

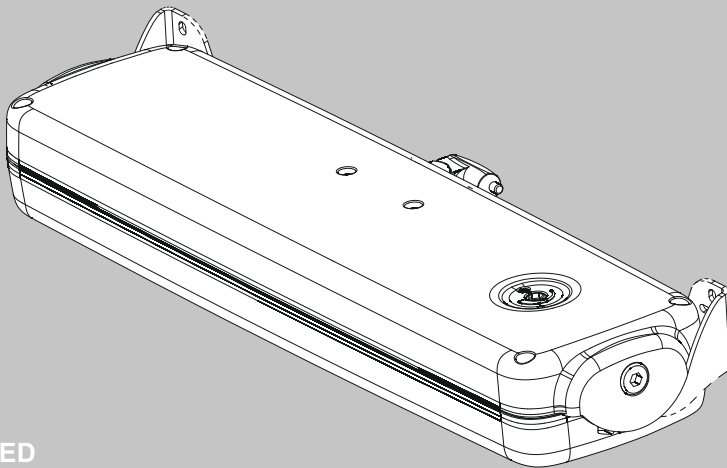
EN

INSTALLATION AND USE INSTRUCTIONS

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CHAIN ACTUATOR FOR
WINDOW AUTOMATION

C40



PATENTED

original instructions



COD. 0P5251

VER.0.0

REV.06.14

**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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TOPP S.p.A.
via L. Galvani, 59
36066 Sandrigo (VI)
ITALIA



declares that the electrical device

called: CHAINACTUATOR FOR WINDOWAUTOMATION

type: C40

models: C40/230V - C40/24V

serial n° and year of manufacture: see data plate and CE marking applied to the device

complies with the requirements of the following directives:

2006/95/CE

Low Voltage Directive: electrical material for use within certain voltage limits.

2004/108/CE

Electromagnetic Compatibility Directive - Concerning the approximation of the laws of Member States relating to electromagnetic compatibility.

and also declares that the following harmonised standards have been applied:

EN55014-1

EN55014-2

EN61000-6-3

EN61000-6-2

EN50366

EN60335-1

Date: Sandrigo, 10/01/2008

Matteo Cavalcante

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.

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

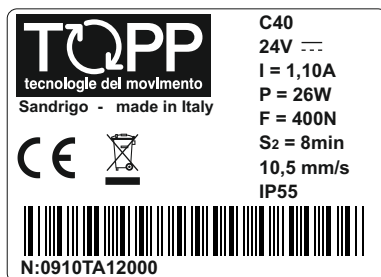
The "CE" marking certifies the compliance of the machine with the essential safety and health requirements foreseen by the product European Directives.

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

It is applied externally on the actuator. The plate (**Fig. 1**) bears in readable and indelible way the following data:

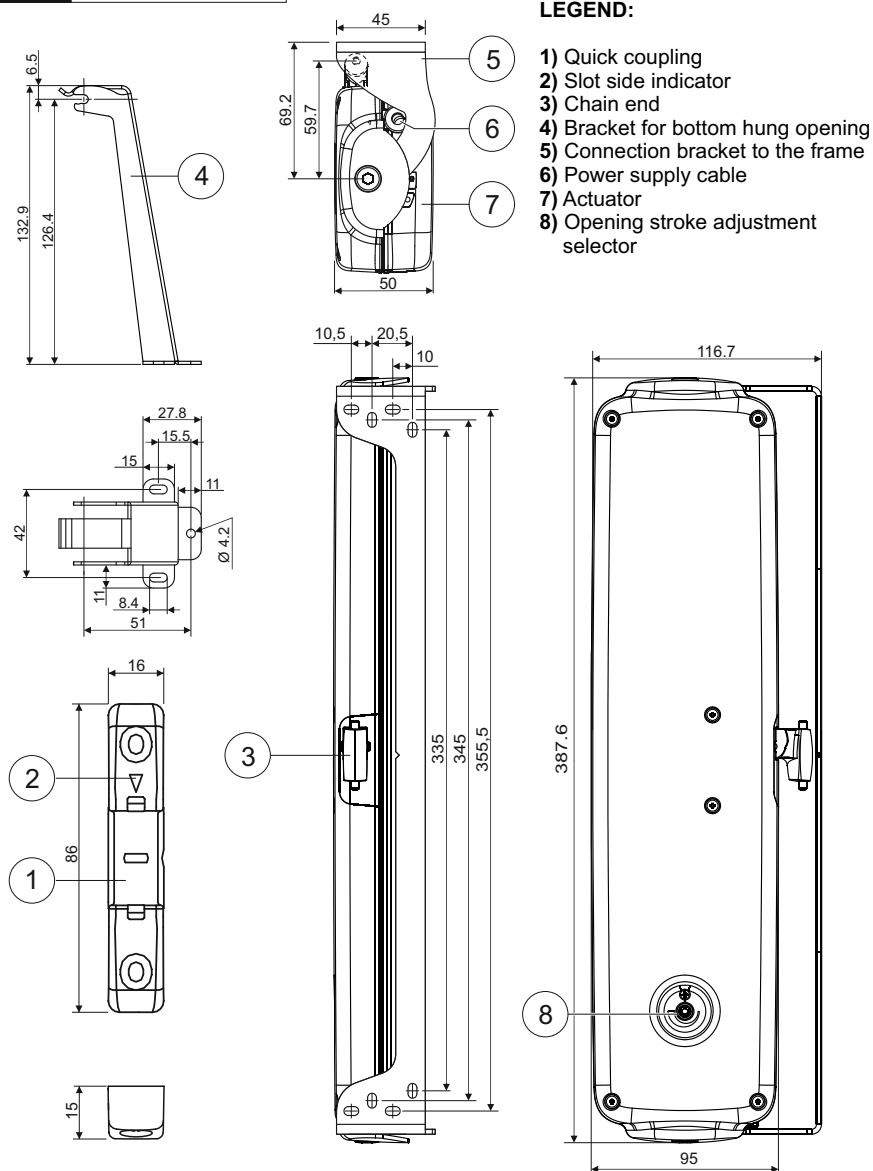
- logo and address of the manufacturer
- type and model
- voltage and intensity of power supply (V - A)
- absorbed electric power P (W)
- thrust and tractive force F (N)
- type of service S_2 (min)
- idle translation speed (mm/s)
- protection degree (IP)
- "CE" marking
- symbol of WEEE Directive 2002/96/CE
- symbol of double insulation (only for mod. C40/230V)
- serial number

