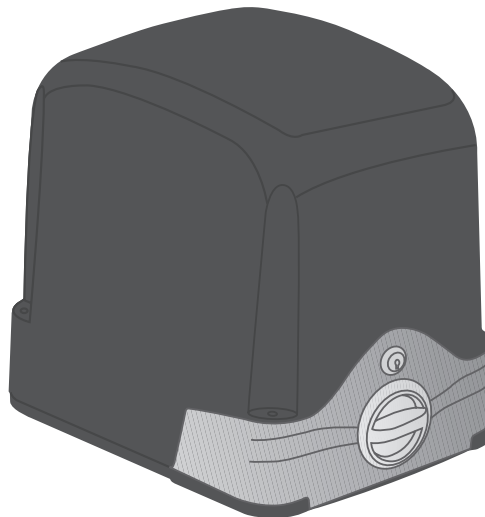


**CHAMBERLAIN™**  
**merlin™**  
professional



**SLIDING GATE MOTOR  
MANUAL FOR MGS300  
MGS500 AND MGS1000  
and  
CB22 CONTROL BOARD**

**Chamberlain Australia Pty Ltd  
PO Box 1446  
Lane Cove NSW 1595  
Phone toll free: 1800 638 234**

**Chamberlain New Zealand Ltd  
PO Box 100-221  
North Shore 0745  
Phone toll free: 0800 MERLIN**

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

  
**N2966**

IMPORTANT FITTING AND OPERATING INSTRUCTIONS

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



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

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



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



*Be careful when using tools and small parts to install or repair gates.*



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



*Do not wear rings, watches or loose fitting clothing.*



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



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



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



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



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



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



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



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



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



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



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



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

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**Blank:** Page 20.

*This sliding gate motor can be activated by hardware trigger inputs (keyswitches, keypads or induction loops) as well as via the RF remote controls provided. The Control board provides a variety of safety and operating functions. Please familiarise yourself with these function to ensure the safest and most functional automation of your gate.*

*A set of manual release keys is provided with your motor incase of power failure.  
**PLEASE LABEL THESE KEYS AND STORE IN A SAFE PLACE.***

**BEFORE YOU BEGIN**

- **Ensure the gate is in working order and suitable for automation.**

Check that any wheels are in good working order, the track is free from obstruction and that the gate moves smoothly throughout it's travel. If not, have the gate serviced by a gate installer.

- **Ensure the motor you are installing is suitable for the gate weight and duty cycle.**

**Operating frequency / Duty cycle:** MGS Sliding gate drives have a maximum duty cycle of approx. 30% (i.e. 30% per hour) and not intended for commercial applications.

**CAUTION:** This device is not intended to run in high duty cycle applications, frequent activations may engage the units Thermal overload circuit. When this occurs the unit will cease operations until such time as the motor cools.

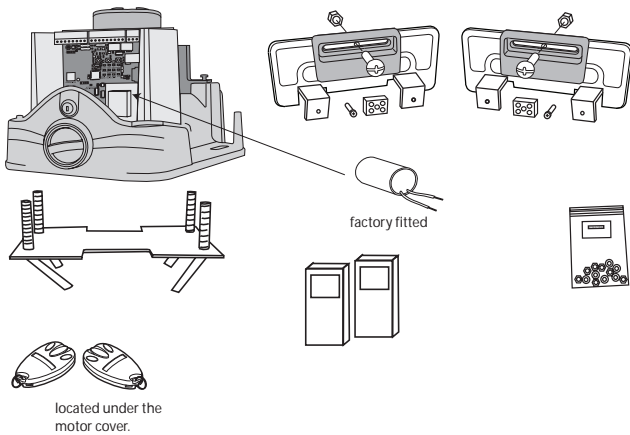
- **Gate size:** When calculating the gates weight allow for the gate's length, a light weight long gate (long = + 5m) needs far greater force to set it in motion than a short gate or heavy gate.
- **Gate weight:** Ensure that allowance is made not only for the gate's weight but its length and mobility. **Example: A light gate that slides poorly is likely to need a stronger drive than a heavy, smooth-sliding gate.**

**NOTE: Gate weight is only an approximate indicator, the actual relevance of which can vary greatly.**

- **Climatic conditions.** Gate operating in high wind areas may be affected by side pressure on the gate. Timber or metal lined gates may require additional force to operate in high winds. It is essential that this is allowed for before installation.
- **Temperature:** Extreme low outdoor temperatures can make it difficult to get the operate the gate due to changes in the ground conditions. A stronger drive again might be necessary.  
High outdoor temperatures can cause the thermal protection mechanism to be activated sooner.
- **Safety:** Your CB22 control board has outputs for flashing lamp as well as safety inputs for, contact strips, loop detectors and photo electric safety beams (1 set of PE beams is provided). Please ensure that you comply with the standards and regulations relevant to your particular installation.
- **Control unit:** The control unit was developed specifically with safety aspects in mind. *It is located in the motor housing and is factory defaulted for a Right hand gate configuration (see page 6)*

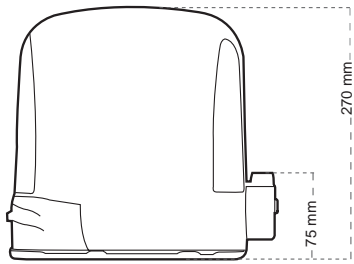
**Carton contents**

**MGS300 / MGS500 and MGS10000**



- PE safety beams (1 set)
- Base plate
- Accessories bag
- Merlin CM945 Mini remotes x 2
- Motor with installed CB22 PCB
- Housed magnets and mounting accessories

# Installation



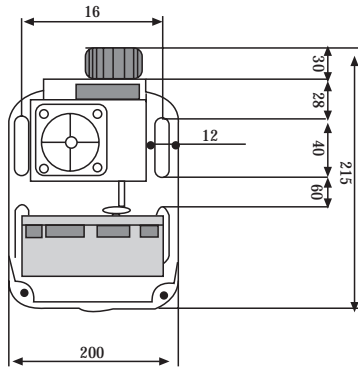
## Positioning the motor and plinth.

Before preparing the plinth for use ensure that you have the correct orientation and location for the motor.

No part of the motor or pinion should extend past the gate.

The motor plinth and all electronics should be located within the property's boundaries.

The motor can be adjusted up and down and back and forth to some degree however planning the location of your plinth and conduit exit will save you time and effort.



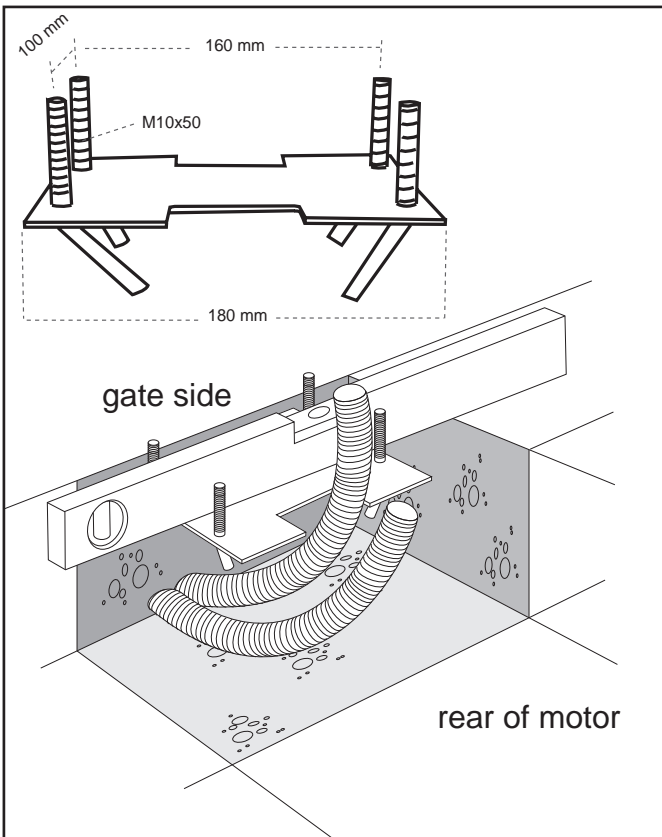
## Installing the base plate.

Where possible the base plate provided should be installed into a concrete plinth. The plate has been manufactured to provide a stable anchorage for the motor whilst also provided for easy adjustment of pinion to the rack.

The Base plate should be installed into a concrete plinth of approximate 50cm x 50cm x 50cm for maximum strength.

Ensure that a conduit is installed before adding the concrete and that the exit point for the conduit is on the correct side of the base plate in relation to the motor. The plate has two recesses, ensure that the conduit exits to the rear of the motor, this will facilitate the passage of wire through the grommet located at the base of the control box housing.

