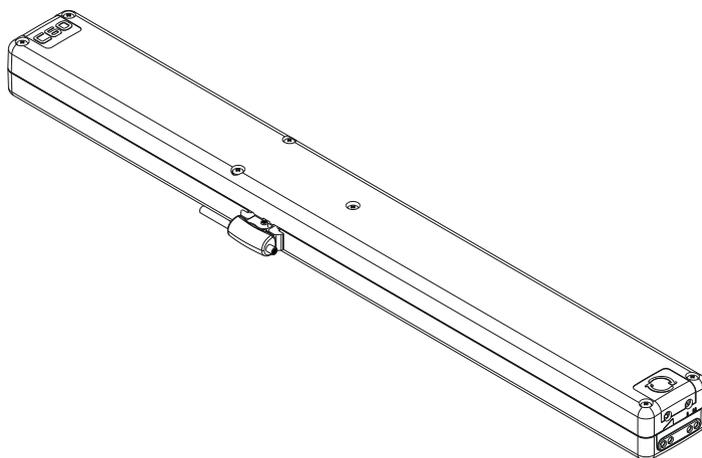


**CHAIN ACTUATOR FOR  
WINDOW AUTOMATION**

**C60**



*original instructions*



COD. 0P5281

VER.0.0

REV.03.16

**BEFORE INSTALLING AND USING THE ACTUATOR, IT IS  
COMPULSORY FOR THE INSTALLER AND THE USER TO READ  
AND UNDERSTAND THIS MANUAL IN ALL ITS PARTS.**

**THIS MANUAL IS INTEGRAL PART OF THE ACTUATOR  
AND MUST BE PRESERVED FOR FUTURE REFERENCE  
UNTIL DEMOLITION OF THE SAME.**



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ORIGINAL



The undersigned, in the name of and behalf of the following company

**Topp S.r.l.**  
**Via Galvani, 59**  
**36066 Sandrigo (VI)**  
**Italia**

herewith declares

that the person authorised to compile the technical file is

Name: Bettiati Roberto - Topp S.r.l.  
 Address: via Galvani, 59 36066 Sandrigo (VI)  
 and  
 that to the partly completed machinery

#### CHAIN ACTUATOR FOR WINDOW AUTOMATION

Type: C20;C60  
 Model(s): C20/230V-C20/24V;C60/230V-C60/24V  
 Serial number and year of construction: from no.1603TB01112 to no. 16120PF1999

the following essential requirements of the following EC directive (including all applicable amendments)

2006/42/EC Machinery Directive (Italian adoption DLgs 27 jan. 2010, n.17)  
 have been applied and fulfilled:

Enclosure I: 1.5.1; 1.5.2; 1.5.10; 1.5.11

and that the relevant technical documentation is compiled in accordance with part B of Annex VII of the above mentioned Machinery Directive.

The above identified partly completed machinery is also in conformity with the all the relevant provisions of the following EC directives (including all applicable amendments)

2014/30/EU EMC Directive  
 2011/65/EU ROHS II Directive

The following harmonised standards have been applied:

EN 55014-1	EN 55014-2	EN 61000-3-2
EN 61000-3-3	EN 61000-6-2	EN 61000-6-3
EN 62233	EN 50581	
EN 60335-1	Applicable parts of EN 60335-2-103	

The undersigned also undertakes the obligation, in response to a duly reasoned request by the national market surveillance authorities, to transmit to the a.m. authorities, in electronic or paper format, the relevant technical documentation on the partly completed machinery.

The above identified partly completed machinery must not be put into service until the final machinery into which it is to be incorporated has been declared in conformity with the provisions of the above mentioned Machinery Directive.

This declaration of conformity is issued under the sole responsibility of the manufacturer.

Date: Sandrigo, 01/03/2016

Signature: Matteo Cavalcante

Administrator .....

## 2.1- GENERAL INSTRUCTIONS



BEFORE INSTALLING AND USING THE ACTUATOR, IT IS COMPULSORY THAT THE INSTALLER AND THE USER CAREFULLY READ AND UNDERSTAND THIS MANUAL IN ALL ITS PARTS.



THIS MANUAL IS INTEGRAL PART OF THE ACTUATOR AND MUST COMPULSORILY BE PRESERVED FOR FUTURE REFERENCE.



THE MANUFACTURER HAS NO LIABILITY FOR ANY EVENTUAL DAMAGE TO PERSONS, ANIMALS AND THINGS DUE TO THE INOBSERVANCE OF THE PRESCRIPTIONS DESCRIBED IN THIS MANUAL.



IN ORDER FOR THE AUTOMATION UNIT TO OPERATE CORRECTLY, WE RECOMMEND CARRYING OUT PERIODICAL MAINTENANCE ON IT, AS INDICATED IN PAR. 7.1 OF THIS MANUAL.



THE WARRANTY ON THE ACTUATOR WILL NOT BE HONORED IF PRODUCT IS NOT INSTALLED AND USED ACCORDING TO THE INSTRUCTIONS PROVIDED AND THE REGULATIONS SHOWN IN THIS INSTRUCTION MANUAL AND IF IT IS USED WITH NON-GENUINE PARTS, ACCESSORIES, SPARE PARTS AND/OR CONTROL/FEEDING UNITS.

## 2.2- INSTALLER AND USER



THE ACTUATOR INSTALLATION CAN BE PERFORMED EXCLUSIVELY BY COMPETENT AND QUALIFIED TECHNICAL PERSONNEL SATISFYING THE PROFESSIONAL AND TECHNICAL REQUIREMENTS FORESEEN BY THE LAWS IN FORCE IN THE COUNTRY OF INSTALLATION.



THE INSTALLATION TECHNICIAN SHALL ACCEPT FULL RESPONSIBILITY FOR ANY INSTALLATION ERRORS AND FOR ANY FAILURE TO ADHERE TO THE INSTRUCTIONS PROVIDED IN THIS MANUAL. THE INSTALLATION TECHNICIAN SHALL THEREFORE BE EXCLUSIVELY LIABLE FOR ANY DAMAGES CAUSED TO USERS AND/OR THIRD PARTIES THAT MAY ARISE AS A RESULT OF INCORRECT INSTALLATION.



THE ACTUATOR CAN BE USED EXCLUSIVELY BY A USER ACTING IN COMPLIANCE WITH THE INSTRUCTIONS CONTAINED IN THIS MANUAL AND/OR IN THE MANUAL OF THE ACTUATOR CONTROL DEVICE (E.G.: CONTROL UNIT).

## 2.3- TECHNICAL ASSISTANCE

Contact the installation technician or retailer for assistance.

## 2.4- RESERVED RIGHTS

The reserved rights on this manual "Installation and use instructions" remain property of the Manufacturer.

Each information herein contained (text, drawings, diagrams, etc.) is reserved.

None part of this manual can be reproduced and disclosed (totally or partially) by any reproduction means (photocopies, microfilms or other) without written authorization of the Manufacturer.

## 2.5- DESCRIPTION OF PERSONNEL



**USERS MUST NEVER PERFORM OPERATIONS RESERVED FOR MAINTENANCE PEOPLE OR SPECIALISED TECHNICIANS. THE MANUFACTURER DECLINES ALL LIABILITY FOR DAMAGE DERIVING FROM FAILURE TO OBSERVE THE ABOVE REQUIREMENTS.**

### **Specialised electrician:**

A specialised electrician must be able to install the actuator, start it and operate it both in normal conditions and in the maintenance mode; he/she is qualified to perform all electrical and mechanical adjustment and maintenance operations. He/she is allowed to work on live electrical cabinets and junction boxes.

### **User:**

specialised person capable of operating the actuator under normal conditions by using the relative controls. He/she must also be able to operate with the actuator under "maintenance" in order to perform simple routine maintenance operations (cleaning), and start or reset the actuator following an unscheduled stop.

### 3.1- RATING PLATE AND “CE” MARKING

The “CE” marking certifies the compliance of the machine with the essential safety and health requirements foreseen by the product European Directives.

The rating plate is an adhesive plate in polyester, silk-screen printed in black, having the following size: L=24 mm - H=60 mm.

It is applied externally on the actuator. The plate bears in readable and indelible way the following data:

- logo and address of the manufacturer
- type and model
- voltage and intensity of power supply (V - A)
- absorbed electric power P (W)
- thrust and tractive force F (N)
- type of service  $S_2$  (min)
- idle translation speed (mm/s)
- protection degree (IP)
- “CE” marking
- symbol of WEEE Directive 2002/96/CE
- symbol of double insulation (only for mod. C60/230V)
- serial number

