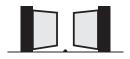
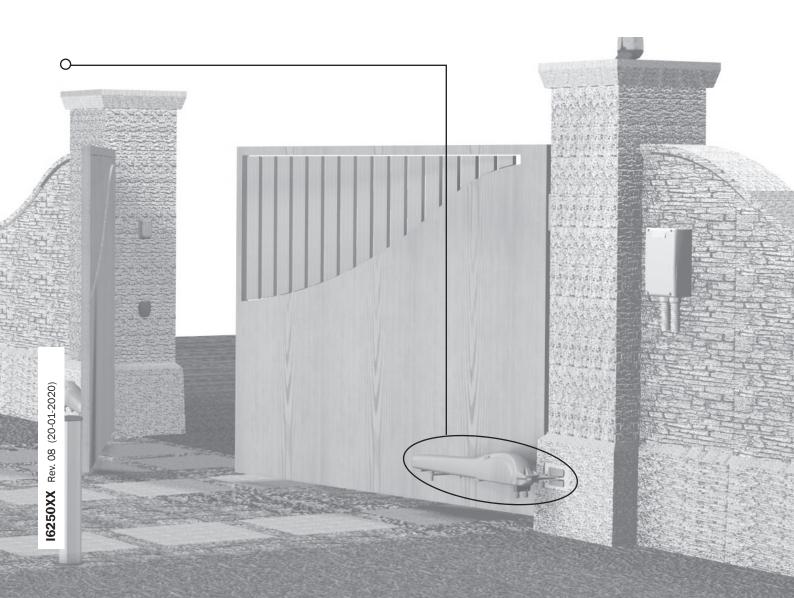
# **STING**



## Electro-mechanical operator for swing gates

Operating instructions and warnings





# **STING**

## **Electro-mechanical ram for swing gates**

Operating instructions and warnings

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## 1 WARNINGS SUMMARY

WARNING! IMPORTANT SAFETY INSTRUCTIONS. CAREFULLY READ AND FOLLOW ALL WARNINGS AND INSTRUCTIONS THAT ACCOMPANY THE PRODUCT SINCE INCORRECT INSTALLATION COULD CAUSE HARM TO PEOPLE, ANIMALS OR THINGS. WARNINGS AND INSTRUCTIONS PROVIDE IMPORTANT INFORMATION REGARDING SAFETY, INSTALLATION, USE AND MAINTENANCE. KEEP THE INSTRUCTIONS TOGETHER THE TECHNICAL DOCUMENTATION AND FOR FUTURE REFERENCE.

- △ **WARNING** The device may be used by children of less than 8 years of age, people with reduced physical, mental or sensory impairment, or generally anyone without experience or, in any case, the required experience provided the device is used under surveillance or that users have received proper training on safe use of the device and are aware of the dangers related to its use.
- △ **WARNING** Do not allow children to play with the device, the fixed commands or the radio controls of the system.
- △ **WARNING** Product use in abnormal conditions not foreseen by the manufacturer may generate hazardous situations; meet the conditions indicated in these instructions.
- △ **WARNING DEA** System reminds all users that the selection, positioning and installation of all materials and devices which make up the complete automation system, must comply with the European Directives 2006/42/CE (Machinery Directive), 2014/30/UE (electromagnetic compatibility), 2014/35/UE (low voltage electrical equipment). In order to ensure a suitable level of safety, besides complying with local regulations, it is advisable to comply also with the above mentioned Directives in all extra European countries.
- △ **WARNING** Under no circumstances use the device in an explosive atmosphere or in areas that may be corrosive or could damage product parts. Check that the temperatures at the installation site are suitable and comply with the temperatures declared on the product label.
- △ **WARNING** When working with the "dead man" switch, make sure that there are no people in the area where the automatism is being used.
- △ **WARNING** Check that there is a switch or an omni polar magneto-thermal circuit breaker that enables complete disconnection in case of over voltage category III conditions installed upstream from the power system.

