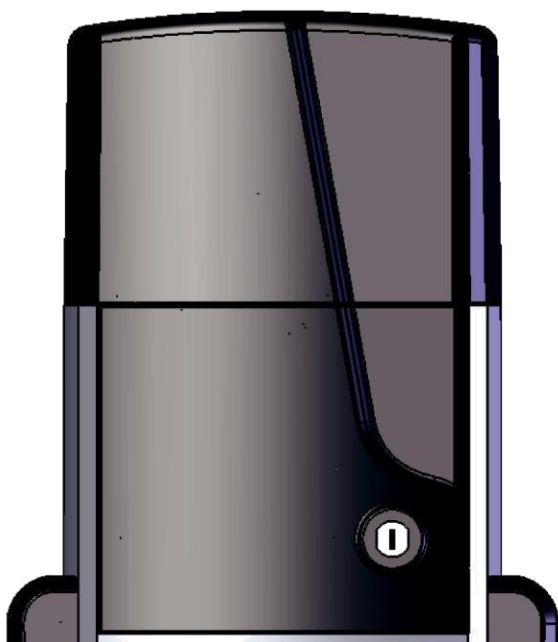


TECHNICAL INSTALLATION MANUAL

TYPHON 2000

ENGLISH



Manual for the installation
and maintenance of
automations for sliding
gates.

CE



WARNINGS FOR THE INSTALLER

GENERAL SAFETY OBLIGATIONS

1) ATTENTION! To ensure the safety of people, it is important that you read all the following instructions. Incorrect installation or incorrect use of the product could cause serious harm to people.

2) Carefully read the instructions before beginning to install the product.

3) Keep packing materials (plastic, polystyrene, etc.) out of the reach of children as such materials are potential sources of danger.

4) Store these instructions for future reference.

5) This product was designed and manufactured exclusively for the use indicated in this documentation. Any other use, not expressly indicated here, could compromise the good condition/operation of the product and/or be a source of danger.

6) Oxygen Automation disclaims any liability for misuse or use other than that for which the automated operator was intended.

7) Do not install the equipment in an explosive atmosphere: the presence of inflammable gas or fumes is a serious danger to safety.

8) The mechanical parts must conform to the provisions of Standards EN 12604 and EN 12605. For non-EU countries, to obtain an adequate level of safety, the Standards mentioned above must be observed, in addition to national legal regulations.

9) Oxygen Automation is not responsible for non-compliance with Good Technique in the construction of the closing elements to be motorised, or for any deformation that may occur during use.

10) The installation must conform to Standards EN 12453 and EN 12445. For non-EU countries, to obtain an adequate level of safety, the Standards mentioned above must be observed, in addition to national legal regulations.

11) Before attempting any job on the system, disconnect the power supply.

12) The mains power supply of the automated system must be fitted with an all-pole switch with contact opening distance of 3mm or greater. Use of a 6A thermal breaker with all-pole circuit break is recommended.

13) Make sure that a differential switch with threshold of 0.03 A is fitted upstream of the system.

14) Make sure that the grounding system is perfectly constructed and connect the metal parts of the locking medium to it.

15) The safety devices (EN 12978 standard) protect any danger areas against mechanical movement risks: such as crushing, dragging, and shearing.

16) For each installation it is recommended to use at least one light signal, as well as a warning sign properly fixed to the frame structure, in addition to the safety devices.

17) Oxygen Automation disclaims any liability for the safety and efficient operation of the automated system if system components not produced by Oxygen Automation are used.

18) For maintenance, use only original parts (manufactured by Oxygen Automation).

19) Do not modify the components of the automated system in any way.

20) The installer must provide all information concerning manual operation of the system in case of emergency, and give the user the User Guide supplied with the product.

21) Do not allow children or adults to be near the product while it is operating.

22) Keep radio controls or other pulse generators away from children, to prevent the automated system from being activated involuntarily.

23) The user must not attempt any kind of repair or direct intervention and must contact qualified personnel only.

