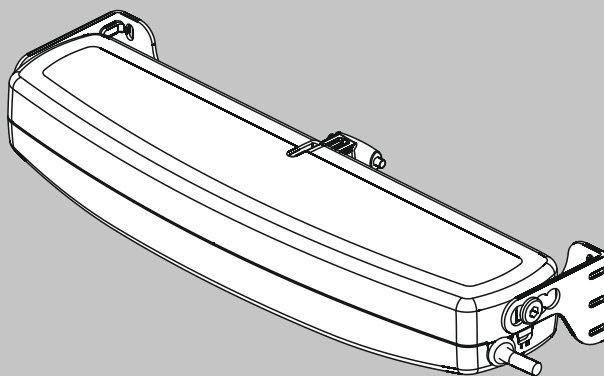


**CHAIN ACTUATOR FOR  
WINDOW AUTOMATION**

**C30**



PATENTED

*original instructions*



P/N 0P5201

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.**



<b>1- EC DECLARATION OF INCORPORATION OF PARTLY COMPLETED MACHINERY</b>	page 04
<b>2- GENERAL REMARKS</b>	
2.1- General instructions.....	page 05
2.2- Installer and user.....	page 05
2.3- Technical assistance.....	page 05
2.4- Reserved rights.....	page 06
2.5- Description of personnel.....	page 06
<b>3- TECHNICAL DESCRIPTION</b>	
3.1- Rating plate and "CE" marking.....	page 07
3.2- Denomination of the components and dimensions.....	page 08
3.3- Technical data.....	page 09
3.4- Formulas for the calculation of thrust force or tractive force.....	page 10
3.5- Destination of use.....	page 10
3.6- Use Limits.....	page 11
3.7- Package.....	page 11
<b>4- SAFETY</b>	
4.1- General instructions.....	page 13
4.2- Safety Devices.....	page 13
4.2.1- Protections against electric hazard.....	page 13
4.3- Safety plates.....	page 14
4.4- Residual risks.....	page 14
<b>5- INSTALLATION</b>	
5.1- General instructions.....	page 15
5.2- Top hung windows.....	page 18
5.3- Bottom hung windows.....	page 19
5.4- Electrical Connections.....	page 20
5.5- Control devices.....	page 21
5.6- Adjustment of the window frame closing.....	page 22
5.7- Emergency procedures.....	page 23
<b>6- USE AND OPERATION</b>	
6.1- Use of the actuator.....	page 24
<b>7- MAINTENANCE</b>	
7.1- General instructions.....	page 25
<b>8- DEMOLITION</b>	
8.1- General instructions.....	page 26
<b>9- SPARE PARTS AND ACCESSORIES UPON REQUEST</b>	
9.1- General instructions.....	page 26
<b>FIGURES</b>	
.....	page 28

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: C30  
 Model(s): C30/230V - C30/24V  
 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.

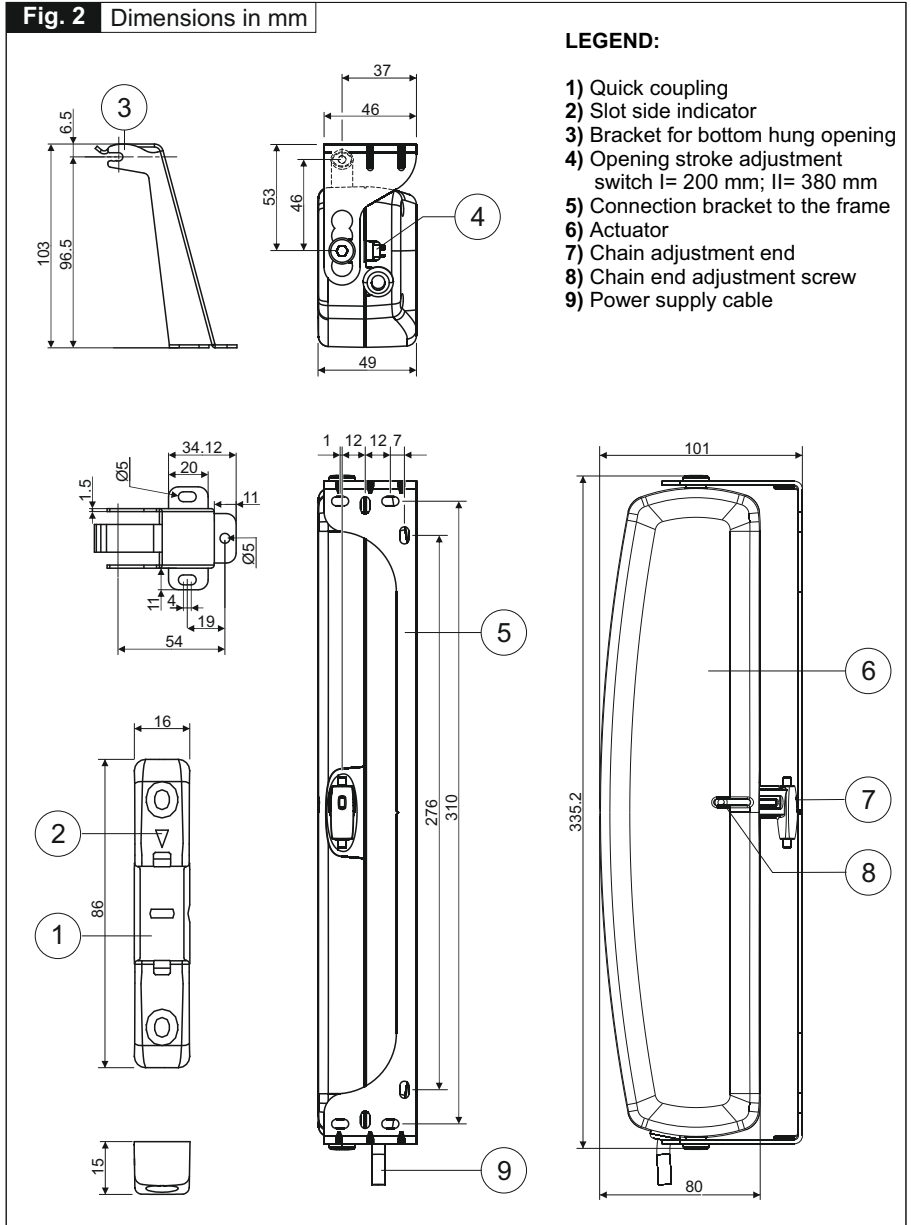
The rating plate is an adhesive plate in polyester, silk-screen printed in black, having the following size: L= 50 mm - H= 36 mm.

