



INSTRUCTION MANUAL



HYDRAULIC GATE

PHV 240-PHV 360



Declaration of Conformity

Company Name: **VDS, Internazionale Co. Soc. Coop..**

Address: **Via Circolare P.I.P. Sn – 65010 Santa Teresa di Spoltore (PE)**

National Identity Number (CIF/NIF): **it 01807970684**

C E R T I F I E S:

That the hydraulic equipment **PHV240-PHV360** conforms to the following EU Directives:

89/392/EEC	On the approximation of the laws of the Member States relating to machinery.
91/368/EEC	Council Directive amending the previous Directive on the approximation of the laws of the Member States to machinery.
93/44/EEC	Council Directive amending Directive 89/392/EEC on the approximation of the laws of the Member States to machinery.
93/68/EEC	Regulating the Directive on simple pressurised containers, construction products, electromagnetic compatibility, machinery, individual protection equipment, non automatic weighing machinery, terminal telecommunication equipment and electrical material destined for use with specific voltage limits.
2004/108/EEC	Council Directive amending Directive 89/336/EEC on approximation of the laws of the Member States to electromagnetic compatibility.
73/23/EEC	On the approximation of the laws of the Member State son electrical material destined for use with specific voltage limits.
EU-EN 292-2/A1	Safety of machinery. Basic Concepts and general principles of design.
EU-EN 60204-1	Safety of machinery and electrical equipment of machinery.
EU-EN 292/1	Safety of machinery. Basic concepts and general principles of design.
EU-EN 418	Safety of machinery and emergency Shopping equipment, functional aspects.
EU-EN 982:96	Safety of machinery. Safety requirements for systems and components of hydraulic and pneumatic transmissions Hydraulic.

This equipment bears the stamp of EEC conformity



Santa Teresa di Spoltore il 26 maggio del 2009

Company representative

A handwritten signature in black ink, appearing to be 'GD' or similar initials, written in a cursive style.

GIUSEPPE DIODATO

IMPORTANT SAFETY INSTRUCTIONS

WARNING! To reduce the risk of injury or death it is important to closely follow all of the following instructions. Incorrect installation or inappropriate use may cause serious personal injury.

This installation manual and safety instructions are an integral part of the product and must be supplied to the user. These instructions should be retained by the owner and/or operator of the gate.

This product has been designed and constructed exclusively for the use indicated in this manual. Any inappropriate use of this product may result in damage to the product and/or personal injury.

To ensure proper functioning of the product and personal safety only use the mounting equipment supplied and the spare parts and accessories supplied by the manufacturer.

Do not install this equipment in an easily flammable environment. The presence of inflammable gases or smoke are a serious threat to personal safety.

This equipment has an anti crushing safety device. In addition to this safety device it is also necessary to install additional safety devices (for example: photo cells and/or pressure sensitive strips, etc.) that will prevent any danger resulting from mechanical movement (for example crushing, pulling or ripping).

In addition to the above mentioned safety devices it is also necessary to install at least one light signal as well as a printed notice fixed to the gate.

The installation of this equipment, the electrical connections and maintenance of the equipment may only be carried out by qualified technicians. Failure to meet this requirement may cause severe injury and/or death, for which the manufacturer will not be held responsible.

For protection against electrical overload or short circuit, always install a 0.03 amp differential and a thermal magnetic switch with a contact aperture of at least 3mm

This equipment must be earthed with a yellow/ green cable, connected to the earth terminal in the junction box. The safety of this product is only guaranteed if the equipment is properly earthed.

Before operating this product you must ensure that all connections have been properly made, that the safety devices are properly working and that the pressure force is adjusted to the minimum according to regulations regarding automatic doors (EU Directive 89/392 and EN 12453 y EN 12445 norms).

Before installing this equipment, ensure that the structure of the gate is strong enough and properly balanced. The gates must work freely in both directions and have no friction points before the automatic operator is installed.

SAFETY INSTRUCTIONS FOR THE USER

In the event that a malfunction in the equipment, contact a qualified technician. **DO NOT** try to repair the equipment yourself.

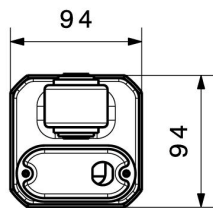
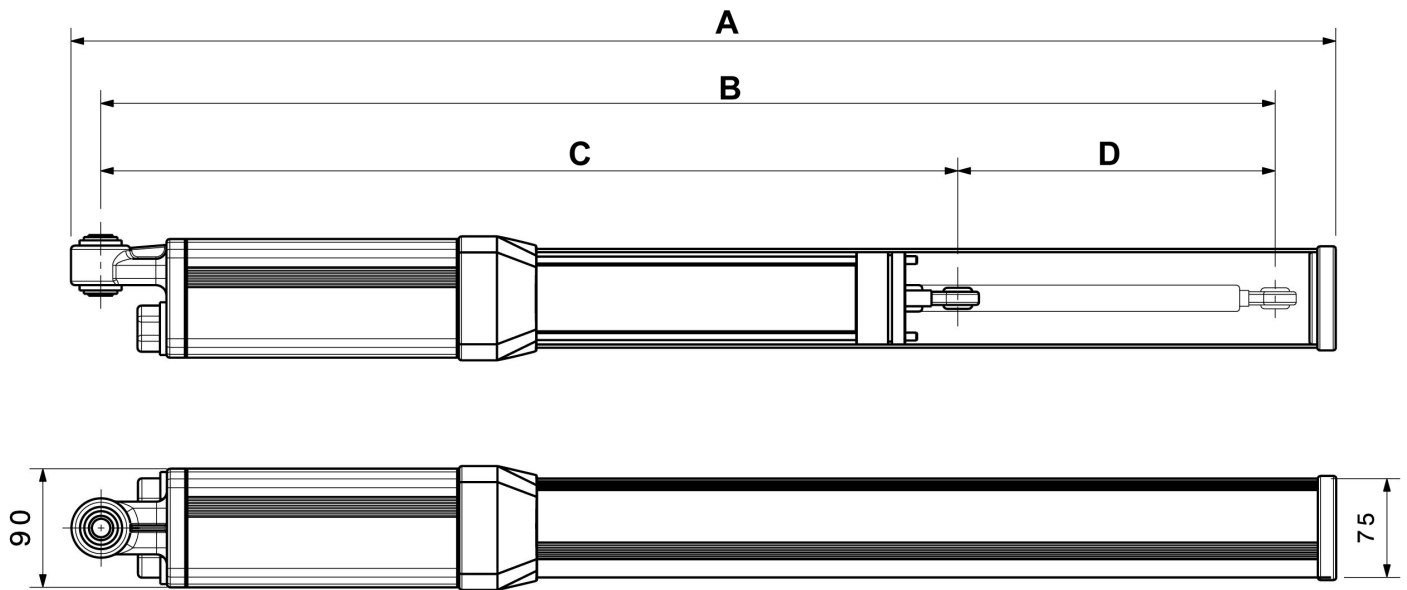
Do not allow children or pets near the gate. Never allow children to play with the gate controls. Keep the remote control in a safe place, out of reach of children and unauthorised persons.