- △ **WARNING** To ensure an appropriate level of electrical safety always keep the 230V power supply cables apart (minimum 4mm in the open or 1 mm through insulation) from low voltage cables (motors power supply, controls, electric locks, aerial and auxiliary circuits power supply), and fasten the latter with appropriate clamps near the terminal boards.
- △ **WARNING** If the power cable is damaged, it must be replaced by the manufacturer or its technical assistance service or, in any case, by a person with similar qualifications to prevent any risk.
- △ **WARNING** All installation, maintenance, cleaning or repair operations on any part of the system must be performed exclusively by qualified personnel with the power supply disconnected working in strict compliance with the electrical standards and regulations in force in the nation of installation.
- Cleaning and maintenance destined to be performed by the user must not be performed by unsupervised children.
- △ **WARNING** Using spare parts not indicated by **DEA** System and/or incorrect re-assembly can create risk to people, animals and property and also damage the product. For this reason, always use only the parts indicated by **DEA** System and scrupulously follow all assembly instructions.
- △ **WARNING** Changing the closing intensity could lead to dangerous situations. Therefore, qualified personnel should only perform increases to the closing force. After adjustment, compliance with regulatory limits values should be detected with a force impact-measuring instrument. The sensitivity of the obstacle detection may be adjusted gradually to the door (see programming instructions). The anti-crushing device operation must be checked after each manual adjustment. Manual modification of the force can only be done by qualified personnel by performing the measurement test according to EN 12445. Modifications to the force adjustment must be documented in the machine manual.
- △ **WARNING** The compliance of the internal sensing obstacles device to requirements of EN12453 is guaranteed only if used in conjunction with motors fitted with encoders.
- △ **WARNING** Any external security devices used for compliance with the limits of impact forces must be conform to standard EN12978.
- **WARNING** In compliance with EU Directive 2012/19/EU on waste electrical and electronic equipment (WEEE), this electrical product should not be treated as municipal mixed waste. Please dispose of the product and bring it to the collection for an appropriate local municipal recycling.

EVERYTHING THAT IS NOT EXPRESSLY PROVIDED FOR IN THE INSTALLATION MANUAL IS NOT ALLOWED. CORRECT OPERATOR OPERATION IS ONLY ENSUED WHEN THE REPORTED DATA IS RESPECTED. THE COMPANY DOES NOT RESPOND FOR DAMAGE CAUSED BY FAILURE TO COMPLY WITH THE INSTRUCTIONS CONTAINED IN THIS MANUAL. WITHOUT AFFECTING THE ESSENTIAL FEATURES OF THE PRODUCT, THE COMPANY RESERVES THE RIGHT TO MAKE ANY CHANGES DEEMED APPROPRIATE AND AT ANY TIME IN ORDER TO TECHNICALLY, STRUCTURALLY AND COMMERCIALLY IMPROVE THE PRODUCT WITHOUT BEING REQUIRED TO UPDATE THIS DOCUMENT.

## **3 TECHNICAL DATA**

	MAC - STING	MAC/EN STING/EN	MAC/R	MAC/24 - MAC24/EN - STING/24	STING/24/ BOOST	MAC/24/E
Motor power supply voltage (V)	230 \	/~ ±10% (50/6	60 Hz)	24 V		
Absorbed power (W)		300		60	85	50
Max Thrust (N)	16	50	1200	1000		500
Duty cycle (cycles/hour)	18	22	18	40		10
Maximum n° of operations in 24 hour	90 90			45		
Built-in capacitor (µF)	8 10		/			
Operating temperature range (°C)			-20÷5	0 °C		
Motor thermal protection (°C)	150			/		
Opening time 90° (s)	16 9 11,5			11,5		
Weight of product with package (kg)	8,8					
Sound pressure emitted (dBA)	< 70					
Protection degree	IPX4					

## **4 INSTALLATION AND ASSEMBLY**

## 4.1 For a satisfactory installation of the product is important to:

- · Verify that the gate complies with the legal requirements and then define the complete project of the installation;
- Verify that the gate is well balanced and that it has no points of friction in opening and closing;
- Identify an area that allows a smooth and safe manual operation of the operator;
- Verify that the operator bulk (Pic. 2) is compatible with the area chosen for the fitting (Pic. 3);
- Use the length/weight graphic and the provided installations dimensions evaluating whether you prefer a 90° or higher opening (Pic. 4).

#### 4.2 Defined and satisfied these prerequisites, proceed to the assembly:

- Fix the rear junction to the pillar bu welding (Pic. 5);
- Fix the front junction to the gate by welding (Pic. 6);
- Keeping the motor in a horizontal position, mount it first to the front bracket, then to the rear bracket (Pic. 7) ensuring that installation dimensions shown in Picture 4 are respected.

**WARNING** In order to make the structure sufficiently strong, reinforcement plates to be fixed to attachments may be necessary. **WARNING** Grease pins before assembly.