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)
- type of service  $S_2$  (min)
- absorbed electric power P (W)
- thrust and tractive force F (N)
- idle translation speed (mm/s)
- protection degree (IP)
- symbol of double insulation (only for mod. C30/230V)
- "CE" marking
- symbol of "WEEE" Directive 2002/96/CE
- serial number

3.2- DENOMINATION OF THE COMPONENTS AND DIMENSIONS

Fig. 2 Dimensions in mm





### 3.3- TECHNICAL DATA

Tab. 1 contains the technical data characterising the actuators.

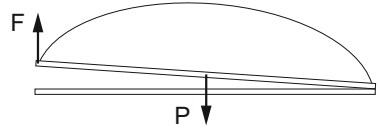
	C30/230V		C30/24V		
Power supply voltage	230 V ~ 50 Hz		24 V ===		
Absorbed current	0,26 A		1,30 A		
Absorbed power with load	60 W		35 W		
Maximum applicable thrust load	300 N				
Maximum applicable tractive load	300 N				
Idle translation speed	37 mm/s		22 mm/s		
Duration of maximum idle stroke	11 s		17 s		
End of stroke selected at mm			200	380	
Minimum height H (mm) of the window frame	Position assembly brackets <sup>(1)</sup>	0	Top hung	250	400
			Bottom hung	500	1000
		1	Top hung	250	400
			2	Top hung	350
		3	Bottom hung	500	950
Minimum window frame height <sup>(2)</sup>	H= 500 + 950 mm				
End of stroke selectable at <sup>(3)</sup>	200 + 380 mm				
Protection against electric shocks	Class II		Class III		
Type of service S <sub>2</sub> <sup>(4)</sup>	4 min				
Operating temperature	-5°C +50°C				
Protection degree of electric devices	IP 30				
Adjustment of the window frame connection	0+22,5 mm (Top hung) 0+30 mm (Bottom hung)				
Parallel electric connection of more actuators on the same window	Only with proper electronic device				
Parallel electric connection of more actuators on different windows	Yes (see wiring diagram)				
Actuator weight with brackets	1,1 kg				
Gross weight	1,5 kg				
Electronics with warning horn to signal to the user the wrong assembling <sup>(5)</sup>					
<sup>(1)</sup> For the assembly position of the brackets see <b>FIG. 7</b>					
<sup>(2)</sup> Distance of the actuator from the window opening hinge valid only with max. stroke 380 mm					
<sup>(3)</sup> Tolerance on the tripping precision of the limit switch at output: ± 10 mm					
<sup>(4)</sup> Service of limited duration according to EN 60034					
<sup>(5)</sup> The "buzzer" device enables automatically itself emitting a continuous "beep" as long as the actuator is supplied. For further details on the operation see <b>par. 5.6</b>					

### 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)

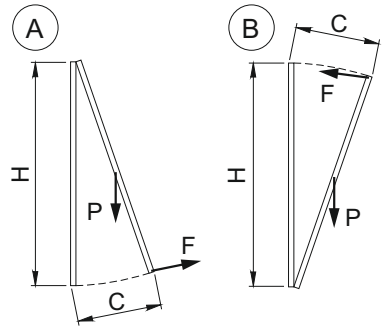


$$F = 0,54 \times P$$

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 CONTROL 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 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- STANDARD PACKAGE

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

- No.1 Actuator equipped with power supply cable;
- No.1 Window frame connection bracket (**Ref. A**);
- No.1 Bracket for bottom hung opening (**Ref. B**);
- No.1 Small parts package (quick coupling, No.2 bracket fastening lateral screws, No.7 screws AF Ø4.2 x 19 mm for fastening the bracket to the window frame and a tool for quick release) (**Ref. C**);
- No.1 (2 mm) Allen wrench (**Ref. D**);
- No.1 Installation and use instructions (**Ref. E**);
- No.1 Safety Plate (**Fig. 6**).



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

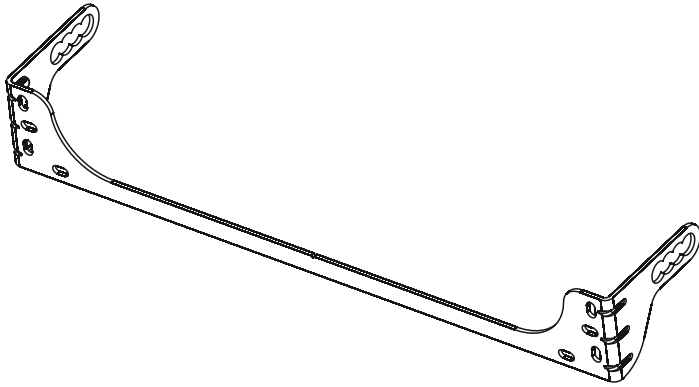


**SHOULD ANY ANOMALY BE DETECTED, IT IS FORBIDDEN TO INSTALL THE ACTUATOR, AND IT IS COMPULSORY TO REQUIRE TECHNICAL ASSISTANCE FROM YOUR DEALER OR THE MANUFACTURER.**

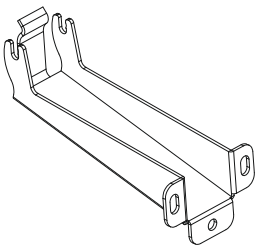


**THE PACKAGING (PAPER, PLASTIC, ETC.) HAS TO BE DISPOSED ACCORDING TO THE LAWS IN FORCE.**

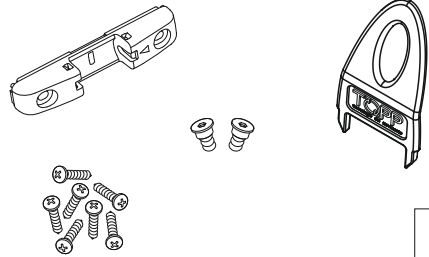
Fig. 5



A



B



C



D



E

## 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 the mod. C30/230V provided with protection against electric shocks:

Protection of passive type given by the use of components with double insulation, also called components of class II or with equivalent insulation.