In the event of a power cut or emergency, you must learn how to use the manual release mechanism according to the procedures found in this installation manual

Keep these safety instructions in a safe place. Make sure that all persons who use the gates or who may be near the gates when they operate are aware of the dangers associated with automatic opening gates

If you sell or rent the property with this equipment installed, give the new owner or tenant a copy of these safety instructions

TECHNICAL DATA MODEL: PHV



Dimensions	PHV240	PHV360
A	985 mm	1225 mm
B	915 mm	1155 mm
C	673 mm	793 mm
D	242 mm	362mm

TECHNICAL DATA

	PHV	
	240	360
Current	230V 50HZ	
Power	276 W	
Consumption	1,3 A	
Condenser	16 uf	
Maximum Pressure	50 bar	
Hydraulic Arm	242 mm	362 mm
Hydraulic arm exit time	28 sec.	40 sec.
Hydraulic arm entry time	23 sec.	34 sec.
Compression	0 to 7793 N (795Kg)	
Traction	0 to 6252 N (638Kg)	
Max. Length of gate leaf	4 m	6 m
Temperature Range	-15 to 80°C	
Thermic Protection	100°C	
Weight	11 Kg	12 Kg

FEATURES

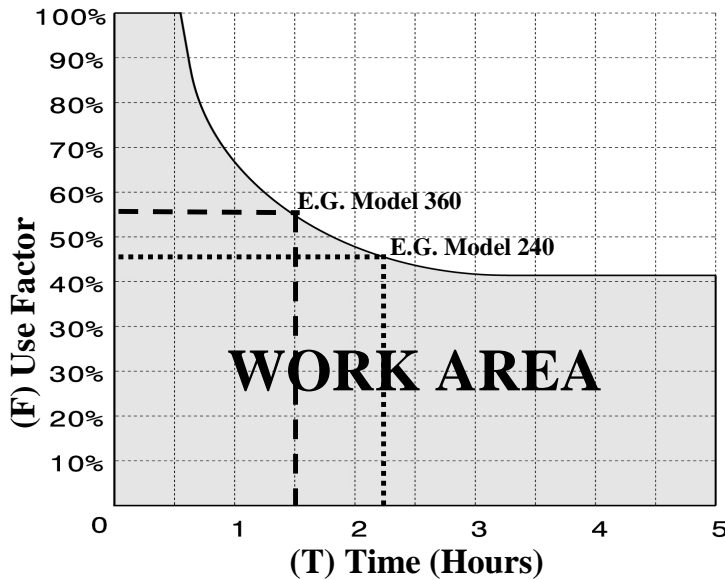
	PHV	
	SB	BAC
HYDRAULIC LOCK OUT PUT	●	●
BLOCK OPEN & CLOSE		●
BLOCK CLOSE		●
BLOCK OPEN		●
REVERSABLE IN BOTH DIRECTIONS	●	●
ANTI-WIND REGULATION		●
BUFFER STOP CLOSE	●	●

SB = WITHOUT BLOCK
BAC = BLOCK, OPEN, CLOSE

FREQUENCY OF USE

The curve below allows calculation of the maximum working time (T) depending on the frequency of use (F). To ensure correct operation of the equipment the working time should be within the shaded area.

These trials have been carried out at a temperature of 22°C. If the equipment is operating at a higher temperature or is exposed to direct solar radiation, the frequency of use can be reduced by 20%.



Graph.1

- %F** : use factor
- Ta** : opening time
- Tc** : closing time
- Tp** : pausing time
- Ti** : time between complete operations (opening-closing)

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

Note. 5 seconds more are needed to assure the complete opening and closing of the door.

There are heavy use times during the day where vehicle transit is higher. Calculations should be carried out during this period of time.

E.G.

What is the maximum working time for a door that has a pause of 30 seconds and a time between cycles of 40 seconds?

CALCULATION FOR PHV240

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



$$\%F = \frac{28 + 33}{28 + 33 + 30 + 40} \times 100$$



46,5%

CALCULATION FOR PHV360

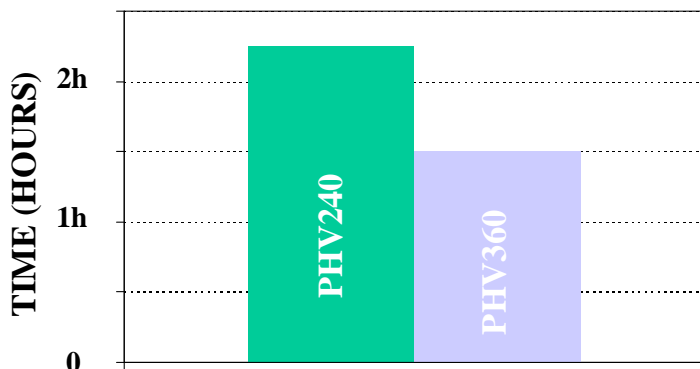
$$\%F = \frac{Ta + Tc}{Ta + Tc + Tp + Ti} \times 100$$



$$\%F = \frac{39 + 45}{39 + 45 + 30 + 40} \times 100$$



54.5%



Graph.2

CONCLUSION: Once obtained data has been applied to graph1, the maximum time of use for model 240 is 2h:15min and for 360 is 1h:30min.

Considering the quotas, model 240 should be used.

MOUNTING HEIGHTS



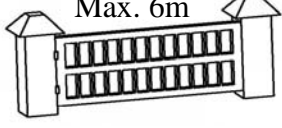



MAX. HEIGHT	Max. 2m			Max. 4m			Max. 6m		
									
LIGHT 400KG		PHV 240 110°	PHV 240 - 95° PHV 360 -115°	PHV 240 110°	PHV 240 - 95° PHV 360 -115°	PHV 360 95°	PHV 240 110°	PHV 360 90°	PHV 360 90°
MED. 600KG		PHV 240 110°	PHV 240 - 95° PHV 360 -115°	PHV 240 110°	PHV 240 - 95° PHV 360 -115°	PHV 360 90°	PHV 240 110°	PHV 360 90°	PHV 360 90°
HEAVY 800KG		PHV 240 110°	PHV 360 115°	PHV 240 110°	PHV 360 115°		PHV 240 110°	PHV 360 115°	

Fig..1

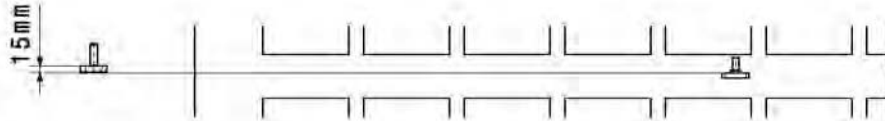


Fig..2

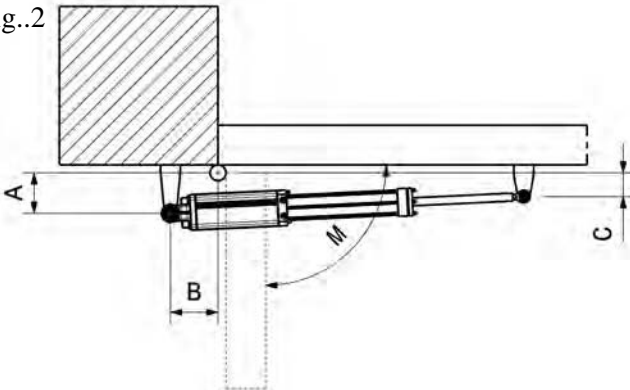
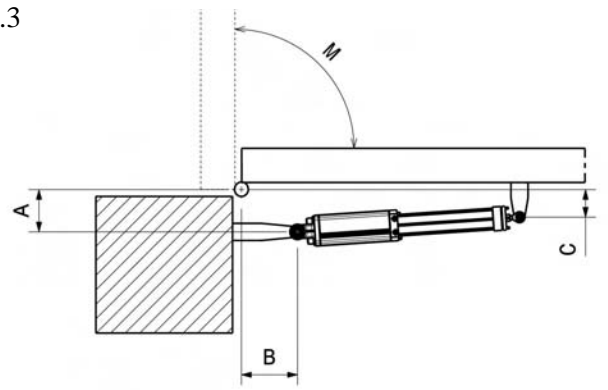


