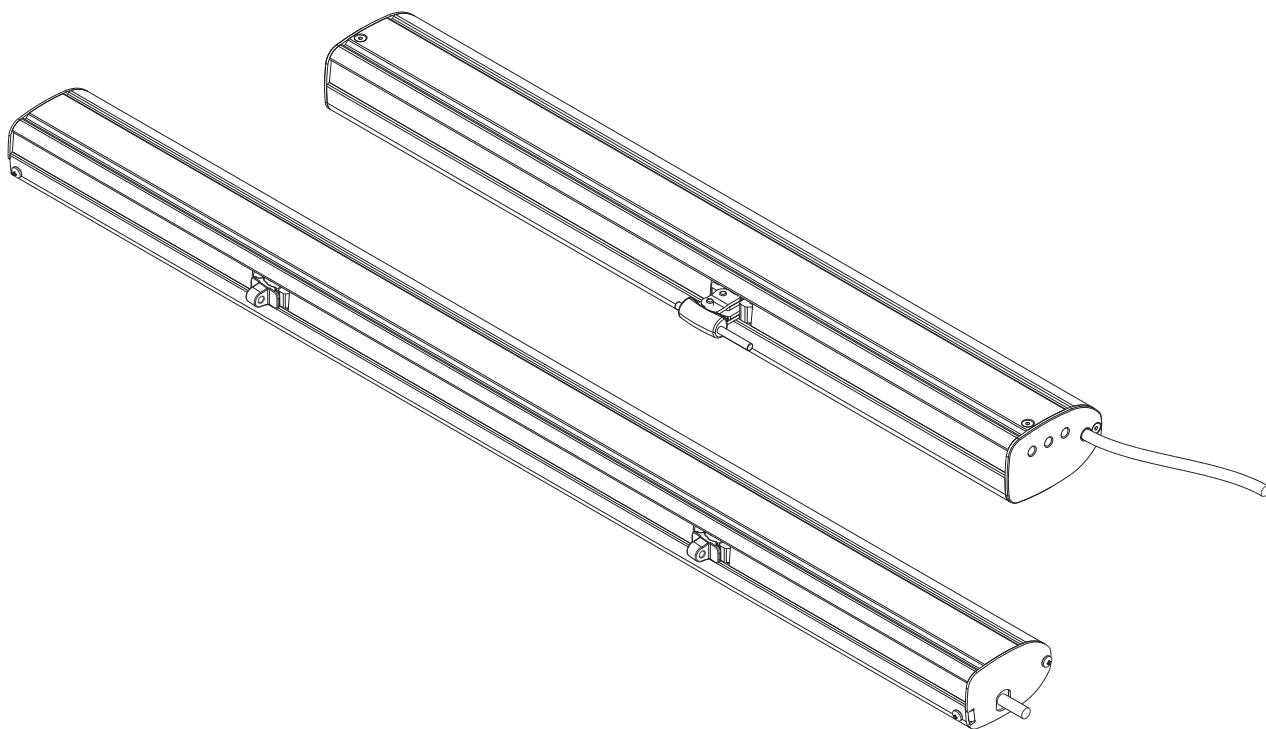


**CHAIN ACTUATOR FOR  
WINDOW AUTOMATION**

**C160  
C160RWA**



*original instruction.*



COD. 0P5296

VER.0.0

REV.02.18

**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**  
**RWA CHAIN ACTUATOR FOR WINDOW AUTOMATION**

Type: C160  
Model: C160/230V - C160/24V RWA - C160/24V Double push point RWA

the following essential requisites of the  
**2006/42/EC Machinery Directive (including all applicable amendments)**  
have been applied and fulfilled: Enclosure I: 1.5.1; 1.5.2; 1.5.10; 1.5.11  
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 directives (including all applicable amendments)  
**EMC Directive 2014/30/EU**  
**RoHS II Directive 2011/65/EU**

The following harmonised standards have been applied:  
**EN 60335-2-103:2015** (applicable parts)  
**EN 55014-1:2006 + A1:2009 + A2:2011**  
**EN 55014-2:2015**  
**EN 61000-6-2:2005.**  
**EN 61000-6-3:2007 + A1:2011 + AC:2012.**  
**EN 50581:2012**  
**EN 12101-2:2003** (only for RWA): - 7.1 Dual purpose ventilator class "RE1000" -7.2 class "SL 0" - 7.3  
class "T(-15)" - 7.4 class "WL1500" - 7.5 class "B300".  
and the following technical documents:  
**EN 62233:2008**

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: Sandrigo01/02/2018

Signature: Matteo Cavalcante  
Amministratore

## 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 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 NONGENUINE 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.

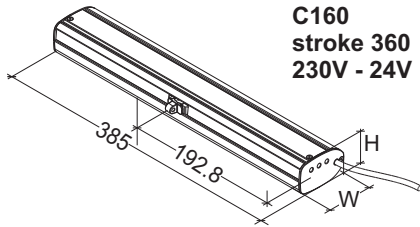
### User:

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.

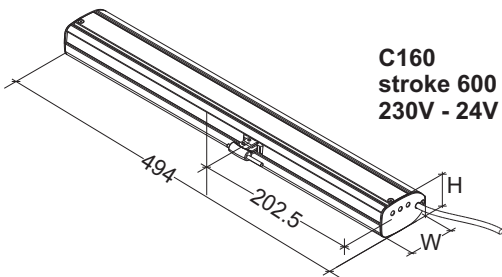
### 3- TECHNICAL DESCRIPTION

**C160**

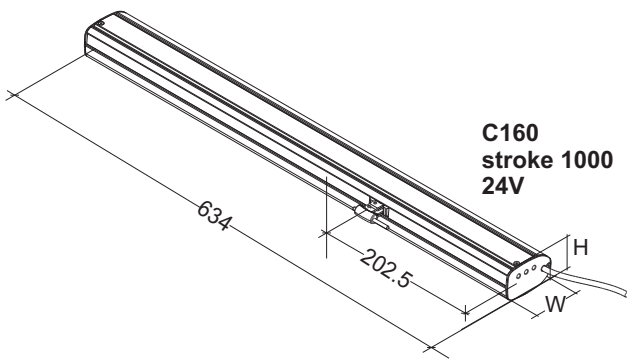
#### 3.1-DENOMINATION – DIMENSIONS TECHNICAL DATA



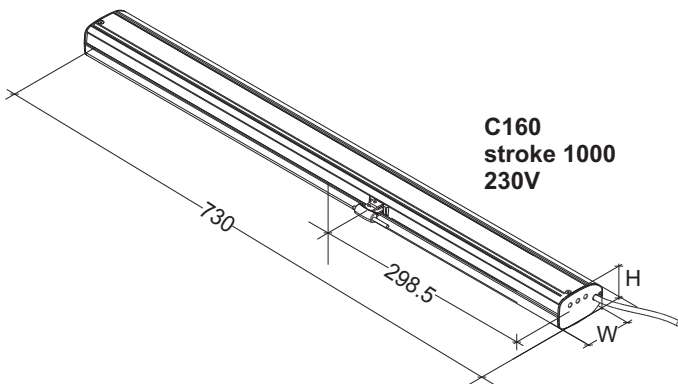
**C160  
stroke 360  
230V - 24V**



**C160  
stroke 600  
230V - 24V**



**C160  
stroke 1000  
24V**



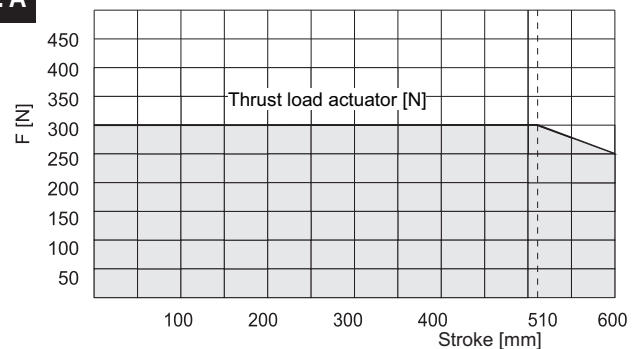
**C160  
stroke 1000  
230V**

H = 43 mm  
W = 68.5 mm

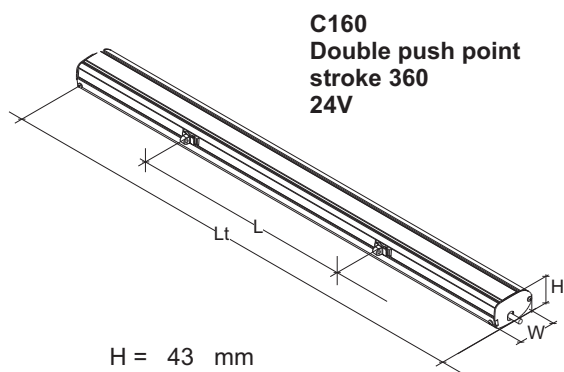
TECHNICAL DATA C160 RWA 24V Single push point	Stroke (1) (mm)		
	360	600	1000
Power supply voltage	24V		
Absorbed current	0,43 A	0,60 A	0,60 A
Absorbed power with load	11 W	15 W	15 W
Protection against electric shock	Class III		
Protection degree of electric devices	IP30		
Parallel electric connection of more actuators on the same window	yes		
Thrust force	300 N	Fig.A	50 N
Tractive force	200 N	185 N	185N
Idle translation speed	7,74	10 mm/s	10 mm/s
Duration of the idle stroke (2)	46,5 s	60s	100s
Type of service S (3)	4 min		
Limit switch	Electronic for opening-by amperometric absorption for closing		
Operating temperature	from - 5°C to + 50°C		
Gross weight	1,7 kg	1,9 kg	2,5 kg
Efective stroke bottom hung inward	322	562	962

TECHNICAL DATA C160 230V Single push point	Stroke (1) (mm)		
	360	600	1000
Power supply voltage	230V ~ 50Hz		
Absorbed current	0,12A	0,14A	0,14A
Absorbed power with load	28W	22,5W	22,5W
Protection against electric shock	Class II		
Protection degree of electric devices	IP30		
Parallel electric connection of more actuators on the same window	yes		
Thrust force	300	Fig.A	50
Tractive force	200	200	185
Idle translation speed	8mm/s	8mm/s	8mm/s
Duration of the idle stroke	45s	75s	125s
Type of service S (3)	4 min		
Limit switch	Electronic for opening-by amperometric absorption for closing		
Operating temperature	from - 5°C to + 50°C		
Gross weight	1,7 kg	1,9 kg	2,8 kg
Efective stroke bottom hung inward	322	562	962

**Fig. A**



- (1) Tolerance on the precision of limit switch tripping at output: +/- 10mm  
 (2) It is considered RWA if the Duration of the idle stroke is less than or equal to 60 s / 600mm Equivalent stroke  
 (3) Service of limited duration according to EN 60034



**C160  
Double push point  
stroke 360  
24V**

H = 43 mm  
W = 68.5 mm

Lt; L : variables

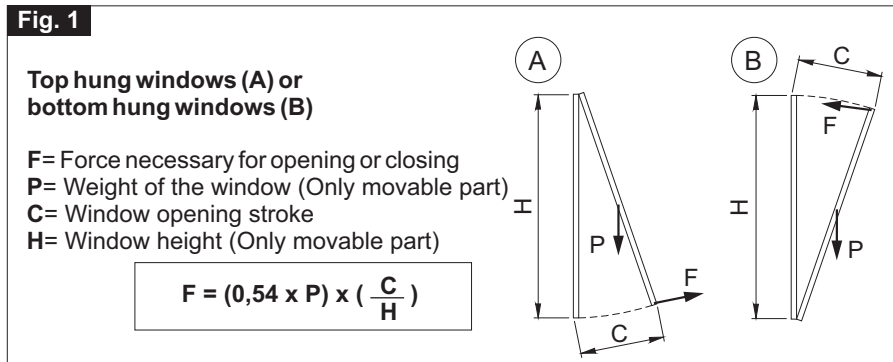
TECHNICAL DATA		Stroke (1) (mm)
<b>C160 RWA 24V Double push point</b>		<b>360</b>
Power supply voltage		24V
Absorbed current		0,75A
Absorbed power with load		18W
Protection against electric shock		Class III
Protection degree of electric devices		IP30
Parallel electric connection of more actuators on the same window		yes
Thrust force		400
Tractive force		300
Idle translation speed		7,5mm/s
Duration of the idle stroke (2)		48s
Type of service S (3)		4 min
Limit switch		Electronic for opening-by amperometric absorption for closing
Operating temperature		from - 5°C to + 50°C
Gross weight		3,9kg - 7,0 kg
Number of clamps	1200<Lt<3000	2
	3000<Lt<4000	3
Effective stroke bottom hung inward		322

(1) Tolerance on the precision of limit switch tripping at output: +/- 10mm

(2) It is considered RWA if the Duration of the idle stroke is less than or equal to 60 s / 600mm Equivalent stroke

(3) Service of limited duration according to EN 60034

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



### 3.3- DESTINATION OF USE

The actuator has been designed and manufactured to perform, by means of a command device, the opening and closing of top hinged windows, bottom hinged windows and side hinged windows.

**Application RWA:** The RWA actuator has been designed and manufactured to perform in case of emergency the opening of the window for safe discharge of the smoke. It must be installed in windows that opening outside and bottom hinged. According to EN 12101-2 / 2003.

### 3.4- USE LIMITS

The actuator has been designed and manufactured exclusively for the destination of use given in par. 3.3, 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 selfbalancing window stays, etc.) it is recommended that they not exceed the actuator performances shown in par.3.1. If they do, please find an alternative and more suitable product for your application.



**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.**

### 3.5-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 S2 (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. C160/230V)
- serial number



### 3.6- PACKAGE

Each package of the product (**Fig. 2**) contains:

- 1) Actuator equipped with power supply (**Ref. A**);
- 2) Window mounting brackets (depending on application) and screws for aluminum (**Ref. B**);
- 3) Actuator brackets (depending on application) and screws for aluminum (**Ref. C**);
- 4) Installation and use instructions (**Ref.D**);
- 5) Safety plate (**Ref. E**).



**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.**



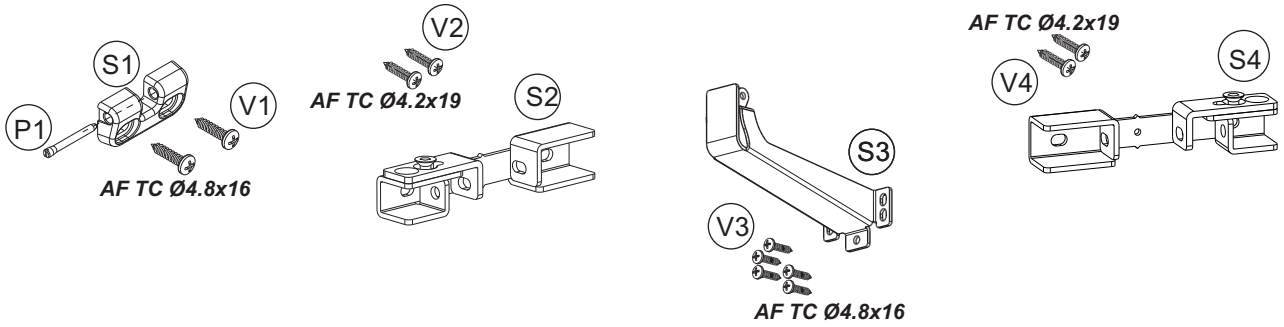
**THE PACKAGING (PAPER, PLASTIC, ETC.) HAS TO BE DISPOSED ACCORDING TO THE LAWS IN FORCE.**