## 4.3 How to unlock the operator

WARNING Disconnect the power supply from the control panel before releasing the operator. In case you cannot turn the power off, you will necessarily have to re-lock the motor in the position in which it was unlocked.

#### STANDARD VERSION UNBLOCKING

- Turn the cap placed on the back of MAC in order to discover the underlying shaped hole.
- Insert the release key inside the shaped hole paying attention to the direction of insertion (Pic. 8.a).
- Rotate 90 degrees (counterclockwise to unlock, clockwise to lock) the release key (Pic. 8.b).

#### STING VERSION UNBLOCKING

Once the lock placed on the release handle (that is protected by a plastic cover) is opened (Fig. 8.c), this will be raised (Fig. 8.d); at this point, the STING is unblocked and the gate, in the absence of other impediments, is free to move. The reverse process, or the pushing to the end stop and relocking the lock, restores the STING to working conditions.

**WARNING** Remember to protect the lock with the respective cover so that the operator is protected by water or powder (even when it remains unlocked for a long time).

WARNING During this operation gate may perform uncontrolled movements: operate with extra care so to avoid any risk.

## 5 ELECTRICAL CONNECTIONS

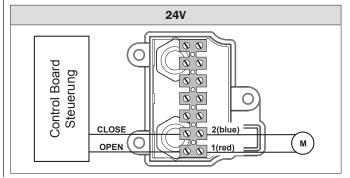
**WARNING** To ensure an appropriate level of electrical safety always keep the 230V power supply cables apart (minimum 4mm in the open or 1 mm through insulation) from low voltage cables (motors power supply, controls, electric locks, aerial and auxiliary circuits power supply), and fasten the latter with appropriate clamps near the terminal boards.

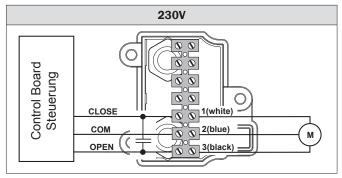
WARNING To connect the encoder to the control panel, use only a dedicated cable 3x0,22mm<sup>2</sup>.

**WARNING** During the connection phase, fasten the electric cables with appropriate clamps near the terminal boards and, when possible, unsheathe the cables to avoid they are too long.

#### Connection for 24V and 230V

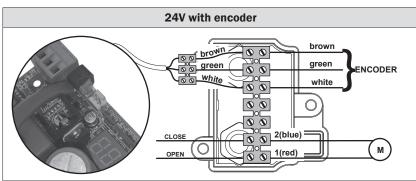
- Remove the plastic cover positioned under MAC/STING (Pic. 9).
- Open one of four shaped holes and choose where the cable exit has to be (Pic. 10).
- Introduce the cable clamp and fix it by its nut (Pic. 11).
- Insert the power supply cable into the clamp (coming from the control panel): A quadrupole cable suitable for external applications with a 4x1mm² section (or 3x1,5mm² for 24V operators)(minimum H05RN-F type) coming directly from the control panel (without any connection and shunt box) and supplied by the installer (Pic. 12).

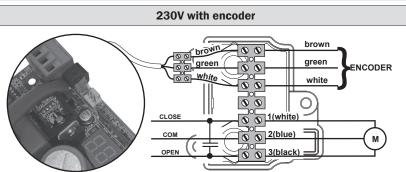




## Connection for 24V and 230V version with encoder

- For the operator power supply connection follow the instructions of the basic version.
- Open a second hole in the plastic cover and apply the second provided cable clamp (a reduced M16).
- Use a 3x0,75mm<sup>2</sup> (ex. H05RN-F) and follow the diagram to correctly connect the encoder to the control board.
- Use the cable with panduit connector supplied in the kit to connect the previously used cable to the control board, by using the clamp 3 "poli" inside the package.





**WARNING** Maintain the ground conductor at a major length respect the active conductors so that, if the cable exit from its fixing housing, the active conductors tighten up as first.

WARNING Respect the Phase-Neutral polarity of the tension as explained by the instructions manual of the control panels of MAC/STING.

Re-assemble the plastic cover ensuring that any cable do not touch moving parts of the operator.

WARNING while installing, maintain a proper distance between the power cable conductors and the operator.

Program the control board to complete all adjustments. It is now possible to supply a complete installation in compliance with all standards required for gate automation. See the instructions provided with the control panel to be connected.

Finally, verify that all adjustments operations have been correctly performed and that safety devices and unlocking device properly work.

## **6 START-UP**

The start-up phase is very important to ensure maximum security and compliance to regulations, including all the requirements of EN 12445 standard which establishes the test methods for testing the automation for gates.