3.2- DENOMINATION OF THE COMPONENTS AND DIMENSIONS

Fig. 2a Dimensions in mm

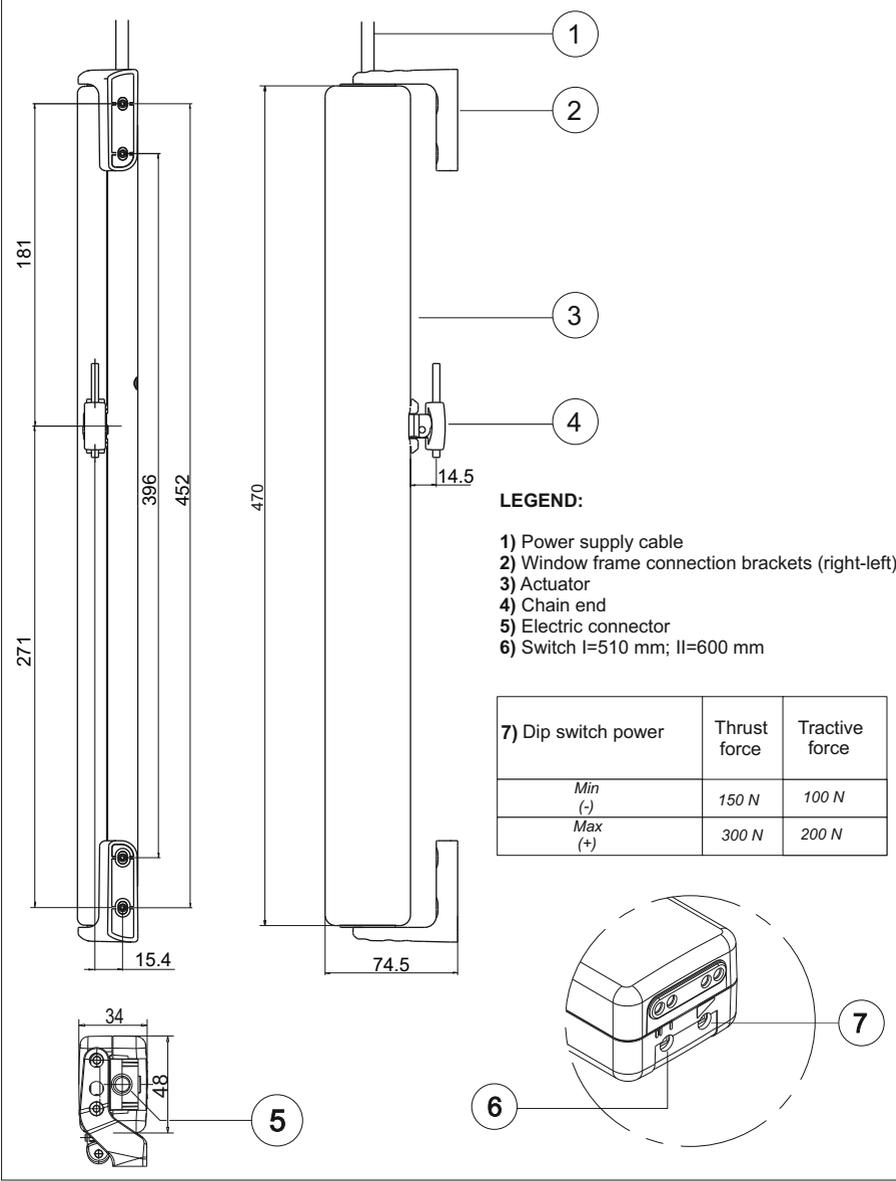
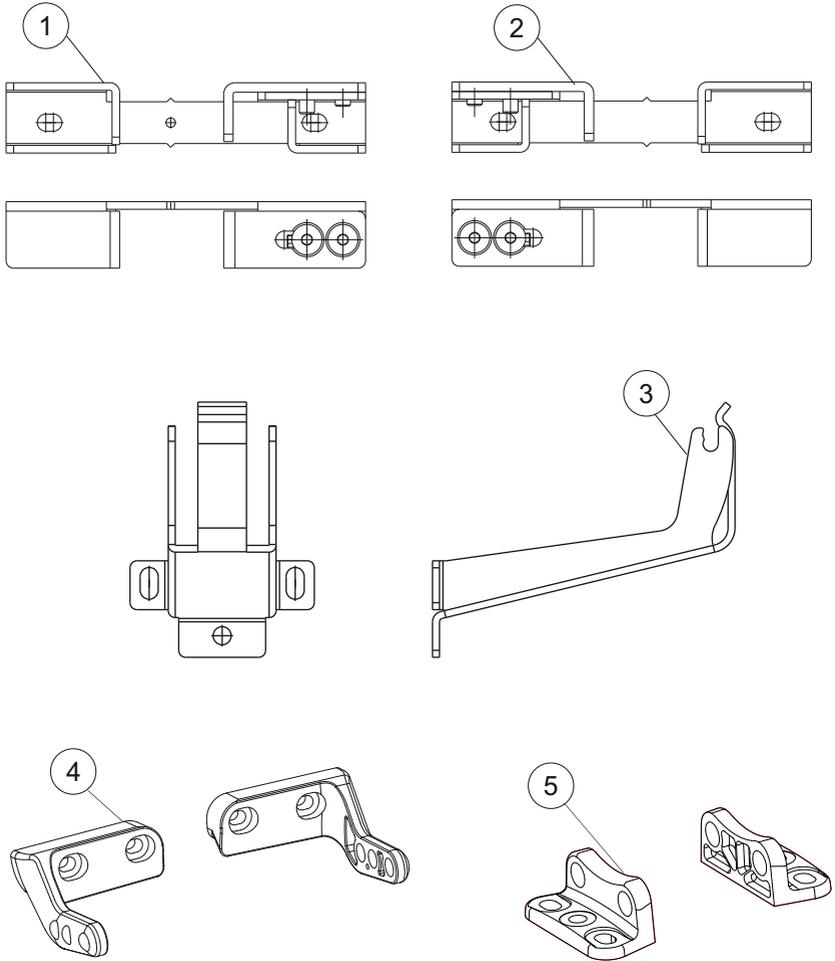


Fig. 2b



**LEGEND:**

- 1) Side-hung frame mount
- 2) Top-hung frame mount
- 3) Bottom-hung window brackets
- 4) Top-/bottom-hung window brackets
- 5) Side-hung window brackets

3.3- TECHNICAL DATA

Tab. 1 contains the technical data characterising the actuators.

Tab. 1	C60/230V	C60/24V	
Power supply voltage	230 V - 50 Hz	24 V	
Absorbed current	0,14 A	0,49 A	
Absorbed power with load	20 W	17 W	
Thrust force			
Tractive force	200 N		
Idle translation speed	8 mm/s	7,5 mm/s	
Duration of the idle stroke (600 mm)	75 s	80 s	
Operation stroke length (mm) <sup>(1)</sup>		510	600
Minimum window frame height (mm) <sup>(2)</sup>	Top hung	500	600
	Bottom hung	900	1000
	Dome	400	600
Limit switch: Electronic for opening - by amperometric absorption for closing.			
Protection against electric shock	Classe II	Classe III	
Type of service S <sub>2</sub> <sup>(3)</sup>	4 min		
Operating temperature	- 5 °C + 50 °C		
Protection degree of electric devices	IP 30		
Adjustment of the window frame connection	NO		
Parallel electric connection of more actuators on the same window	NO		
Parallel electric connection of more actuators on different windows	Yes (see wiring diagram)		
Actuator weight with brackets	1,30 kg		
Gross weight	1,50 kg		

<sup>(1)</sup> Tolerance on the precision of limit switch tripping at output: +/- 2 cm.

<sup>(2)</sup> Actuator distance from the window frame opening hinge

<sup>(3)</sup> Service of limited duration according to EN 60034

### 3.4- FORMULAS FOR THE CALCULATION OF THRUST AND TRACTIVE FORCE

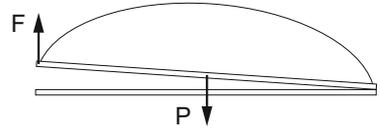
**Fig. 3**

#### Horizontal domes or skylights

**F** = Force necessary for opening or closing

**P** = Weight of the skylight or dome  
(Only movable part)

$$F = 0.54 \times P$$



**Fig. 4**

#### Top hung windows (A) or bottom hung windows (B)

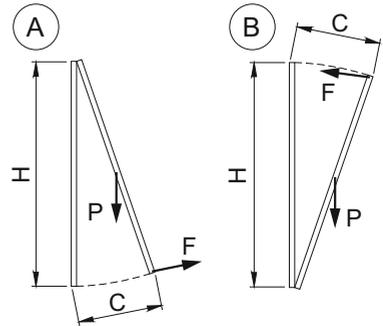
**F** = Force necessary for opening or closing

**P** = Weight of the window  
(Only movable part)

**C** = Window opening stroke

**H** = Window height (Only movable part)

$$F = (0.54 \times P) \times \left( \frac{C}{H} \right)$$



### 3.5- DESTINATION OF USE



THE ACTUATOR HAS BEEN DESIGNED AND MANUFACTURED TO PERFORM AUTOMATICALLY, BY MEANS OF A COMMAND DEVICE, THE OPENING AND CLOSING OF TOP HUNG WINDOWS, BOTTOM HUNG WINDOWS, PIVOT WINDOWS, AND SKYLIGHTS.

### 3.6- USE LIMITS

The actuator has been designed and manufactured exclusively for the destination of use given in **par. 3.5**, therefore, any other type of use is strictly forbidden in order to assure in any moment the safety of the installer and of the user, as well as the efficiency of the actuator itself.

Check carefully all environmental conditions (temperature, humidity, wind, snow, potential chemical agents, etc.) and installation settings (misaligned fitting of brackets and attachment to the frame, frictions produced by hinges or gaskets, use of self-balancing window stays, etc.) it is recommended that they not exceed the actuator performances shown in the technical table. If they do, please find an alternative and more suitable product for your application.



**IT IS STRICTLY FORBIDDEN TO USE THE ACTUATOR FOR IMPROPER USES, I.E. OTHER THAN THE ONE FORESEEN BY THE MANUFACTURER (SEE PAR. 3.5).**



**IT IS STRICTLY FORBIDDEN TO INSTALL THE ACTUATOR ON THE EXTERNAL SIDE OF THE WINDOW FRAME SUBJECT TO ATMOSPHERIC AGENTS (RAIN, SNOW, ETC.).**



**THE USE OF THE ACTUATOR IN ENVIRONMENTS WITH POTENTIALLY EXPLOSIVE ATMOSPHERE IS STRICTLY FORBIDDEN.**



**IT IS COMPULSORY TO KEEP THE PACKAGE AND THE ACTUATOR OUT OF REACH OF CHILDREN.**

### 3.7- PACKAGE

Each package of the product (cardboard box) contains (**Fig. 5**):

- Actuator equipped with power supply cable (with electric connector);
- Actuator brackets (depending on application);
- Window mounting brackets (depending on application);
- Drilling template ;
- Small parts package for aluminum windows (No. 2 screws TCEI M4X10 for lateral fastening of connection brackets to the window, No. 7 screws AF Ø 4,8 x 16 mm, No. 2 screws AF Ø 4,2 x 19 mm and 1 screw TSPEI M4x6);
- Installation and use instructions;
- Safety plate.



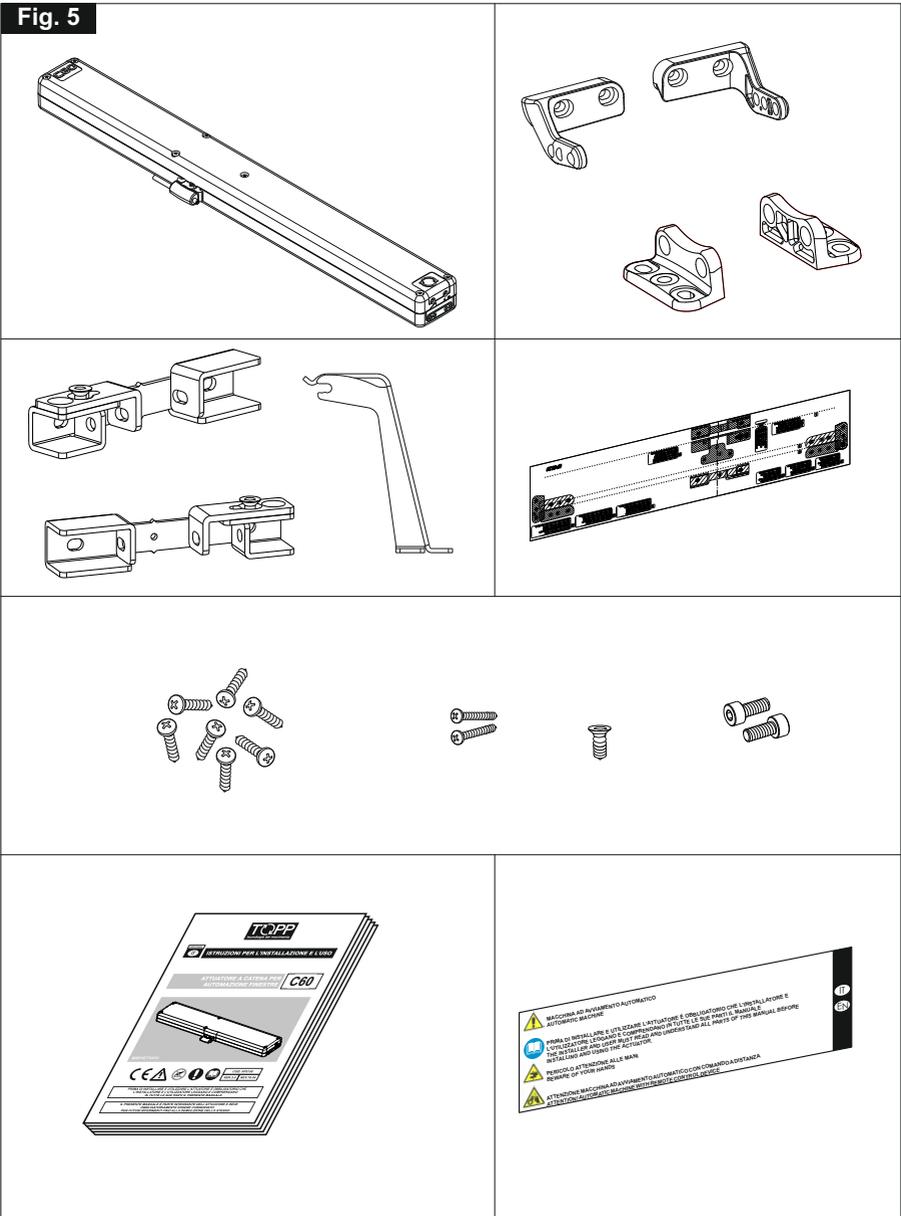
**MAKE SURE THAT THE ABOVE DESCRIBED COMPONENTS ARE CONTAINED IN THE PACKAGE, AS WELL AS THAT THE ACTUATOR HAS NOT BEEN DAMAGED DURING TRANSPORT.**



