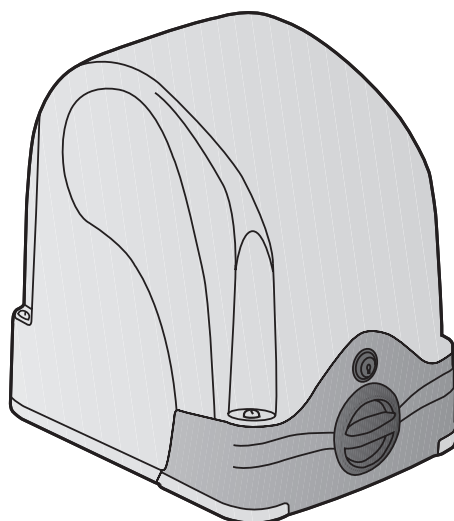


Merlin® XLR8



MGS524 24 Volt DC SLIDING GATE OPENER INSTALLATION MANUAL

For Professional Installation ONLY

For level gradient installations ONLY

**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 653 667**

www.go-merlin.com


N2966

IMPORTANT FITTING AND OPERATING INSTRUCTIONS

PLEASE START BY READING THESE IMPORTANT SAFETY RULES



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



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

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



When using tools and small parts to install or carry out repair work on a gate exercise caution and do not wear rings, watches or loose clothing.



Do not install this opener on surfaces with a gradient. Designed for flat surface installations only.



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



Frequently examine the installation for imbalance and signs of wear or damage to cables, hardware and mountings. Do not use if repair or adjustment is necessary. Gates which stick or jam must be repaired immediately. Employ a qualified technician to repair the gate, never attempt to repair it yourself.



Entrapment protection devices **MUST** be installed to protect anyone who may come near a moving gate. Locate entrapment protection devices to protect in **BOTH** the open and close gate cycles. Locate entrapment protection devices to protect between moving gate and **RIGID** objects, such as posts.



Disconnect electric power to the system before making repairs or removing covers.

A disconnecting device must be provided in the permanently-wired installation to guarantee all-pole disconnection by means of a switch (at least 3mm contact gap) or by a separate fuse.



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



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



After the installation a final test of the full function of the system and the full function of the safety devices must be done.



This drive cannot be used with a gate incorporating a wicket door unless the drive cannot be operated with the wicket door open.



The full protection against potential squeeze or entrapment must work direct when the drive arms are installed.



Lightweight gates must be substantially reinforced to avoid gate damage. The best solution is to check with your gate manufacturer for an opener installation reinforcement kit.



Children should be supervised to ensure that they do not play with the appliance.



Gate must not extend over public byway during operation.



This appliance is not intended for use by persons (including children) with reduced physical sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.



Activate opener only when the gate is in full view, free of obstructions. Do not allow children to play near the gate.



Controls must be far enough from the gate so that the user is prevented from coming in contact with the gate while operating the controls.



Keep additional accessories away from children. Do not allow children to play with pushbuttons or remote controls. A gate can cause serious injuries as it closes.



Humidity and water destroy the control board. Make sure under all circumstances that water, humidity or dammed-up water cannot penetrate the control board covering.



Automatic drive – Keep away from the area of the gate since it may operate unexpectedly.



When opener is disengaged:
- gate must move freely when pushed by hand
- gate must not move on its own ie. no slope.

PLEASE KEEP THESE INSTRUCTIONS

CONTENTS	PAGE	INITIAL OPERATION/BASIC
SAFETY INSTRUCTIONS	2	SETTING14
BEFORE YOU BEGIN	3	PROGRAMMING THE TRAVEL
CARTON CONTENTS	3	DISTANCE AND OPERATOR
INSTALLATION	4-6	FORCE15
TYPICAL CONFIGURATION	7	COMPLETION OF INSTALLATION/
INSTALLATION OF CONTROL		PROGRAMMING 16
BOARD	7	SPARE PARTS17
WIRING OF CONTROL BOARD	8-10	DIAGNOSIS LED18
ACCESSORIES	11-12	FREQUENTLY ASKED
JUMPER SETTINGS	13	QUESTIONS19
		WARRANTY20

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 or more) 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 operate the gate due to changes in the ground conditions. A higher powered again might be necessary.

High outdoor temperatures can cause the thermal protection mechanism to be activated sooner.

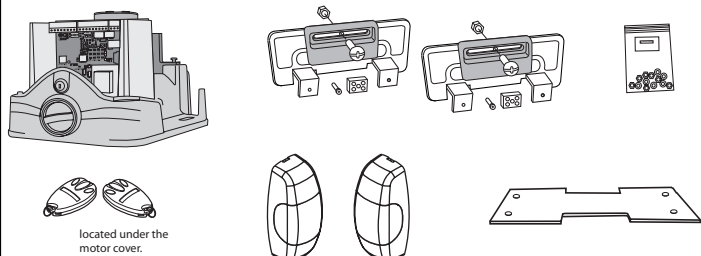
• Safety:

Your CB202 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.

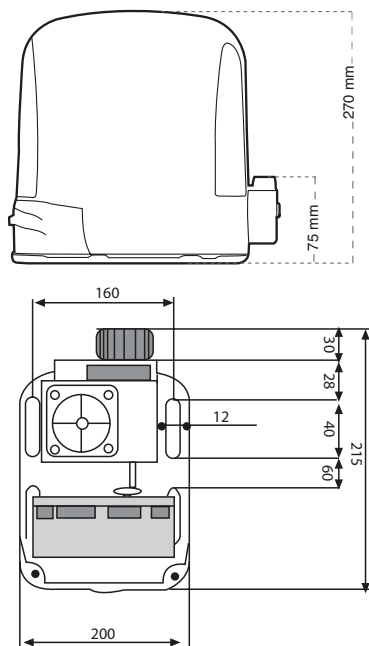
• Control unit:

The control unit was developed specifically with safety aspects in mind. *It is located in the motor housing.*

MGS524 Carton contents



- PE safety beams (1 set)
- Hardware bag
- Merlin C945 Mini remotes x 2
- Motor with housing
- PCB CB202 logic board
- Limit magnets (1&2) and mounting accessories
- Base plate



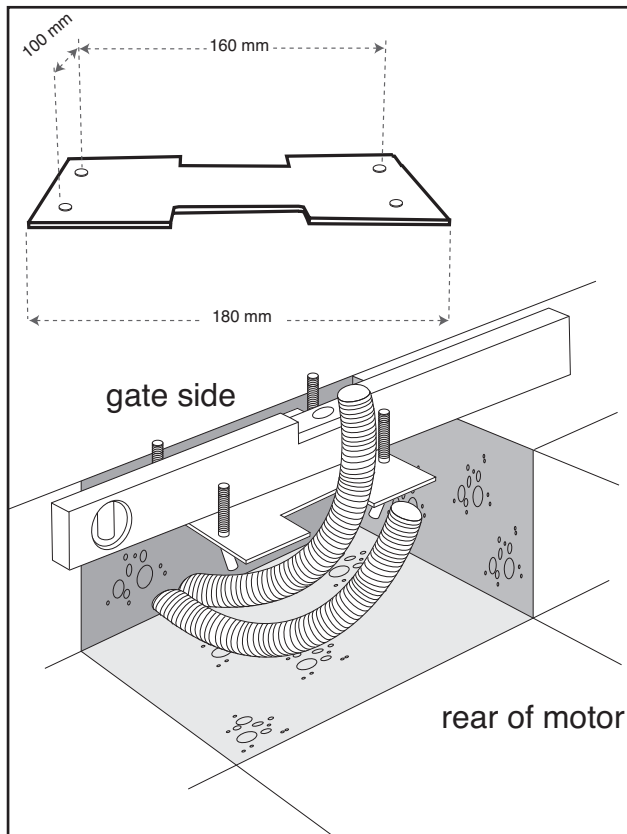
Positioning the motor and plinth.

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 Base plate should be installed into a concrete plinth of approximate 500mm x 500mm x 500mm 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.

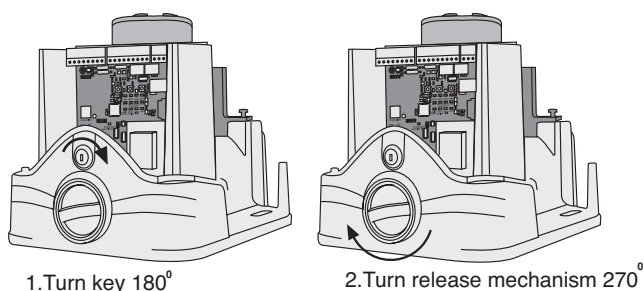
Manual release

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.



