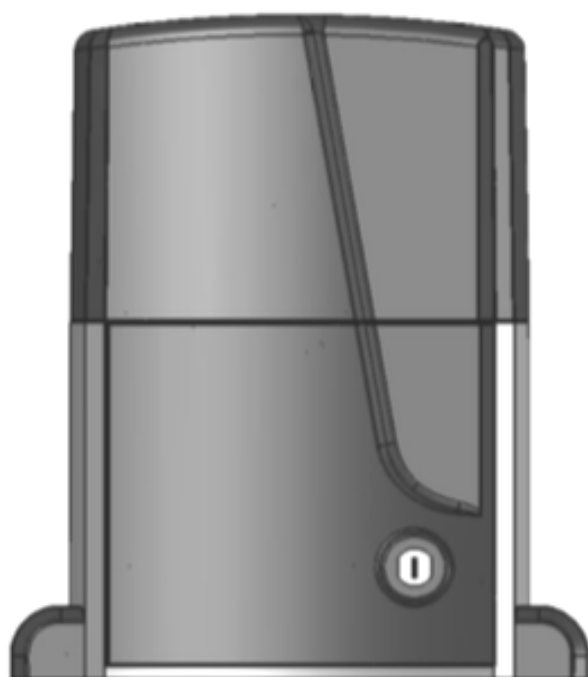




# AT PLUS-2500



(ENG)

Manual for installation  
and maintenance of  
automatizms for sliding  
gates.




AC Casablanca, 867 AV 2 MARS ETG  
RC HADDAOIA 3, Casablanca 20470

+ 212 522502539 : 



[polyopenmaroc@gmail.com](mailto:polyopenmaroc@gmail.com)

+ 212 666453856 : 

# MOTOR AT 2500

These instructions apply to the following models: AT-2500

The automatism AT-2500 gearmotor is an electro-mechanical operator designed for moving sliding gates.

The non-reversing reduction system ensures the gate is mechanically locked when the gearmotor is not operating, therefore it is not necessary to install any electric lock.

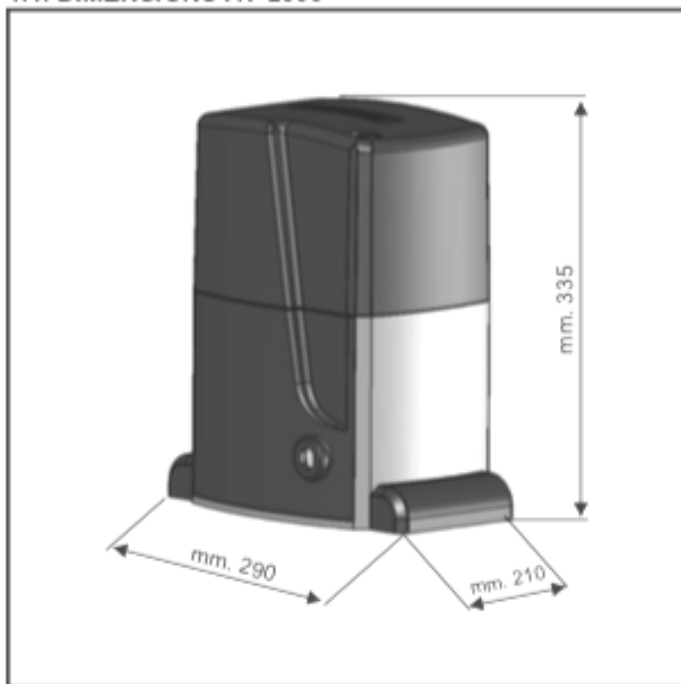
A convenient manual release with customised key makes it possible to move the gate in the event of a power failure or malfunction of the operator.

The AT-2500 gearmotor was designed and built for controlling vehicle access.

**AVOID ANY OTHER USE WHATEVER.**

## 1. DESCRIPTION AND TECHNICAL SPECIFICATIONS

### 1.1. DIMENSIONS AT-2500



### 1.2. MAXIMUM USE CURVE

The curve makes it possible to establish maximum work time (T) according to use frequency (F). With reference to IEC 34-1 Standard, the AT-2500 gearmotor can operate at a use frequency of 40%.

To ensure efficient operation, it is necessary to operate in the work range below the curve.

**Important:** The curve is obtained at a temperature of 20°C.

Exposure to the direct sun rays can reduce use frequency down to 20%.