**NOTE: For best results make sure the plinth is level and has adequate drainage. Pooled water around the base of the motor will damage the gate motor.**



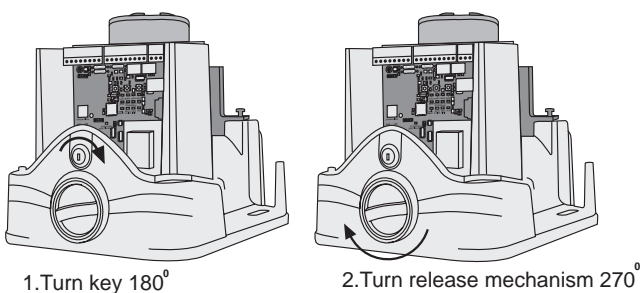
## Manual release

In the case of a power failure or to move the gate freely during installation the drive pinion must be disengaged.

To release the drive pinion.

- Turn the key 180 degrees to unlock the release mechanism
- Turn the release mechanism 270 degrees to the right to release the pinion.

**NOTE: The gate should move freely once the drive pinion has been released.**



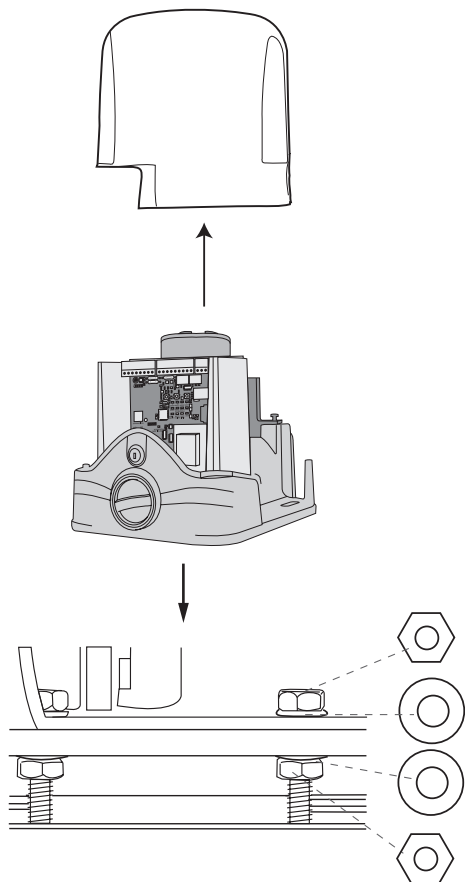
### Mounting the Motor

Hand tighten one of the nuts provided onto each of the four posts (tighten to about 15mm from the base of the plate) then place a washer (provided) onto each post.

Remove the cover from the motor and fit the motor onto the threaded posts. Position the motor and drive pinion approximately in place (some adjustments may be required).

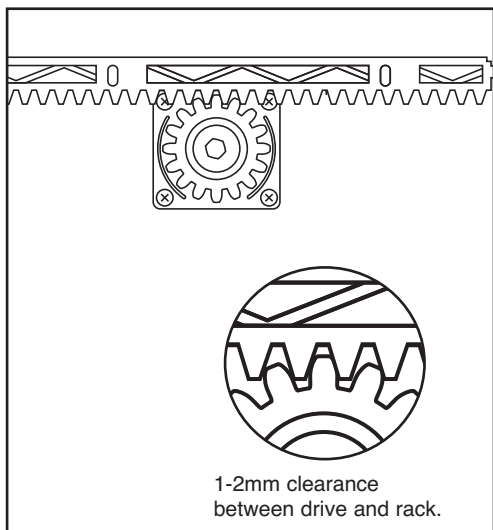
Place a washer onto each post then hand tighten the nuts provided onto the post, some final adjustments will be required so do not tighten the nuts yet.

NOTE: Remove any foam packing from the motor assembly.



### Mounting the Rack

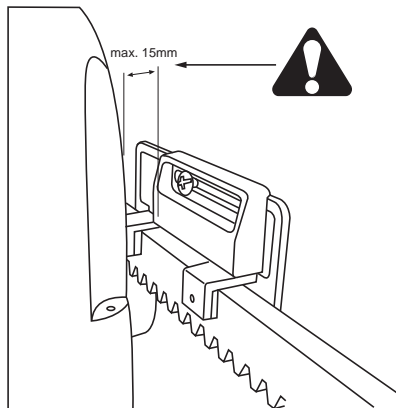
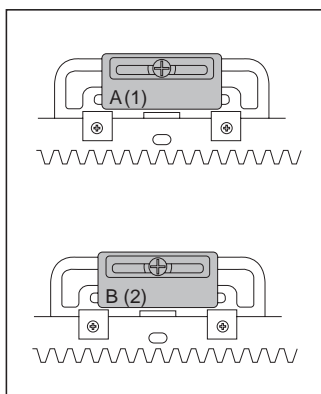
To ensure the best gate travel the rack should follow the gates movement. The rack should be fastened to the gate in section follow the contours of the gate's travel. Release the gate drive as detailed above first. Lay one section of rack across the drive pinion parallel to the ground. Allowing for 1-2mm of clearance between and the drive pinion and the rack to avoid pressure and possible damage to the gears. Allowance should be made for later adjusted to the rack, mark the first hole at the end of your rack. Fasten the rack in place, role the gate forward and fasten the remaining sections of rack using the same method.



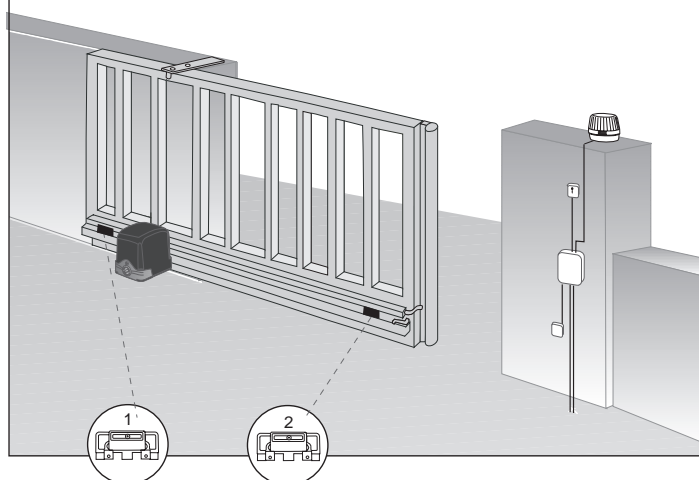
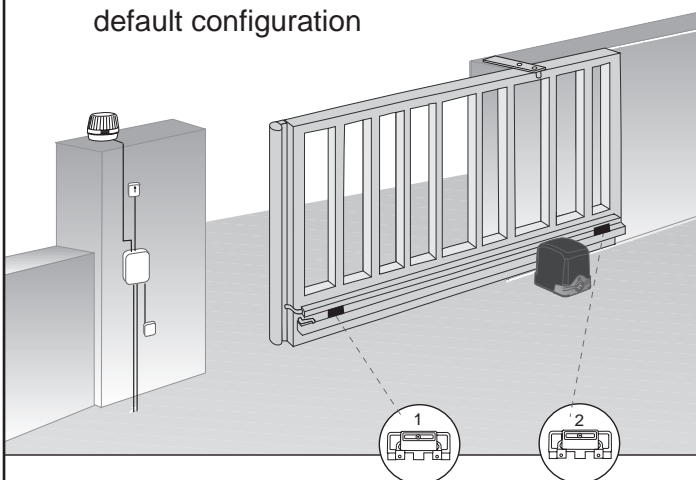
### Fitting the Magnets

Your MGS gate kit contains two magnets, marked one and two. These indicate to the gate motor the gate position it is essential that they are fitted correctly.

Magnets must be installed between 10-15mm from the limit switch (see page 6).