**SHOULD ANY ANOMALY BE DETECTED, IT IS FORBIDDEN TO INSTALL THE ACTUATOR, AND IT IS COMPULSORY TO REQUIRE TECHNICAL ASSISTANCE FROM YOUR DEALER OR THE MANUFACTURER.**



**THE PACKAGING (PAPER, PLASTIC, ETC.) HAS TO BE DISPOSED ACCORDING TO THE LAWS IN FORCE.**



## 4.1- GENERAL INSTRUCTIONS



**OPERATORS MUST BE INFORMED OF ACCIDENT RISKS, SAFETY DEVICES AND THE GENERAL ACCIDENT PREVENTION REGULATIONS ESTABLISHED BY INTERNATIONAL DIRECTIVES AND BY THE LAW IN FORCE IN THE COUNTRY OF USE. ALL OPERATORS MUST STRICTLY COMPLY WITH THE ACCIDENT PREVENTION REGULATIONS IN FORCE IN THE COUNTRY OF USE.**



**DO NOT REMOVE OR ALTER THE PLATES PLACED ON THE ACTUATOR BY THE MANUFACTURER.**



**IF THE WINDOW FRAME IS ACCESSIBLE FROM OR INSTALLED AT A HEIGHT OF LESS THAN 2.5 m FROM THE GROUND, AND IF IT CAN BE COMMANDED BY AN UNTRAINED USER OR WITH A REMOTE CONTROL DEVICE, FIT AN EMERGENCY STOP SYSTEM WHICH AUTOMATICALLY CUTS IN TO PREVENT THE RISK OF CRUSHING OR DRAGGING PARTS OF THE BODY INSERTED BETWEEN THE MOVING AND FIXED PARTS OF THE WINDOW FRAME.**



**ANY TAMPERING WITH OR UNAUTHORISED REPLACEMENT OF ONE OR MORE PARTS OR COMPONENTS OF THE ACTUATOR, OR THE USE OF UNORIGINAL ACCESSORIES AND CONSUMABLES, MAY INCREASE THE RISK OF ACCIDENT AND THUS RELIEVES THE MANUFACTURER OF ALL CIVIL AND PENAL LIABILITY.**



**EXTRAORDINARY AND ROUTINE MAINTENANCE OPERATIONS INVOLVING THE TOTAL OR PARTIAL DISMOUNTING OF THE ACTUATOR MAY ONLY BE PERFORMED AFTER DISCONNECTING IT FROM THE POWER SUPPLY.**



**THIS APPLIANCE MAY NOT BE USED BY PERSONS (CHILDREN INCLUDED) WITH REDUCED PHYSICAL, SENSORIAL OR MENTAL CAPACITIES, OR INEXPERT PEOPLE, UNLESS THEY ARE SUPERVISED AND TAUGHT HOW TO USE IT BY A PERSON RESPONSIBLE FOR THEIR SAFETY. CHILDREN MUST BE CONTROLLED TO MAKE SURE THEY DO NOT PLAY WITH THE APPLIANCE.**

## 4.2- SAFETY DEVICES

### 4.2.1- PROTECTION AGAINST ELECTRIC HAZARD

The actuator is protected against electric hazard due to direct and indirect contacts.

The protection measures against direct contacts aim at protecting people against hazards due to contact with active parts, usually live parts; while the protection measures against indirect contacts aim at protecting people against hazards due to conducting part, which are usually insulated, but could become live in case of failure (insulation failure).

The adopted protection measures are the following:

- 1) Insulation of live parts by means of a plastic material body;
- 2) Enclosure with suitable protection degree;

**3) Only for Mod. C60/230 V equipped with double insulation:** Protection of passive type given by the use of components with double insulation, also called components of class II or with equivalent insulation. (It is forbidden to connect the actuators equipped with double insulation to the earth plant.

#### 4.3- SAFETY PLATES



**IT IS FORBIDDEN TO REMOVE, MOVE, SPOIL OR IN ANYWAY REDUCE THE VISIBILITY OF THE SAFETY PLATES. FAILURE TO OBSERVE THE ABOVE MAY CAUSE SERIOUS HARM TO PEOPLE AND DAMAGE TO PROPERTY. THE MANUFACTURER DECLINES ALL LIABILITY FOR ANY DAMAGE CAUSED BY THE FAILURE TO OBSERVE THE ABOVE REQUIREMENT.**

**Fig. 6** illustrates the safety plate: this must be applied directly to the outside of the actuator or near it and always in a position where it can be seen by the installer and/or operator.

#### 4.4- RESIDUAL RISKS

The installer and the user are herewith informed that after the actuator has been installed on the window, the actuator drive can accidentally generate the following residual risk:

**Residual risk:** Hazard of squashing or dragging of body parts inserted between the movable and the fix part of the window frame.

**Exposure frequency:** Accidental and when the installer or the user decides to perform a wrong voluntary action.

**Severity of the damage:** Light lesions (usually reversible).

**Adopted measures:** Before enabling the device, it is compulsory to verify that near the window there are not persons, animals or things whose safety may be accidentally jeopardized. During actuator operation, it is compulsory to be in a safe control position assuring visual control on the window movement (**see par. 6.1**).

**Fig. 6**



MACCHINA AD AVVIAMENTO AUTOMATICO  
AUTOMATIC MACHINE



PRIMA DI INSTALLARE E UTILIZZARE L'ATTUATORE È OBBLIGATORIO CHE L'INSTALLATORE E L'UTILIZZATORE  
LEGGANO E COMPRENDANO IN TUTTE LE SUE PARTI IL MANUALE  
THE INSTALLER AND USER MUST READ AND UNDERSTAND ALL PARTS OF THIS MANUAL BEFORE INSTALLING  
AND USING THE ACTUATOR.



PERICOLO ATTENZIONE ALLE MANI  
BEWARE OF YOUR HANDS



ATTENZIONE MACCHINA AD AVVIAMENTO AUTOMATICO CON COMANDO A DISTANZA  
ATTENTION! AUTOMATIC MACHINE WITH REMOTE CONTROL DEVICE

IT

EN

## 5.1- GENERAL INSTRUCTIONS



THE ACTUATOR INSTALLATION CAN BE PERFORMED EXCLUSIVELY BY COMPETENT AND QUALIFIED TECHNICAL PERSONNEL SATISFYING THE PROFESSIONAL AND TECHNICAL REQUIREMENTS FORESEEN BY THE LAWS IN FORCE IN THE COUNTRY OF INSTALLATION.



THE ACTUATOR PERFORMANCE MUST BE SUFFICIENT TO ASSURE THE CORRECT MOVEMENT OF THE WINDOW. IT IS COMPULSORY TO VERIFY THE THRUST OR TRACTIVE FORCE ACCORDING TO THE TYPE AND WEIGHT OF THE WINDOW (PAR. 3.4). IT IS FORBIDDEN TO EXCEED THE LIMITS SET IN TAB. 1 CONCERNING TECHNICAL DATA (PAR. 3.3).



THE ACTUATOR INSTALLATION MUST BE PERFORMED EXCLUSIVELY WITH CLOSED WINDOW OR SKYLIGHT.



BEFORE PERFORMING THE INSTALLATION OF THE ACTUATOR ON BOTTOM HUNG WINDOWS, VERIFY THAT ON BOTH SIDES OF THE WINDOW TWO COMPASS STROKE LIMIT DEVICES ARE INSTALLED IN ORDER TO AVOID THE ACCIDENTAL FALL OF THE WINDOW.



FOR CORRECT OPERATION OF THE ACTUATOR, THE WINDOW FRAME MUST HAVE A MINIMUM HEIGHT VALUE INCLUDED IN THE RANGE STATED IN TABLE FIG. 7a FOR TOP HUNG ASSEMBLY, IN TABLE FIG. 7b FOR BOTTOM HUNG ASSEMBLY, AND IN TABLE FIG. 7c FOR THE DOME ASSEMBLY.



THE STROKE SELECTION HAS TO BE CARRIED OUT WITH SWITCHED OFF ACTUATOR ONLY BY COMPETENT AND QUALIFIED TECHNICAL PERSONNEL.



VERIFY THAT DISTANCE "D" BETWEEN THE ACTUATOR SHELL AND THE CHAIN END (FIG. 7a/7b/7c) IS GREATER THAN 5 mm.



IF THE WING AND THE FRAME ARE COPLANAR PROCEED WITH THE ASSEMBLY ACCORDING TO FIG. 7a.

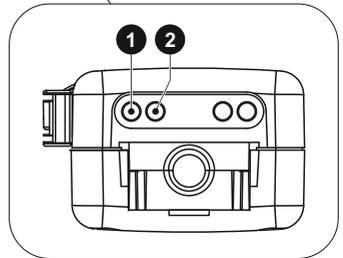
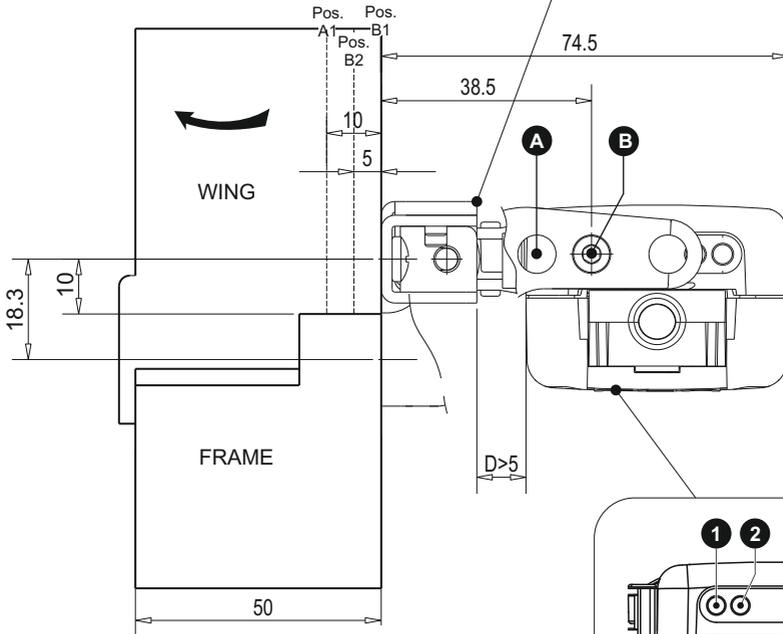
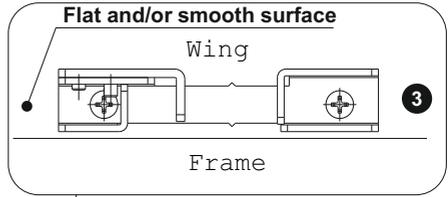


THE FITTING SURFACE FOR THE BRACKETS MUST BE PERFECTLY FLAT AND/OR SMOOTH.

