**INDEX**


PAGE 2 Introduction
Legal requirements
Recommended tools

3 Terms and definitions

4—5 Diagram of motor

6 Optional extras
Site evaluation

7 –8 Motor installation

9 - 13 Removing the lid
Placing the motor in manual over-ride.
Electrical wiring. DC motor only.
Anchoring the motor
Mounting the rack
Filling the gearbox oil

14-15 Mounting the magnets.

16 P.C.BOARD layout

17 Initial motor set-up and set-up trouble shooting.

18 Programming remotes

19 Setting the auto-close time

20 Setting multi-user mode.
Setting P.I.R.A.C. mode.

21 Connecting infra-red beams

22 Connecting a light / lock card

23 Connecting an intercom

24—27 L.E.D. Functions
Advanced settings
Re-setting factory default

28—29 AC/DC motor switcher wiring diagram

30 Specifications / warranty

## INTRODUCTION

**Congratulations** on purchasing your DURASLIDE gate motor. D.A.C.E has proven to be a leader in the automation field and strives to manufacture high quality products using the latest technology available. D.A.C.E. is constantly working on upgrading their products to bring you, the customer, a product of the highest quality. Other products manufactured by D.A.C.E. include:-

It is recommended that an experienced gate installer is used to install your gate motor. If you intend to install this motor yourself, please read this manual carefully before any installation begins.
This automatic gate operator is ***NOT*** a security device. It is designed to make access to a premise undemanding.

## LEGAL REQUIREMENTS AND WARNINGS

REMEMBER THAT A GATE IS A HEAVY PIECE OF MOVING EQUIPMENT SERIOUS INJURY OR EVEN DEATH MAY OCCUR IF MISUSED

- It is recommended that your local E.C.A. (Electrical Contractors Association) is contacted in order to obtain the legal wiring regulations pertaining to the area.
- Electrical Shock may occur while installing this equipment.
- Injury or death by electrocution may lead to law suits against the installer/homeowner.
- If you intend to run 220V/AC directly from the Mains supply (house supply) to the transformer, the wiring should be done by a qualified/registered electrician. This is a legal requirement and failure to do so may lead to non compliance of property or law suits against the property owner in the event of an accident.
- It is a legal requirement to run all cabling in conduit. The power supply must be run in a separate conduit to the communication cables.
- Mains supply may only be run in a guarded cable. Under no circumstances may 220V/AC be run using Communication, Cabtyre or Ripcord Cables.
- D.A.C.E will not be held liable for any accident / incident resulting in damage, injury or death ensuing from the installation of the automatic gate motor.
- Although the DuraSlide has built-in collision sensing, substantial damage may occur. For this reason safety beams should be used on all installations.
- Do not allow children to play near or with any gate, gate motor or remote control.
- It is the responsibility of the installer to ensure that the gate is in good working condition before automating the gate.

## RECOMMENDED TOOLS

- Assorted screw drivers – Phillips and flat
- 17mm spanner
- 17mm Socket
- Tape Measure
- Spade
- Pick
- Level
- Drilling Machine
- Steel Drill Bits
- Masonry Drill Bits
- Hammer
- Multi Meter
- Side Cutters
- Hacksaw

## TERMS AND DEFINITIONS

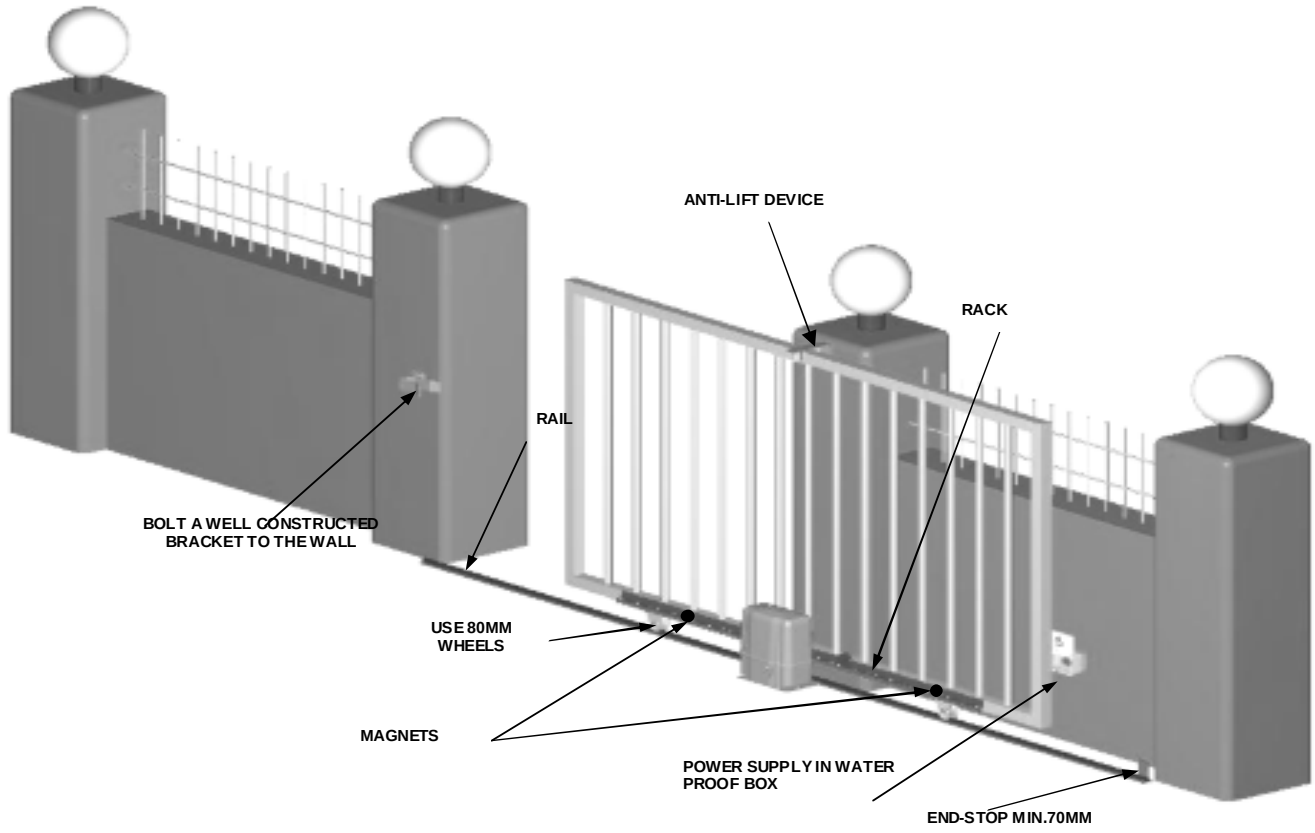
- AUTOCLOSE- allows gate to close automatically after a selected time period
- PEDESTRIAN ACCESS- gate will open partially and will autoclose after 6 secs.
- PARTY MODE- this allows autoclose to be overridden and gate can remain open for as long as needed.
- MULTI USER- commonly used in a town house situation. The gate will open completely, regardless of any other trigger received.
- COLLISION SENSING- in the event of a collision while closing, the gate will stop and then reopen. If collision occurs while opening , the gate will stop.
- BATTERY- 12 volt 7 amp/hour, drives the motor.
- CHARGER MODULE- delivers a trickle charge to maintain a constant 13,8 V/DC in the battery.
- TRANSFORMER- receives 220 V/AC from the mains supply and delivers 16 V/AC to the charger module.
- MAIN P.C. BOARD- this is the printed circuit board that contains all the electronic components that operate the motor.
  **NOTE** : always remove the power from the P.C. Board before connecting any inputs.
- RECEIVER- this is an external or onboard component that will trigger the motor via the mainP.C. Board
- REMOTE / TRANSMITTER- this is a device that will trigger the motor via the receiver.
- INTERCOM- there are many types of intercoms available, an intercom allows communication between the gate and the house. There is normally a button on the intercom handset that operates the gate.
- TEST BUTTON- button found on the main P.C. Board that is used to activate the motor during initialisation mode.
- RACK- length of gear mounted on the gate.
- PINION- drive gear fitted to main drive shaft of motor.
- FOUNDATION PLATE- secures motor to concrete plinth. (pg 4)
- MANUAL OVERRIDE MODE- allows the gate to be moved by hand.(pg 9)

**I. DURAOPTIC INFRA RED BEAMS**- it is strongly recommended that beams are used on all nstallations. The beams are designed to stop the gate from closing on a vehicle / pedestrian. If the gate is closing and the beam is broken, the gate will stop and then re-open.

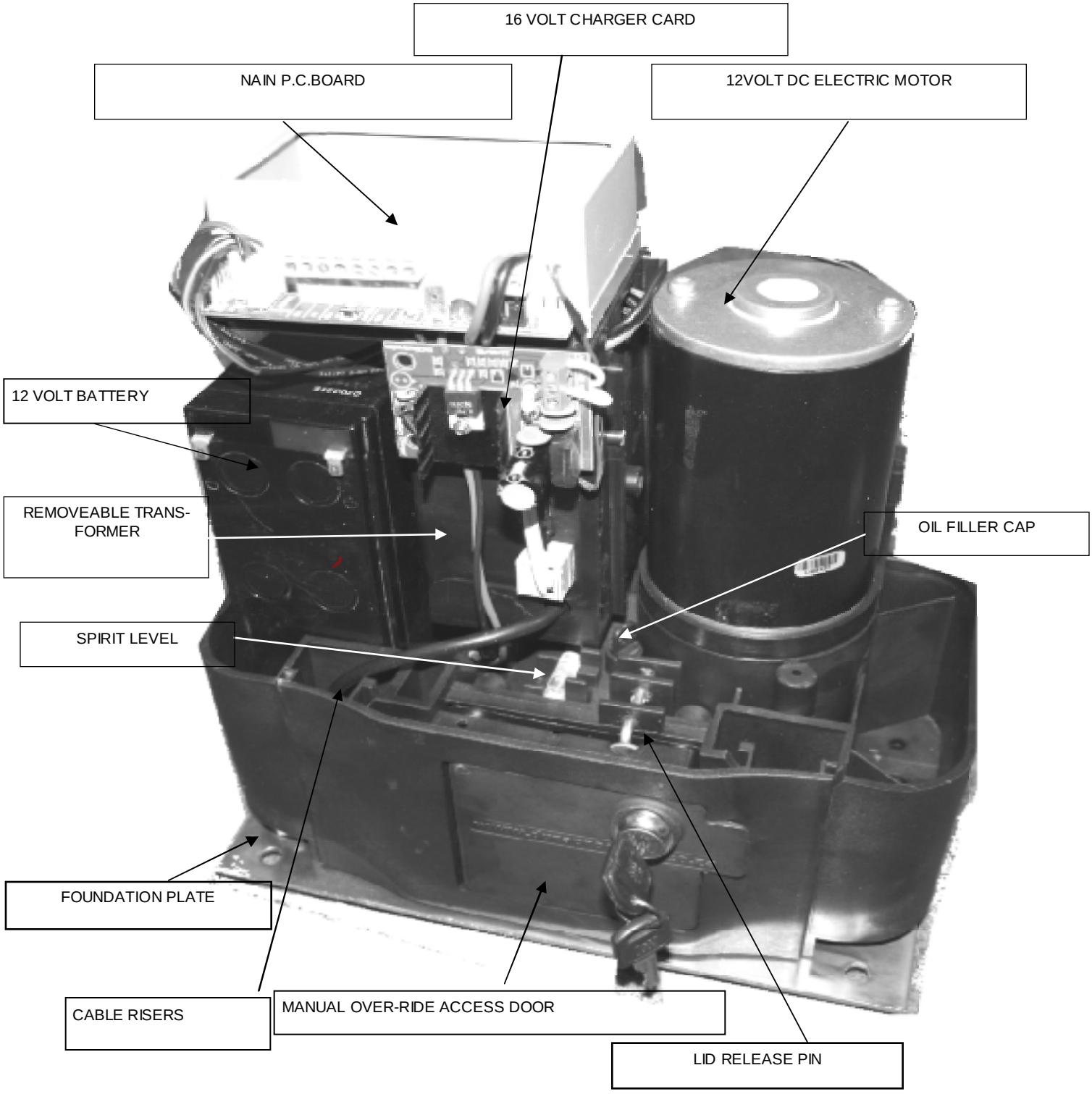
**II. DURATRONIC CODE HOPING RECEIVER**- radio receiver which uses random code radio signals to activate the motor.