default configuration

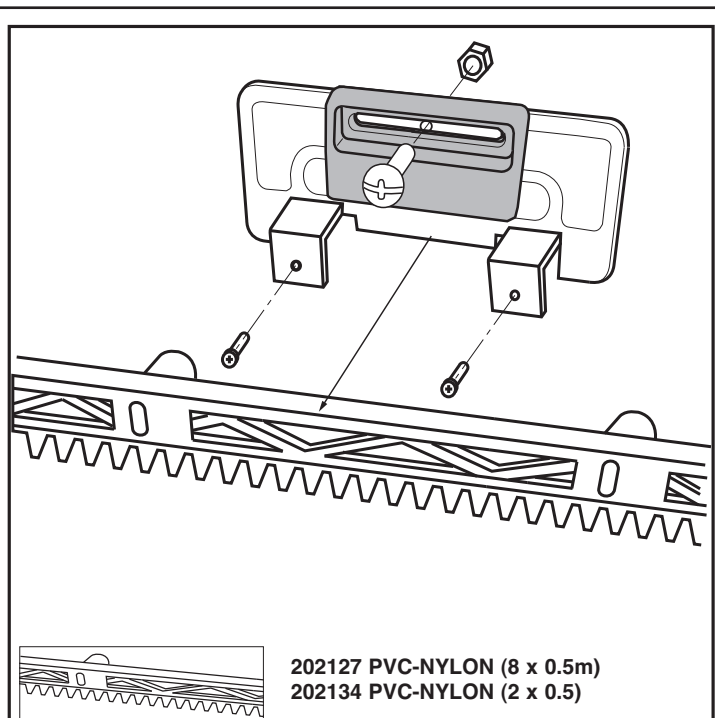
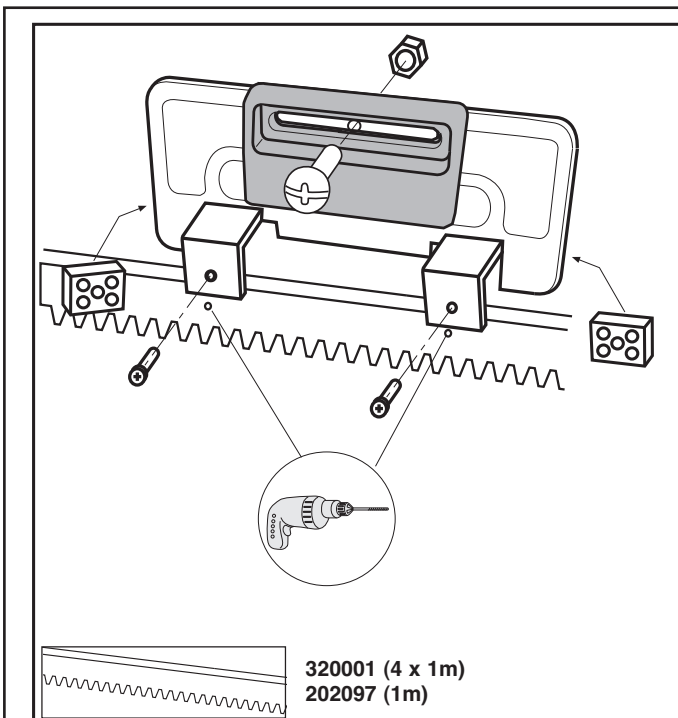


### Installing the Limit Magnets

**Caution:** The magnet limit switches are polarity sensitive and must be installed in the positions as marked above, failure to do so will cause your motor to malfunction.

**NOTE:** If your gate opens to the LEFT Magnet 2 should be at the open limit, for a RIGHT hand opening gate Magnet 1 must be position as the open limit as illustrated above.

**Caution:** You must have rack installed along the entire length of its travel including the start and stop limits.



### Installing the magnet bracket Steel Rack.

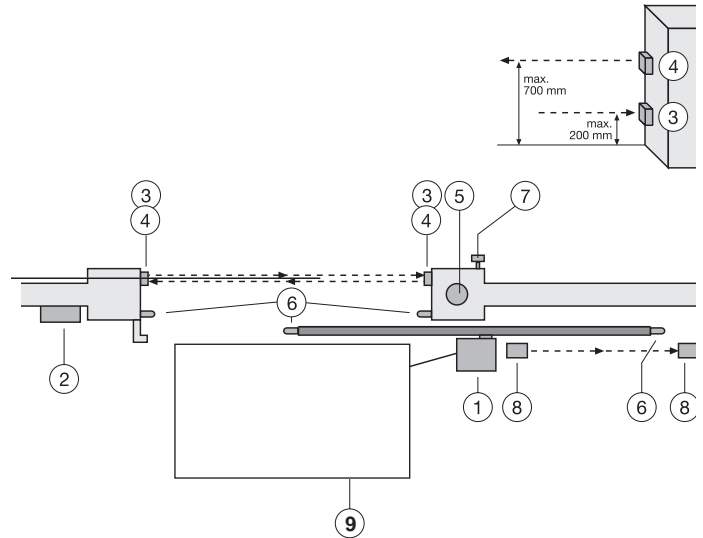
Identify your start and stop limit. Using the magnet bracket mark two holes as shown above. Drill two holes into the rack then install the spacers provided into the back tabs using the raised pins to position. Once the spacers are in place, fit the bracket over the rack and tighten the screws. Install the start and stop limit magnets as outlined above using the bolt and nylax nut provided.

### Installing the magnet and bracket for nylon rack.

Identify your start and stop limit. Fit the bracket over the rack and tighten the screws. Install the start and stop magnets as outlined above using the bolt and nylax nut provided.

### TYPICAL CONFIGURATION OF A UNIT

1. Motor and control board, located on height-adjustable mounting plate.
2. Control board (if mounted externally).
3. Photocell 150-200 mm (optional). First photocell. Protects people.
4. Photocell 700 mm (optional). Second photocell. Protects vehicles and higher objects.
5. Flashing light (optional) indicates gate is moving.
6. Contact strip (optional) Safeguards against possible damage caused by the gate impacting on persons or property, by stopping the gate immediately on contact.
7. Key-operated switch (optional) Allows the gate to be opened by key or by entering a number on a wired or wireless keypad.
8. photocell (optional) Safeguards against possible injury to person whilst the gate is moving, not required if the gate recess is enclosed.
9. Induction loop for safety or exit (optional) protects against damage to vehicles or allows easy egress.

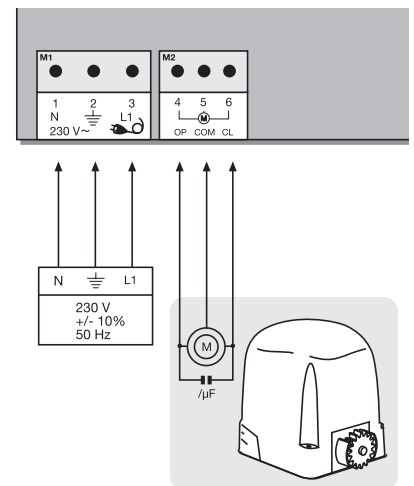


### Powering the motor



**Power supply to the motor MUST BE in accordance with Local electrical Standards, and should only performed by a licensed electrician or similarly qualified person.**

The capacitors should be pre-wired by the factory. Connections for the capacitor should be as follows:  
 Terminal 4 cable black  
 Terminal 5 cable blue  
 Terminal 6 cable brown

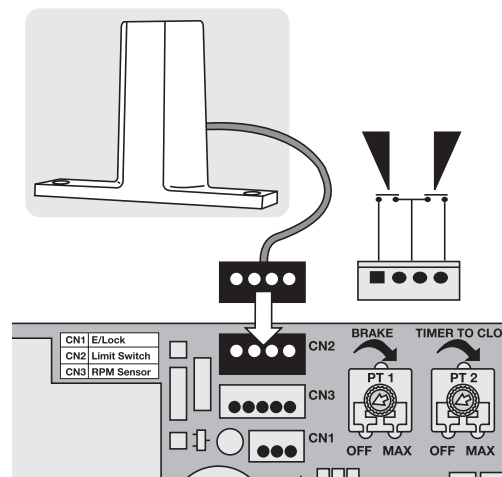


### LIMIT SWITCH CONNECTION

Your Merlin Professional MGS gate motor is supplied with factory fitted limit switching. If not connected, plug in as illustrated.

**Note:** The correct operation of the control LED should be re-checked before initial operation.

**Note:** In order to have the correct direction for OPEN, check the setting of DIP7.



## SAFETY DEVICES

### Standard Photoelectric beams (100263)

#### (Supplied)

Your Merlin Professional gate motor is supplied with one set of 100263 PE safety beams. To avoid possible damage or personal injury the PE beams **MUST** be installed, if no other safety devices are fitted.

The 100263 requires 4 wires from the RX or Receiver to the control board and 2 wires from the TX or transmit side.