Fig..3

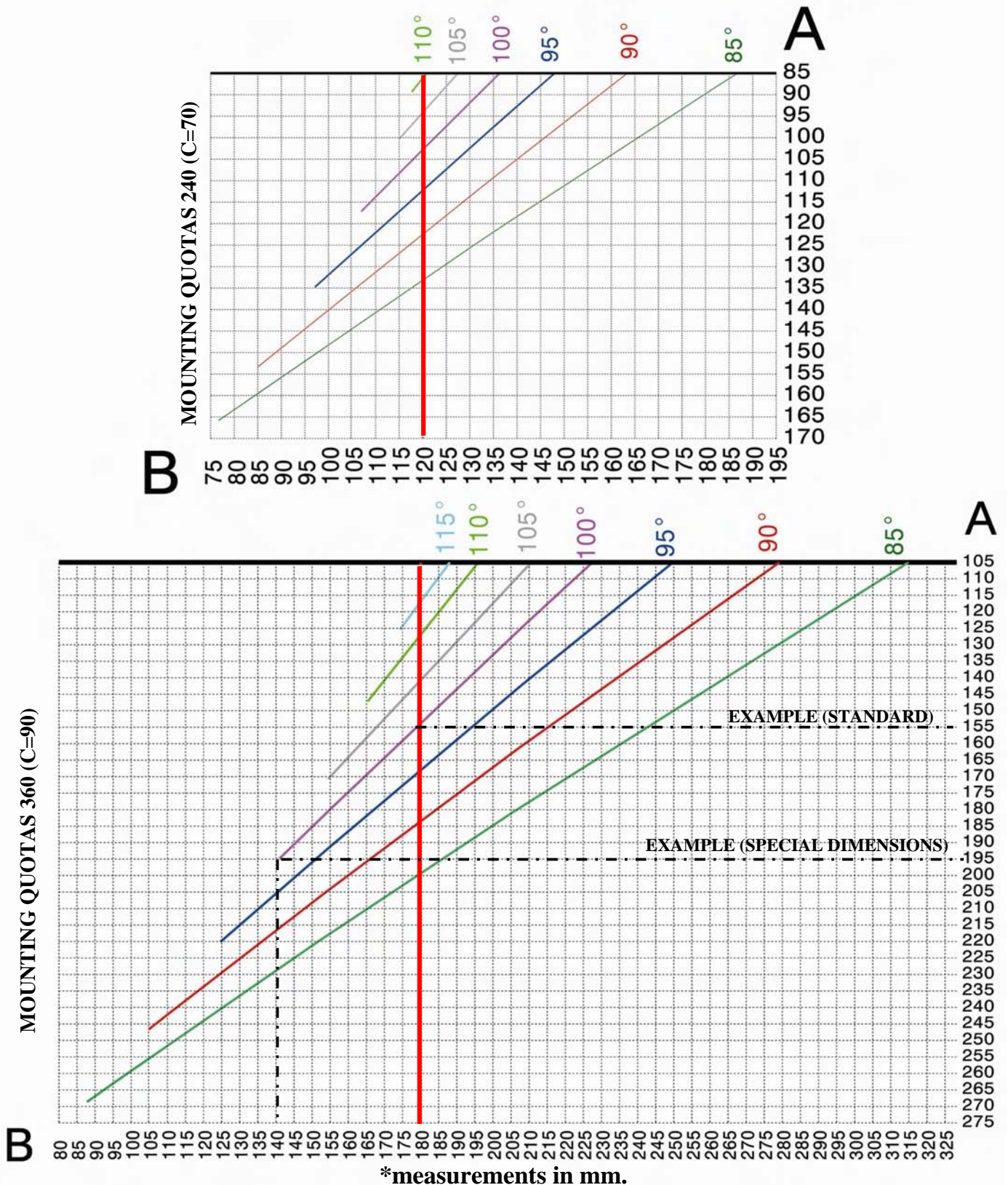


PHV 360	INWARD OPENING (Fig.2)			
	M	A	B	C
	85°	195	185	90
	90°	180	180	90
	95°	165	180	90
	100°	150	180	90
	105°	140	180	90
	110°	125	180	90
	115°	115	180	90
	120°	105	180	90
	OUTWARD OPENING (Fig.3)			
	M	A	B	C
	85°	200	180	100
	90°	180	180	100
	95°	165	180	100
100°	150	180	100	
105°	125	180	100	

PHV 240	INWARD OPENING (Fig.2)			
	M	A	B	C
	85°	130	125	70
	90°	120	120	70
	95°	110	120	70
	100°	100	120	70
	105°	93	120	70
	110°	85	120	70
	115°	85	115	70
	OUTWARD OPENING (Fig.3)			
	M	A	B	C
	85°	130	120	80
	90°	120	120	80
	95°	110	120	80
	100°	100	120	80

ALL MEASUREMENTS IN MM FROM CENTER OF HINGE

SPECIAL MEASUREMENTS INWARD OPENING (Fig.2)



In some cases it may be necessary to vary the standard dimensions, e.g., because of space restrictions in fixing the supports. The above graphs show dimension ranges for inward opening 360 and 240 models.

At the top part of each graph are the range of gate opening angles and a series of diagonal lines from which the values of A and B may be determined (fig.2 page 5). These values should be as near as possible to those determined by the thick vertical line.