Fig. 1



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.

	C40/230V	C40/24V
Power supply voltage	230 V ~ 50 Hz	24 V==
Absorbed current	0,24 A	1,10 A
Absorbed power with load	50 W	26 W
Maximum applicable thrust load	400 N	
Maximum applicable tractive load	400 N	
Idle translation speed	18,5 mm/s	10,5 mm/s
Duration of the idle stroke	27 s	48 s
Adjustable strokes on outlet ⁽¹⁾	100 - 150 - 200 - 250 - 300 - 400 - 500 mm	
Minimum height of the window frame ⁽²⁾	Top hung	H= 300 ÷ 500 mm (v. Fig. 7a)
	Bottom hung	H= 300 ÷ 1000 mm (v. Fig. 7b)
Return end of stroke for the absorption in the last 100 mm		
Protection against electric shocks	Class II	Class III
Type of service S ₂ ⁽³⁾	5 min	8 min
Operating temperature	-5°C +50°C	
Protection degree of electric devices	IP 55	
Adjustment of the window frame connection	Unnecessary	
Parallel connection of more than one actuator	Yes (see wiring diagram)	
Connection and synchronization of many actuators on the same window	Only with synchronization unit (see wiring diagram)	
Chain position control	Yes	
Actuator weight with brackets	1,9 kg	
Gross weight	2,2 kg	
Electronics with warning horn to signal to the user the wrong assembling ⁽⁴⁾		
<div><div>(1) Tolerance on the tripping precision of the limit switch at output: +/- 10 mm</div><div>(2) Distance of the actuator from the window opening hinge valid only with max. stroke 380 mm</div><div>(3) Service of limited duration according to EN 60034</div><div>(4) The “buzzer” is enabled automatically, and emits a continuous “beep” until the actuator is supplied.</div></div>		

Tab. 1

Compatibility of actuators connected in parallel

	ACK4	T50	C20	C25	C30	C40	SL60	T80	C240	C20T
C40	Y	Y		Y	Y	Y	Y			

3.4- FORMULAS FOR THE CALCULATION OF THRUST AND TRACTIVE FORCE

Fig. 3

Horizontal domes or skylights

$F_{(N)}$ = Force necessary for opening or closing

$P_{(N)}$ = Weight of the skylight or dome
(Only movable part)

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

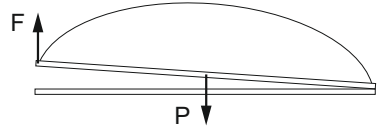


Fig. 4

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

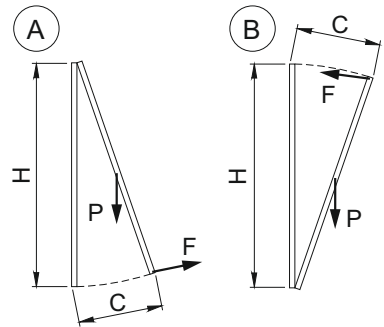
$F_{(N)}$ = Force necessary for opening or closing

$P_{(N)}$ = Weight of the window
(only movable part)

$C_{(mm)}$ = Window opening stroke

$H_{(mm)}$ = Window height

$$F = (0,54 \times P) \times \left(\frac{C}{H} \right)$$



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.



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 part package (quick coupling, No. 2 bracket fastening lateral screws, No. 7 screws AF Ø 4.2 x 19 mm fastening the bracket on the window frame and tightening the quick coupling, Allen wrench to adjust the stroke end) (**Ref. C**);
- No.1 Installation and use instructions (**Ref. D**);
- 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.

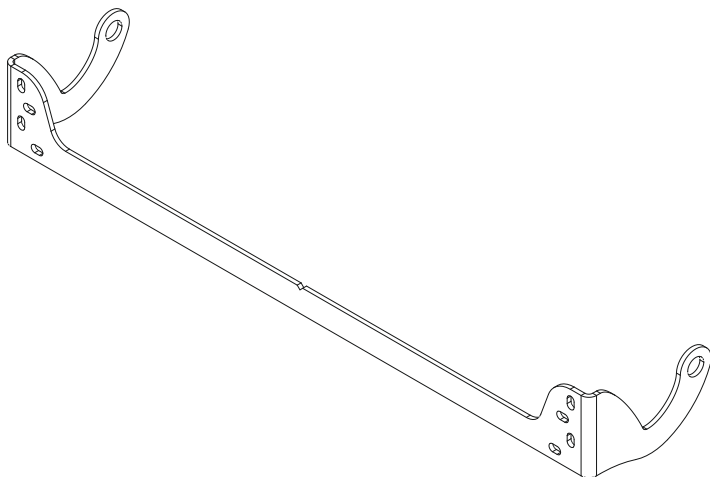


SHOULD ANY ANOMALY BE DETECTED, IT IS FORBIDDEN TO INSTALL THE ACTUATOR, AND IT IS COMPULSORY TO REQUIRE TECHNICAL ASSISTANCE FROM YOUR DEALER OR THE MANUFACTURER.