Fig. 2

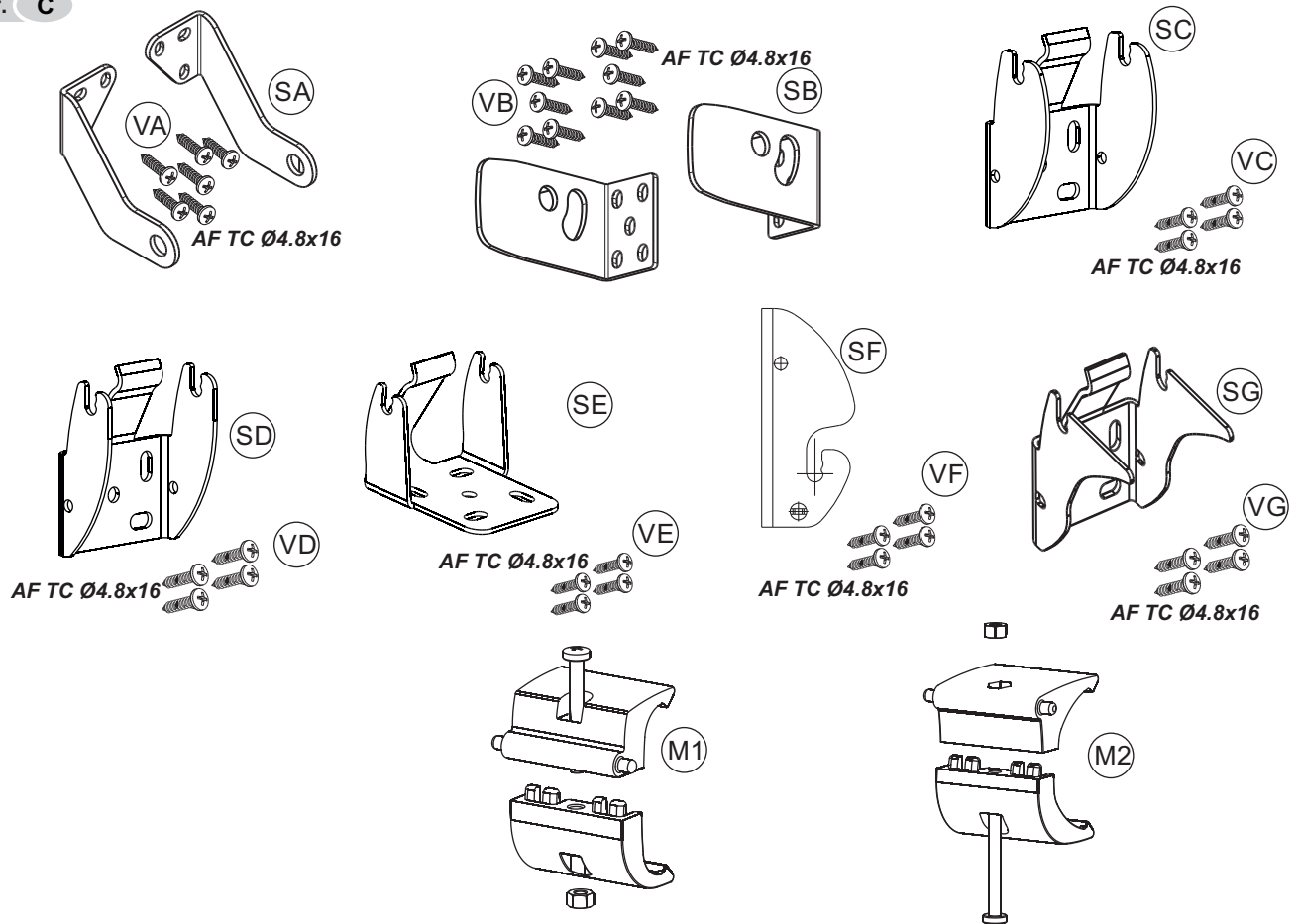
Ref. A



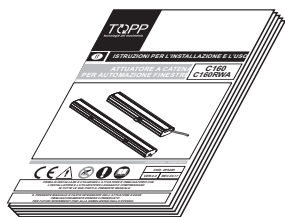
Ref. B



Ref. C



Ref. D

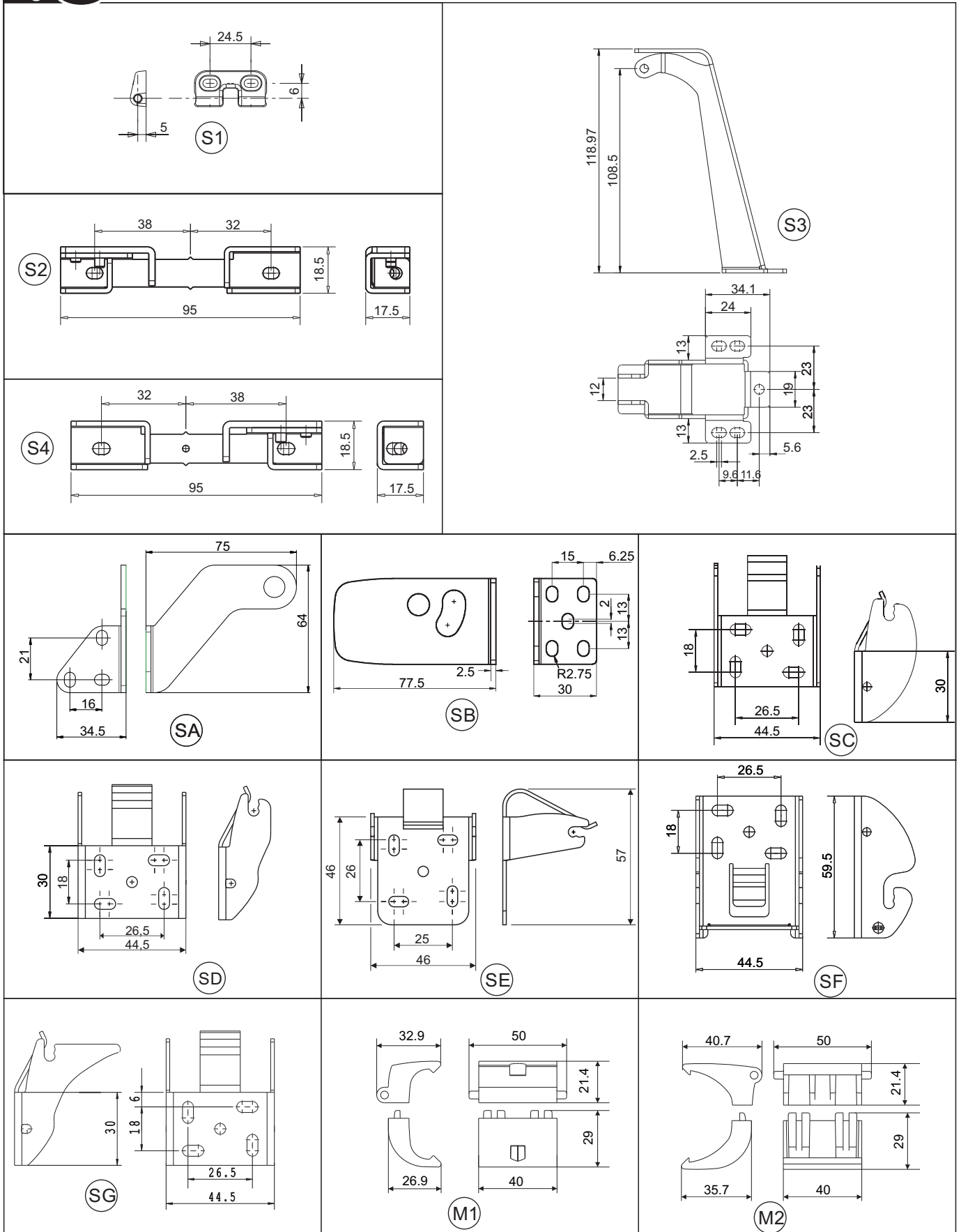


Ref. E



3.7- COMPONENTS AND DIMENSIONING

Fig. 3

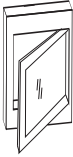
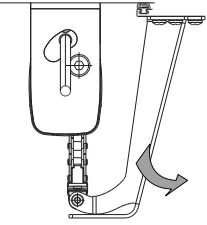
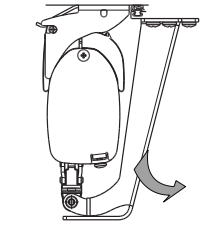
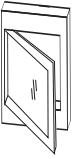
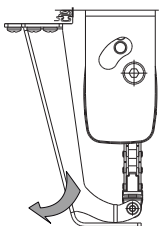
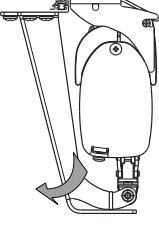

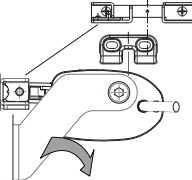

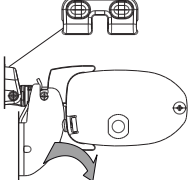


## 3.8-APPLICATION

**Fig. 4**

APPLICATION		REF.	Single push point	Double push point	Minimum window frame height mm (1)			Push point
					360	600	1000	
ACTUATOR MOUNTING ON THE FRAME	TOP HUNG Outward opening <i>Pag. 20</i> SA,S1 SA,S2	A1_1			500	600		Sing.
	TOP HUNG Outward opening <i>Pag. 34</i> SC,S1,M1	A1_2			700			Doub.
	TOP HUNG Outward opening <i>Pag. 34</i> SD,S1,M1	A1_3			400			Doub.
	TOP HUNG Outward opening <i>Pag. 34</i> SE,S1,M1	A1_4			500			Doub.
	BOTTOM HUNG Outward opening <i>Pag. 23, 38</i> SA,S1 SA,S2 SF,S1,M1	A2			500	600	1000	Sing.
	BOTTOM HUNG Inward opening <i>Pag. 26, 40</i> SB,S3 SG,S3,M2	A3			500	800	1000	Sing.
	SIDE HUNG Outward opening LH <i>Pag. 28, 43</i> SA,S2 SF,S1,M1	A4_1			500	600	1000	Sing.
	SIDE HUNG Outward opening RH <i>Pag. 28, 43</i> SA,S4 SF,S1,M1	A4_2			500	600	1000	Sing.
				700			Doub.	
				700			Doub.	

Fig. 4

APPLICATION		REF.	Single push point	Double push point	Minimum window frame height mm (1)			Push point
					360	600	1000	
ACTUATOR MOUNTING ON THE FRAME	SIDE HUNG Inward opening LH <i>Pag. 31, 46</i> SB,S3 SG,S3,M2	A5_1 			500	800	1000	Sing.
					900			Doub.
	SIDE HUNG Inward opening RH <i>Pag. 31, 46</i> SB,S3 SG,S3,M2	A5_2 			500	800	1000	Sing.
					900			Doub.
ACTUATOR MOUNTING ON MOVABLE WINDOWS	On the window Inward opening <i>Pag. 49</i> SA,S1 SA,S4	B1 			1100	1900	3000	Sing.
ACTUATOR MOUNTING ON MOVABLE WINDOWS	On the window Inward opening <i>Pag. 52</i> SC,S1,M1	B1 			1000			Doub.

(1) Distance from the opening edge of the window to the axis of rotation of the window.

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.



THE 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.



DURING HANDLING AND INSTALLATION OF THE PARTS, THE PERSONNEL SHALL BE EQUIPPED WITH SUITABLE PERSONAL PROTECTION EQUIPMENT (PPE) SO AS TO PERFORM THE WORKS REQUIRED UNDER SAFE CONDITIONS.

## 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. C160/230 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.

In Fig. 5 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.



### 5.1- GENERAL INSTRUCTIONS



THE ACTUATOR INSTALLATION CAN BE PERFORMED EXCLUSIVELY BY COMPETENT AND QUALIFIED TECHNICAL PERSONNEL SATISFYING THE PROFESSIONAL AND TECHNICAL REQUIREMENTS FORE SEEN 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. 3.1). IT IS FORBIDDEN TO EXCEED THE LIMITS CONCERNING TECHNICAL DATA (PAR. 3.1).



THE ACTUATOR INSTALLATION MUST BE PERFORMED EXCLUSIVELY WITH CLOSED WINDOW.



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 PAR 3.8.



VERIFY THAT DISTANCE "D" BETWEEN THE ACTUATOR SHELL AND THE CHAIN END IS GREATER THAN 5 mm.



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



CHECK THE ADEQUACY OF THE WINDOW AND THE SUITABILITY OF THE MATERIALS OF THE WINDOW AND/OR FRAME ON WHICH THE ACTUATOR WILL BE FASTENED. AND IT MUST ENSURE A GOOD SUPPORT OF THE ACTUATOR-WINDOW ASSEMBLY DURING THE MOVEMENT.

### 5.2- INSTALLATION

Perform the installation as described in **Chapter 10 : DRAWINGS / INSTALLATION INSTRUCTIONS.**

### 5.3- ELECTRIC CONNECTIONS



THE CONNECTION OF MODEL C160/24V HAS TO BE CARRIED OUT WITH VERY LOW VOLTAGE SAFETY FEEDER PROTECTED AGAINST SHORT CIRCUIT.



THE ELECTRIC CONNECTION OF THE ACTUATOR (PAR.11) 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 PAR.3.1 AND ON THE RATING PLATE AND THE "CE" MARKING.



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 (PUSHBUTTON) 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.

### 5.4- 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) OPTIONAL: CONTROL AND FEEDING UNIT:

TOPP 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 pushbuttons, 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).**

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



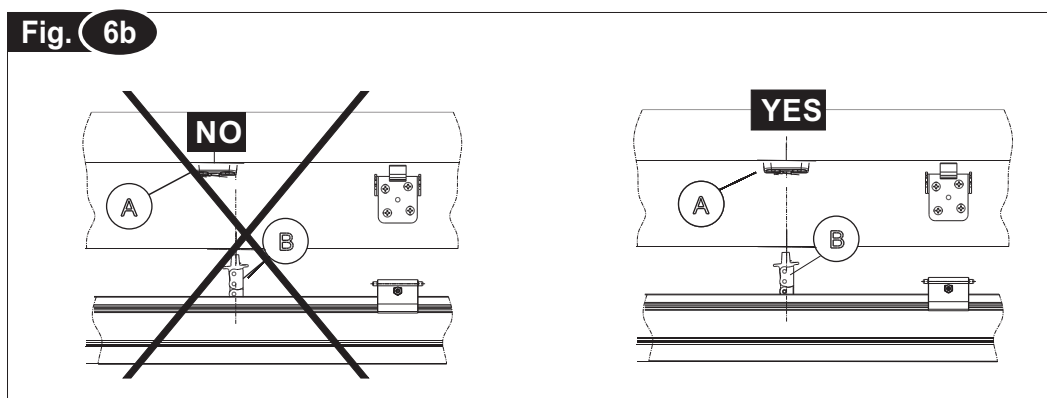
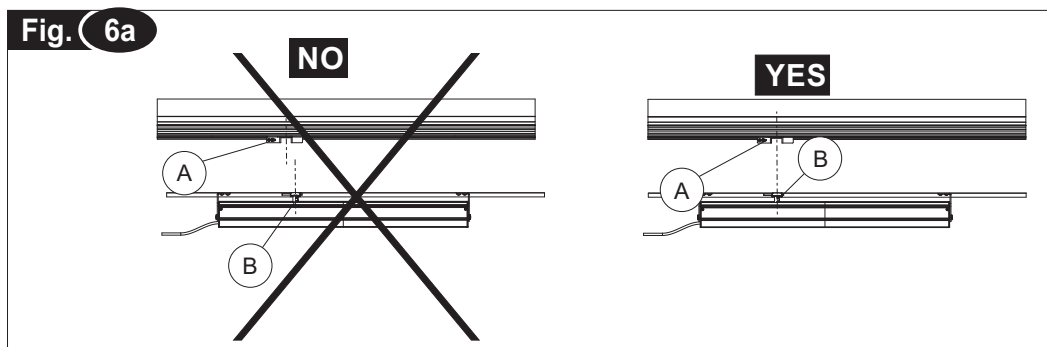
**THE CORRECT ADJUSTMENT OF THE WINDOW FRAME CLOSING ASSURES THE LIFE AND THE TIGHTNESS OF THE SEALS, AS WELL AS THE GOOD OPERATION OF THE ACTUATOR.**

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



**VERIFY THAT THE CHAIN COUPLING (A) IS ON THE SAME AXIS OF THE CHAIN END (B). 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. 6a-6b).**

- 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.





**5.6- 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.**

**EMERGENCY PROCEDURES – For Applications with frame actuator mounting :**

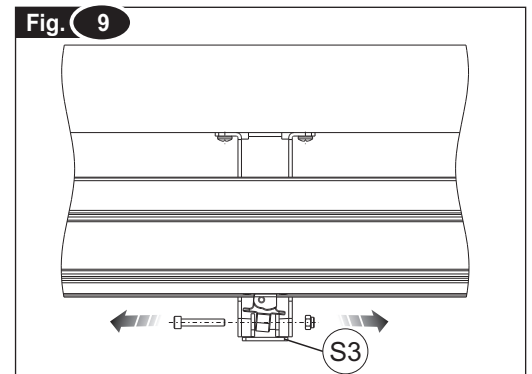
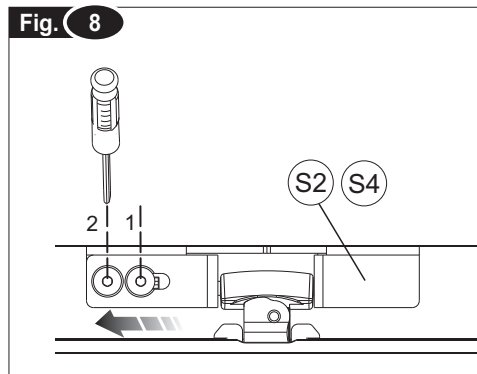
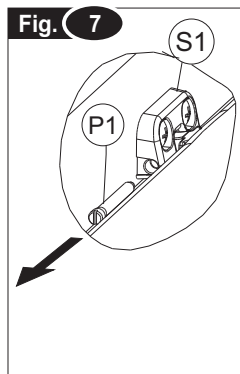
**Opening S1: Fig. 7-** Remove P1 from S1 bracket completely, until the chain end is released.

**Opening S2 (S4): Fig. 8-** Slacken off both bolts (Ref. 1,2) with a 2.5mm hex wrench, move the square plate aside and extract the actuator (pull out the shorter shaft side first).

**Opening S3: Fig. 9-** Bottom hung – inward opening: with a 3 mm Allen key and 7 mm hex wrench unscrew the nut , remove the pin until the chain end is released.



**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.**

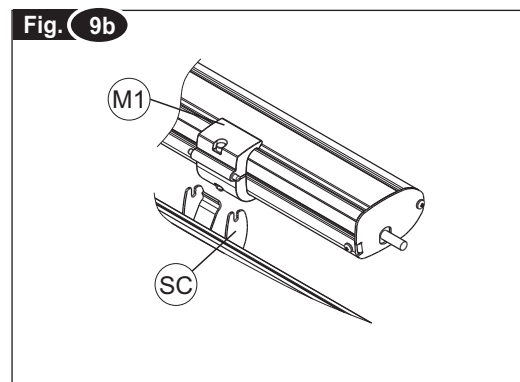
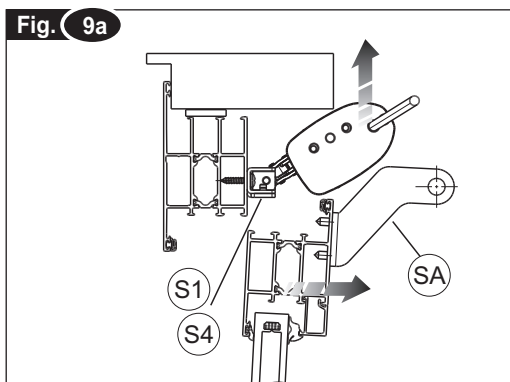


**EMERGENCY PROCEDURES – For applications with casement actuator mounting:**

- 1) **Remove the actuator from the window:** For single push point actuator (Fig. 9a): loosen the two screws that secure the actuator to the bracket "SA"; for two push point (Fig. 9b): unfasten the clamps "M1" from the bracket "SC";
- 2) Move actuator upwards;
- 3) Open the window just enough and then proceed to pull out the chain terminal from S1 or S4 bracket, described below:

• **Opening S1: Fig. 7-** Remove P1 from S1 bracket completely, until the chain end is released.