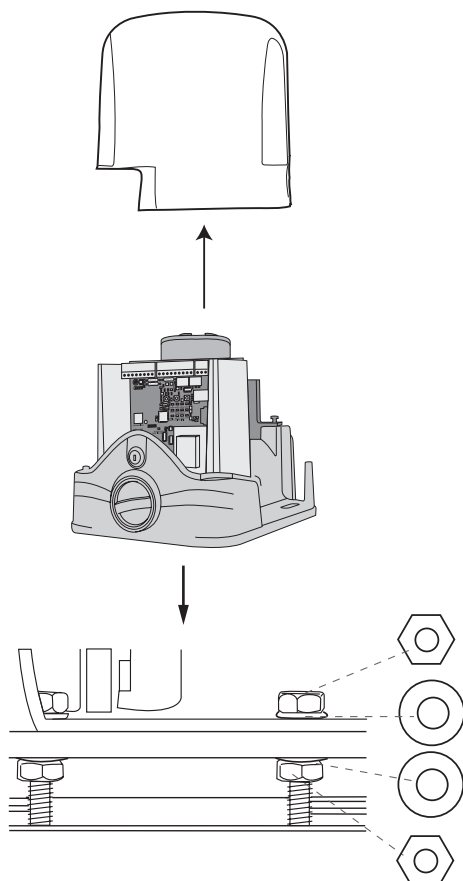
Mounting the Motor

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.

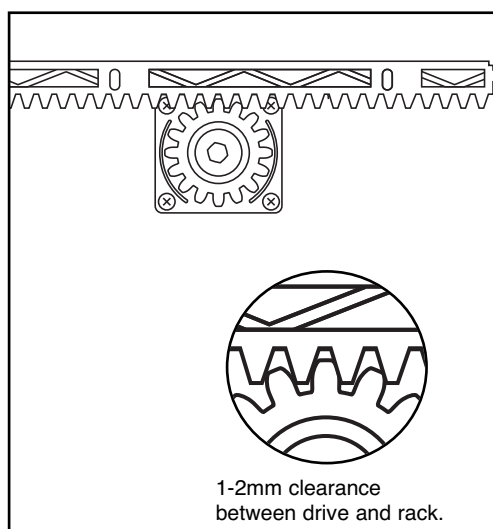
Remove the cover from the motor and fit the motor onto the threaded posts. Position the motor and drive pinion approximately in place (some adjustments may be required).

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.



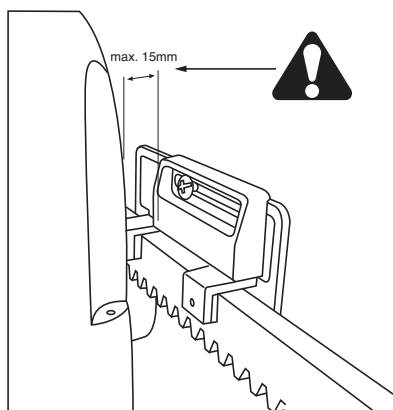
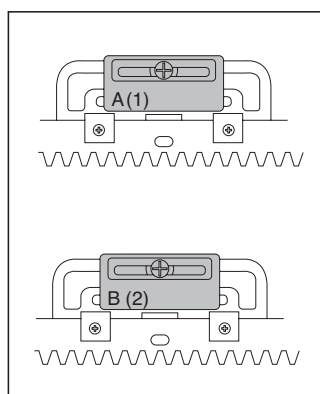
Mounting the Rack



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.

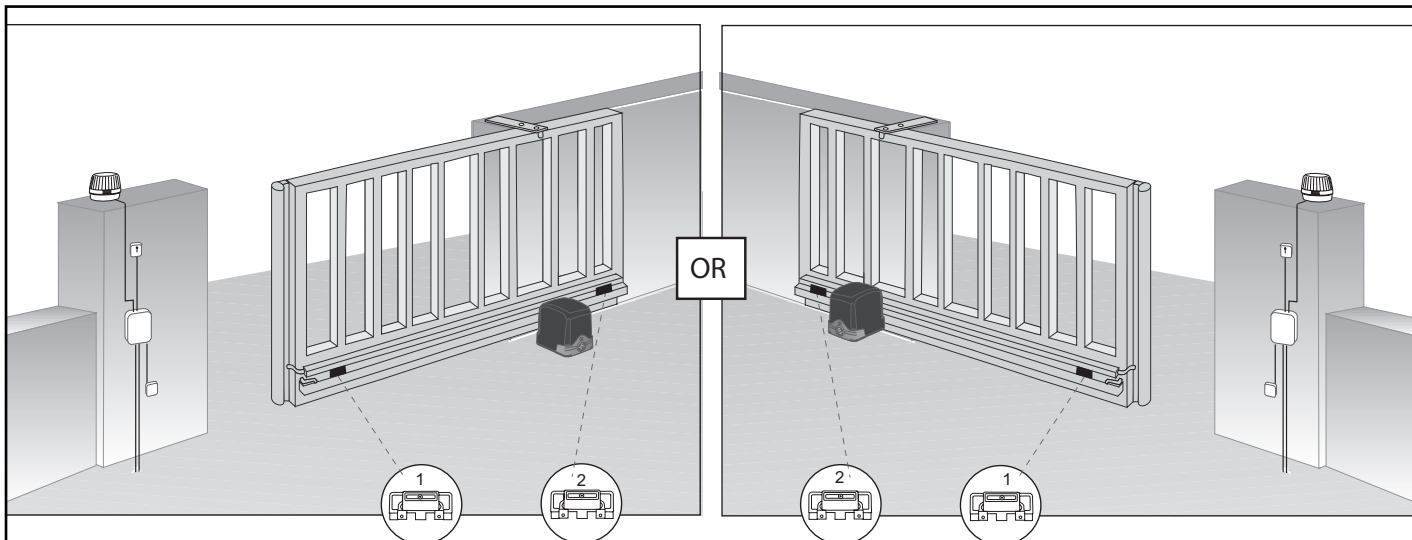
Caution: You must have rack installed along the entire length of its travel including the start and stop limits.

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 and securely.

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

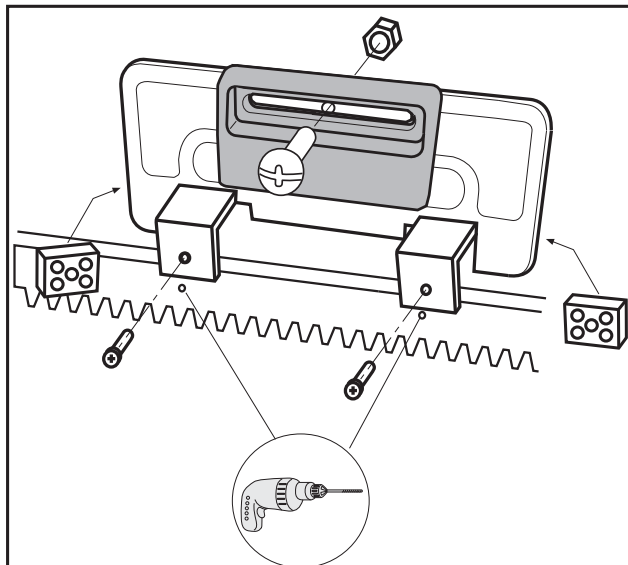


Installing the Limit Magnets

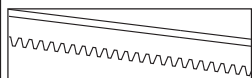
Caution: The magnet limit switches are polarity sensitive and can be installed in either of the positions as marked above.

NOTE: Motor Wiring does NOT need to be reversed for left and right hand opening.

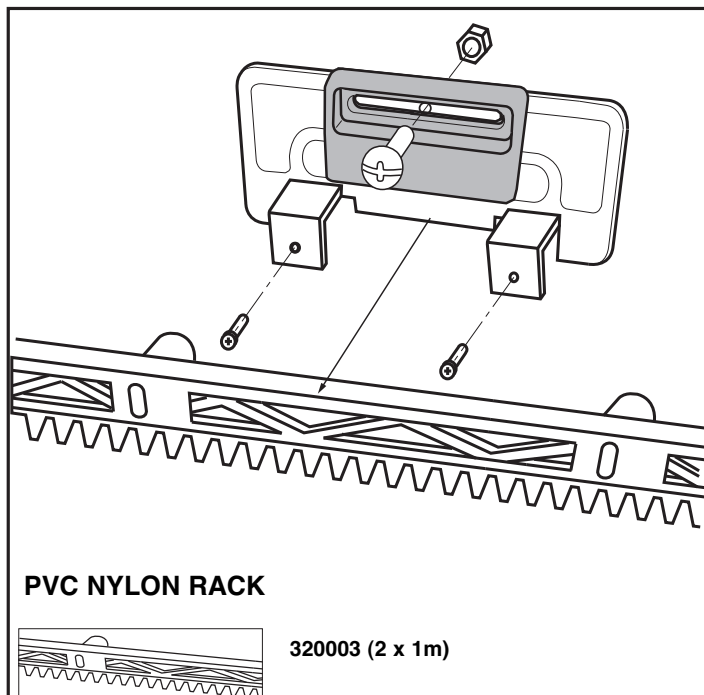
Caution: You must have rack installed along the entire length of its travel including the start and stop limits.



