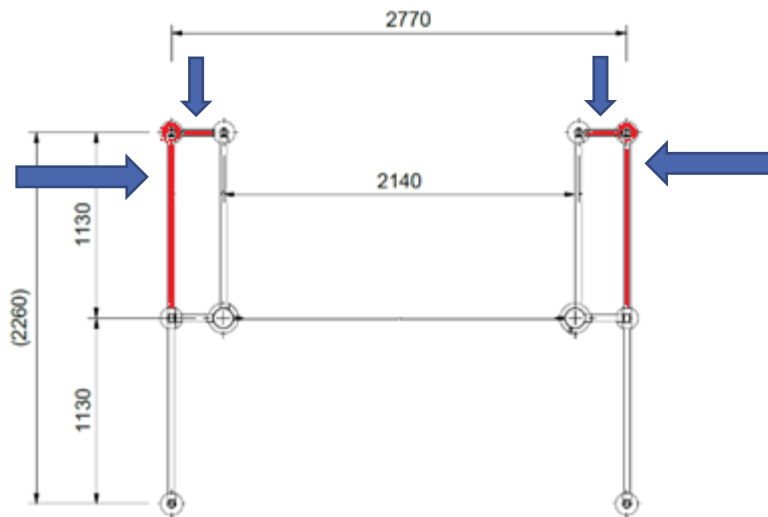
Parts highlighted in green (front, within box) will stay in position and will not need to be removed unless store entry is being moved. These include gate bollards, lead in rails, sensor/reflector end posts and front glass infill panels.



Lead out rails parts highlighted in yellow represent existing rails, end posts and glass infill panels. These components are to be carefully removed and used again. The glass infill panel and associated fixings will no longer be required. The following image shows placement of these parts as part of the upgrade.



New placement of lead out rails. These rails now protect the gate arm while it's in the fully open position.



Components highlighted in red represent components contained within kit6. Unlike all other rails and end posts contained within the welcome gate assembly these rails and end posts are 200mm in height.

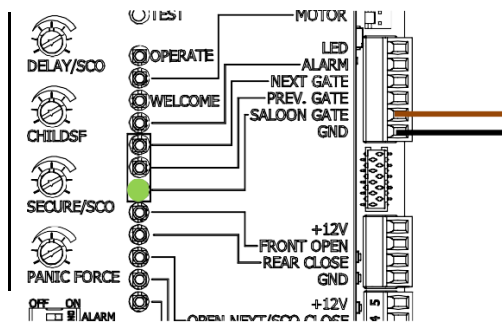
Cups contained within this kit will need to be secured to existing rails and relocated rails with self tapping screws provided.

Once these changes have been made to the gate layout. Please follow commissioning instructions below to ensure correct gate operation and settings are applied.

Please follow step to commission gates below

(Synchronisation cable connections)

- **Saloon-gate couple** = install underground cable (*run cat 5 cable underground between facing gate bollards instead of cable provided thus allowing extra pairs as redundancy*) and connect to “saloon gate” & “ground” terminals at both ends. The LED for SALOON GATE should be steady green on both gates when correct connection.



Note when gates are triggered by their inbuilt (top mounted) radar sensors or lead in rail (inbuilt to upright post) PEC sensors they will operate as one couple – whichever sensor is triggered first will trigger the gates to drive to the open at the same time as one gate couple.

(Installation of equipment in situ)

Bolt gate bollards firmly into the ground – carefully fit glass arms including post, rails and glass infill panels as required lead in posts incorporate the PEC sensor and reflectors.

Please ensure that you only use the post (sensor/end/tee posts etc) being installed for your markings as not all foot positioning is the same.

Important:

- Make sure gate bollard and upright post cups are centred sufficiently tightened with fixing bolts as loose bolts can cause false triggering of EAS panels – note if cups are not “over tightened” they can be gently tapped *left* or *right* as required to assist with cross rail alignment.
- Adequate fixings penetrating at least 65mm into the floor with flat washers and spring washers must be used.
(Caution: if floor concrete is inadequate for standard fixings, use Chemset-bolt solution or similar.)
- Sensor post in lead in rails require sensor cable to be carefully fed through cross rails and into the gate bollard.