24) Transit is permitted only when the automated system is inactive.

25) Maintenance: check at least every 6 months the efficiency of the system, particularly the efficiency of the safety devices (including, where foreseen, the operator thrust force) and of the release devices.

26) Anything not expressly specified in these instructions is not permitted.

MOTOR TYPHON 2000

These instructions apply to the following models:
TYPHON 2000 MEC.LS and TYPHON 2000 MAG-LS.
The automatism TYPHON 2000KG gear motor S is an electro-mechanical operator designed for moving sliding gates.

The non-reversing reduction system ensures the mechanical locking of the gate when the gear motor 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 case of a power failure or operator malfunction.

The TYPHON 2000 gear motor was designed and built for controlling vehicle access.

AVOID ANY OTHER USE.

where:

Ta = opening time

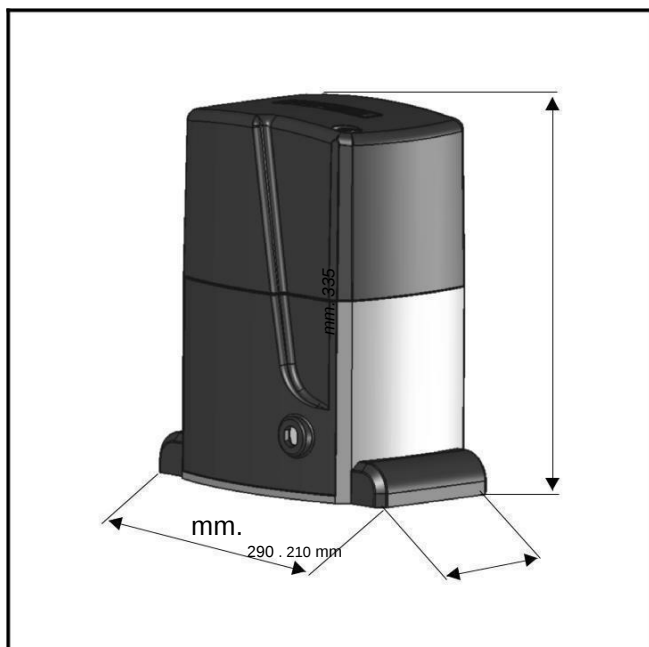
Tc = closing time

Tp = pause time

Ti = time of interval between two complete cycles

1. DESCRIPTION AND TECHNICAL SPECIFICATIONS

1.1. DIMENSIONS TYPHON 2000KG



1.2. MAXIMUM USE CURVE

The curve makes it possible to establish the maximum working time (T) according to the use frequency (F). With reference to IEC 34-1 Standard, the TYPHON 2000 KG gearmotor can operate with a use frequency of 40%. To ensure efficient operation, it is necessary to operate in the work range below the curve.

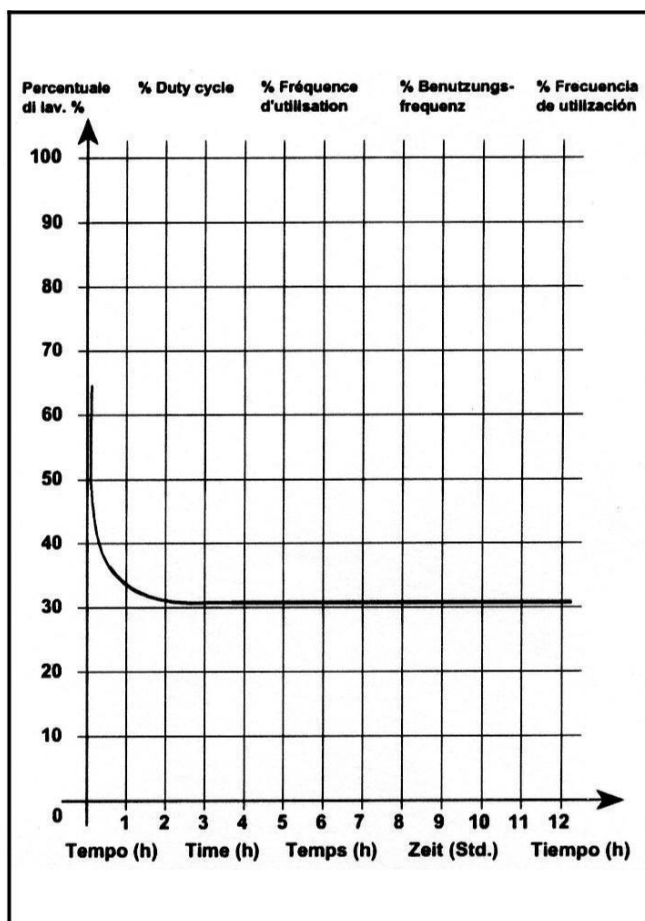
Important: The curve is obtained at a temperature of 20°C. Exposure to the direct sun rays can reduce the use frequency by up to 20%.