**Fig. 7a** Dimensions in mm

**TOP HUNG OPENING**

POS.	ROTATION AXIS	POS. FROM THE WINDOW FRAME
<b>B</b>	<b>1</b>	COPLANAR
<b>B</b>	<b>2</b>	-5 mm
<b>A</b>	<b>1</b>	-10 mm



STROKE (mm)	MIN. WINDOW GAP (mm)
510	500
600	600



**REF.3 FOLLOW THE INDICATED DIRECTION OF INSTALLATION.**



**USE ONLY A SCREW IN POSITION "A" OR "B".**

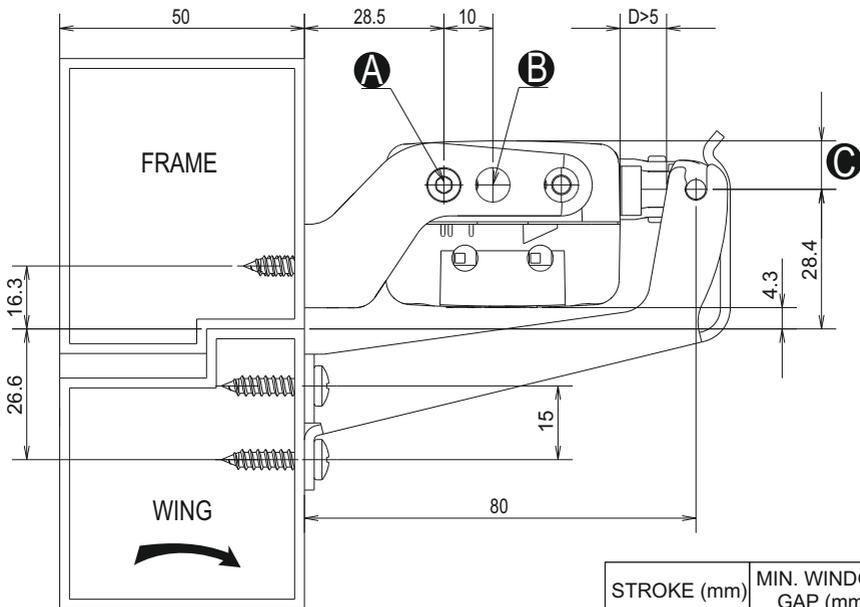
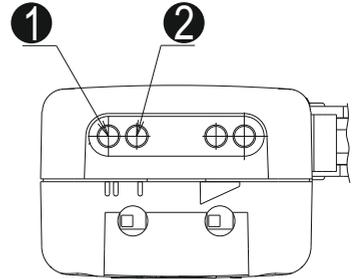


**IF THE WINDOW FRAME IS COPLANAR, REMOVE THE ACTUATOR FROM THE WINDOW FRAME USING THE APPLICATIONS OF THE ABOVE GIVEN TABLE.**

Fig. 7b Dimensions in mm

**BOTTOM HUNG OPENING**

SCREW POSITION	ROTATION AXIS	POSITION FROM THE WINDOW FRAME (mm)	MOTOR OVERALL DIMENSIONS (mm)
A	1	0 ÷ 5	15.5
B	2	> 5	17.5

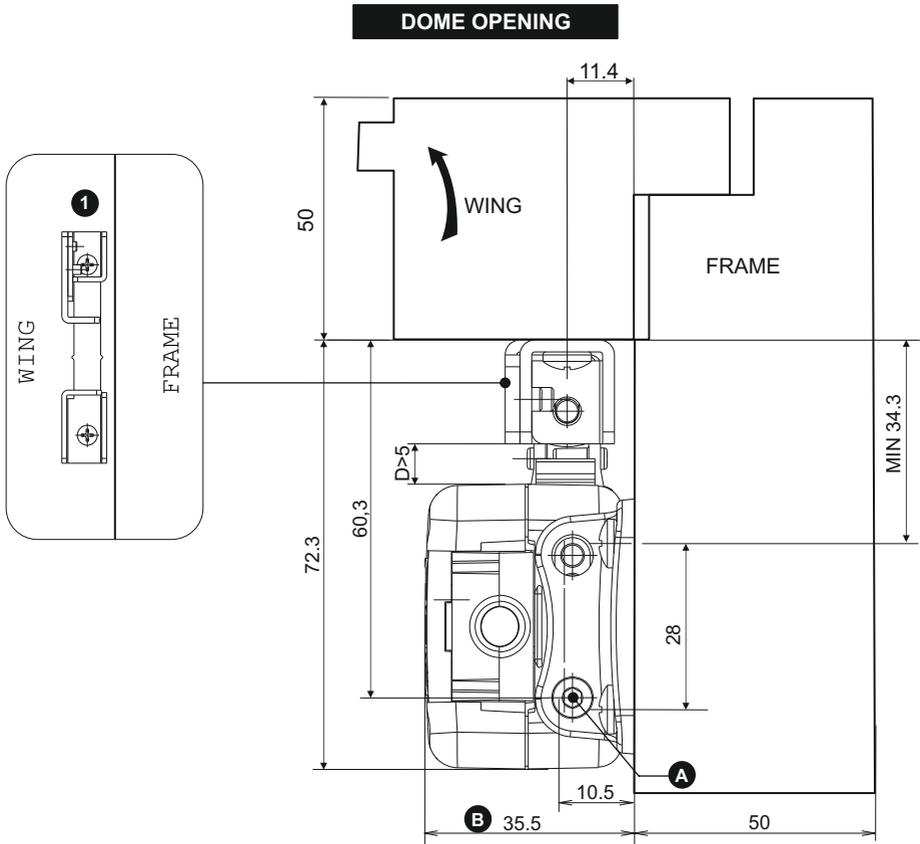


STROKE (mm)	MIN. WINDOW GAP (mm)
510	900
600	1000



**ATTENTION:** use only one screw in pos. A or B.

Fig. 7c Dimensions in mm



STROKE (mm)	MIN. WINDOW GAP (mm)	"B" MOTOR OVERALL DIMENSIONS (mm)
510	400	44
600	600	44



REF.1 FOLLOW THE INDICATED DIRECTION OF INSTALLATION.



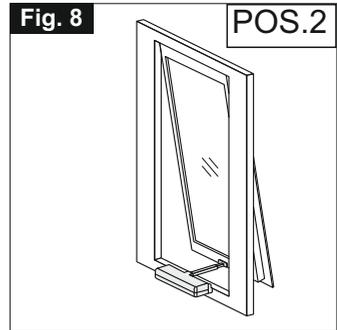
USE ONLY A SCREW IN POSITION "A".

## 5.2- TOP HUNG WINDOWS

Open the package (**par. 3.7**) and extract the various components;

**Fig. 14-** With a pencil draw the centre line "X" of the window frame;

**Fig. 15-** Apply the template (**POS.2**) on the window frame aligning it with the previously drawn centre line "X";



**CAUTION: FOR NON-COPLANAR WINDOW FRAMES, IT IS NECESSARY TO CUT THE TEMPLATE CONCERNED PART AND TO APPLY IT ON THE WINDOW FRAME PAYING ATTENTION TO KEEP IT IN THE SAME REFERENCE POSITION.**

**Fig. 16-** With a suitable drill, create on the window frame holes having the related diameter, given on the template;

**Fig. 17-18-19-** Use the provided bolts to secure the brackets to the window (RH / LH) and the frame mount;

**Fig. 20-21-** After having connected the electric connector in the actuator, perform the electric connections according to the provisions of **par. 5.5**, as well as with reference to the wiring diagram. Let the chain come out for at least 15 cm of stroke, then disconnect the connector;

**Fig. 22-** Secure the chain terminal to the frame mount; first fit the long side of the shaft and then insert the entire assembly. ;

**Fig. 23-** Move the square plate to the centre of the mount and hand tighten bolt **A**. Now insert bolt **B** (included) into the frame mount and tighten both bolts down fully with a 2.5mm hex wrench (**torque to 2,3 Nm**). Insert the electric connector and let the chain come in, than disconnect the connector.

**Fig. 24 -** Fasten the actuator to the brackets for connection to the window frame using the suitable screws;



**VERIFY IN Fig. 7a THE CORRECT FASTENING POSITIONING OF THE ACTUATOR.**



**VERIFY THAT AFTER THE TIGHTENING THE CONNECTION BRACKETS TO THE WINDOW FRAME ADHERE TO THE ACTUATOR IN ORDER TO ASSURE A CORRECT APPLICATION.**

**Fig. 24-** Select the wished stroke ( $l = 510 \text{ mm}$  -  $ll = 600 \text{ mm}$ ) using the switch (**Ref. 1**) located on one side of the actuator. The actuator is supplied with the stroke set on 510 mm. Insert the electric connector.



**TO CHANGE THE PRE-SET STROKE, USE A SCREWDRIVER (FIG. 24) WITH SUITABLE TIP. MAKE SURE TO INSERT THE TIP UP TO THE MICROSWITCH BASE AND TO SHIFT IT COMPLETELY. AN INCORRECT IN-BETWEEN POSITION STALLS THE ACTUATOR.**



THE STROKE SELECTION HAS TO BE CARRIED OUT WITH SWITCHED OFF ACTUATOR ONLY BY COMPETENT AND QUALIFIED TECHNICAL PERSONNEL.



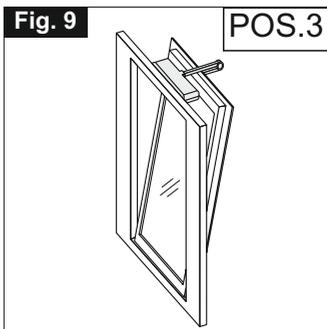
FOR A CORRECT ADJUSTMENT OF THE WINDOW FRAME CLOSING SEE THE INDICATIONS GIVEN IN PAR. 5.7.