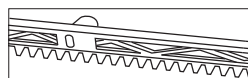
HEAVY DUTY STEEL RACK



320001 (1 x 1m)
202097 (4 x 1m)



PVC NYLON RACK



320003 (2 x 1m)

Installing the magnet bracket steel rack.

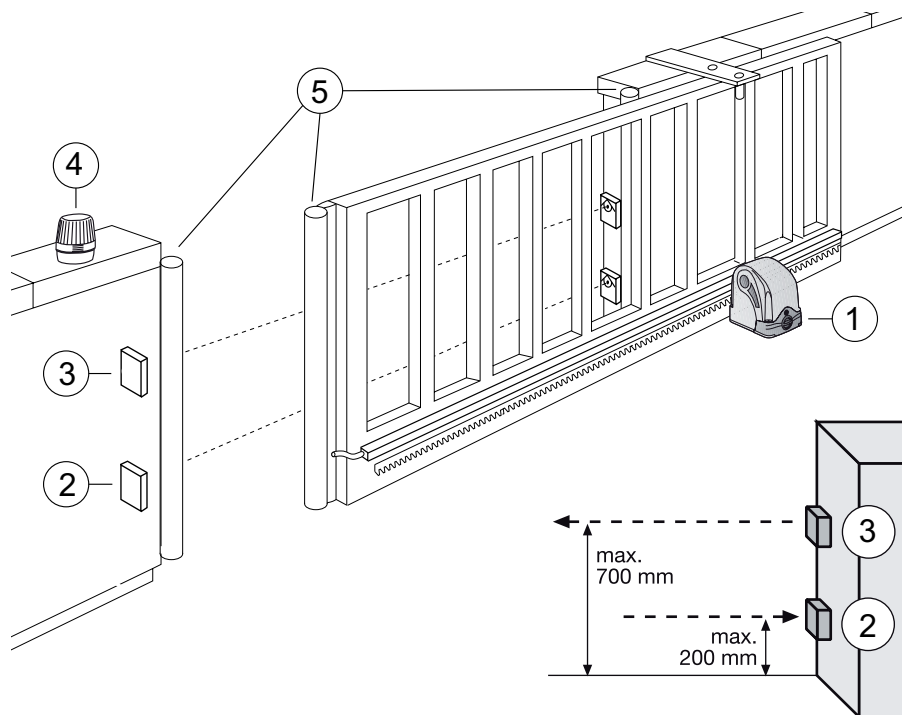
Identify your start and stop limit. Using the magnet bracket mark two holes as shown above. Drill two holes into the rack then install the spacers provided into the back tabs using the raised pins to position. Once the spacers are in place, fit the bracket over the rack and tighten the screws. Install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

TYPICAL CONFIGURATION OF A SLIDING GATE UNIT

1. Drive with control board
The drive is located on a height-adjustable mounting plate.
2. Photocell min. 150- max200 mm (optional)
First photocell.
Detects low objects.
3. Photocell max. 700 mm (optional)
Second photocell.
Detects vehicles and higher objects.
4. Flashing light (optional)
Important visual information indicating gate movement.
5. Safety edge (optional)
Detects obstacles and avoids risks produced by gate movement.
Safety edges can be mounted on the gate or on the pillars. If the gate has openings exceeding 45mm, a safety edge is required on the pillar (accessory).
If required, safety edges must be mounted at a height of up to 2.5m.



INSTALLATION OF CONTROL BOARD

The CB202 control board was designed for installation in a special covering under the housing of the sliding gate drive.

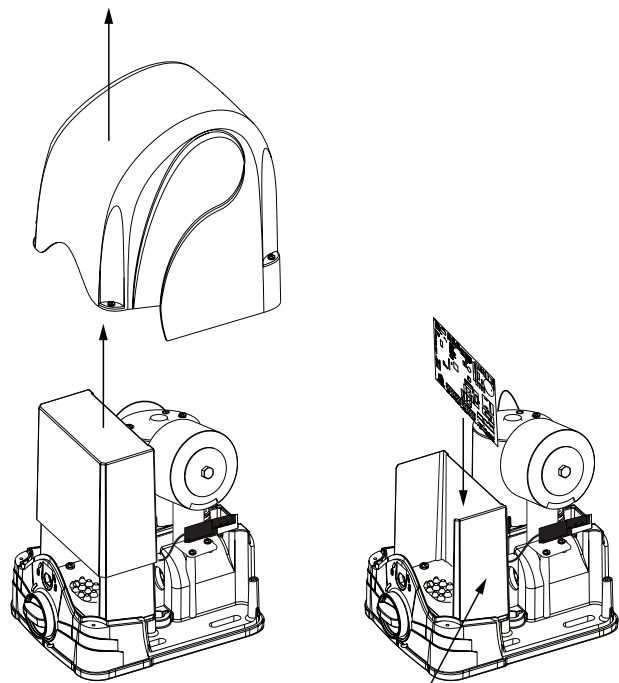
The installation of the electrical controller is allowed only after the completion of the mechanical installation. All work on the controller must be performed after disconnecting it from the mains power supply. Turn on the power only when it is prompted in the section INITIAL OPERATION/ BASIC SETTING.

To operate, at least the following connections have to be established: -

- "Power supply"
- Transformer "Input & Transf"
- Motor "MOTOR"
- Plug limit switch "LIMIT SWITCH"
- Plug "RPM/ENCODER"

If necessary assemble the following optional connections:

- photocells
- safety edge
- flashing light
- external antenna
- key switch or other external control devices



NOTE: Plastic housing may need to be loosened to tighten the Power Cable Gland.

WIRING OF CONTROL BOARD

The cables for the power supply and the connected equipment can be routed from below into the sliding gate operator through the rubber seal at the bottom of the control box.

The controller is to be mounted with the terminal strips down as shown in the picture.

The usage of shielded cable in order to connect the motor to control board is highly recommended. Magnetic and inductive influence of the signal in the cables can produce electric noise and may disturb the function of the gate .

Generally avoid:

- 230 V and low voltage in the same power line. Not allowed by electrical rules.
- Wiring of the photocells, switches, flashing lamps require a cable separately from the motor wiring.
- Other wirings like telephone intercoms, lights for garden etc. must be in separate cables.
- Rigid copper cables especially when thicker diameters are difficult to manage during the installation and may result in bad connections with functional issues. Use flexible cables instead.
- Cable material not suitable for outside use. Use cables suitable for outside use and underground. Run the cables in conduits if the cable is not suitable for placing in the ground (armoured or suitably protected). Consult a local electrician if required.

General wiring sizes:

The numbers mentioned in the table below are minimum requirements. It is always possible to use larger diameters.

- 230 V Supply Power to controller: min. 0,75mm² 3-pole
- Switches, infrared sensors, flashing lamp: See table etc. min. 0.5mm²

Terminals:

The terminal blocks on the controller can be removed (pull) to facilitate a convenient wiring and are pushed back only while installing the controller. Even if a terminal strip is not in use, it must be pushed back. The wiring is done as described in the wiring diagram.

Plugs (available on the motor):

These plugs must be connected to the controller (plugged in).

The cable of the connectors are not routed from below, but from the back of the controller (see picture).

1. 230 V transformer feeder TRANSF IN - connect to terminal
2. Limit switch
3. Motor connector RPM/Encoder - remove the extender cable from RPM lead to enable connection.
4. Connect Green earth lead to Power lead.

Radio

The radio system is supplied as a small radio PCB module separate to the main controller and plugged in when needed as shown in the wiring diagram. A short cable antenna is always pre-assembled at the factory.