#### Calculation of use frequency

Use frequency is the percentage of effective work time (opening + closing) compared to total time of cycle (opening + closing + pause times).

Calculation formula:

$$\%F = \frac{T_a + T_c}{T_a + T_c + T_p + T_i} \times 100$$

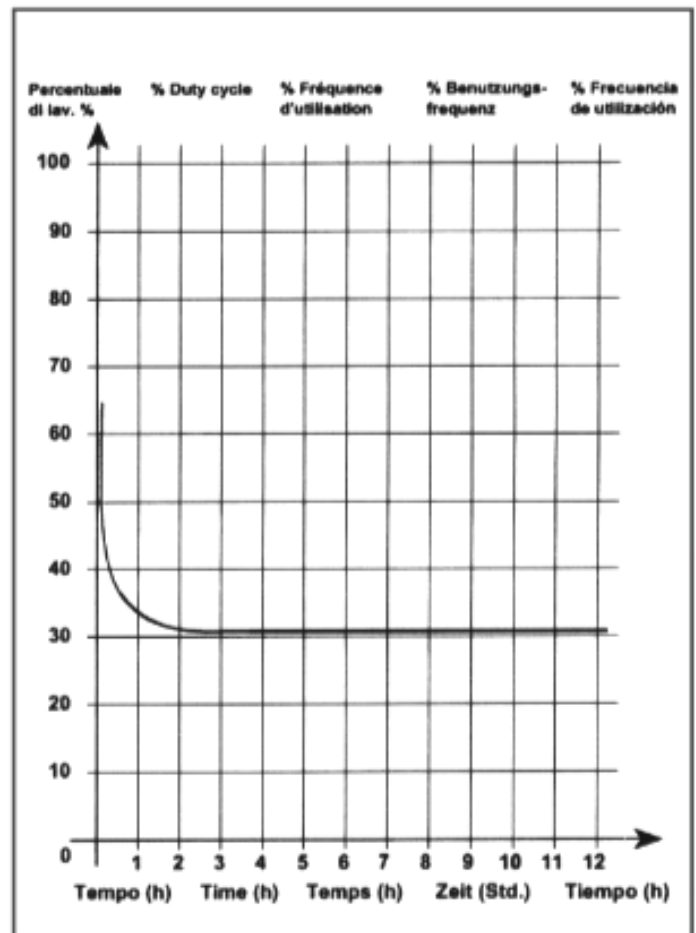
where:

T<sub>a</sub> = opening time

T<sub>c</sub> = closing time

T<sub>p</sub> = pause time

T<sub>i</sub> = time of interval between two complete cycles



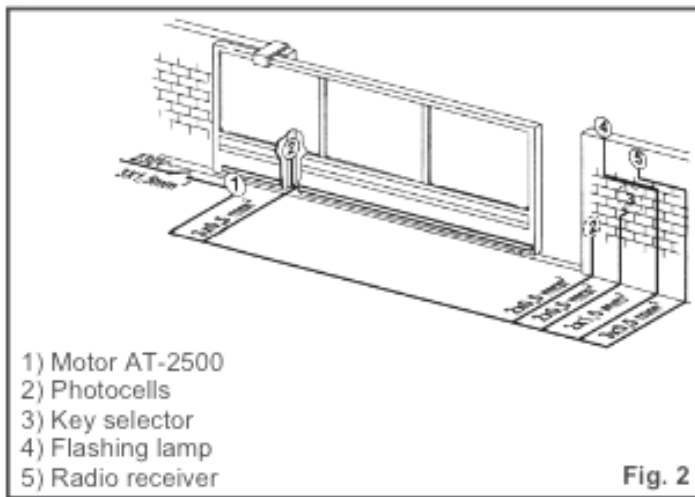
### 1.3. TECHNICAL SPECIFICATIONS

MODEL

AT- 2500

	Monophase	Tree phase
Power supply	230V (+6% -10%) 50Hz	380V (+6% -10%) 50Hz
Absorbed power (W)	650	
RPM (X min.)	1400	
Absorbed current (A)	2,4	
Capacitor	25 uf	/
Reduction Ratio	1:30	
Pinion	Modulo 4 - Z16	
Thrust on pinion (daN)	170	
Winding thermal protection	130°C	
Use frequency	Intensive use	
Oil quantity (Lt)	1	
Oil type	Total Equivis HZS 68	
Operating temperature	-20°C +55°C	
Gearmotor weight (Kg)	17	
Protection class	IP 44	
Gate max weight (Kg)	2500	
Gate speed	9,6 ml/min.	
Clutch	Double disc in oil	