### 5.3- BOTTOM HUNG WINDOWS

Open the package (**par. 3.7**) and extract the various components;

**Fig. 25-** With a pencil draw the centre line “Y” of the window frame;

**Fig. 26-** Apply the template (**Pos. 3**) on the window frame aligning it with the previously drawn centre line “Y”;



**CAUTION: FOR NON-COPLANAR WINDOW FRAMES, IT IS NECESSARY TO CUT THE TEMPLATE CONCERNED PART AND TO APPLY IT ON THE WINDOW FRAME PAYING ATTENTION TO KEEP IT IN THE SAME REFERENCE POSITION.**

**Fig. 27-** With a suitable drill, create on the window frame holes having the related diameter, given on the template;

**Fig. 28-29-30-** With the suitable screws tighten the brackets for window frame connection (right - left) and the bottom hung opening bracket;

**Fig. 31-32-** After having connected the electric connector in the actuator, perform the electric connections according to the provisions of **par. 5.5**, as well as with reference to the wiring diagram. Let the chain come out for at least 5 cm of stroke, then disconnect the connector;

**Fig. 33-** Connect the chain end to the bottom hung bracket, insert the electric connector and let the chain come in, than disconnect the connector;

**Fig. 34-** Fasten the actuator to the brackets for connection to the window frame using the suitable screws;



**VERIFY IN Fig. 7b THE CORRECT FASTENING POSITIONING OF THE ACTUATOR.**



**VERIFY THAT AFTER THE TIGHTENING THE CONNECTION BRACKETS TO THE WINDOW FRAME ADHERE TO THE ACTUATOR IN ORDER TO ASSURE A CORRECT APPLICATION.**

**Fig. 34-** Select the wished stroke ( $I = 510 \text{ mm}$  -  $II = 600 \text{ mm}$ ) using the switch (**Ref. 1**) located on one side of the actuator. The actuator is supplied with a stroke set on 510 mm; insert the electric connector.



TO CHANGE THE PRE-SET STROKE, USE A SCREWDRIVER (FIG. 34) WITH SUITABLE TIP. MAKE SURE TO INSERT THE TIP UP TO THE MICROSWITCH BASE AND TO SHIFT IT COMPLETELY. AN INCORRECT IN-BETWEEN POSITION STALLS THE ACTUATOR.



THE STROKE SELECTION HAS TO BE CARRIED OUT WITH SWITCHED OFF ACTUATOR ONLY BY COMPETENT AND QUALIFIED TECHNICAL PERSONNEL.



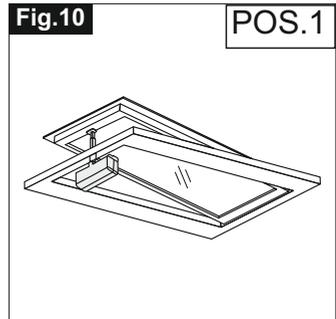
FOR A CORRECT ADJUSTMENT OF THE WINDOW FRAME CLOSING SEE THE INDICATIONS GIVEN IN PAR. 5.7.

## 5.4- DOME WINDOWS

Open the package (par. 3.7) and extract the various components;

**Fig. 35-** With a pencil draw the centre line "Z" of the window frame;

**Fig. 35-** Apply the template (position 1) to the window, making sure it is aligned with the centre line Z (traced in the previous step), and fold it onto the panel (see detail);



**CAUTION: FOR NON-COPLANAR WINDOW FRAMES, IT IS NECESSARY TO CUT THE TEMPLATE CONCERNED PART AND TO APPLY IT ON THE WINDOW FRAME PAYING ATTENTION TO KEEP IT IN THE SAME REFERENCE POSITION.**

**Fig. 36-** With a suitable drill, create on the window frame holes having the related diameter, given on the template;

**Fig. 37-38-39-** Use the provided bolts to secure the brackets to the window (RH / LH) and the frame mount;

**Fig. 40-41-** After having connected the electric connector in the actuator, perform the electric connections according to the provisions of par. 5.5, as well as with reference to the wiring diagram. Let the chain come out for at least 15 cm of stroke, then disconnect the connector;

**Fig. 42-** Secure the chain terminal to the frame mount; first fit the long side of the shaft and then insert the entire assembly.

**Fig. 43-** Move the square plate to the centre of the mount and hand tighten bolt A. Now insert bolt B (included) into the frame mount and tighten both bolts down fully with a 2.5mm hex wrench (**torque to 2.3 Nm**). Insert the electric connector and let the chain come in, disconnect the connector;

**Fig. 44-** Fasten the actuator to the brackets for connection to the window frame using the suitable screws;



**VERIFY IN Fig. 7c THE CORRECT FASTENING POSITIONING OF THE ACTUATOR.**



**VERIFY THAT AFTER THE TIGHTENING THE CONNECTION BRACKETS TO THE WINDOW FRAME ADHERE TO THE ACTUATOR IN ORDER TO ASSURE A CORRECT APPLICATION.**

**Fig. 44-** Select the wished stroke (I=510 mm - II=600 mm) using the switch (**Ref. 1**) located on one side of the actuator. The actuator is supplied with a stroke set on 510 mm. Insert the electric connector.



**TO CHANGE THE PRE-SET STROKE, USE A SCREWDRIVER (FIG. 44) WITH SUITABLE TIP. MAKE SURE TO INSERT THE TIP UP TO THE MICROSWITCH BASE AND TO SHIFT IT COMPLETELY. AN INCORRECT IN-BETWEEN POSITION STALLS THE ACTUATOR.**



**THE STROKE SELECTION HAS TO BE CARRIED OUT WITH SWITCHED OFF ACTUATOR ONLY BY COMPETENT AND QUALIFIED TECHNICAL PERSONNEL.**



**FOR A CORRECT ADJUSTMENT OF THE WINDOW FRAME CLOSING SEE THE INDICATIONS GIVEN IN PAR. 5.7.**

### 5.5- ELECTRIC CONNECTIONS (Wiring diagram)



THE CONNECTION OF MODEL C60/24V HAS TO BE CARRIED OUT WITH VERY LOW VOLTAGE SAFETY FEEDER PROTECTED AGAINST SHORT CIRCUIT.



THE ELECTRIC CONNECTION OF THE ACTUATOR CAN BE PERFORMED ONLY BY COMPETENT AND QUALIFIED TECHNICAL PERSONNEL FORESEEN BY THE LAW IN FORCE IN THE COUNTRY OF INSTALLATION WHO CAN ISSUE TO THE CUSTOMER A DECLARATION OF CONFORMITY FOR THE CONNECTION AND/OR PLANT CARRIED OUT.



BEFORE PERFORMING THE ELECTRIC CONNECTION OF THE ACTUATOR, VERIFY THE CORRECT INSTALLATION ON THE WINDOW.



THE MAINS TO WHICH THE ACTUATOR IS CONNECTED MUST COMPLY WITH THE REQUIREMENTS OF THE LAWS IN FORCE IN THE COUNTRY OF INSTALLATION, AS WELL AS SATISFY THE TECHNICAL FEATURES GIVEN IN TAB. 1 AND ON THE RATING PLATE AND THE "CE" MARKING (PAR. 3.1), AS WELL AS BE EQUIPPED WITH A SUITABLE "EARTHING PLANT".



THE SECTION OF THE MAINS CABLES MUST BE PROPERLY SIZED ACCORDING TO THE ABSORBED ELECTRIC POWER (SEE RATING PLATE AND "CE" MARKING).



ANY TYPE OF ELECTRIC MATERIAL (PLUG, CABLE, TERMINALS, ETC.) USED FOR THE CONNECTION MUST BE SUITABLE FOR THE USE, WITH "CE" MARKING, AND COMPLYING WITH THE REQUIREMENTS FORESEEN BY THE LAWS IN FORCE IN THE COUNTRY OF INSTALLATION.



TO ASSURE AN EFFICIENT SEPARATION FROM THE MAINS, IT IS COMPULSORY TO INSTALL UPSTREAM OF THE DEVICE A TEMPORARY BIPOLAR SWITCH (PUSH-BUTTON) OF APPROVED TYPE. UPSTREAM OF THE COMMAND LINE, IT IS COMPULSORY TO INSTALL AN UNIPOLAR MAIN SWITCH WITH OPENING OF CONTACTS OF AT LEAST 3 mm.



BEFORE MAKING ANY ELECTRICAL CONNECTIONS ON THE ACTUATOR, MAKE SURE THE POWER SUPPLY CABLE IS NOT DAMAGED. IF THE CABLE IS DAMAGED, THEN IT MUST BE REPLACED BY THE MANUFACTURER THROUGH THE TECHNICAL ASSISTANCE SERVICE OR BY TECHNICAL OPERATORS.

### 5.6- COMMAND DEVICES



THE CONTROL DEVICES USED TO DRIVE THE ACTUATOR MUST ASSURE THE SAFETY CONDITIONS FORESEEN BY THE LAWS IN FORCE IN THE COUNTRY OF USE.

According to the different type of installations, the actuators can be driven by the following control devices:

#### 1) MANUAL PUSH-BUTTON:

Bipolar switch button with central OFF position, with biased-off switch;

## 2) CONTROL AND FEEDING UNIT:

Microprocessor control units (e.g.: Mod. TF, etc.) controlling the single actuator or more than one actuator simultaneously by means of one or more manual push-buttons, an infrared remote control or a 433 Mhz radio control.

To these control units, it is possible to connect rain sensors (**RDC - 12V**), wind sensor (**RW**) and brightness sensor.



**TO ASSURE A CORRECT OPERATION OF THE ACTUATOR, THE COMMAND AND FEEDING UNITS EVENTUALLY USED HAVE TO PROVIDE POWER SUPPLY TO THE ACTUATOR FOR MAX. 120 sec.**



**BEFORE OPERATING THE ACTUATOR, THE USER MUST COMPULSORILY VERIFY THAT NEAR AND/OR UNDER THE WINDOW THERE ARE NOT ANY PERSON, ANIMAL AND THING WHOSE SAFETY MAY BE ACCIDENTALLY JEOPARDISED (SEE PAR. 4.4).**

## 5.7- CORRECT ASSEMBLY OF THE ACTUATOR ON THE WINDOW FRAME



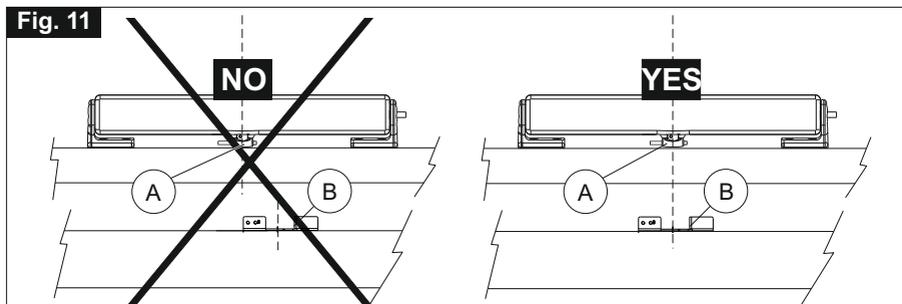
**THE CORRECT ADJUSTMENT OF THE WINDOW FRAME CLOSING ASSURES THE LIFE AND THE TIGHTNESS OF THE SEALS, AS WELL AS THE GOOD OPERATION OF THE ACTUATOR.**

- 1) With open window frame, verify that the selected stroke is some centimetre lower than the stroke limited by window frame mechanical limit devices;



**VERIFY THAT THE CHAIN END IS ON THE SAME AXIS OF THE QUICK COUPLING. OTHERWISE, LOOSEN THE TIGHTENING SCREWS AND POSITION CORRECTLY. WHEN THE DEVICES ARE NOT COAXIAL, DAMAGES TO THE ACTUATOR AND THE WINDOW FRAME MAY ARISE (FIG. 11).**

- 2) Verify that the two support brackets of the actuator are aligned to each other and the four tightening screws are well tightened. Between the two brackets and the actuator there must not be any clearance.