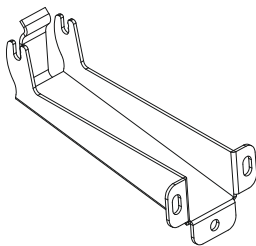


THE PACKAGING (PAPER, PLASTIC, ETC.) HAS TO BE DISPOSED ACCORDING TO THE LAWS IN FORCE.

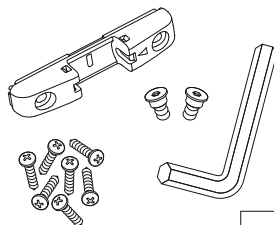
Fig. 5



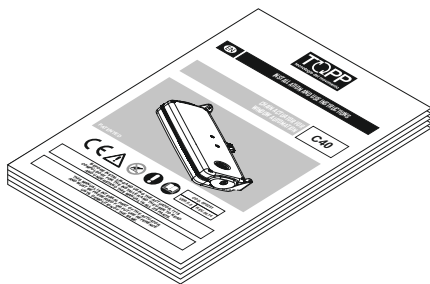
A



B



C



D

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. C40/230 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 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 AS QUOTED IN THE TABLE OF FIG. 7a FOR THE TOP HUNG ASSEMBLY AND IN THE TABLE OF FIG. 7b FOR THE BOTTOM HUNG ASSEMBLY.



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.



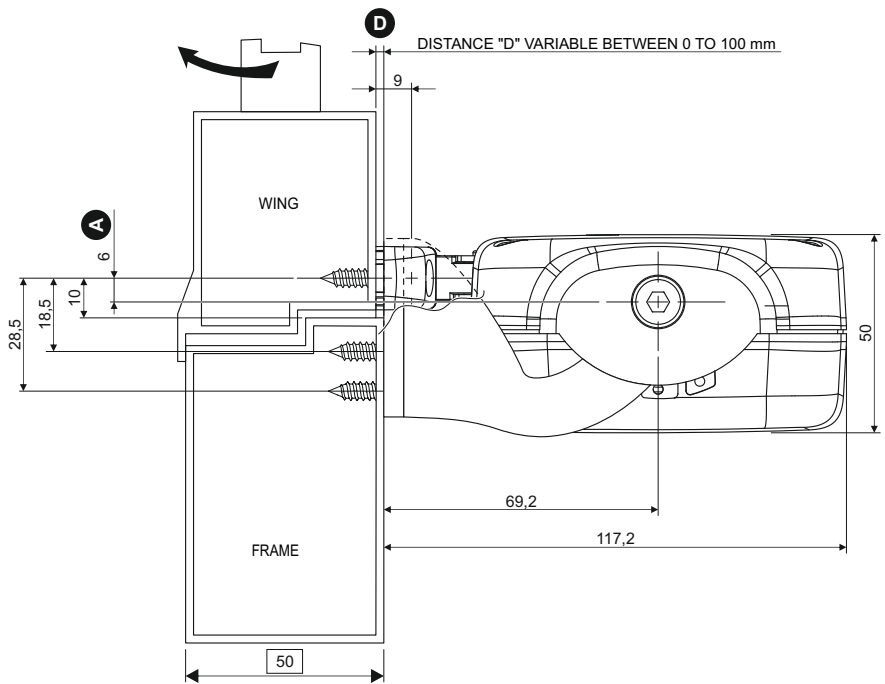
VERIFY THAT THE DISTANCE "D" BETWEEN THE FRAME OF THE WINDOW FRAME (ON WHICH THE FIXING OF THE ACTUATOR IS FORESEEN) AND THE WING OF THE WINDOW FRAME (ON WHICH THE FASTENING OF THE BRACKET IS FORESEEN) IS INCLUDED BETWEEN 0 AND 100 mm BOTH FOR THE TOP HUNG ASSEMBLY (SEE FIG 7a) AND FOR THE BOTTOM HUNG ASSEMBLY (SEE FIG 7b).



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

Fig. 7a

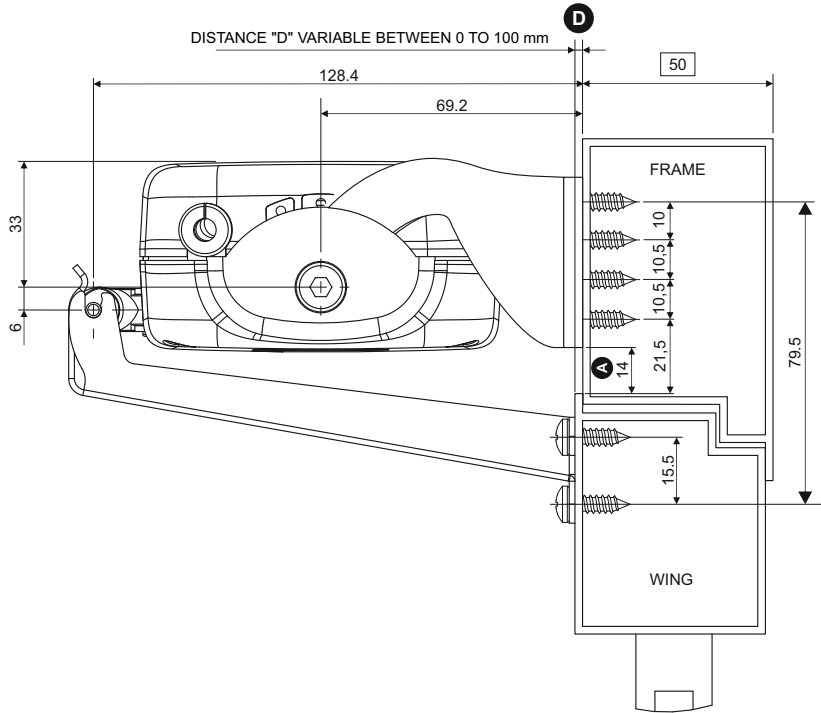
TOP HUNG OPENING		
POS.	STROKE (mm)	WINDOW MIN HEIGHT (mm)
1	100	300
2	150	
3	200	
4	250	
5	300	350
6	400	450
7	500	500