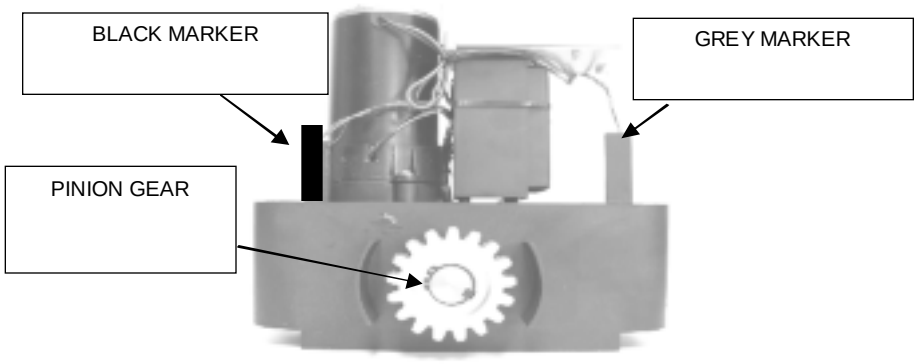
**BASIC SITE LAYOUT**

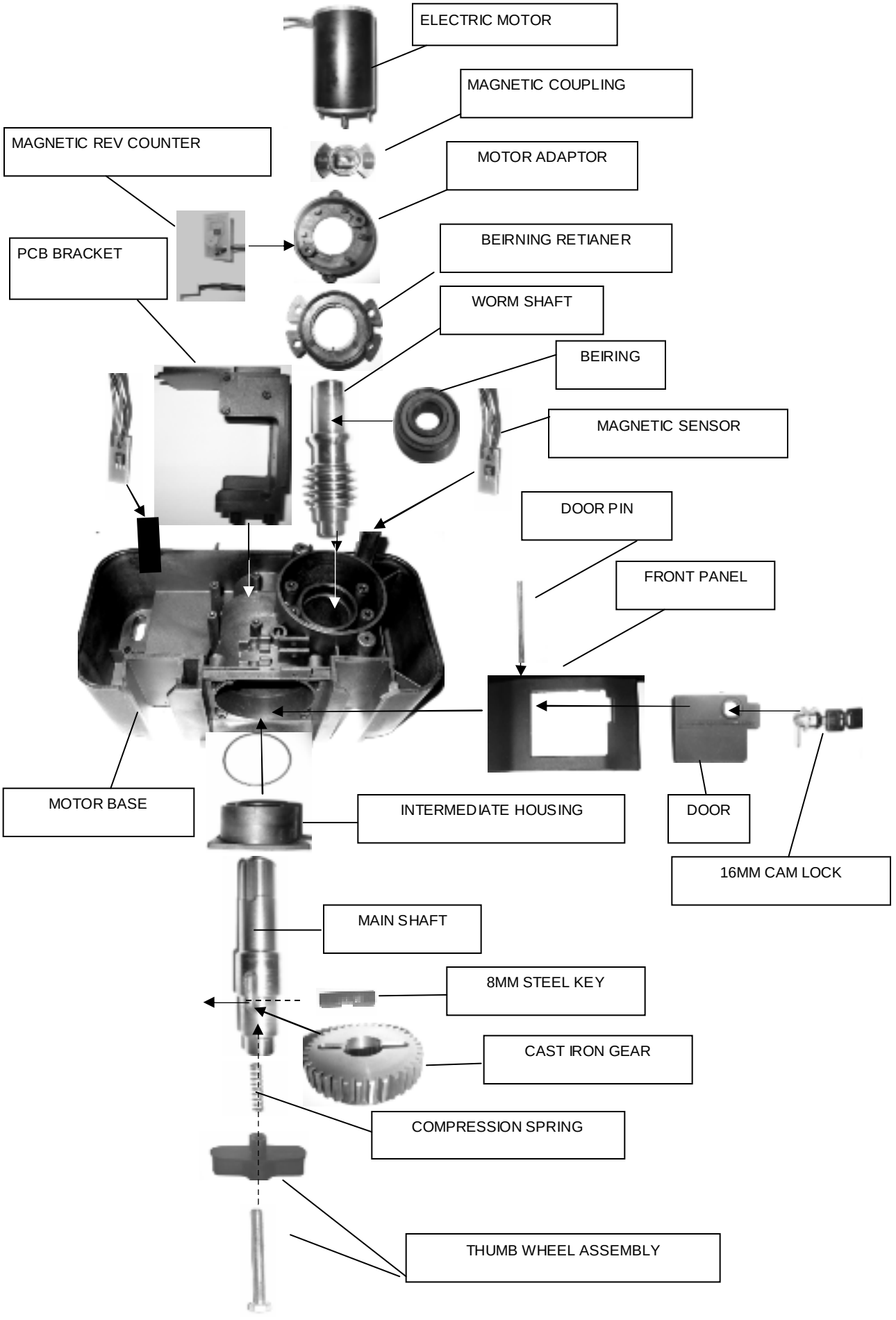
**Fig. 1.1**



## GENERAL MOTOR LAYOUT




ELECTRIC MOTOR
MAGNETIC COUPLING
MAGNETIC REV COUNTER
MOTOR ADAPTOR
PCB BRACKET
BEIRNING RETIANER
WORM SHAFT
BEIRING
MAGNETIC SENSOR
DOOR PIN
FRONT PANEL
MOTOR BASE
INTERMEDIATE HOUSING
DOOR
16MM CAM LOCK
MAIN SHAFT
8MM STEEL KEY
CAST IRON GEAR
COMPRESSION SPRING
THUMB WHEEL ASSEMBLY

**III.**

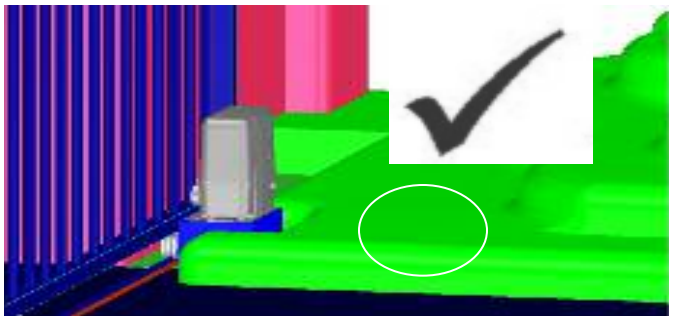
## OPTIONAL EXTRAS

**DURATRONIC REMOTE CONTROL**- radio transmitter which transmits a secure radio signal to the receiver.
**IV. ANTI TAMPER SWITCH**- this is a microswitch which can be connected to a house alarm zone that will trigger the alarm if the motor cover is removed.
**V. PILLAR LIGHT INTERFACE**- automatically switches lights on when a trigger is received. The lights will stay on for 4 minutes.
**VI. GATE STATUS INDICATOR**- the position of the gate can be seen on a L.E.D. which can be fitted to the intercom handset.
**VII. PEDESTRIAN PUSHBUTTON**- activates the gate in pedestrian mode
**VIII. ANTI THEFT BRACKET**- deters theft of the motor
**IX. EXIT LOOP DETECTOR—** Triggers the gate to open when a vehicle drives over it.

**I. LAY OF THE LAND**- it is important that the rail is level and the motor is above the flood level. (Fig.2.1)
**II. CONCRETE AND BRICK WORK**– A concrete plinth of approximately 400 x 400 x 300 must be laid to secure the foundation plate (page 8).

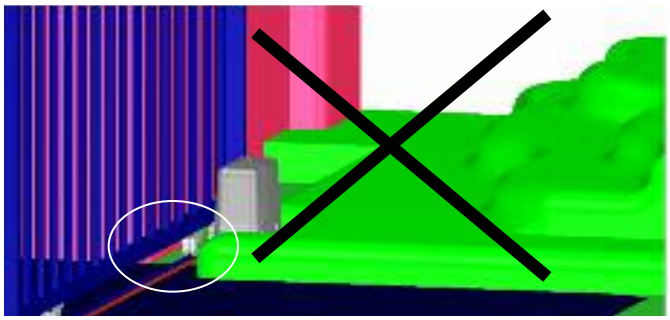
## SITE EVALUATION.

**Fig. 2.1**



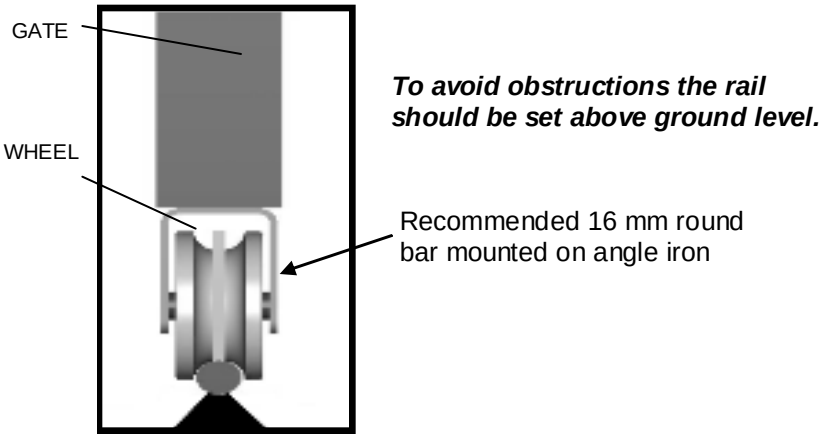
***Motor mounted above flood level with adequate drainage.***

**Fig. 2.2**



***Motor mounted below flood level .***

**Fig. 3**




***To avoid obstructions the rail should be set above ground level.***

## MOTOR INSTALLATION

It is important to check the following items before the motor is installed.

- The gate must be level .
- The gate must not exceed the max start up force (see table 1.2)
- Wheels and rollers must be in good working order.
- Any catch bracket, locking pins etc must not restrict the gate in any way.
- The end stoppers must be secure, minimum 70mm. Do not attempt to automate a gate without end stoppers.
- An anti lift device must be placed above the gate to avoid the gate being lifted off the rail.
- The motor must be set above the flood level to ensure correct operation.

NOTE the rail must be level otherwise the gate may strike the end stopper. D.A.C.E. will not be held responsible for any gate that hits the stopper due to the rail not being level.