**DEA** System reminds that all installation, maintenance, cleaning or repair operations on any part of the system must be performed exclusively by qualified personnel who must be responsible of all texts requie by the eventual risk;

#### **6.1 Installation test**

The testing operation is essential in order to verify the correct installation of the system. **DEA** System wants to summarize the proper testing of all the automation in 4 easy steps:

- Make sure that you comply strictly as described in paragraph 2 "WARNINGS SUMMARY";
- Test the opening and closing making sure that the movement of the leaf match as expected. We suggest in this regard to perform various tests to assess the smoothness of the gate and defects in assembly or adjustment;
- Ensure that all safety devices connected work properly;
- Perform the measurement of impact forces in accordance with the standard 12445 to find the setting that ensures compliance with the limits set by the standard EN12453.

**WARNING** Using spare parts not indicated by **DEA** System and/or incorrect re-assembly can create a risk to people, animals and property and also damage the product. For this reason, always use only the parts indicated by **DEA** System and scrupulously follow all assembly instructions.

#### 6.2 Unlocking and Manual operation

In the event of malfunctions or simple power failure, release the motor (Pic. 8) and perform the operation manually.

The knowledge of the unlocking operation is very important, because in times of emergency the lack of timeliness in acting on such a device can be dangerous.

**WARNING** The efficancy and safety of manual operation of the automation is guaranteed by **DEA** System only if the installation has been installed correctly and with original accessories.

## 7 MAINTENANCE

Good preventive maintenance and regular inspection ensure long working life. In the table below you will find a list of inspections/maintenance operations to be programmed and executed periodically.

Consult the TROUBLE-SHOOTING" table whenever anomalies are observed in order to find the solution to the problem and contact **DEA** System directly whenever the solution required is not provided.

INTERVENTION TYPE	PERIODICITY		
cleaning of external surfaces	6 months		
checking of screw tightening	6 months		
checking of release mechanism operation	6 months		
greasing of articulated joint	1 year		

TROUBLE-SH00TING				
Description	Possible solutions			
When the opening command is given, the leaf fails to move and the operator's electric motor fails to start.	The operator is not receiving correct power supply. Check all connections, fuses, and the power supply cable conditions and replace or repair if necessary.			
	Check that the unlocking system is closed (see Pic.8).			
When the opening command is given, the motor starts but	Make sure that the electronic device for electric power adjustment is in good condition.			
the leaf fails to move.	If the piston remains at the complete end of its stroke when the gate is closed, review the assembly procedure.			
	If the leaf does not move freely, release the ram and readjust the rotation points.			
The operator jerks during movement.	The power of the gear motor may be insufficient for the characteristics of the gate's wing; check the choice of model whenever required.			
	The operator's front and rear attachments bend or are not fastened correctly. Repair or replace.			

## **8 PRODUCT DISPOSAL**

MAC/STING consists of materials of various types, some of which can be recycled (electrical cables, plastic, aluminum, etc. ..) while others must be disposed of (electronic boards and components).

Proceed as follows:

- 1. Disconnect the power supply;
- 2. Disconnect and disassemble all the accessories connected. Follow the instructions in reverse to that described in the section "Installation":
- 3. Remove the electronic components;
- 4. Sorting and disposing of the materials exactly as per the regulations in the country of sale.



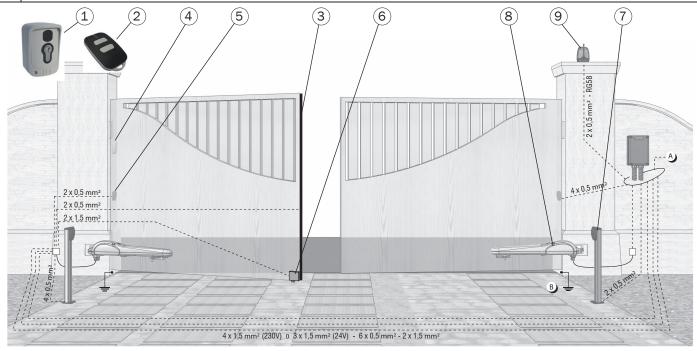
**WARNING** In line with EU Directive 2012/19/EU for waste electrical and electronic equipment (WEEE), this electrical product must not be disposed of as unsorted municipal waste. Please dispose of this product by returning it to your local municipal collection point for recycling.