Calculation of the use frequency

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

Calculation formula:

$$\%F = \frac{Ta + Tc}{Ta + Tc + Tp + Ti} \times 100$$

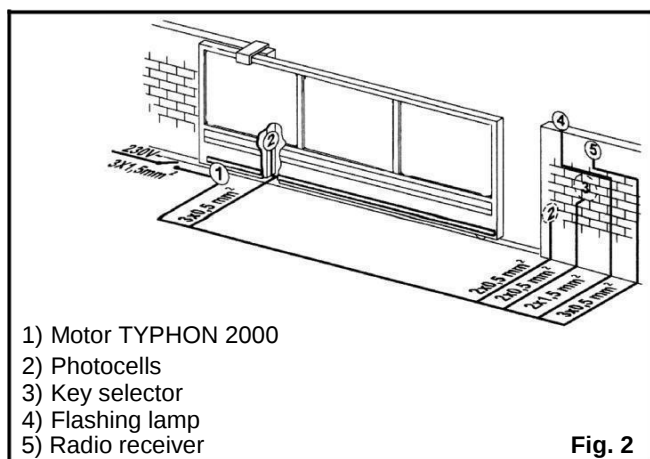


1.3. TECHNICAL SPECIFICATIONS

MODEL	1000	TYPHON 2000
Power supply	230V (+6% -10%) 50Hz	
Absorbed power (W)	550	650
RPM (X min.)	1400	
Absorbed current (A)	1,7	2,4
Capacitor	16 uf	25 uf
Reduction Ratio	1 : 30	
Pinion	Modulo 4 - Z16	
Thrust on pinion (daN)	80	150
Winding thermal protection	150°C	130°C
Use frequency	40%	Intensive use
Oil quantity (Lt)	0,250	1
Oil type	Total Equivis HZS 68	
Operating temperature	-20°C +55°C	
Gearmotor weight (Kg)	16	17
Protection class	IP 55	
Gate max weight (Kg)	1000	2000
Gate speed	9,6 ml/min.	
Clutch	No (electronic clutch is recommended)	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. In particular the following requirements are necessary:
- The 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 gear motor is located in the vehicle transit or manoeuvre area, adequate means of protection should be provided against accidental impact.
- Check if an efficient grounding is available for the connection to the gear motor.

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 the 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.