### Optional 2 Wire Beams (771E)

**Required for Autoclose function.**

### LED STATUS at the Chamberlain failsafe photocell (771ANZ)

LED constant = OK

LED flashes = photocell disables control board

LED off = no current, incorrect connection or polarity

#### On Board LED STATUS

LED off = OK

LED on constantly = control board disables

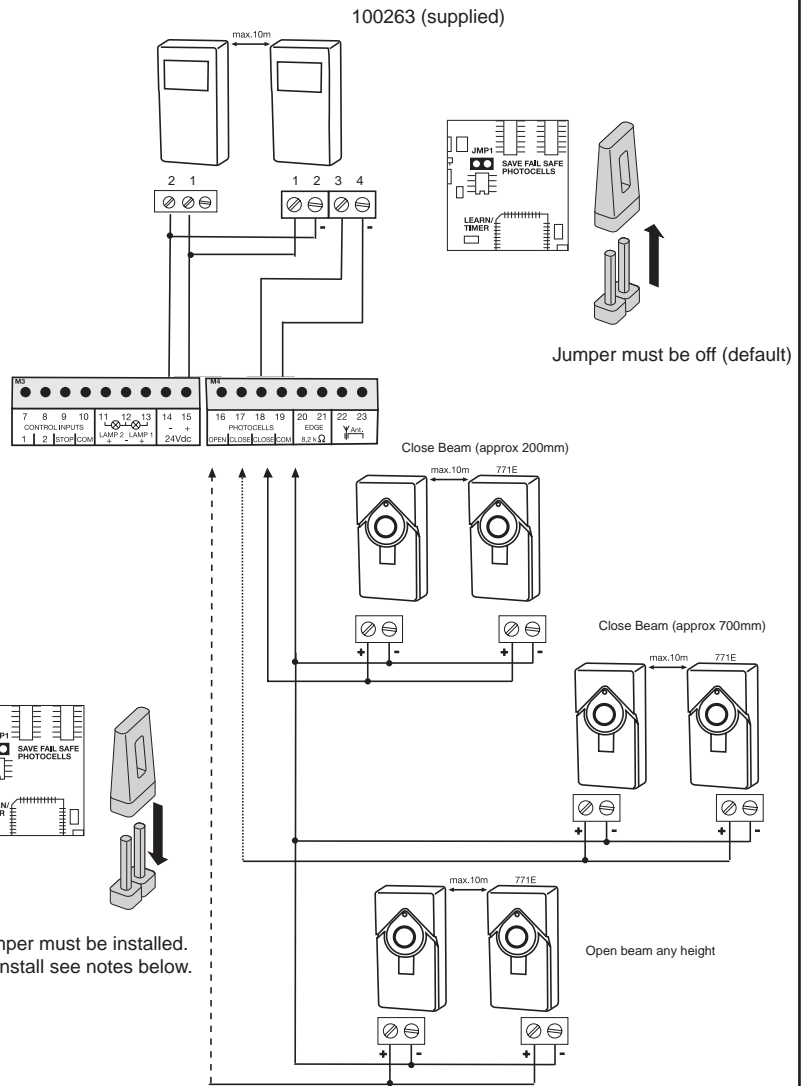
LED flashes = OK no photocell connected

**Cable cross-section: 0.5 mm<sup>2</sup> or more.**

**Voltage: 12/24 volts AC/DC.**

Do not run in parallel to high voltage.

Control pairs must be in separate sheaths (i.e 2 x 2 wires not 4 core).



### Other Safety Devices:

#### Programming of failsafe photocells model 771ANZ (Set up procedure)

NOTE: Install before running final setup

Installing

- Turn off power to the motor and control board
- Place jumper onto JMP1 as illustrated
- Dipswitch 5 to "ON"
- Connect photocell(s) according to the illustration
- Turn power off for approx 10 seconds
- Remove the jumper pin after about 30 seconds.

#### Programming of relay photocells such as 100263

The control board must be disconnected from the mains for a few seconds. All unused terminals **MUST BE BRIDGED** to COM (16-19,17-19,18-19). The power supply for the relay photocell of terminals 14-15.

- Dip switch 5 must be at OFF.
- The jumper must be unplugged.

### IMPORTANT:

**Operation without photocells is not recommended.**

**If no safety beams are installed all unused safety terminals must be bridged, and jumper must be off.**



## Accessories

### Optional inputs and outputs

The CB22 control board may be activated using various hardwired inputs.

#### Keyswitch, Keypad, push button or entry/exit loop.

Normally open contacts across 7 and 10 or 8 and 10 depending on configuration see page 11.

#### EMERGENCY STOP (OPTIONAL)

A switch can be connected to stop or disable the unit. The movement of the gate is stopped immediately. Terminals 9 and 10 must be bridged if no switch is installed.

**Cable cross-section: 0.5 mm<sup>2</sup> (AWG20 or greater)**  
**Voltage: 12/24 volts AC/DC.**

#### GATE MONITOR / LIGHTING (OPTIONAL)

A 24 V/3 W light bulb can be connected to monitor the status of the gate or trigger a garden lighting system (via relay not supplied).

**Cable cross-section: 0.5 mm<sup>2</sup> (AWG20) or greater**  
**Voltage: 24 V**

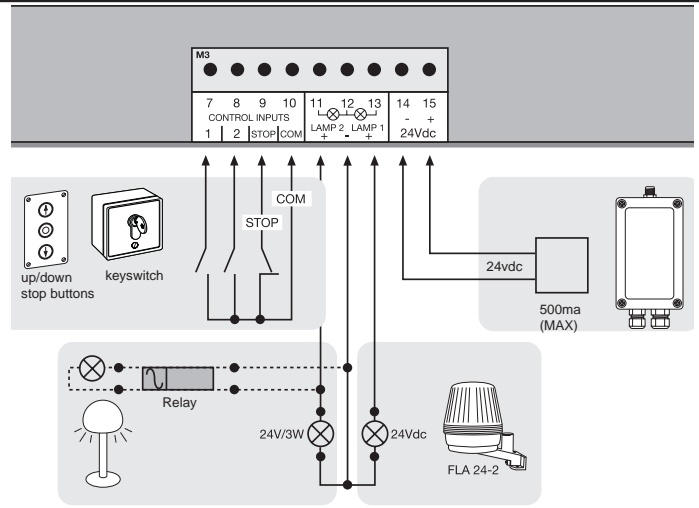
#### FLASHING LAMP (OPTIONAL) FLA24-2

A flashing lamp can be connected to the control board. It warns when the gate is being moved. The flashing light should be fitted as high as possible and in good clear view. The control board emits a constant signal that the lamp converts to a flashing signal.

**Cable cross-section: 0.5 mm<sup>2</sup> (AWG20) or greater.**  
**Voltage: 24 V DC**

#### 24 VDC - OUTPUT

For relay infrared sensors or other devices (e.g. receivers) max.500 mA



Do not use Solid core cables  
 Do not place high and low voltage cables in the same conduit.  
 Ensure all cabling complies with local electrical standards.

### CONTACT STRIP/ SAFETY EDGE(OPTIONAL)

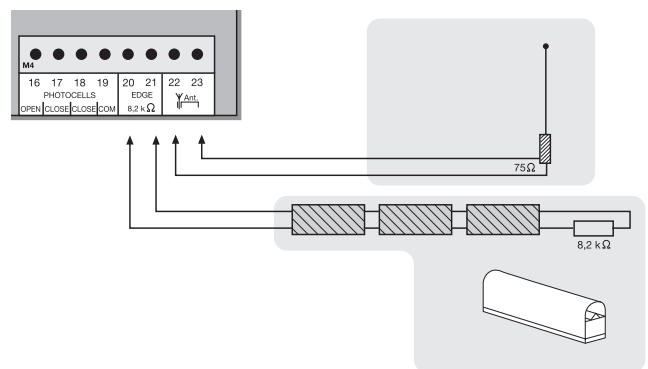
Contact strips drastically decrease the chance of damage to people and property by shutting down the gate motor immediately it comes into contact an obstacle.

If no Strip is installed the 8.2K Ohm resistor (factory fitted) must remain in place.

If a contact strip / safety edge is installed a 8.2K resistor must be installed in series, using cable with a cross-section diameter of no less than 0.5mm<sup>2</sup>.

### ANTENNA (OPTIONAL) ANT4X-1LM

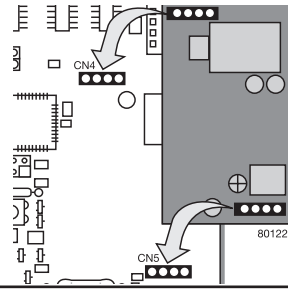
An external antenna (accessory) can be connected to terminals 22 and 23. A larger range (radio) can thus be achieved. Mount the antenna as high as possible.



Do not use Solid core cables  
 Do not place high and low voltage cables in the same conduit.  
 Ensure all cabling complies with local electrical standards.

### RADIO MODULE (factory fitted)

Your receiver module was fitted during manufacture. If the unit has dislodged during transportation or needs to be replaced, please insert the module the 801221 (433.92 MHz module into the slots CN4/CN5 as shown.



### TEACHING / DELETING THE HAND-HELD TRANSMITTERS

#### Channel 1: (up to 128 users)

**ADD:** Press button CH1. The LED "Learn1" lights up red. Press one of the transmitter's button for approx. 5 seconds. The LED "Learn 1" flashes.