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

Fig. 7b

BOTTOM HUNG OPENING		
POS.	STROKE (mm)	WINDOW MIN HEIGHT (mm)
1	100	300
2	150	
3	200	
4	250	400
5	300	500
6	400	900
7	500	1000

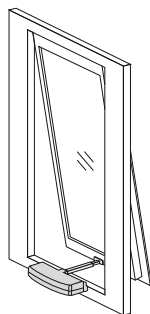


THE FASTENING POSITION **A** HAS TO BE VERIFIED AND EVALUATED ACCORDING TO THE PROFILE/LENGTH OF THE WING/FRAME AND OF THE WINDOW LIGHT.

5.2- TOP HUNG WINDOWS (Fig. 8 and Fig. 14 ÷ 25)

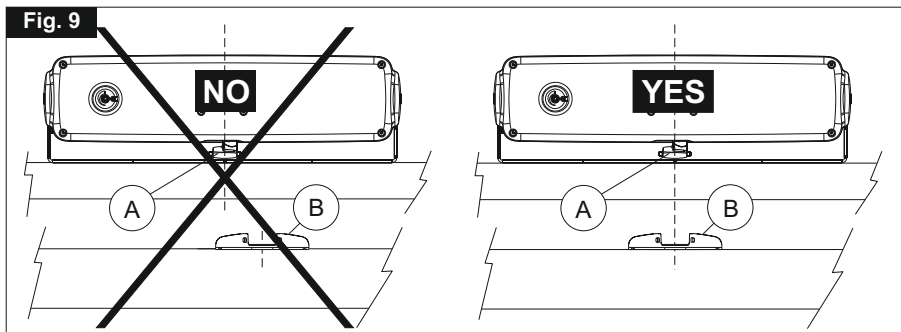
- 1) Open the package (**par. 3.7**) and extract the various components;
- 2) **Fig. 14-** With a pencil draw the centre line "X" of the window frame;
- 3) **Fig. 15-** Align the quick coupling to the centre line using as reference the rib (**Ref. 1**) located in the centre of the same with the quick release side indicator on the right (**Ref. 2**);
- 4) **Fig. 16-** Position the quick coupling at a minimum height of 10 mm from the frame and mark the drilling points;
- 5) **Fig. 17/18-** With a suitable drill, perform two holes on the wing and tighten the quick coupling with proper screws;
- 6) **Fig. 19-** Align to the centre line the window frame connection bracket using as reference the indicator of the centre line (**Ref. 1**) located in the middle of the same;
- 7) Position the bracket on the frame, aligning it to the profile of the frame within a distance of about 3 mm, as indicated in **Fig. 20**, and mark the drilling points;
- 8) **Fig. 21/22-** With a suitable drill, perform four holes on the frame and tighten the bracket with proper screws;
- 9) Perform the electric connections in compliance with the provisions of **par. 5.4** and with reference to the wiring diagram and control the outlet of the chain for at least 50 mm of stroke; then, disconnect power supply;

Fig. 8



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).

Fig. 9





MAKE SURE THAT THE RED LABEL WITH LETTER "A" LOCATED ON THE QUICK COUPLING CORRESPONDS TO THE SAME LABEL ON THE ACTUATOR.

- 10) **Fig. 23-** Insert the chain end before the left connection point (**Ref. 1**) and then on the right connection point (**Ref. 2**);
- 11) **Fig. 24-** Tighten with the two standard supplied screws (**Ref. 1**) the actuator on the bracket connecting it to the window frame;
- 12) **Fig. 25-** With an Allen wrench, adjust the opening stroke by means of a proper selector (**Ref. 1**) according to the table quoted in **Fig. 7a**;
- 13) Perform the complete opening and closing of the window frame. After the closing phase, verify that the window frame is completely closed by checking the squashing of the seals.



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.