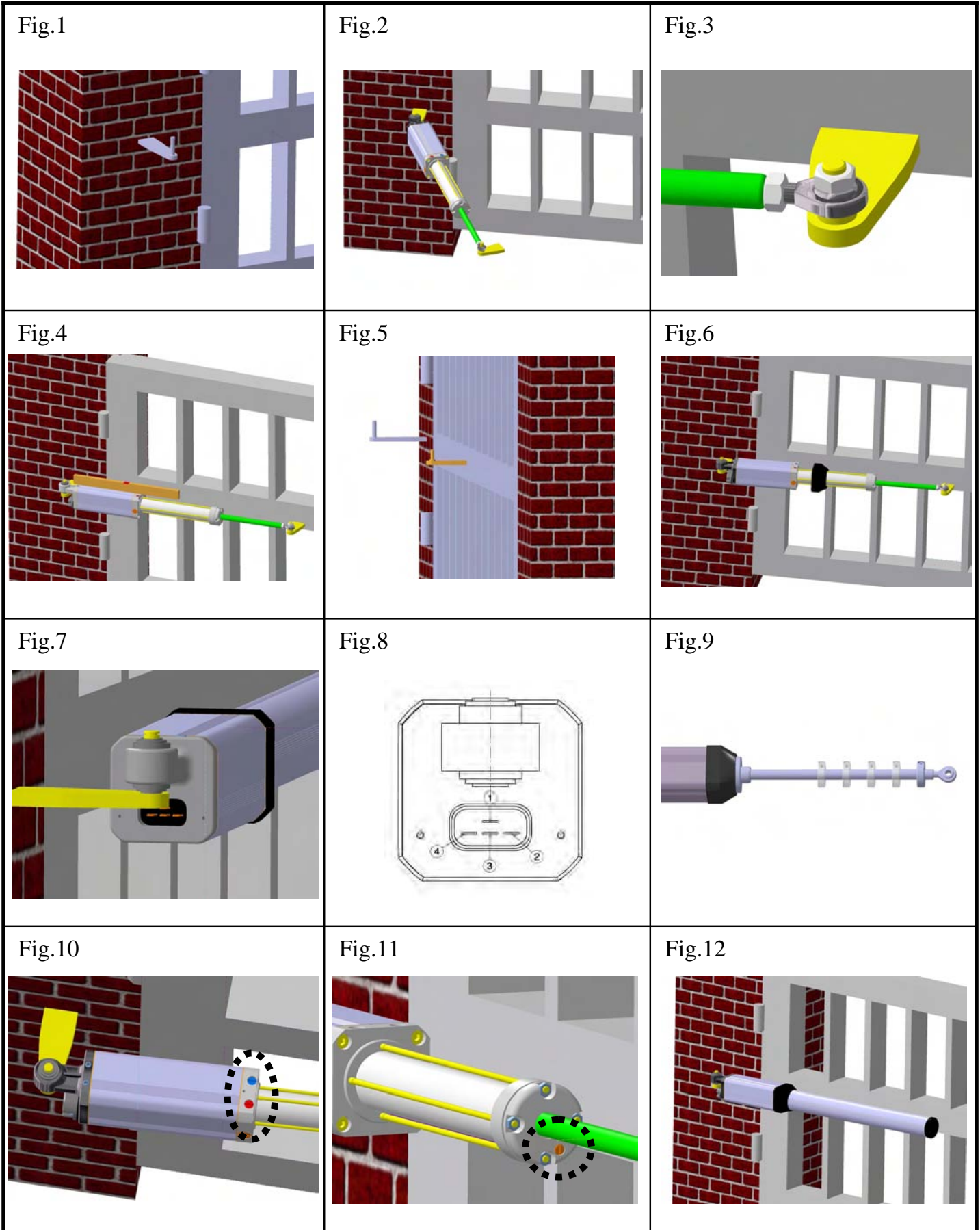
The dimension for C is constant at C = 90 mm for model 360 and C = 70 mm for model 240.

Example: What should be the value for A and what model should be used for a gate with an opening angle of 100° where B = 140?

Answer: Model 360 where A =195 mm. See the example in the above graph shown by the dotted line for the 360 model : EXAMPLE (SPECIAL DIMENSIONS))

Conclusion: It would not be possible to use the 240 model because the value for A would be outside the minimum for this model.

MOUNTING INSTRUCTIONS

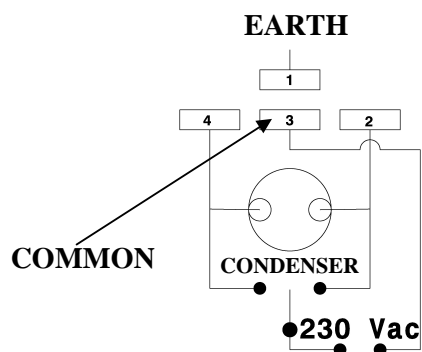


1. Fix the pillar support (**Fig.1 Page 7**) shortening or lengthening the support according to the dimensions A and B shown in the table on page 4. The support should be fixed at a height where the gate has a sufficiently rigid surface to fix the gate support , bearing in mind that the gate support will be fixed 15 mm lower than the pillar support. (**Fig.1 Page 5**).

2. Shorten or lengthen the gate support according to the dimensions for C shown in the table on page 5. Connect the gate opener to the gate support, with the rod completely extended (**Fig.2 Page 7**) and with the swivel joint nut fully tightened (**Fig.3 Page 7**). Once this has been done use a spirit level (**Fig.4 Page 7**) to mark the position of the gate support on the gate. Dismantle the gate support and fix it to the gate using the markings previously made.

3. Mount the motor and unscrew the swivel joint nut three turns to ensure closure. Attach the security ring and the safety bolt supplied. (**Fig.6 Page 7**).

4. Electrical connections: Unscrew the end cover and connect the terminals according to the following diagram:



5. Open the door manually to the desired open position, slide the collar stopper along the arm (**Fig.9 Page 7**) up to the front cover plate, fixing its position with the Allen key. The hydraulic transmission can then be plugged in and started. Re-position the collar stopper to the desired position if the angle of opening is not the desired one.

6. Once the motor is working correctly the limit valves can be adjusted (**Fig.10 Page 7**). The limit valves control the force and are independent in opening (blue limit valve) and closing (red limit valve) the gate. The screws can be adjusted by turning them a maximum of 45°, and should be adjusted slightly above the minimum possible, in this way the force of the hydraulic system is reduced thus increasing safety.

7. The closing buffer can then be adjusted (**Fig.11 Page 7**), thus avoiding the door banging closed. To adjust the closing buffer turn the screw a maximum of 10° (If the buffer valve is completely closed then 15mm of buffering will be lost) .

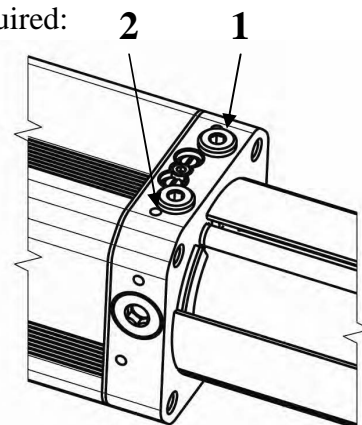
8. The aluminium arm cover can then be pressured into position (**Fig.12 Page 7**), followed by its plastic cover and the end cover.

OPERATION OF THE HYRAULIC LOCK

With hydraulic powered gates it is necessary to consider the type of opening required:

- Inward opening (Fig.2, Page 5)
Kit 'KM' should be connected to position 2 (see diagram).

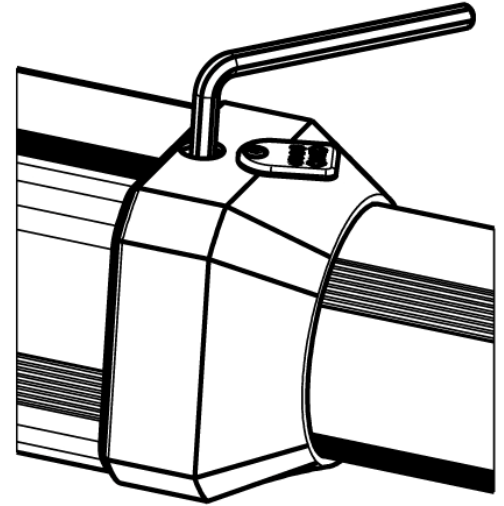
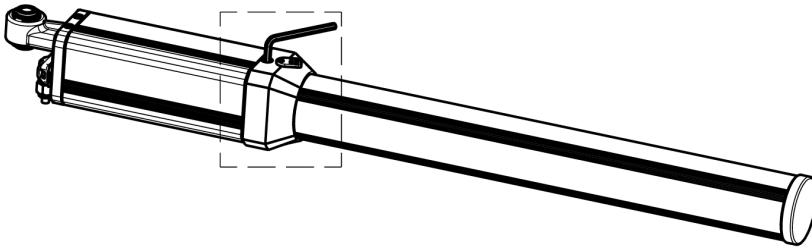
- Outward opening (Fig.3, Page 5)
Kit 'KM' should be connected to position 1 (see diagram).