# Esempio di installazion tipica - Example of typical installation - Exemple d'installation typique - Installationsbeispiel - Ejemplo de installación típica - Exemplo de instalação típica - Przyład standardowego systemu automatyzacji - Пример типового монтажа

**DEA** System fornisce queste indicazioni che si possono ritenere valide per un impianto tipo ma che non possono essere complete. Per ogni automatismo, infatti. l'installatore deve valutare attentamente le reali condizioni del posto ed i requisiti dell'installazione in termini di prestazioni e di sicurezza; sarà in base a queste considerazioni che redigerà l'analisi dei rischi e progetterà nel dettaglio l'automatismo. - DEA System provides the following instructions which are valid for a typical system but obviously not complete for every system. For each automatism the installer must carefully evaluate the real conditions existing at the site. The installation requisites in terms of both performance and safety must be based upon such considerations, which will also form the basis for the risk analysis and the detailed design of the automatism. - DEA System fournit ces indications que vous pouvez considérer comme valables pour une installation-type, même si elles ne peuvent pas être complètes. En effet, pour chaque automatisation, l'installateur doit évaluer attentivement les conditions réelles du site et les pré-requis de l'installation au point de vue performances et sécurité ; c'est sur la base de ces considérations qu'il rédigera l'analyse des risques et qu'il concevra l'automatisation d'une manière détaillée. - Diese Angaben von DEA System können als gültig für eine Standardanlage angesehen werden, können aber nicht erschöpfend sein. So muss der Installationsfachmann für jedes Automatiksystem sorgfältig die Voraussetzungen des Installationsortes sowie die Leistungs- und Sicherheitsanforderungen an die Installation abwägen; aufgrund dieser Überlegungen muss er die Risikobewertung erstellen und genau das Automatiksystem entwickeln. -  ${\bf DEA}$ 

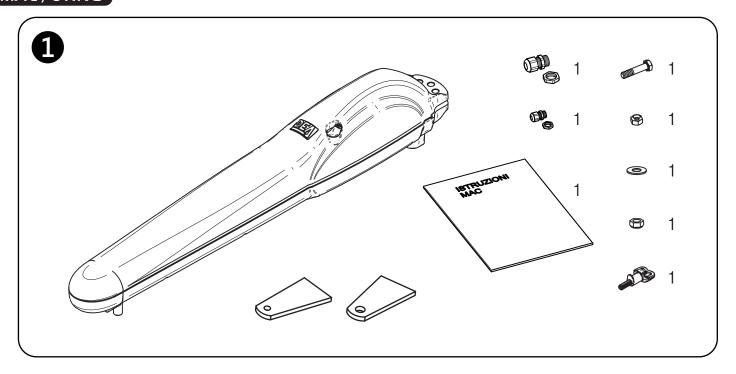
System facilita estas indicaciones que pueden considerarse válidas para una instalación tipo pero que no pueden considerarse completas. El instalador, en efecto, tiene que evaluar atentamente para cada automatismo las reales condiciones del sitio y los requisitos de la instalación por lo que se refiere a prestaciones y seguridad; en función de estas consideraciones redactará el análisis de riesgos y efectuará el proyecto detallado del automatismo. - DEA System fornece estas indicações que podem ser consideradas válidas para o equipamento padrão, mas que podem não ser completas. Para cada automatismo praticamente o técnico de instalação deverá avaliar com atenção as condições reais do sítio e os requisitos da instalação em termos de performance e de segurança; será em função destas considerações que realizará uma análise dos riscos e projectará. - DEA System dostarcza wskazówek, do wykorzystania w typowej instalacji ale nie będą one nigdy kompletne. Dla każdego typu automatyki, instalator musi sam oszacować realne warunki miejsca montażu i wymogi instalacyjne mając na uwadze przepisy dotyczące bezpieczeństwa. Na podstawie zebranych informacji będzie w stanie przeanalizować zagrożenia mogące wystąpić i zaprojektować w szczegółach automatyzacie. - DEA System предлагает рекомендации . которые действительны для типовой системы, но, очевидно, не обязательны для каждой конкретной установки. Для каждого конкретного случая установщик должен тщательно оценить реальные условия. Устройства для установки оцениваются с точки зрения производительности и безопасности, которые необходимы для анализа рисков и детального проектирования системы автоматизации.