## 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.

**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 GIVEN IN TAB. 1 CONCERNING THE 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 HOPPER 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 (DISTANCE OF THE ACTUATOR FROM THE WINDOW OPENING HINGE) EQUAL TO THE VALUES QUOTED IN TAB. 1.



VERIFY THAT THE POSITIONS OF THE LABELS LOCATED ON THE QUICK COUPLING CORRESPOND TO THE LABELS ON THE ACTUATOR: RED LABEL WITH LETTER "A" FOR THE TOP HUNG ASSEMBLY, GREEN LABEL WITH LETTER "B" FOR VERTICAL ASSEMBLY.



THE FITTING SURFACE FOR THE ARS RAPID COUPLING DEVICE MUST BE PERFECTLY FLAT AND/OR SMOOTH.

Fig. 7a Dimensions in mm

THE POSITIONS 1 - 2 - 3 - 0 ARE TO BE USED ACCORDING TO THE OVERLAPPED PART **D** OF THE WINDOW

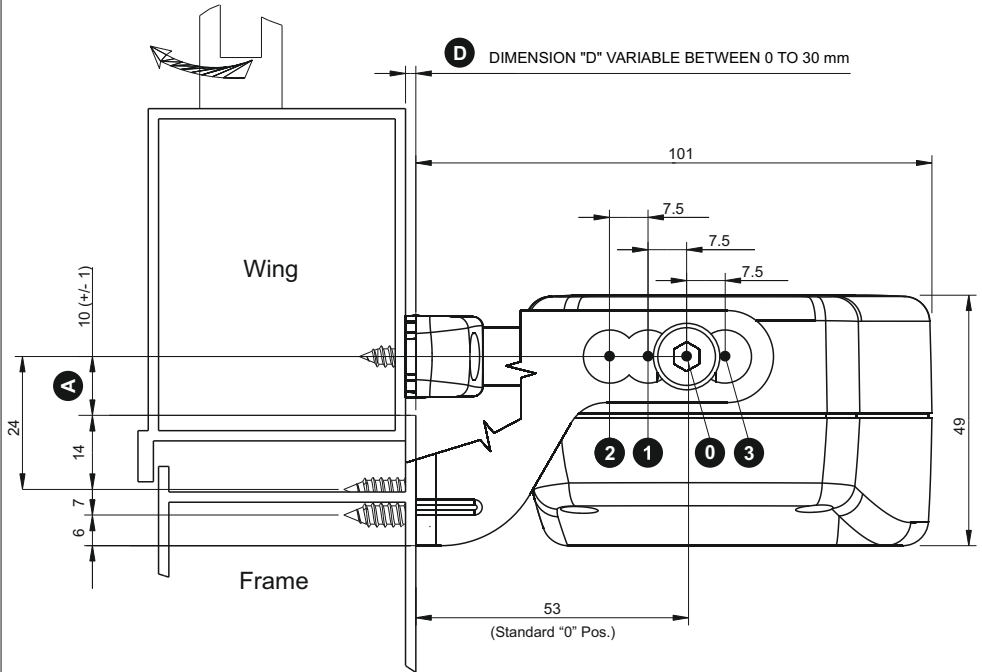
OVERLAPPED PART <b>D</b>	ACTUATOR POSITION	TYPE OF APPLICATION
0 ÷ 15 mm	<b>0</b>	TOP HUNG
15 ÷ 22,5 mm	<b>1</b>	
22,5 ÷ 30 mm	<b>2</b>	



THE FASTENING POSITION **A** HAS TO BE VERIFIED AND EVALUATED ACCORDING TO THE PROFILE/LENGTH OF THE WING/FRAME AND OF THE WINDOW LIGHT.



FOR WINDOWS HAVING A "WINDOW LIGHT" LOWER THAN 500 mm, IT IS SUGGESTED TO ADJUST THE STROKE 200 mm (SWITCH POS. I).





**Fig. 7b** Dimensions in mm

THE POSITIONS 1 - 2 - 3 - 0 ARE TO BE USED ACCORDING TO THE OVERLAPPED PART **D** OF THE WINDOW

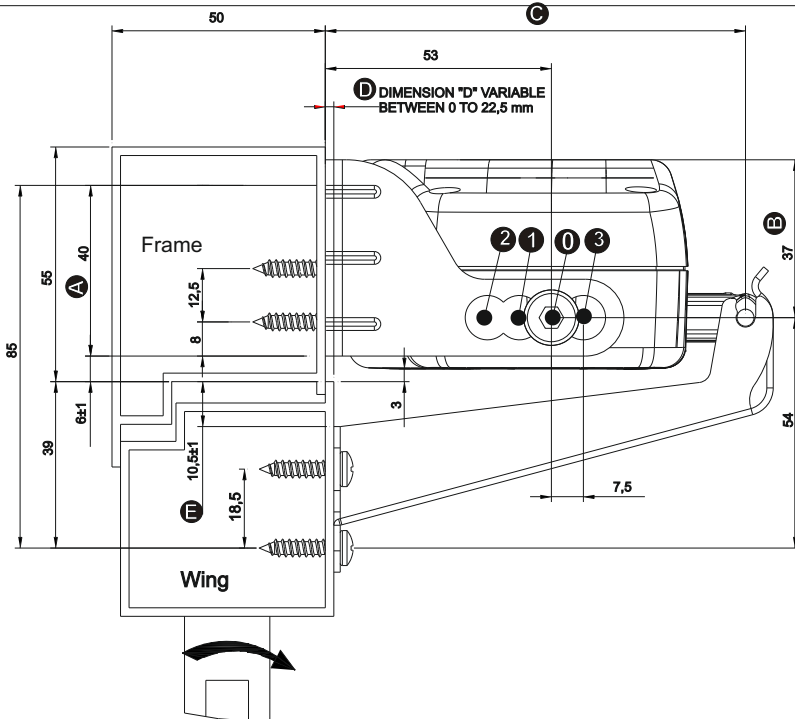
0 ÷ 15 mm	<b>0</b>	TOP HUNG (see Fig.34)
15 ÷ 22,5 mm	<b>3</b>	