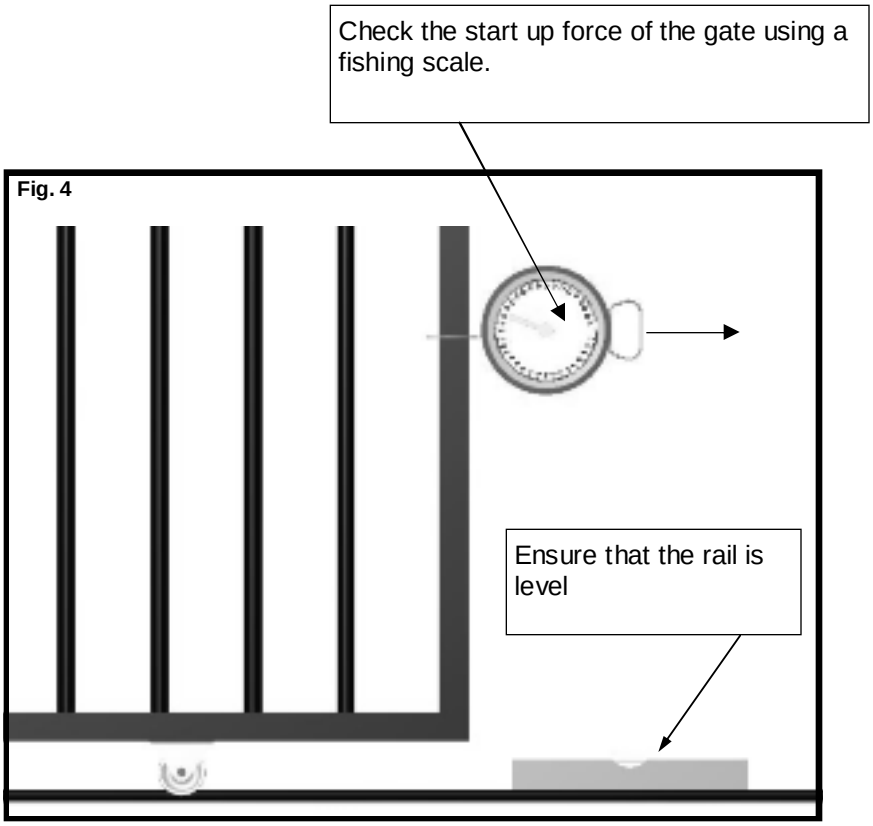



**Fig. 4**

**Maximum Linear Start up Force for DuraSlide 500 series is as follows:**

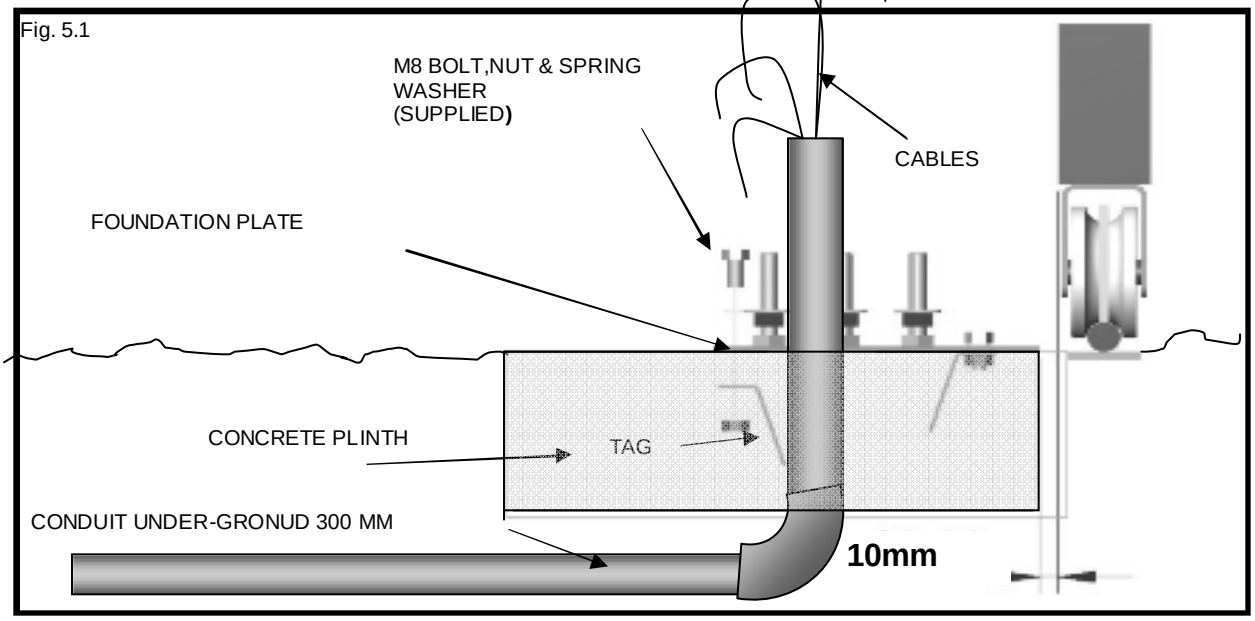
**Table 1.2**

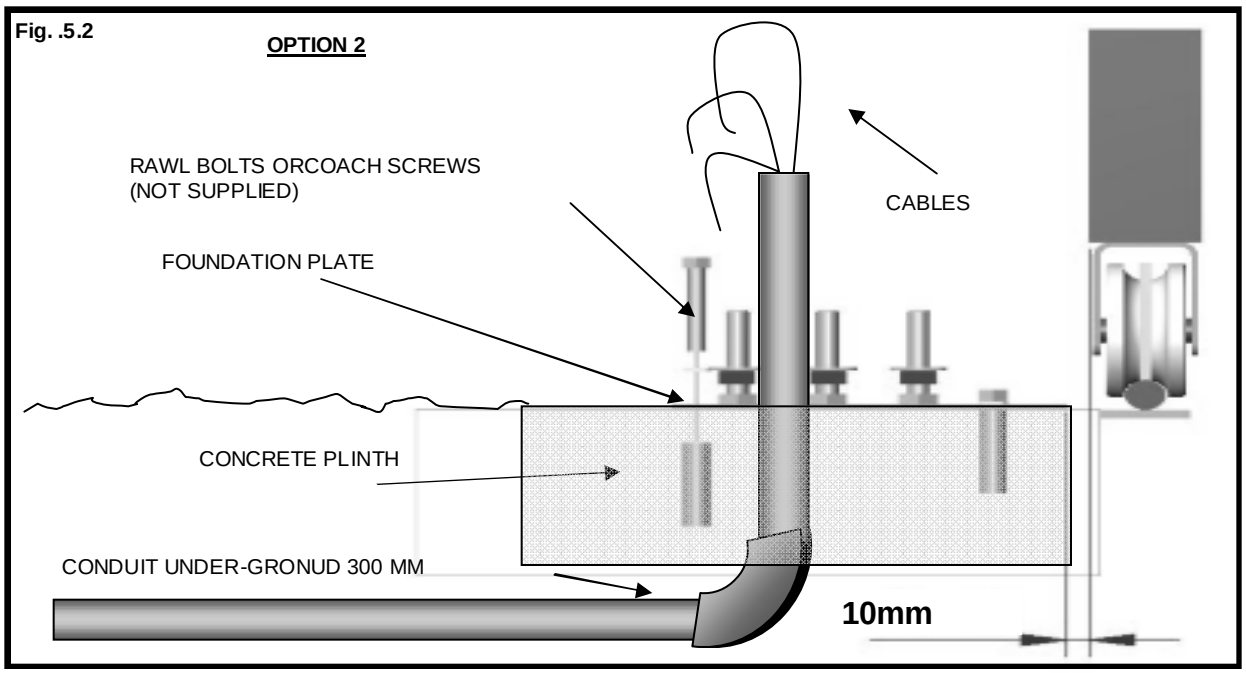
| Start Up | Running | Openings per day |
|---|---|---|
| 25kgf | 10kgf | 20 |
| 20kgf | 8kgf | 50 |
| 15kgf | 6kgf | 85 |
| 10kgf | 4kgf | 120 |
| 5kgf | 2.5kgf | 150 |

One of the most important points when installing the motor is that the motor must be secure. This means that a secure concrete plinth ( block ) must be laid in order to mount the motor onto. The plinth should be about 400 mm square.
The foundation plate must be attached to the concrete by means of the tags supplied (fig 5.1) or using RAWL bolts or coach screws (fig 5.2) if the concrete is already in place .
The foundation plate must be placed 10 mm from the inside edge of the gate, it must be parallel to the gate.

The cable and the conduit must be laid before the foundation plate is set. The cable and conduit must be brought up through the holes in the foundation plate to ensure correct operation.
(**See mounting foundation plate.**)

**I.** MOUNTING FOUNDATION PLATE (OPTION 1 **)**

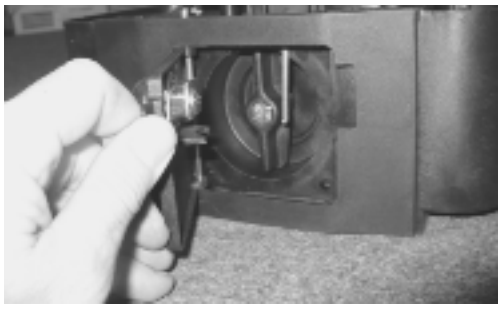


## REMOVING THE LID AND PLACING THE MOTOR IN MANUAL OVER-RIDE

**To remove the lid**.

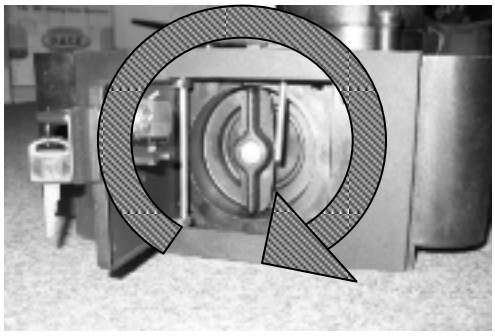
**Step 1**
Open the door



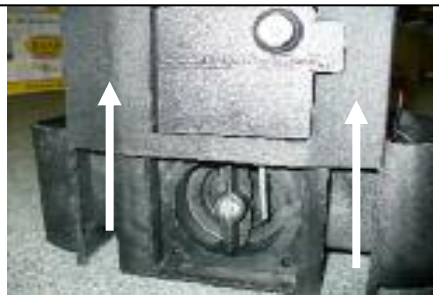
**Step 2**
Pull the pin out, the pin will move about 5 mm
The lid can now be removed

**To place the motor in manual over-ride**

Open the door as in step 1 above
Turn the thumb-wheel CLOCKWISE until the gate moves freely.

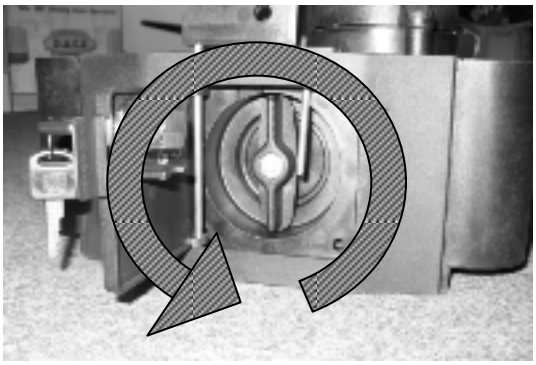


The front cover can be removed for ease of operation, as shown bellow.



**To place the motor in normal operation mode**

Turn the thumb-wheel ANTI-CLOCKWISE. Move the gate by hand until it locks into place. The number of turns needed should not be more than 6. If the number of turns exceeds 6, the wheel may come all the way out. This will not cause any damage. The wheel must be turned back in to the gearbox (clockwise). This should take about 4 or 5 turns.

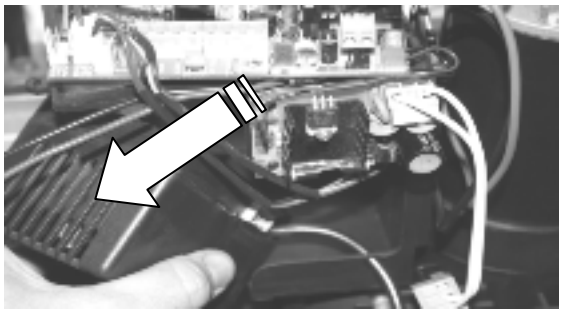


## ELECTRICAL WIRING (DC MOTOR ONLY)

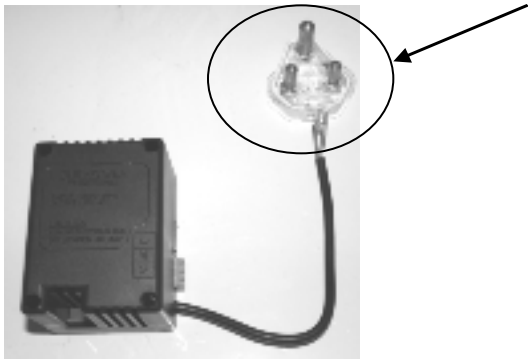
**For AC/DC motor wiring, see page 29**

The electrical wiring of this motor should be done with care as this is a potentially dangerous area. It is strongly recommended that the wiring is done as shown below. This method is the safest way to do the wiring. The voltage used in this method is 16 v AC. **Do not** use intercom cable for the power supply. The cable type should be a three core 1.5mm cable.

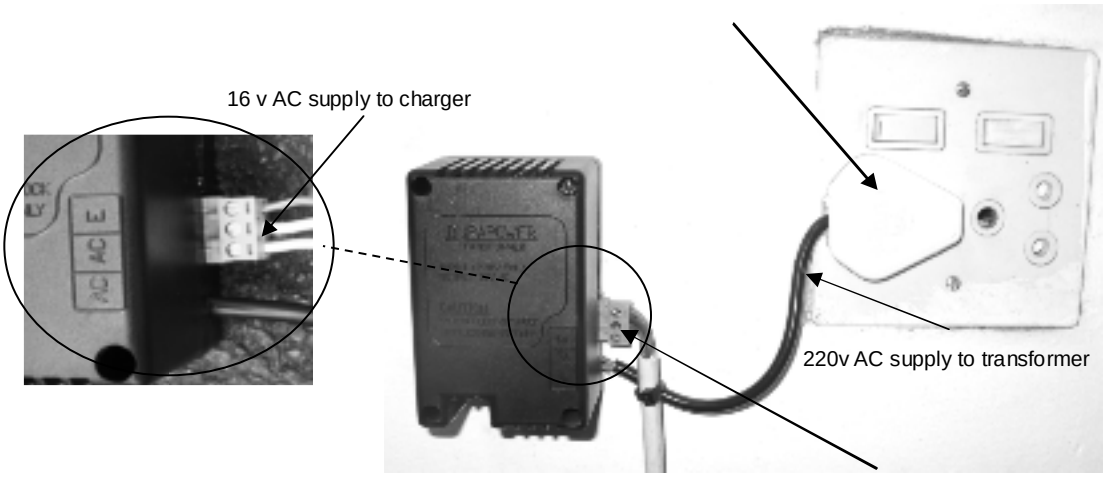
Step 1 remove the transformer from the motor. The battery must be removed first to allow the transformer to be removed. Replace the battery after the transformer has been removed.



Step 2. attach a normal plug to the three core cable on the transformer

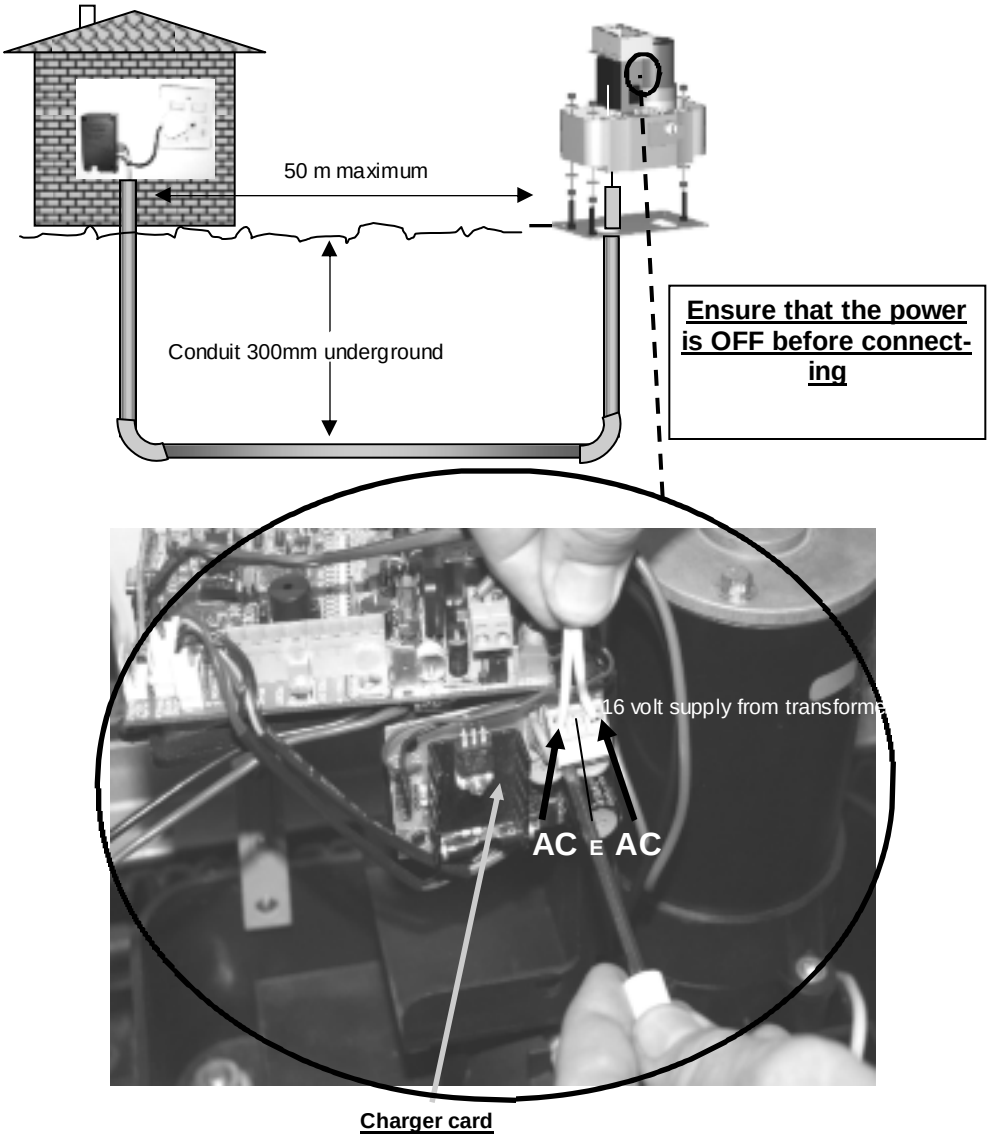


Step 3. plug the transformer into a 220v AC socket. (normal household type)