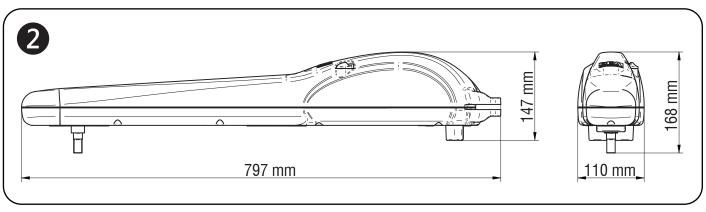


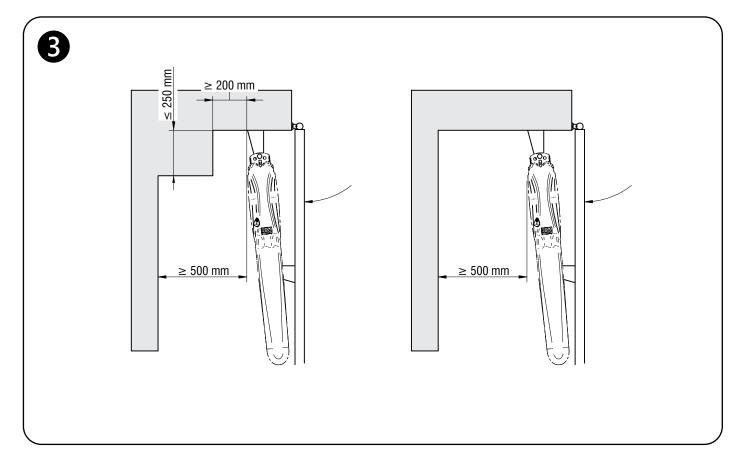


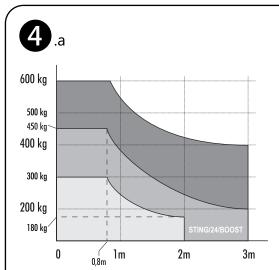
Collegarsi alla rete 230 V ± 10% 50-60 Hz tramite un interruttore onnipolare o altro dispositivo che assicuri la onnipolare disinserzione della rete, con una distanza di apertura dei contatti ≥ 3 mm - Make the 230V ± 10% 50-60 Hz mains connection using an omnipolar switch or any other device that guarantees the omnipolar disconnection of the mains network with a contact opening distance of 3 mm - Connectez-vous au réseau 230 V ± 10% 50-60 Hz au moyen d'un interrupteur omnipolaire ou d'un autre dispositif qui assure le débranchement omnipolaire du réseau, avec un écartement des contacts égal à 3 mm. - Den Anschluss an das 230 V ~ ± 10% 50-60 Hz Netz mit einem Allpolschalter oder einer anderen Vorrichtung vornehmen, durch die eine allpolige Netzunterbrechung bei einem Öffnungsabstand der Kontakte von ≥ 3 mm gewährleistet wird. - Efectuar la conexión a una línea eléctrica 230 V ± 10% 50-60 Hz a través de un interruptor omnipolar u otro dispositivo que assegure la omnipolar desconexión de la línea, con 3 mm de distancia de abertura de los contactos. - Ligue na rede de 230 V. ± 10% 50-60 Hz mediante um interruptor omnipolar ou outro dispositivo que assegure que se desliga de maneira omnipolar da rede, com abertura dos contactos de pelo menos 3 mm. de distância - Podłączyć się do sieci 230 V ± 10% 50-60 Hz poprzez przełącznik jednobiegunowy lub inne urządzenie które zapewni brak zakłóceń w sieci, przy odległości między stykami ≥ 3 mm. - Подключайтесь к сети 230V ± 10% 50-60 Гц с помощью многополюсного выключателя или используйте любое другое устройство, которое гарантирует многополюсное отключение питающей сети с расстоянием между контактами от ≥ 3 мм и больше.

Collegare a terra tutte le masse metalliche - All metal parts must be grounded - Connectez toutes les masses métalliques à la terre - Alle Metallteile erden - Conectar con la tierra todas las masas metálicas - Realize ligação à terra de todas as massas metálicas - Uziemić wszystkie elementy metalowe. - Все металлические части должны быть заземлены.





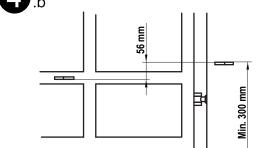


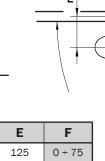


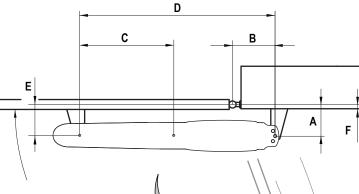
WARNING With not self-locking models, with same leaf length, reduce of 1/3 the door admissible weight compared to what indicated in "Length-weight" chart.