1 (Fitting glass arms to Woolworths Itab Alphagates)

It's very important to make sure that ALL components are fitted to the gate arm bracket correctly before placing the glass (or even offering up the glass arm) into the metal bracketry – otherwise glass breakage is likely to occur, either on the spot or later during normal operations.



Ensure the rubber gaskets (there are two, one each side of the glass panel) are fitted correctly – no glass is to come into direct contact with metal components at any time – see below image of black rubber gaskets.



Ensure the **BOTH** plastic spacers are fully intact and firmly in place on metal mounting shaft – no glass to come into direct contact with metal components at any time – see below image of white plastic spacers.



Ensure no cables associated with LED lighting strip are damaged before fitting (and during fitting) of glass arm panels.



Glass arms should be placed with equal spacing (there should always be a minimum of 100mm for safety reasons) between glass panels which are fitted in sloping offset design. (All fixing screws should be fitted tightly into outside-metal fixing panel.)

BEFORE POWER IS CONNECTED TO GATE YOU MUST FULLY UNDERSTAND THE FOLLOWING IMPORTANT INFORMATION.

2 (Adjusting the gate arms for fine-tune alignment)



3 The gate will be severely damaged if you don't strictly understand and follow the arm adjustment process.



Make sure **NO sensors (disconnect ALL RADAR, PEC AND CHILD SAFE SENSORS COMPLETELY)** are connected during this adjustment process.

If the gate arm needs to be adjusted, loosen the screw that holds the coulisse (electronic encoder circuit/position sensor) with 3mm Allen key and move the coulisse a little bit to the left or to the right depending on how the gate arm needs to be adjusted. **Important: do not overtighten Allen key as it only needs to be gently nipped up. Move carefully as small movements are enough to adjust gate arm several centimetres. When the gate arm is satisfactory adjusted, fasten the screw again.**

To be able to do this adjustment successfully, the power needs to be switched **on** to the gate however you must always make sure **no sensors (DISCONNECT ALL RADAR, PEC AND CHILD SAFE SENSORS COMPLETELY)** are in circuit while the screwdriver is in Coulisse (electronic encoder circuit/position sensor) otherwise if the sensor triggers the motor to activate the screwdriver will move with the shaft and jam against the stops – this will **damage the Coulisse** (electronic encoder circuit/position sensor) beyond repair **and void all warranty!**

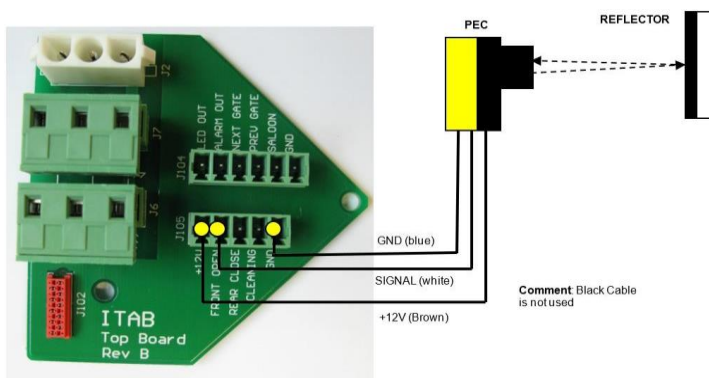
Move screwdriver to the right → gate arm moves to the left
 Move screwdriver to the left ← gate arm moves to the right



1. Connect photocell eye sensor (PEC)

Note, PEC's are to be wired back to the Top Board LOCATED IN THE TOP OF THE GATE BOLLARD as shown below:

- Brown cable to +12V
- White cable to FRONT OPEN
- Blue cable to GND (ground)
- Black cable is not used (you can cut it or isolate it with a tape)



4 (Setting up the post mounted photocell eye)

In a photocell eye system, the gate opens when an object breaks the beam of light, and closes automatically after a set period, once the beam is cleared.

When setting up the PEC the open time delay should be set to "min" on the time delay potentiometer (Top pot) on the control board located at the base of the bollard. Once fully adjusted, time delay should be-

reset to **2** seconds delay (once gate reaches the stopped position, count **2** seconds and the gate should start to **drive** home)

The bracket of the PEC sensor is spring loaded (see red arrow).