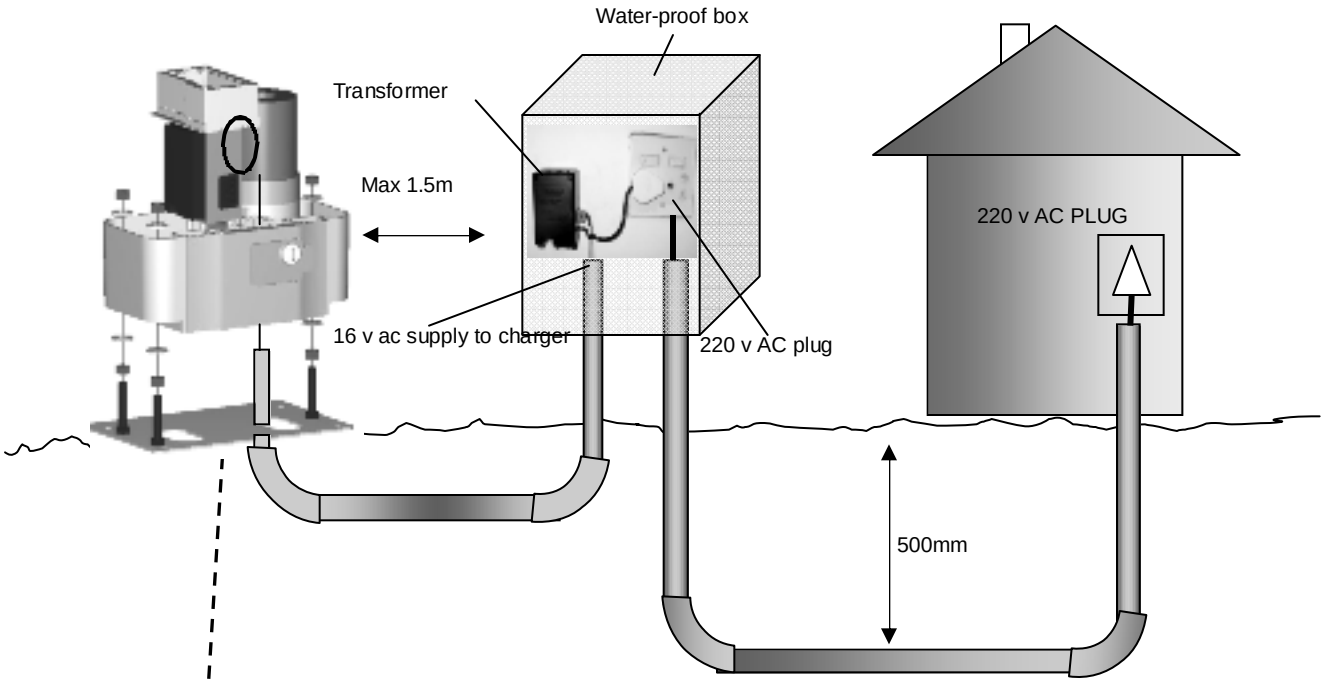

Step 4. connect a three core (16 volt) cable to the transformer using the green connector block. Take note of which wires are the AC wires (normally blue and brown and which wire is the earth wire. (normally green). These wires are now run to the motor and connected to the charger card( see pg 11) The voltage in this wire should be 16 v AC. The maximum distance between the transformer and the charger should not exceed 50m**..** **Do not** use communication cable.

Pull the cable through the conduit an connect to the charger card in the motor. Ensure that the two AC wires from the transformer are connected to the two AC connections on the charger card. The earth must be connected to the E on the charger card.

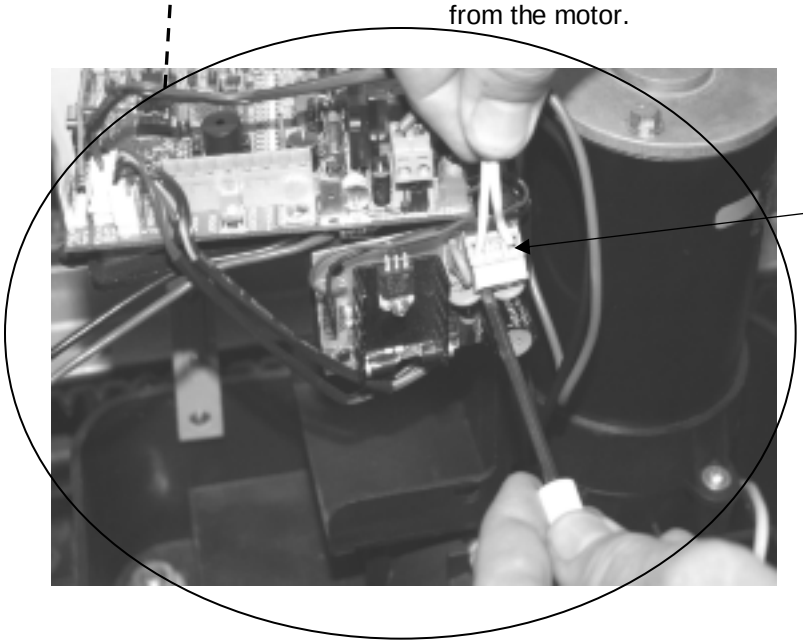



When the connections are done, the power supply should be checked. This is done by switching the mains supply on at the transformer. The green LED called CHARGE on the P.C.Board should come on. This indicates that the charger is getting power. The voltage should be checked at this time. The correct voltage at the green charger connector plug should be **16 v** AC. If this voltage is not correct the motor will operate for a limited time only as the battery will go flat and the motor will stop operating.

The second method of wiring the motor is done by leaving the transformer in the motor and then running 220v AC to the transformer. This method is not recommended as this can lead to non-compliance regarding electrical laws. This method is also a costly method as the cable needed in order to run the 220 volts to the transformer must be guarded type cable. This cable must be in conduit a minimum of 500mm underground. **No** other cable may be run in the same conduit as this can lead to electrocution in the case of a short circuit. The installation of 220v AC should only be done by a registered electrician.




The cable must be guarded cable. The cable must be plugged into a standard 15 amp household socket. It must be placed in a conduit and placed 500mm underground. DO NOT run any other cable in this conduit. The cable must then be connected to the transformer which must be in a water-proof box. This box must be within 1,5 m from the motor.



Connect the 16 v AC to the charger card as shown

## IV. ANCHORING THE MOTOR

Fig. 7.1

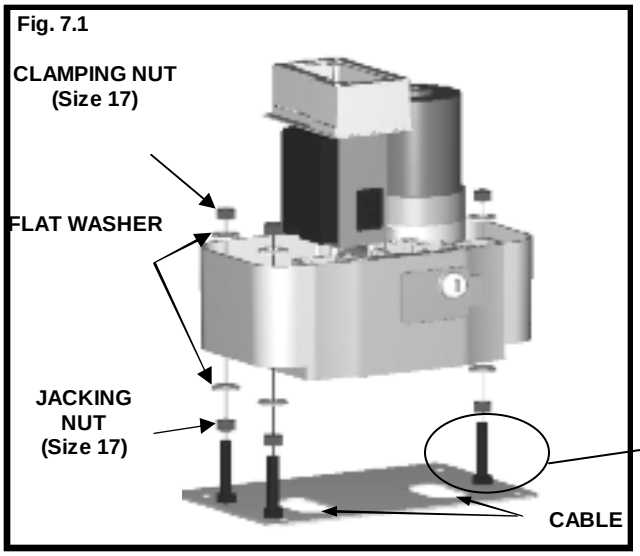
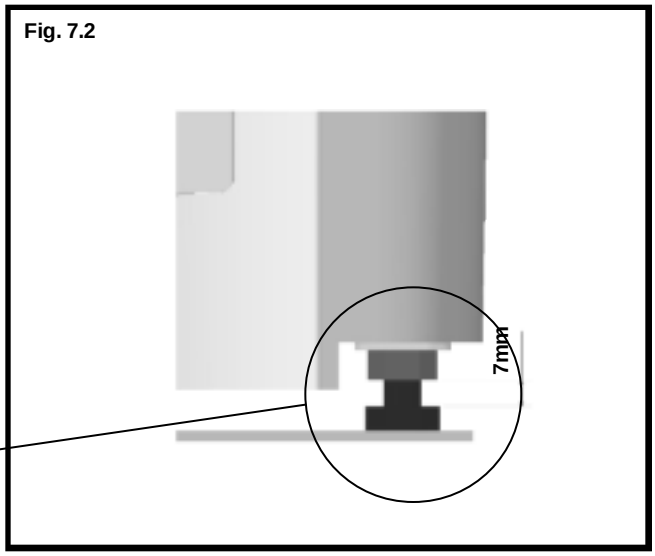



Fig. 7.2




## V.MOUNTING THE RACK

Fig. 7.3

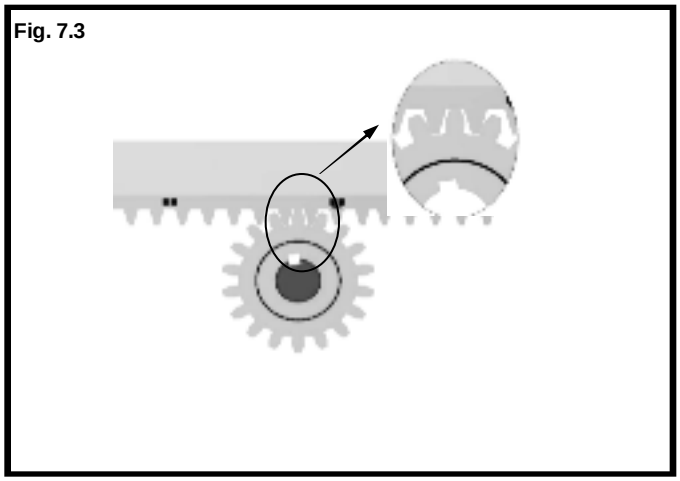
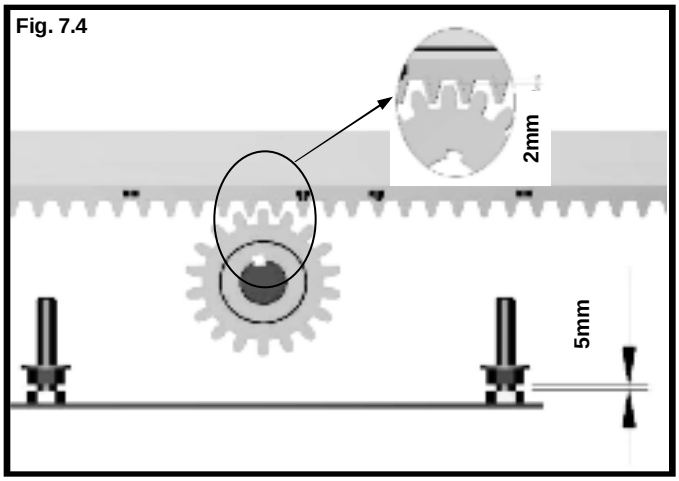


Fig. 7.4




**STEP 1**: Fasten motor on Jacking Nuts as in Fig. 7.2. and ensure motor is level.
**STEP 2**: Place the rack on pinion (Fig.7.3) There should be no clearance and the rack must be level.
**STEP 3**: Fix rack to the gate with Tek Screws (Self Drilling) as close to the motor as possible..
**STEP 4**: Move gate slowly about 300mm and repeat step 3 throughout the entire length of rack.
**STEP 5**: Lower motor using Jacking Nuts and then tighten Clamping Nuts. Ensure that there is a 2mm gap between the pinion and the rack (Fig.7.4) and ensure motor is level.

## VI. FILLING GEAR BOX OIL

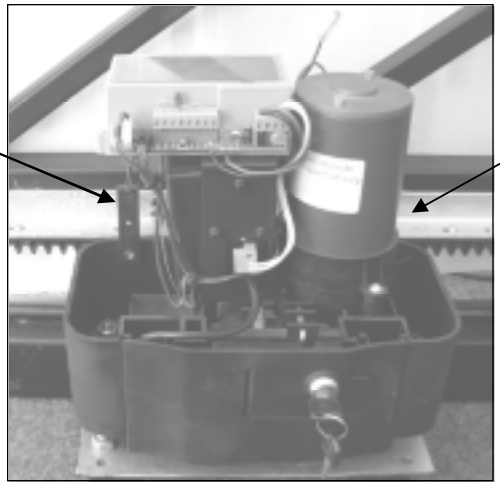
FIG 8

It is extremely important that the gearbox is filled with the oil supplied before the motor is operated.

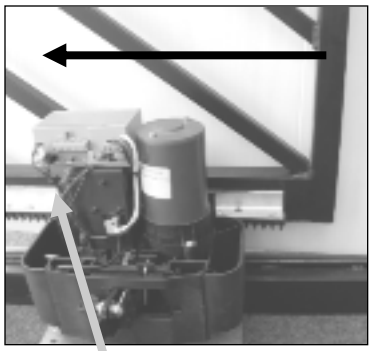
## MOUNTING THE MAGNETS

GREY MARKER

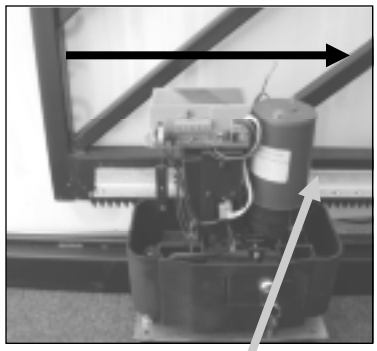
BLACK MARKER



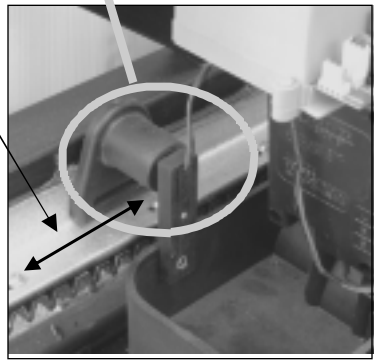
With the gate in this position , set magnet up in front of the greymarker as shown here. **See step 1 on page 13**



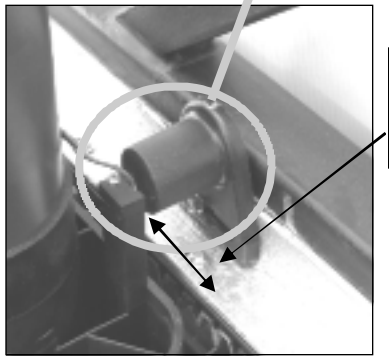
With the gate in this position , set magnet up in front of the black marker as shown here. **See step 2 on page 13**