**DELETE:** Press and hold the CH1 button down until the LED goes out.

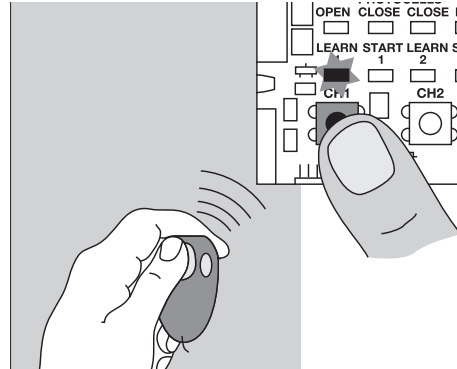
**(WARNING THIS DELETES ALL CH1 MEMORY)**

#### Channel 2 Pedestrian function if configured (up to 128 users)

Press button CH2. The LED "Learn2" lights up red. Press one of the transmitter's buttons for approx. 5 seconds. The LED "Learn 2"

**DELETE:** Press and hold the CH2 button down until the LED goes out.

**(WARNING THIS DELETES ALL CH2 MEMORY)**

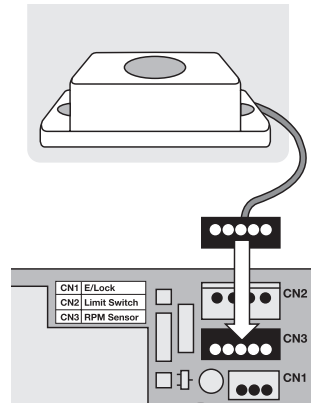


**FOR SAFETY: ENSURE GATE MOTOR IS DISENGAGED BEFORE LEARNING TRANSMITTERS INTO YOUR MOTOR**

### RPM SENSOR (OPTIONAL) 041ACOM17001

This optional RPM sensor may be installed onto your MGS motor simply by plugging the pre-made cable into CN2 and fastening the sensor in place. The sensor enables the automatic reversing of the gate if an obstacle is detected and increasing the gates sensitivity and safety.

**NOTE:** The sensor is only active during the drive's fast run cycle and is switched off for the soft stop (slow run).

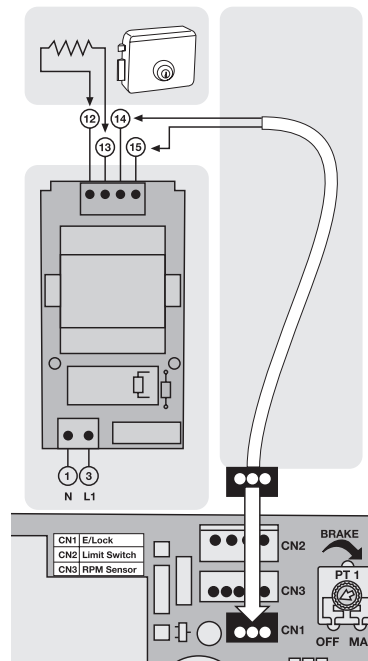


### ELECTRIC LOCK (OPTIONAL) 203285 (12V)

An electric lock can be connected to the control board using the connector CN1.

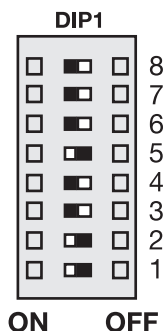
Alternatively a small relay can be triggered from the lamp1 output where a magnetic lock is used.

E-LOCK MUST NOT EXCEED 500ma.

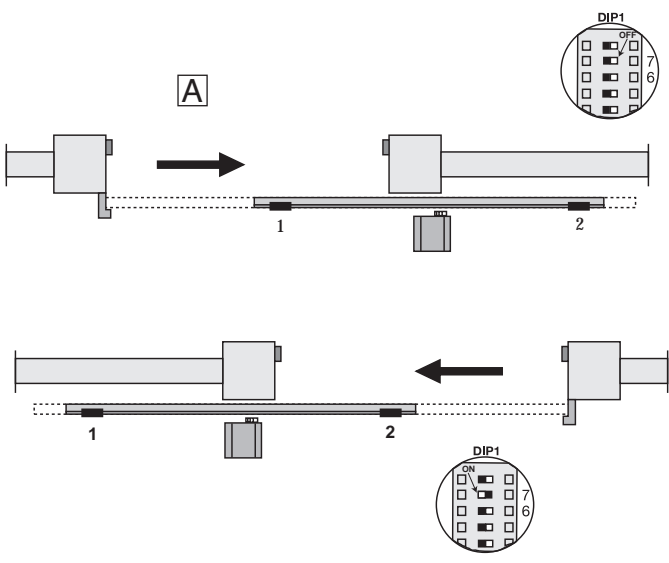


Do not use Solid core cables  
Do not place high and low voltage cables in the same conduit.  
Ensure all cabling complies with local electrical standards.

Configuration options		
The control board has 5 operational modes. The desired program is set using the dip switch "ON" or "OFF".		
DIP 1	On Off	Assigned to various drive operating modes. (see separate table)
DIP 2	On Off	
DIP 3	On Off	
DIP 4	On	Soft stop (slow run) is active The soft stop is activated 2 seconds before the limit switch is reached. The drive stops only when the limit switches have been reached or as soon as the maximum soft stop phase (10 seconds) has expired.
	Off	Soft stop (slow run) is disabled. The drive shuts down immediately in both directions OPEN/CLOSED as soon as the limit switches have been reached.
DIP 5	On	Setting for Chamberlain failsafe photocells (770ANZ/771ANZ), complies with EN60335-2-103
	Off	Setting for Chamberlain photocells (100263) or others ( <b>Supplied with MGS</b> )
DIP 6	On	Preflash function of flashing light 2 seconds before the drive starts.
	Off	Preflash function disabled
DIP 7	On	see B
	Off	see A
DIP 8	On	Connection option for a gate monitor (24V/3W) Status: Permanently off = gate closed Flashes = gate moving in OPEN or CLOSED direction
	Off	Permanently on = gate open A yard lighting system can be used by adding a relay (accessory).



**NOTE:** Power must be disconnected to make changes to the DIP switches, if not changes will not be accepted



**TRIM POTS (POTENTIOMETER)**

**PT1 (TRIM POT 1): BRAKE**

When the gate reaches its limit switch, the drive shuts down. Depending on weight and function of the gate, it may continue to move on a bit further before stopping. The brake function is for the active braking of the gate in order to minimise this additional movement. Left stop = brake OFF.

**PT2 (TRIM POT 2): AUTOMATIC CLOSING (TIMER TO CLOSE)**

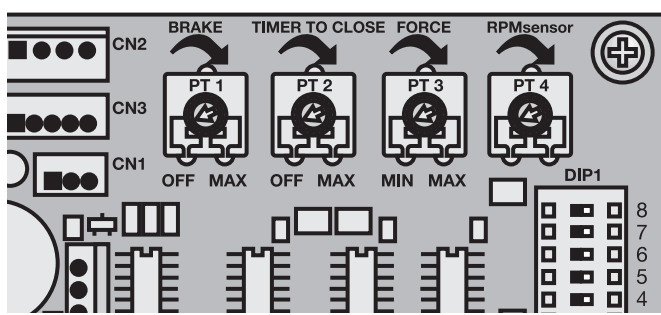
Sets the delay between when the gate is opened and when it closes (0-150 sec) adjustable. **Only possible if a photocell is connected (771ANZ/770ANZ).** (Not possible for self-hold and channel separation)

**PT3 (TRIMMING POTENTIOMETER 3): FORCE SETTING**

Defines the amount of force exerted by the motor. The required force depends on weight and function of the gate.

**PT4 (TRIMMING POTENTIOMETER 4): RPM SENSOR**

See RPM sensor description  
Not active for "Slow run"



**NOTE:** Power must be disconnected to make changes to the TRIM POTS, if not changes will not be accepted

Separate table for setting the operating modes					
	DIP1	DIP2	DIP3	Control input 1 (terminal 7 and 10)	Control input 2 (terminal 8 and 10)
Standard (Start, stop, close).	ON	ON	OFF	A momentary pulse across 7 and 10 will: <ul style="list-style-type: none"> <li>• open the gate if closed,</li> <li>• stop the gate if in motion, ( a second pulse will re- open the gate).</li> <li>• close gate if open</li> </ul>	A momentary pulse across 8 and 10 will: <ul style="list-style-type: none"> <li>• activate the motor for 10 seconds to allow pedestrian access i.e a partial opening. A second pulse is required to close the gate. If closing a further pulse will partially re-open the gate for pedestrians</li> </ul>
Standard & pedestrian function	OFF	ON	OFF	A momentary pulse across 7 and 10 will: <ul style="list-style-type: none"> <li>• open the gate if closed,</li> <li>• close gate if opening</li> <li>* close gate if open (at rest)</li> </ul>	A momentary pulse across 8 and 10 will: <ul style="list-style-type: none"> <li>• activate the motor for 10 seconds to allow pedestrian access i.e a partial opening. A second pulse is required to close the gate. If closing a further pulse will partially re-open the gate for pedestrians</li> </ul>
Separate inputs Start, stop, step by step. separate close input.	ON	ON	ON	A momentary pulse across 7 and 10 will: Open the gate, a pulse whilst opening will stop the gate, another pulse will start the gate opening again etc.  If Gate has been triggered to close by input 2 a pulse on input 1 will stops and start the gate detailed above.	A momentary pulse across 8 and 10 will: <ul style="list-style-type: none"> <li>• be ignored if the gate is closed.</li> <li>• close the gate if open, further pulses will start and stop the gate until the close limit is reached.</li> </ul>
Car park	ON	OFF	OFF	A momentary pulse will: <ul style="list-style-type: none"> <li>• opens the gate ignoring any subsequent trigger pulses</li> <li>• reset the open (rest) time if re-triggered whilst open.</li> <li>• open the gate if closing.</li> </ul>	A momentary pulse will: <ul style="list-style-type: none"> <li>• open the gate partially for pedestrian access, ignoring subsequent pulse whilst opening.</li> <li>• Once open a second pulse will close the gate.</li> <li>• if a pulse is generated whilst closing the gate will reopen.</li> </ul>
No self-hold (hold to run)	OFF	OFF	OFF	Closing input 1 will cause the gate to open until released i.e press and hold to open the gate.  No radio or safety functions work in this mode. Limit switches are active	Closing input 2 will cause the gate to close until released i.e press and hold to close the gate.  No radio or safety functions work in this mode. Limit switches are active

**Note:** When changing DIP switches the unit must be powered down as the DIP switches have a digital memory. The Control board will operate according to the way the dip switches were the last time the board received power.