• **Opening S4: Fig. 8-** Slacken off both frame mount bolts with a 2.5mm hex wrench, move the square plate aside and extract the actuator (pull out the shorter shaft side first).



### 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).



DURING THE OPERATION OF THE ACTUATOR CONTROL DEVICE, THE USER HAS TO COMPULSORY 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 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. 5.4).

## 7- MAINTENANCE

### 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.



THE 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 replacement of components that show signs of superficial damage such as injuries, cracks, discoloration, etc., 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.).

**SPARE PARTS AND ACCESSORIES UPON REQUEST -9****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 3x0.75 FOR THE C160/230V AND TYPE Si HF Fg4G4 2x0.75 FOR THE C160/24V.



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.

10.1- Actuator mounting on the frame

TOP HUNG  
Outward opening

A1\_1



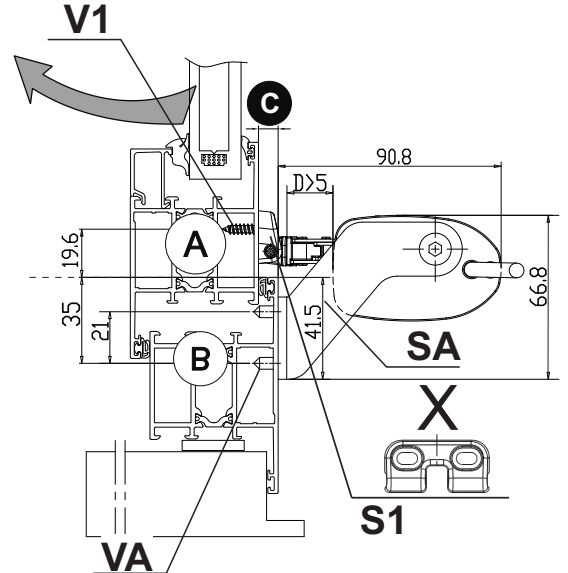
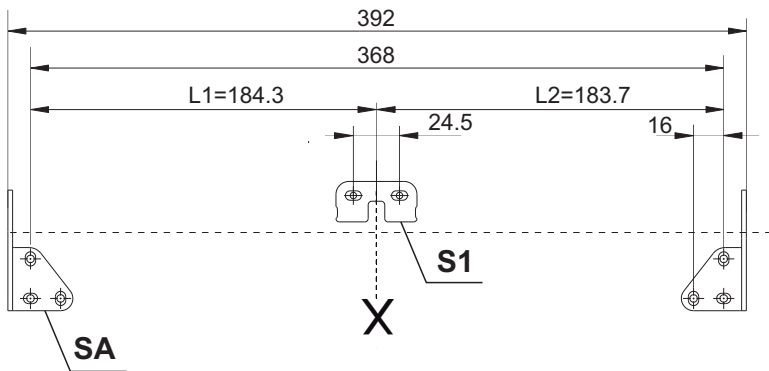
SA,S1

Stroke 360

24V - 230V

Standard

<b>A</b>	Casement
<b>B</b>	Frame
<b>C</b>	Overlap



TOP HUNG  
Outward opening

A1\_1



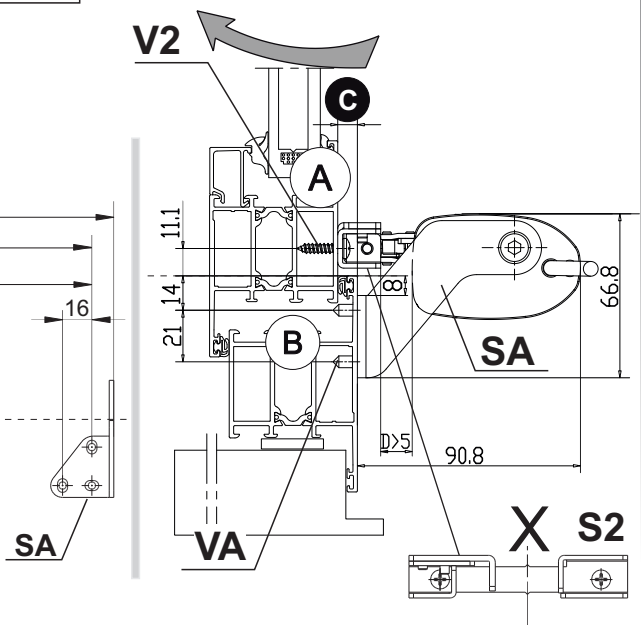
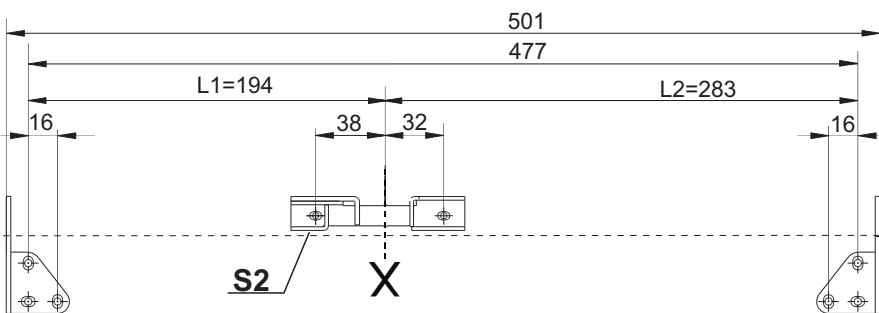
SA,S2

Stroke 600

24V - 230V

Standard

<b>A</b>	Casement
<b>B</b>	Frame
<b>C</b>	Overlap



TOP HUNG  
Outward opening

A1\_1



SA,S1

Stroke 360

24V - 230V

Standard

Fig. 10

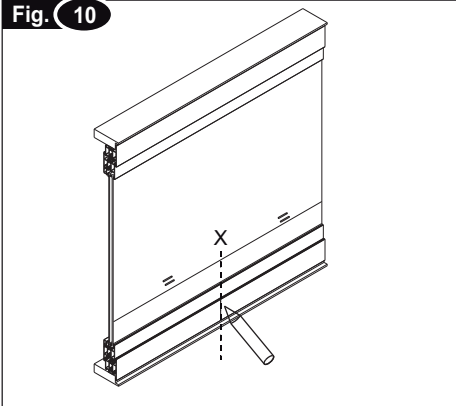


Fig. 11

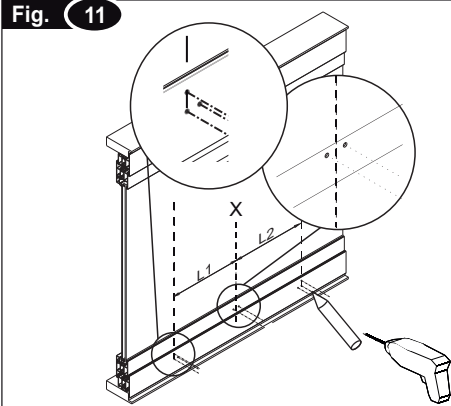


Fig. 12

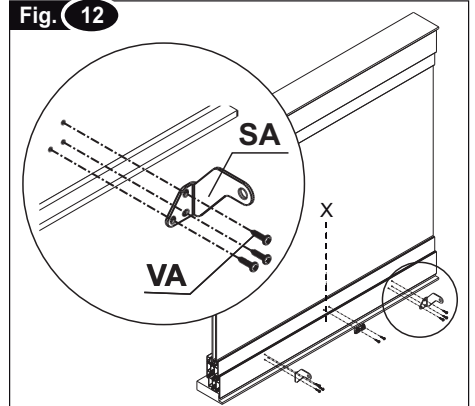


Fig. 13

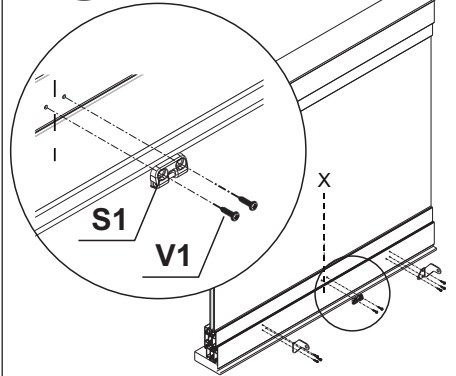


Fig. 14

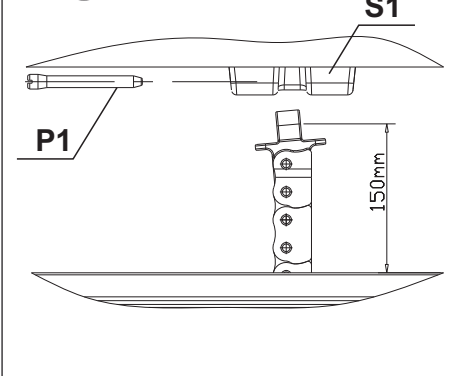
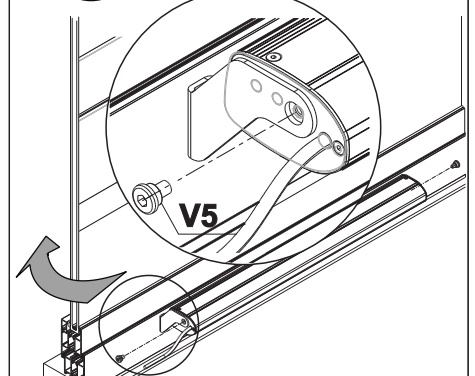


Fig. 15



## INSTALLATION

- 1) Open the package and extract the various components;
- 2) Fig. 10- With a pencil draw the centre line **X** of the window frame;
- 3) Fig. 11- Taking as reference the **X-axis** previously traced and the hole layout for the application **A1\_1**. Mark the points for the holes to fasten the brackets **S1** and **SA**;
- 4) With a suitable drill, create on the window the holes;
- 5) Fig. 12- Mount the supports **SA (RH-LH)** on the fix window frame with the screws **VA**; check the perfect horizontal and vertical alignment with the window frame;
- 6) Fig. 13- Mount the bracket **S1** on the movable window frame with the screws **V1**;
- 7) Perform the electric connections according to the provisions of par. 5.3, as well as with reference to the wiring diagram. Power the actuator and let the chain come out for at least 150mm of stroke, then disconnect the actuator;
- 8) Fig. 14- Connect the bracket **S1** to the chain end using the pin **P1**;
- 9) Fig. 15- Place the actuator on the support **SA** inserting the screw **V5** on the support bracket;

**! VERIFY THAT AFTER THE TIGHTENING THE BRACKETS "SA" ADHERE TO THE ACTUATOR IN ORDER TO ASSURE A CORRECT APPLICATION.**

- 10) Perform a test of complete window frame opening and closing. Verify that with open window frame, the stroke is some centimetres lower than the stroke limited by window frame mechanical limit devices. Once the closing phase is ended, verify that the window frame is completely closed by checking the seal deflection.

TOP HUNG  
Outward opening

A1\_1

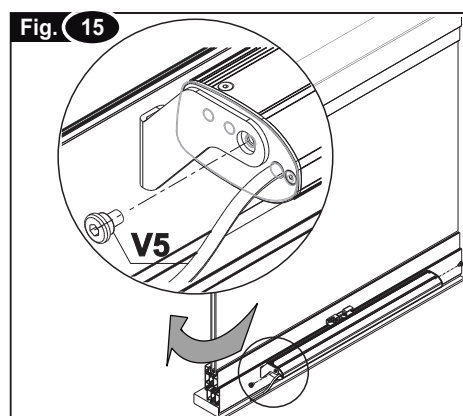
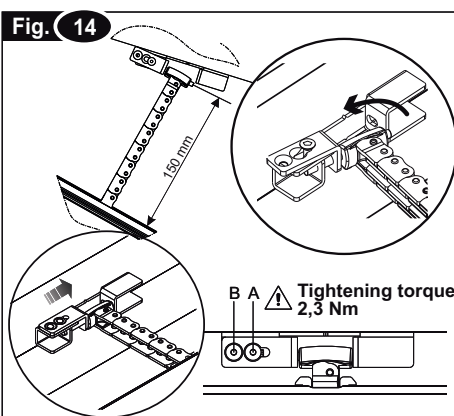
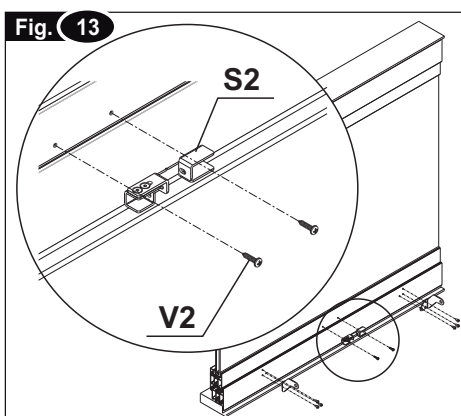
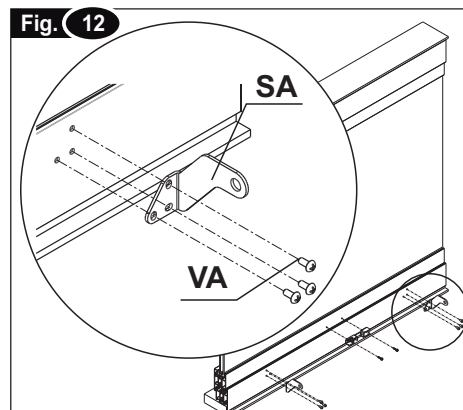
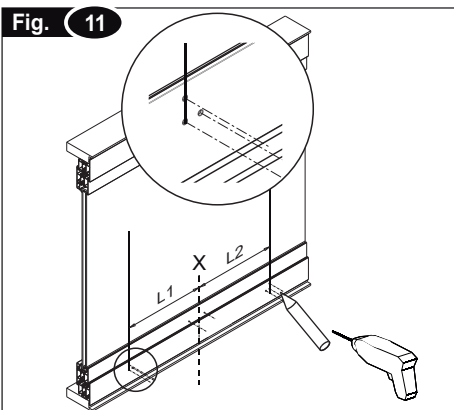
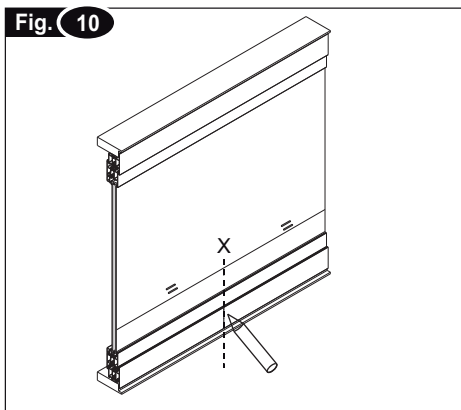
Stroke 600

24V - 230V

Standard



SA,S2



## INSTALLATION

- 1) Open the package and extract the various components;
- 2) **Fig. 10-** With a pencil draw the centre line "X" of the window frame;
- 3) **Fig. 11-** Taking as reference the X-axis previously traced and the hole layout for the application A1\_1. Mark the points for the holes to fasten the brackets S2 and SA;
- 4) With a suitable drill, create on the window the holes;
- 5) **Fig. 12-** Mount the supports SA (RH-LH) on the fix window frame with the screws VA; check the perfect horizontal and vertical alignment with the window frame;
- 6) **Fig. 13-** Mount the bracket S2 on the movable window frame with the screws V2;
- 7) **Fig. 14-** Perform the electric connections according to the provisions of par. 5.3, as well as with reference to the wiring diagram. Power the actuator and let the chain come out for at least 150mm of stroke, then disconnect the actuator; secure the chain terminal to the frame mount; first fit the long side of the shaft and then insert the entire assembly. 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);
- 8) **Fig. 15-** Place the actuator on the support SA inserting the screw V5 on the support bracket;

**! VERIFY THAT AFTER THE TIGHTENING THE BRACKETS "SA" ADHERE TO THE ACTUATOR IN ORDER TO ASSURE A CORRECT APPLICATION.**

- 9) Perform a test of complete window frame opening and closing. Verify that with open window frame, the stroke is some centimetres lower than the stroke limited by window frame mechanical limit devices. Once the closing phase is ended, verify that the window frame is completely closed by checking the seal deflection.