WARNING In case the leaf is more than 2 m long or in case you use not self-locking models, an electric-lock must be installed to hold the gate in closing position.

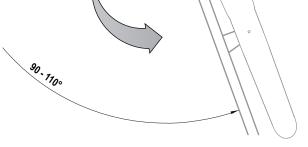


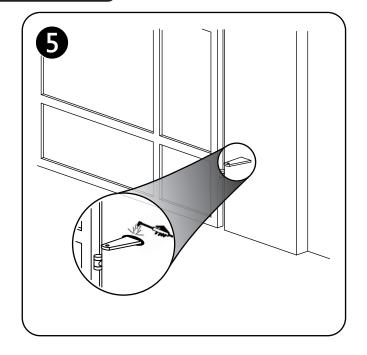




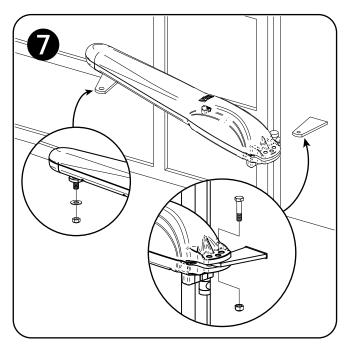


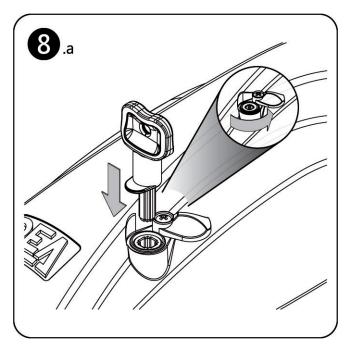
α	A	В	С	D	E	F
90°	150	150	300	720	125	0 ÷ 75
	180	150	331	720	125	100
	210	150	363	715	140	125
	230	150	385	715	145	150
100°	135	160	321	720	125	0 ÷ 50
110°	135	185	375	720	125	0 ÷ 25