- The upper screw 1 is for adjustment vertically.
- The lower screw 2 is for adjustments horizontally

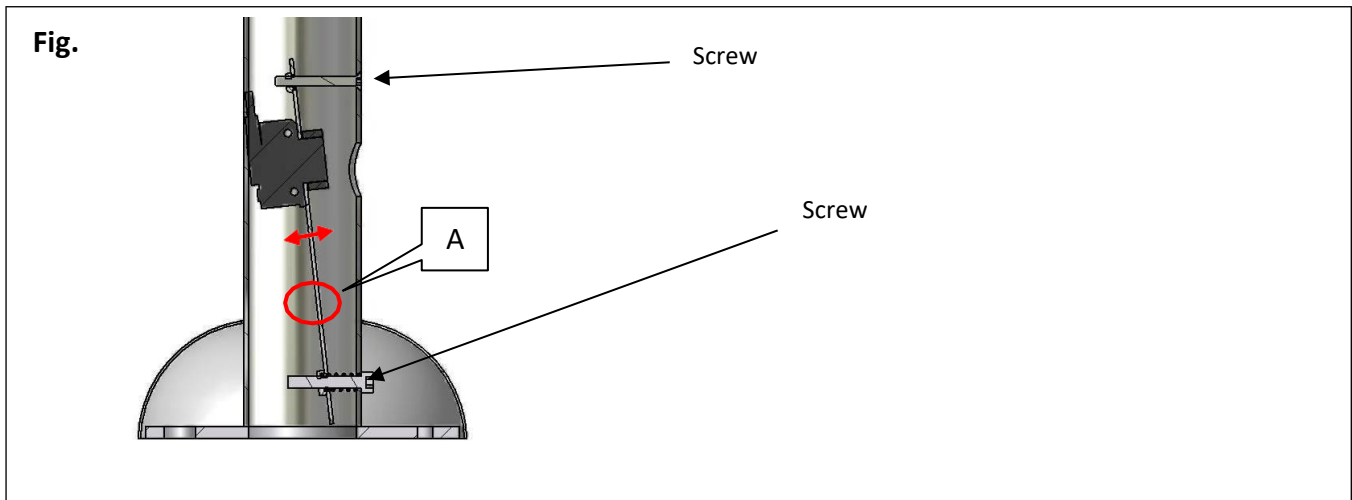
Adjustments:

Adjust one PEC at a time only (disconnect the opposite temporarily until finished) ensure both PEC units are operating independently.

Note: if one PEC is not aligned, the gates may stay open all the time!

Adjust lowers screw 2 first to centralise the horizontal position (red bean can be picked up on a piece of paper) red beam should be approx. in the centre position of the opposite reflector – then gently lock the screw (clockwise) tight.

Adjust top screw 1 to adjust the PEC sensor horizontally until the yellow light on top of sensor is steady (no flashing).



Adjusting the PEC

- Connect the PEC to power it up. Now the GREEN led light should be on.
- Trim the vertical and horizontal angle of the PEC until the yellow LED is showing a steady light – a flickering light is not optimal.
- **IMPORTANT: Each PEC needs to be aligned and tested individually (disconnect other PEC during this process) to ensure no false triggering**



1. Child safe sensor protection sensor

Child safe sensors are an Ultrasonic Sensor that is used as a safety device to protect children from being injured by the moving gate arm. The Ultrasonic sensor is a presence sensor designed to detect the presence of a person in the area behind the gate where the gate arm operates.

Therefore, it is very important that there are no obstacles within the detection area, for example it is important that the uprights posts are installed at the correct length away from the gate bollards, so the **sensor does not detect** them. The store manager needs to be advised not to place baskets, shopping carts or any other objects close to the child safe sensor detection area.

(Setting the range of the child safe sensor)

The covered area should be at least the same length as the gate arm. But it is recommended to set as big detection area as possible, due to reaction time if a person walks into the area. The bigger detection area, the safer operation.

To adjust the range for the detection area, turn the potentiometer clockwise to increase the detection area according to the chart below.

Wiring:

Red = + 12 V

Black = GND

Blue = Child safe (signal)

(Setting # 5 to be selected for Woolworths operations to match the 1000mm arms)



Setting	Range (cm)
0	75
1	80
2	85
3	90
4	95
5	100
6	105
7	110
8	115
9	120
A	125
B	130
C	135
D	140
E	145
F	150

1. General commissioning:

Dip switches:

Set up dip switches in each gate bollard, as per its installed position.