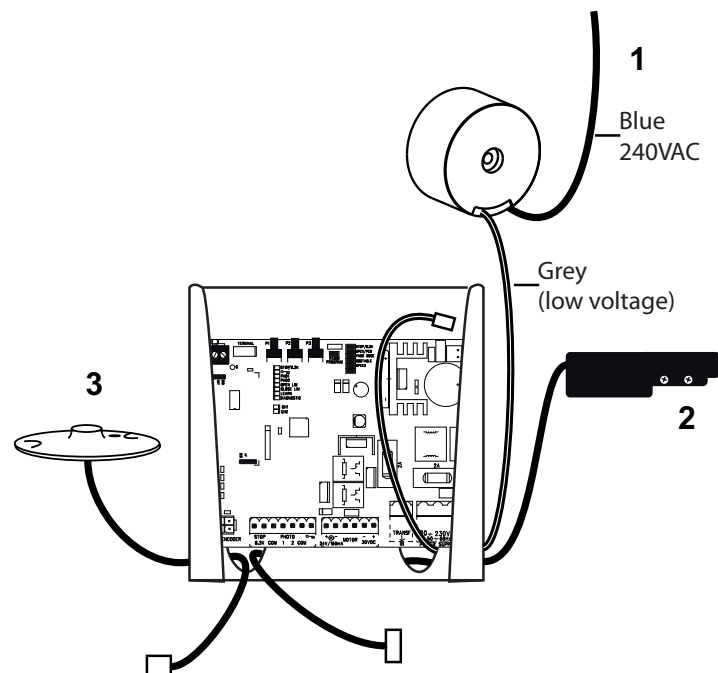
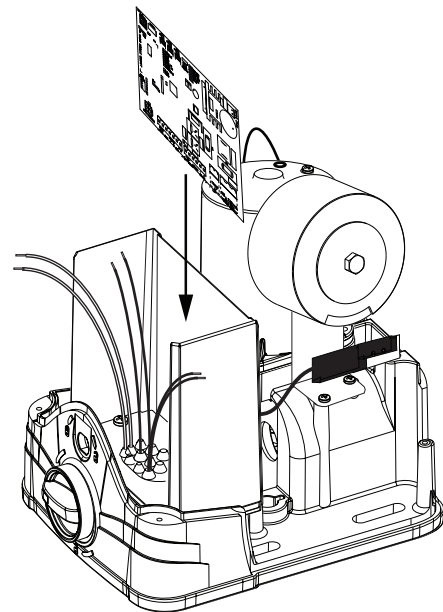
NOTE: Transmitter will not work if the module is not plugged in.

WIRE SIZES:

Operator Model	Distance 0m - 6m	Distance 6m - 10m	Distance 10m - 12m	Distance 12m – xx
External antenna (Remove original antenna of logic board)	Coax cable (Satellite cable) 50 or 75 Ohm	Coax cable (Satellite cable) 50 or 75 Ohm	Coax cable (Satellite cable) 50 or 75 Ohm	Coax cable (Satellite cable) 50 or 75 Ohm (max. 25m)
Switches, Flashing lamp etc.	0,5mm ²	0,5mm ²	0,75mm ²	Min. 0,75mm ² Max. 30m
Infrared Sensors	0,5mm ²	0,5mm ²	0,75mm ²	Min. 0,75mm ² Max. 20m

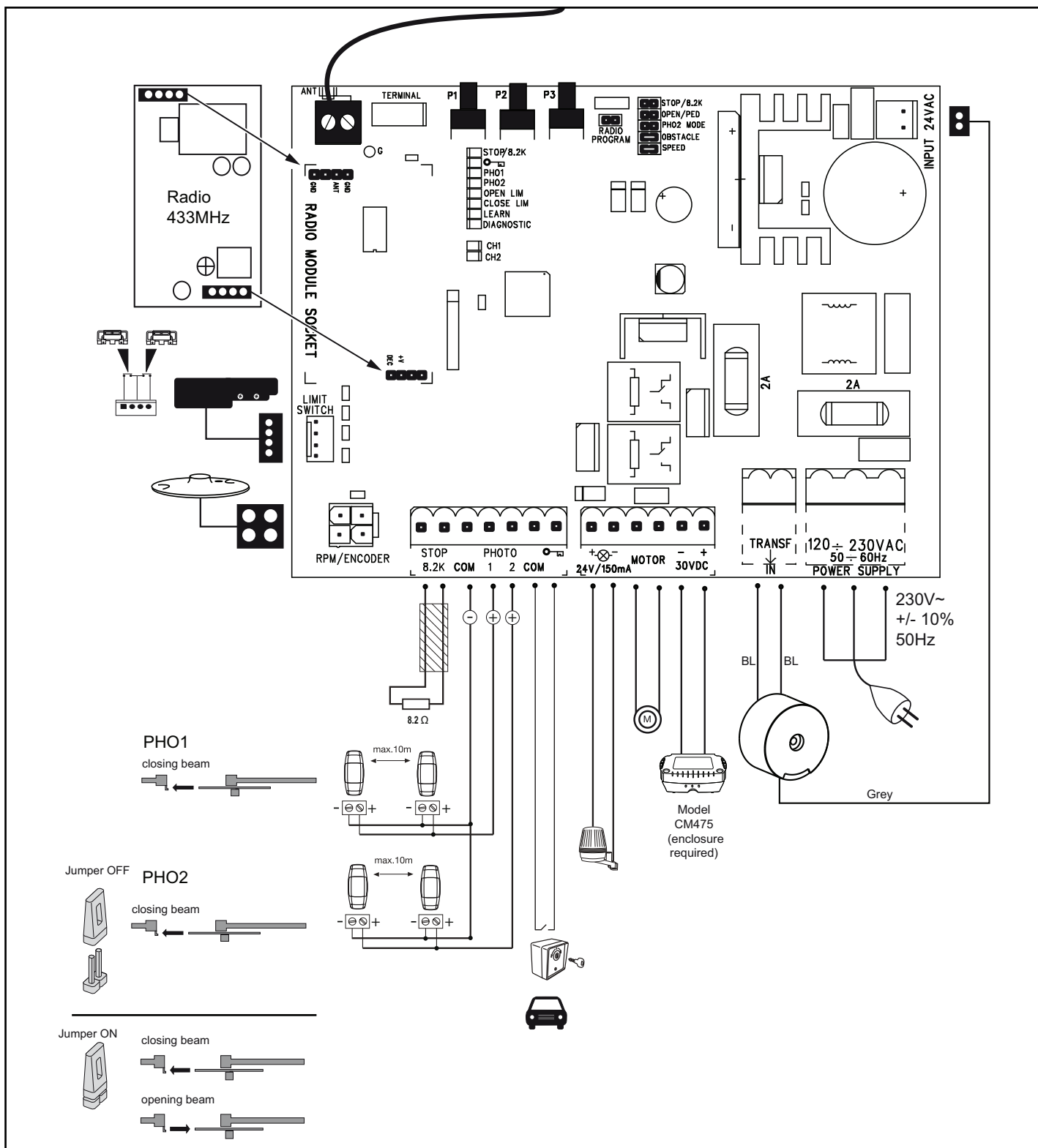
NOTE: The terminals are designed for a Max. cable diameter of 1.5m² (flexible wire).

NOTE: MGS524 is factory terminated (ie. power cord is wired into CB202 controller).
Consult a qualified electrician if your product requires alternative installation.



WIRING DIAGRAM

9



TECHNICAL DATA OF CONTROL BOARD

Voltage:	230 V ~ ±10% 50 Hz
Transformer:	230 V / 24 V, 105 VA
Output Motor:	24 VDC
Consumption max.:	max. 400 W (in operation)
Consumption Standby:	max. 4 W (without accessories)
Operating temperature:	-20° C ÷ 55° C
Modes:	Standard, Automatic
Measurements:	145 x 110 mm (without box)
Protection class Box:	IP45
Fuse:	2 x 2 A (slow blow fuse)
Remote control:	max. 180 x Rolling Code
feasible frequencies:	433 MHz

The motor control unit is a highly modern electronic unit controlled by a microprocessor. It has all wiring facilities and functions required for safe operation. The electronics can be used for the precise adjustment of the push-pull torque. The gate can be held by hand if the fitting/setting is correct. During operation, the gate can be stopped at all times via remote control, push-button or key-operated switch. The gate wing requires a firm stop for the "OPEN" and "CLOSED" positions.

Humidity and water will destroy the control board. Make sure under all circumstances that water, humidity or dammed-up water cannot penetrate the control board. All openings and cable entries must be sealed watertight.