## 2. ELECTRICAL SET-UP (standard system)



## 3. INSTALLING THE AUTOMATISM

### 3.1. Preliminary checks

To ensure safety and efficiency of the automated system, make sure the following requirements are observed before installing the system:

- The gate structure must be suitable for automation. The following are necessary in particular: wheel diameter must be in proportion to the weight of the gate, an upper track must be provided, plus mechanical travel stops to prevent the gate derailing.
- The soil must guarantee a perfect stability of the foundation plinth.
- There must be no pipes or electric cables in the plinth excavation area.
- If the gearmotor is located in the vehicle transit or manoeuvre area, adequate means of protection should be provided against accidental impact.
- Check if an efficient earthing is available for connection to the gearmotor.

### 3.2. MASONRY FOR FOUNDATION PLATE

1- Assemble the foundation plate as shown in figure 05.

2- In order to ensure that the pinion and rack engage correctly, the foundation plate must be positioned as shown in Fig. 03 (right closing) or Fig. 04 (left closing).

**Warning:** The hole for the cables on the foundation plate must always point to the gate, see Fig. 05.

3- After determining the position of the foundation plate, make a plinth as shown in Fig. 06 and wall the plate, providing several sheaths for routing the cables. Using a spirit level, check if the plate is perfectly level. Wait for the cement to set.

4- Lay the electric cables for connection to the accessories and power supply as shown in diagram of Fig. 02. To facilitate connections to the control unit, allow the cables to protrude by at least 45 cm from the hole on the foundation plate.

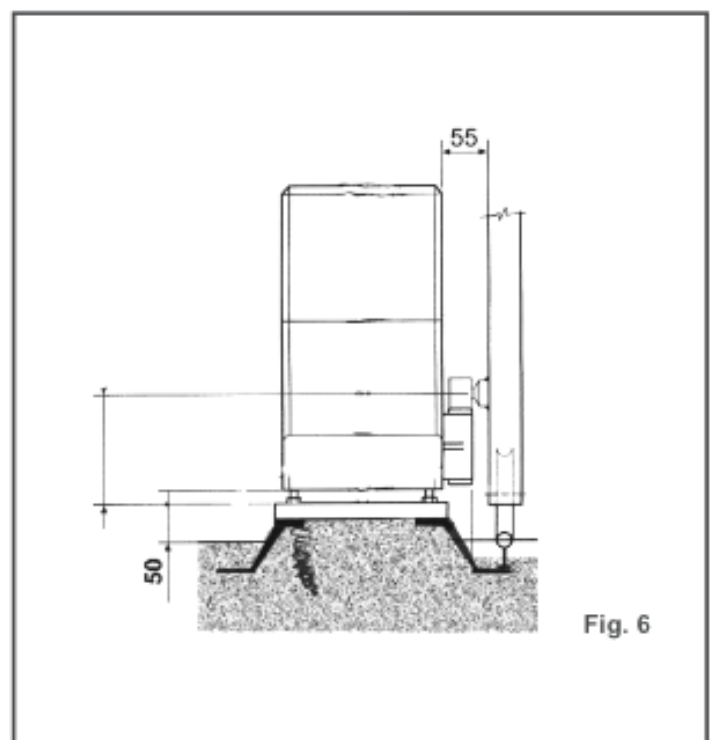
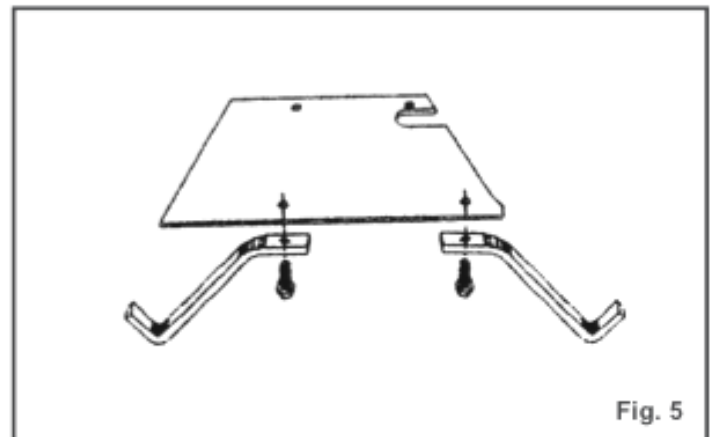
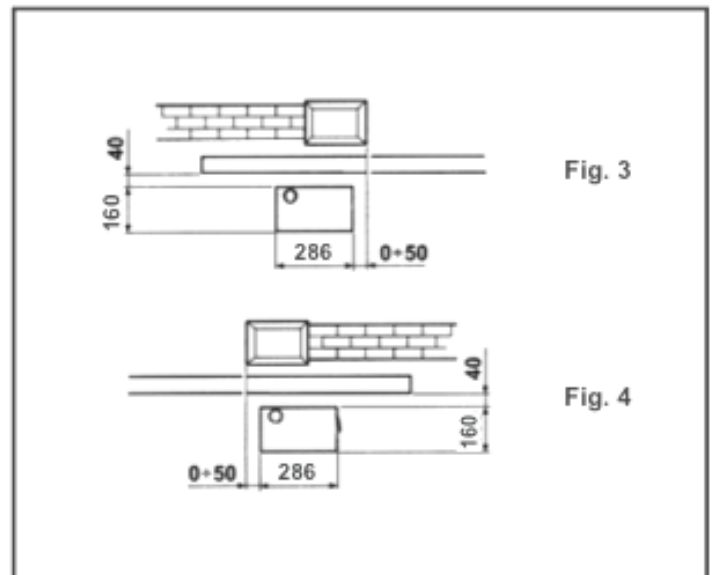
### 3.3. MECHANICAL INSTALLATION