THE DIMENSION **C** IS INCLUDED BETWEEN 96,6 mm AND 119,1 mm.



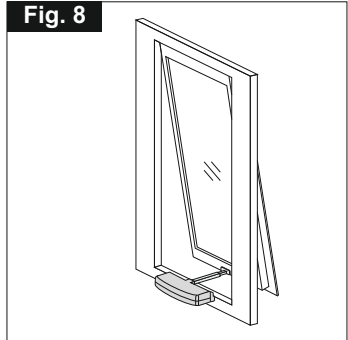
THE FASTENING POSITION **A** HAS TO BE VERIFIED AND EVALUATED ACCORDING TO THE PROFILE/LENGTH OF THE WING/FRAME AND OF THE WINDOW LIGHT.



STROKE	MIN. WINDOW LIGHT	OPENING ANGLE	MOTOR OVERALL DIMENSIONS (B)
200 mm	500 mm	22°	39.5 mm
380 mm	900 mm	24.5°	41.5 mm

## 5.2- TOP HUNG WINDOWS (Fig. 8 and Fig. 14 ÷ 21)

- 1) Open the package (**par. 3.7**) and extract the various components;
- 2) **Fig. 14-** With a pencil draw the centre line "X" of the window frame;
- 3) **Fig. 15-** Apply the template (POS.2) on the window frame aligning it with the previously drawn centre line "X";

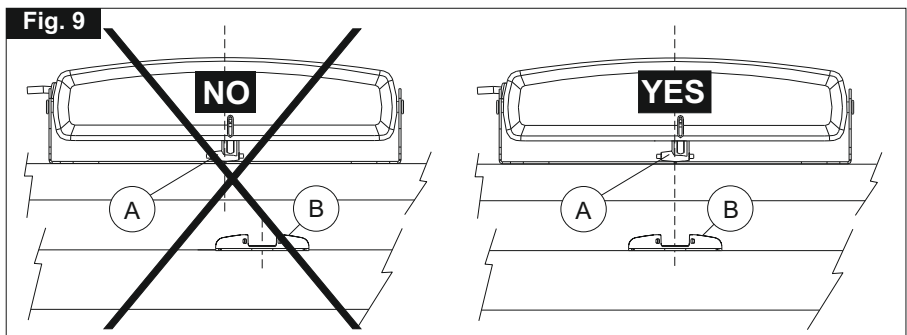


**CAUTION: FOR NON-COPLANAR WINDOW FRAMES, IT IS NECESSARY TO CUT THE TEMPLATE CONCERNED PART AND TO APPLY IT ON THE WINDOW FRAME PAYING ATTENTION TO KEEP IT IN THE SAME REFERENCE POSITION.**

- 4) **Fig. 16-** With a suitable drill, create on the window frame holes having the related diameter, given on the template;
- 5) **Fig. 17/18-** With the suitable screws tighten the bracket for window frame connection and the quick coupling;
- 6) **Fig. 19-** Loosen the chain end adjustment screw (**Ref. 3**) and connect the actuator to the semi-automatic coupling inserting the chain adjustment end first of all in the left connection point (**Ref. 1**) and then in the right connection point (**Ref. 2**);



**VERIFY THAT THE CHAIN ADJUSTMENT END (FIG. 9 - Ref. A) IS ON THE SAME AXIS OF THE QUICK COUPLING (FIG. 9 - Ref. B). OTHERWISE, REPEAT THE OPERATIONS AND POSITION CORRECTLY; WHEN THEY ARE NOT COAXIAL, THIS MAY DAMAGE THE ACTUATOR AND THE WINDOW FRAME (FIG. 9).**



- 7) **Fig. 20-** Using the two supplied screws (**Ref. 1**) tighten the actuator to the window frame connection bracket in the most suitable position according to the value of the overlapped part "D" (**see Fig. 7a**) and tighten the chain end adjustment screw (**Fig. 23 - Ref. 3**);
- 8) **Fig. 21-** Adjust the opening stroke by means of the switch (**Ref. 1**) located in the right side of the actuator according to the wing opening;



**TO CHANGE THE PRE-SET STROKE, USE A SCREWDRIVER (FIG. 25) 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.**

- 9) Perform the electric connection according to the provisions of **par. 5.4** and referring to the wiring diagram.