5.3-BOTTOM HUNG WINDOWS (Fig. 10 and $26 \div 35$)

- 1) Open the package (**par. 3.7**) and extract the various components;
- 2) **Fig. 26-** With a pencil draw the centre line "Y" of the window frame;
- 3) **Fig. 27-** Align to the centre line the bracket connecting it to the window frame using as reference the centre line indicator (**Ref. 1**) located in the centre of the same positioning the bracket at a height of 39 mm from the frame and mark the drilling points on the frame;
- 4) **Fig. 28/29-** With a suitable drill, perform four holes on the frame and tighten the bracket with the suitable screws;
- 5) Perform the electric connections in compliance with the provisions of **par. 5.4** and with reference to the wiring diagram and control the outlet of the chain for at least 50 mm of stroke, then disconnect power supply;
- 6) **Fig. 30-** Align the bottom hung bracket with the centre line of the window using as reference the central hole of the fastening screws (**Ref. 1**) and position the bottom hung bracket at 4 mm from the frame, then mark the drilling points;
- 7) **Fig. 31/32-** With a suitable drill, perform 3 holes on the wing and tighten the bracket with proper screws;

Fig. 10



- 8) **Fig. 33-** Tighten with the two standard supplied screws (**Ref. 1**) the actuator on the bracket connecting it to the window frame;
- 9) **Fig. 34-** Connect the bracket for bottom hung opening (**Ref. 1**) to the chain end (**Ref. 2**);
- 10) **Fig. 35-** With an Allen wrench, adjust the opening stroke by a suitable selector (**Ref. 1**) according to the table quoted in **Fig. 7b**;
- 11) Perform the complete opening and closing of the window frame. After the closing phase, verify that the window frame is completely closed by checking the squashing of the seals.



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.

5.4- ELECTRIC CONNECTIONS (Wiring diagram)



THE CONNECTION OF MODEL C40/24V 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.

5.5- 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 (**RD - 12V**), the wind sensor (**RW**) and the brightness sensor;



THE EVENTUALLY USED UNITS MUST SUPPLY A VOLTAGE TO C40 FOR MAX. 120 SECONDS.

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- 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 a screw driver in the right side opening (**Ref. 1**) of the quick coupling and lever on the reed holding the chain end (**Fig. 11**) and extract the actuator.
- **Bottom hung opening: Fig. 12-** Insert a screw driver between the bracket for bottom hung opening and the chain end, then lever until the chain end disconnects from the above mentioned bracket.

Fig. 11

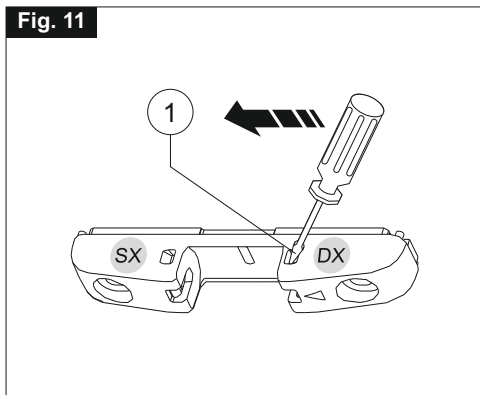
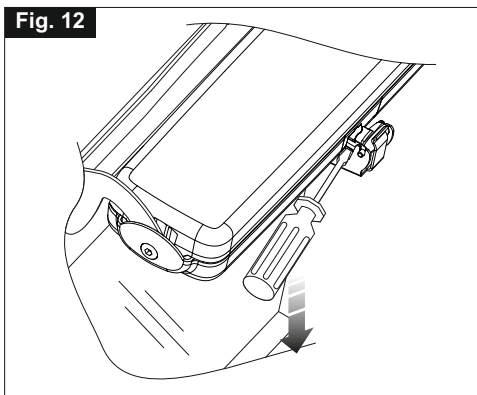


Fig. 12



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.

Users may contact TOPP technical assistance at the following telephone number to request the periodical maintenance service for the automation unit: + 39 (0)444 656700.

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.