**OPERATIONAL NOTE:** If safety beams are damaged or safety terminals are not bridged the gate will still operate in the “hold to run” mode.

### CONTROL BOX CONFIGURATION

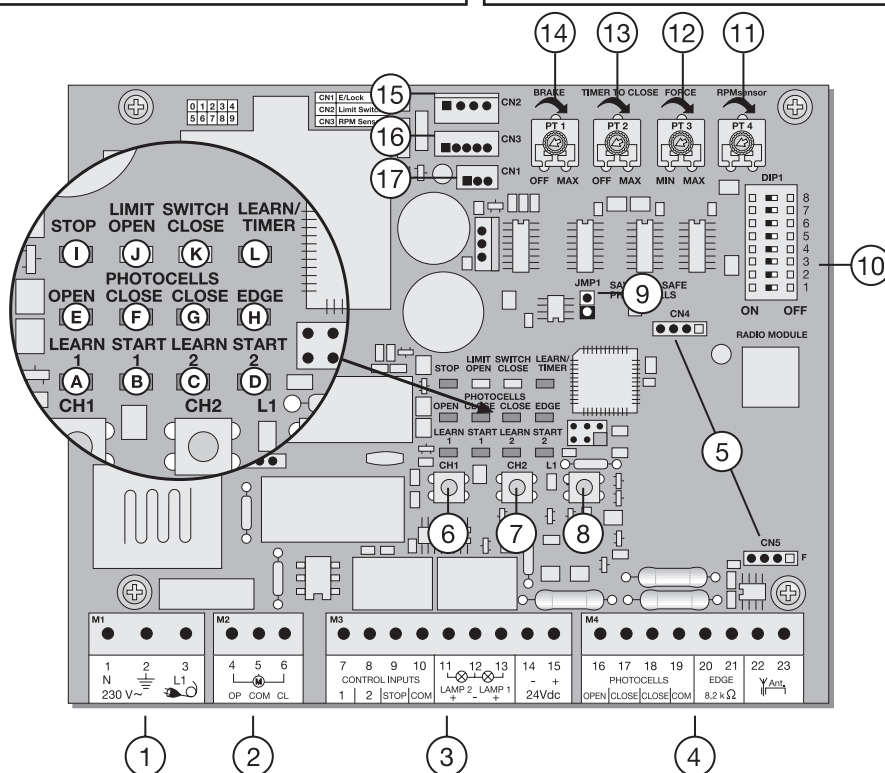
POINT	DESCRIPTION	FUNCTION
1	M1, terminals:1,2,3	230 to 240 vac ~
2	M2, terminals:4,5,6	Drive
3	M3, terminals:7,10	Input trigger (1) normally open
	Terminals:8,10	Input trigger (2) normally open
	Terminals:9,10	Emergency-stop push-button (NC) <b>must be bridged if no switch connected</b>
	Terminals:11,12	Gate monitor/lighting
	Terminals:12,13	Flashing lamp
	Terminals:14,15	Connection for accessories 24Vdc
4	M4, terminals:16,19	Normally open PE input
	Terminals:17,19	Normally closed PE input
	Terminals:18,19	Normally closed (main PE) input
	Terminals:20,21	Contact strip 8.2 kilo ohms
	Terminals:22,23	Antenna
5	CN4/CN5, connector	Radio module sockets
6	CH1, pushbutton	Learn/Delete radio channel 1
7	CH2, pushbutton	Learn/Delete radio channel 2
8	L1, pushbutton	Learning the distance covered
9	JMP1, jumper	Function selector for PE beam NO/NC safe/secure
10	DIP1	Dip switch block
11	PT4, potentiometer	RPM sensor setting
12	PT3, potentiometer	Force setting
13	PT2, potentiometer	Automatic closing
14	PT1, potentiometer	Brake
15	CN2, connector	Magnetic limit switch
16	CN3, connector	RPM sensor
17	CN1, connector	E-lock

### DESCRIPTION OF THE LEDs

RED LEDs should be switched off. Indication of faults to be rectified; this does not apply to failsafe photocells not connected. (see "photocell" description)

(Example: short circuit, photocells and/or contact strip)

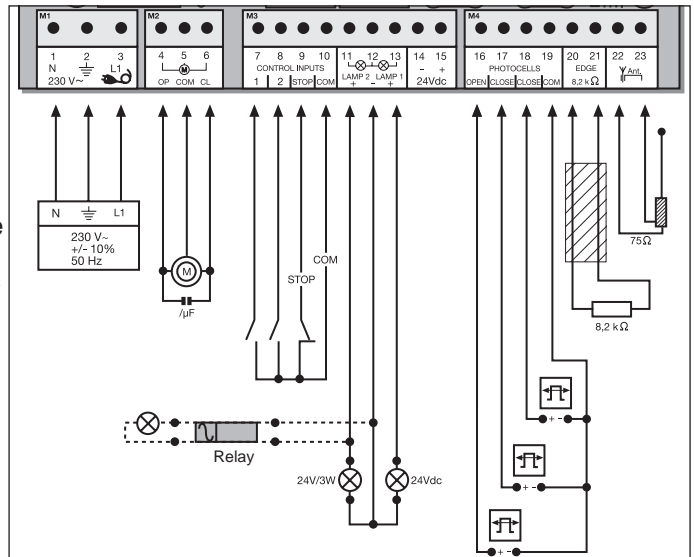
POINT	DESCRIPTION
LED A	RED Learn/Delete radio channel 1
LED B	RED Start impulse channel 1
LED C	RED Learn/Delete radio channel 2
LED D	RED Start impulse channel 2
LED E	RED photocell active for OPEN
LED F	RED photocell active for CLOSE
LED G	RED photocell active for CLOSE
LED H	RED contact strip
LED I	GREEN stop
LED J	YELLOW limit switch gate OPEN
LED K	YELLOW limit switch gate CLOSED
LED L	RED learn program (distance covered)



# SETUP

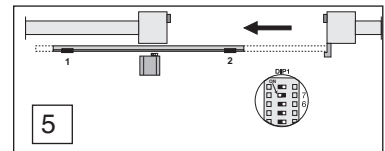
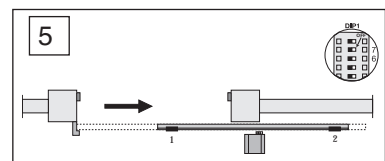
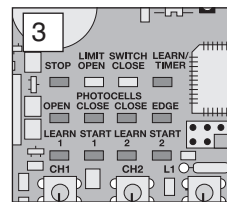
## Overview

1. Ensure all safety and trigger devices are installed. Any unused safety inputs **MUST BE BRIDGED**.
2. Ensure the gate path is clear of obstacles.
3. Check the LEDs are working correctly. red LEDs should be off, green LEDs should be on. ( with the exception of the LEDs for the limit switch status yellow)
4. Set the dip switch to the standard program, if not already done on delivery: 1= "ON", 2="ON", 3="OFF".
5. Dip switch 7 determines the direction of opening (see Dip switch description)
6. Set the force at the potentiometer "FORCE " to approx 30% lower if the gate is light. Adjust force up or down in small increments.
7. Switch off control board (cut from current)
8. Set jumper switch to on if installing 771ANZ safety beams. See page 8.



## Programming the travel time

1. With the gate disengaged, roll the gate to its start and stop limits to ensure the LED change state.
2. Move the gate to about halfway through its travel and engage the pinion (see page 4).
3. Press button L1 briefly (1 second), the gate opens. If the gate reaches the "OPEN" limit switch, it stops briefly and then closes again automatically. Once the gate reaches the "OPEN" limit switch, the programming process is completed. The travel time has now been programmed. The soft stop (slow run) is programmed automatically approx. 4-5 seconds before the limit switch is reached. This option can be selected via dip switch (page 11).