BLOCKING FUNCTION

The BAC system used in the PHV range provides a wide range of features which can be adjusted to ensure that the equipment may be adjusted for different requirements.

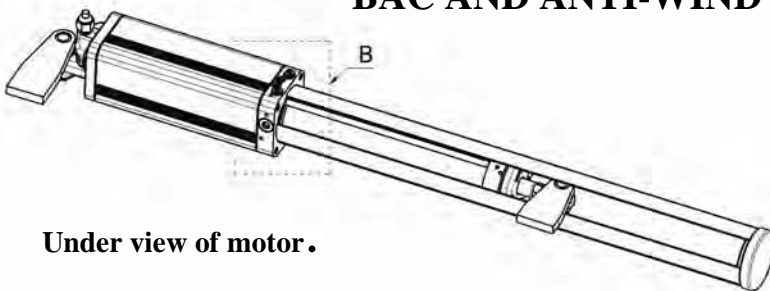
EMERGENCY RELEASE SYSTEM



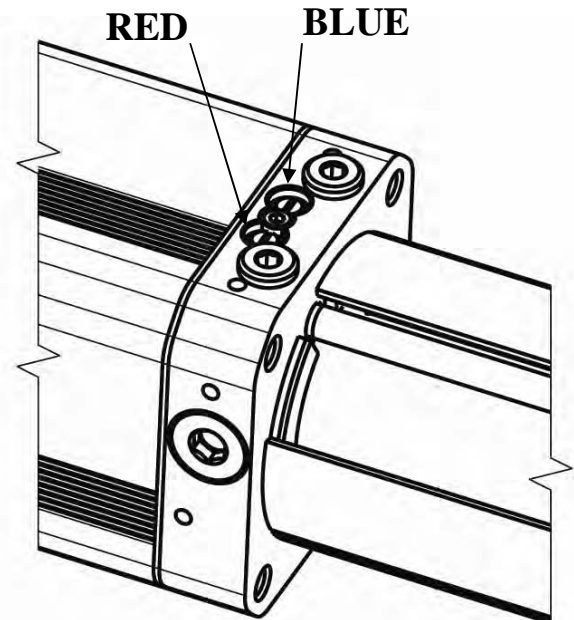
This valve allows us to override the system in order to operate the gate manually in the event of power cuts. To move the gate manually, open the cover and turn the valve 360° anti clockwise. To return to the automatic system turn the valve clockwise.

IMPORTANT: If the valve is not tight the motor will not function.

BAC AND ANTI-WIND SYSTEMS



Under view of motor.



By adjusting the red and blue valves (located under the motor), gate actions can be reversed.

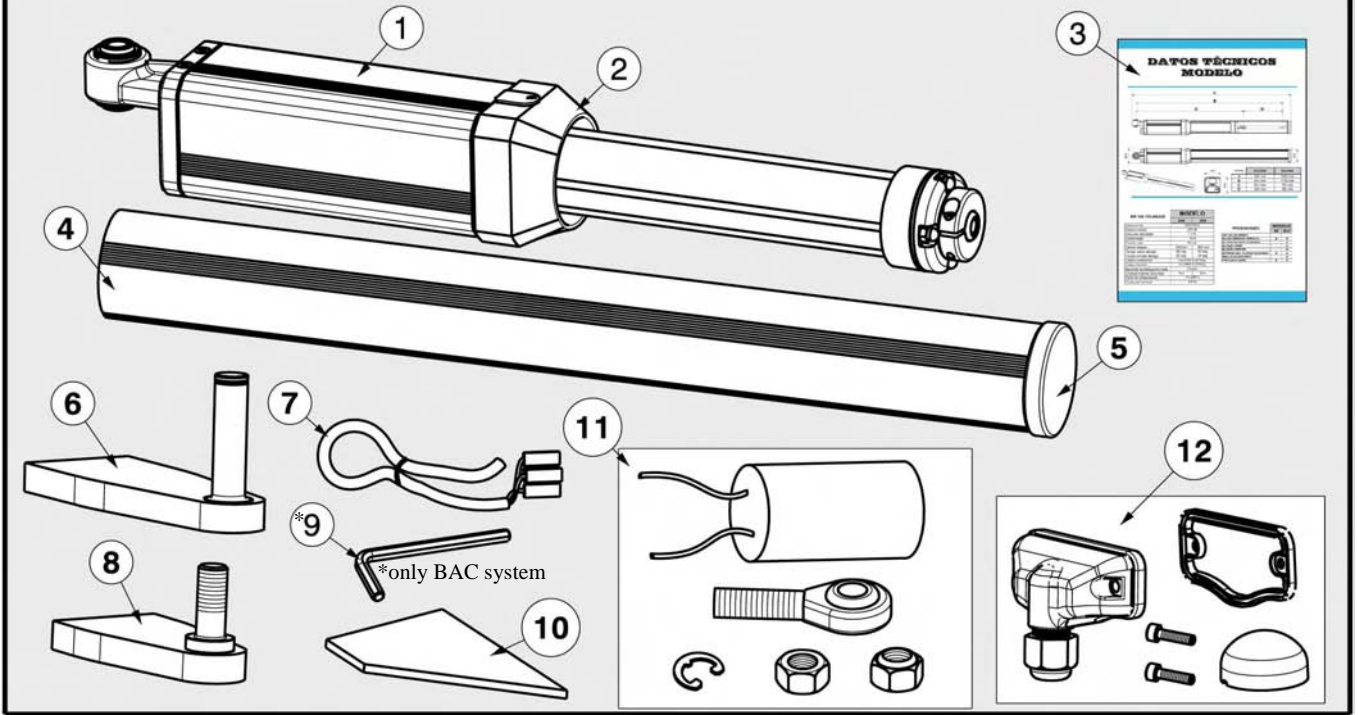
The options are as follows:

ADJUSTMENT OF BAC VALVES
Red open - Blue closed Opening blocked and closing reversed
Red closed - Blue open Opening reversed and closing blocked
Red closed - Blue closed Opening and closing blocked
Red open - Blue open Opening and closing reversed.