### 5.8- EMERGENCY PROCEDURES

Should it be necessary to close the window manually, due to power supply failure or mechanism block, follow these instructions:



**BEFORE PERFORMING ANY TYPE OF TRIPPING ON THE ACTUATOR AND ON THE WINDOW, IT IS COMPULSORY TO DISCONNECT THE POWER SUPPLY OF THE ACTUATOR AND TO PUT ON "0" THE EVENTUAL SWITCHES OF THE CONTROL DEVICES.**



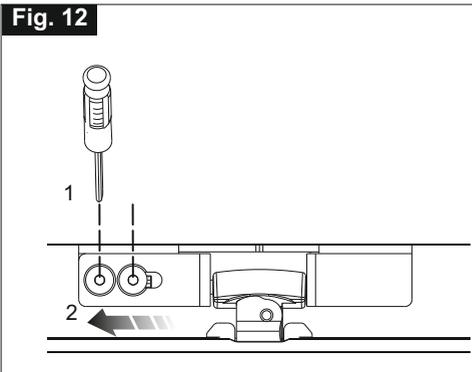
**IT IS COMPULSORY TO PADLOCK THE MAIN SWITCH OF THE DISCONNECTION DEVICE INSTALLED ON THE MAINS IN ORDER TO AVOID ANY UNEXPECTED START. IF THE MAIN SWITCH CANNOT BE PADLOCKED, IT IS COMPULSORY TO PLACE A SIGN FORBIDDING THE ENABLING.**

- **Top hung/dome opening: Fig. 12-** Slacken off both frame mount bolts with a 2.5mm hex wrench, move the square plate aside and extract the actuator (pull out the longer shaft side first).
- **Bottom hung opening: Fig. 13-** Insert a screwdriver between the bottom hung opening bracket and the chain end, then lever until the chain end is released from the above mentioned bracket.

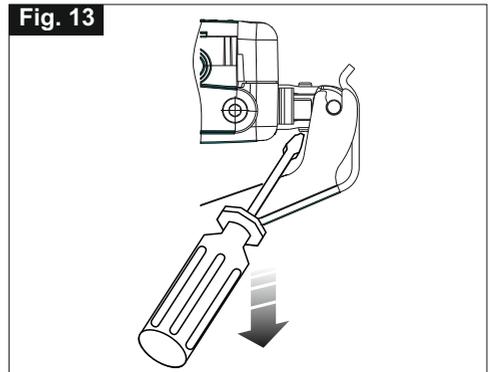


**SHOULD IT BE IMPOSSIBLE TO CARRY OUT THE ABOVE MENTIONED MANOEUVRES, EXTRACT THE ACTUATOR FROM THE BRACKETS PROVIDING CONNECTION TO THE FRAME BY UNSCREWING THE PROPER SCREWS.**

**Fig. 12**



**Fig. 13**



## 6.1- USE OF THE ACTUATOR



THE ACTUATOR CAN BE USED EXCLUSIVELY BY AN USER ACTING IN COMPLIANCE WITH THE INSTRUCTIONS CONTAINED IN THIS MANUAL AND/OR IN THE MANUAL OF THE ACTUATOR CONTROL DEVICE (e.g.: WIND AND RAIN CONTROL UNIT).



BEFORE USING THE ACTUATOR, IT IS COMPULSORY FOR THE USER TO READ AND UNDERSTAND IN ALL ITS PARTS THIS MANUAL, AS WELL AS THE EVENTUAL MANUAL OF THE INSTALLED CONTROL DEVICE TYPE.



BEFORE OPERATING THE ACTUATOR, THE USER MUST COMPULSORILY VERIFY THAT NEAR AND/OR UNDER THE WINDOW THERE ARE NOT ANY PERSON, ANIMAL AND THING WHOSE SAFETY MAY BE ACCIDENTALLY JEOPARDISED (SEE PAR. 4.4).



DURING THE OPERATION OF THE ACTUATOR CONTROL DEVICE, THE USER HAS TO COMPULSORILY OCCUPY A SAFE CONTROL POSITION ASSURING VISUAL CONTROL ON THE WINDOW MOVEMENT.



IT IS COMPULSORY TO VERIFY CONSTANTLY IN TIME THE FUNCTIONAL EFFICIENCY AND THE RATED PERFORMANCE OF THE ACTUATOR, OF THE WINDOW FRAME WHERE IT IS INSTALLED AND OF THE ELECTRIC PLANT, PERFORMING WHEN NECESSARY INTERVENTIONS OF ROUTINE OR SUPPLEMENTARY MAINTENANCE ASSURING OPERATION CONDITIONS COMPLYING WITH SAFETY REGULATIONS.



ALL ABOVE MENTIONED MAINTENANCE INTERVENTIONS CAN BE PERFORMED ONLY BY COMPETENT AND QUALIFIED TECHNICAL PERSONNEL MEETING THE PROFESSIONAL AND TECHNICAL REQUIREMENTS FORESEEN BY THE LAW IN FORCE IN THE COUNTRY OF INSTALLATION.



IN ORDER FOR THE AUTOMATION UNIT TO OPERATE CORRECTLY, WE RECOMMEND CARRYING OUT PERIODICAL MAINTENANCE ON IT, AS INDICATED IN PAR. 7.1 OF THIS MANUAL.



TOPP INFORMS THE USER THAT, IN ACCORDANCE WITH ART. 8 OF MINISTERIAL DECREE NO. 38 OF 22.1.2008, THE OWNER OF THE SYSTEM IS RESPONSIBLE FOR ADOPTING ALL NECESSARY MEASURES TO MAINTAIN THE SAFETY FEATURES SET OUT IN APPLICABLE LEGISLATION, OBSERVING THE INSTRUCTIONS FOR MAINTENANCE AND USE PROVIDED BY THE MANUFACTURER OF THE DEVICE AND BY THE COMPANY THAT CARRIED OUT THE INSTALLATION.

The use of the actuator allows to control automatically the opening and closing of the window according to the type of control device installed (see par. 5.6).

**7.1- GENERAL INSTRUCTIONS**

**IF THE ACTUATOR WORKS INCORRECTLY, CONTACT THE MANUFACTURER.**



**ANY WORK ON THE ACTUATOR (E.G.: POWER CABLE, ETC.) OR ITS COMPONENTS MAY ONLY BE CARRIED OUT BY PERSONNEL QUALIFIED BY THE MANUFACTURER. TOPP DECLINES ALL LIABILITY FOR WORK PERFORMED BY UNAUTHORISED PEOPLE.**



**EXTRAORDINARY AND ROUTINE MAINTENANCE OPERATIONS INVOLVING THE TOTAL OR PARTIAL DISMOUNTING OF THE ACTUATOR MAY ONLY BE PERFORMED AFTER DISCONNECTING IT FROM THE POWER SUPPLY.**

The actuator incorporates components that do not require significant routine or extraordinary maintenance operations.

The recommended maintenance activities should in any case involve the periodical execution (every 6 months) of at least the following operations: that the actuator assembly components are clean, the fixing systems (brackets and screws) are tight, the window frame is not deformed and the seals are tight, and check the cables and connectors.

This maintenance activity may be carried out either by TOPP, in accordance with a specific agreement made with the user, or by the installation technician or by other competent and qualified technical personnel in possession of all legal requirements.

**8- DEMOLITION****C60****8.1- GENERAL INSTRUCTIONS**

**THE DEMOLITION OF THE ACTUATOR MUST OCCUR IN COMPLIANCE WITH THE LAWS IN FORCE ON ENVIRONMENT PROTECTION.**



**DIFFERENTIATE THE PARTS MAKING UP THE ACTUATOR ACCORDING TO THEIR DIFFERENT MATERIAL TYPE (PLASTIC, ALUMINIUM, ETC.).**

## 9.1- GENERAL INSTRUCTIONS



THE USE OF “NON-ORIGINAL” SPARE PARTS AND ACCESSORIES WHICH MAY ENDANGER THE SAFETY AND THE EFFICIENCY OF THE ACTUATOR IS FORBIDDEN.



ORIGINAL SPARE PARTS AND ACCESSORIES HAVE TO BE REQUESTED EXCLUSIVELY TO YOUR DEALER OR TO THE MANUFACTURER STATING TYPE, MODEL, SERIAL NUMBER, AND YEAR OF CONSTRUCTION OF THE ACTUATOR.



IN CASE OF REPLACEMENT OF THE POWER SUPPLY CABLE, IT IS NECESSARY TO USE A CABLE TYPE HOS-VVF 3 x 0.75.



THE REPLACEMENT CAN BE PERFORMED EXCLUSIVELY BY COMPETENT AND QUALIFIED TECHNICAL PERSONNEL MEETING THE PROFESSIONAL AND TECHNICAL REQUIREMENTS FORESEEN BY THE LAWS IN FORCE IN THE COUNTRY OF INSTALLATION.