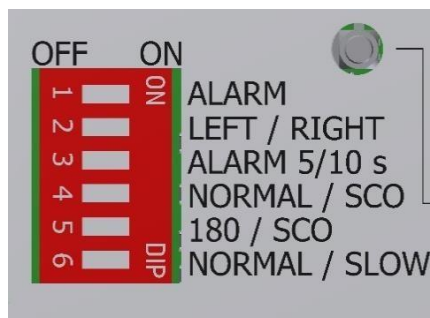
(upon entry to store, the gate on your left is considered a left-hand gate & the gate on your right is considered right-hand gate)

Dip switch block settings:

1 = right position

2 = left **or** right position (as required) 3 = left position

4 = left position 5 = left position 6 = right position



2. Set up Master & Slave function in gate couple:

- ❓ **Left-hand gate** = set DELAY/SCO and SECURE/SCO potentiometers to maximum (right-hand) position.

(Set CHILDF fully to minimum (left hand) position)

- ❓ **Right hand gate** (Master) = set DELAY/SCO potentiometer to full left and then approx. 25% of its full range to the right position as a starter point before final timing adjustments are made later. (**two seconds** timed between stopped and starting of gate arm motor).

(Set CHILDF and SECURE/SCO fully to minimum (left hand) position)

- ❓ Once the gate synchronization cable is connected between both gates, the gate couple will then be controlled as one-unit and **all** adjustments made to the right-hand controller will control both right and left-hand gates alike.

IMPORTANT NOTES: In a saloon-gate configuration, the **right**-hand is always set up as the master-gate.

(Final settings for PCB potentiometers)

(Left hand gate)



DELAY/SCO

← Set fully to right position (to set up master & slave function)



CHILDSF

← Set fully to left position



SECURE/SCO

← Set fully to right position (to set up master & slave function)



PANIC FORCE

← Set to mid position



DELAY/SCO

← Adjust to the right as required to achieve 2 seconds delay - (temporarily disconnect child-safe sensors to while set up a 2 second delay between fully stopped/fully open and motor starting to drive back to the closed position)



CHILDSF

← Set fully to left position



SECURE/SCO

← Set fully to left position (to set up master & slave function)



PANIC FORCE

← Set to mid position

(PCB controller set up)

- Connect Synchronization cable to each front and rear saloon gate-couple.
- Remove the lid on top of **each** gate bollard and **disconnect** the radar electrical connectors on **both** gate bollards to **(temporarily)** render the radars out of circuit.
- Connect Synchronization cable to Saloon gate-couple (Saloon & Ground).
- Power up gates and press the test button (see figure 8.5 in Alphagate MKII manual) on the master gate (right hand gate) and both gates should now operate as a saloon-gate couple (**both gates should open and close at the same time**).
- The gate couple (both left and right-hand gates) should open **into** the store, stopping in the 90-degree (fully open) position and remain open for a pre-set time before driving back to the fully closed position – time delay can be tested by triggering radars during Radar set up step (remembering left is least).
- The time-lapse (time gates remain fully open) for both gate bollards can now be adjusted by the master (right-hand) gate DELAY/SCO potentiometer whereby both gates should operate and close at the same time.
- The recommended time delay (time-lapse) between the gates **after** they have **reached** the fully opened position and the time the gates **start** to drive back to the closed position, should be approx. four (4) seconds.
- Adjust panic force potentiometer (break out function): wind to full left (off) position and then wind to the full right before setting to the approx. mid position.

9. Sensor adjustments:

Important: sensor adjustments must be done in the following sequence:

1. PEC (lead in post sensors) adjustments (see item 4) disconnect Radar sensor connections while adjusting PEC sensors
2. Radar adjustments (see item 10) disconnect PEC connection while adjusting radar sensors
3. Child safety sensor adjustments (see item 5)