Fig. 13

DOME ASSEMBLY BRACKET

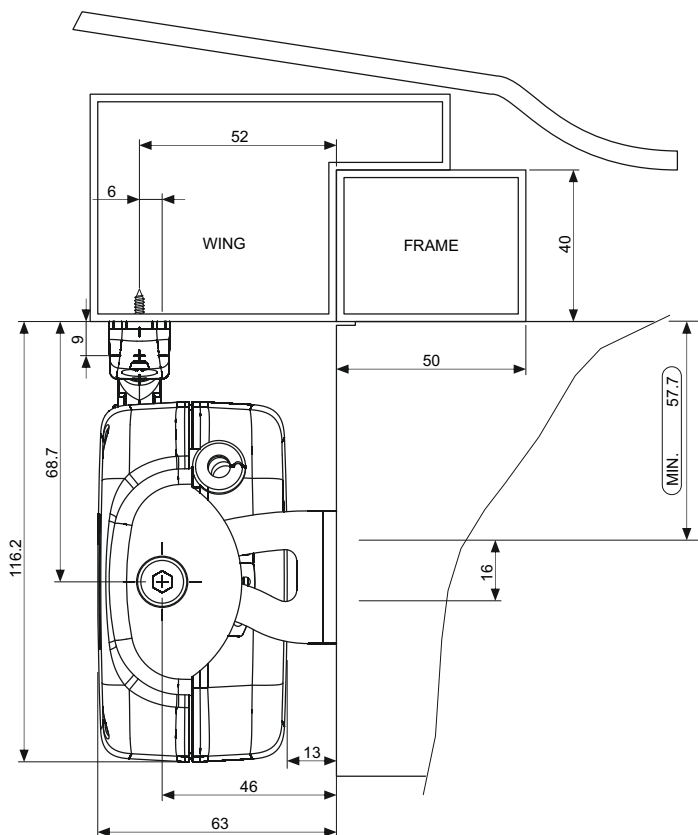


Fig. 14

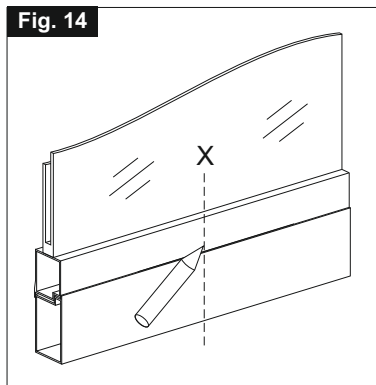


Fig. 15

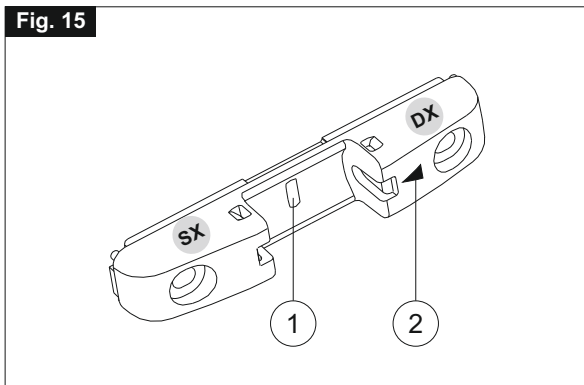


Fig. 16

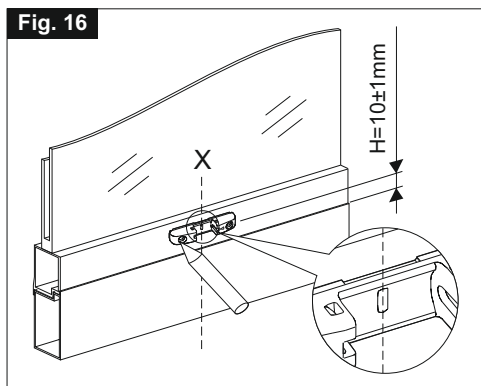


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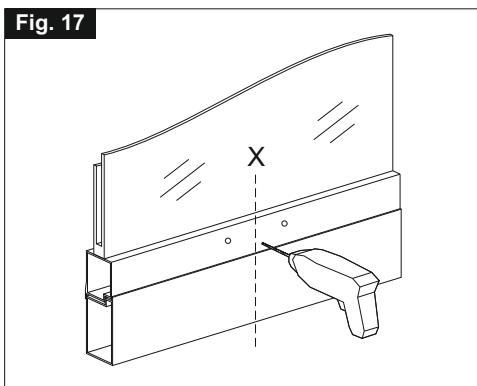


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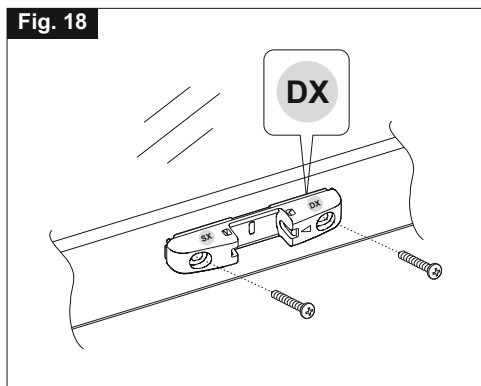


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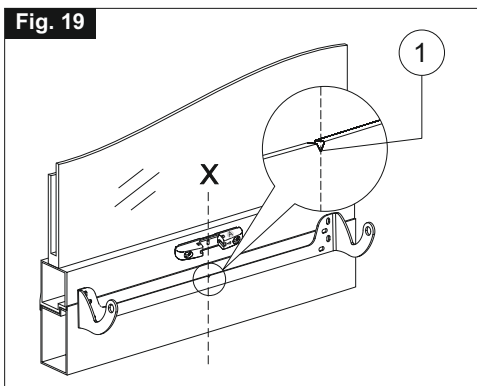


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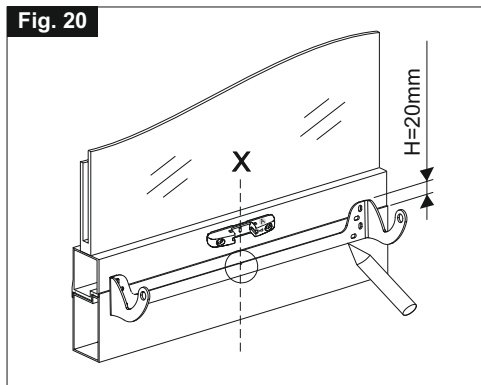


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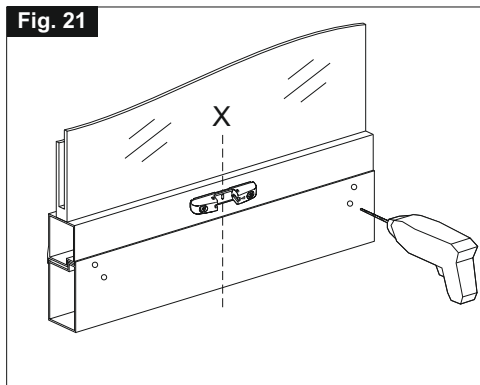


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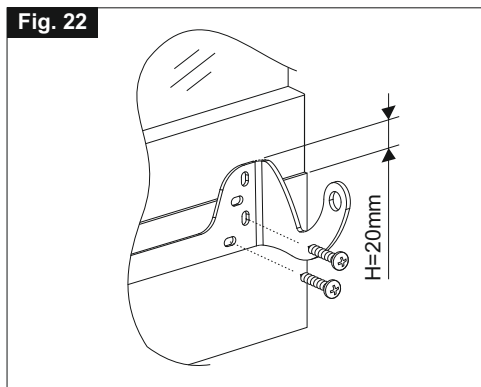