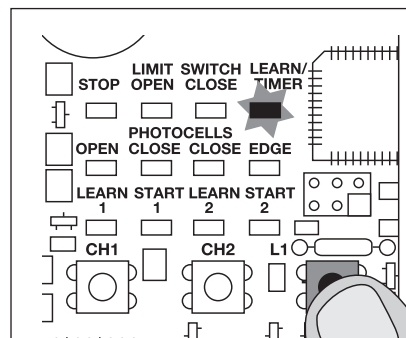
**NOTE: If the gate closes instead of opening, dip switch 7 must be moved to the other position! Turn the power off and start again.**

## Completion of the installation/programming:

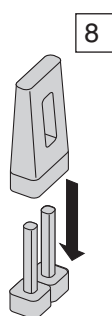
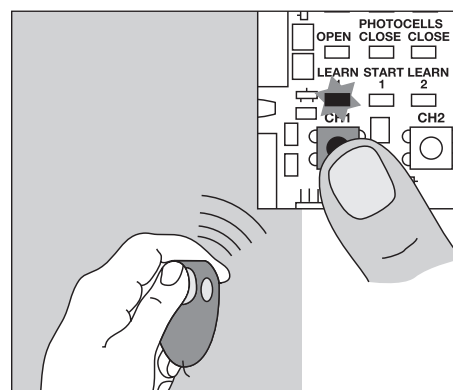
Once the travel time is programmed. Test the gate by using the Remote controls provided with your kit.

1. Start the gate with the remote or an activation button: ensure the gate opens completely and closes completely. **Note1:** If the gate does not respond check the remotes are programmed properly and that the PE beams are aligned. **Note2:** If the gate reacts to the input closure (terminals 7+10) but fails to operate using the remote control, check the module is plugged in correctly and that the remotes are programmed correctly.
2. If the gate does not close completely by itself, some fine tuning of the force potentiometer may be required. Make: small adjustments to the force setting, do not simply turn the trim pot to full force.
3. Now start a second attempt and proceed as above. Close the gate first before you make any settings.
4. If 771E PE beams are installed on your system you should adjust the closing time now that all other function tests are complete.
5. Commission the site by demonstrating the gates functionality to your client and ensure they are familiar with the manual release procedure as set out on (page 5).

## Setting the Travel Time



## Learning Remotes



## Troubleshooting and Frequently Asked Questions

What happens in case of power failure?	Your Merlin MGS gate opener is equipped with a release system by means of which the gate can be operated manually in case of power failure.	
Is it possible to open gate for pedestrian mode?	Yes, it is possible. This process can be operated via remote control (a 2-channel remote control is the minimum requirement here) or via switch operation (see "Standard & pedestrian mode")	
Gate opener does not function / does not respond when button is pressed.	<ol style="list-style-type: none"> <li>1. Connection to button is loose.</li> <li>2. STOP switch connection is loose; STOP LED is off.</li> <li>3. Obstacle is blocking photocell in direction of movement.</li> <li>4. Safety edge is damaged or has encountered an obstacle.</li> <li>5. Gate opener is still released.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check button and COM connections.</li> <li>2. Check STOP switch connections (STOP and COM).</li> <li>3. Remove obstacle.</li> <li>4. Remove obstacle and check connections and wiring.</li> <li>5. Lock gate opener.</li> </ol>
Immediately after the gate has started moving, it stops and reverses.	Obstacle in area of gate.	Check area of gate for objects
The controller doesn't respond when I alter the Dip-switches.	Disconnect controller from power supply, then alter Dip-switches.	
The gate opener only works when I press and hold the button on the remote control.	<ol style="list-style-type: none"> <li>1. Controller in 'hold to run' operating mode.</li> <li>2. A safety facility is not working correctly (photocell, safety edge).</li> </ol>	<ol style="list-style-type: none"> <li>1. Disconnect controller from power supply, then alter Dip-switches.</li> <li>2. Observe LEDs; find and rectify fault.</li> </ol>
"Timer to close" doesn't work.	<ol style="list-style-type: none"> <li>1. Only works if the 2-cable photocell 770A(ML) or 771A(ML) has been installed.</li> <li>2. Then turn "timer to close" potentiometer in a clockwise direction.</li> </ol>	
The gate opener doesn't respond at all, although the controller has been connected (LEDs are on).	<ol style="list-style-type: none"> <li>1. Remote control has not been programmed.</li> <li>2. LEDs indicate a fault.</li> <li>3. Photocell connected incorrectly.</li> <li>4. Jumper between STOP and COM missing.</li> <li>5. Motor terminal possibly not connected properly.</li> </ol>	<ol style="list-style-type: none"> <li>1. Programming remote control.</li> <li>2. Find and rectify fault(s) (see description of LEDs).</li> <li>3. Check photocell connection / programming.</li> <li>4. Connect simple jumper.</li> <li>5. Check terminals and connections.</li> </ol>
The gate opener doesn't respond at all; no LED is on.	Possibly power failure.	<ol style="list-style-type: none"> <li>1. Check conductor and zero conductor.</li> <li>2. Check house fusing.</li> </ol>
The gate opener stops suddenly and then restarts only after a lengthy pause.	If the gate is operated constantly, the motor will reach its cut-off temperature - protective facility - as the gate opener is not designed for permanent operation.	Allow motor sufficient time to cool (min. 15 minutes).
The gate must follow a slope.	Not recommended! Change gate! The gate can move in an uncontrolled (dangerous) manner if the gate opener has been released. A stronger force is needed in the upwards direction of the slope and then, in the opposite direction, the gate opener's force is too strong.	
The force setting has been altered, but no difference is apparent.	Disconnect the controller from the power supply for a few seconds in order to activate the control board's self-diagnosis functionality.	
The remote control's range is too short.	The installation of an external aerial is recommended as the controller with the short cable aerial is located either behind the post or near ground level in most cases. The optimum location of the aerial is as high as possible in all cases. An appropriate aerial with installation kit can be obtained from Chamberlain as an accessory with the product ref. no. ANT4X-1EML.	
The gate opener hums slightly but has no force	<ol style="list-style-type: none"> <li>1. Capacitor is not correctly connected to the brown and black cable.</li> <li>2. Force has not been set.</li> <li>3. The gate opener has been released.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check wiring of capacitor.</li> <li>2. Turn force potentiometer in a clockwise direction.</li> <li>3. Lock gate opener.</li> </ol>
The control board does not work any more using the transmitter, only with the switch and even then only as long as a button is pressed and kept pressed. Open with push-button (1) or CLOSE with push-button (2)	<ol style="list-style-type: none"> <li>1. Dip switch setting not as desired</li> <li>2. A safety photocell, a contact strip or the stop disables the control board</li> <li>3. Only one photocell was connected for OPEN</li> </ol>	<ol style="list-style-type: none"> <li>1. Correction of the dip switch, elimination of fault required. If the fault cannot be repaired, it will be necessary to "reset" and re-program (see photocell)</li> <li>2. At least one photocell must be connected and activated for CLOSED or OPEN &amp; CLOSED.</li> </ol>

The unit does not close automatically, it OPENS automatically

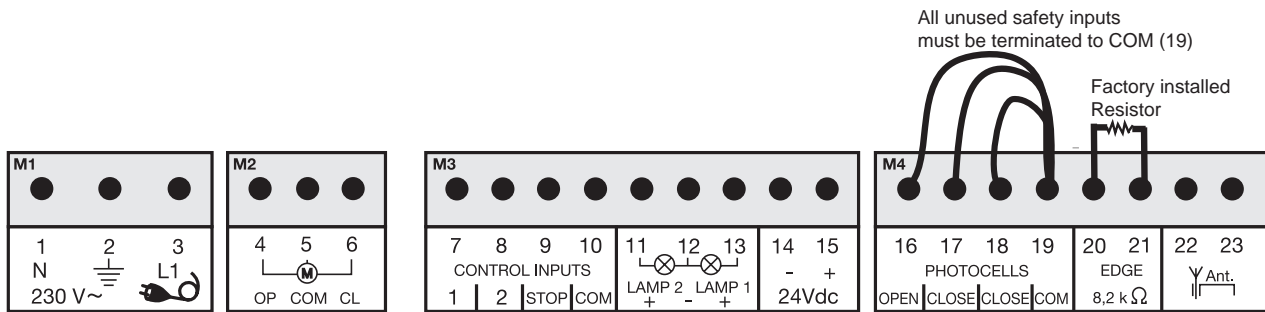
Check setting of Dipswitch 7

Change setting of Dipswitch 7

Control board does not work with transmitter	1. Transmitter not programmed 2. A photocell blocks	1.Program transmitter 2.Check photocells
Gate can only be opened	1.Photocell blocks 2.Dip switch setting not as desired	1.Function and connection must be checked 2.Check dip switch
The control board is not running	No covered distance learned	Learn covered distance. See Initial operation
The gate does not open completely.	1.Is the door travel programmed correctly? 2.Is the force adjusted correctly?	1. Program door travel again 2. Increase force (under wind load the operator may run a bit slower)
(Remote controlled) universal receiver does not work	Observe polarity (terminals 14/15)	Swap "+" and "-" cables

**PE OVERRIDE:**

If a safety edge or loop detector is fitted and the PE beams are not used, the PE terminals must be terminated to com as illustrated below.