1- Remove the cover and position the operator on the foundation plate, using the supplied washers and nuts. During this operation, route the cables through the appropriate openings in the motor body.

2- Adjust the height of the gearmotor and the distance from the gate, referring to dimensions in Fig. 6.

Attention: This operation is necessary to ensure the rack is correctly secured and to enable any new adjustments.

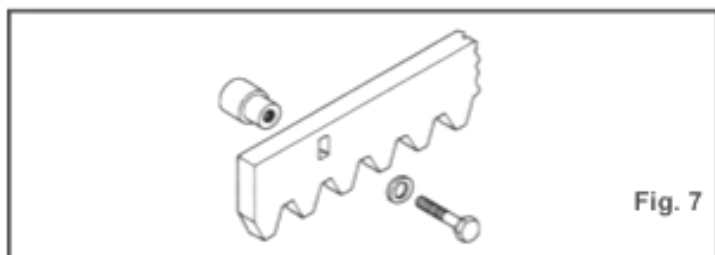
4- Secure the gearmotor to the plate, tightening the nuts.



### 3.4. ASSEMBLING THE RACK

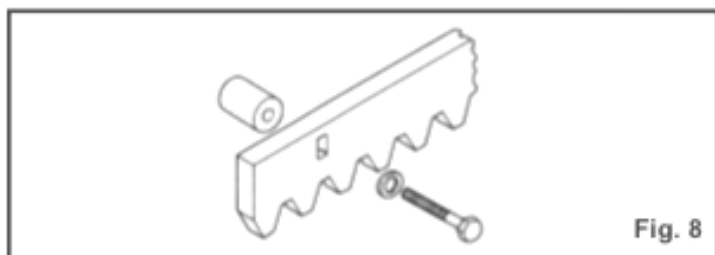
#### 3.4.1. STEEL RACK TO WELD (fig.7)

- 1) Fit the three threaded pawls on the rack element, positioning them at the bottom of the slot. In this way, the slot play will enable any future adjustments to be made.
- 2) Manually take the leaf into its closing position.
- 3) Lay the first section of rack level on the pinion and weld the threaded pawl on the gate.
- 4) Move the gate manually, checking if the rack is resting on the pinion, and weld the second and third pawl.
- 5) Position another rack element end to end with the previous one, using a section of rack to synchronise the teeth of the two elements.
- 6) Move the gate manually and weld the three threaded pawls, thus proceeding until the gate is fully covered.