Adjust the magnet for fine tuning if needed



Adjust the magnet for fine tuning if needed

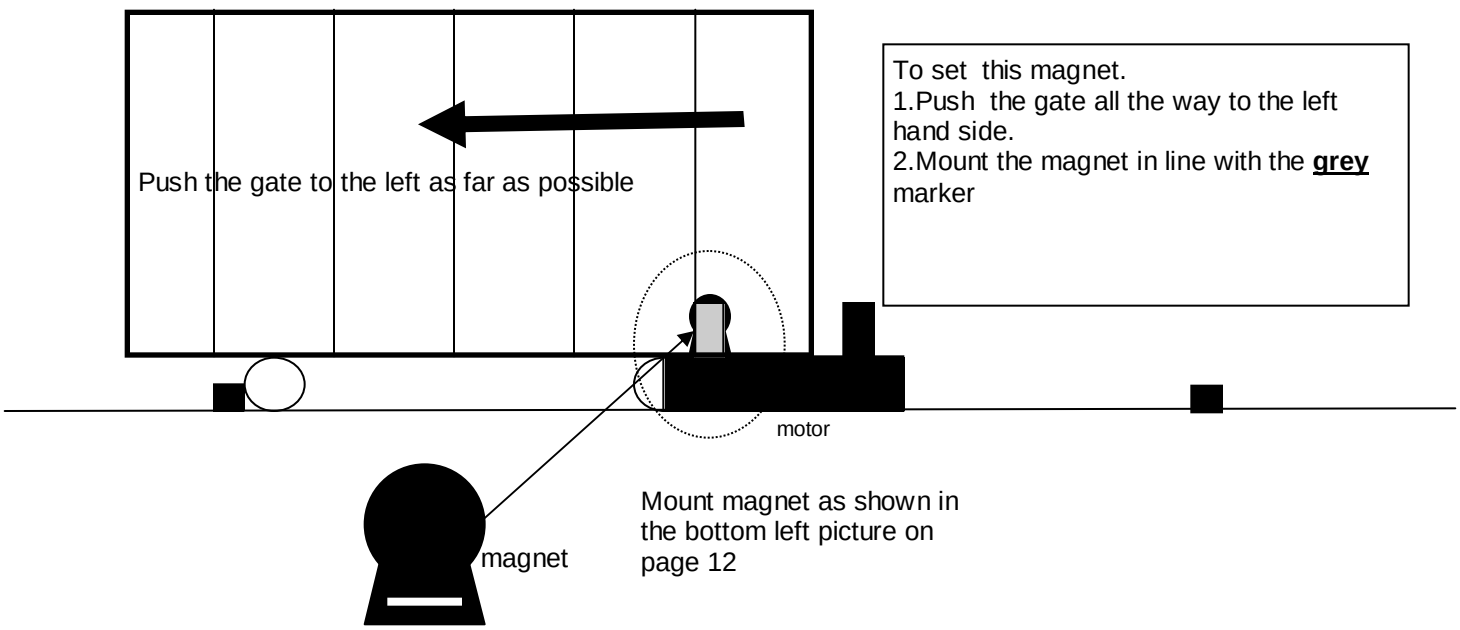


This gate operator uses TWO magnets in order to stop the gate on the “limits’. It is very important to ensure that the magnets are secured to the gate and that they are as close to the “markers” as possible. In the case of one of the magnets not being in place or the position of the magnet is such that the marker can not detect the magnet, the motor will NOT operate correctly

The magnets are set up in the following manner :
Manually move the gate to the LEFT HAND SIDE, using the TEK screw supplied, attach one magnet directly in front of the GREY marker (see STEP 1 on page 13) .
To set up the second magnet. Manually move the gate all the way to the right hand side, mount the second magnet in front of the BLACK marker. (see STEP 2 on page 13) the magnets are now set .

If the gate hits the end stopper/s when it is operated in the normal operating mode, the magnets must be adjusted so that the gate stops before the end stopper is struck.
This is done by moving the magnet towards the end stopper. The distance that the magnet is moved should only be a couple of millimetres.

STEP 1

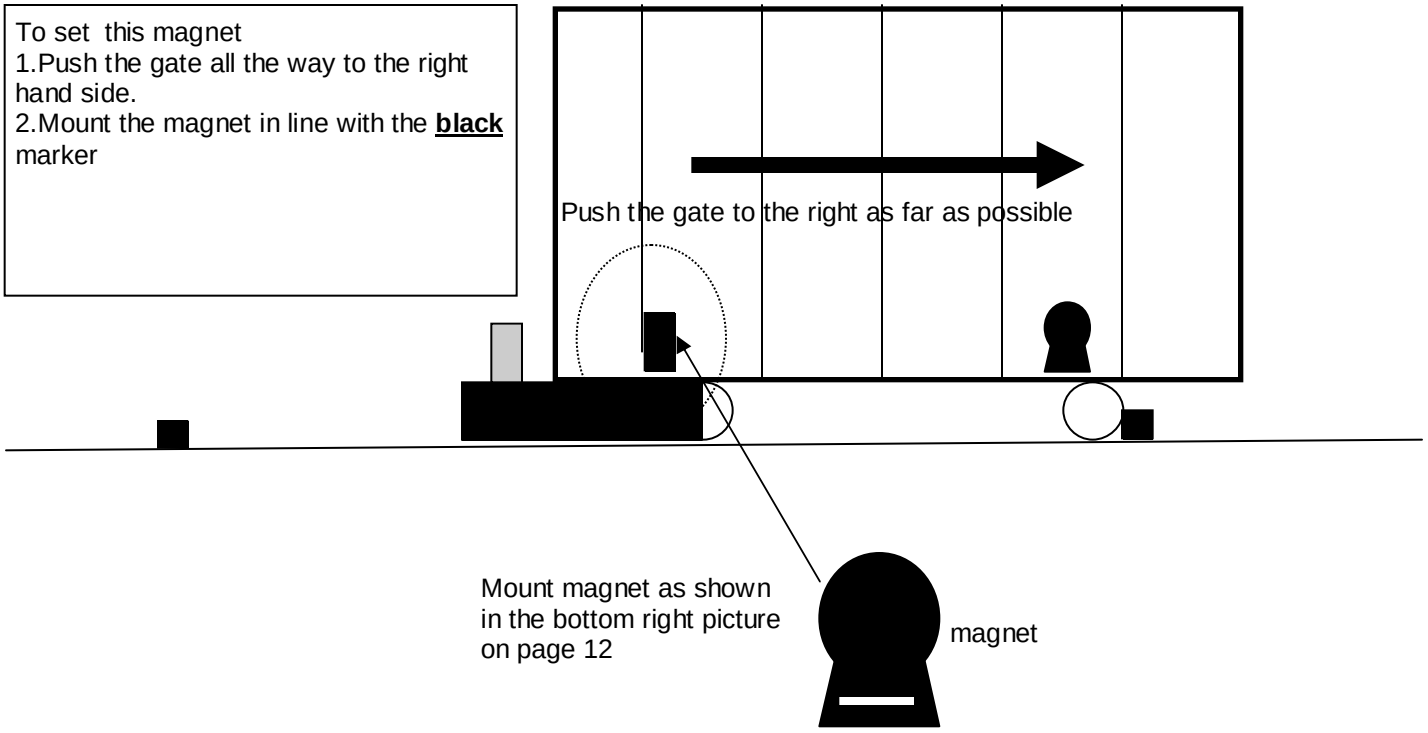



To set this magnet.
1.Push the gate all the way to the left hand side.
2.Mount the magnet in line with the **grey** marker

Mount magnet as shown in the bottom left picture on page 12

STEP 2

To set this magnet
1.Push the gate all the way to the right hand side.
2.Mount the magnet in line with the **black** marker




Mount magnet as shown in the bottom right picture on page 12

**NOTE** the space between the magnet and the marker must not exceed 3 mm

**P.C.BOARD LAY-OUT**

FIG 10

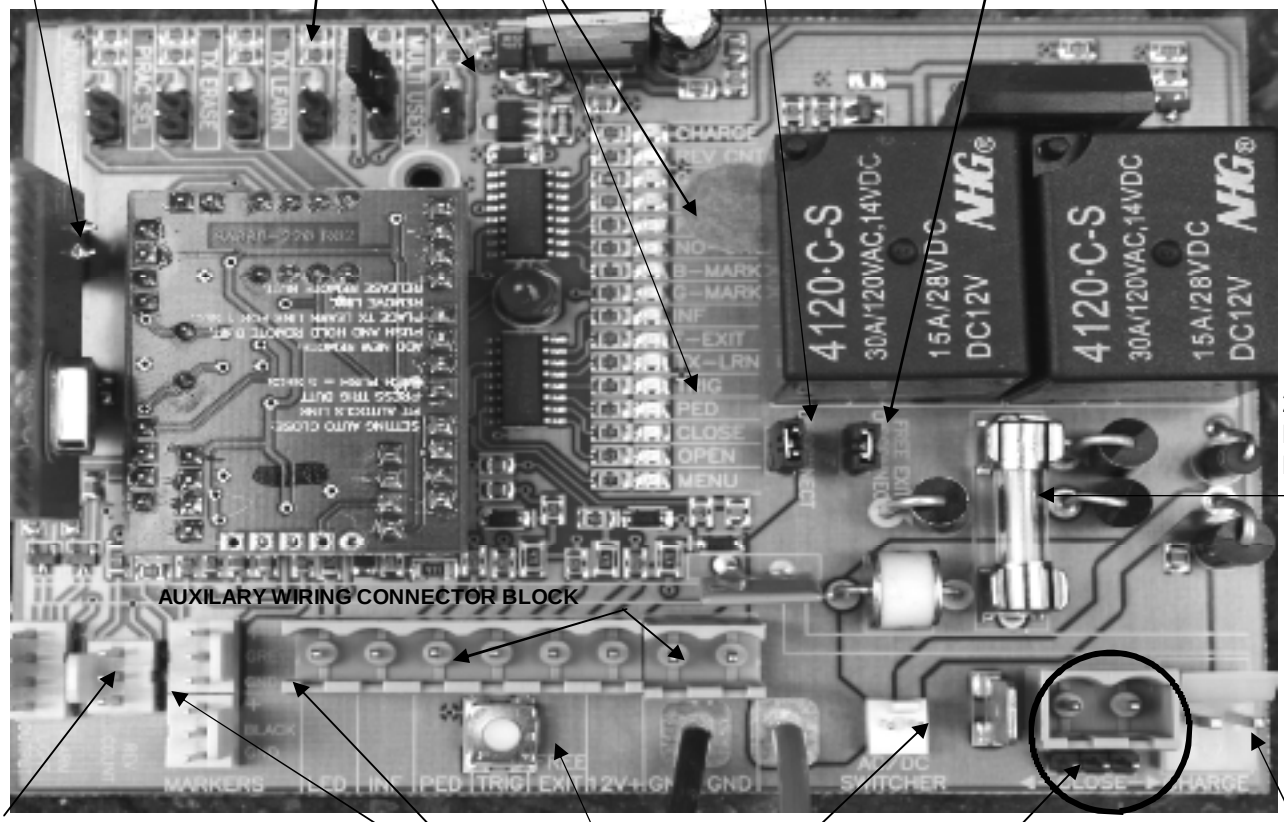
BEAMS JUMPER MUST BE REMOVED WHEN BEAMS ARE FITTED.

SET—UP JUMPERS

ON-BOARD RECEIVER

L.E.D INFORMATION MENU

FREE EXIT LOOP DETECTOR JUMPER. MUST BE REMOVED WHEN LOOP IS FITTED




20 AMP MOTOR FUSE

LIGHT-LOCK CONNECTOR

TEST/TRIG BUTTON

16 VOLT CHARGER CONNECTOR
NB **DO NOT** APPLY 220V

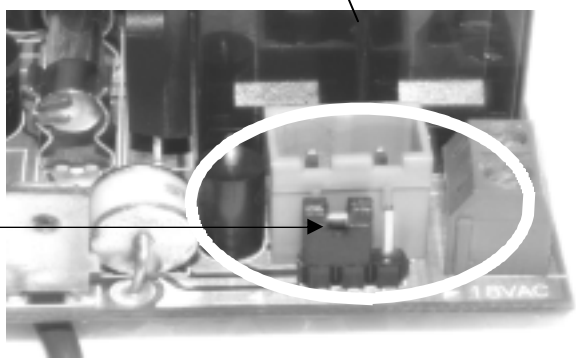
MARKER CONNECTOR

AC/DC JUMPER **DO NOT REMOVE**

MAGNETIC REV COUNTER CONNECTOR

**MOTOR DIRECTION JUMPER AND MOTOR WIRE CONNECTOR.**

**NB**



This picture shows the jumper set up for a gate that closes to the left hand side.

## INITIAL SET-UP OF THE MOTOR

**Before the motor is run ensure the following items are checked.**

- Gearbox oil has been filled
- Motor direction is correct i.e. the motor wires are in the correct order.
  If the gate closes to the right hand side, the black motor wire must be on the right hand side of the blue motor wire. The jumper must be on the right hand side pins. (see page 14)
- If the gate closes to the left hand side, the black wire must be on the left hand side of the blue motor wire. The jumper must be on the left hand side pins.
  **The magnets must be set up in the correct positions. (See page 14 and 15)**

**INITIAL SET—UP.**

* Remove ALL power from the P.C.BOARD / CONTROLER.
* Manually open the gate about 1 meter and place in normal operation mode. (see page 9)
* Apply battery power and press the test /trigger button within 5 seconds
* The gate will automatically do the following.

Close in the slow mode, until the end stopper is struck. Then the gate will open at normal operating speed until the open magnet is detected.
The gate is now fully operational and ready for normal use.

If any of the above steps are not done or are done incorrectly, remove the battery power and start the process again.

***NB.*** **Ensure that the charger is connected. Failure to do this will result in the battery going flat and the motor will not operate. The green "CHARGE" L.E.D. must be seen on the top of the L.E.D. Menu (page 16)**
**Please note that :-**
**1. If the charger is not connected after the motor has been initialised, the large red led will illuminate for 60 seconds**
**2. The motor must be initialised before the remotes can be programmed to the receiver.**

**Initialisation trouble-shooting.**
In most cases of initialisation problems, the fault is very often that the magnets are not set-up correctly, see table below . Another possible fault may be that the gate mass exceeds the factory set "stall torque". This will be indicated by a fast repeated flashing of the large led and the open and close L.E.D. will flash alternately. If this is the case **see advanced settings and set the stall torque to a higher level**.

| Symptom | Action |
|---|---|
| Gate closes slowly then opens slowly, then starts to open fast when the gate is nearly open. | Marker not detecting the magnet.<br>Move magnet closer to the marker on both sides. |
| Gate closes slowly then opens slowly and stops before it is fully open. | The magnets are reversed.<br>The magnets must be placed in front of the correct marker.<br>See page 14 and 15. |
| Gate closes slowly and then opens and stops when the magnet reaches the first marker. | Motor direction jumper is on the wrong pins. Or as above.<br>Check the direction jumper is in front of the black motor wire. See page 16 |

## PROGRAMMING REMOTES TO THE RECEIVER.

**NOTE. THE MOTOR MUST BE INITIALISED BEFORE THE REMOTES ARE PROGRAMMED.**

1. Press and hold the button down on the remote.
2. While holding the button down, place the jumper over the two TX LEARN pins on the main PCB. . The large red LED will flash to indicate that the remote is programmed.
3. Remove the jumper.
4. Release the button on the remote

It is recommended that the remotes being programmed are numbered in sequence of programming. This is important in the case of a remote being lost and needs to be erased from the receiver.