DESCRIPTION OF TERMINALS

Description	Function
230 VAC 50 Hz POWER SUPPLY	connector
TRANSF IN INPUT 24 V	230 V to transformer 24 V from transformer
30VDC	output 30 VDC battery kit terminal for CM475 + enclosure
Motor Motor	blue cable red cable
24 V / 150 mA	flashing light (accessory)
Key symbol COM	keyswitch negative pole
PHOTO2 PHOTO1 COM	photocells 2 (accessory) photocells 1 (accessory) negative pole
STOP 8.2 kOhms	stop switch or safety edge with 8.2 KOhms (accessory)
RPM / ENCODER	socket for rpm-sensor
LIMIT SWITCH	socket for limit switch
RADIO MODULE SCKT	socket for radio PCB module
ANT	terminal for antenna
2A	2x slow blow fuse included 250V/2A

DESCRIPTION OF LED'S (LIGHT EMITTING DIODE)

DESCRIPTION	COLOUR	STATUS
STOP / 8.2 kOhms	green	Stop Switch ON: Stop Active OFF: OK (Requires wire bridge if no switch is connected)
EDGE	green	Safety Edge 8.2KOhm ON: Activated OFF: OK (Requires 8.2KOhm resistor if not used)
"Key symbol"	red	Key-switch 2-wing opening ON: Activated OFF: OK
PHO 1	red	Photocell 1 (close) ON: OK, photocell connected OFF: No photocell connected
PHO 2	red	Photocell 2 (adjustable) ON: OK, photocell connected OFF: No photocell connected
OPEN LIM	yellow	limit switch GATE OPEN
CLOSE LIM	yellow	limit switch GATE CLOSED
LEARN	yellow	Programming indicator ON: (flashing) programming is active OFF: off
DGN	red	Diagnostic, also refer to page 18
CH1	red	Remote control programming for complete opening ON: New remote can be programmed OFF: off
CH2	red	Remote control programming for partial opening (Refer to CH1)

DESCRIPTION OF PUSH BUTTONS P1, P2, & P3

Button	Function
P1+P2+P3	Limit setting: Push P1+P2+P3 simultaneously. The LED LEARN starts to flash as long as feature is activated.
P1	Button P1 operates Motor . Deactivate: Wait for 20 seconds or disconnect logic board from power.
P1	Force / travel distance - setting "BASIC DEFAULT" ; from position CLOSE LIM
P1 + P2	Force / travel distance - setting "INSTALLER FORCE SETUP" ; from position CLOSE LIM; with optional Soft-Stop setting
P2 ; P3	Timer to close. Factory setting: off. When the photocell beam is interrupted, the gate closes immediately without delay. Refer to Timer to Close section (page 16).
P3	Software-reset to factory defaults. Push & hold for 10 seconds. Does not reset memory (see section "radio").
Radio jumper + P1	Programming Remote for Channel 1 Command for OPEN completely
Radio jumper + P2	Programming Remote for Channel 2 Command for OPEN partially

ANTENNA (OPTIONAL) MODEL: ANT4X-1LM

The control board is supplied with a wire antenna as standard. An external antenna (accessory) can be connected to terminals as shown. A larger range (radio) can thus be achieved. For best range results mount antenna as high as possible.

BACKUP BATTERY (OPTIONAL) MODEL: CM475 (24V/DC)

The terminals serve to reload an externally installed storage battery.

The integrated recharger is loaded and in case of power failure the battery provides power. A new fully charged storage battery may provide power for more than 24 hours. Storage batteries are subject to deterioration and lose capacity. Due to extensive use they lose capacity even faster. Replace storage batteries after approx. 2-3 years. CM475 is not for outside use and requires a suitable enclosure.

FLASHING LAMP (OPTIONAL) MODEL: 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 mm² or more.

Voltage: 24 V DC

KEY SWITCH (OPTIONAL) MODEL: 100010, 100027, 100034, 100041

The system can be operated by key switch (connectors: key symbol and COM). Also see OPEN/PED under "Jumper Settings".

STOP SWITCH (OPTIONAL) MODEL: 600084

A stop switch to stop the movement of the gate in any direction can be connected to this output.

Also see STOP/8.2kOHM under "Jumper Settings".

SAFETY EDGE (OPTIONAL) MODEL: 600046, 600053, 600077, 600060

A safety edge working according to the 8.2 kilo ohm principle can be connected to the control board, i.e. a 8.2 kilo ohm test resistor is attached to the end of the safety edge. It ensures that the electric circuit is monitored permanently. The control board is supplied with an 8.2 kilo ohm resistor installed. Several safety edges are connected in series. Cable cross-section: 0.5 mm² or more.

Also see STOP/8.2kOHM under "Jumper Settings".

PHOTOCELLS (INCLUDED) MODEL: 772ANZ

The photocells are for safeguarding the gate and must be used.

The fitting location depends on the gate's design. EN12453 specifies that a pair of photocells must be installed at a height of 200 mm and activated to "Close". The photocells consist of a transmitter and a receiver and must be opposite each other. The photocell is mounted on the wall using small screws and wall plugs. To enable the "Automatic Closing" function, the Chamberlain failsafe photocell must be installed.

Programming of IR sensors:

- connect IR sensors
- program the travel of the gate
- special feature: Fast closing gate
(see "Description of the Push Buttons P1, P2 & P3")

Deletion of IR sensors:

Disconnecting already connected IR sensors will cause the control board to block the functionality of the terminals it was connected to. To delete IR sensors correctly:

- disconnect IR sensors
- cut control board from current shortly
- program the travel of the gate.

Diagnosis of the photocell

LED constant = OK

LED flashes = photocell disables control board

LED off = no current, incorrect connection or polarity

Diagnosis on the control board

LED constant = OK

LED off = OK no photocell connected

LED flashes = photocell disables control board

Connection between 1 & COM:

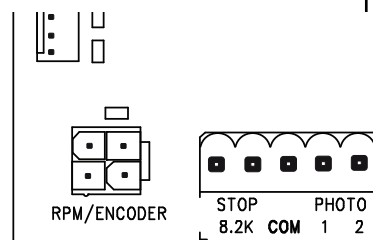
Active when gate is closing (reverses gate to open)

Connection between 2 & COM:

adjustable:

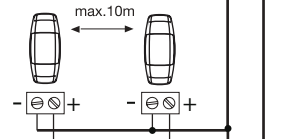
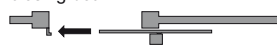
Jumper "PHO 2 MODE" unplugged >> active when gate is closing

Jumper "PHO 2 MODE" plugged >> active when gate is opening



PHO1

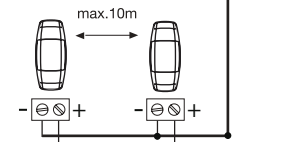
closing beam



Jumper OFF

PHO2

closing beam



Jumper ON

closing beam



opening beam



RADIO AND RADIO PROGRAMMING

Insert radio module on designated pins, if not pre-installed.

PROGRAM / DELETE REMOTE CONTROLS

The receiver has two channels CH1 and CH2.

The respective LEDs CH1 and CH2 are assigned to these two channels. Receiving a signal from a programmed remote control button, CH1 fully opens the gate.

Receiving a signal from another programmed remote control button, CH2 partially opens the gate (pedestrian mode).

PROGRAMMING

1. **Insert (connect) jumper "RADIO"**
2. Briefly push button P1 (for CH1) or P2 (for CH2) and the respective LED lights up.
3. Press and hold a selected button on your remote control until LED goes out after short flashing. Done!
Repeat for all remote controls (a maximum of 180 remote controls can be programmed to each channel).

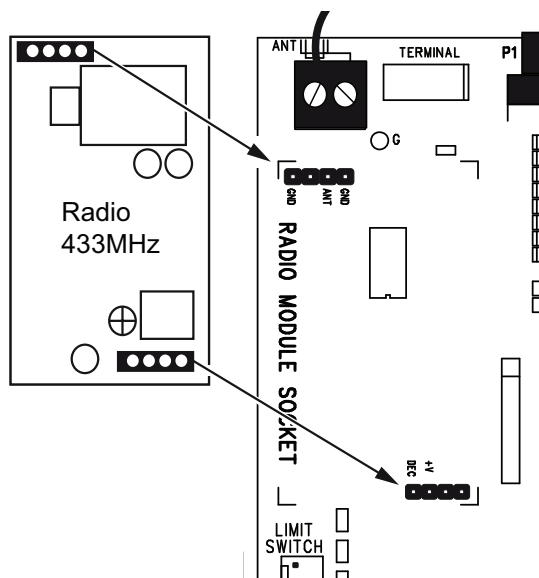
Important: To finish programming, remove (disconnect) jumper "Radio"!

Note: Make sure **NOT** to program the same remote control button to CH1 and CH2, otherwise the gate will **NOT** work properly.

DELETE

1. Insert (connect) Jumper "Radio".
2. Press and hold buttons P1 (for CH1) or P2 (for CH2) until the respective LED goes out again (approx. 10 seconds).
Single remote controls can not be deleted. All remotes programmed to this channel are deleted.

Important: To finish deleting, remove (disconnect) jumper "Radio"



LOOP DETECTOR (OPTIONAL)

Jumper OPEN/PED must be plugged

Loop detectors react to metal and the most common use is for cars or trucks but not for bikes or pedestrians.