**THE SELECTION OF THE STROKE MUST BE PERFORMED WITH SWITCHED OFF ACTUATOR EXCLUSIVELY BY COMPETENT AND QUALIFIED TECHNICAL PERSONNEL.**



**CAUTION: VERIFY THAT THE SELECTED STROKE IS SOME CENTIMETRES LOWER THAN THE STROKE EFFECTIVELY ALLOWED BY MECHANICAL LOCKS, COMPASS LIMIT DEVICES OR WING OPENING HINDRANCES.**

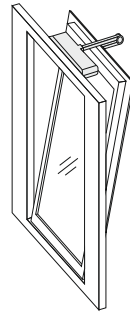


**FOR A CORRECT ADJUSTMENT OF THE WINDOW FRAME CLOSING SEE THE INDICATIONS GIVEN IN PAR. 5.6.**

### 5.3- BOTTOM HUNG WINDOWS (Fig. 10 and 22 ÷ 30)

- 1) Open the package (**par. 3.7**) and extract the various components;
- 2) **Fig. 22-** With a pencil draw the centre line "Y" of the window frame;
- 3) **Fig. 23-** Apply the template (**Ref. 1**) on the window frame aligning it with the previously drawn centre line "Y";

**Fig. 10**



**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.**

- 4) **Fig. 24-** With a suitable drill, create on the window frame holes having the related diameter, given on the template;

- 5) **Fig. 25/26** - With the suitable screws tighten the bracket for window frame connection and the bottom hung opening bracket;
- 6) **Fig.27**- Tighten with the two standard supplied screws (**Ref. 1**) the actuator on the bracket connecting it to the window frame in the position "0" (**see Fig. 7b**) and unscrew the chain adjustment end screw;
- 7) **Fig. 28**- Select the position of the actuator with reference to the bracket connecting it to the window frame (**see Fig. 7b**) and connect the chain end to the bottom hung bracket;
- 8) **Fig. 29/30**- Adjust the opening stroke by the switch (**Fig. 35 - Ref. 1**) located on the right side of the actuator according to the opening of the wing and tighten the chain end adjustment screw (**Fig. 36 - Ref. 2**);



TO CHANGE THE PRE-SET STROKE, USE A SCREWDRIVER (FIG. 35) 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.

- 9) Perform the electric connections in compliance with the provisions of **par. 5.4** and with reference to the wiring diagram.



THE SELECTION OF THE STROKE MUST BE PERFORMED WITH SWITCHED OFF ACTUATOR EXCLUSIVELY BY COMPETENT AND QUALIFIED TECHNICAL PERSONNEL.



CAUTION: VERIFY THAT THE SELECTED STROKE IS SOME CENTIMETRES LOWER THAN THE STROKE EFFECTIVELY ALLOWED BY MECHANICAL LOCKS, COMPASS LIMIT DEVICES OR WING OPENING HINDRANCES.



FOR A CORRECT ADJUSTMENT OF THE WINDOW FRAME CLOSING SEE THE INDICATIONS GIVEN IN PAR. 5.6.

#### 5.4- ELECTRIC CONNECTIONS (Wiring diagram)



THE ELECTRIC CONNECTION OF THE ACTUATOR CAN BE PERFORMED ONLY BY COMPETENT AND QUALIFIED TECHNICAL PERSONNEL SATISFYING THE TECHNICAL AND PROFESSIONAL REQUIREMENTS FORESEEN BY THE LAW IN FORCE IN THE COUNTRY OF INSTALLATION ISSUING TO THE CUSTOMER A DECLARATION OF CONFORMITY FOR THE CONNECTION AND/OR THE PLANT PERFORMED.



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



THE ELECTRIC CONNECTION OF THE VERSION C30/24V HAS TO BE CARRIED OUT WITH A VERY LOW SAFETY VOLTAGE FEEDER PROTECTED AGAINST SHORT CIRCUITS.



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).



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 A CORRECT SEPARATION FROM THE MAINS, IT IS COMPULSORY TO INSTALL UPSTREAM OF THE DEVICE A BIPOLAR TEMPORARY SWITCH (PUSH-BUTTON) OF APPROVED TYPE. UPSTREAM OF THE CONTROL LINE, IT IS COMPULSORY TO INSTALL AN UNIPOLAR CUTOFF SWITCH WITH CONTACT OPENING OF AT LEAST 3 mm.



BEFORE PERFORMING THE ELECTRIC CONNECTION OF THE ACTUATOR, VERIFY THAT THE POWER SUPPLY CABLE IS NOT DAMAGED. SHOULD IT BE DAMAGED, IT MUST BE REPLACED BY THE MANUFACTURER OR BY THE TECHNICAL ASSISTANCE SERVICE OR IN ANY CASE BY AUTHORIZED OPERATORS.

### 5.5- CONTROL 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 the rain sensors (**RDC - 12V**), the wind sensor (**RW**) and the brightness sensor;



THE EVENTUALLY USED UNITS MUST SUPPLY A VOLTAGE TO C30 FOR MAX. 120 s.

#### 3) SYNCHRONIZATION UNIT:

Microprocessor control unit (USA2) controlling by means of a manual push-button the simultaneous operation of 2 or 3 actuators installed on a single window assuring the regular opening and closing movement.

### 5.6- ADJUSTMENT OF THE WINDOW FRAME CLOSING (Fig. 36)



**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.**

A good method to perform a correct assembly, consists in verifying that after the disabling of the gear motor the window seals are correctly compressed. Should this not occur, adjust again the chain end by placing it back as needed and eventually by shifting the actuator on the various positions offered by the bracket and then by adjusting the chain end (**see Tab. 1**).

As shown in **Fig. 36**, although the window is closed, the chain end adjustment screw (**Ref. 2**) is located outside the slit (**Ref. 1**) located on the actuator body causing therefore the failed tripping of the limit switch related to the chain re-entering.