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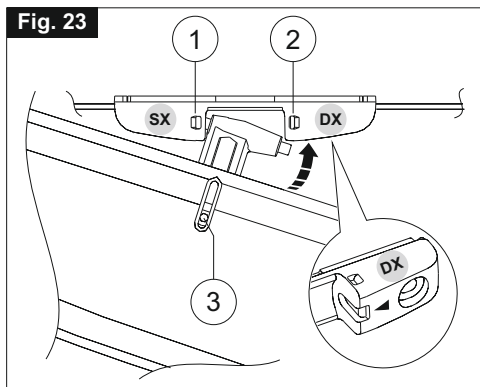


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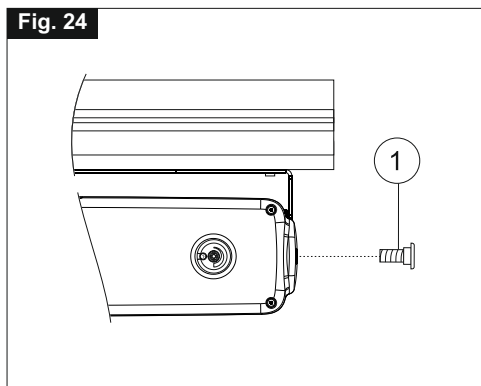


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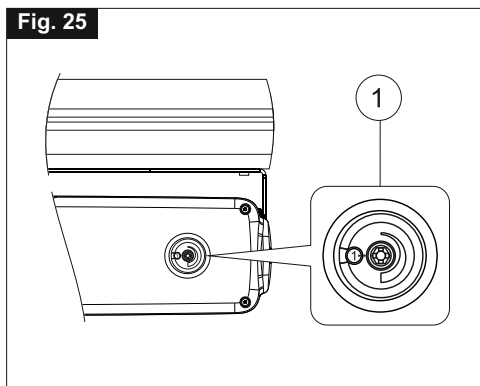


Fig. 26

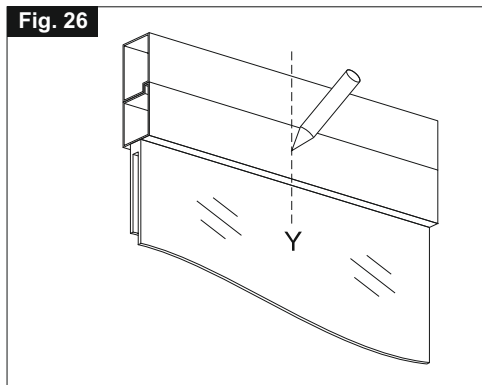


Fig. 27

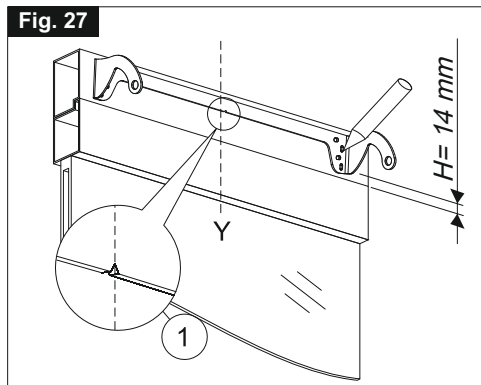


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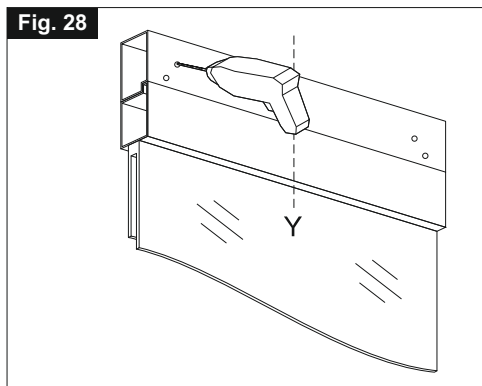


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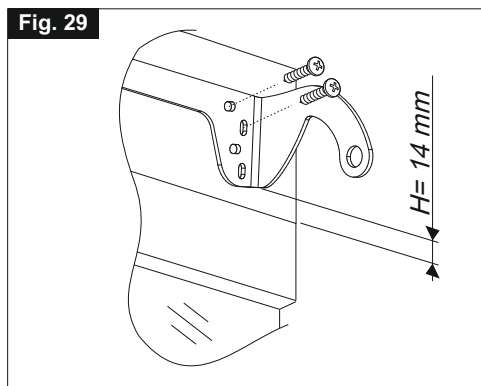