Exit loop / Gate Opening Loop

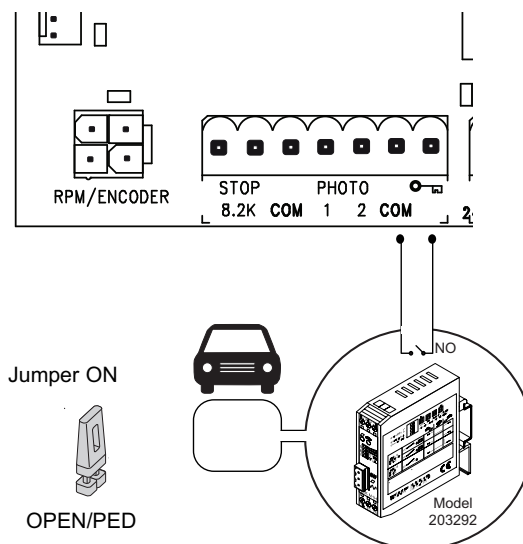
An exit loop is behind the gate and opens the gate when closed, keeps it open or re-opens the gate.

The jumpers OPEN/PED must be PLUGGED (in place).

The gate requires installed photocells and timer to close activated.

In addition, the feature "Fast closing" can be activated.

Refer to section "Description of Push Buttons P1, P2 & P3"



JUMPER SETTINGS

RADIO

The radio jumper is required to program remote controls.

For programming procedure please refer to page 12, section "radio"

FREE: No programming of remote controls possible

PLUGGED: Programming of remote controls possible

Important: Keep jumper "RADIO" disconnected (removed) if not in use!

STOP/8,2 KOhm

Defines whether the terminal STOP/8,2KOhm is used for an emergency stop or a safety edge. With an emergency stop any movement of the gate will be stopped. When used for a safety edge the gate reverses for 1 second.

FREE: Factory setting is 8,2KOhm. Safety edge or 8.2kOhm resistor is required.

PLUGGED: Emergency stop required. In this case the resistor must be removed and replaced by the switch or a switch circuit.

OPEN/PED

Defines if a key switch opens the gate completely or partially.

FREE: opens partially (ca. 100 -150 cm)

PLUGGED: opens completely

Note: If the jumper OPEN/PED is plugged and timer to close is activated as well, the functionality of the terminals "key symbol" and "COM" changes. See section "Loop Detector" above.

PHO 2 MODE

Defines whether the second photocell is active in closing or in closing & opening.

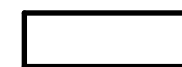
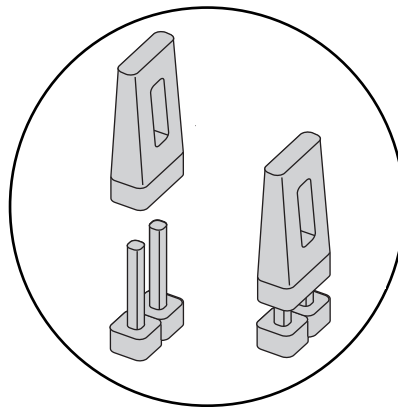
FREE: active in closing

PLUGGED: active in opening

OBSTACLE

Factory-equipped with fixed wire jumper. Cutting through increases the operating power at the control.

CAUTION: If the jumper is severed, the gate system should be secured with additional safety devices (contact strip, etc.).



RADIO
PROGRAM



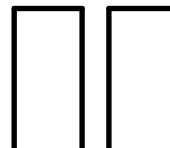
STOP/8.2K

OPEN/PED

PHO2 MODE

OBSTACLE

SPEED



INITIAL OPERATION / BASIC SETTING

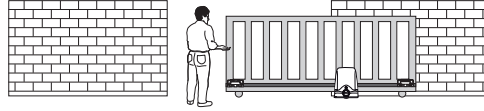
Proceed step by step. When in doubt, start again at the beginning. Take sufficient time to make these settings.

1. Are all components required for operation connected? Motor, photocells, safety contact strip, stop switch.
2. Limit switches are fixed to the rack?
3. Setting of jumpers => all removed (settings can be done later on)
5. Make sure nobody is present in the gate area.

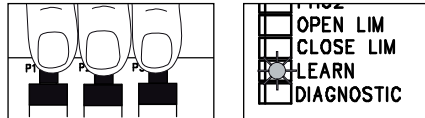
Now connect control board to power

BASIC SETTING (to identify magnet position):

1. Bring the gate manually to a position between the two limit switches OPEN - CLOSE and lock drive.

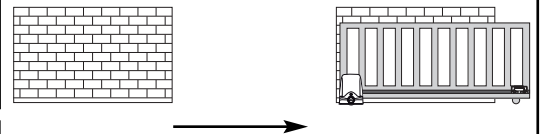
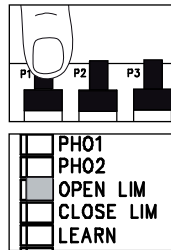


2. Press buttons P1, P2 and P3 at the same time for about 2-3 sec. LED "LEARN" starts to flash.

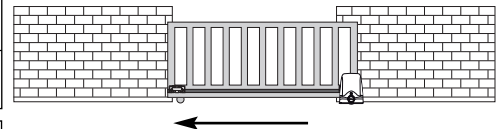
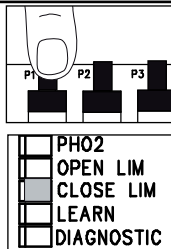


3. Now watch the gate. The gate can be moved in both directions using the button P1. Press the button P1 several times (1-2 seconds each time) to understand the function of the button. If none of the buttons are pressed for about 15 seconds, the control switches back to normal operation. Repeat step 2 in this section.

4. Fully open the gate with the button P1.
Keep P1 pressed until the controller turns off by itself at the limit switch OPEN. (Do not release beforehand).
Control: The LED "OPEN LIM" (yellow) = limit switch OPEN should now light up and the gate can be opened as required. Otherwise, change the limit switch position before further settings are made.



5. Close the gate with the button P1 till it is turned off at the limit switch CLOSED. (Do not release beforehand).
Control: The LED "CLOSE LIM" (yellow) = limit switch CLOSED should now light up and the gate can be closed as desired.



Basic setting is completed.

- Wait for "learn" to stop flashing
- Proceed to next step

PROGRAMMING THE TRAVEL DISTANCE AND OPERATOR FORCE

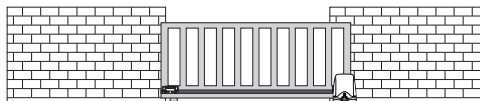
Below are two methods of configuring the opener's travel

1. Basic Default Setup - Slowest travel
2. Installer setup - Faster travel (optional soft start/soft stop)

1. BASIC DEFAULT FORCE SETTING

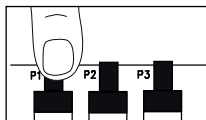
(Default speed - fast start then slows down)

1. The drive is at the limit switch CLOSED.
LED "CLOSE LIM" glows.



<input type="checkbox"/>	PH02
<input type="checkbox"/>	OPEN LIM
<input checked="" type="checkbox"/>	CLOSE LIM
<input type="checkbox"/>	LEARN
<input type="checkbox"/>	DIAGNOSTIC

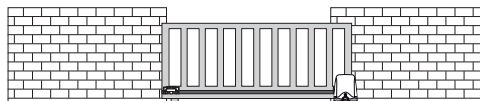
2. Press the button P1 until the gate starts to open.
(LED "LEARN" glows)
The automatic programme starts (slow speed).



<input type="checkbox"/>	PH02
<input type="checkbox"/>	OPEN LIM
<input type="checkbox"/>	CLOSE LIM
<input checked="" type="checkbox"/>	LEARN
<input type="checkbox"/>	DIAGNOSTIC

3. The drive moves the gate to the limit switch OPEN,
stops briefly and then moves back to the limit switch CLOSED.

4. After reaching the limit switch CLOSED, the LED
"LEARN" goes out. The programming of the distance and
the force required is completed.



<input type="checkbox"/>	PH02
<input type="checkbox"/>	OPEN LIM
<input type="checkbox"/>	CLOSE LIM
<input type="checkbox"/>	LEARN
<input type="checkbox"/>	DIAGNOSTIC

Proceed with "Radio and Radio Programming" and "Completion of Installation".

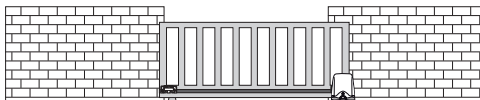
2. INSTALLER FORCE SETUP

(Faster speed with optional soft stop function)

PROGRAMMING THE DISTANCE "ADVANCED" (INDIVIDUAL)

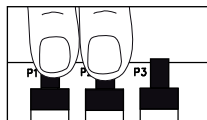
NOTE: The button P1 must be pressed firmly several times during this set up. Each press of the button will determine the position at which the soft-stop (slow rampdown speed) is activated. ie. The installer can set the soft stop function at any point of the travel.