In this case, the actuator motor remains under maximum stress conditions until the electronic protection tripping **and the “BUZZER” enabling.**

**This acoustic warning device emits a continuous “beep” until the actuator is connected to the power supply.**



**CONSIDERING THAT THIS ADDITIONAL SAFETY DEVICE HAS BEEN DEVELOPED IN ORDER TO OFFER A RAPID SYSTEM TO DETECT ANY EVENTUAL ANOMALY IN THE ASSEMBLY OF THE DEVICE, FOR A CORRECT INSTALLATION OF THE PRODUCT IT IS COMPULSORY TO FOLLOW ALL THE ASSEMBLING PROCEDURES DESCRIBED IN THIS MANUAL.**

## 5.7- EMERGENCY PROCEDURES

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



**BEFORE PERFORMING ANY TYPE OF INTERVENTION 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.**

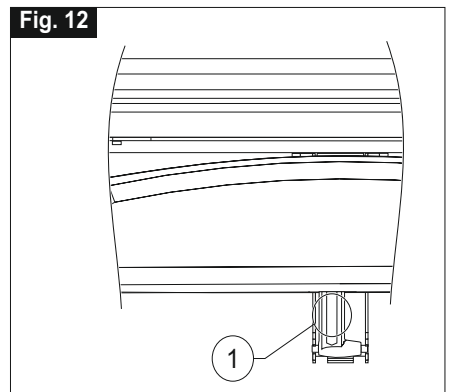
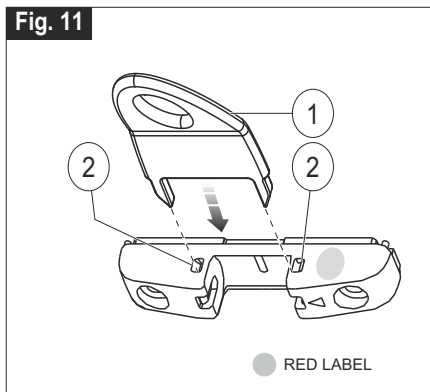


**IT IS COMPULSORY TO PADLOCK THE MAIN SWITCH OF THE DISCONNECTION DEVICE INSTALLED ON THE MAINS IN ORDER TO AVOID ANY UNEXPECTED START. IF THE MAIN SWITCH CANNOT BE PADLOCKED, IT IS COMPULSORY TO PLACE A SIGN FORBIDDING THE ENABLING.**



**IN SOME CASES, THE EVENT OF POSSIBLE ANOMALIES MIGHT STALL ALSO OTHER ACTUATORS CONNECTED IN PARALLEL. TO FIND THE SUPPOSED MALFUNCTIONING ACTUATOR, RUN SOME CLOSING OPERATIONS IN SUCCESSION (ABOUT 10 OPERATIONS EVERY 2 SECONDS), TILL THE WORKING ACTUATORS START RUNNING AGAIN.**

- **Top hung opening: Fig. 11-** Insert the release tool (Ref. 1) in the openings (Ref. 2) as shown in figure, disconnect the chain end from the ARS coupling and extract the actuator;
- **Bottom hung opening: Fig. 12-** Act on the chain end adjustment screw (**Ref.1**) and let the actuator rotate upwards until the same is removed from the bottom hung opening bracket.



## 6.1- USE OF THE ACTUATOR



THE ACTUATOR CAN BE USED ONLY BY A USER ACTING IN COMPLIANCE WITH THE INSTRUCTIONS GIVEN IN THIS MANUAL AND/OR IN THE MANUAL OF THE ACTUATOR COMMAND 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 CONTROL POSITION ASSURING VISUAL CONTROL ON THE WINDOW MOVEMENT.



THE FUNCTION EFFICIENCY AND THE RATED PERFORMANCE OF THE ACTUATOR, OF THE WINDOW FRAME ON WHICH IT IS INSTALLED AND OF THE ELECTRIC EQUIPMENT MUST BE VERIFIED STEADILY IN TIME BY PERFORMING, WHEN NECESSARY, INTERVENTIONS OF ROUTINE AND SUPPLEMENTARY MAINTENANCE ASSURING THE OPERATION CONDITIONS IN COMPLIANCE WITH THE SAFETY REGULATIONS.



ALL ABOVE MENTIONED MAINTENANCE INTERVENTIONS MAY BE PERFORMED EXCLUSIVELY BY TECHNICAL COMPETENT AND QUALIFIED TECHNICAL PERSONNEL SATISFYING THE TECHNICAL AND PROFESSIONAL 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. 5.5).



## 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.

**8.1- 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- SPARE PARTS AND ACCESSORIES UPON REQUEST****9.1- GENERAL INSTRUCTIONS**

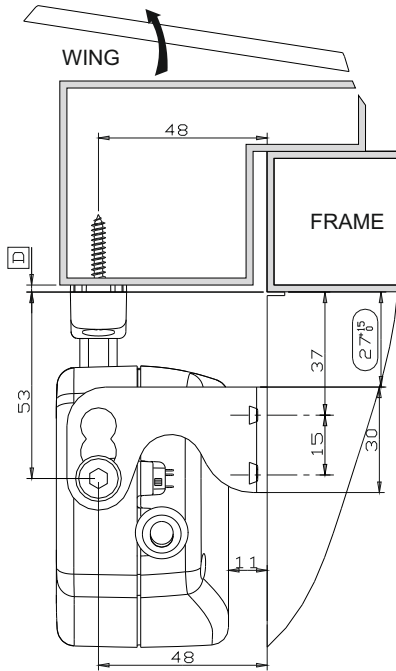
**THE USE OF "NON-ORIGINAL" SPARE PARTS AND ACCESSORIES WHICH MAY ENDANGER THE SAFETY AND THE EFFICIENCY OF THE ACTUATOR IS FORBIDDEN.**



**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.**

Fig. 13

**DOME ASSEMBLY BRACKET**



FOR A CORRECT OPERATION OF THE ACTUATOR, "D" MUST HAVE A VALUE INCLUDED BETWEEN 0 mm AND 30 mm.