9. Radar set up:

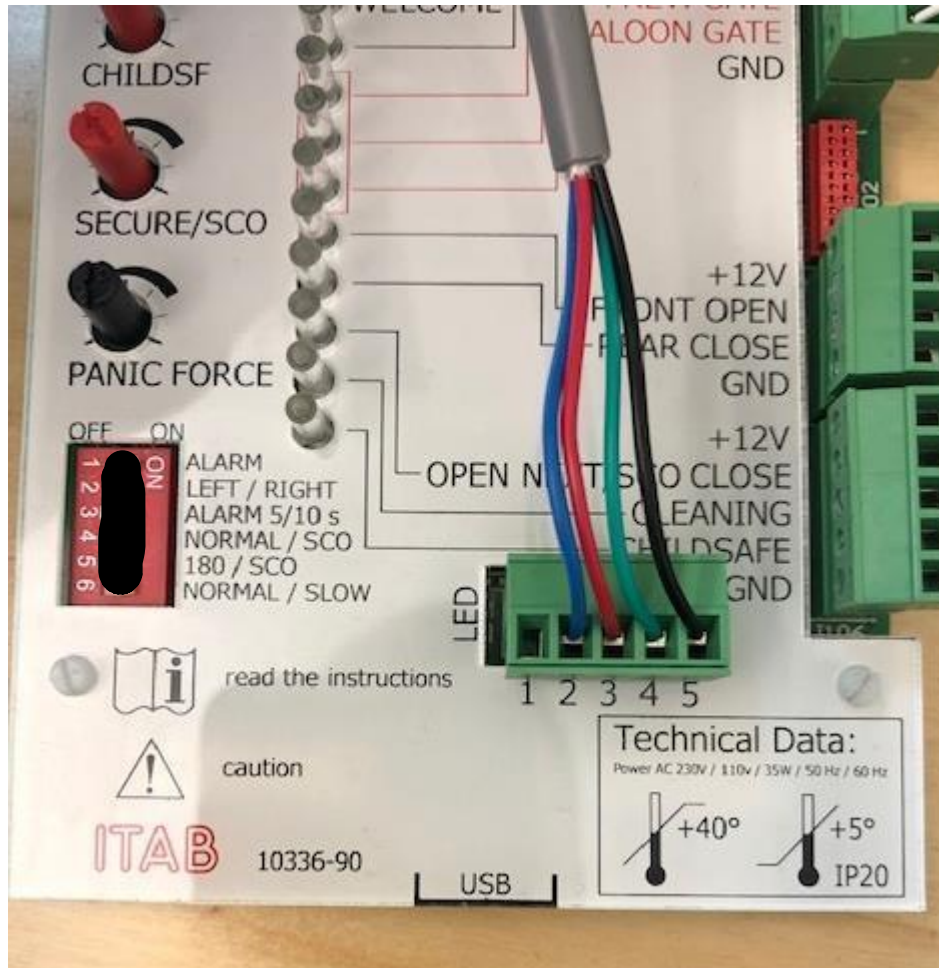
Both gates in the saloon-gate couple are fitted with radar controllers (either gate bollard radar will trigger the gate couple) to trigger the gate-couple as one unit.

- Connect the electrical connectors back onto the radar units and adjust the mechanical radar bracket on **each** gate into position - the radars should be pointing in the general forward position and slightly into the middle of the gate arms centre. Radar should also be pointing **slightly** down towards the floor to pick up shopping trolley wheels as a trolley approach and to avoid ghosts signals being sent to the radar.
- Remove the inner white plastic radar cut-out cover (slides out by hand) and adjust the radar approach sensor triggering distance potentiometer on the top of radar sensor to the full left-hand (off) position, then adjust in small-increments to the right until the gate is picking up a forward **moving** person or object at between 1.2 to 1.5 meters – measured from the gate arm
- Disconnect **each** radar electrical connector (one at a time) and test the remaining in-circuit radar sensor distance picks up a trigger signal from approx. 1.2 to 1.5 meters from the gate bollard and opens both gates fully – each individual gate bollards radar sensor should pick up people approaching across the full width of the arm and a little overlap to the other arm position.
- Ensure electrical connectors are re-connected firmly back into both radar units.
- Ensure that all radar cabling are tidy and secured with a cable tie to prevent false triggering – **loose** radar brackets (or gate bollards) will cause **false** triggering.