1. The gate is at the limit switch CLOSED.



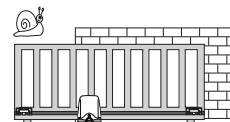
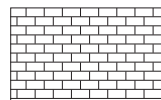
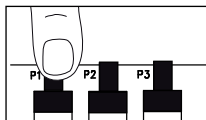
<input type="checkbox"/>	PH02
<input type="checkbox"/>	OPEN LIM
<input checked="" type="checkbox"/>	CLOSE LIM
<input type="checkbox"/>	LEARN
<input type="checkbox"/>	DIAGNOSTIC

2. Press P1 and P2 simultaneously for a longer time (about
5-6 seconds) until the gate opens.
Release buttons! LED "LEARN" flashes.

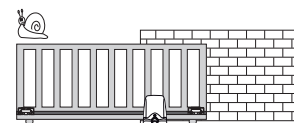
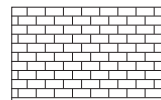
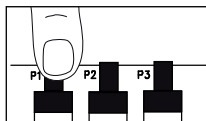


<input type="checkbox"/>	PH02
<input type="checkbox"/>	OPEN LIM
<input type="checkbox"/>	CLOSE LIM
<input checked="" type="checkbox"/>	LEARN
<input type="checkbox"/>	DIAGNOSTIC

3. Press P1. Soft-stop in the OPENING direction starts from
this position.



4. Press P1 again when the gate moves in CLOSING
direction, soft-stop starts from this position.



When LED "LEARN" goes out, the programming is
completed successfully.

<input type="checkbox"/>	PH02
<input type="checkbox"/>	OPEN LIM
<input type="checkbox"/>	CLOSE LIM
<input type="checkbox"/>	LEARN
<input type="checkbox"/>	DIAGNOSTIC

COMPLETION OF INSTALLATION / PROGRAMMING

Once the travel distances are programmed, the remote controls can be programmed as well.
(Refer to "Radio and Radio Programming")

1. You can now let the gate run 2 complete cycles by pressing a key on the remote or a connected switch and observe the process. Close the gate again, WITHOUT making another setting.
2. Check operation of photocells, switch, flashing light, remotes, accessories, etc.
3. Advise people using the gate with regard to gate operation, safety functions and how to release the gate in order to operate it manually.

TIMER TO CLOSE (AUTO-CLOSE)

NOTE: Only possible with connected photocells. Time frames from 2 seconds up to 120 seconds are possible.

Activate:

1. Press and hold P2 until yellow LED starts flashing
2. Now count the time you wish to program
3. Press P2 again. Done!

Deactivate:

1. Press and hold P2 until yellow LED starts flashing.
2. Press P3. Yellow LED goes out. Done!

FORCE / TORQUE OF MOTOR

Thrust of the motor is set automatically while programming the travel distance. Thrust can only be modified by programming the travel distance again. If gate movement is impeded by weather or changes to the installation (rust or inappropriate lubrication) it may have to be repaired.



The control board complies with the latest EU guidelines.

One of these guidelines specifies that the closing forces at the gate edge must not exceed 400N (40 kg) for the last 500 mm before the gate is CLOSED. Above 500 mm, the maximum force at the gate edge must not exceed 1400 N (140 kg). If this cannot be ensured, a contact strip must be mounted on the gate at a height up to 2.5 m or on the pillar on the opposite side (EN12453).

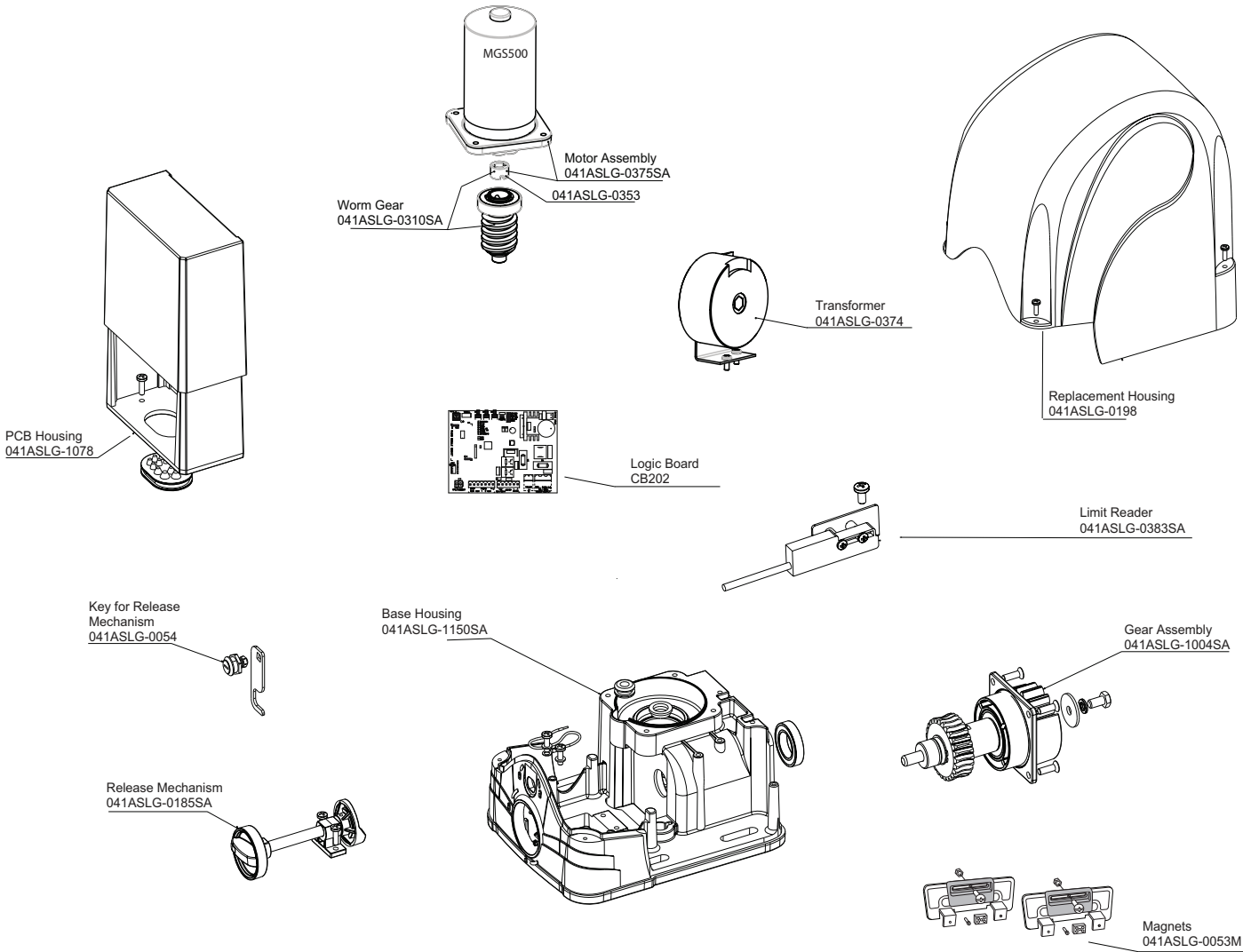
BATTERY DISPOSAL

Batteries and rechargeable batteries may not be disposed along with domestic waste, but are obliged to be returned.

After use they can be returned free of charge locally e.g. in trade or at municipal collecting points. Batteries and rechargeable batteries are marked with a crossed waste container as well as with the chemical symbol which describes their toxic element, "Cd" for cadmium, "Hg" for mercury and "Pb" for lead.



SPARE PARTS



DIAGNOSIS LED

The LED diagnostics always shows the latest upcoming issue. If several issues are existing the LED diagnostics does not show them.
Example: The gates' guiding rail is soiled and the drive performs a safety reversal due to too high force. After that the photocell beam got interrupted. Diagnosis: As long as the photocell beam is interrupted the diagnosis LED flashes 6x respectively 7x.