Fig. 14

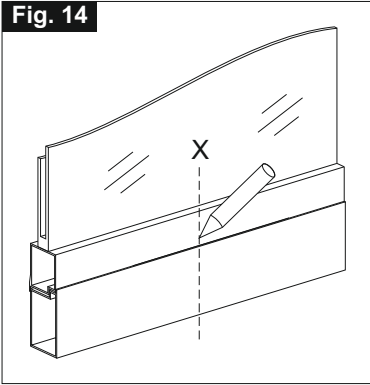


Fig. 15

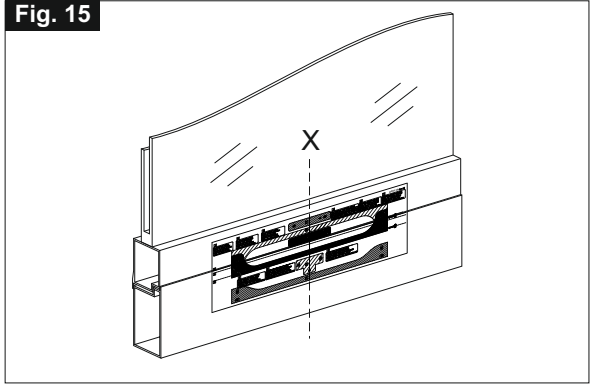


Fig. 16

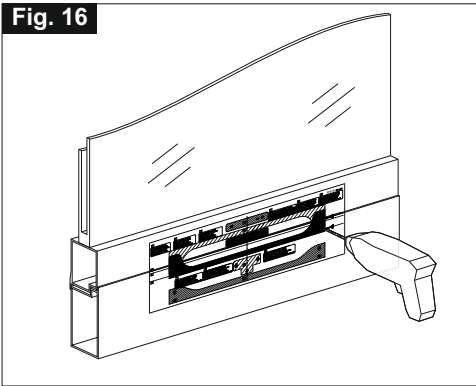


Fig. 17

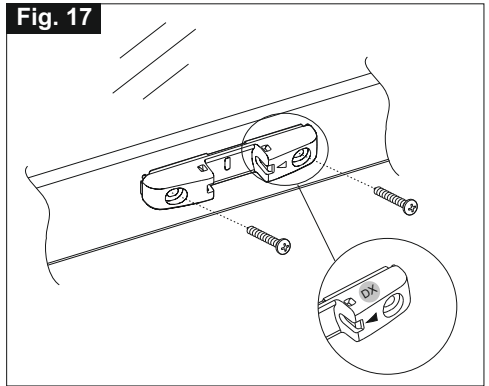


Fig. 18

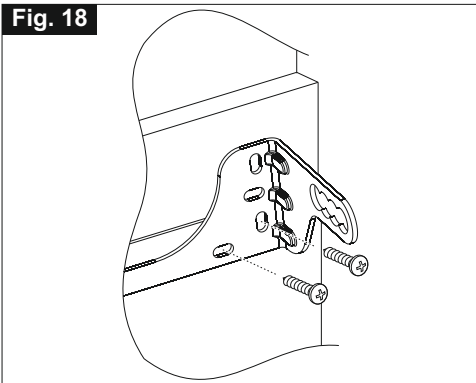


Fig. 19

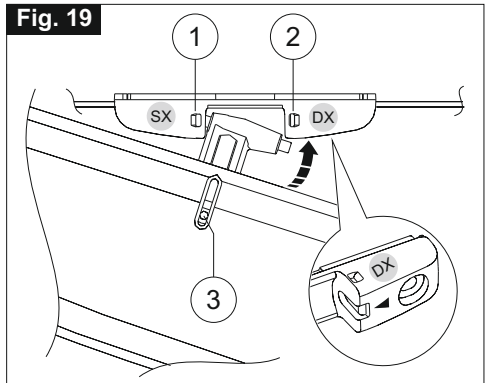


Fig. 20

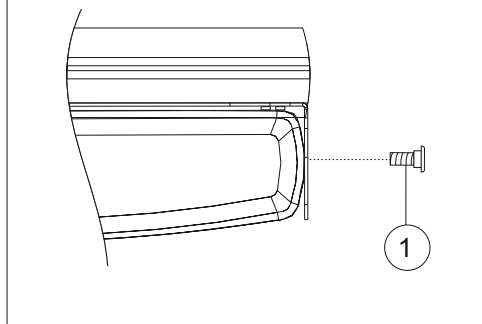


Fig. 21

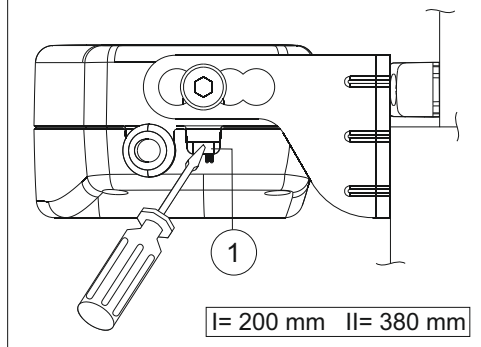


Fig. 22

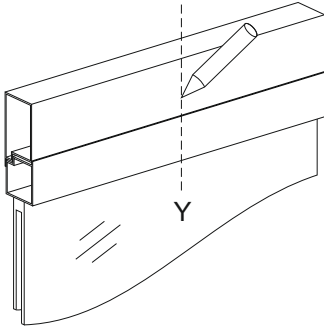


Fig. 23

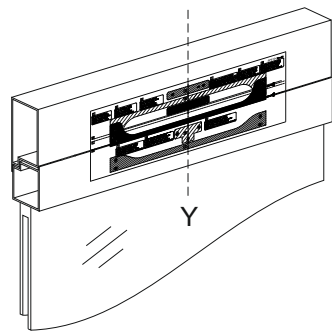


Fig. 24

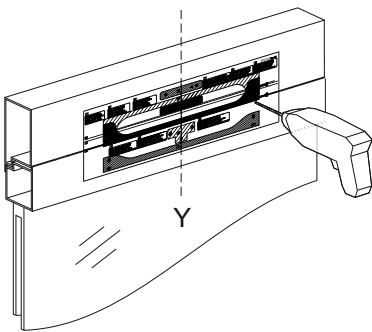


Fig. 25

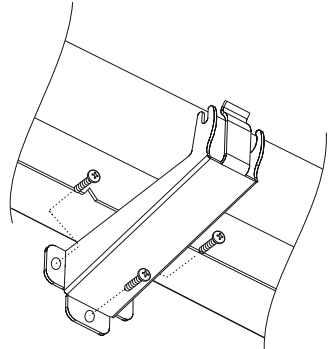


Fig. 26

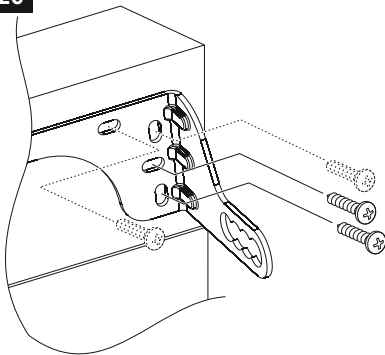