**BOTTOM HUNG**  
Outward opening

A2

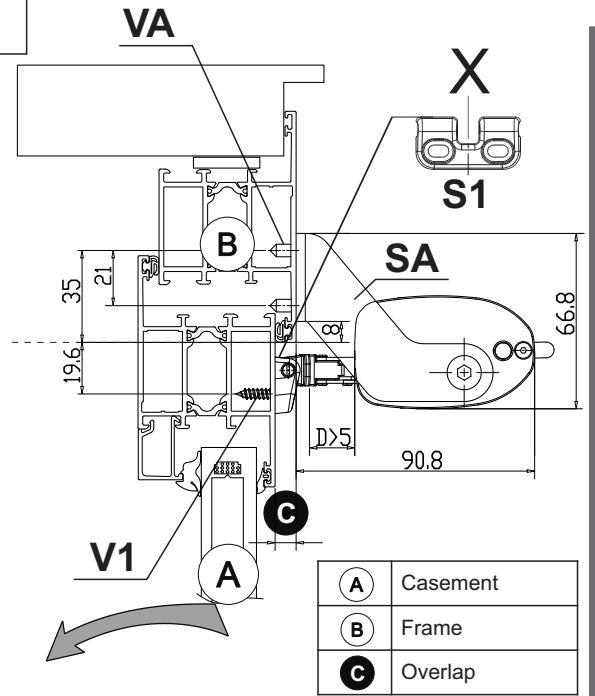
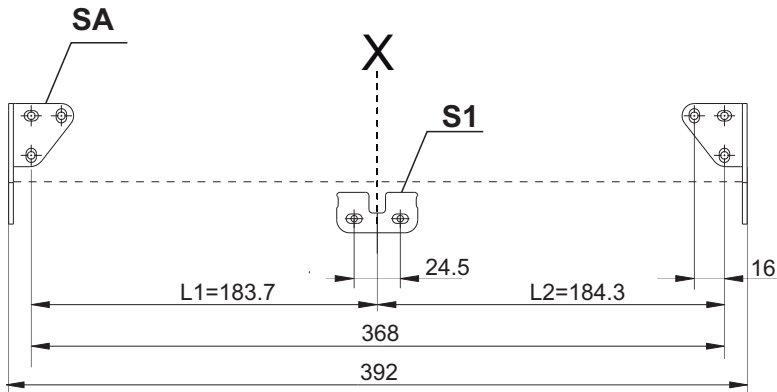
Stroke 360

24V - 230V

Standard -RWA



SA, S1



**BOTTOM HUNG**  
Outward opening

A2

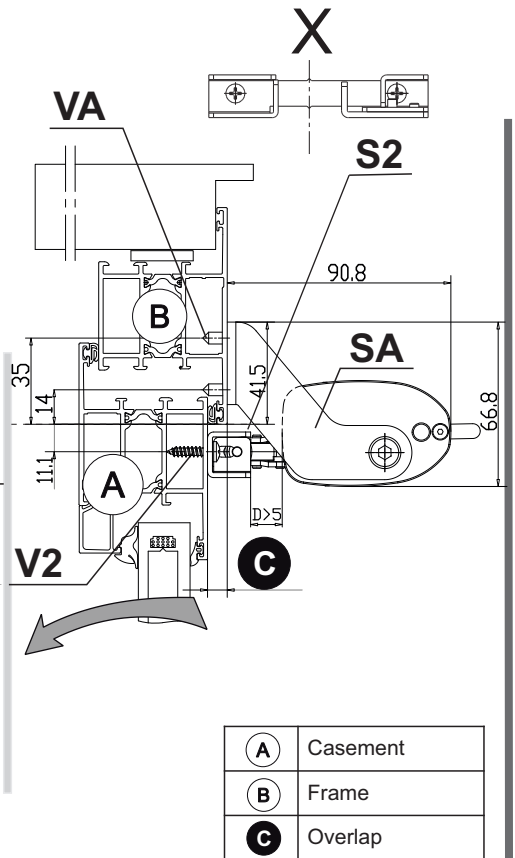
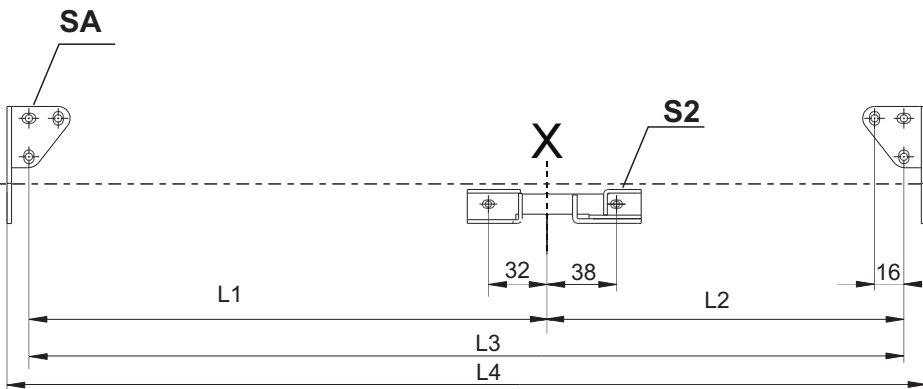
Stroke 600- 1000

24V - 230V

Standard - RWA



SA, S2



	L1	L2	L3	L4
<b>Stroke 600</b>	283	194	477	501
<b>Stroke 1000 24V</b>	423	194	617	641
<b>Stroke 1000 230V</b>	423	290	713	737

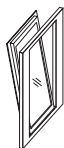
**BOTTOM HUNG**  
Outward opening

A2

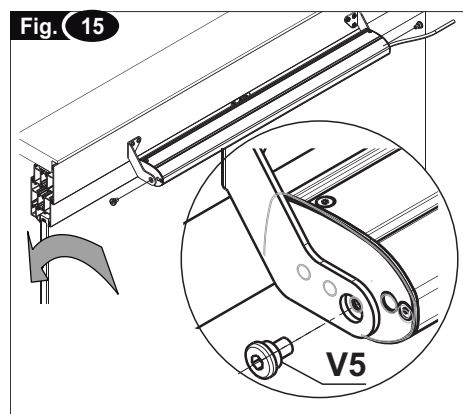
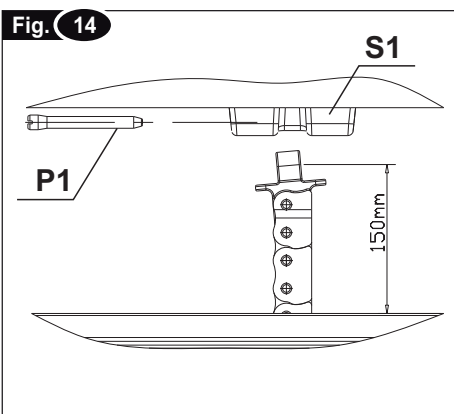
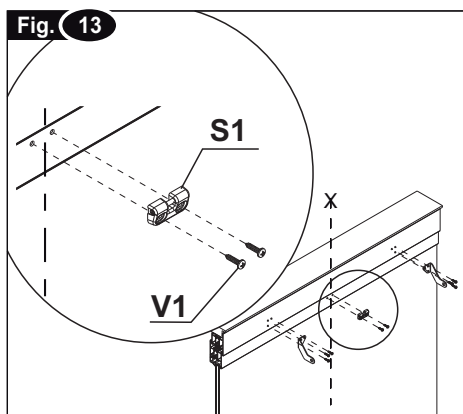
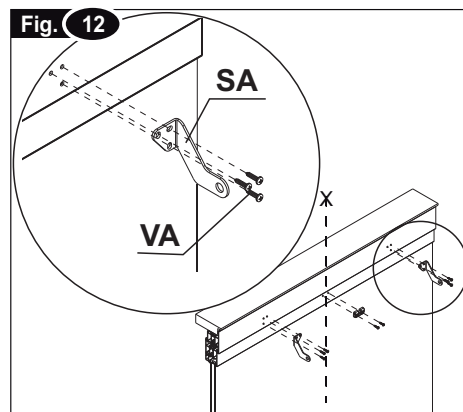
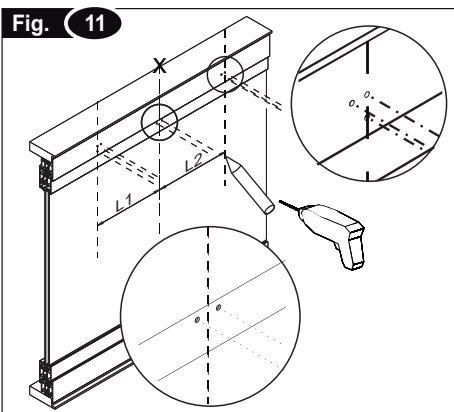
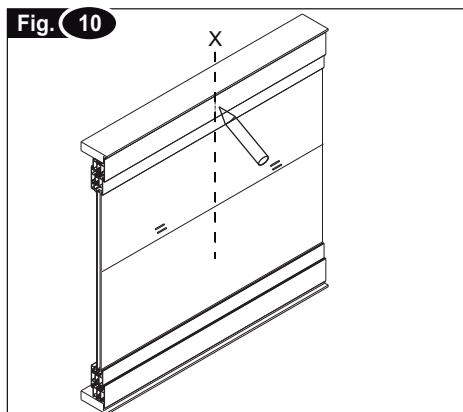
Stroke 360

24V - 230V

Standard - RWA



SA, S1



## INSTALLATION

- 1) Open the package and extract the various components;
- 2) **Fig. 10-** With a pencil draw the centre line **X** of the window frame;
- 3) **Fig. 11-** Taking as reference the **X-axis** previously traced and the hole layout for the application **A2**. Mark the points for the holes to fasten the brackets **S1** and **SA**;
- 4) With a suitable drill, create on the window the holes;
- 5) **Fig. 12-** Mount the supports **SA(RH-LH)** on the fix window frame with the screws **VA**; check the perfect horizontal and vertical alignment with the window frame;
- 6) **Fig. 13-** Mount the bracket **S1** on the movable window frame with the screws **V1**;
- 7) Perform the electric connections according to the provisions of par. 5.3, as well as with reference to the wiring diagram. Power the actuator and let the chain come out for at least 150mm of stroke, then disconnect the actuator;
- 8) **Fig. 14-** Connect the bracket **S1** to the chain end using the pin **P1**;
- 9) **Fig. 15-** Place the actuator on the support **SA** inserting the screw **V5** on the support bracket;



**VERIFY THAT AFTER THE TIGHTENING THE BRACKETS "SA" ADHERE TO THE ACTUATOR IN ORDER TO ASSURE A CORRECT APPLICATION.**

- 10) Perform a test of complete window frame opening and closing. Verify that with open window frame, the stroke is some centimetres lower than the stroke limited by window frame mechanical limit devices. Once the closing phase is ended, verify that the window frame is completely closed by checking the seal deflection.



**BOTTOM HUNG  
Outward opening**

A2

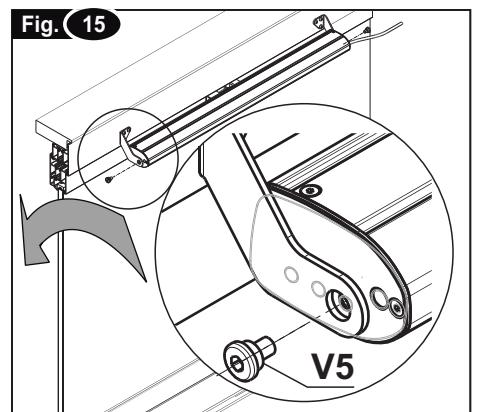
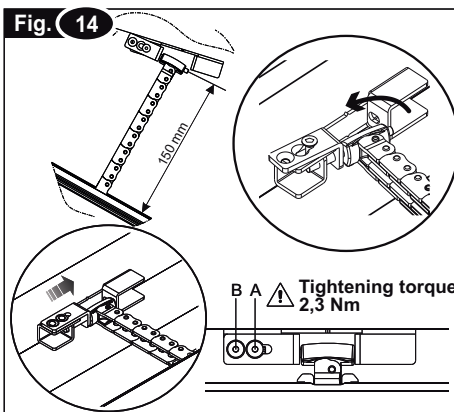
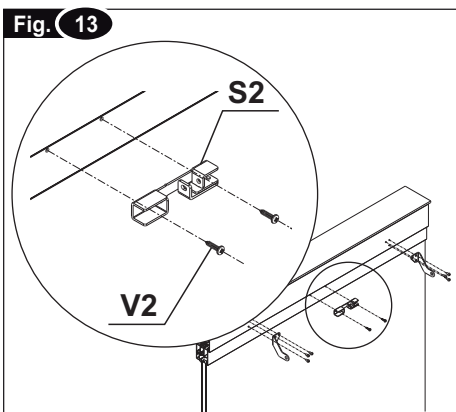
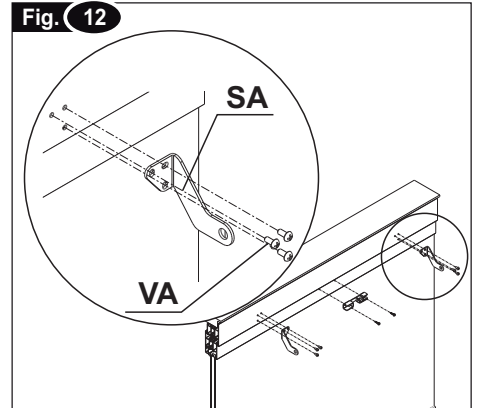
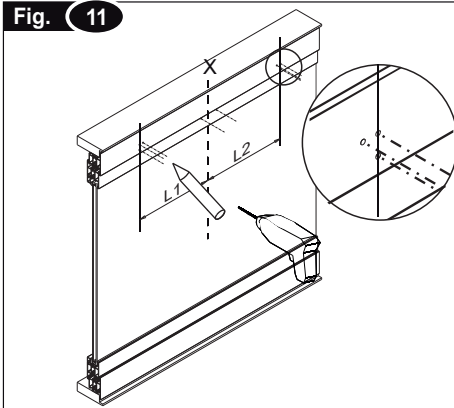
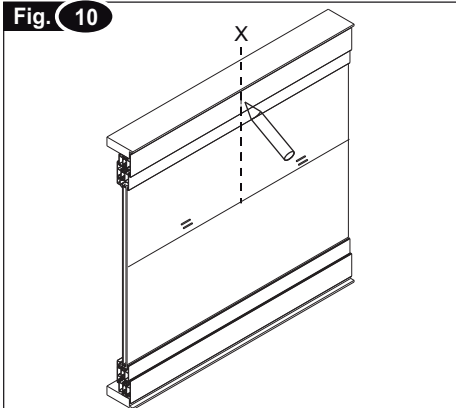
Stroke 600- 1000

24V - 230V

Standard - RWA



SA ,S2



**INSTALLATION**

- 1) Open the package and extract the various components;
- 2) Fig. 10- With a pencil draw the centre line **X** of the window frame;
- 3) Fig. 11- Taking as reference the **X-axis** previously traced and the hole layout for the application **A2**. Mark the points for the holes to fasten the brackets **S2** and **SA**;
- 4) With a suitable drill, create on the window the holes;
- 5) Fig. 12- Mount the supports **SA(RH-LH)** on the fix window frame with the screws **VA**; check the perfect horizontal and vertical alignment with the window frame;
- 6) Fig. 13- Mount the bracket **S2** on the movable window frame with the screws **V2**;
- 7) Fig. 14- Perform the electric connections according to the provisions of par. 5.3, as well as with reference to the wiring diagram. Power the actuator and let the chain come out for at least 150mm of stroke, then disconnect the actuator; secure the chain terminal to the frame mount; first fit the long side of the shaft and then insert the entire assembly. 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);
- 8) Fig. 15- Place the actuator on the support **SA** inserting the

screw **V5** on the support bracket;

**! VERIFY THAT AFTER THE TIGHTENING THE BRACKETS "SA" ADHERE TO THE ACTUATOR IN ORDER TO ASSURE A CORRECT APPLICATION.**

- 9) Perform a test of complete window frame opening and closing. Verify that with open window frame, the stroke is some centimetres lower than the stroke limited by window frame mechanical limit devices. Once the closing phase is ended, verify that the window frame is completely closed by checking the seal deflection.

**BOTTOM HUNG**  
Inward opening

A3

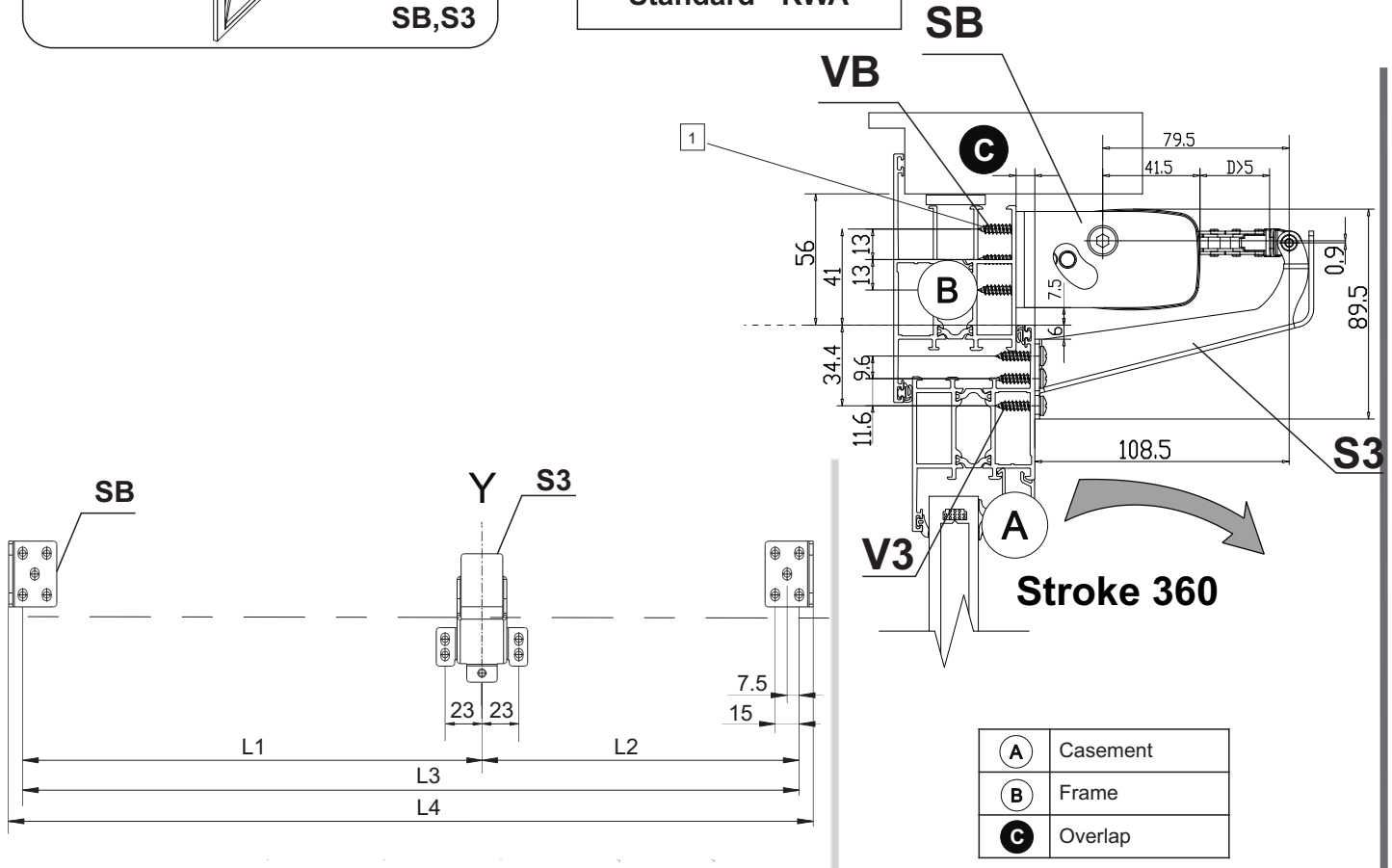


SB,S3

Stroke 360 - 600 - 1000

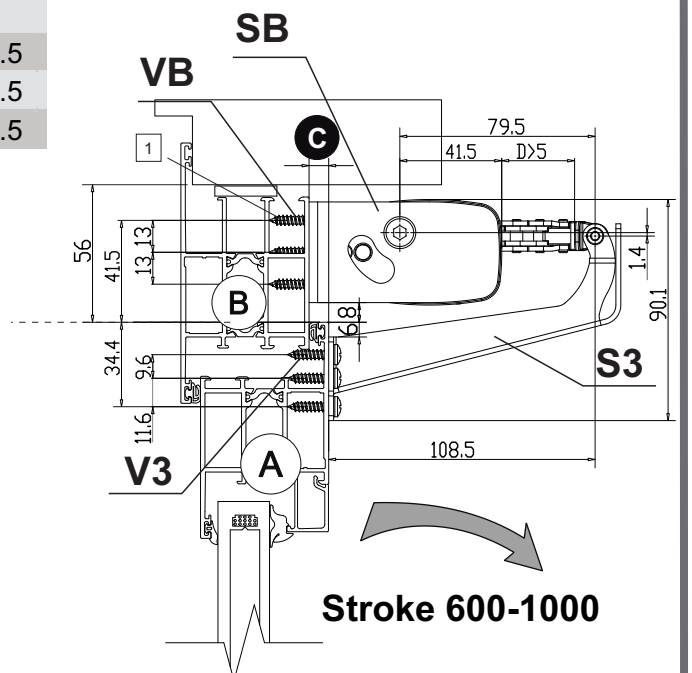
24V - 230V

Standard - RWA



(A)	Casement
(B)	Frame
(C)	Overlap

	L1	L2	L3	L4
Stroke 360	186.9	187.6	374.5	392
Stroke 600	286	197	483	500.5
Stroke 1000 24V	426	197	623	640.5
Stroke 1000 230V	426	293	719	736.5