Fig. 14

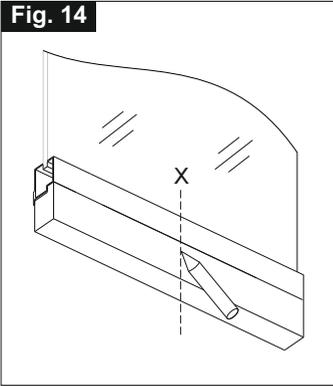


Fig. 15

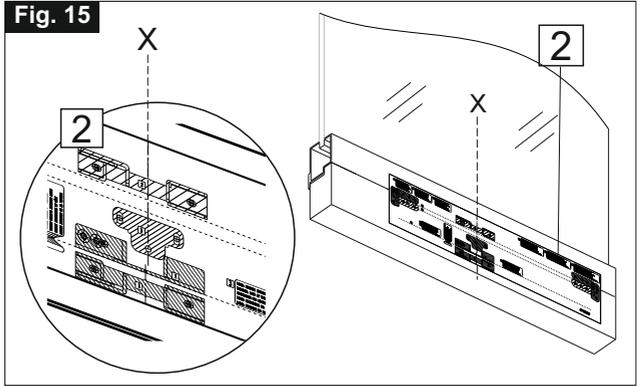


Fig. 16

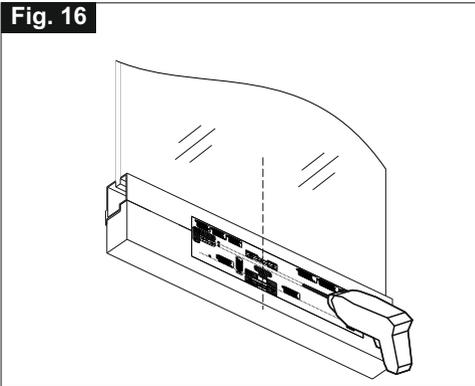


Fig. 17

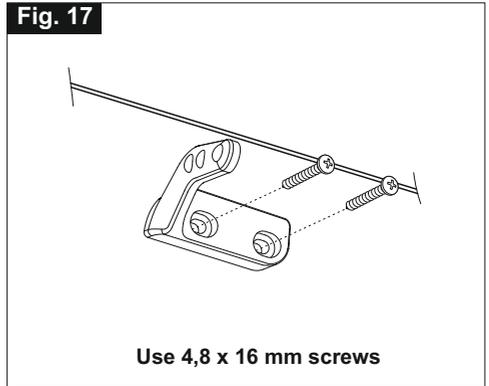


Fig. 18

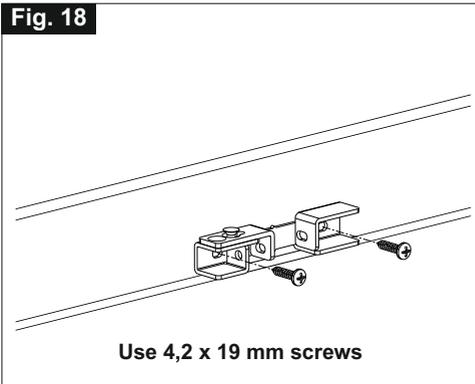


Fig. 19

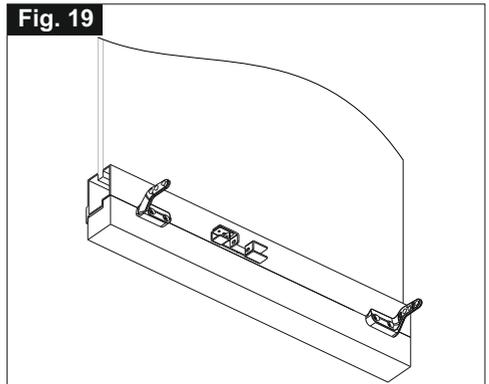


Fig. 20

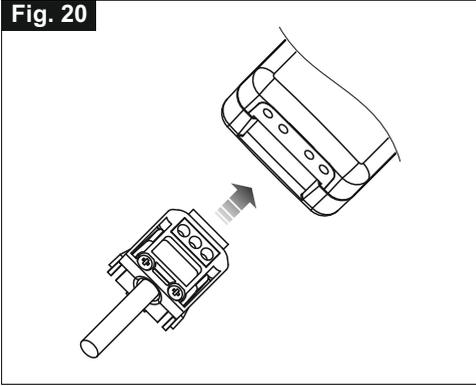


Fig. 21

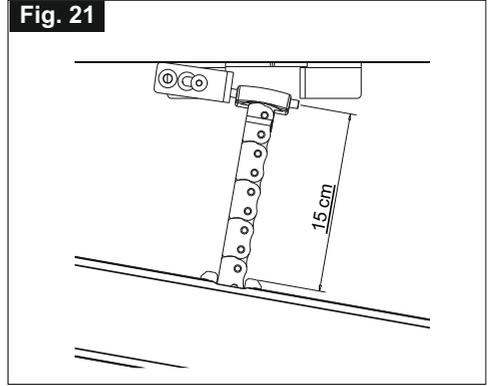


Fig. 22

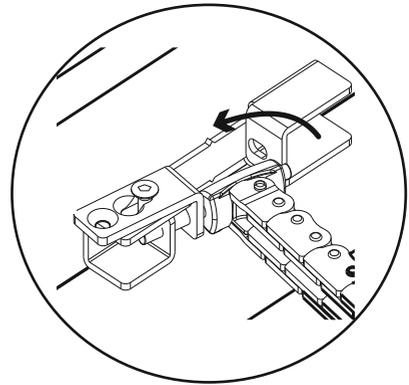
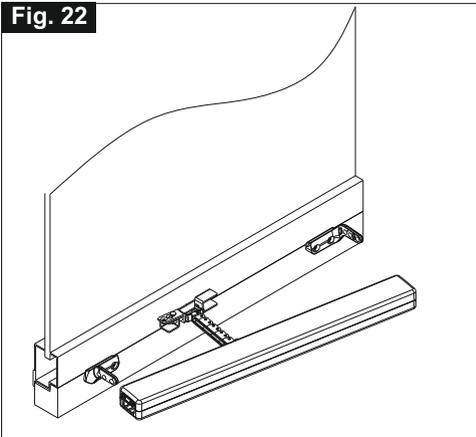


Fig. 23

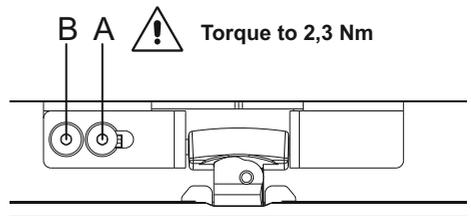
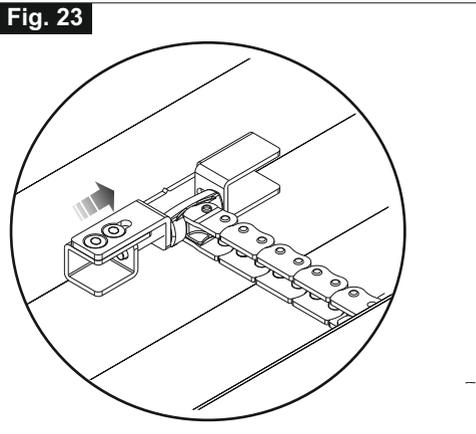


Fig. 24

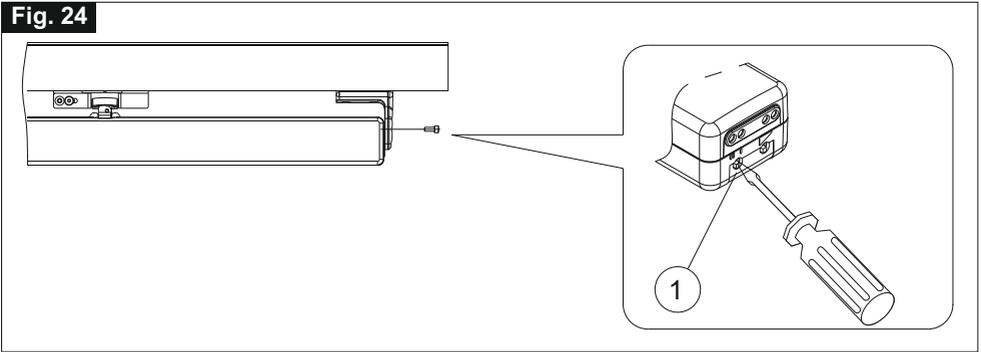


Fig. 25

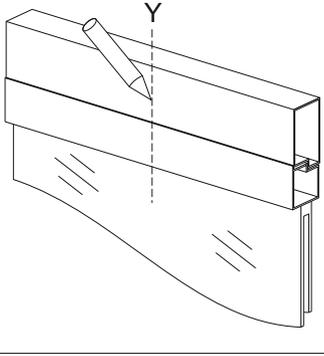


Fig. 26

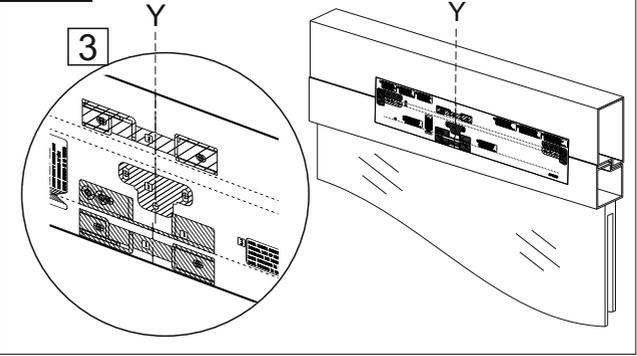


Fig. 27

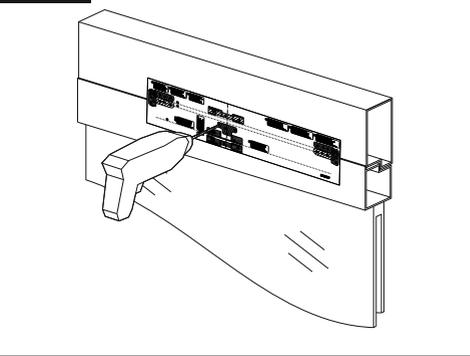


Fig. 28

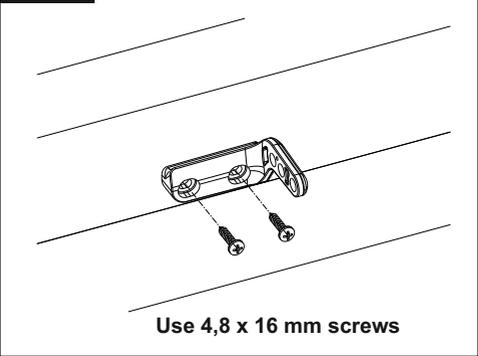


Fig. 29

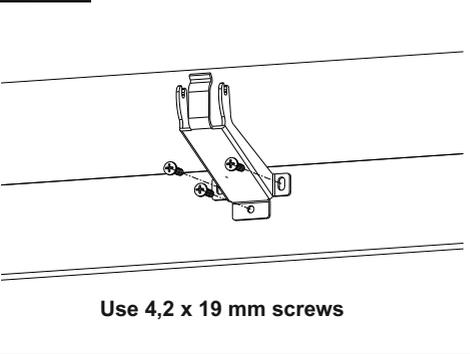


Fig. 30

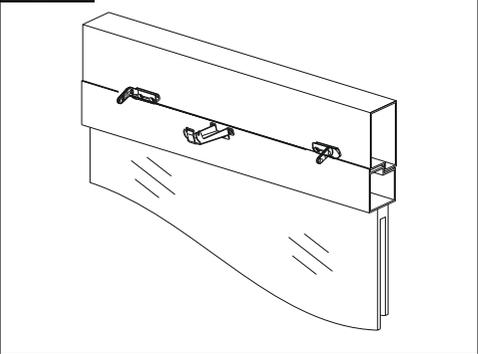


Fig. 31

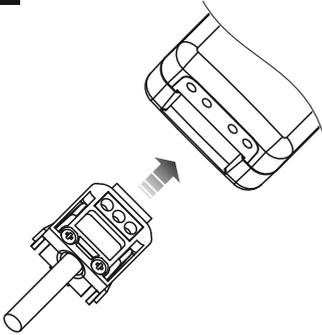


Fig. 32

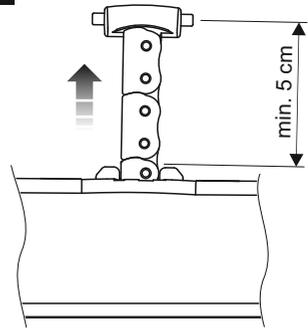


Fig. 33

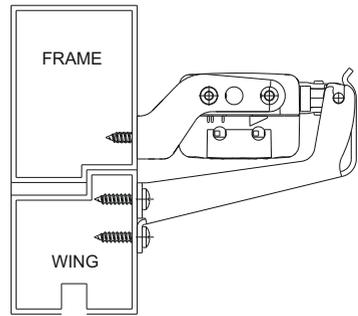
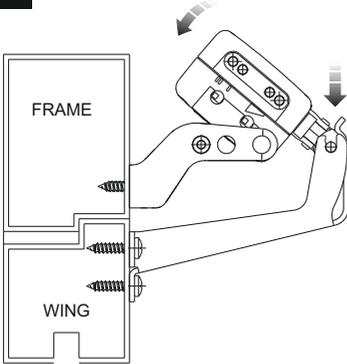