Fig. 30

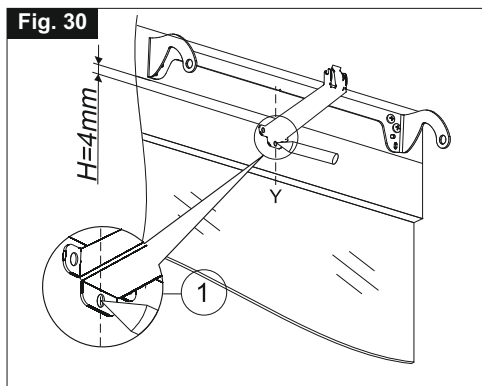


Fig. 31

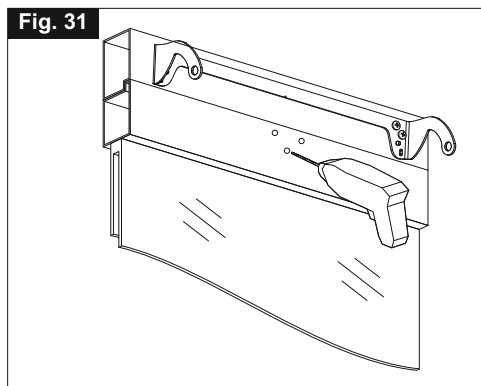


Fig. 32

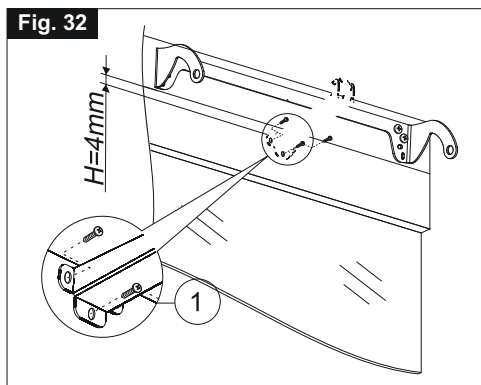


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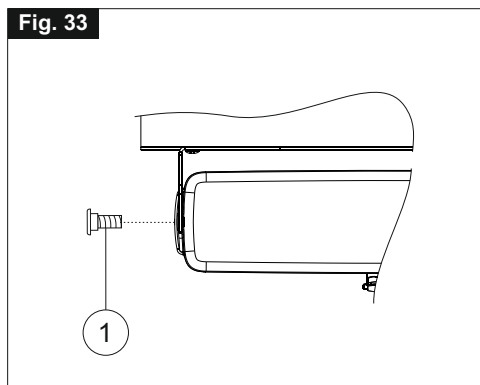


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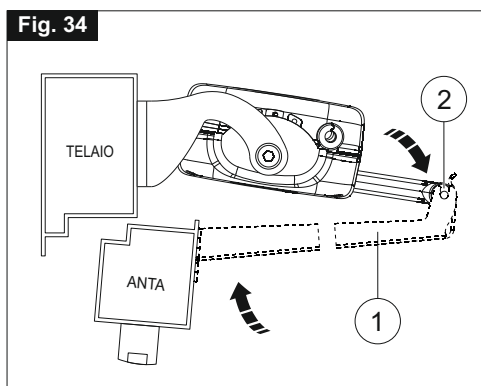
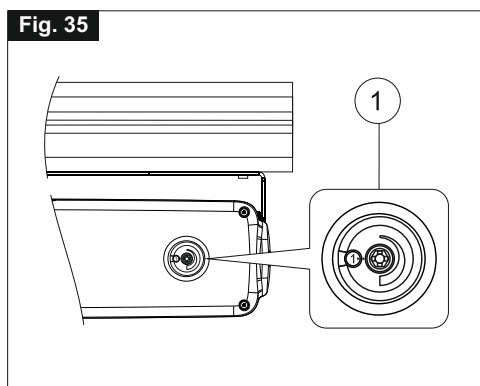
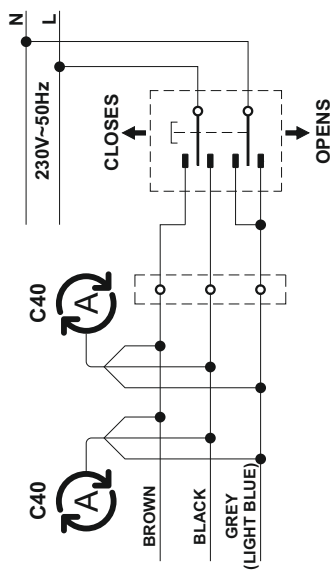


Fig. 35

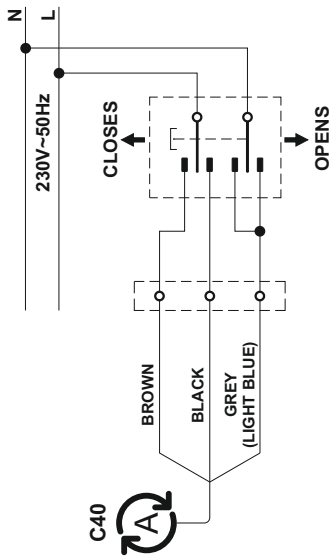


230 V

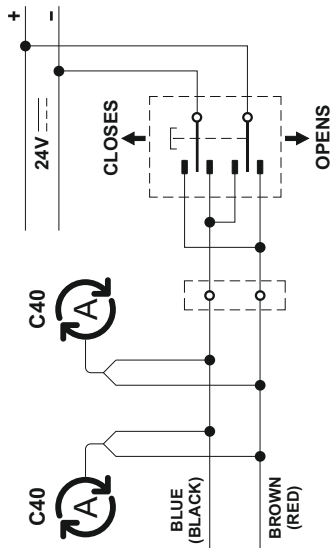
Wiring diagram



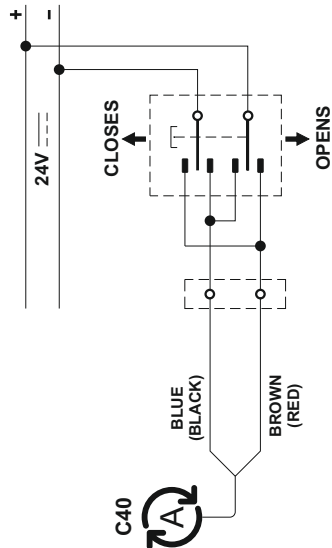
THIS SYMBOL IDENTIFIES THE TOPPELECTRICAL ACTUATOR
IN WIRING DIAGRAM.



24 V



THIS SYMBOL IDENTIFIES THE TOPPELECTRICAL ACTUATOR
IN WIRING DIAGRAM.



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