1 For narrow window frames, the installation of the indicated screw can be omitted

**BOTTOM HUNG**  
Inward opening

A3



SB,S3

Stroke 360 - 600 - 1000

24V - 230V

Standard - RWA

Fig. 10

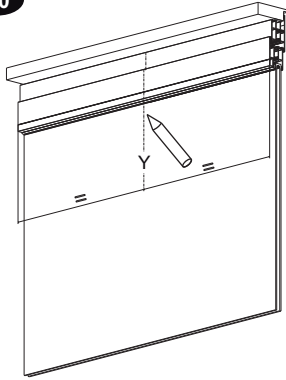


Fig. 11

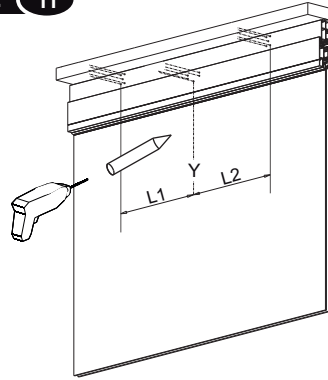


Fig. 12

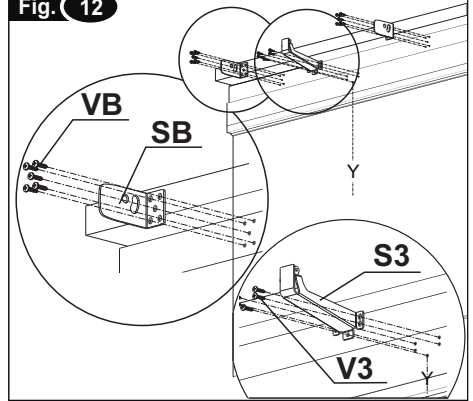


Fig. 13

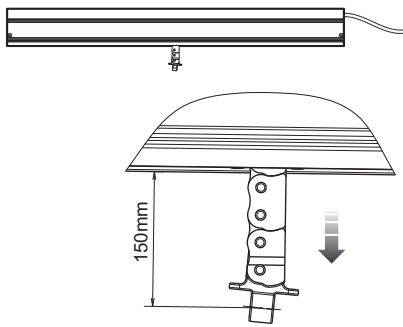
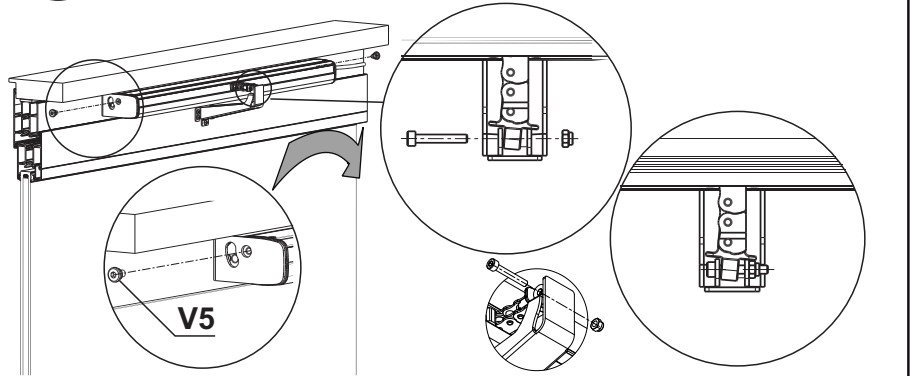


Fig. 14



## INSTALLATION

- 1) Open the package and extract the various components;
- 2) **Fig. 10-** With a pencil draw the centre line **Y** of the window frame;
- 3) **Fig. 11-** Taking as reference the **Y-axis** previously traced and the hole layout for the application **A3**. Mark the points for the holes to fasten the brackets **S3** and **SB**;
- 4) With a suitable drill, create on the window the holes;
- 5) **Fig. 12-** Mount the supports **SB (RH-LH)** on the fix window frame with the screws **VB**; check the perfect horizontal and vertical alignment with the window frame;
- 6) **Fig. 12-** Mount the bracket **S3** on the movable window frame with the screws **V3**;
- 7) **Fig. 13-** Perform the electric connections according to the provisions of par. 5.3, as well as with reference to the wiring diagram. Power the actuator and let the chain come out for at least 150mm of stroke, then disconnect the actuator;
- 8) **Fig. 14-** Attach the chain end to the bottom hung bracket **S3** with the screw and nut supplied;
- 9) **Fig. 14-** Place the actuator on the support **SB** inserting the screw **V5** on the support bracket;



**VERIFY THAT AFTER THE TIGHTENING THE BRACKETS "SB" ADHERE TO THE ACTUATOR IN ORDER TO ASSURE A CORRECT APPLICATION.**

- 9) Perform a test of complete window frame opening and closing. Verify that with open window frame, the stroke is some centimetres lower than the stroke limited by window frame mechanical limit devices. Once the closing phase is ended, verify that the window frame is completely closed by checking the seal deflection.

SIDE HUNG  
Outward opening

A4\_1

Stroke 360 - 600 - 1000

24V - 230V

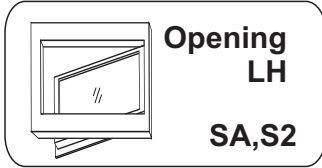
Standard - RWA

A4\_2

SIDE HUNG  
Outward opening



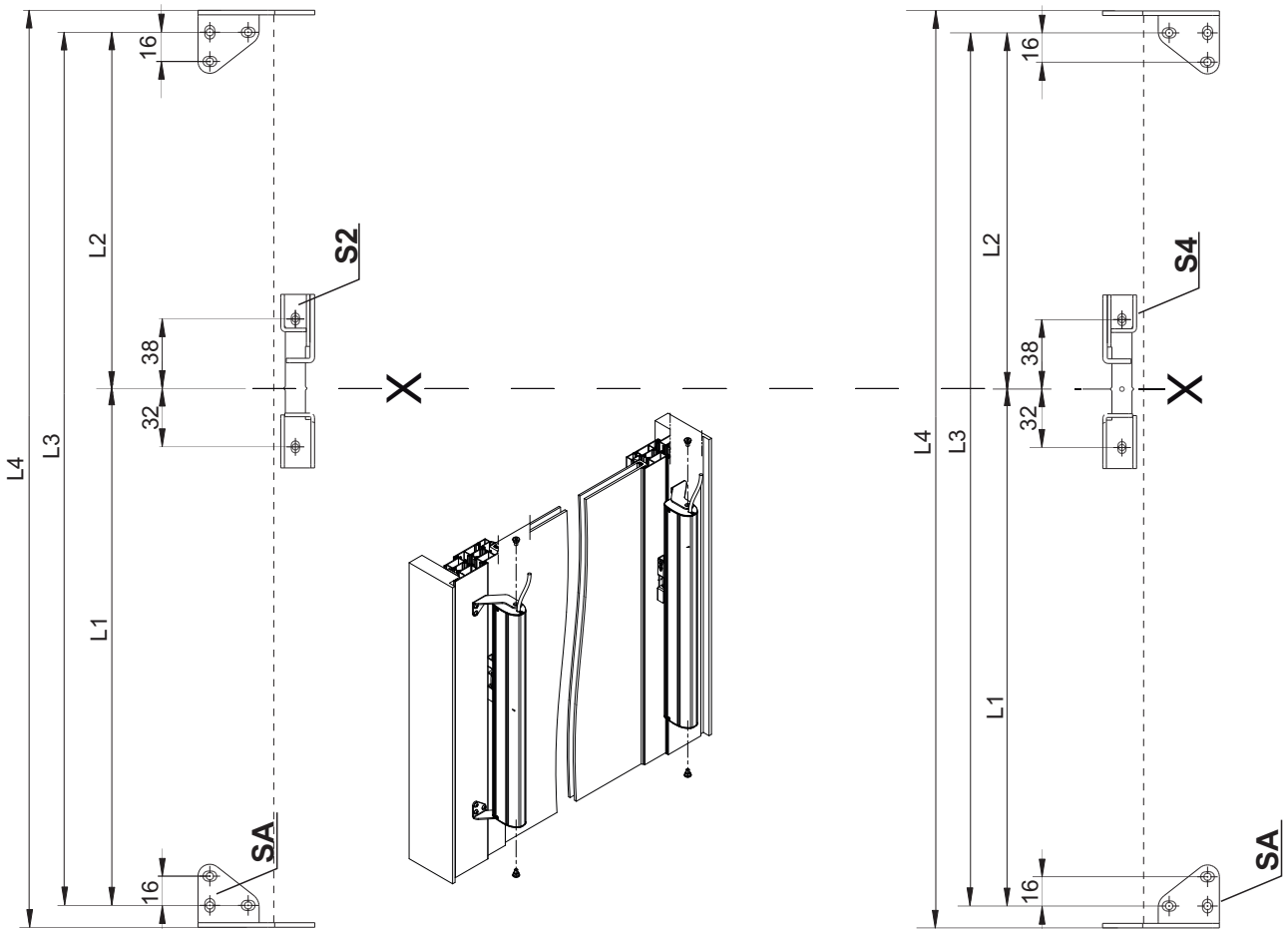
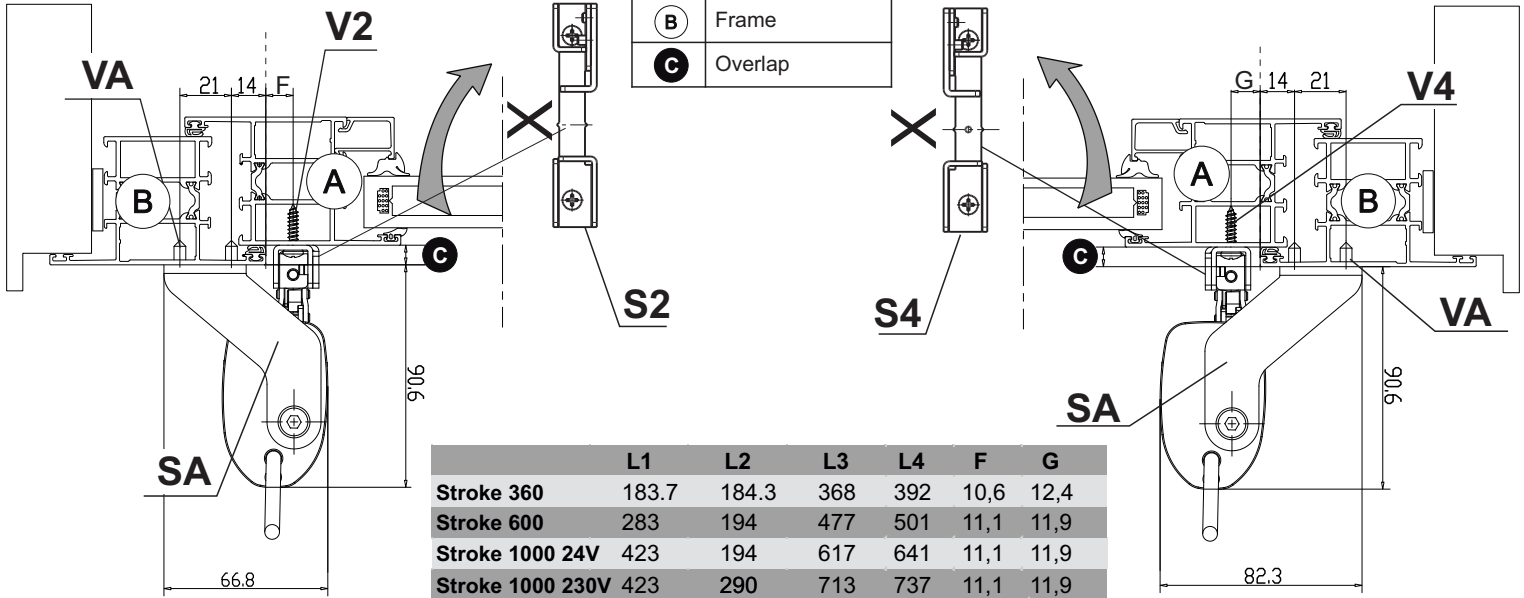
Opening  
RH  
SA,S4