Fig. 34

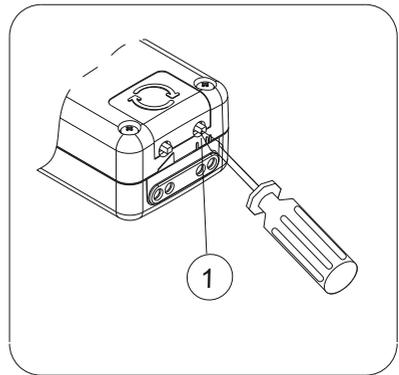
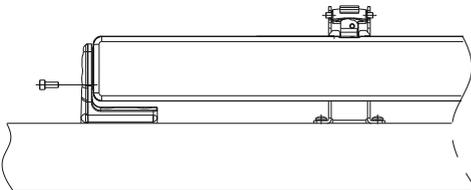


Fig. 35

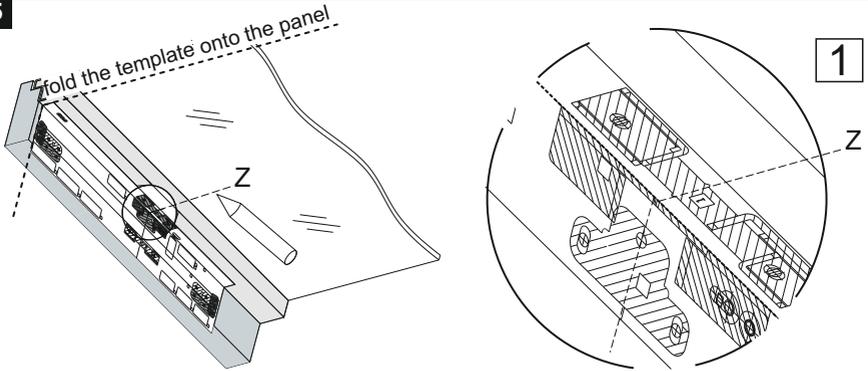


Fig. 36

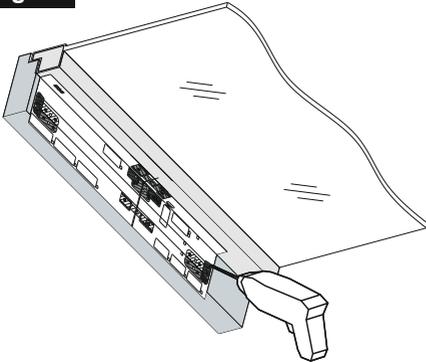
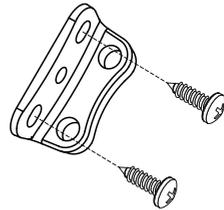
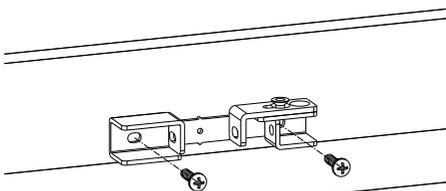


Fig. 37



Use 4,8 x 16 mm screws

Fig. 38



Use 4,2 x 19 mm screws

Fig. 39

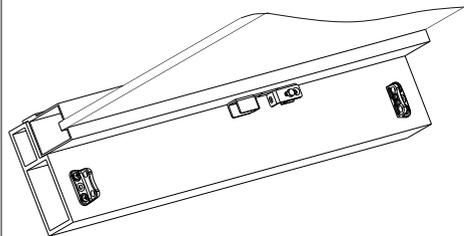


Fig. 40

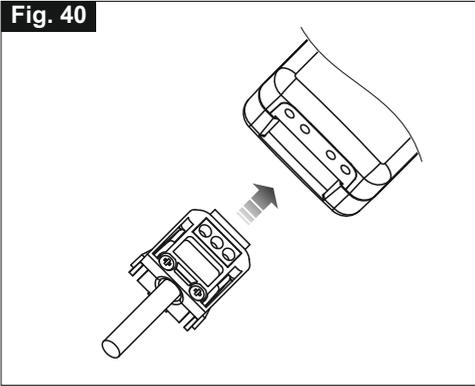


Fig. 41

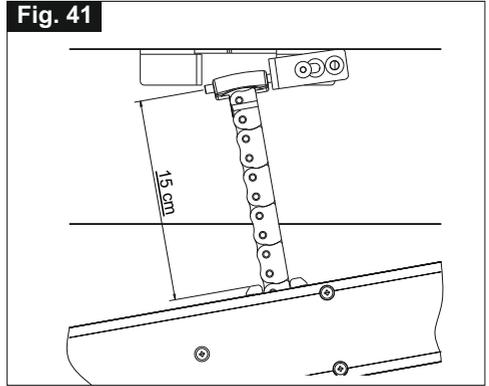


Fig. 42

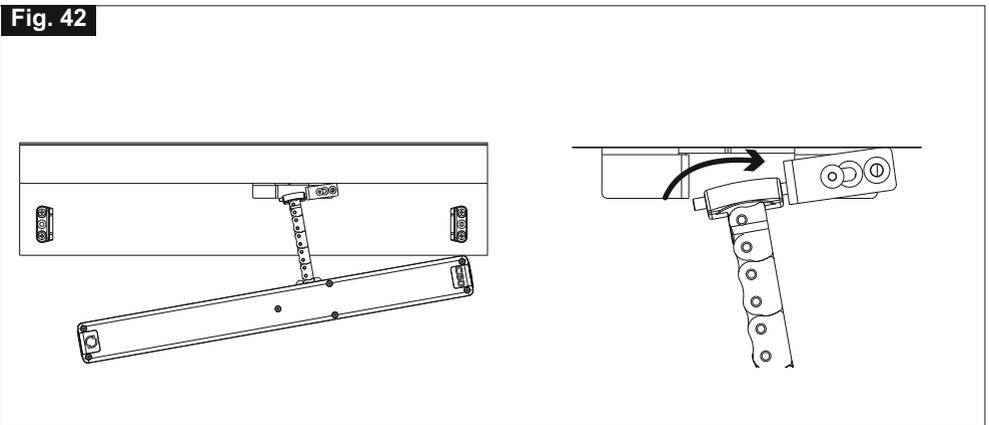
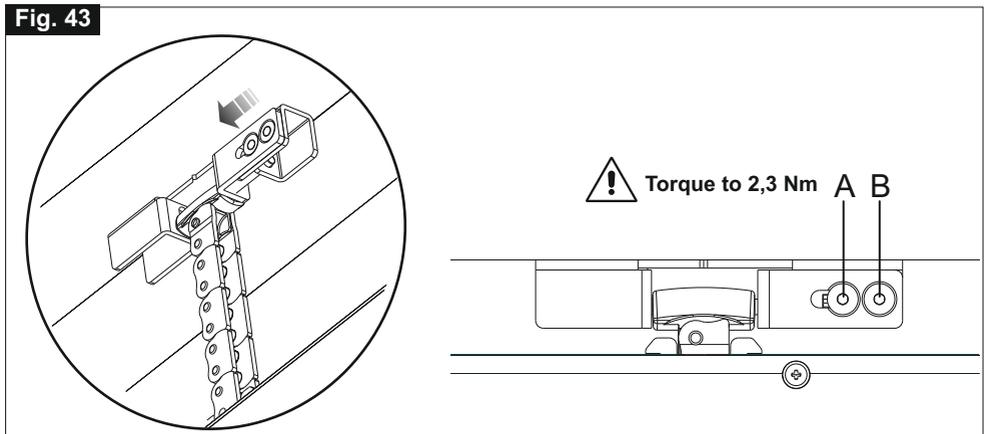
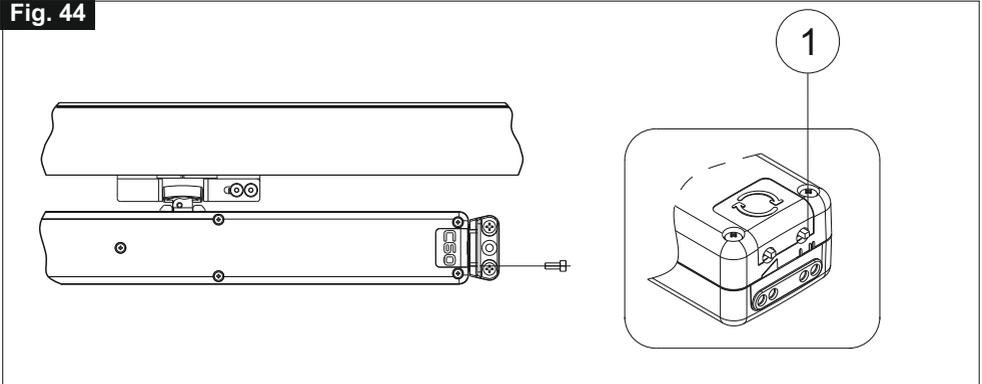


Fig. 43

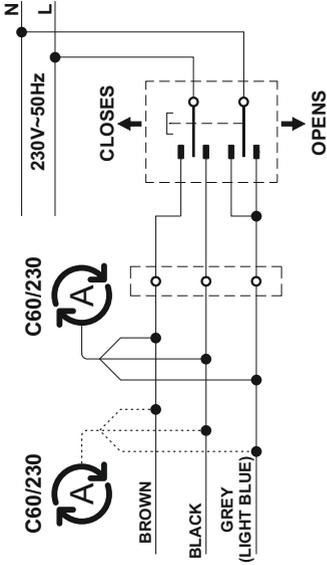


**Fig. 44**

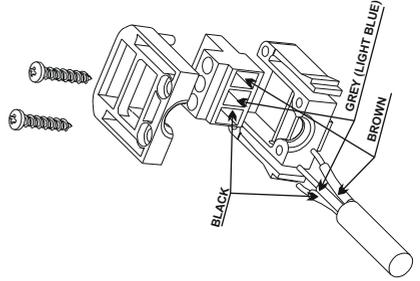


**Wiring diagram**

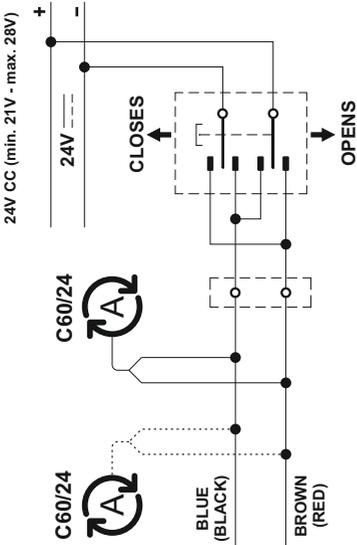
**230 V**



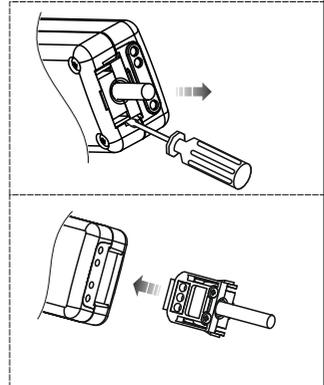
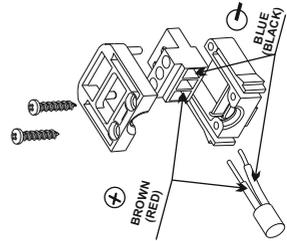
THIS SYMBOL IDENTIFIES THE TOPP ELECTRICAL ACTUATOR IN WIRING DIAGRAM



**24 V**



THIS SYMBOL IDENTIFIES THE TOPP ELECTRICAL ACTUATOR IN WIRING DIAGRAM







TOPP S.r.l.

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