The safety PE beams supplied with your kit must be fitted if no other safety is installed to avoid the risk of damage to property or serious personal injury.

TECHNICAL DATA	MGS300	MGS500	MGS1000
Voltage IN	230-240 Vac	230-240 Vac	230-240 Vac
Frequency	50Hz	50Hz	50Hz
Power	300W	360W	480W
Current rated	1.3A	1.5A	2.1A
Torque	9Nm	10Nm	12Nm
Capacitor	8µF	10µF	16µF
Thermal Overload Protection	140°	140°	140°
Motor Speed	1400	1400	1400
Travel Speed	12	12	11.5
Duty Cycle	30	30	30
Working Temperature Range	-20°C - 55°C	-20°C - 55°C	-20°C - 55°C
Protection Class	IP44	IP44	IP44
Degree of Protection	I	I	I
Weight	9	9	10
approx. Gate Length	5m	8m	10m
Max. Gate weight at max. length (incl. 20% reserve)	300kg	500kg	1000kg



# Install Notes

Installation Date:

Installer:

Serviced:

## Lamp output 1

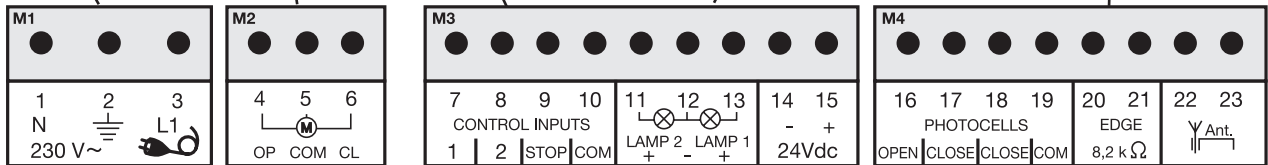
used/ unused  
Cable:  
Colour: +  
Colour: -  
connected to:

**IMPORTANT!**  
Isolation switch  
location:

Capacitor  
installed by  
factory

**Input 2**  
Device:  
Cable:  
Colour: 8  
Colour: 10

**Safety edge**  
Device:  
Cable:  
Colour: 20  
Colour: 21



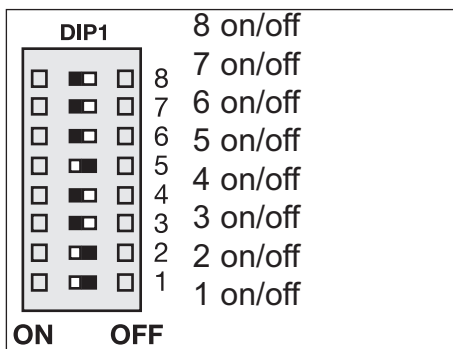
500ma MAX

**Input 1**  
Device:  
Cable:  
Colour: 7  
Colour: 10

**Stop input**  
used/ unused  
Cable:  
Colour: 9  
Colour: 10

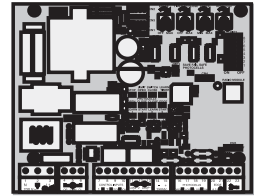
**Lamp output 2**  
used/ unused  
Cable:  
Colour: +  
Colour: -  
connected to:

**Safety Inputs**  
Open: used/ unused  
Device:  
Cable:  
Colour: 16  
Colour: 19  
  
Close: used/ unused  
Device:  
Cable:  
Colour: 17  
Colour: 19  
  
Open: used/ unused  
Device:  
Cable:  
Colour: 18  
Colour: 19

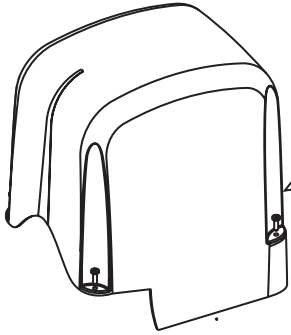


**Please take a couple of minutes to write down your cable configuration and the Dipswitch positions. The service time saved later may be your own.**

041A5456 (433MHz)

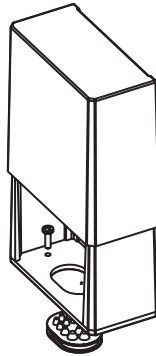


041ASLG-00920



041SLG-0198  
PLASTIC COVER

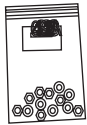
041SLG-0078  
Inside Control Board Box Cover



041SLG-0079  
Inside Control Board Box  
Lower Part

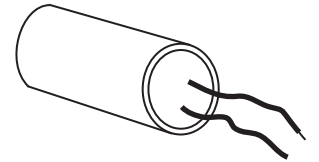
041SLG-0125S A

Bag Nuts & Washers

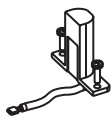


Capacitors

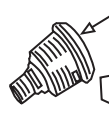
8mf MGS300 041F091  
10mf MGS500 041F096  
16mf MGS1000 041F0096-16



041SLG-0068  
Magnetic Switch MGS



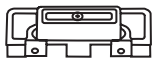
041SLG-0054  
Lock & Key



041SLG-0054K  
Release Key / Piece



041SLG-053M  
Rack Magnets 1,2 and brackets



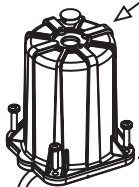
041SLG-0176  
Gear Sprocket MGS300/500  
041SLG-0179  
Gear Sprocket MGS1000



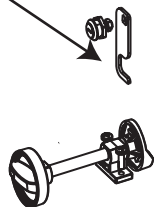
041SLG-0175SA  
Service Gear Set MGS300/500  
041SLG-0176SA  
Service Gear Set MGS1000



041SLG-0152SA  
Stator & Housing Assy MGS300/500  
041SLG-0153SA  
Stator & Housing Assy MGS1000



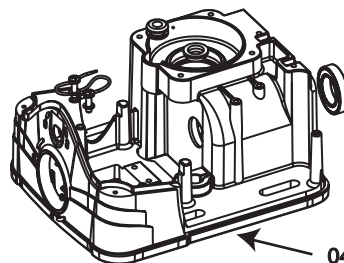
041SLG60054



041ASLG-0362

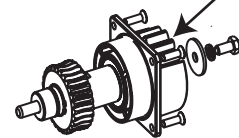


041ASLG-1005SA

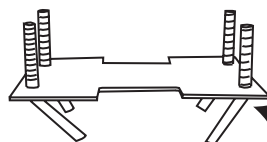


041ASLG-1150SA

041ASLG-1004SA



041SLG-0193  
Drive Sprocket Module4



041SLG-0058  
Motor Mounting Plate

**CHAMBERLAIN 2 YEAR LIMITED WARRANTY  
Merlin MGS300/MGS500/MGS1000  
Sliding Gate Motor**

**Chamberlain Australia Pty Limited / Chamberlain New Zealand Limited (Seller) warrants to the original purchaser of the Merlin MGS series gate operator (Unit) that it is free from defects in material and/or workmanship for a period of 2 YEARS from the date of first purchase from the Seller.**

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

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

**Limited warranty on motor**

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

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

**In-warranty service**

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

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

**Exclusions**

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

1. non-compliance with the instructions regarding installation, operation, maintenance and testing of the Unit or of any product with which the Unit is used.
2. any attempt to repair, dismantle, reinstall or move the Product to another location once the Product is installed by any person other than an authorised installer.
3. tampering, neglect, abuse, wear and tear, accident, electrical storm or water damage, excessive use or conditions other than normal domestic applications.

This warranty does not cover any problems with, or relating to, the gate, its hardware and fittings, track, rack or guides or any problems caused by electrical faults, replacement of batteries or labour charges for reinstalling a repaired or replaced Units.

**Liability – Australia only**

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

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

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

**Liability – New Zealand only**

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

(a) all other guarantees, warranties and representations in relation to the Unit or its supply are excluded to the extent that the Seller can lawfully exclude them; and

(b) under no circumstances shall the Seller be liable for consequential, incidental or special damages arising in connection with the use, or inability to use, the Unit, other than those which were reasonably foreseeable as liable to result from the failure.

**NOTE:** We request that you attach your sales docket or invoice to this manual to enable you to establish the date of purchase in the unlikely event of a service call being made. Chamberlain reserves the right to change the design and specification without prior notification. Some features or accessories may not be available in certain markets or areas. Please check with your distributor.

**Chamberlain service centres:**

**Australia**

**Phone toll free 1800 638 234**

**Fax toll free 1800 888 121**

**New Zealand**

**Auckland phone 09 415 4393**

**Phone toll free 0800 MERLIN**

**Fax toll free 0800 653 663**

**www.chamberlainanz.com**