Opening  
LH

SA,S2

<b>(A)</b>	Casement
<b>(B)</b>	Frame
<b>(C)</b>	Overlap



**SIDE HUNG**  
Outward opening

A4\_1

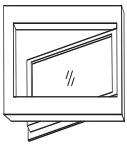
Stroke 360 - 600 - 1000

24V - 230V

Standard - RWA

A4\_2

**SIDE HUNG**  
Outward opening



Opening  
LH  
SA,S2



Opening  
RH  
SA,S4

Fig. 10

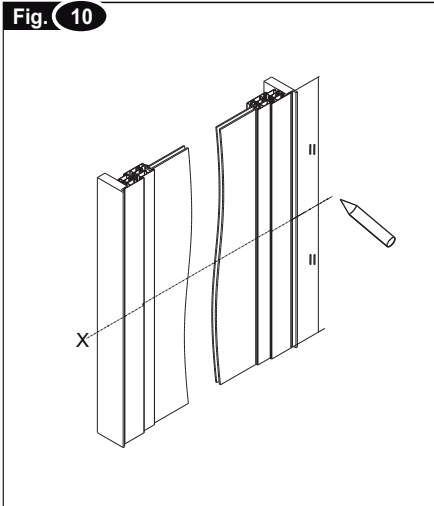


Fig. 11

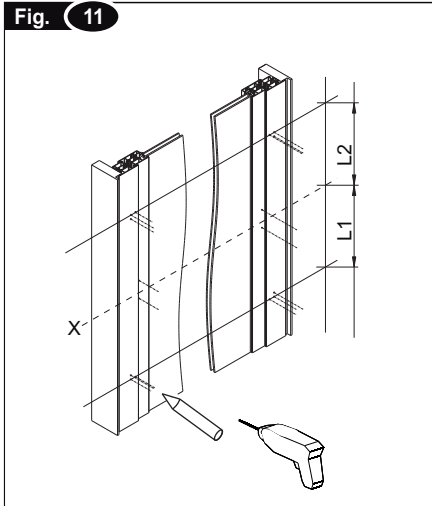


Fig. 12

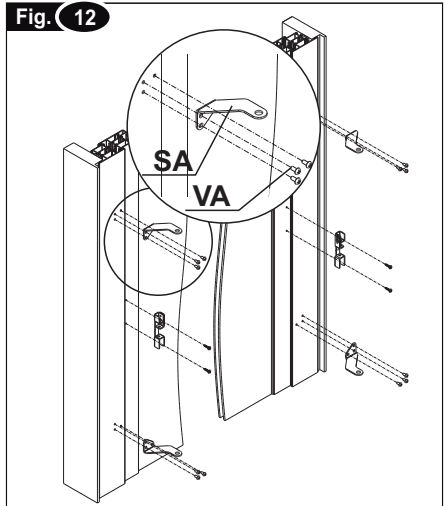


Fig. 13

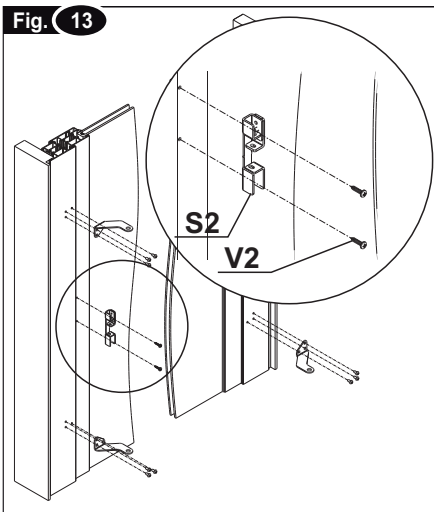


Fig. 14

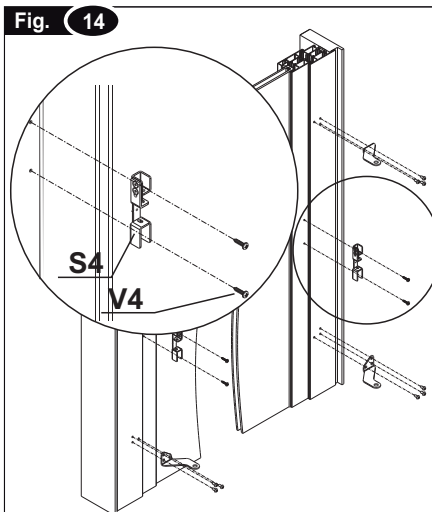


Fig. 15

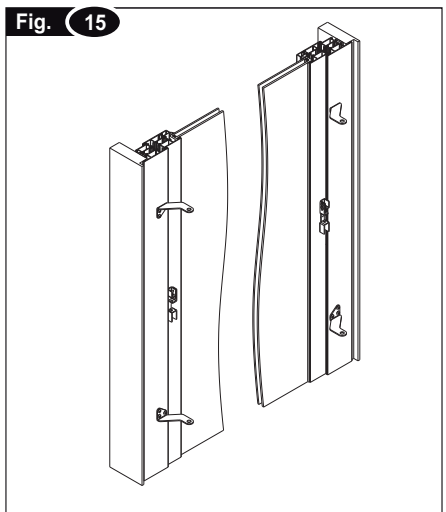


Fig. 16

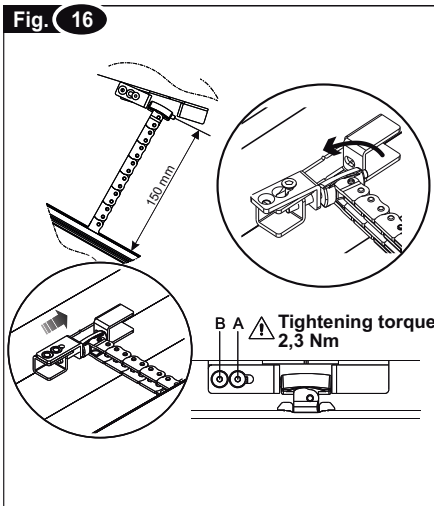
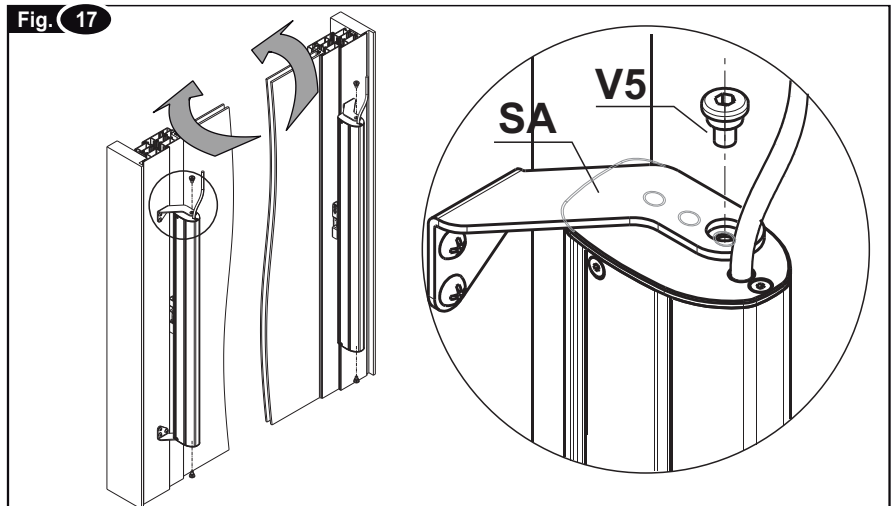


Fig. 17



**INSTALLATION**

- 1) Open the package and extract the various components;
- 2) **Fig. 10-** With a pencil draw the centre line **X** of the window frame;
- 3) **Fig. 11-** Taking as reference the **X-axis** previously traced and the hole layout for the application **A4\_1 (A4\_2)**. Mark the points for the holes to fasten the brackets **S2(S4)** and **SA**;
- 4) With a suitable drill, create on the window the holes;
- 5) **Fig. 12-** Mount the supports **SA(Up-Dwn)** on the fix window frame with the screws **VA**; check the perfect horizontal and vertical alignment with the window frame;
- 6) **Fig. 13-** Mount the bracket **S2** on the movable window frame with the screws **V2(A4\_1)**;
- 6a) **Fig. 14-** Mount the bracket **S4** on the movable window frame with the screws **V4(A4\_2)**;
- 7) **Fig. 16-** Perform the electric connections according to the provisions of par. 5.3, as well as with reference to the wiring diagram. Power the actuator and let the chain come out for at least 150mm of stroke, then disconnect the actuator; secure the chain terminal to the brackets **S2(S4)**; first fit the long side of the shaft and then insert the entire assembly. 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);
- 8) **Fig. 17-** Place the actuator on the support **SA** inserting the screw "**V5**" on the support bracket;



**VERIFY THAT AFTER THE TIGHTENING THE BRACKETS "SA" ADHERE TO THE ACTUATOR IN ORDER TO ASSURE A CORRECT APPLICATION.**

- 9) Perform a test of complete window frame opening and closing. Verify that with open window frame, the stroke is some centimetres lower than the stroke limited by window frame mechanical limit devices. Once the closing phase is ended, verify that the window frame is completely closed by checking the seal deflection.

**SIDE HUNG**  
Inward opening

A5\_1

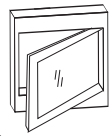
Stroke 360-600-1000

24V - 230V

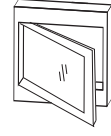
Standard - RWA

A5\_2

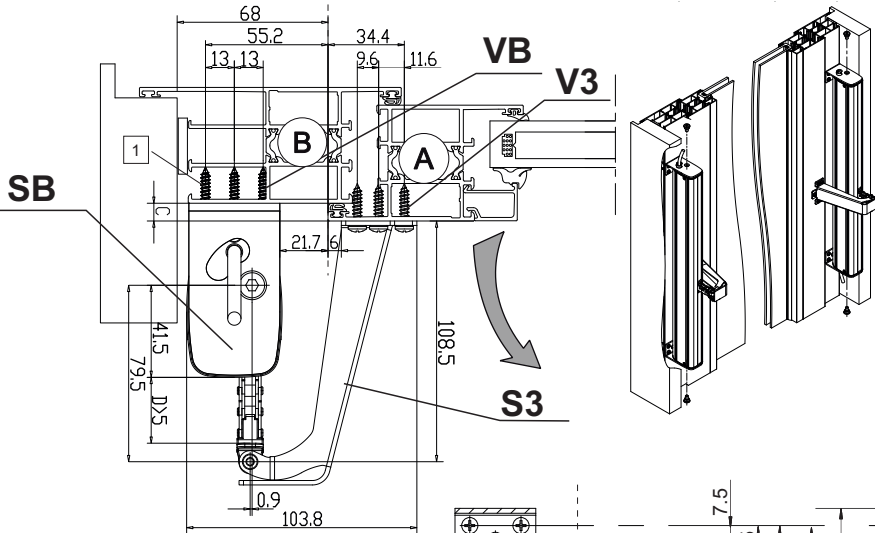
**SIDE HUNG**  
Inward opening



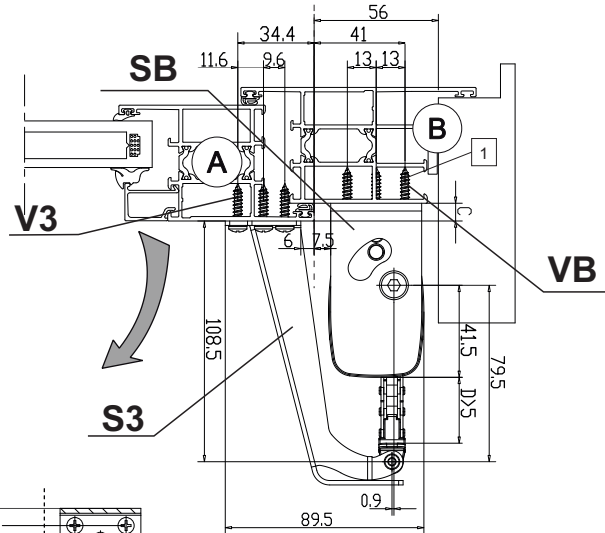
Opening  
LH  
SB,S3



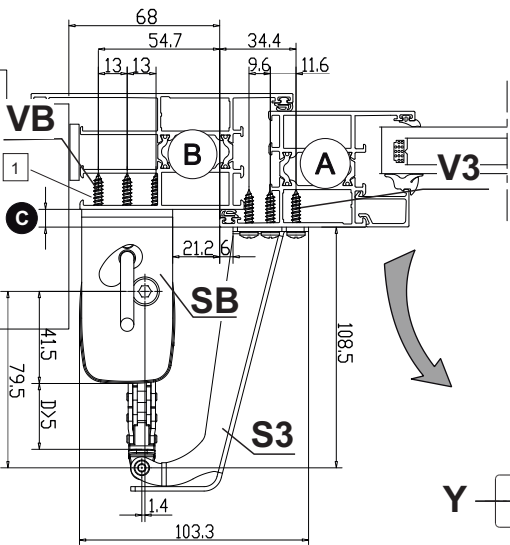
Opening  
RH  
SB,S3



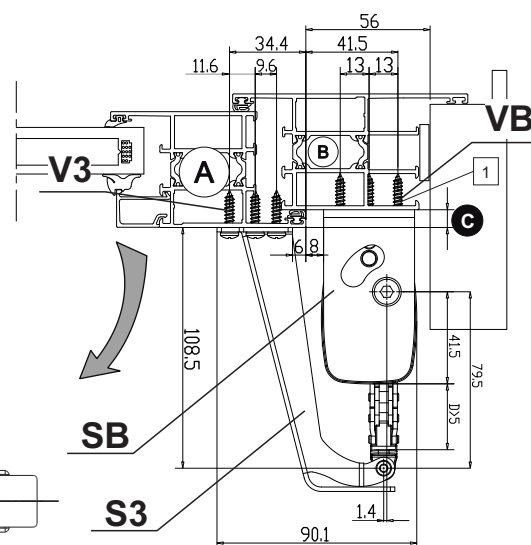
Stroke 360



Stroke 360



Stroke 600 - 1000



Stroke 600 - 1000

	L1	L2	L3	L4
Stroke 360	187.6	186.9	374.5	392
Stroke 600	197	286	483	500.5
Stroke 1000 24V	197	426	623	640.5
Stroke 1000 230V	293	426	719	736.5

1 For narrow window frames, the installation of the indicated screw can be omitted

(A)	Casement
(B)	Frame
(C)	Overlap

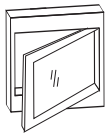
SIDE HUNG  
Inward opening

A5\_1

Stroke 360-600-1000

A5\_2

SIDE HUNG  
Inward opening



Opening  
LH  
SB,S3

24V - 230V

Standard - RWA



Opening  
RH  
SB,S3

Fig. 10

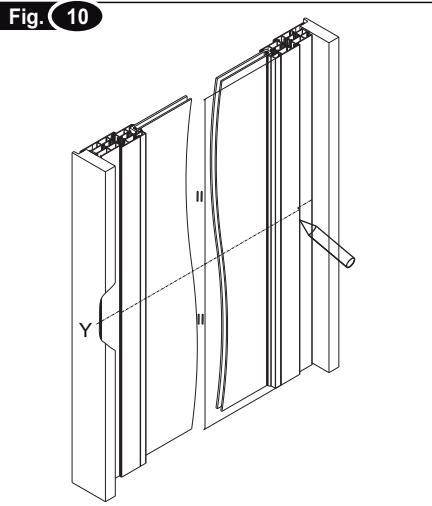


Fig. 11

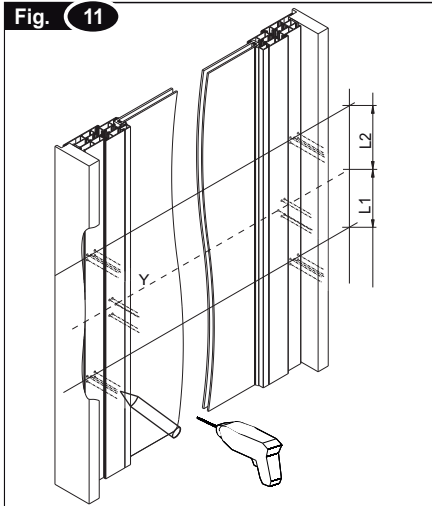


Fig. 12

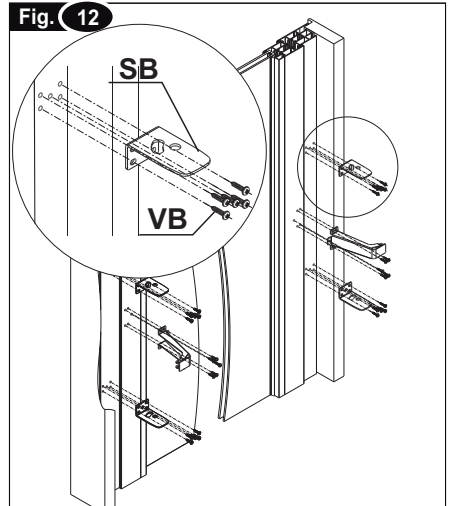


Fig. 13

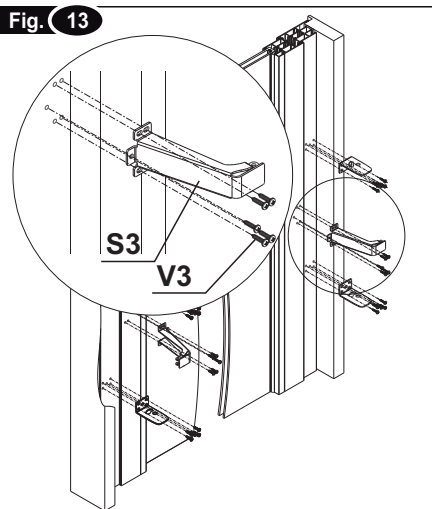


Fig. 14

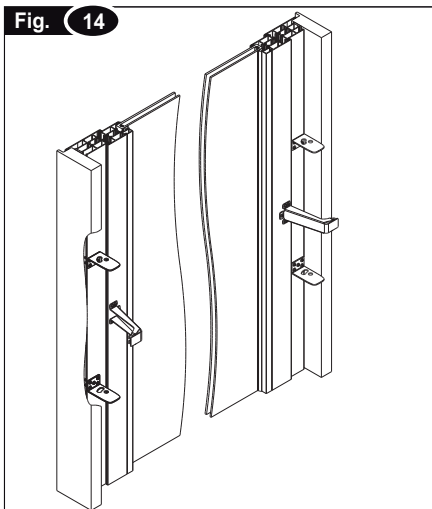


Fig. 15

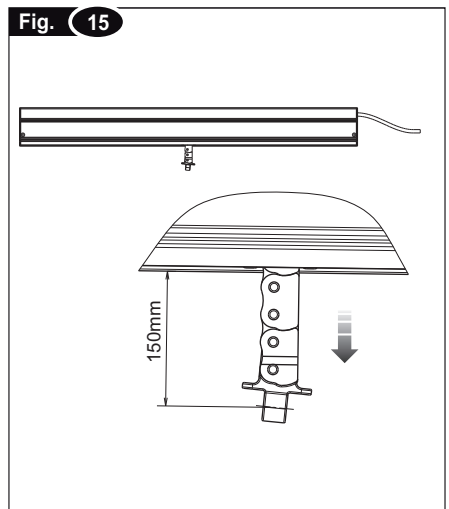
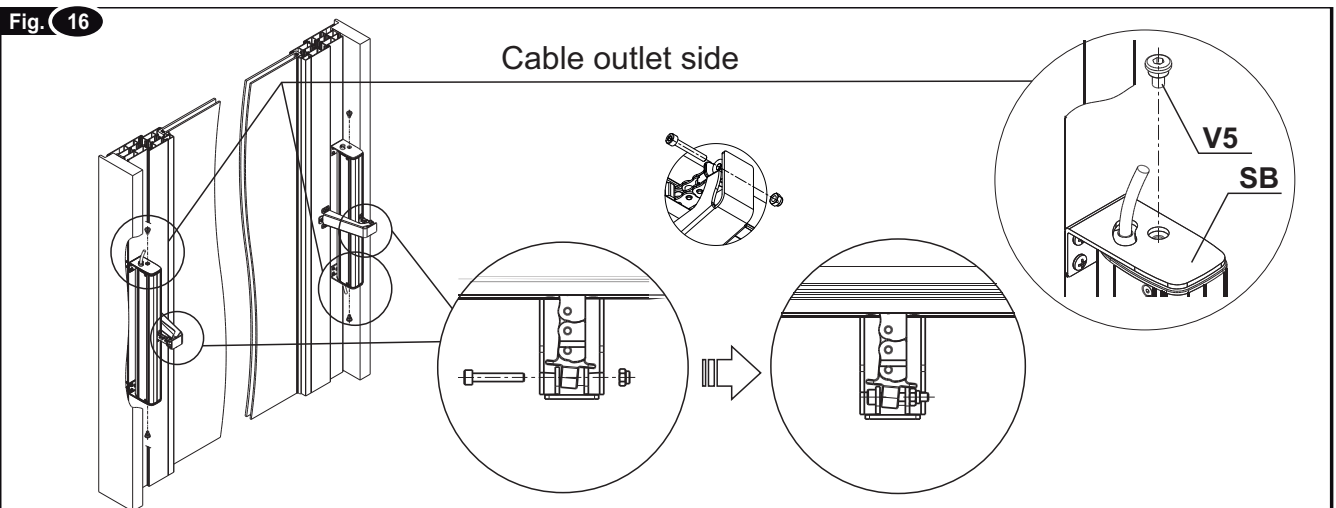


Fig. 16





**INSTALLATION**

- 1) Open the package and extract the various components;
- 2) **Fig. 10-** With a pencil draw the centre line **Y** of the window frame;
- 3) **Fig. 11-** Taking as reference the **Y-axis** previously traced and the hole layout for the application **A5\_1 (A5\_2)**. Mark the points for the holes to fasten the brackets **S3** and **SB**;
- 4) With a suitable drill, create on the window the holes;
- 5) **Fig. 12-** Mount the supports **SB** on the fix window frame with the screws **VB**; check the perfect horizontal and vertical alignment with the window frame;
- 6) **Fig. 13-** Mount the bracket **S3** on the movable window frame with the screws **V3**;
- 7) **Fig. 15-** Perform the electric connections according to the provisions of par. 5.3, as well as with reference to the wiring diagram. Power the actuator and let the chain come out for at least 150mm of stroke, then disconnect the actuator;
- 8) **Fig. 16-** Attach the chain end to the bracket **S3** with the screw and nut supplied;
- 9) **Fig. 16-** Place the actuator on the support **SB** inserting the screw **V5** on the support bracket;



**VERIFY THAT AFTER THE TIGHTENING THE BRACKETS "SB" ADHERE TO THE ACTUATOR IN ORDER TO ASSURE A CORRECT APPLICATION.**

- 9) Perform a test of complete window frame opening and closing. Verify that with open window frame, the stroke is some centimetres lower than the stroke limited by window frame mechanical limit devices. Once the closing phase is ended, verify that the window frame is completely closed by checking the seal deflection.