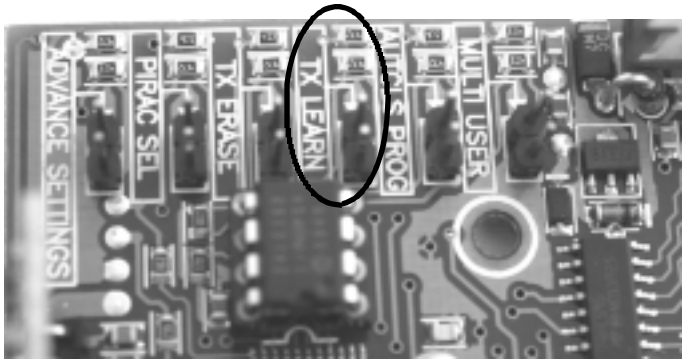
To erase one remote from the receiver, the previously programmed remote will erase the remote programmed after it. E.g. remote number 10 will erase remote number 11 e.t.c.

The procedure to erase a single remote is as follows :

- Insert the jumper over the TWO pins named TX ERASE .
- Press the button on the remote. (E.G number 10. this will erase number 11)
- Remove the jumper.

Note : if the range of the receiver is not sufficient, an external receiver must be added and mounted 2 meters above the motor.

The maximum number of remotes that can be programmed on the on-board receiver is 30. If more remotes are required, an external receiver must be added.




To erase all the remotes, the sequence is as follows.

- Place the jumper over the two pins TX ERASE. Count four (4) flashes of the TX LEARN LED. Remove the jumper .
- Re-place the jumper and count two (2) flashes on the TX LEARN LED. Remove the jumper.
- Re-place the jumper and count four (4) flashes on the TX LEARN LED. Remove the jumper.
- The TX LEARN LED will flash rapidly to indicate that the receiver has been erased successfully. If this does not occur then the receiver has not been erased and the process must be repeated.
- It is important to note that the above sequence must followed very carefully otherwise the process will not be successful. It must be noted that the jumper must be removed and replaced within two seconds during the above process

If at any stage the motor seems to “open on its own’ the receiver should be erased of all remotes and then the remotes re-programmed on to the receiver.

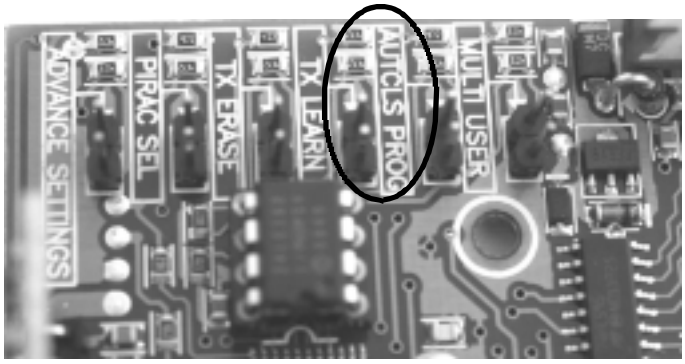
## SETTING THE AUTO-CLOSE TIME (optional)

The motor can be set to close automatically after a chosen time. It must be stressed that D.A.C.E. strongly recommend that all automatic gate systems should use infra-red safety beams, this is extremely important when auto-close time is selected. Selecting auto-close without installing infra-red beams will cause the gate to close after a chosen time and will not detect an obstruction until the obstruction is physically struck, this may cause severe injury or damage.
The infra-red safety beams will cause the gate to stop as soon as the beam is broken. The gate will then open automatically. (SEE WIRING INFRA-RED BEAMS)

To set the auto-close time the following steps must be carried out

- Place the jumper over the TWO pins on the main P.C.BOARD named AUTCLS PROG.
- The large red led will flash ..
- Press the test button once for every 5 seconds of auto-close time required. E.g. press and release the button three times, this will be 15 seconds auto-close time.
- Remove the jumper.

The minimum time that can be set is 5 seconds = PRESS BUTTON 1 TIME
The maximum time that can be set is 75 seconds = PRESS BUTTON 15 TIMES




**To cancel auto-close time the following steps must be carried out:**

* Place the jumper over the TWO pins on the main P.C.BOARD named AUTCLS PROG and wait 5 seconds,
* The large red led will flash. This indicates that the auto-close has been cancelled.
* Remove the jumper.

PARTY MODE / AUTO-CLOSE OVERIDE

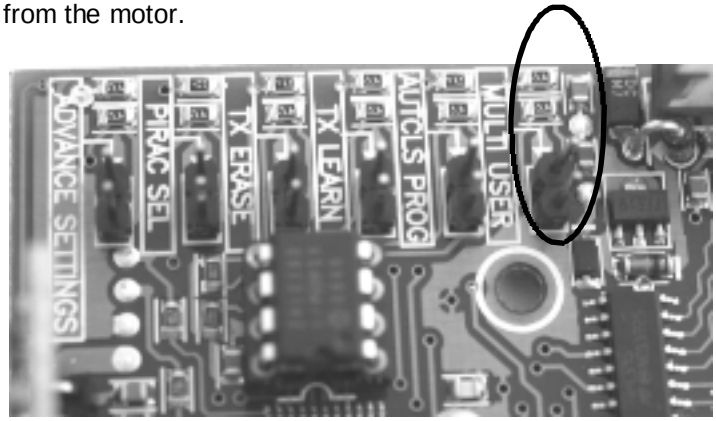
Auto-close override can be done by pressing the test button or remote button down and holding it down for three seconds. The gate will start to open and then stop after three seconds. Release the test button. This will allow the gate to open and remain open for as long as is required.
To re-initialise the motor to normal operation.
Press the button twice. This will place the motor into normal operation mode.

## SETTING MULTI-USER MODE (optional)

The motor can be set up to accept one trigger at a time only. This is called MULTI-USER mode.
This means that the motor will accept a trigger to open and then while it is opening the motor will not accept any other trigger that it receives. This is important when the motor is installed in a town-house, block of flats or office complex type situations. To avoid the gate opening and closing before the full cycle has been completed. It is also extremely important to be used when a FREE EXIT LOOP DETCTOR is used, as this will avoid the gate closing on a second vehicle when exiting.

To initialise the MULTI-USER mode insert the jumper over the TWO pins named MULTI USER.
NB. An Auto-close time must be selected in order for the MULTI-USER mode to be active. If this is not done the gate will open and will not close regardless of any trigger input.

To remove the MULTI-USER mode from the motor, remove the jumper from the TWO pins.
The MULTI -USER is now removed from the motor.

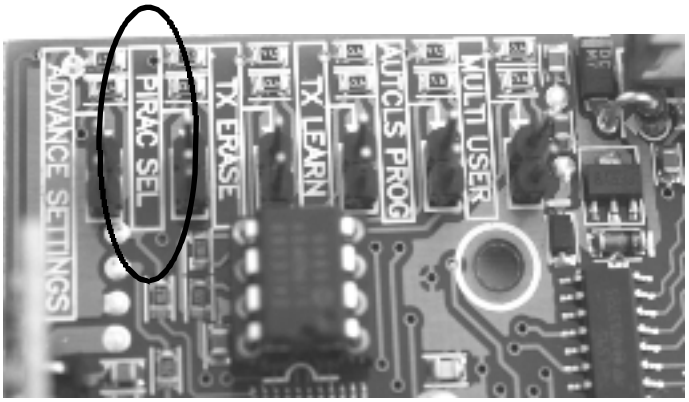



## SETTING PIRAC MODE (passive infra-red auto-close) (optional)

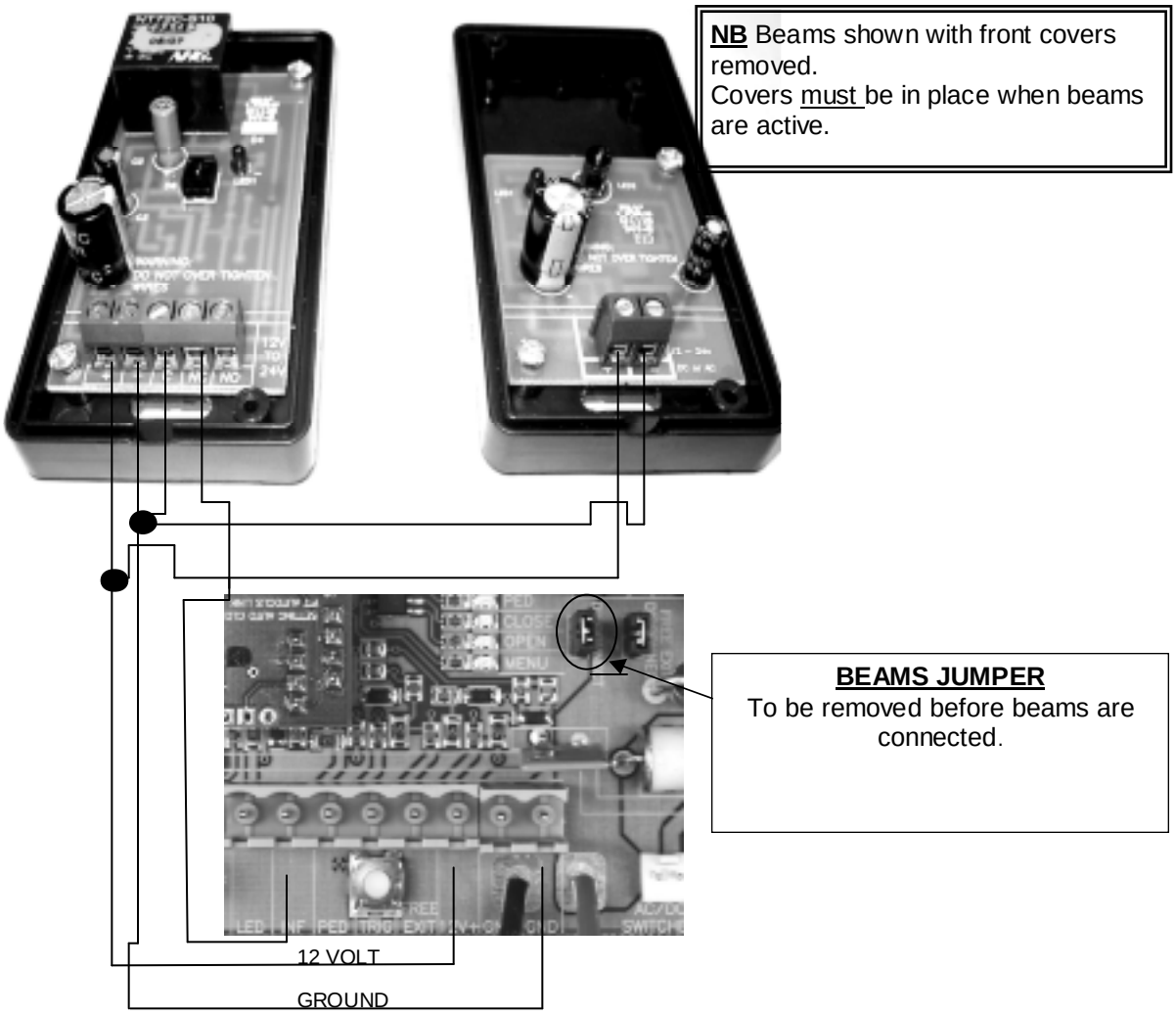
The PIRAC mode is used for extra security as this means that the gate will close as soon as the vehicle has passed through the infra-red beam. If the gate reaches the fully open position and the beam has not been broken, the gate will close immediately.
To select PIRAC mode the following items must be checked.

- Infra-red beams must be in place (SEE WIRING INFRA-RED BEAMS)
- AUTO-CLOSE should be selected as this will allow the vehicle enough time to get through the gate before it starts to close. (SEE SELECTING AUTO-CLOSE)

To initialise PIRAC mode, insert the jumper over the TWO pins named PIRAC SEL. The motor is now in the PIRAC mode.
To remove the PIRAC mode, remove the jumper from the TWO pins named PIRAC SEL mode.
The PIRAC mode is now removed from the motor.



## WIRING INFRA-RED BEAMS

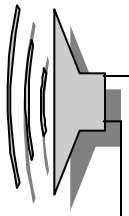



It is strongly recommended that ALL gate motor installations have infra-red beams connected as this is a safety feature and will guard against the gate hitting a vehicle or pedestrian.
The beams are wired using normal communication cable (8 core). The wiring is done as shown above. It is important to check the following when installing beams.
The **NC** (normally closed ) connector is used on the beam. This is wired to the **BEAM**S out-put on the main P.C.Board.
**The BEAMS jumper must be removed before the beams are fitted**.
To de-activate the beams, place the BEAMS jumper over both pins. This will render the beams in-active and will allow the gate to close regardless of any obstruction in front of the beams.