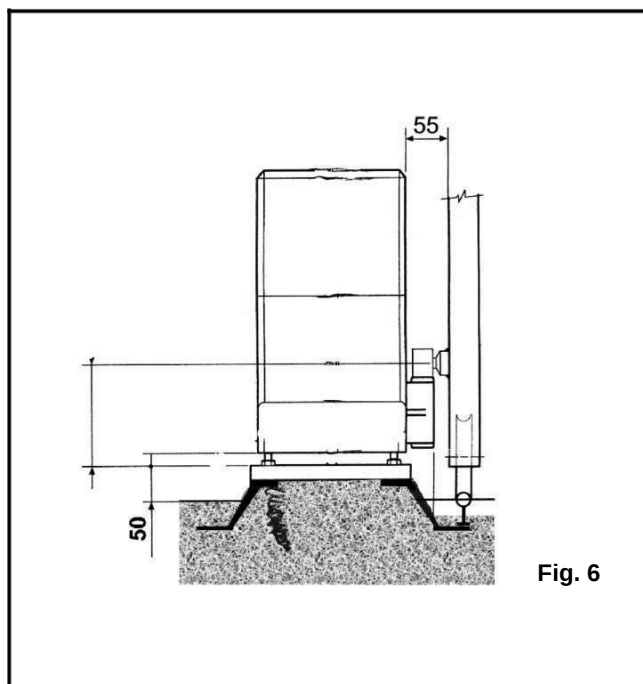
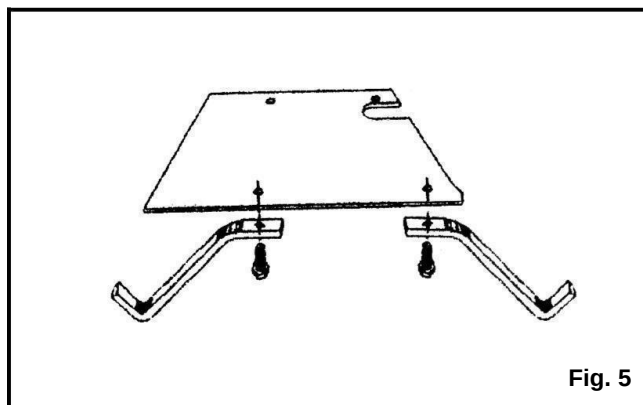
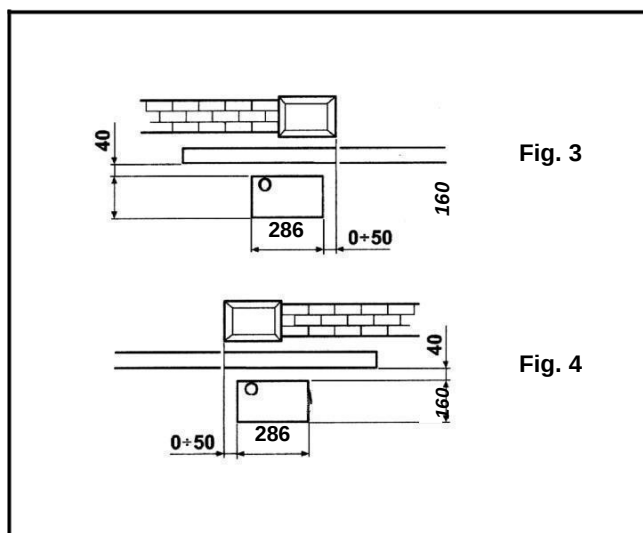
3.3. MECHANICAL INSTALLATION

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 gear motor and the distance from the gate, referring to the dimensions in Fig.6.

Attention: This operation is necessary to ensure the correct securing of the rack and to enable any new adjustments.

4- Secure the gear motor 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 to 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.

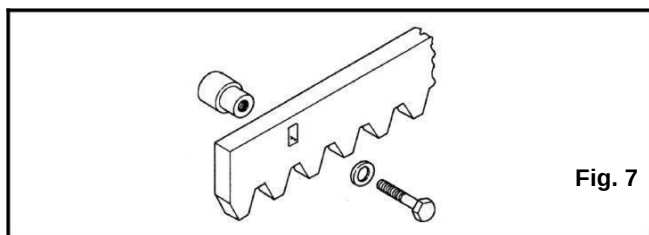


Fig. 7

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.