#### 3.4.2. STEEL RACK TO SCREW (fig. 8)

- 1) Manually take the leaf into its closing position.
- 2) Lay the first section of rack level on the pinion and place the spacer between the rack and the gate, positioning it at the bottom of the slot.
- 3) Mark the drilling point on the gate. Drill a  $\varnothing 6,5$  mm hole and thread with an M8 male tap. Screw the bolt.
- 4) Move the gate manually, checking if the rack is resting on the pinion, and repeat the operations at point 3.
- 5) Position another rack element end to end with the previous one, using a section of rack to synchronise the teeth of the two elements.
- 6) Move the gate manually and carry out the securing operations as for the first element, thus proceeding until the gate is fully covered.

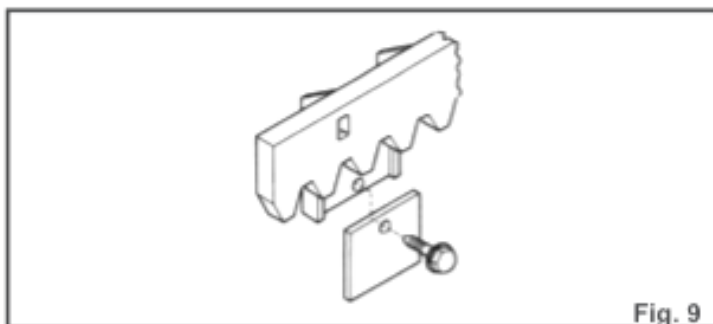


#### 3.4.3. NYLON RACK TO SCREW (fig. 9)

- 1) Manually take the leaf into its closing position.
- 2) Lay the first section of rack level on the pinion.
- 3) Mark the drilling point on the gate. Drill a  $\varnothing 4$  mm hole and thread with screw 6x20 mm with relative plate reinforcement.
- 4) Move the gate manually, checking if the rack is resting on the pinion, and repeat the operations at point 2.
- 5) Position another rack element end to end with the previous one, using a section of rack to synchronise the teeth of the two elements.
- 6) Move the gate manually and carry out the securing operations as for the first element, thus proceeding until the gate is fully covered.

### NOTES ON RACK INSTALLATION

- Make sure that, during the gate travel, all the rack elements do not exit the pinion.
- Do not, on any account, weld the rack elements either to the spacers or to each other. (only for steel rack).
- When the rack has been installed, to ensure it meshes correctly with the pinion, it is advisable to lower the gearmotor position by about 1.5 mm.
- Manually check if the gate correctly reaches the mechanical limit stops maintaining the pinion and rack coupled and make sure there is no friction during gate travel.
- Do not use grease or other lubricants between rack and pinion.



## 4. START UP

### 4.1. CONTROL BOARD CONNECTION

#### ATTENTION:

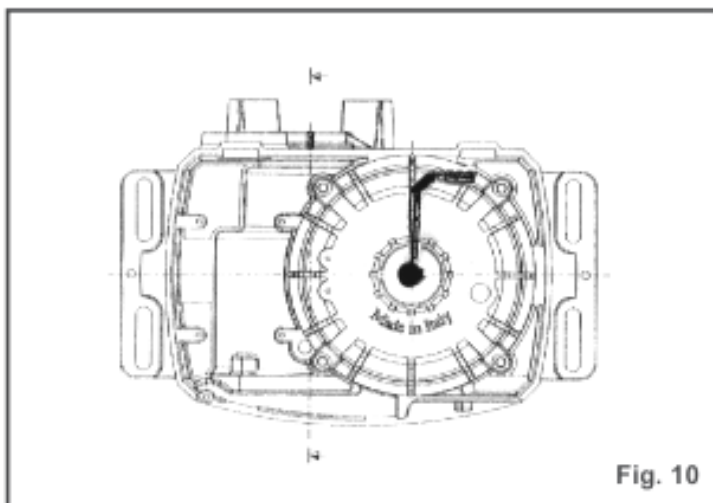
Before attempting any work on the board (connections, programming, maintenance), always turn off power.