**WIRING A LIGHT /LOCK CARD (optional)**

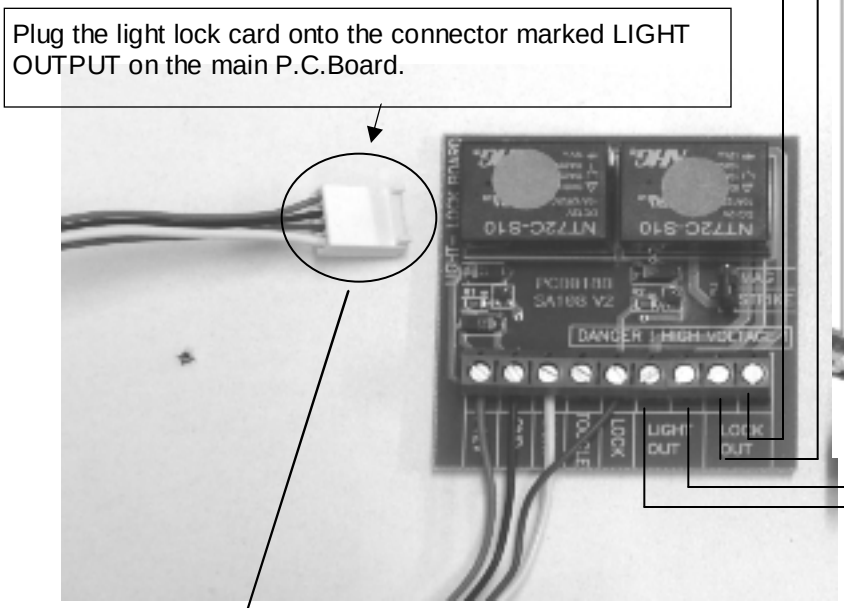
A light /lock card can be connected to the main P.C.Board in order to switch on pillar lights or in the case of swing gate motors it can be used to trigger an electric lock (locks are not to be used on slide gates)
The lights will switch on for four minutes and then they will switch off until the next trigger is received. In the event of a flat battery, the lights will flash rapidly as a warning.
In addition, the light lock card can be used to trigger an alarm / buzzer when the gate is moved unlawfully ( forced open) A buzzer or alarm can be connected to the LOCK OUTPUT.

12volt Buzzer or alarm will sound when the gate is moved without a trigger.



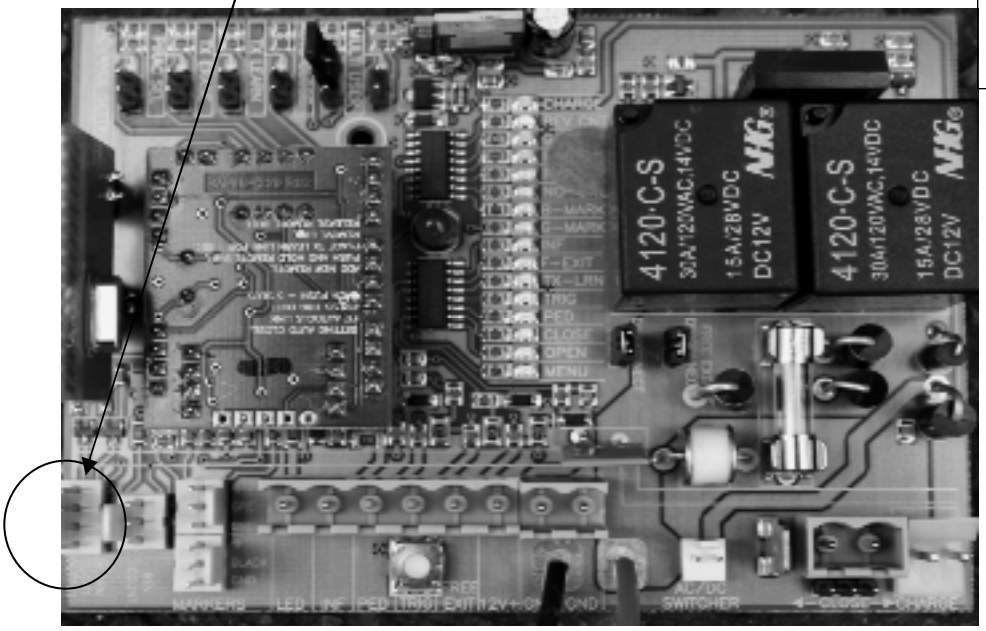
Power supply

FIG 16



**220 volt power supply**.

NB ALL 220volt WIRING MUST BE DONE BY A REGISTERED ELECTRICIAN.



## CONNECTING AN INTERCOM. (OPTIONAL)

There are many different types of intercoms available on the market today.
The wiring of these intercoms can vary in some ways, but the general wiring is the same. The three main types of intercom are as follows:-

220 volt. This type normally plugs into the house mains, (220 volt supply) and then four wires are run from the handset (inside the house) to the gate station (outside at the gate) and the motor (trigger).

12 volt. This type normally gets its power from the motor (12 v/dc). This means that a minimum of six wires are needed to run from the handset. Two wires to the gate station and four wires to the motor. (fig 17)

6 volt. This type is battery operated, normally using 4 penlight type batteries for power. Only four wires are needed to run from the handset. Two wires to the gate station and two wires to the motor (trigger)

The mounting of the intercom is the same with each type. The handset is placed inside the house / office and the gate station is placed at the point of entry, this is normally the gate. The gate station is normally mounted by means of a “gooseneck”

**It is important to note that the communication cable MUST be run in a conduit**
**High tension cable (220 volt) MUST NOT be run in the same conduit.**

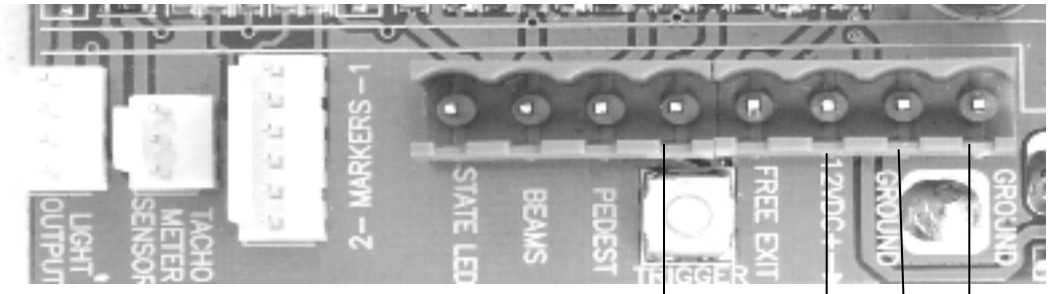
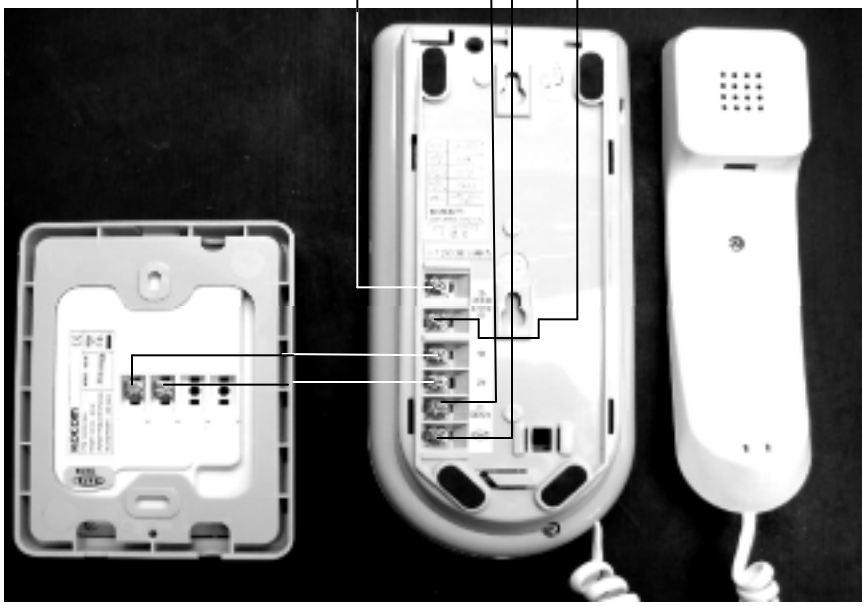



FIG 17

Diagram shows a typical Ko-com 12 volt one to one inter-com system. Other brands may vary in the layout of the connector screws.



## L.E.D FUNCTIONS

The P.C.Board / control card has several light emitting diodes (L.E.Ds). These LED's indicate various conditions of the motor. The function of each L.E.D. is as follows:

| Name | Colour | Indication ON | OFF |
|---|---|---|---|
| CHARGE | GREEN | MAINS SWITCH IS ON AND 16VOLTS IS CONNECTED | MAINS SWITCHED OFF,OR TRANSFORMER NOT FUNCTIONING. THIS CONDITION WILL RESULT IN A FLAT BATTEREY AND THE MOTOR WILL NOT OPERATE. |
| TACHOMETER | RED | MOTOR IS RUNNING | MOTOR IS NOT RUNNING |
| | | . | |
| G BATT | GREEN | BATTERY IS IN GOOD CONDITION | CHECK BATTERY AND CHARGE SYSTEM |
| L BATT | YELLOW | MAY BE ON WHEN MOTOR IS RUNNING. THIS INDICATES THAT THE BATTERY IS GETTING LOW IN VOLTAGE. | NORMAL |
| F BATT | RED | BATTERY IS FLAT .<br>REPLACE BATTERY OR CHECK THE CHARGE SYSTEM. | NORMAL |
| CHARGE FAULT | RED | FLASHING = MAINS POWER IS OFF OR CHARGER FAULTY<br>ON SOLID = CHARGE VOLTAGE TOO HIGH<br>THE LED WILL SHINE FOR 60 SECONDS. | NORMAL |
| B MARKER | RED | BLACK MARKER DETECTING MAGNET WHEN THE MAGNET PASSES THE MARKER THE LIGHT WILL FLASH ON | NORMAL |
| G MARKER | RED | GREY MARKER AS ABOVE | NORMAL |
| INF | RED | BEAMS ARE ACTIVE<br>THE LIGHT WILL FLASH WHEN A VEHICLE PASSES THROUGH THE BEAM. | NORMAL |
| F EXIT | RED | LOOP IS ACTIVE.<br>THE LIGHT WILL FLASH WHEN A VEHICLE PASSES OVER THE LOOP | NORMAL |
| TX LEARN | RED | RECEIVING A SIGNAL FROM A TRANSMITTER. | NORMAL |
| TRIG | RED | RECEIVING A CONSTANT TRIGGER. CHECK ALL TRIGGER WIRES AND ALL TRIGGER DEVICES E.G RECEIVER , INTERCOMM, KEYPADS ETC | NORMAL |
| PEDEST | RED | RECEIVING A CONSTANT TRIGGER FROM A PEDESTRIAN INPUT. CHECK AS ABOVE | NORMAL |
| CLOSE | RED | GATE IS CLOSED | GATE IS OPEN |
| OPEN | RED | GATE IS OPEN | GATE IS CLOSED |
| MENU24 | RED | IF THIS LIGHT IS ON SOLID IT INDICATES THAT THE GATE HAS HIT AN OBSTRUCTION. | SHOULD FLASH TO INDICATE THE ADVANCED SETTINGS CHOSEN. NORMAL |

**Advanced settings** (optional)
There are some advanced programming settings that can be done to the motor. These settings are only recommended if the gate does not operate correctly **.** The motor is set at the factory to operate in most situations under normal operating conditions. These settings may need to be changed in certain extra-ordinary situations.
These advanced features are as follows.;

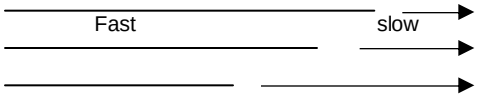
- Ramp down distance.
- Ramp down torque control.
- Current Sensing

The programming works by using the jumper on the two pins named. A.D.V. SETTINGS The jumper is inserted over the TWO pins and then the large red led will light, press the button to cancel the light. The test button is then pressed and held in order to select the menu required. The led will give a sequence of flashes to indicate which menu is selected. The button is then pressed and held to select the value required in that menu. The led will then indicate which value is selected. The menu is selected as follows.:
By pressing and holding the button down the led will flash in 1 second flashes.
Each flash will indicate a particular menu.
The button must be released after the chosen menu flashes are seen.

1 flash = Ramp down OPEN distance.
2 flashes = Ramp down CLOSE distance.
3 flashes = Ramp down TORQUE CONTROL OPEN.
4 flashes = Ramp down TORQUE CONTROL CLOSE.
5 flashes = CURRENT SENSE control OPEN.
6 flashes = CURRENT SENSE control CLOSE.

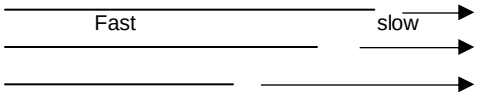
**Setting the RAMP DOWN Distance**.
The Ramp down distance is the distance that the gate runs in the “SLOW MODE” at the end of each operation.
There are three settings available— SHORT—MEDIUM— LONG.
It must be noted that D.A.C.E. will not be held responsible for a gate that is installed on a slope. However it may be unavoidable is certain circumstances. In these cases it may be necessary to extend the RAMP down distance in order to stop the gate before it hits the end stopper.
To set the OPEN ramp down distance the following must be carried out. :

- Insert the jumper over the two pins named ADV SETTINGS.
- The led will light up.
- Press the test button once, The led will go out
- Press and hold the button down until one flash is seen. Release the button immediately.
- Press and hold the button and count the number of flashes required.
  - 1 flash = short ramp down
  - 2 flashes = medium ramp down
  - 3 flashes = long ramp down
  - REMOVE JUMPER when light comes on solid




To set the CLOSE ramp down distance the following steps must be carried out. :

- Insert the jumper over the TWO pins named ADV SETTINGS.
- The led will light up.
- Press the button once. The led will go out
- Press and hold the button down until two flashes are seen. Release the button immediately
- Press and hold the button down and count the number of flashes required.
  - 1 flash = short ramp down
  - 2 flashes = medium ramp down
  - 3 flashes = long ramp down.
  - REMOVE JUMPER when light comes on solid



**Setting the RAMP DOWN TORQUE control**

The ramp down torque control refers to the amount of power required in order to overcome friction while the gate is in the e ramp down mode, i.e. tight wheels , slope in the rail .....etc.