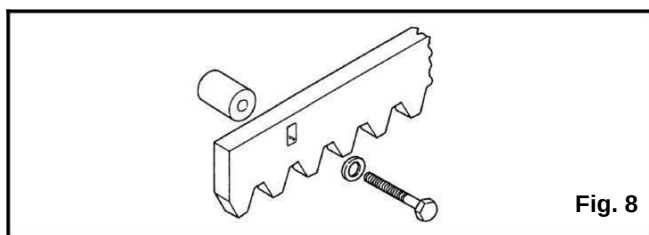


Fig. 8

3.4.3. NYLON RACK TO SCREW (fig. 9)

- 1) Manually take the leaf to 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, to check 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 synchronize 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.
- In no case weld the rack elements neither to the spacers nor 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.

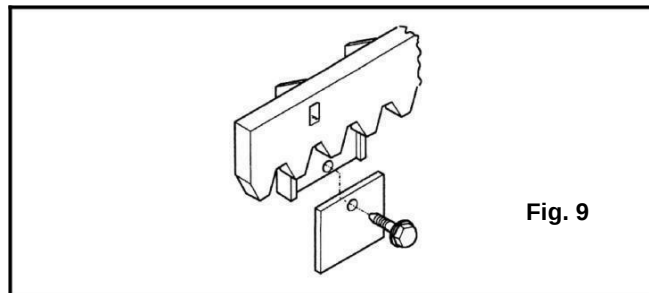


Fig. 9

4. START UP

4.1. CONTROL BOARD CONNECTION

ATTENTION:

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

4.2. ADJUSTING THE TORQUE TRANSMISSION (only for MSC 2000)

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. THE SCREW SHOULD BE ROTATED ANTICLOCKWISE, UP TO ACHIEVE THE OPTIMAL ADJUSTMENT.

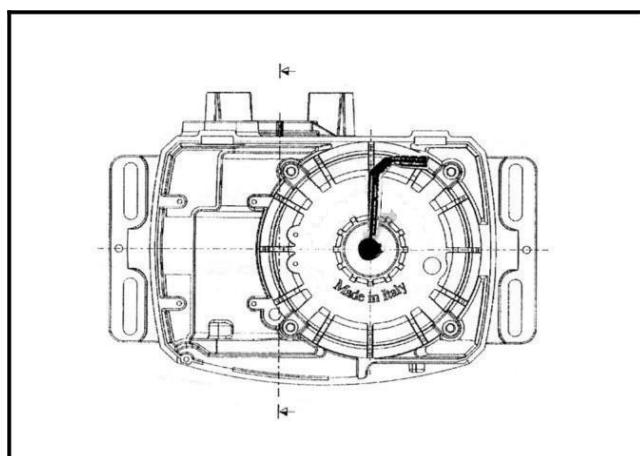


Fig. 10



4.3. AUTOMATION SYSTEM TEST

Once the installation of the operator has been completed, make a careful functional check of all accessories and safety devices connected.

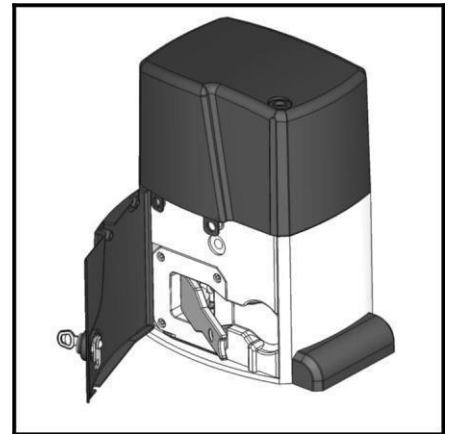
Give the Client the "User Guide" and demonstrate the correct operation and use of the gearmotor, highlighting the potentially dangerous zones of the automated system.

5. MANUAL OPERATION

If it is necessary to manually actuate the gate due to lack of power or automation interruption, it must be unlocked as follows.

RELEASE LEVER

- 1) Insert the key supplied in the plastic fold and open it.
- 2) Pull the release lever.
- 3) Open or close the gate manually.



6. RESTORING NORMAL OPERATION

To prevent an inadvertent boost from moving the gate during the manoeuvre, turn off the power supply before locking the motor again.