### 4.2. ADJUSTING THE TORQUE TRANSMISSION (only for AT 2500)

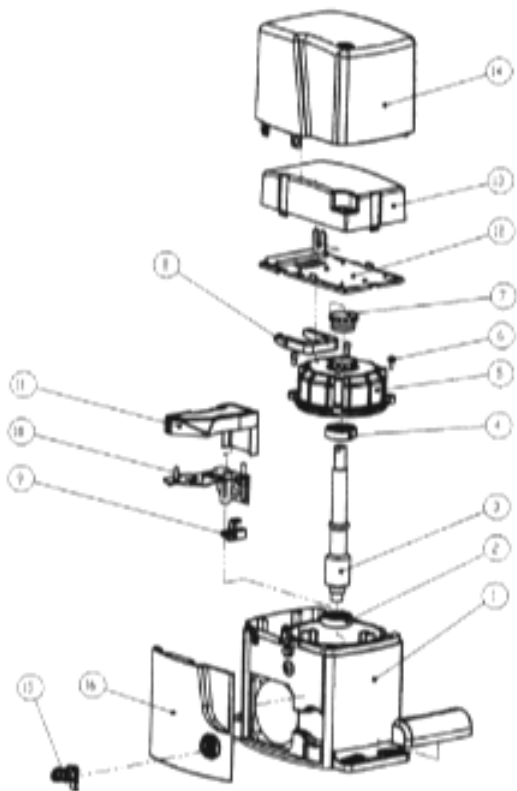
To adjust the torque transmission, act on the screw placed on the engine (Fig. 10):

- Rotate the screw clockwise to increase the torque transmission.
- Rotate the screw anticlockwise to decrease the torque transmission.

CAUTION: THE MOTOR IS PROVIDED WITH THE CLUTCH REGULATED AT MAX. SHOULD BE ROTATE ANTICLOCKWISE THE SCREW, UP TO ACHIEVE THE OPTIMAL ADJUSTMENT.



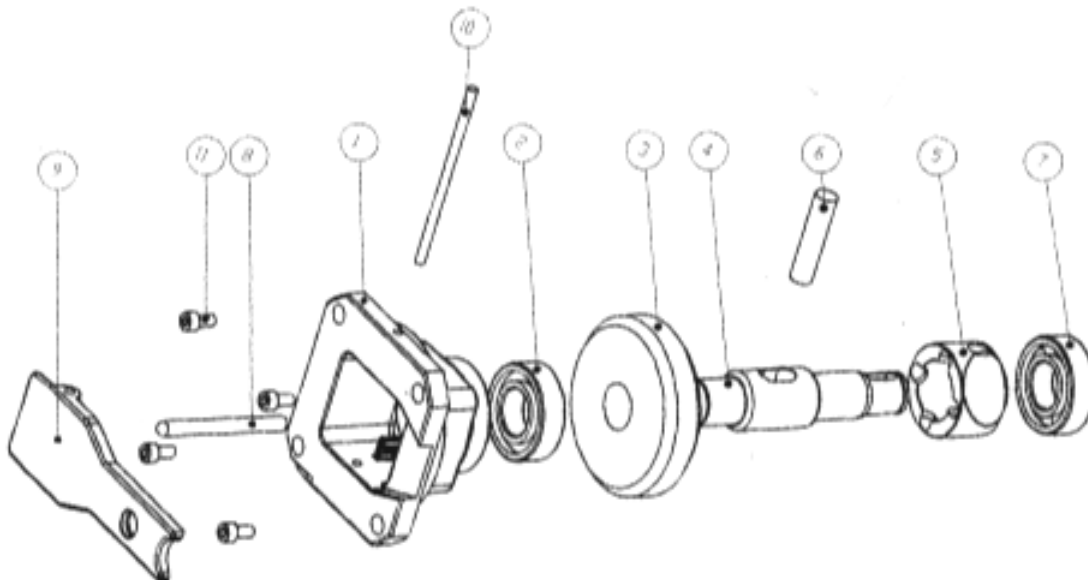
# AT-2500



## SPARE PARTS

1	Body reducer
2	Bearing 6303
3	Crankshaft
4	Bearing 6303
5	Motor cover
6	Screw TCEI 6 x 12
7	Register clutch cap
8	Electronic box hinge
9	Support spring limit switch
10	Limit switch box base
11	Limit switch cover
12	Electric box base
13	Electric box cover
14	External cover
15	MSC lock
16	Fold

## TRANSMISSION AND UNLOCK GROUP



1	Square cap
2	Bearing 6205
3	Helical wheel
4	Led tree
5	Unlock Coupling
6	Plug 12 X 47
7	Bearing 6205
8	Unlock pin 8 x 80,5
9	Unlock lever
10	Unlock lever plug 5 X 106
11	Screw TCEI 6 X 12

AC Casablanca, 867 AV 2 MARS ETG  
RC HADDAOIA 3, Casablanca 20470



polyopenmaroc@gmail.com

+ 212 522502539 :  + 212 666453856 :