Indication	Description	Remedy
1x blinking	Motor has insufficient connection to control board	Cables not wired or badly connected. Check terminals precisely. Consider wire lengths
2x blinking	Limit switch GATE CLOSED	Programming travel distance failed because the gate never reached the limit switch GATE CLOSED. Repeat programming the travel distance according to instructions
3x blinking	Limit switch GATE OPEN	Programming travel distance failed because the gate never reached the limit switch GATE OPEN. Repeat programming the travel distance according to instructions
4x blinking	Interruption of programming / no programming	A: Button P1 was pressed too often during "programming travel distance advanced" B: The control board has never been programmed
5x blinking	Force too high. Force very unsteady	A: Gate too heavy or rough running B: Gate blocked / or rough running at a certain position C: Gate not balanced D: Faulty mechanical installation All: Consult gate dealer/specialist
6x blinking	Photocells 1 block installation A: Obstacle interrupts beam B: Poor alignment of the lenses C: Power supply for photocells not sufficient	A: Remove obstacle B: Check alignment C: Check terminals and wire diameter
7x blinking	Photocells 2 block installation	refer to 6x blinking
8x blinking	Emergency stop blocks installation	A: Check wires and wiring B: Check basic setting of control board (jumpers)
9x blinking	Safety edge blocks installation A: Obstacle pushes safety edge B: Safety edge defective C: Power supply too low or wire damaged	A: Remove obstacle B: Check wires, wiring and 8.2kOhm resistor C: Check basic setting of control board (jumpers)
10x blinking	Power supply to control board too low A: 230V supply defective or faulty connection B: Damaged wire in powercable C: Back up battery (optional accessory) empty	A: Check terminals/connections B: Consult dealer/specialist C: Charge battery min. 24h
11x blinking	EEPROM Fault Power up failed	Replace control board
12x blinking	Defect on relay or major electrical component A: Overload B: Bad wiring (wrong) D: Water in photocells (bad installation) E: A photocell was connected before but not removed (disconnected)	Replace logic board Check wiring Reprogram the travel distance from gate fully closed

Pressing P1, P2 and P3 does not show any reaction		Jumper "RADIO" must be removed. Check whether the radio module is seated correctly.
The gate opener doesn't respond at all; no LED is on.	Possibly power failure.	1. Check conductor and zero conductor. 2. Check house fusing. Check whether the radio module is seated correctly.
Immediately after the gate has started moving, it stops and reverses.	Obstacle in area of gate. Gate rough running (consult dealer)	Check gate area for objects Check photocells Reprogram travel distance
Gate can only be opened	Photocell blocks	Function and connection must be checked
"Timer to close" doesn't work.		Only works if the 2-cable photocell 770,771 or 772 installed.
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.	Photocell, a contact strip or the emergency stop disables the control board. Only one photocell was connected for OPEN	At least 1 pair of photocells active in OPEN or CLOSED must be connected
The gate opener doesn't respond at all, although the controller has been connected (LEDs are on).	1. Remote control not programmed. 2. LEDs indicate a fault. 3. Photocell connected incorrectly. 4. Motor terminal possibly not connected properly.	1. Programming remote control. 2. Find and rectify fault(s) (see description of diagnostic LEDs). 3. Check photocell connection / programming. 4. Check terminals and connections.
Control board does not work with transmitter	1. Transmitter not programmed 2. Photocells block 3. Jumper "RADIO"	1. Program transmitter 2. Check photocells, check diagnostic LEDs 3. Jumper "RADIO" must be plugged.
Control board does not work	Travel distance not programmed	Program travel distance. See initial operation / diagnosis LED
Gate doesn't open completely	Gate heavy / rough running	Re-program travel distance Consult dealer/specialist
Travel distance can't be programmed.	1. Jumper setting not correct 2. See Diagnostic LED 3. Interferences in wiring of photocells, switch or safety edge 4. Gate moves for 1 second only and stops without reversal during programming 5. Magnetic limit switch	1: Follow the instructions of "initial operation" closely 3: Remove for checking, then re-program travel distance 4: Check RPM sensor/Encoder on control board 5: Install magnetic limit switch properly
The operator sometimes moves slowly	Power failure	Common procedure. After power failure the operator performs a selftest. Depending on the operator model this can take a few seconds or a complete cycle. Do not interrupt this test via remote control or switch, otherwise the limits may change. If this is the case reprogram travel distance using P1.
Limit switches OPEN and CLOSED not correctly indicated	Incorrect programming	During programming the limit switch OPEN must be reached using P1, then limit switch CLOSED. Switching motor cables is not required.
Gate opens instead of closing automatically (timer to close activated)	Incorrect programming	Repeat programming as described in these instructions
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.	
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.	

CHAMBERLAIN LIMITED WARRANTY
Merlin Professional MGS524
Sliding Gate Opener

Chamberlain Australia Pty Limited / Chamberlain New Zealand Limited (Chamberlain), the manufacturer of Merlin® automatic gate openers, is committed to manufacturing and supplying high quality goods.

As part of this commitment, we seek to provide reliable service and support for our goods and are pleased to provide you, the original purchaser, with this Chamberlain Limited Warranty.

We also provide the following statement as required by the Australian Consumer Law: In Australia, in addition to your rights under this Chamberlain Limited Warranty, our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

Chamberlain's warranty

Chamberlain warrants to the original purchaser of the Merlin® Sliding Gate Opener (Unit) that all parts of the Unit, other than remote controlled transmitters and accessories, globes and batteries, are free from defects in materials and workmanship for a period of 24 months from the date of purchase when installed in a residential premise with a residential specified gate that is designed for the sole purpose of domestic domicile. Chamberlain warrants that remote controlled transmitters and accessories included with the Unit are free from defects in materials and workmanship for a period of 12 months from the date of purchase.

Batteries and globes are not covered under the Chamberlain Limited Warranty.

It is a condition of this Chamberlain Limited Warranty that the Unit is sold, installed and serviced by a Professional Dealer appointed by Chamberlain. A Merlin® branded gate opener purchased over the internet and installed by a person other than a Professional Dealer will not be covered by this Chamberlain Limited Warranty.

During the applicable Chamberlain Limited Warranty period, if you are concerned that the Unit may be defective, for prompt on-site service call the Professional Dealer that sold/installed the opener, or our service centre on the toll free number below and a Chamberlain technician will diagnose the problem and arrange for this to be rectified. Once the problem has been diagnosed, subject to your rights under the Australian Consumer Law with respect to major failures, Chamberlain or its Professional Dealer will provide you with:

1. repairs to the Unit
or
2. a replacement Unit.

Repairs and replacement parts provided under this Chamberlain Limited Warranty are provided free of charge and are warranted for the remaining portion of the original warranty period.

This Chamberlain Limited Warranty provides benefits which are in addition to your other rights and remedies as a consumer.

Exclusions

If our service centre determines that a warranty claim has been made in respect of a failure or defect arising under or out of any exclusion detailed below such that the claim is not covered under this Chamberlain Limited Warranty, we may, subject to your other rights and remedies as a consumer, charge you a fee to repair, replace and/or return the Unit to you. This Chamberlain Limited Warranty does not cover any failure of, or defect in, 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 by a person other than a Professional Dealer to repair, dismantle, reinstall or move the Unit to another location once it has been installed;
- 3 tampering, neglect, abuse, wear and tear, accident, electrical storm, excessive use or conditions other than normal domestic use;
- 4 problems with, or relating to, the gate or gate hardware, including but not limited to the gate;

- 5 problems caused by electrical faults or replacement of batteries;
- 6 water or moisture ingress that causes corrosion or electrical malfunction;
- 7 corrosion caused by sea air if located near a waterway, beach etc;
- 8 fitment in a commercial operating application; or
- 9 solid panel gates installed in an unprotected wind affected location resulting in the gate not closing;
- 10 gate travel encounters an incline/decline.

NB: A General Purpose Outlet (GPO) ie: power point must be supplied by the consumer as this electrical fitting does not form a part of the Unit (opener). Excludes solar installations.

If this Chamberlain Limited Warranty does not apply, you may have rights available to you under the Australian Consumer Law.

Liability – Australia only

Except as set out in the Australian Consumer Law (being Schedule 2 of the Competition and Consumer Act 2010) (as amended, consolidated or replaced):

- 1 all other guarantees, warranties and representations in relation to the Unit or its supply are excluded to the extent that Chamberlain can lawfully exclude them; and
- 2 under no circumstances will Chamberlain 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.

Liability – New Zealand only

Except as set out in the Fair Trading Act 1986 and the Consumer Guarantees Act 1993 (as amended, consolidated or replaced):

- 1 all other guarantees, warranties and representations in relation to the Unit or its supply are excluded to the extent that Chamberlain can lawfully exclude them; and
- 2 under no circumstances will Chamberlain 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 retain your sales docket or invoice as proof-of-purchase and attach it to this manual to enable you to establish the date of purchase in the unlikely event of a warranty service being required. Chamberlain reserves the right to change the design and specifications of the Unit without prior notification. Some features or accessories of the Unit may not be available in certain markets or areas. Please check with your distributor.

Chamberlain service centre contact details

Australia

Phone toll free 1800 638 234
Fax toll free 1800 888 121
Chamberlain Australia Pty. Ltd.
PO BOX 1446
Lane Cove NSW 1595

New Zealand

Auckland phone 09 477 2823
Phone toll free 0800 653 667
Fax toll free 0800 653 663
Chamberlain New Zealand Ltd
PO BOX 100221
North Shore 0745

Email: customerservice@chamberlainnz.com

Website: www.go-merlin.com