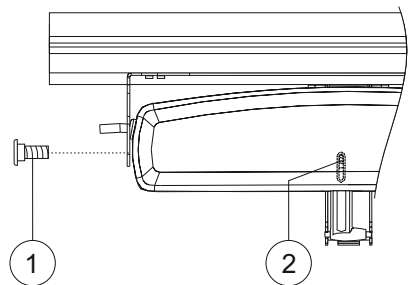
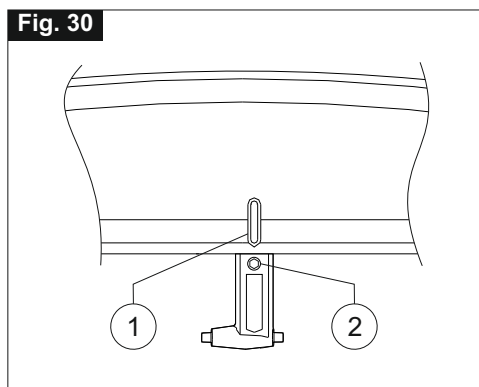
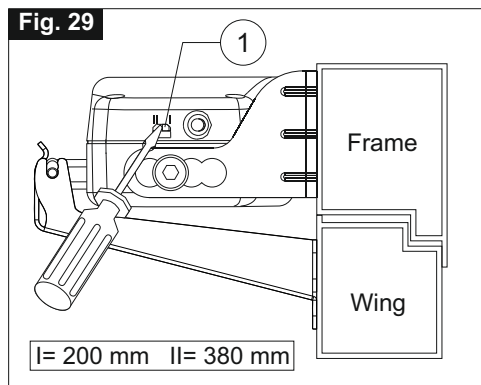
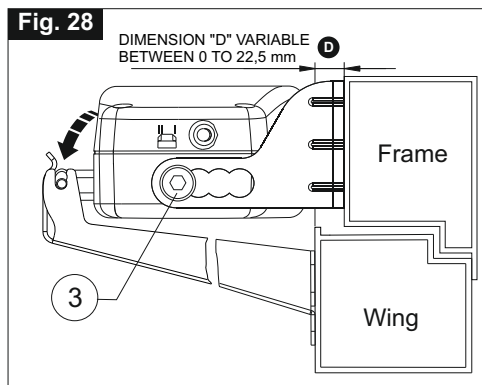


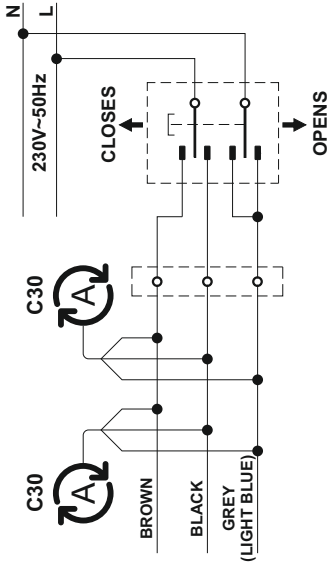
Fig. 27



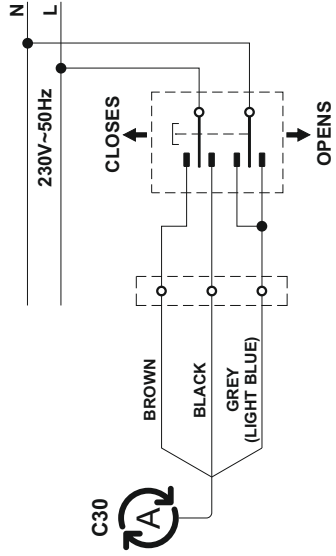


Wiring diagram

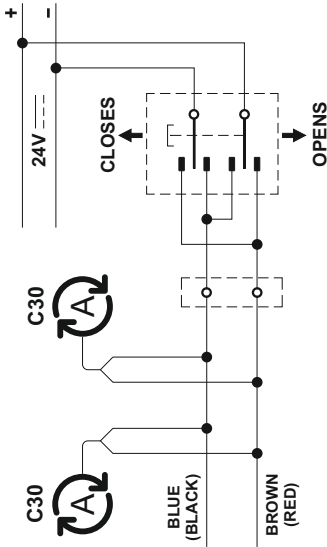
230 V



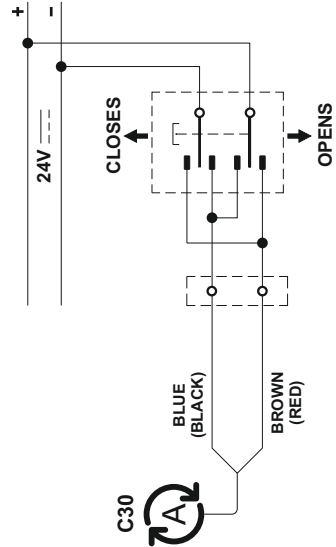
THIS SYMBOL IDENTIFIES THE TOPPELECTRICAL ACTUATOR IN WIRING DIAGRAM.



24 V



THIS SYMBOL IDENTIFIES THE TOPPELECTRICAL ACTUATOR IN WIRING DIAGRAM.





A large grid area for taking remarks, consisting of 20 columns and 30 rows of small squares.







TOPP S.r.l.

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