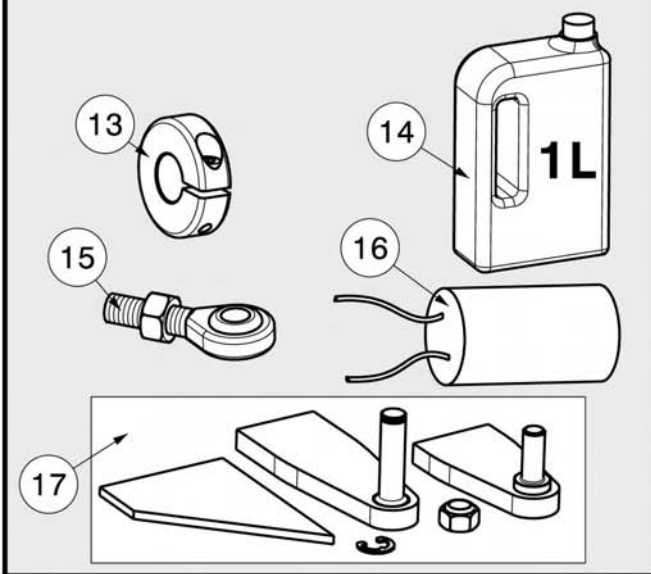
IMPORTANT: if these valves are slightly opened they serve as an excellent anti-wind system. The pressure of the gate can be adjusted with the motor not working.

A lock is required for gates over 1.8m in length.

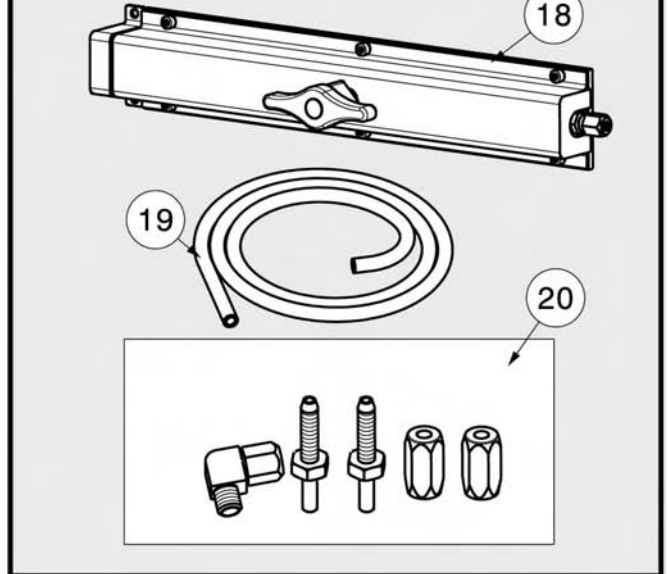
BOX CONTENTS



SPARE PARTS



ACCESSORIES



Nº	Description	Ref.
1	PHV240SB	A112.21100.00
	PHV240BAC	A112.21200.00
	PHV360SB	A112.22100.00
	PHV360BAC	A112.22200.00
2	Plastic cover	70284
	Plastic cover BAC	95011
3	Installation Instructions	50171
4	Aluminium cover PHV240	70044
	Aluminium cover PHV360	70197
5	End cover for aluminium arm cover	70046
6	Support 240	95006
	Support 360	95037
7	Electric cable 4x0,75 L1,5m	70055
8	Door support 240	95007
	Door support 360	95036

Nº	Description	Ref.
9	Allen key no. 6	80738
10	Strengthening block	70141
11	Set up bolts - bag	95008
12	Wire housing	95107
13	Stopper collar	95020
14	OILMEDVA-JV oil (1 Litre)	70466
15	Hinge set with nut	A232.11003.K1
16	Condenser 16 Uf	80497
17	Door support kit 240	A232.11001.K1
	Door support kit 360	A232.11002.K1
18	Hydraulic lock	A232.21002.00
19	Hydraulic piping (m)	80736
20	Hydraulic piping mounting kit	A232.22003.K1

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:

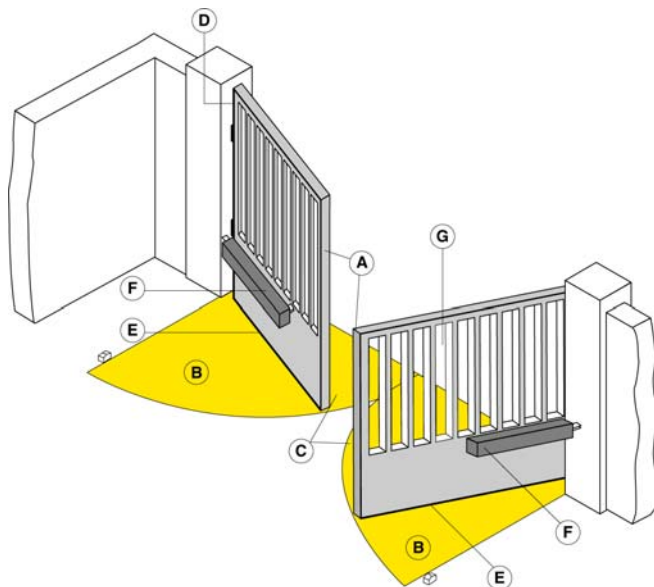
- Assembly drawing of the motorised door/gate (usually included in the installation manual).
- Electrical connections and control circuit diagrams (usually included in the installation manual).
- Risk analysis including (as indicated on the following pages):
 - the list of the essential requirements 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).



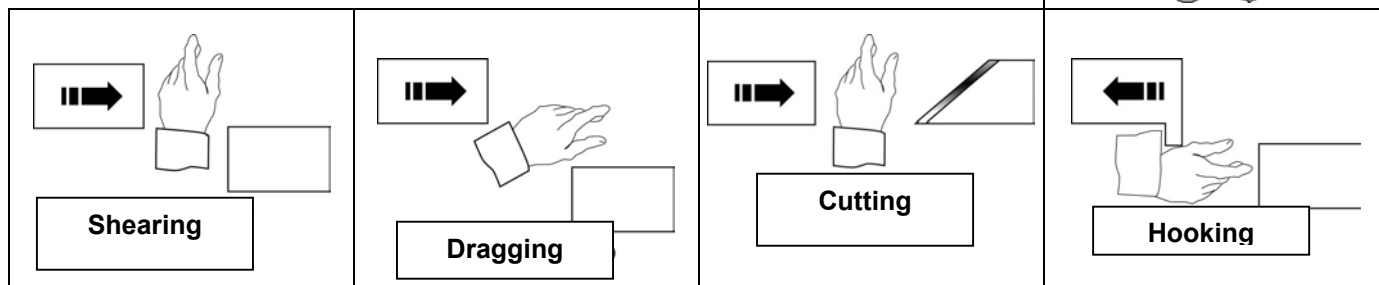
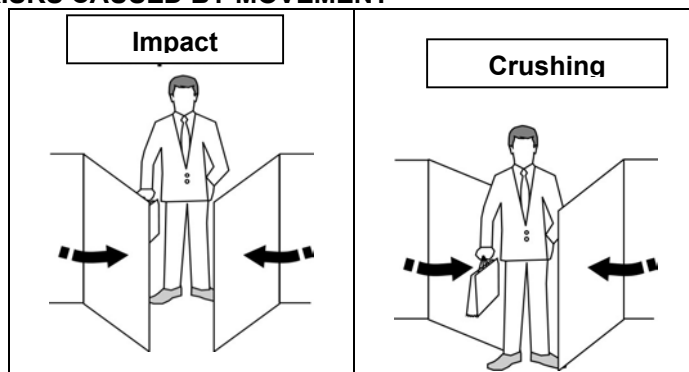
**Risk areas
 of the hinged gate (Figure 1)**

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.

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 of 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	<i>Mechanical, structural and wear risks.</i> [1] Loss of stability and break-up.	<input type="checkbox"/> 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. <input type="checkbox"/> If necessary, carry out the structural calculation and attach it to the Technical File. <input type="checkbox"/> 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.	<input type="checkbox"/> Check that any thresholds higher than 5 mm are visible, indicated or shaped.