RELEASE LEVER

- 1) Close the release lever.
- 2) Move the gate until the release system meshes.
- 3) Close the plastic fold and restore the power supply to the system

7. MAINTENANCE

Check the functional operation of the system at least every six months, especially the efficiency of the safety devices (including the operator thrust force) and the release devices.

7.1. OIL FILLING

Periodically check the amount of oil within the operator.

For medium-low frequency of use, an annual check is enough, for more intensive use it is recommended every 6 months. To refill, unscrew the cap and fill up to the indicated level.

8. REPAIRS

For any repairs, contact Norton's authorised Repair Centres.



USER'S GUIDE

MOTOR FOR SLIDING GATE MOD. TYPHON 2000KG

Read the instructions carefully before using the product and keep them for future consultation.

GENERAL SAFETY RULES:

If installed and used correctly, the TYPHON 2000 automated system will ensure a high degree of safety. Some simple rules regarding behaviour will avoid any accidental trouble:

- Do not stand near the automated system and do not allow children and other people to stand there, especially while it is operating.
- Keep radio controls or any other pulse generator well away from children to prevent the automated system from being activated involuntarily.
- Do not allow children to play with the automated system.
- Do not willingly obstruct the gate movement.
- Prevent any branches or shrubs from interfering with gate movement.
- Keep light signalling systems efficient and clearly visible.
- Do not attempt to activate the gate by hand unless you have released it.
- In the event of malfunctions, release the gate to allow access and wait for qualified technical personnel to do the necessary work.
- After enabling manual operation, switch off the power supply to the system before restoring normal operation.
- Do not make any alterations to the components of the automated system.
- Do not attempt any kind of repair or direct intervention and contact qualified personnel only.
- Call in qualified personnel at least every 6 months to check the efficiency of the automated system, safety devices and earth connection.

MANUAL OPERATION

If it is necessary to manually activate the gate due to lack of power or disruption of automation, you must act on the release as follows.

RELEASE LEVER

- 1) Insert the key supplied in the plastic fold and open it.
- 2) Pull the lever unlock.
- 3) Open or close the gate manually.

DESCRIPTION

TYPHON 2000 automated system is ideal for controlling vehicle access areas of medium transit frequency.

TYPHON 2000 system for sliding gates is an electro-mechanical operator transmitting motion to the sliding gate with a rack pinion appropriately coupled to the gate.

Operation of the sliding gate is controlled by an electronic control unit housed inside the operator or in a hermetically sealed outdoor enclosure.

When, with the gate closed, the unit receives an opening command by radio control or from another suitable device, it activates the motor until the opening position is reached.

If automatic operation has been set, the gate will automatically close again after the selected pause time has elapsed.

If the semi-automatic operation has been set, a second pulse must be sent to close the gate again.

An opening pulse during re-closing always causes the movement to be reversed.

A stop pulse (if provided) always stops the movement. The light signal indicates that the gate is currently moving. For details on the sliding gate behaviour in different operating logics, consult the installation technician.

The automated system include obstacle-detection and/or safety devices (photocells, edges) that prevent the gate from closing when there is an obstacle in the area they protect.

The system ensures mechanical locking when the motor is not operating and, therefore, it is not necessary to install any lock. Manual opening is, therefore, only possible by using the release system.

The gear motor TYPHON 2000 has a mechanical clutch, so it doesn't need any electronic clutch.

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

RESTORING NORMAL OPERATION

To prevent an inadvertent boost could move the gate during the manoeuvre, turn off the power supply, before locking again the motor.