TOP HUNG  
Outward opening

Double Push point

A1\_2

A1\_3

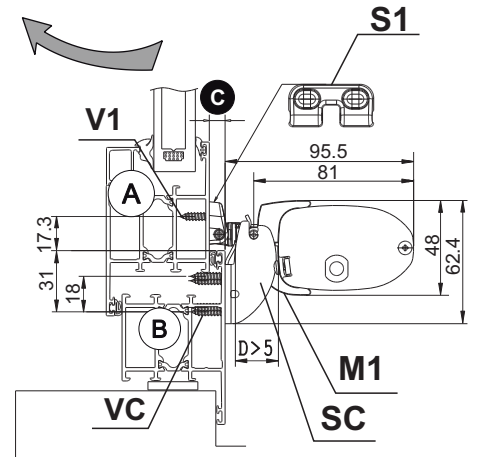
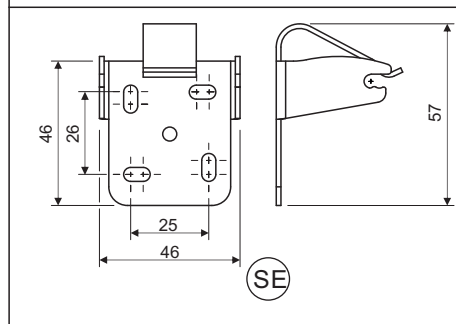
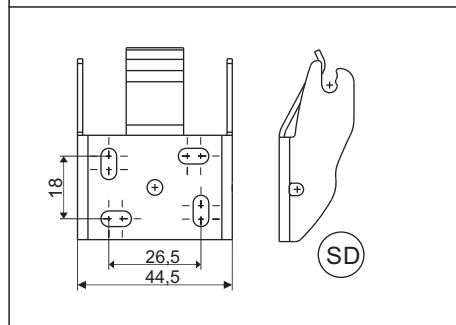
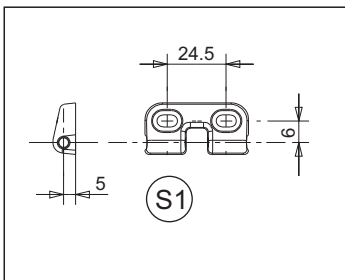
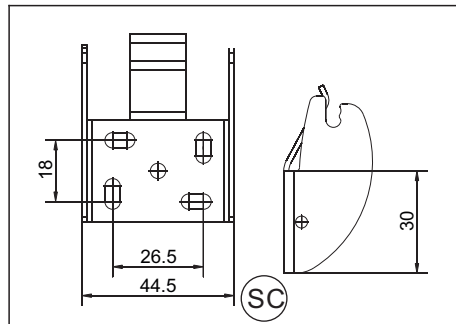
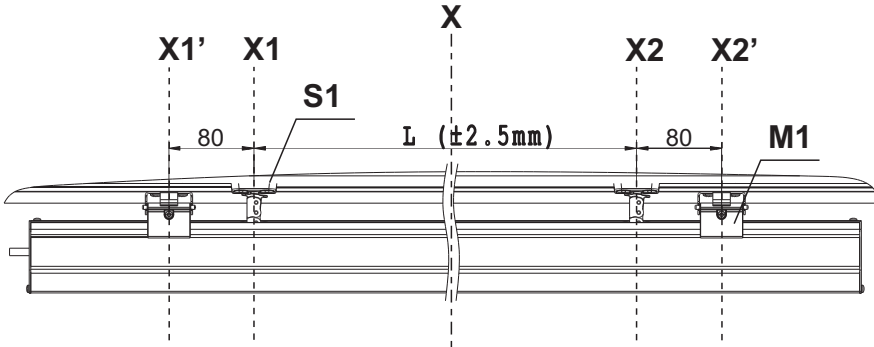
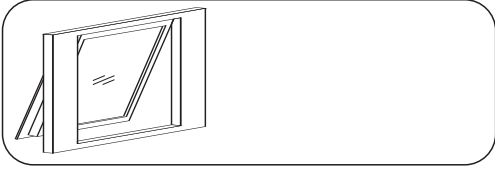
SC, SD, SE, S1, M1

A1\_4

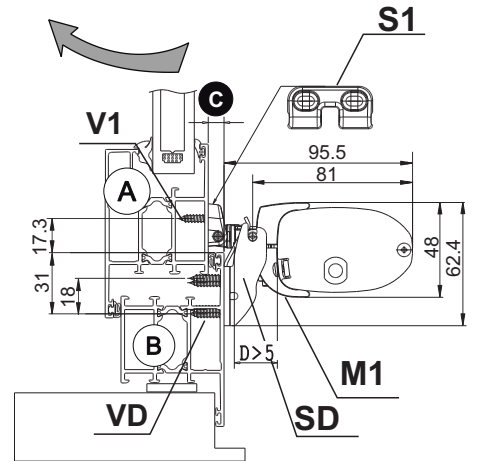
Stroke 360

24V

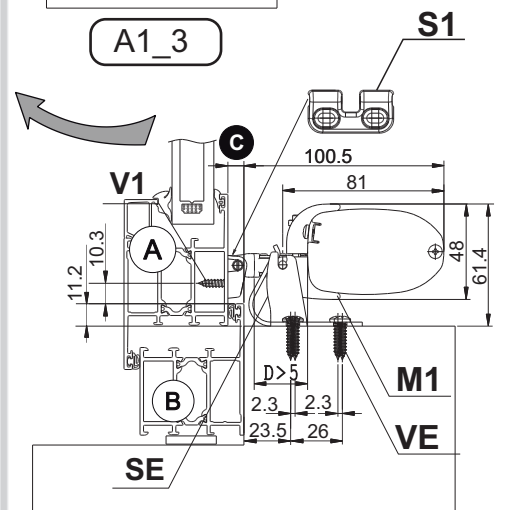
Standard



A1\_2



A1\_3



A1\_4

<b>A</b>	Casement
<b>B</b>	Frame
<b>C</b>	Overlap

TOP HUNG  
Outward opening

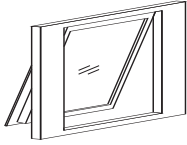
Double Push point

A1\_2

Stroke 360

24V

Standard



SC, S1, M1

Fig. 10

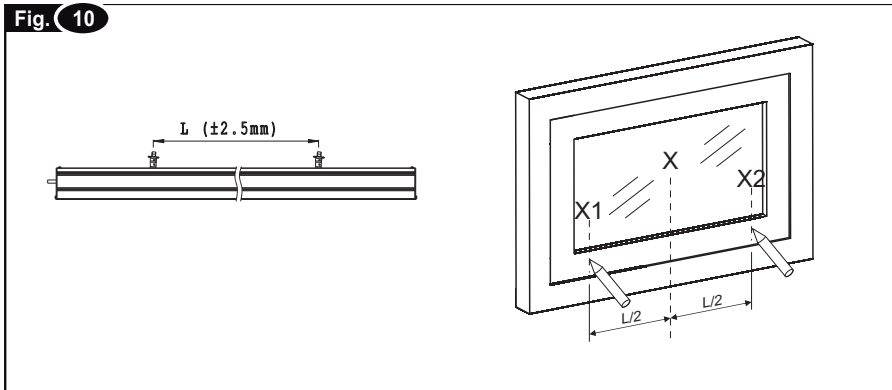


Fig. 11

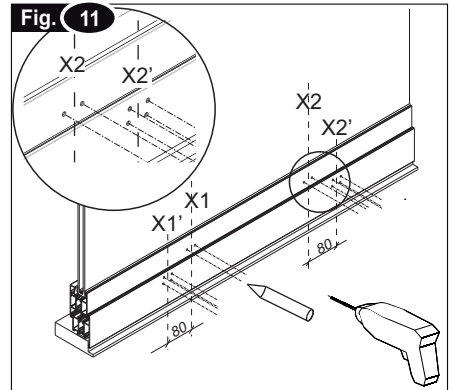


Fig. 12

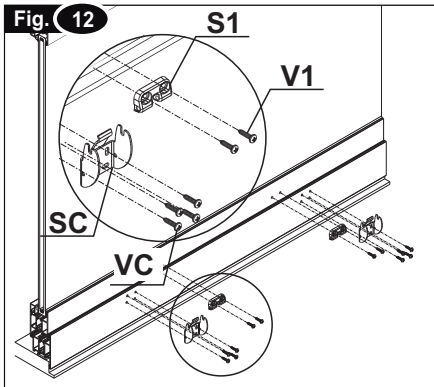


Fig. 13

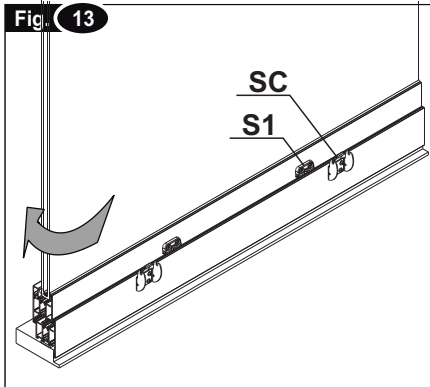


Fig. 14

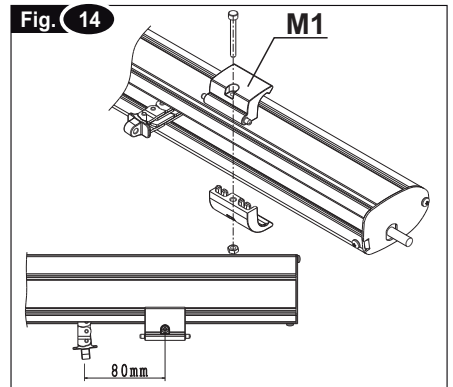


Fig. 15

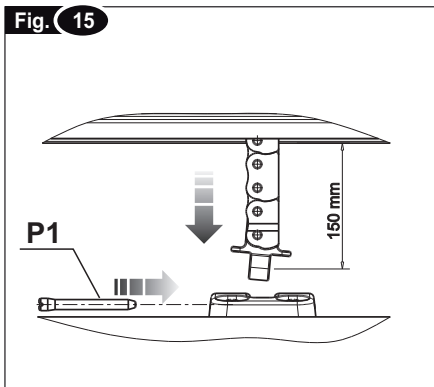
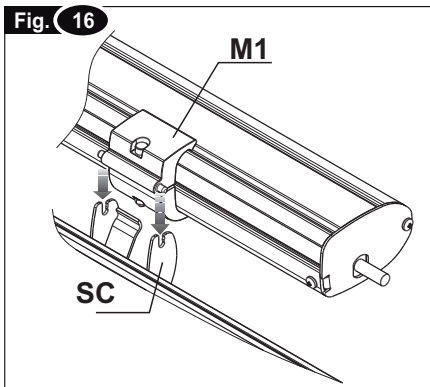


Fig. 16



6) Fig. 14 - Insert the two pairs of clamps "M1" for the topped applications, fitting them in the actuator slider adjacent to the chain terminal, then close them partially with the screw and nut in the package;

7) Fig. 14 - Position the clamps 80mm on either side of the chain terminal midline and tighten the screw all the way;

8) Fig. 15 - Perform the electric connections according to the provisions of par. 5.3, as well as with reference to the wiring diagram. Power the actuator and let the chain come out for at least 150mm of stroke, then disconnect the actuator;

9) Fig. 15-16 - First fasten the chain terminal to the S1 with P1, then fasten the clamps

M1 to the brackets for connection to the window SC. Make sure the brackets for connection to the window are correctly fastened to their clamps. The number of clamps necessary for assembly will depend on the length of the actuator: up to 3 meters only 2 clamps are needed, over 3 meters add a third at the center of the actuator.

10) Connect the power actuator.

Perform a test of complete window frame opening and closing. Verify that with open window frame, the stroke is some centimetres lower than the stroke limited by window frame mechanical limit devices. Once the closing phase is ended, verify that the window frame is completely closed by checking the seal deflection.

## INSTALLATION

- 1) Open the package and remove the various components;
- 2) Fig. 10 - With a pencil draw the centre line X of the window frame. Measure the distance L between the two chain terminals of the actuator and mark it on the window, symmetrically to the midline X marked previously, trace axis X1 and X2;
- 3) Fig. 11 - Trace axis X1' and X2'; Taking as reference the axis X1, X1' and X2, X2' previously traced and the hole layout for the application A1\_2, mark the points for the holes to fasten the brackets S1 and SC;
- 4) Fig. 11 - With a suitable drill, create on the window the holes;
- 5) Fig. 12-13 - Mount the two movable window brackets S1 with V1 and the two frame brackets SC with VC;

TOP HUNG  
Outward opening

Double Push point

A1\_3

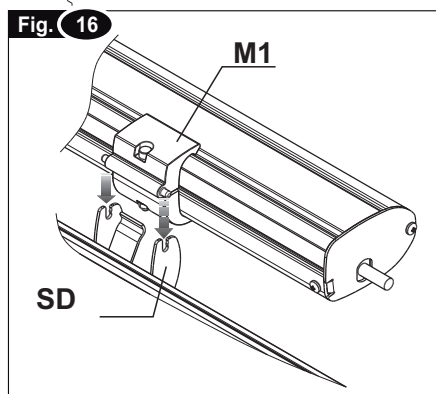
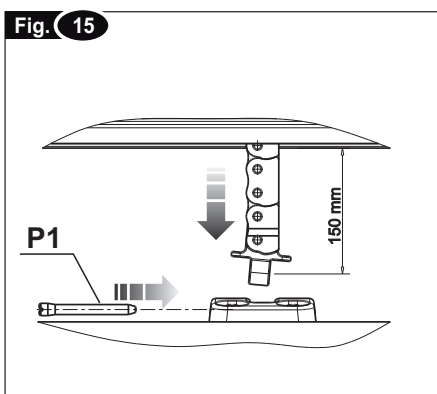
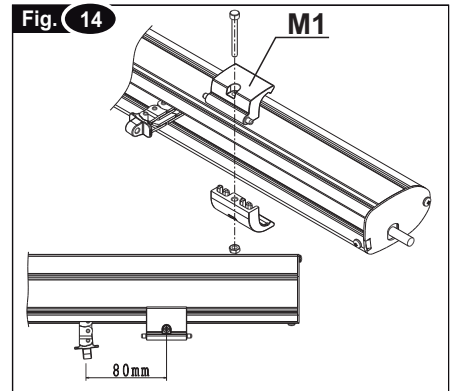
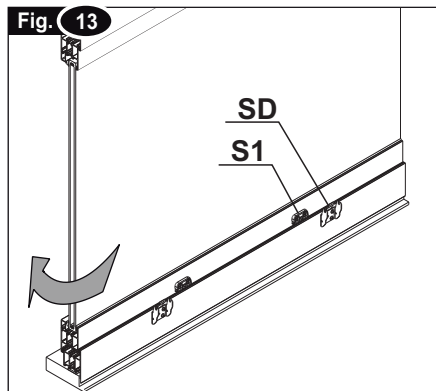
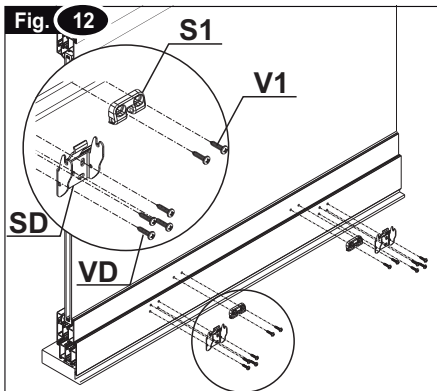
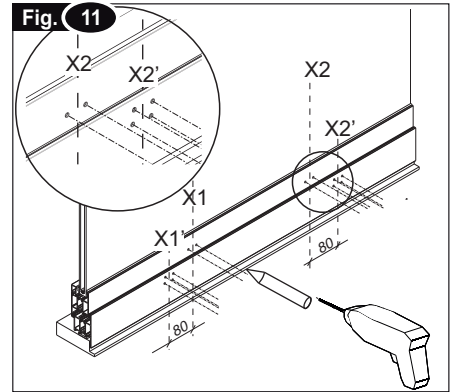
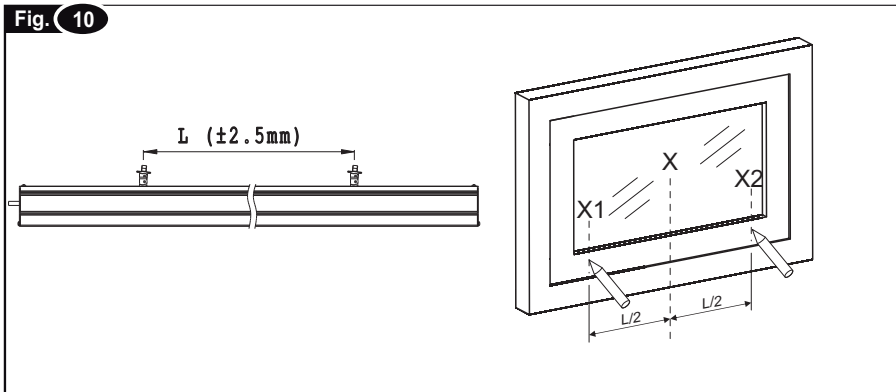
Stroke 360

24V

Standard



SD, S1, M1



6) Fig. 14 - Insert the two pairs of clamps "M1" for the top-hung applications, fitting them in the actuator slider adjacent to the chain terminal, then close them partially with the screw and nut in the package;  
7) Fig. 14 - Position the clamps 80mm on either side of the chain terminal midline and tighten the screw all the way;  
8) Fig. 15 - Perform the electric connections according to the provisions of par. 5.3, as well as with reference to the wiring diagram. Power the actuator and let the chain come out for at least 150mm of stroke, then disconnect the actuator;

9) Fig. 15- 16 - First fasten the chain terminal to the S1 with P1, then fasten the clamps

## INSTALLATION

- 1) Open the package and remove the various components;
- 2) Fig. 10 - With a pencil draw the centre line X of the window frame. Measure the distance L between the two chain terminals of the actuator and mark it on the window, symmetrically to the midline X marked previously, trace axis X1 and X2;
- 3) Trace axis X1' and X2';  
Taking as reference the axis X1, X1' and X2, X2' previously traced and the hole layout for the application A1\_3, mark the points for the holes to fasten the brackets S1 and SD;
- 4) Fig. 11 - With a suitable drill, create on the window the holes;
- 5) Fig. 12-13 - Mount the two movable window brackets S1 with "V1" and the two frame brackets SD with VD;

M1 to the brackets for connection to the window SD. Make sure the brackets for connection to the window are correctly fastened to their clamps. The number of clamps necessary for assembly will depend on the length of the actuator: up to 3 meters only 2 clamps are needed, over 3 meters add a third at the center of the actuator.