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	<p>Mechanical risks caused by the movement of the gate (see references in Figure 1).</p> <p><input type="checkbox"/> 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.</p> <p><input type="checkbox"/> 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.</p>	

[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).

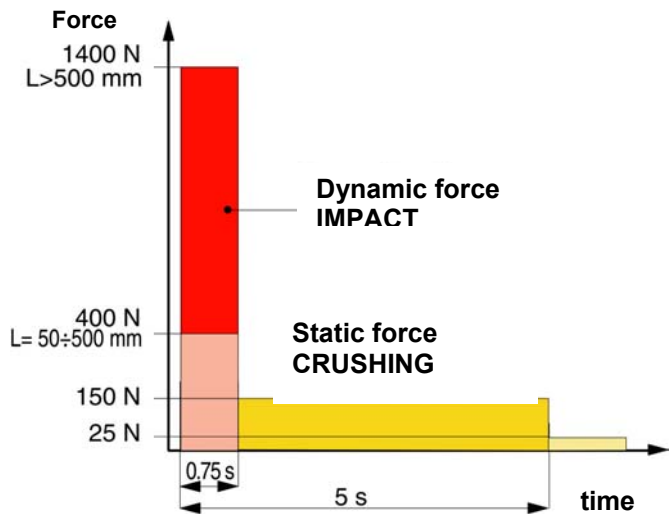
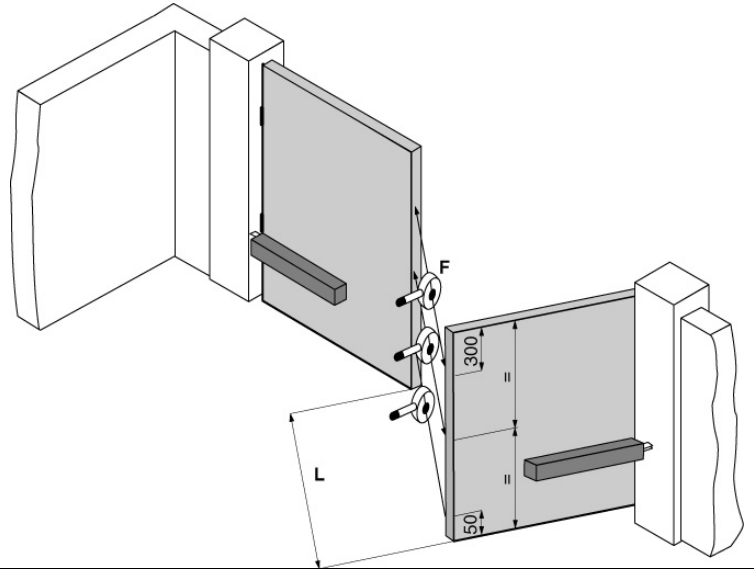
N.B. The measurement should be repeated three times in each point and the average value considered.

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

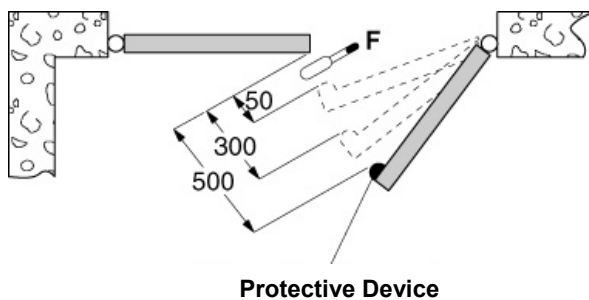
N. B. With reference to the measurement points with L = 50, 300 and 500 mm, the maximum dynamic force value permitted is 400 N.

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.

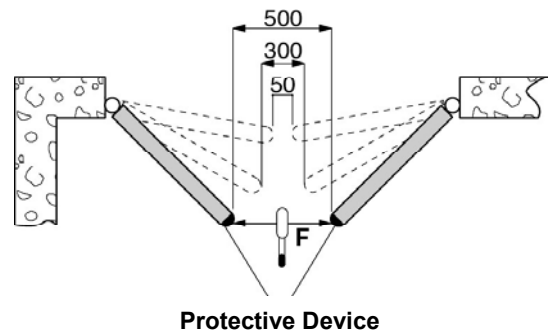
N. B. The dynamic force can be reduced, for example, by reducing the speed of the leaf or using a sensitive edge with high elastic deformation.

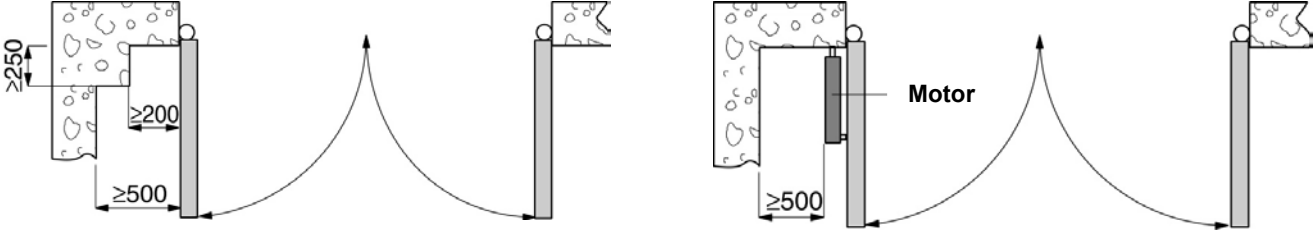
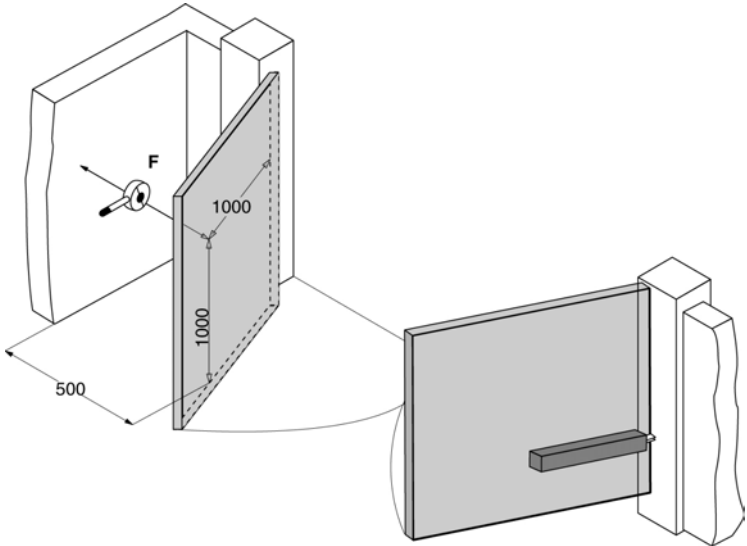
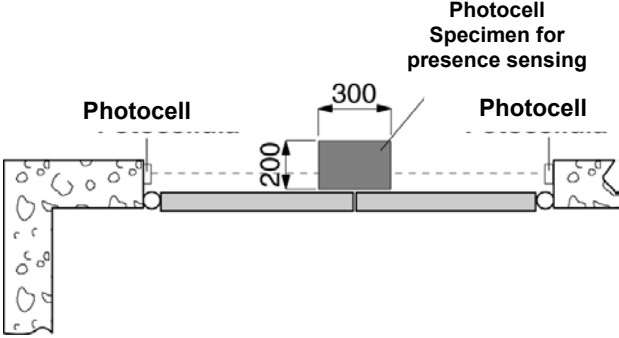
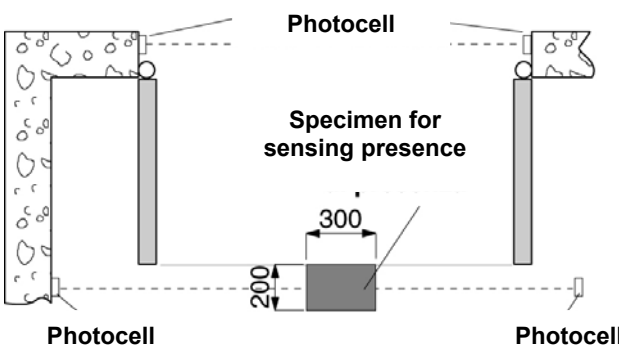