(Rotate to adjust the radar triggering pick-up distance)



9. LED cable set up for glass arm lighting:



When connected as shown above the arms will operate to achieve the following LED colours for

Woolworths operations:(PCB wiring colours: 1 = not used, 2 = blue, 3 = red, 4 = green & 5 = black)

- Gate in normal closed operation = green lighting required
- Gate while in opening operations = green lighting required
- Gate pushed into break out (wrong way) operations = red lighting required

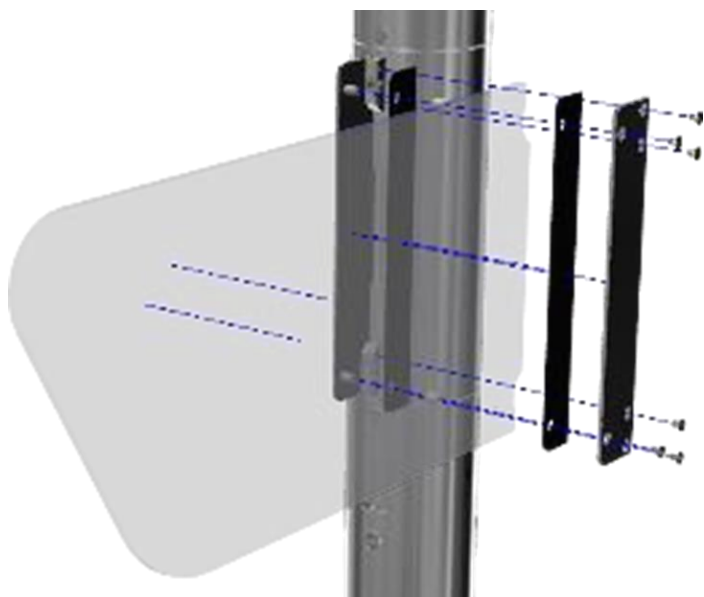
Gently tighten bracket screws until the plastic spacer flattens up tight to the glass panel.

9. Installing glass panels

Care should be taken when installing glass panels:

- Do not tighten post cups grub screws until glass panels are fully installed into glass fixing brackets.

When fully satisfied that all glass panels are installed and aligned correctly only then should the gate and post cups holding the cross rails grub-screws, be fully tightened (note all front glass fixing plates (Itab logo identifiers) must be facing the same way



Wiring link for audible alarm to trigger if gate arm arc has been penetrated:

Wire link to be terminated to OPEN NEXT/ SCO CLOSE & CHILDSAFE terminals.

Adding a cable link between OPEN NEXT/SCO CLOSE and CHILDSAFE will have the following effect on gate operation when the child safe sensor has been activated with the gates in the closed position.

- Child safe sensor will stop arm movement as normal
- Audible alarm now activates upon Child safe sensor activation
- Gate arms now flash red with alarm activation