RELEASE LEVER

- 1) Close the unlock lever.
- 2) Move the gate until the release system meshes.
- 3) Close the plastic fold and restore the power supply to the System



CONFORMITY DECLARATION FOR MACHINERY (DIRECTIVE 98/37 CEE)

Manufactured under CE regulation and directive in **ITALIA** and **Distributed** in **THE EUROPEAN UNION** and **OVERSEAS** by **OXYGEN AUTOMATION Srl, via Marzabotto, 40133 Bologna ITALIA.**

Declares that the electromechanical operator for sliding gates mod. Typhon 2000:

- 1) is designed to be incorporated into machinery or to be assembled with other machinery to constitute machinery under the Directive 98/37 CEE and subsequent amendments;
- 2) meets the essential safety requirements of the following Directives CEE:
73/23 CEE and subsequent amendment 93/68/CEE
89/336 CEE and subsequent amendment 92/31 CEE and 93/68 CEE.

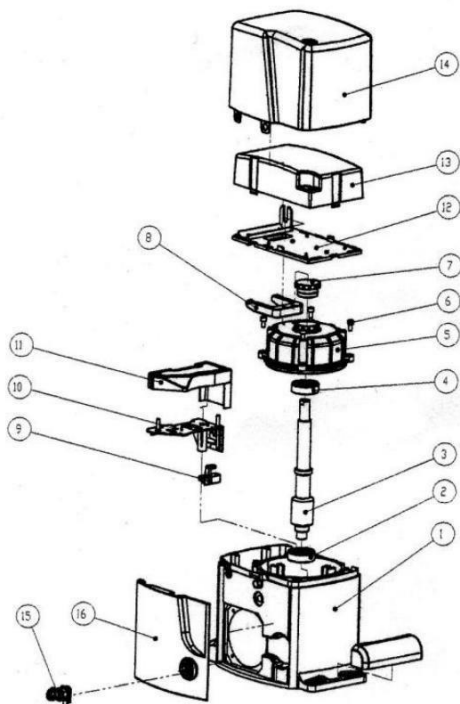
Declares that: it is not allowed to put in service the machinery up to that the car in which it will be incorporated or which will become component has been identified and has been declared the conformity under the conditions of the Directive 98/37/CEE and subsequent amendment.

The Legal Representative



TYPHON 2000KG

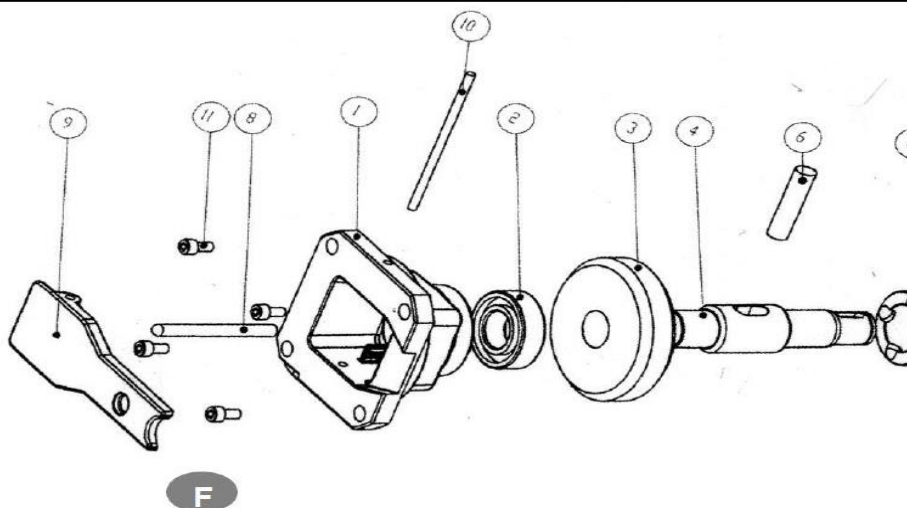
SPARE PARTS LIST



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
1	
0	Limit switch box base
1	
1	Limit switch cover
1	
2	Electric box base
1	
3	Electric box cover
1	
4	External cover
1	
5	MSC lock
1	
6	Fold

Prova

TRANSMISSION AND UNLOCK GROUP



1	Square cup
2	Bearing 6205
3	Bearing 6205
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