Leaves with overlapping and delayed closure

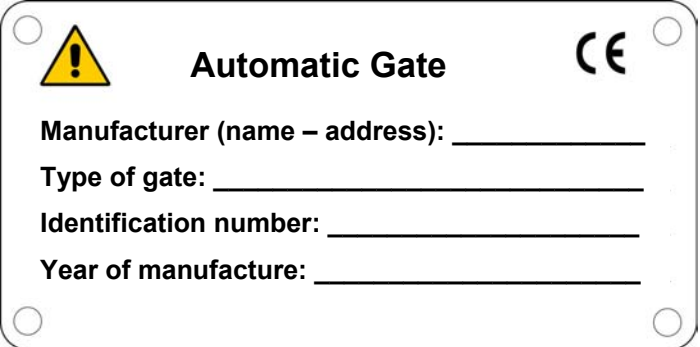


Leaves with simultaneous closure



MD Ann. 1	Type of risks considered	Evaluation criteria and solutions to be adopted (Tick the box corresponding to the solution adopted)
<p>[4] Impact and crushing in the area of opening (Figure 1, risk B).</p> <p><input type="checkbox"/> Observe the safety distances illustrated (in the most prominent part of the leaf).</p> 		
<p>or:</p> <p><input type="checkbox"/> 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.</p> <p>Carry out the measurement at a height of 1000 mm (or in the most prominent point of the leaf)</p> <p><i>N.B. The measurement should be repeated three times and the average value considered.</i></p> <p><input type="checkbox"/> 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.</p> 		
<p>[5] Impact in the area of closure (Figure 1, risk C).</p> <p><input type="checkbox"/> 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.</p> <p><i>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.</i></p> 		
<p>[6] Impact in the area of opening (Figure 1, risk B) and in the area of closure (Figure 1, risk C)</p> <p><input type="checkbox"/> 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.</p> 		

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	<p><i>Mechanical risks due to movement of the leaf.</i></p> <p>[7] Dragging of the hands on the hinges side edge (Figure 1, risk D).</p> <p>[8] Dragging of the feet on the lower edge (Figure 1, risk E).</p> <p>[9] Dragging of the hands on the drive unit (Figure 1, risk F).</p> <p>[10] Dragging, hooking and cutting due to the shaping of the mobile leaf (Figure 1, risk G).</p>	<p><input type="checkbox"/> Check that there is a clearance ≥ 25 mm,</p> <p>or:</p> <p><input type="checkbox"/> attach guards that prevent fingers from being inserted (for example a rubber strip).</p> <p><input type="checkbox"/> The clearance between the gate and ground must prevent the risk of dragging of the feet.</p> <p><i>N.B. Should, due to the slope of the ground, the clearance vary, guards should be attached (e.g. rubber strips).</i></p> <p><input type="checkbox"/> 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).</p> <p><input type="checkbox"/> Eliminate or protect any sharp edges, handles, projecting parts etc. (for example by means of covers or strips in rubber).</p>
1.5.1 1.5.2 1.5.10 1.5.11	<p><i>Electrical and electromagnetic compatibility risks</i></p> <p>[11] Direct and indirect contacts. Dispersion of electrical energy.</p> <p>[12] Risks relating to electromagnetic compatibility.</p>	<p></p> <p><input type="checkbox"/> Use CE-marked components and materials pursuant to the Low Voltage Directive (73/23/EEC).</p> <p><input type="checkbox"/> 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.</p> <p><i>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.</i></p> <p><input type="checkbox"/> 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.</p>
1.2 1.5.3 1.2.3 1.2.4	<p><i>Safety and reliability of drive unit and control and safety devices.</i></p> <p>[13] Safety conditions in the event of malfunctioning and power failure.</p> <p>[14] Energy types other than electrical energy</p> <p>[15] Actuation and disabling of the drive unit.</p> <p>[16] Power supply switch.</p>	<p><input type="checkbox"/> Use drive units which comply with the standard EN 12453 and safety devices which comply with the standard EN 12978.</p> <p><input type="checkbox"/> If hydraulic drive units are used, they must comply with the standard EN 982; or</p> <p><input type="checkbox"/> if pneumatic drive units are used, they must comply with the standard EN 983.</p> <p><input type="checkbox"/> Check that, after a fault or power failure, the drive unit restarts safely without creating hazardous situations.</p> <p><input type="checkbox"/> 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.</p>

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	<input type="checkbox"/> 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). <input type="checkbox"/> 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.	<input type="checkbox"/> 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.	<input type="checkbox"/> If appropriate, install an emergency stop control in accordance with the standard EN 418. <i>N.B. Make sure that the emergency stop does not introduce additional risks, aborting operation of the safety devices installed.</i>
1.7.1 1.7.2 1.7.3 1.7.4 1.6.1 1.1.2	<i>Integration principles for safety and information.</i> [20] Signalling equipment. [21] Warnings. [22] Marking. [23] Operating instructions. [23] Maintenance. [24] Unprotected residual risks.	<input type="checkbox"/> A flashing light should be installed, in a visible position, to indicate movement of the leaf. <input type="checkbox"/> Traffic lights can be installed to control vehicle traffic. <input type="checkbox"/> Reflectors can also be attached to the leaf. <input type="checkbox"/> Attach all those signs or warnings considered necessary for indicating any unprotected residual risks and to indicate any foreseeable improper use. <input type="checkbox"/> Attach the label or plate with the CE marking and containing at least what is shown in the illustration. <div data-bbox="715 1308 1417 1653" style="border: 1px solid black; padding: 10px; text-align: center;">  <p>Automatic Gate CE</p> <p>Manufacturer (name – address): _____</p> <p>Type of gate: _____</p> <p>Identification number: _____</p> <p>Year of manufacture: _____</p> </div> <input type="checkbox"/> Consign to the user the operating instructions, safety warnings and EC declaration of conformity (cf. facsimile in Annex 2). <input type="checkbox"/> A maintenance plan has to be drawn up and implemented. Check on the proper working of the safety devices at least every 6 months. <input type="checkbox"/> Record the work carried out in the proof book in accordance with the standard EN 12635 (cf. facsimile in Annex 1). <input type="checkbox"/> Inform the user in writing (for example in the operating instructions) of any unprotected residual risks and foreseeable improper use.