To set the OPEN ramp down torque the following steps must be carried out.:

- Insert the jumper over the TWO pins named ADV SETTINGS.
- The led will light up.
- Press the button once. The led will go out
- Press and hold the button until three flashes are seen. Release the button immediately
- Press and hold the button until the required number of flashes are seen.
    - 1 flash = low torque ( light gate)
    - 2 flashes = medium torque (medium gate)
    - 3 flashes = high torque ( heavy gate)
    - REMOVE JUMPER when light comes on solid

To set the CLOSE ramp down torque the following steps must be carried out.:

- Insert the jumper over the TWO pins named ADV SETTINGS.
- The led will light up.
- Press the button once. The led will go out
- Press and hold the button until four flashes are seen. Release the button immediately
- Press and hold the button until the required number of flashes are seen.
    - 1 flash = low torque ( light gate)
    - 2 flashes = medium torque (medium gate)
    - 3 flashes = high torque ( heavy gate)
    - REMOVE JUMPER when light comes on solid

**SETTING UP THE COLLISION SENSE.**. The COLLISION SENSING is in fact the sensitivity of the motor. It is important to note that it is not recommended to set the motor at it highest setting as this is a safety feature, if the high setting is chosen, extensive damage or injury will occur in the case of a collision with a vehicle or pedestrian. This setting must be done with great care and must only be used in extreme cases

.To set up the OPEN collision sensing the following steps must be carried out.

- Insert the jumper over the TWO pins named ADV SETTINGS.
- The led will light up.
- Press the button once. The led will go out
- Press and hold the button until five flashes are seen. Release the button immediately
- Press and hold the button until the required number of flashes are seen.
    - 1 flash = low torque ( light gate)
    - 2 flashes = medium torque (medium gate)
    - 3 flashes = high torque ( heavy gate)
    - REMOVE JUMPER when light comes on solid

To set up the CLOSE collision sensing the following steps must be carried out.

- Insert the jumper over the TWO pins named ADV SETTINGS.
- The led will light up.
- Press the button once. The led will go out.
- Press and hold the button until six flashes are seen. Release the button immediately
- Press and hold the button until the required number of flashes are seen.
    - 1 flash = low torque (light gate)
    - 2 flashes = medium torque (medium gate)
    - 3 flashes = high torque ( heavy gate)

      REMOVE JUMPER when light comes on solid

**SETTING THE START-UP TORQUE**

The start-up torque is the amount of drive that the motor delivers when the motor starts to operate. This should only be re-set if the motor stalls while starting to move.

To set the torque.

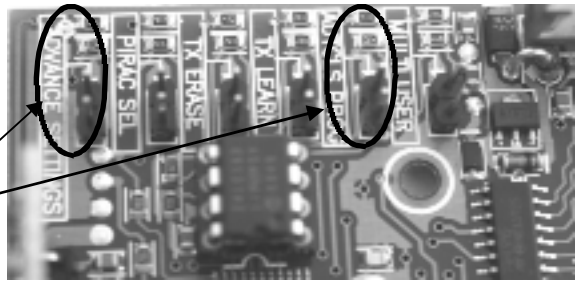
* Place the jumper over the ADV SETTINGS pins.
* The led will light up.
* Press the button once, the led will go out.
* Press and hold the button down until seven flashes are seen. Release the button.
* Press and hold the button until the required number of flashes are seen. 1 flash = low torque
  2 flashes = medium
  3 flashes = high
  REMOVE THE JUMPER when light comes on solid

**RESETING THE FACTORY DEFAULT**

To set the motor up in the double magnet mode the following steps must be carried out.

- Remove battery and charger power from the P.C.BOARD.
- Insert one jumper on the AUTCLS PROG and one jumper on the ADV SETTINGS jumper.
- Apply the battery power. The led will light up
- Remove both jumpers. The led will go out for two seconds. The led will light up for five seconds
- The motor is now re-set to the factory settings.

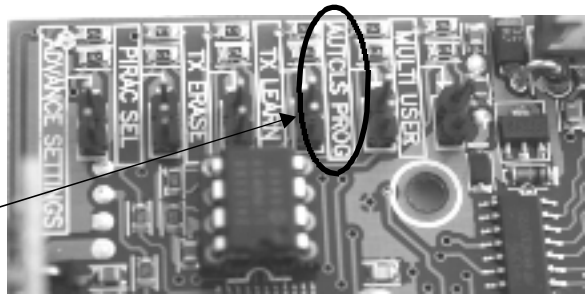
Place a jumper on each of these pins
To re-set the factory settings




**TO TEST THE MARKERS THE FOLLOWING PROCEDURE CAN BE DONE.**

* Remove all the power from the p.c.board.
* Place one jumper over the AUTO CLS pins.
* Apply the battery power.
* Press the test button once.
* Now move the gate until the magnet is in front of the marker, the corresponding L.E.D. should now show and the large red should light up. This indicates that the marker is functioning.

Place a jumper over these pins
to test the marker function.



# AC/DC MOTOR

## BATTERY BACK – UP MOTOR

This section covers the AC / DC motor. This is a standard Sleek Fleet type motor, that uses a transformer, this allows the motor to use the AC power coming from the mains supply as the primary operating power source.

**It is important to note that the law states that, all 220 volt wiring must be at least 2,5mm cable and must be in a conduit and no other wires e.g. communication, may be run in the same conduit.**

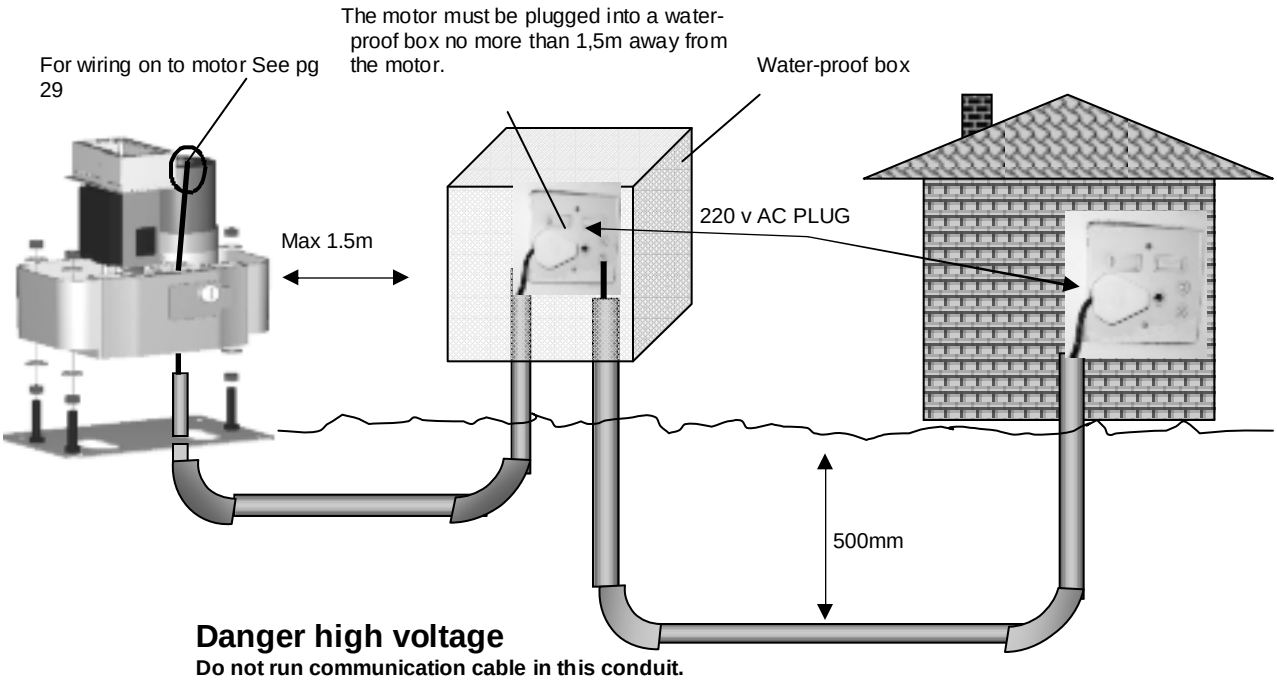
The motor has an AC / DC switcher unit known as the SA 109, attached to the motor. The SA109 is designed to detect a power cut and immediately switch over to the battery back up power. This is done without any interruption to the normal operation of the motor. The SA 109 will automatically switch back to the mains supply when the power is resumed.

This system is recommended for housing complex applications or where the traffic volume is high.

**Note:** The installation of the motor is the same as the SleekFleet type motor, with the exception of the wiring which can be found on the following page.

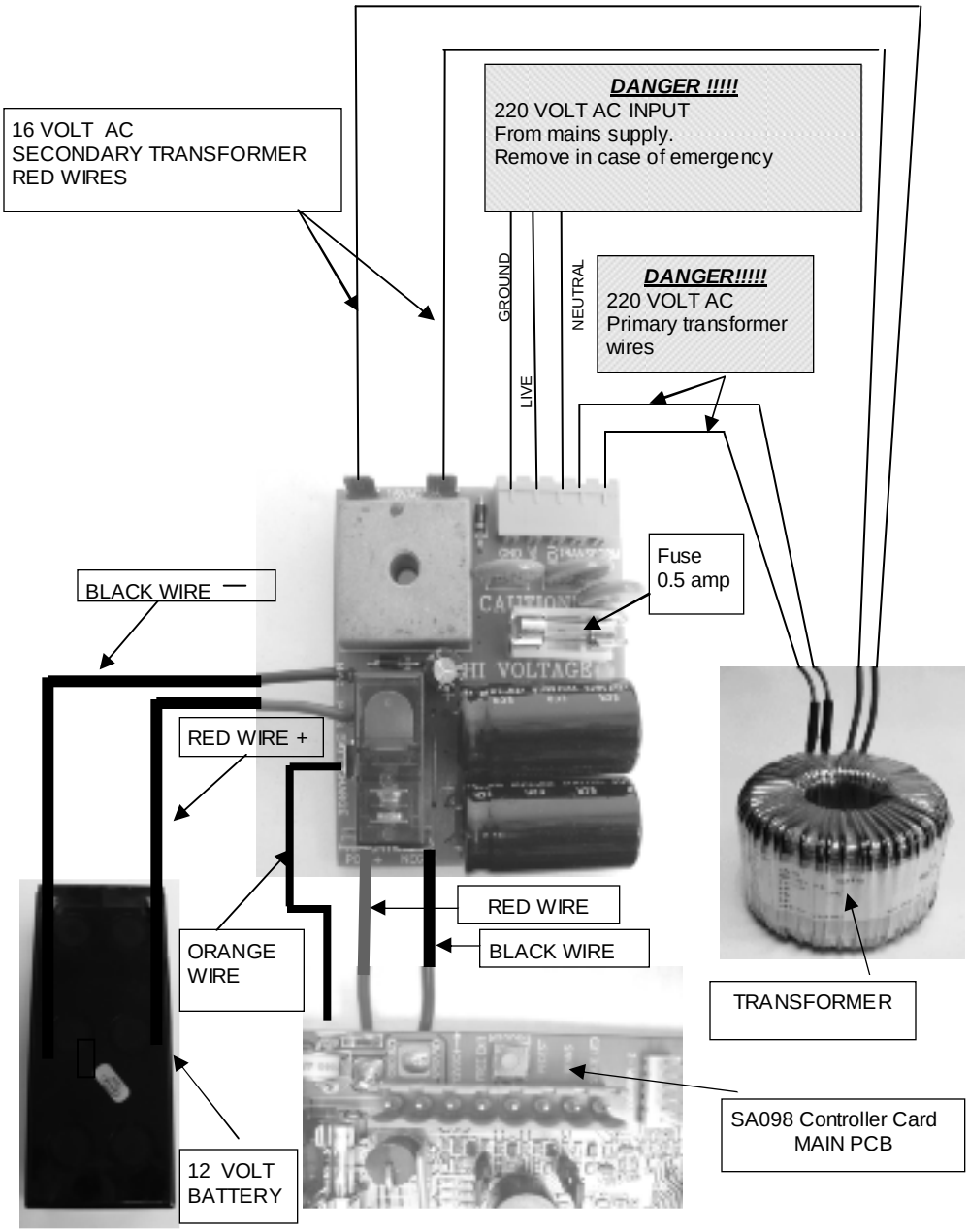
Please refer to the relevant section in the manual for all the other installation processes.

**IMPORTANT !!: The AC/DC motor uses 220 volts. Use extreme care when connecting the electricity as this is potentially dangerous**



AC/DC SWITCHER SA109. USED ON AC/DC MOTOR **ONLY**

**!!!!!!!! CAUTION !!!!!! HIGH VOLTAGE**



## WARRANTY

PLEASE READ THE WARRANTY CAREFULLY

The motor, gearbox and P.C.B. are warranteed for a period of two years.
The following conditions apply to the warranty:
All warranty claims MUST be accompanied by the original invoice

- Warranty does not apply if the goods are subject to misuse.
- Warranty does not apply if the goods are installed contrary to the specifications as laid out by D.A.C.E cc.
- Warranty does not apply if any attempt has been made to repair the goods by any workshop and / or person not authorised to do so by D.A.C.E. cc.
- Warranty does not apply if the goods have been repaired using components not tested, passed or authorised by D.A.C.E cc.
- Warranty only covers repair, components and labour. It does not include transport, postage and railage which will be for the account of the purchaser.
- Warranty does not cover corrosion, insect damage or Acts of God.
- The 7AH Battery is covered by a one year warranty.
- No warranty repair will be done on site. This is a factory warranty.

**NOTE**
Due to power fluctuations / outages the transformer is not guaranteed in any way.

## SPECIFICATIONS FOR THE DURASLIDE SERIES MOTORS.

**Transformer**: *220 V/AC input to 16 V/AC output*
**Fuses**: *motor 20 amps*
*12 V output 3 amps (re-settable)*

**DuraSlide 500 Series**

- The 500 Series uses a 12V/DC. 120w motor.
- In the event of power failure the motor will do +- 50 operations.
- The maximum size of the gate is 11m long.
- The motor can be used in a housing complex situation with a maximum of 30 units.
- The maximum number of openings per day is 120 dependant on gate mass
- The maximum gate mass is 500kg.
- The 500 series has a nominal speed of 20m per minute.
- The colour of the badge is green

**DuraSlide AC/DC motor**

∗The main power supply is 220~230 v AC
∗The motor type is a 12 v DC
∗The maximum gate mass is 500 kg
∗The maximum gate length is 11 m
∗The maximum startup force is 15 kg
∗The duty cycle is 100%
∗The gate speed is 23 m per minute (max)
∗The battery type is a 12 v 7 ah.