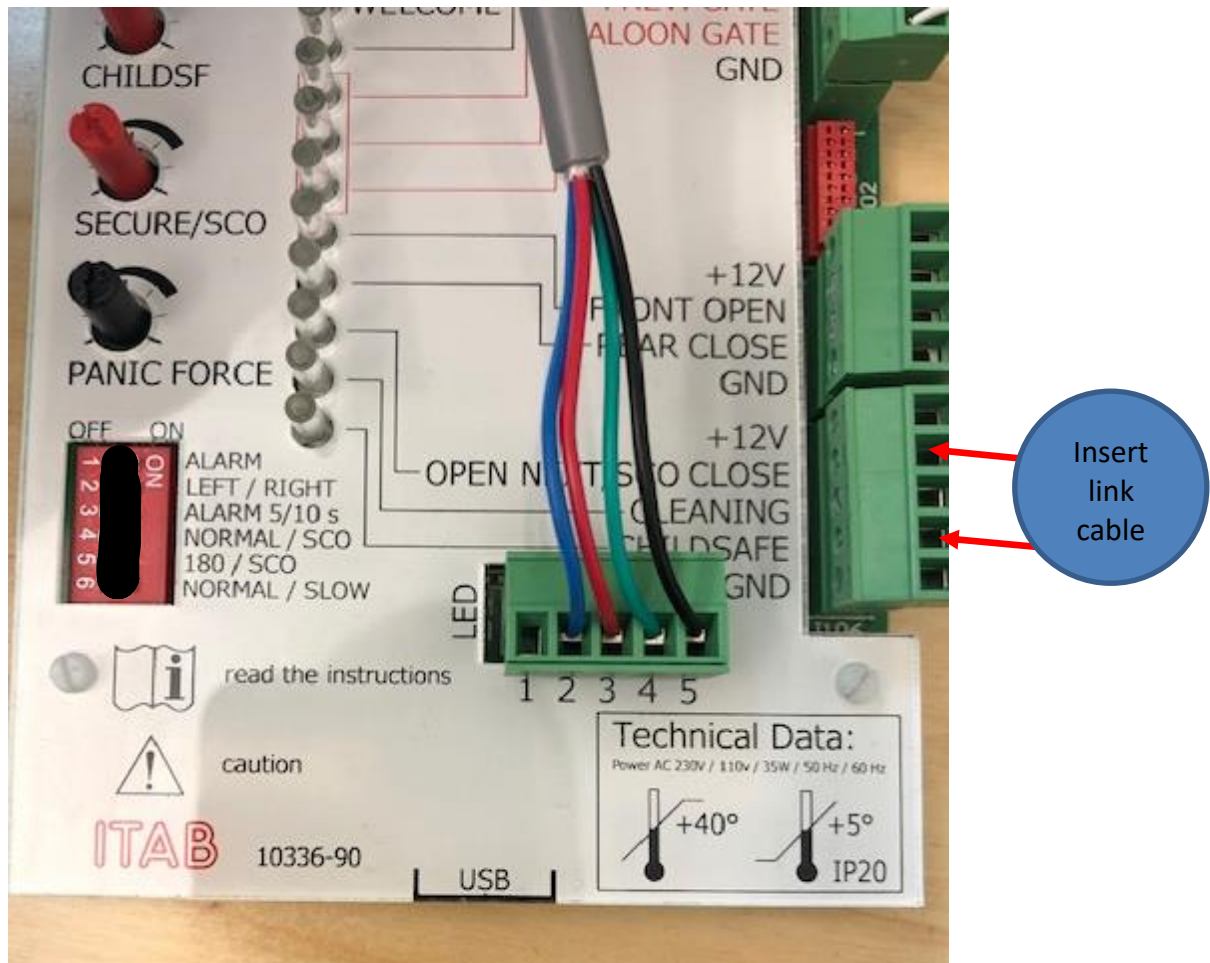
Gates will flash red when the Child safe sensor has been activated while gates are in the open position as patrons enter the store. (please note audible alarm will not activate if gates have received an open trigger from radar sensors)

This function allows for the following: Patrons will be alerted not to exit via the welcome gates.

Staff will be alerted to objects being placed within Child safe zone

Delivers a clear indication of Child safe sensor activation

Please see photo indicating where wire link must be placed to achieve this function within the Child safe block connector located on the main PCB



I can confirm that the gate has been successfully installed and is in full working order – please initial each box if you agree.

<p>I have received the keys for isolating the gates when required.</p>	
<p>I have tested the distance of sensor triggering (pick up patron advancing) of 2 metres measured from the gate arm</p> <p>I have tested the Photocell (secondary triggering safety) sensors operate independently to the primary radar sensors.</p> <p>I have tested the Child-safe sensors operate – stop the gate from moving if someone in behind the gate. Note: there are a total of SIX sensors to be commissioned:</p> <ul style="list-style-type: none"> • 2 x primary radar approach sensors (operate as a couple but tested individually) • 2 x secondary PEC approach sensors (operate as a couple but tested individually) • 2 x child safety rear facing sensors (operating on individual gates) • Gate alarms once child safety sensor is triggered with gates in the closed position 	
<p>I am satisfied with the timing of how long the gate stays open before automatically driving back to the closed position – 4 seconds from the moment the gates are in the fully open position as requested by WW</p>	
<p>I have tested the alarm sounder cancelation (5 seconds) before returning to normal operation.</p>	

I am satisfied with the gate arm selection speed is set to slow mode – as the glass arms are 100mm the max speed set can only be set to slow mode.	
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I am satisfied the rear child safety sensor is operating to a satisfactory standard.	
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I am satisfied that the entire installation looks straight and aligned (bollards and upright posts looks reasonably straight) and the gates have been cleaned down after completion of installation.	
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Store name and address: -----

Date:

Name:

Signature: