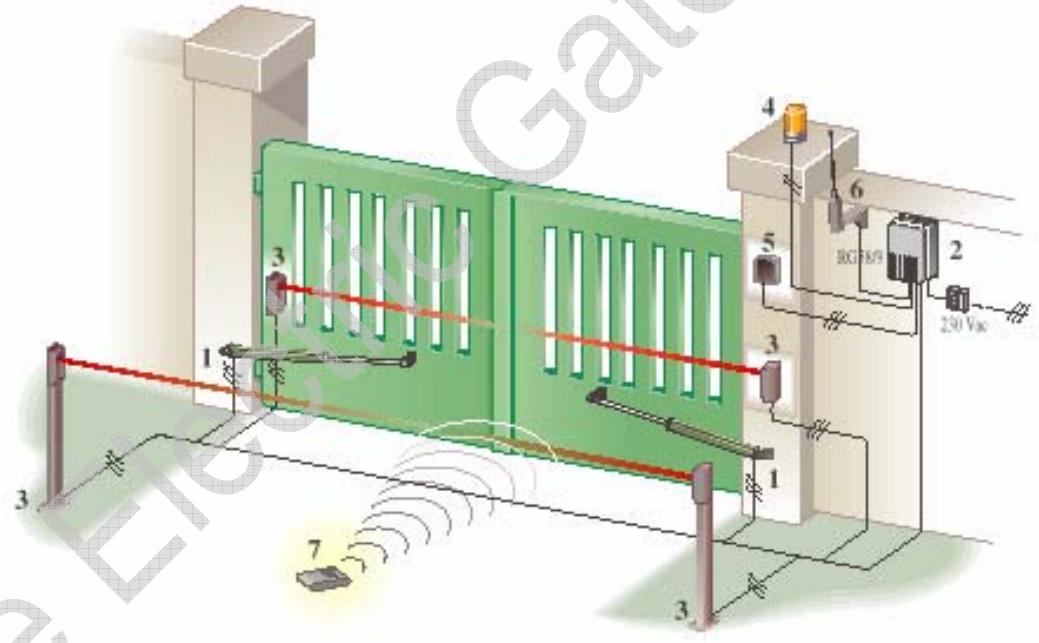
INSTALLATION INSTRUCTIONS FOR MAXIM GATE OPENING KITS



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VERSION 3.2
May 2007

POSITIONING

Your gate may be heavy or light, rigid or flexible, it may be made of wood, iron or plastic yet the automation will accept it and adapt to these versions provided that each leaf does not exceed 250 kg in weight and 3.5 m in length.
Before beginning installation, it is important that you check that the gate rotates perfectly on its pivots, making sure they are suitably lubricated.
Everything is easily moved by hand and will not interfere with the mechanical movement.

NB : Once installation is complete, the geared motor must result as being inclined approx. 1 degree (See fig. 10)

INSTRUCTIONS FOR MOUNTING THE GEARED MOTOR

1.1 Fix plate A to the side of the leaf on the pillar following the tables. Remember the inclination. See N.B.
1.2 Take the geared motor and using the bolt, fix it on to the plate which you have just screwed on.
1.3 Let shaft D slide out by unscrewing it as far as the end of the screw.
1.4 Screw it back on 1 complete turn for 360 degrees.
1.5 Take plate B, place it in the hole of the shaft, position it against the gate leaf crossways and screw on.
1.6 Proceed in a similar way with the other gate leaf.
1.7 Place the mechanical stops in the opening and closure position. See fig. 11

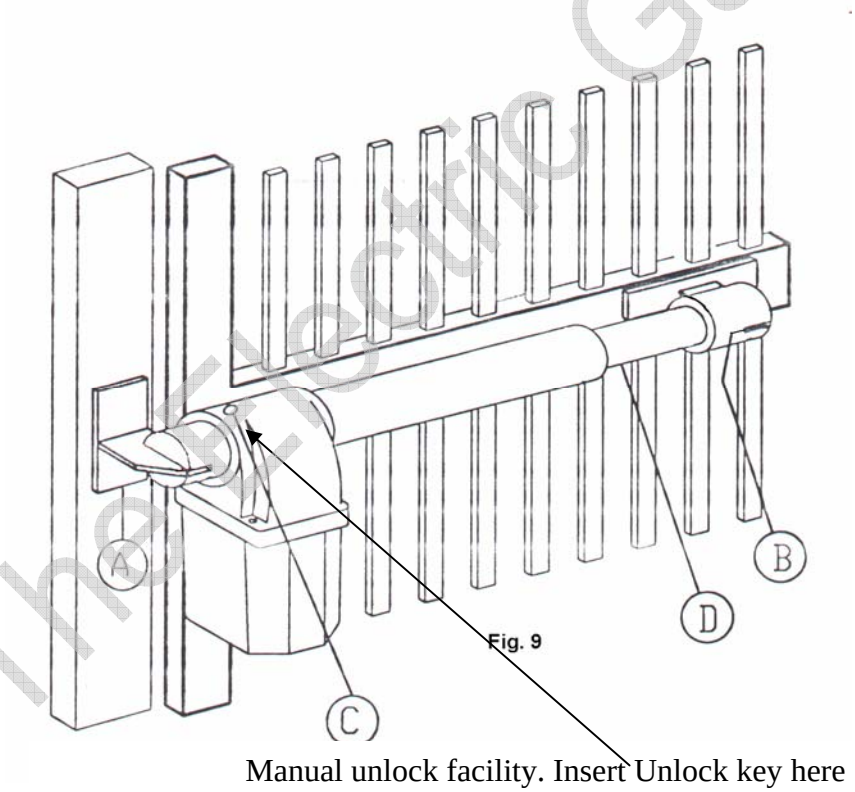

Fig. 9

Manual unlock facility. Insert Unlock key here

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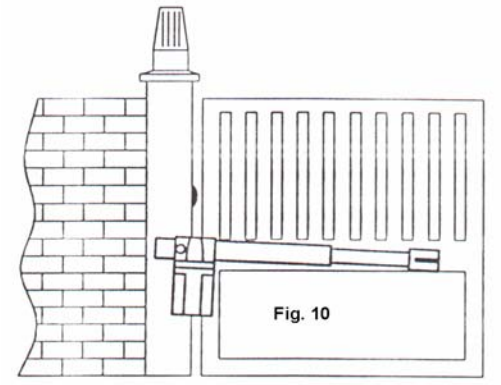
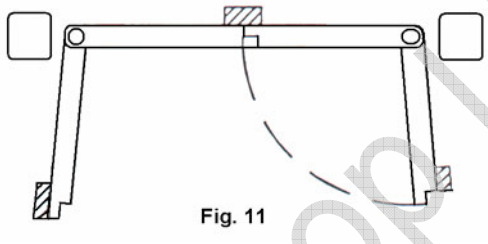
Date: 28-11-03

POSITIONING

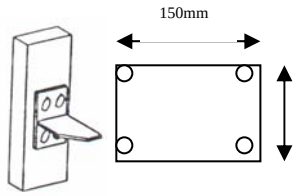




WARNING: To active the block and the release of the gate leaves (active/disactivate the screws) use -the special key supplied to operate screw C.

If your pillar is made of iron, weld the plate as indicated or:
-Countermark the holes of the bracket
-Bore with an 8mm diameter drill bit
-fix using M10 set screws

If your pillar is made of masonry, carry out the following operations:
-Countermark the holes of the bracket
-Bore with a 12mm diameter drill bit
-Insert expanding dowel and screw on



If your pillar is made of wood, it may be necessary to fit a metal plate:
150mm X 130mm X 6mm spreads the pressure over a larger area
Drill the plate & weld or screw the motor bracket to the plate.
Screw the plate to the wood using number 12 screws

LEVELS TO BE RESPECTED WHILE MOUNTING THE GEARED MOTOR

Once the opening of the gate leaves has been chosen (95-120 degrees) adopt the measures indicated below for the precise positioning of bracket A

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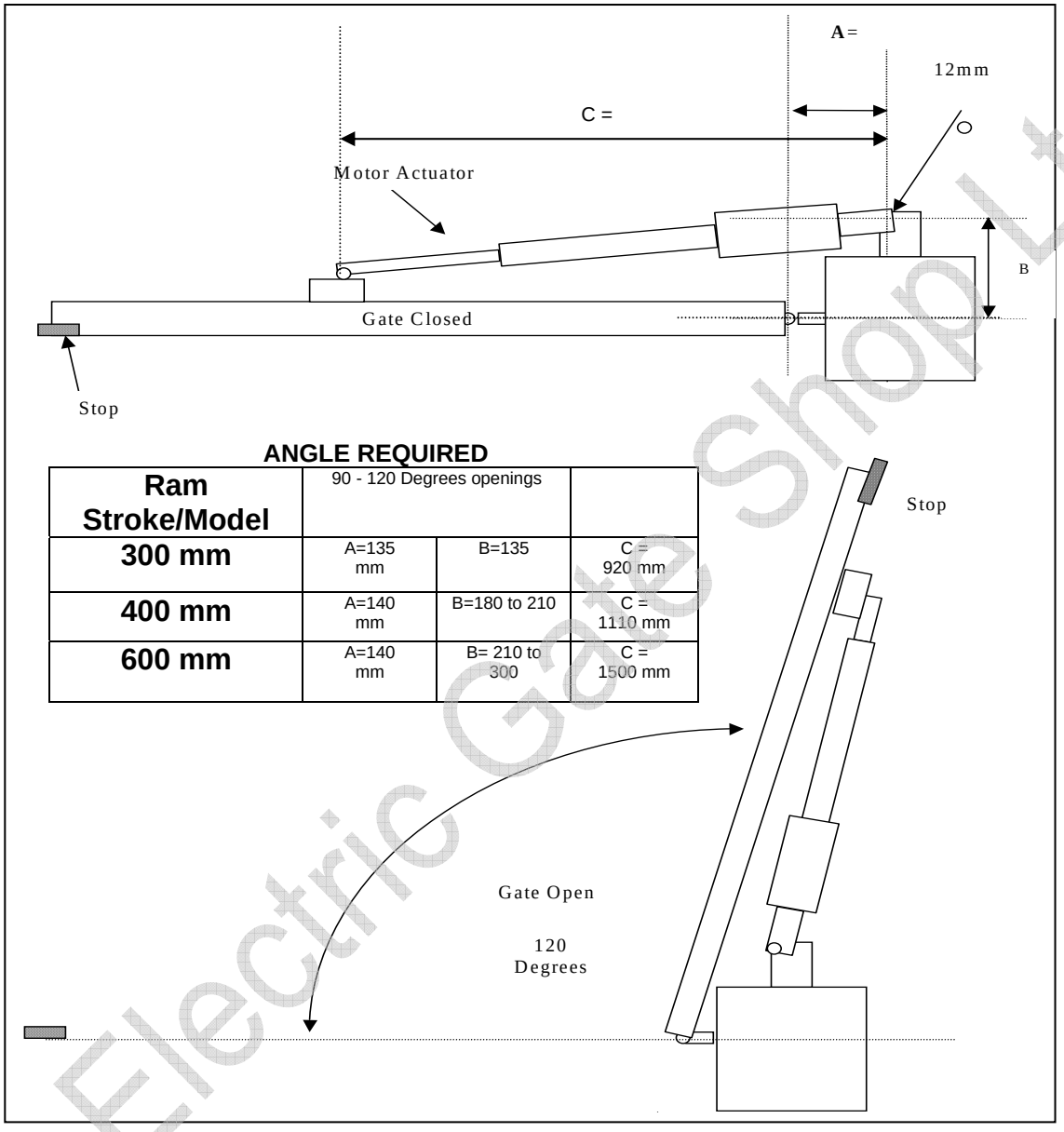

ANGLE REQUIRED

Ram Stroke/Model	90 - 120 Degrees openings		
300 mm	A=135 mm	B=135	C = 920 mm
400 mm	A=140 mm	B=180 to 210	C = 1110 mm
600 mm	A=140 mm	B= 210 to 300	C = 1500 mm

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Photocells

The photocells are in pairs, one transmitter and one receiver. They should be mounted 500-600 mm from the ground and face each other level. Each photocell regardless of type has a 24Volt AC or a 12Volt DC positive and negative supply. (Please see Technical Specification for the control unit)

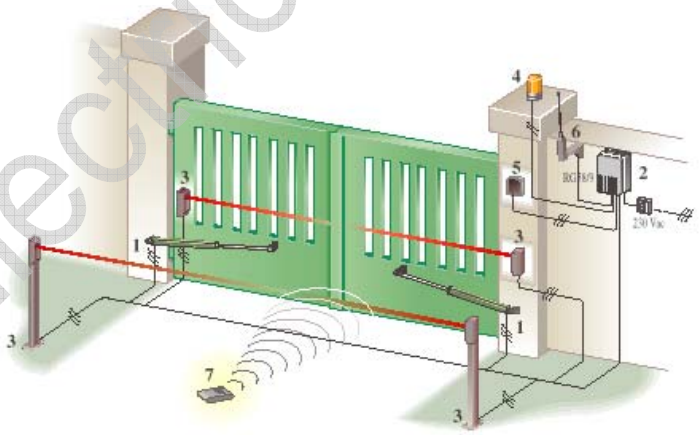
The receiving photocell does the switching on and off to the control panel. If the transmitting beam can reach the receiving photocell, there will be a completed circuit to the main panel and the gate/s will function. If the beam is broken, during operation of closing, the gates will stop and reopen.

If you are using two pairs of photocells as pictured, the receivers should be crossed on opposite sides so that you do not have two receivers at the same side.

For this purpose 4 core alarm type cable is recommended for use. Follow the wiring diagram provided to wire both the receiver and transmitting photocells. At the control box end, wire the colour coded cables up as per the diagram provided showing a typical photocell placement. If you require the photocells to operate in both opening and closing, wire according to the full wiring diagram.

When the photocells are working and correctly aligned, you should hear a clicking sound from the transmitter when the beam is broken intermittently. Once wired, place the covers over the photocells and secure the fixing screw. Fill any cable gaps with silicone to prevent insects from entering the device and interfering with it.

Surface Mounted Photocells



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Power failures and use of the manual unlock

In the event of a power failure, you should first turn off the power isolator switch to the system. Remove the weather cap from the top of the motor near the hinge point. Then use the unlock key to unlock the motors. The gates can now be used manually and locked open with the key.

To reuse the system after the power has been reconnected.

Unlock the gates with the key and lock them in the closed position as far as they will go.

Turn the power isolator switch back on and press the remote control to open the gates. The system should now learn positions and resume normal operation. **Do not forget to refit the weather cap.**

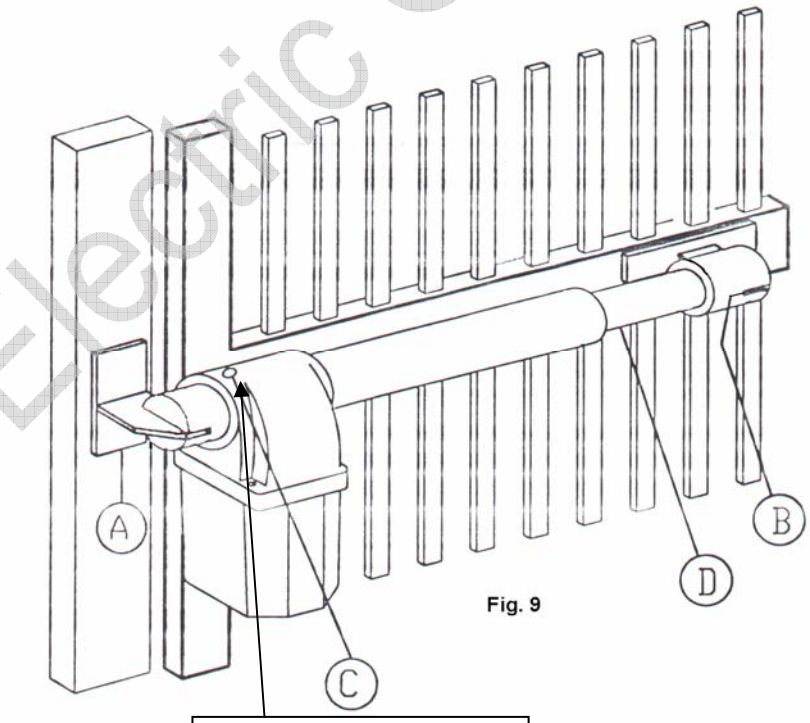

Fig. 9

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TERMS AND LIMITS OF WARRANTY

1. The Electric Gate Shop gate kit is covered for 1 year, RTB. (Return to base) from the date of purchase.

2. Warranty covers all components against faults arising from faulty manufacture, materials, or factory workmanship.

3. The warranty only covers genuine component faults, and only applies when the goods have been used in accordance with their specification. No warranty will be given to any component where there has been misuse, abuse, damage or modification, and will be rendered invalid if any repair is attempted without the approval of The Electric Gate Shop LTD.

No warranty will be given to events of natural causes, ie. Lightening, flood, fire etc or acts of vandalism. In addition it does not cover parts subject to wear (batteries, etc)

4. The liability of The Electric Gate Shop LTD will be limited to the cost of repair or replacement of faulty components under warranty.
The cost of removing faulty components and returning them for warranty consideration will be at the owners or installers expense.

5. In the event of a component failure you should contact The Electric Gate Shop service support on 01226 370549 and arrange for the item to be repaired or replaced.

6. The Electric Gate Shop LTD reserves the right to ship faulty components to the original manufacturer. for their test or repair before a decision on warranty is made.
Terms and limitations of component warranty are also liable to the terms and conditions of the original manufacturer.

The Electric Gate Shop Ltd

ANIMA®
UNAC
ASSOCIAZIONE COSTRUTTORI DI INFISSI MOTORIZZATI E AUTOMATISMI PER SERRAMENTI IN GENERE

Installer:
(Name, address, telephone)

UNAC GUIDE No. 2
FOR THE MOTORISATION OF HINGED GATES
IN ACCORDANCE WITH MACHINERY DIRECTIVE 98/37/EEC AND THE APPLICABLE PARTS OF STANDARDS EN 13241-1, EN 12453, EN 12445

With this publication UNAC sets out to inform and assist installers in applying the specifications of the directives and of European standards concerning the safe use of motorised gates/doors.
It should be noted that those who sell and *motorise* an existing manual door/gate become the manufacturer of the motorised door/gate *machine* and must prepare and keep the technical file, as laid down by Annex V of the Machinery Directive (98/37/EEC). The technical file must contain the following documents:

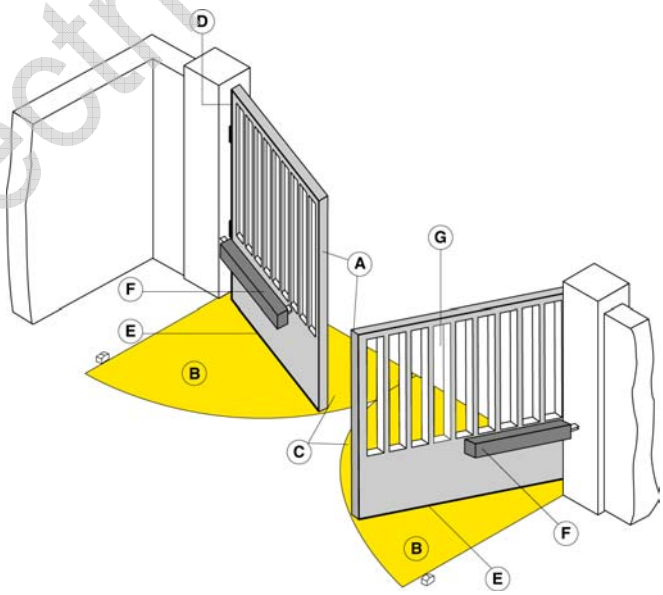
- Assembly drawing of the motorised door/gate (usually included in the installation manual).
- Electrical connections and control circuit diagrams (usually included in the installation manual).
- Risk analysis including (as indicated on the following pages):
  the list of the essential requirements as indicated in Annex I of the Machinery Directive;
  the list of the risks presented by the door/gate and the description of the solutions adopted.
- They must also keep the manuals for installation and maintenance of the door/gate and of the components.
- Prepare the operating instructions and general warnings for safety (if necessary integrating those in the manual for installation of the door/gate) and give the user a copy.
- Compile the proof book and give the user a copy (see facsimile in Annex 1).
- Draft the EC declaration of conformity (see facsimile in Annex 2) and give the user a copy.
- Fill in the label or plate with CE marking and attach it to the motorised door/gate.

N.B. *The technical file must be held and made available to the competent national authorities for at least ten years from the date of construction of the motorised door/gate.*

Note also that, as from May 2005, the manufacturer of a new door/gate (both manual and motorised) must observe the procedure for the CE marking pursuant to the Construction Products Directive (89/106/EEC), as indicated in annex ZA of the standard EN 13241-1. This procedure involves the manufacturer:

- setting up and maintaining internal production control;
- having a notified body carry out the initial type tests referring to the applicable characteristics indicated in Annex ZA of standard EN 13241-1.

N.B. UNAC is preparing guidelines dedicated to the correct application of the Construction Products Directive (89/106/EEC).



Risk areas
of the hinged gate (Figure 1)

The information given was drafted and checked with the utmost care, nevertheless UNAC declines all responsibility for any errors, omissions or inaccuracies due to technical or graphical requirements. UNAC points out that this guide does not replace the content of standards which the manufacturer of the motorised door/gate must observe.

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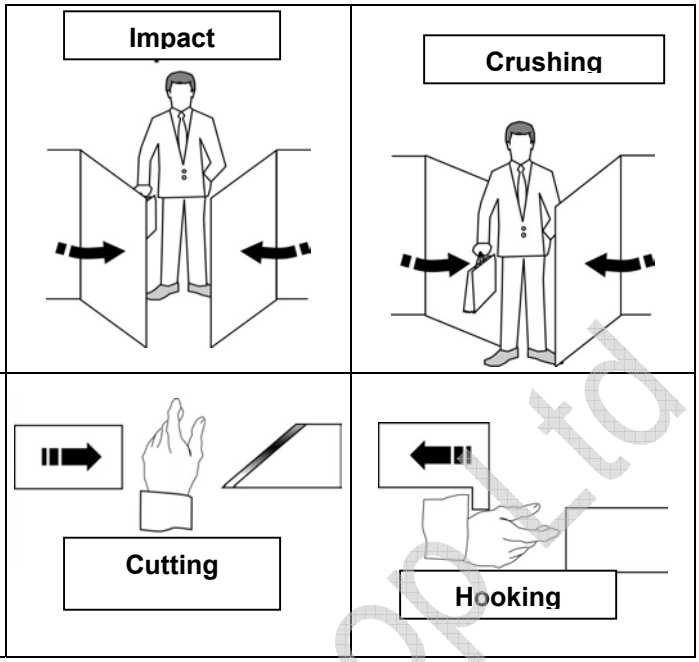
KEY TO THE MECHANICAL RISKS CAUSED BY MOVEMENT

Pursuant to the Machinery Directive:

- "Danger zones" refer to any zone within and/or around machinery in which an exposed person is subject to a risk to his or her health and safety.
- "Exposed person" refers to any person wholly or partially in a danger zone.



MINIMUM LEVEL OF PROTECTION OF THE MAIN EDGE

Type of actuation controls	**Type of use**		
	Informed users (private area)	Informed users (public area)	Uninformed users
Hold-to-run control	Pushbutton control	Pushbutton control with key	Hold-to-run control not possible
Impulse control with door visible	Limitation of forces, or presence sensing devices	Limitation of forces, or presence sensing devices	Limitation of forces and photocells, or presence sensing devices
Impulse control with door not visible	Limitation of forces, or presence sensing devices	Limitation of forces and photocells, or presence sensing devices	Limitation of forces and photocells, or presence sensing devices
Automatic control (e.g. timed closure control)	Limitation of forces and photocells, or presence sensing devices	Limitation of forces and photocells, or presence sensing devices	Limitation or forces and photocells, or presence sensing devices

ANALYSIS OF THE RISKS AND CHOICE OF SOLUTIONS IN ACCORDANCE WITH THE MACHINERY DIRECTIVE 98/37/EEC AND THE STANDARDS EN 13241-1, EN 12453, EN 12445

The risks listed below follow the sequence of the installation process. These risks are those which are commonly present in motorised doors/gates systems. According to the various situations, consideration therefore has to be made of any possible additional risks and exclude those which are not applicable. The solutions to be adopted are those indicated by the standards mentioned above; in the case of risks not dealt with, the safety integration principles indicated by the Machinery Directive (Annex 1 – 1.1.2) have to be applied.

MD Ann. 1	**Type of risks**	**Evaluation criteria and solutions to be adopted** *(Tick the box corresponding to the solution adopted)*
1.3.1 1.3.2	*Mechanical, structural and wear risks.* **[1] Loss of stability and break-up.**	☐ Check the solidity of the structure installed (jambs, hinges and leaves) in relation to the forces generated by the motor. Attach the motor stably using adequate materials. If available, check the content of the EC declaration of conformity of the manual gate. ☐ If necessary, carry out the structural calculation and attach it to the Technical File. ☐ Check that the travel of the leaves is limited (during opening and closure) by mechanical stops of adequate strength. Check that the leaves cannot, under any circumstance, exit their slide guides and fall.
1.5.15	**[2] Tripping.**	☐ Check that any thresholds higher than 5 mm are visible, indicated or shaped.

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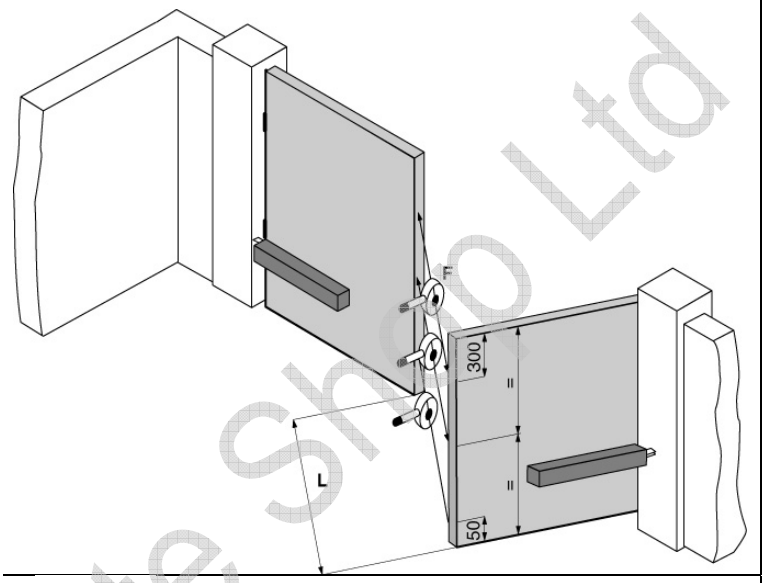
MD Ann. 1	Type of risks	Evaluation criteria and solutions to be adopted *(Tick the box corresponding to the solution adopted)*
1.3.7 1.3.8 1.4	*Mechanical risks caused by the movement of the gate (see references in Figure 1).* ☐ *CAUTION – If the door/gate is used solely with hold-to-run controls (and meets the requirements of the standard EN 12453), the danger points listed below do not have to be protected.* ☐ *CAUTION – If protective devices are installed (in accordance with the standard EN 12978) which prevent in all cases contact between the moving leaf and persons (for example photoelectric barriers, presence sensing devices), it is not necessary to measure the operating forces.*	

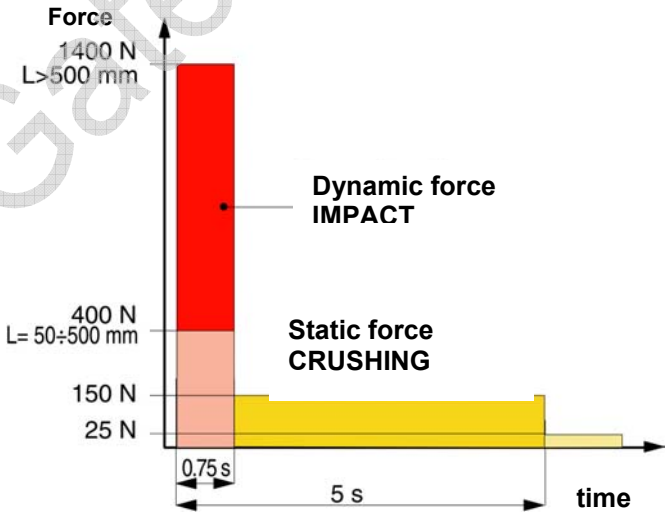
[3] Impact and crushing on the main closing edge (Figure 1, risk A).



☐ Measure the closure forces (by means of the special instrument required by the standard EN 12445) as illustrated.
In the case of gates with two leaves, the closure force should be measured one leaf at a time.
Check that the values measured by the instrument are below those indicated in the graph.
Carry out the measurements in the following points:
L = 50, 300 and 500 mm;
H = 50 mm,
at mid-height of the leaf and
at the height of the leaf minus 300 mm (max 2500).

N.B. The measurement should be repeated three times in each point and the average value considered.

The graph indicates the maximum values of the dynamic, static and residual operating forces in relation to the various positions of the leaf.

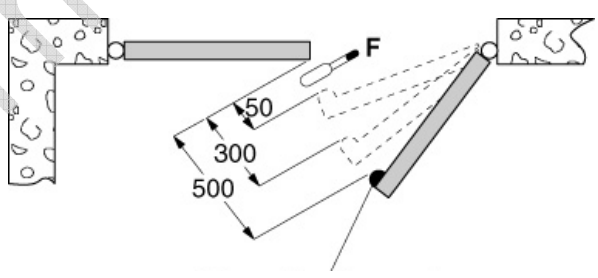


N. B. With reference to the measurement points with L = 50, 300 and 500 mm, the maximum dynamic force value permitted is 400 N.

☐ If the values of the forces are higher, install a protective device in accordance with the standard EN 12978 (for example a sensitive edge) and repeat the measurement.

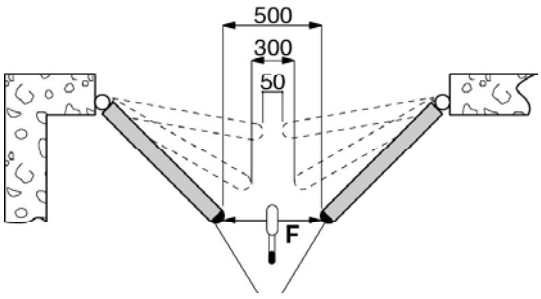
N. B. The dynamic force can be reduced, for example, by reducing the speed of the leaf or using a sensitive edge with high elastic deformation.

Leaves with overlapping and delayed closure



Protective Device

Leaves with simultaneous closure



Protective Device

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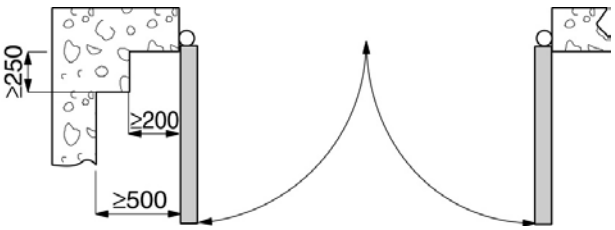
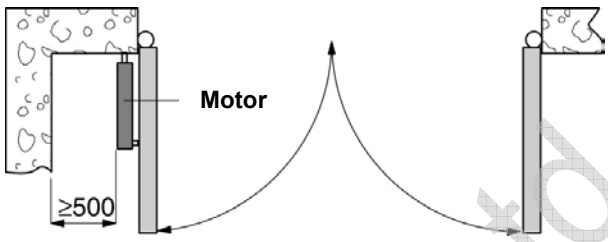
MD Ann. 1	Type of risks considered	Evaluation criteria and solutions to be adopted *(Tick the box corresponding to the solution adopted)*

[4] Impact and crushing in the area of opening (Figure 1, risk B).

☐ Observe the safety distances illustrated (in the most prominent part of the leaf).





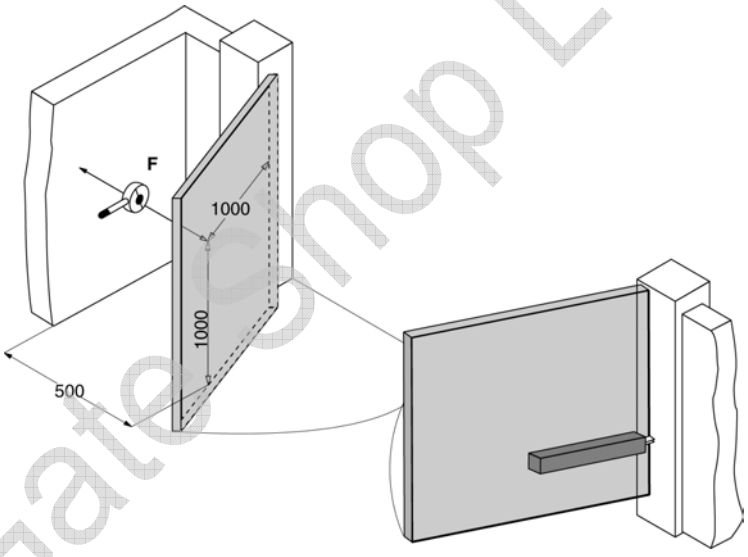
or:

☐ Measure the forces of opening (by means of the special instrument required by the standard EN 12445) as illustrated.
Check that the values measured by the instrument are less than those indicated in the graph above.

Carry out the measurement at a height of 1000 mm (or in the most prominent point of the leaf

N.B. The measurement should be repeated three times and the average value considered.

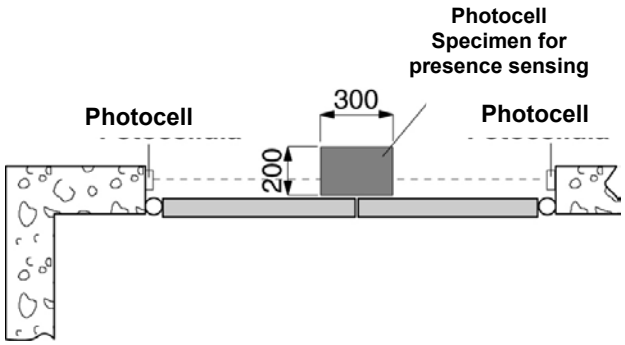
☐ If the values of the forces are higher, install a protective device in accordance with the standard EN 12978 (for example a sensitive edge) and repeat the measurement.



[5] Impact in the area of closure (Figure 1, risk C).

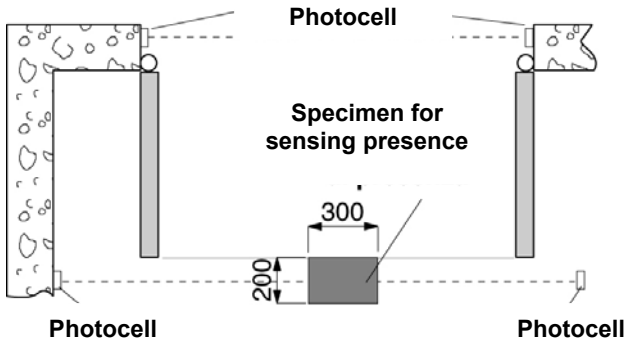
☐ Install a pair of photocells (recommended height 500 mm) so as to sense the presence of the test parallelepiped (height 700 mm) positioned as illustrated.

N.B. The test specimen for presence sensing is a parallelepiped (700 x 300 x 200 mm) with 3 faces with a light and reflective surface and 3 faces with a dark and opaque surface.



[6] Impact in the area of opening (Figure 1, risk B) and in the area of closure (Figure 1, risk C)

☐ To reduce further the possibility of impact in the areas of movement of the gate, it is possible to install a pair of photocells (recommended height 500 mm) so as to sense the presence of the test parallelepiped (height 700 mm) positioned as illustrated.



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MD Ann. 1	Type of risks	Evaluation criteria and solutions to be adopted *(Tick the box corresponding to the solution adopted)*
1.3.7 1.3.8 1.4	*Mechanical risks due to movement of the leaf.* **[7] Dragging of the hands on the hinges side edge (Figure 1, risk D).**	☐ Check that there is a clearance ≥ 25 mm, or: ☐ attach guards that prevent fingers from being inserted (for example a rubber strip).
	[8] Dragging of the feet on the lower edge (Figure 1, risk E).	☐ The clearance between the gate and ground must prevent the risk of dragging of the feet. *N.B. Should, due to the slope of the ground, the clearance vary, guards should be attached (e.g. rubber strips).*
	[9] Dragging of the hands on the drive unit (Figure 1, risk F).	☐ If the distances between the drive unit and the leaf vary, check on the presence of a clearance ≥ 25 mm, or attach guards (e.g. covers or strips in rubber).
	[10] Dragging, hooking and cutting due to the shaping of the mobile leaf (Figure 1, risk G).	☐ Eliminate or protect any sharp edges, handles, projecting parts etc. (for example by means of covers or strips in rubber).
1.5.1 1.5.2	*Electrical and electromagnetic compatibility risks* **[11] Direct and indirect contacts. Dispersion of electrical energy.**	 ☐ Use CE-marked components and materials pursuant to the Low Voltage Directive (73/23/EEC). ☐ Carry out the electrical connections, connection to the mains, earth connections and relevant checks, in accordance with current regulations and as indicated in the installation manual of the drive unit. *N.B. If the electrical supply line is already set up (via both a socket and a connector block), declarations of conformity to Italian law no. 46/90 are not necessary.*
1.5.10 1.5.11	**[12] Risks relating to electromagnetic compatibility.**	☐ Use CE-marked components pursuant to the EMC Directive (89/336/EEC). Carry out the installation as indicated in the manual for installation of the drive unit.
1.2	*Safety and reliability of drive unit and control and safety devices.* **[13] Safety conditions in the event of malfunctioning and power failure.**	☐ Use drive units which comply with the standard EN 12453 and safety devices which comply with the standard EN 12978.
1.5.3	**[14] Energy types other than electrical energy**	☐ If hydraulic drive units are used, they must comply with the standard EN 982; or ☐ if pneumatic drive units are used, they must comply with the standard EN 983.
1.2.3 1.2.4	**[15] Actuation and disabling of the drive unit.** **[16] Power supply switch.**	☐ Check that, after a fault or power failure, the drive unit restarts safely without creating hazardous situations. ☐ Install an omnipolar switch for electrical insulation of the door/gate, in accordance with current laws. This switch must be positioned and protected against accidental or unauthorised actuation.

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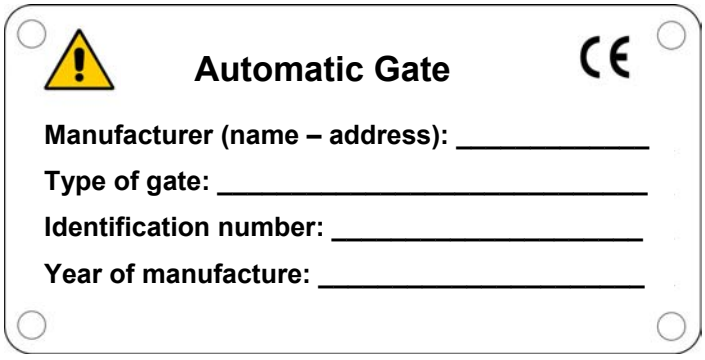
MD Ann. 1	Type of risks	Evaluation criteria and solutions to be adopted *(Tick the box corresponding to the solution adopted)*
1.2.5	**[17] Consistency of controls**	☐ Install the controls (e.g. key selector) so that the user is not in a danger zone, and check that the meaning of the controls has been understood by the user (for example the function selector). ☐ Use CE-marked radio controls pursuant to the R&TTE directive (1999/5/EEC) and complying with the frequencies admitted by the laws of each individual country.
1.5.14	**[18] Risk of trapping.**	☐ Install a device for release of the drive unit that allows manual opening and closure of the leaf with force no higher than 225 N (for doors/gates in residential areas) or 390 N (for doors/gates in industrial or commercial areas). Supply the user with the means and instructions for the release operations. Check that operation of the release device is simple and does not create additional risks.
1.2.4	**[19] Emergency stop.**	☐ If appropriate, install an emergency stop control in accordance with the standard EN 418. *N.B. Make sure that the emergency stop does not introduce additional risks, aborting operation of the safety devices installed.*
	Integration principles for safety and information.	
1.7.1	**[20] Signalling equipment.**	☐ A flashing light should be installed, in a visible position, to indicate movement of the leaf. ☐ Traffic lights can be installed to control vehicle traffic. ☐ Reflectors can also be attached to the leaf.
1.7.2	**[21] Warnings.**	☐ Attach all those signs or warnings considered necessary for indicating any unprotected residual risks and to indicate any foreseeable improper use.
1.7.3	**[22] Marking.**	☐ Attach the label or plate with the CE marking and containing at least what is shown in the illustration.  **Automatic Gate** CE **Manufacturer (name – address):** _____ **Type of gate:** _____ **Identification number:** _____ **Year of manufacture:** _____
1.7.4	**[23] Operating instructions.**	☐ Consign to the user the operating instructions, safety warnings and EC declaration of conformity (cf. facsimile in Annex 2).
1.6.1	**[23] Maintenance.**	☐ A maintenance plan has to be drawn up and implemented. Check on the proper working of the safety devices at least every 6 months. ☐Record the work carried out in the proof book in accordance with the standard EN 12635 (cf. facsimile in Annex 1).
1.1.2	**[24] Unprotected residual risks.**	☐ Inform the user in writing (for example in the operating instructions) of any unprotected residual risks and foreseeable improper use.

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