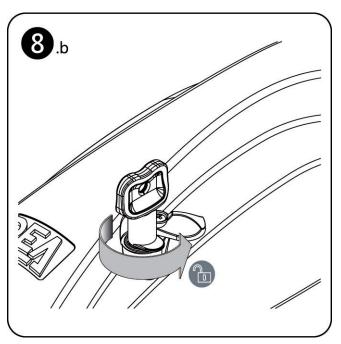


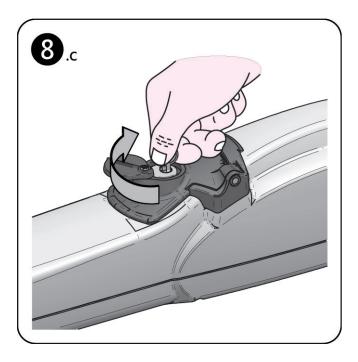


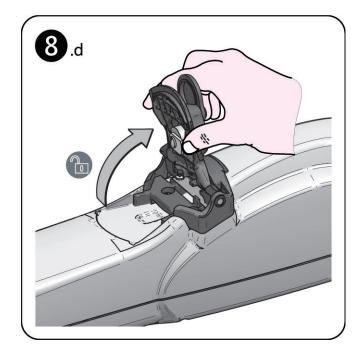


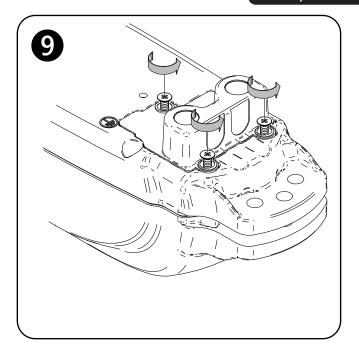


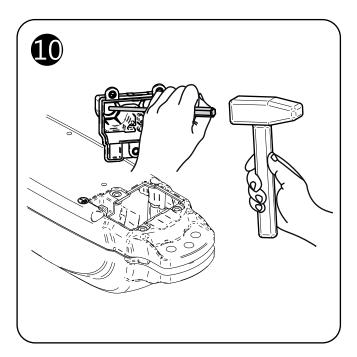


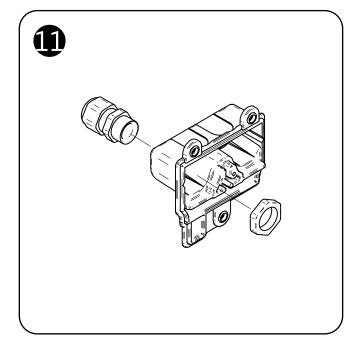


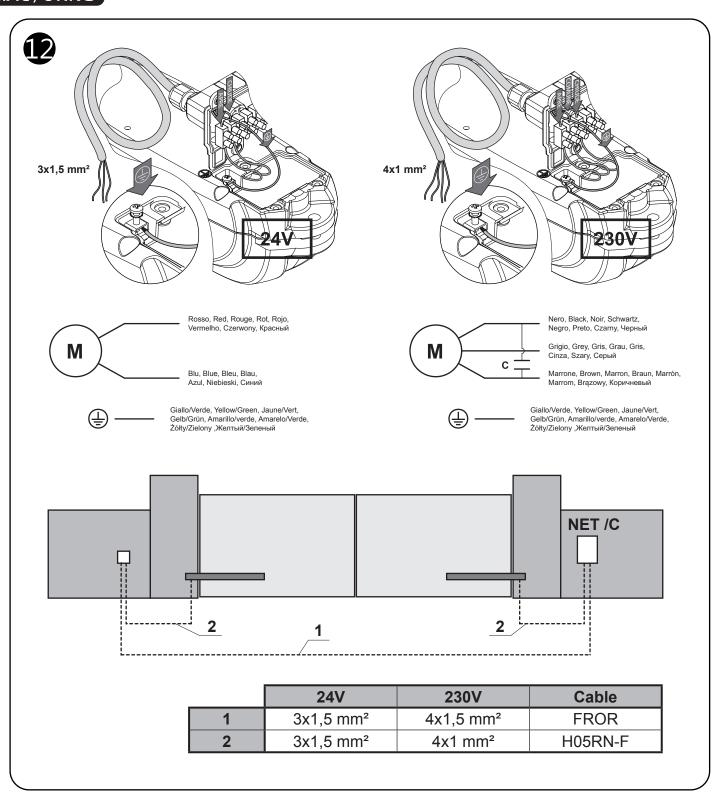












MAC/STING

#### EN

#### INSTRUCTIONS FOR THE FINAL USER

This guide has been prepared for the final users of the automatism; the installer is required to deliver this guide and illustrate its contents to the person in charge of the system. The latter must then provide similar instruction to all the other users. These instructions must be carefully conserved and easily available for consultation when required.

Good preventive maintenance and frequent inspection ensures the long working life of the product. Contact the installer regularly for routine maintenance and in event of anomaly.

## **SAFETY RULES**

- 1. Always keep a safe distance from the automatism during operation and never touch any moving part.
- 2. Prevent children from playing near the automatism.
- 3. Perform the control and inspection operations prescribed in the maintenance schedule and immediately stop using the automatism whenever signs of malfunction are noted.
- 4. Never disassemble parts of the product! All maintenance and repair operations must be performed only by qualified personnel.
- 5. The release operation must sometimes be performed in emergencies! All users must be instructed on the use of the release mechanism and the location of the release keys.

## **MAC/STING RELEASE MECHANISM**

WARNING Disconnect the power supply from the control panel before releasing the operator. In case you cannot turn the power off, you will necessarily have to re-lock the motor in the position in which it was unlocked.

All MAC/STING models are equipped with a release device which must be operated as follows:

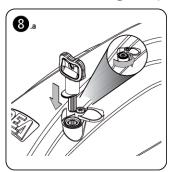
#### STANDARD VERSION UNBLOCKING

- Turn the cap placed on the back of MAC in order to discover the underlying shaped hole.
- Insert the release key inside the shaped hole paying attention to the direction of insertion (Pic. 8.a).
- Rotate 90 degrees (counterclockwise to unlock, clockwise to lock) the release key (Pic. 8.b).

#### STING VERSION UNBLOCKING

Once the lock placed on the release handle (that is protected by a plastic cover) is opened (Fig. 8.c), this will be raised (Fig. 8.d); at this point, the STING is unblocked and the gate, in the absence of other impediments, is free to move. The reverse process, or the pushing to the end stop and relocking the lock, restores the STING to working conditions.

WARNING: During this operation gate may present uncontrolled movement: operate with extra care so to avoid any risk.









## **CLEANING AND INSPECTIONS**

The only operation that the user can and must do is to remove branches, leaves, and any other object that might obstruct the gate's free movement. Warning! Always disconnect the power supply whenever performing operations on the gate!







## **DEA SYSTEM S.p.A.**

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