10) Connect the power actuator.  
Perform a test of complete window frame opening and closing. Verify that with open window frame, the stroke is some centimetres lower than the stroke limited by window frame mechanical limit devices. Once the closing phase is ended, verify that the window frame is completely closed by checking the seal deflection.

TOP HUNG  
Outward opening

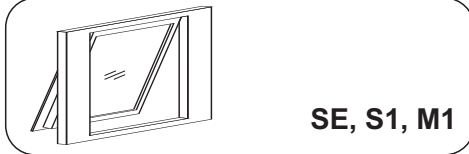
Double Push point

A1\_4

Stroke 360

24V

Standard



SE, S1, M1

Fig. 10

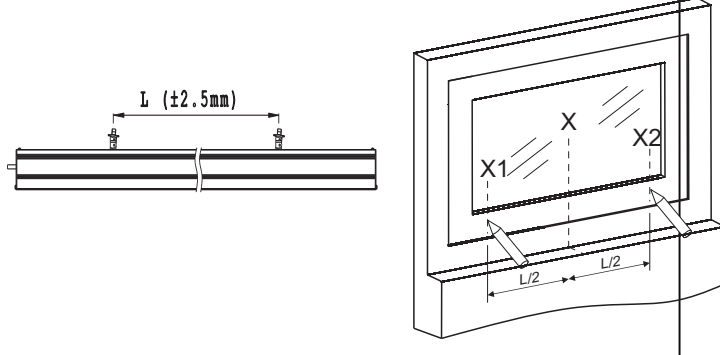


Fig. 11

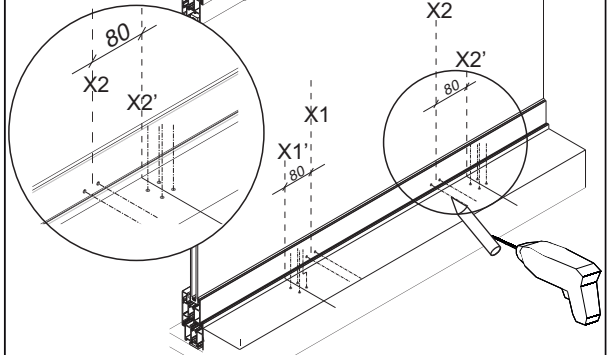


Fig. 12

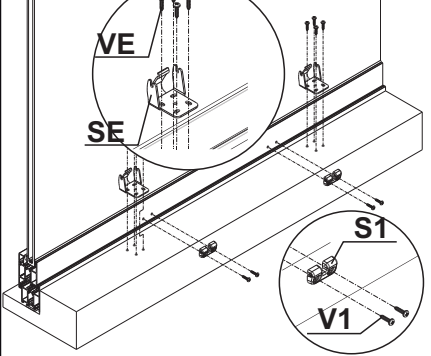


Fig. 13

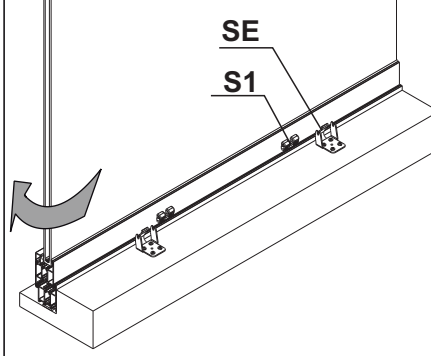


Fig. 14

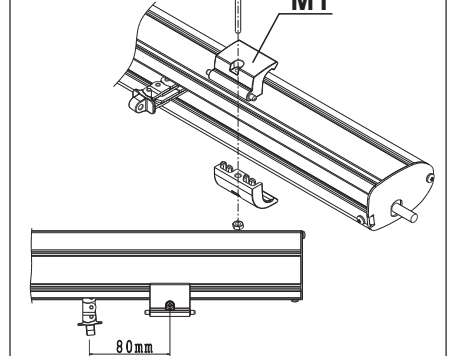


Fig. 15

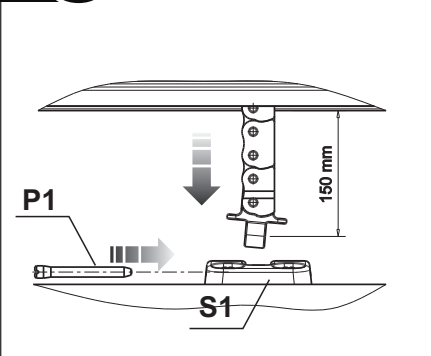
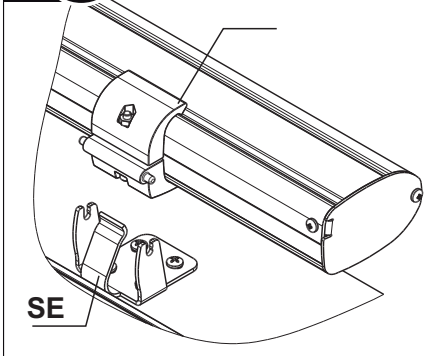


Fig. 16



- 6) Fig. 14 - Insert the two pairs of clamps "M1" for the top-hung applications, fitting them in the actuator slider adjacent to the chain terminal, then close them partially with the screw and nut in the package;
- 7) Fig. 14 - Position the clamps 80mm on either side of the chain terminal midline and tighten the screw all the way;
- 8) Fig. 15 - Perform the electric connections according to the provisions of par. 5.3, as well as with reference to the wiring diagram. Power the actuator and let the chain come out for at least 150mm of stroke, then disconnect the actuator;
- 9) Fig. 15- 16 - First fasten the chain terminal to the S1 with P1, then fasten the clamps

## INSTALLATION

- 1) Open the package and remove the various components;
- 2) Fig. 10 - With a pencil draw the centre line X of the window frame. Measure the distance L between the two chain terminals of the actuator and mark it on the window, symmetrically to the midline X marked previously, trace axis X1 and X2;
- 3) Fig. 11 - Trace axis X1' and B'; Taking as reference the axis X1, X1' and X2, X2' previously traced and the hole layout for the application A1\_4, mark the points for the holes to fasten the brackets S1 and SE;
- 4) Fig. 11 - With a suitable drill, create on the window the holes;
- 5) Fig. 12-13 - Mount the two movable window brackets S1 with V1 and the two frame brackets SE with VE;

M1 to the brackets for connection to the window SE. Make sure the brackets for connection to the window are correctly fastened to their clamps. The number of clamps necessary for assembly will depend on the length of the actuator: up to 3 meters only 2 clamps are needed, over 3 meters add a third at the center of the actuator.

10) Connect the power actuator.  
Perform a test of complete window frame opening and closing. Verify that with open window frame, the stroke is some centimetres lower than the stroke limited by window frame mechanical limit devices. Once the closing phase is ended, verify that the window frame is completely closed by checking the seal deflection.

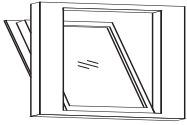
**BOTTOM HUNG**      **Double Push point**  
**Outward opening**

A2

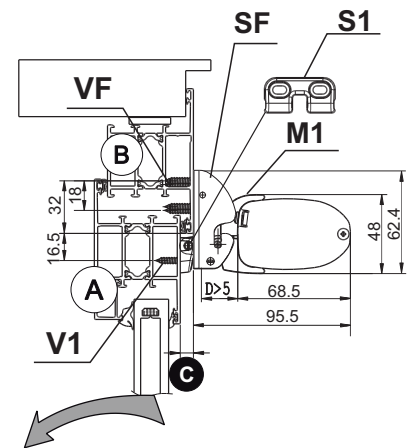
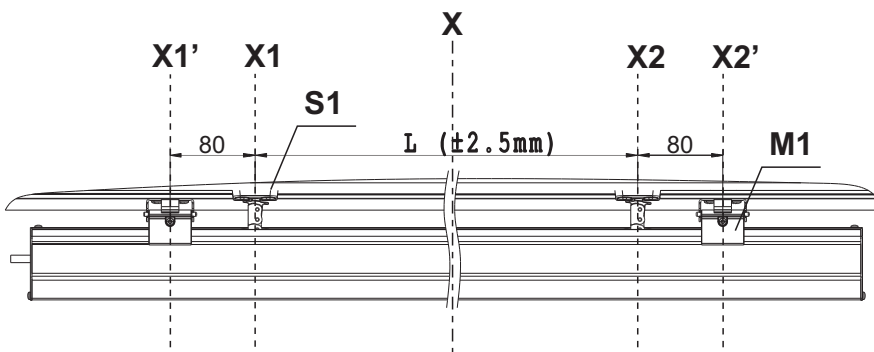
Stroke 360

24V

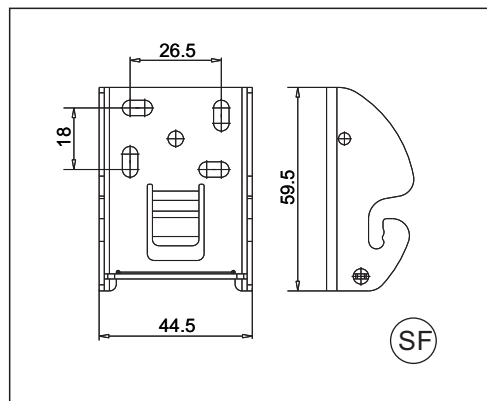
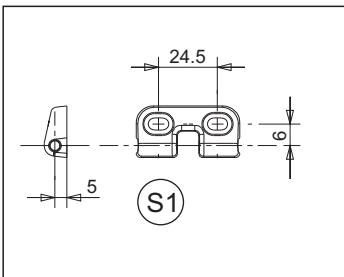
Standard - RWA



SF, S1, M1



<b>(A)</b>	Casement
<b>(B)</b>	Frame
<b>(C)</b>	Overlap



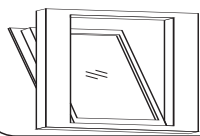
**BOTTOM HUNG**      **Double Push point**  
**Outward opening**

A2

Stroke 360

24V

Standard - RWA



SF, S1, M1

Fig. 10

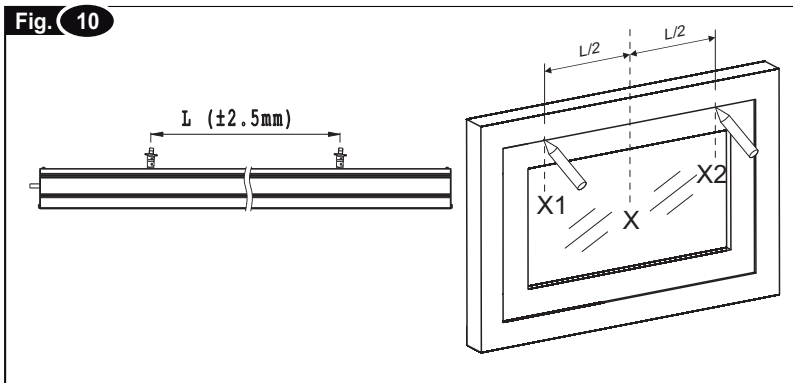


Fig. 11

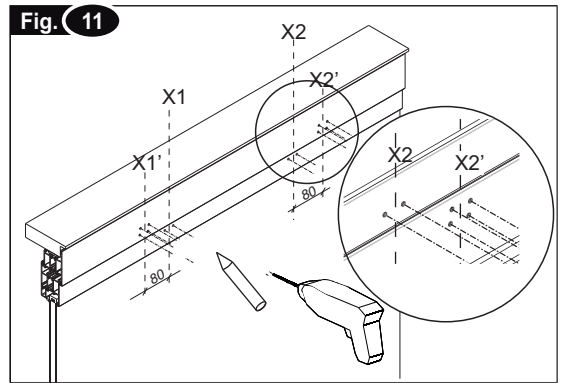


Fig. 12

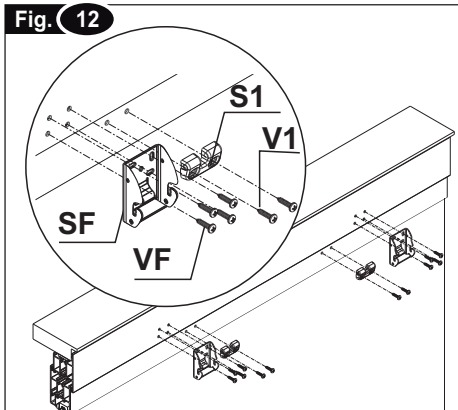


Fig. 13

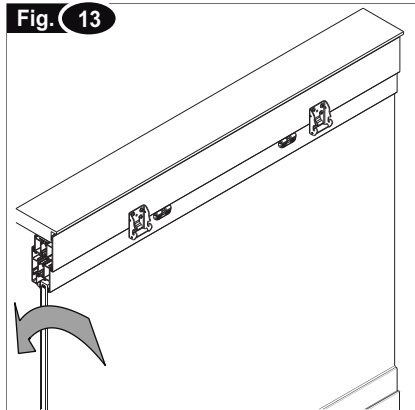


Fig. 14

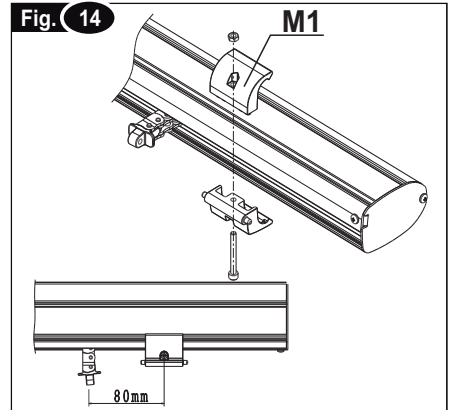


Fig. 15

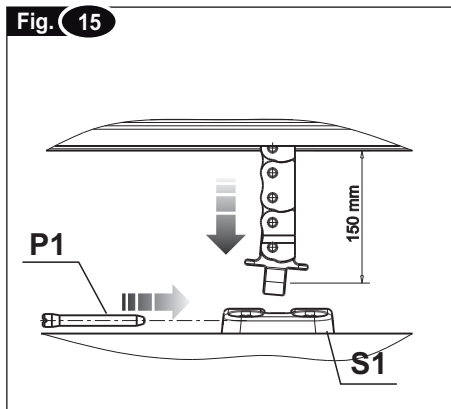
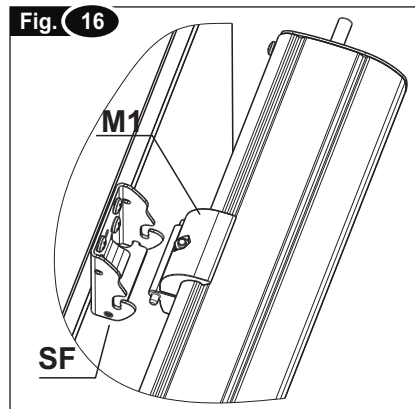


Fig. 16



6) Fig. 14 - Insert the two pairs of clamps "M1" for the top-hung applications, fitting them in the actuator slider adjacent to the chain terminal, then close them partially with the screw and nut in the package;

7) Fig. 14 - Position the clamps 80mm on either side of the chain terminal midline and tighten the screw all the way;

8) Fig. 15 - Perform the electric connections according to the provisions of par. 5.3, as well as with reference to the wiring diagram. Power the actuator and let the chain come out for at least 150mm of stroke, then disconnect the actuator;

9) Fig. 15- 16 - First fasten the chain terminal to the S1 with P1, then fasten the clamps M1 to the brackets for connection to

## INSTALLATION

- 1) Open the package and remove the various components;
- 2) Fig. 10 - With a pencil draw the centre line X of the window frame. Measure the distance L between the two chain terminals of the actuator and mark it on the window, symmetrically to the midline X marked previously, trace axis X1 and X2;
- 3) Fig. 11 - Trace axis X1' and X2'; Taking as reference the axis X1, X1' and X2, X2' previously traced and the hole layout for the application A2, mark the points for the holes to fasten the brackets S1 and SF;
- 4) Fig. 11 - With a suitable drill, create on the window the holes;
- 5) Fig. 12-13 - Mount the two movable window brackets S1 with V1 and the two frame brackets SF with VF;

the window SF. Make sure the brackets for connection to the window are correctly fastened to their clamps. The number of clamps necessary for assembly will depend on the length of the actuator: up to 3 meters only 2 clamps are needed, over 3 meters add a third at the center of the actuator.

10) Connect the power actuator.

Perform a test of complete window frame opening and closing. Verify that with open window frame, the stroke is some centimetres lower than the stroke limited by window frame mechanical limit devices. Once the closing phase is ended, verify that the window frame is completely closed by checking the seal deflection.

**BOTTOM HUNG**  
Inward opening

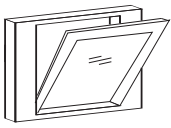
Double Push point

A3

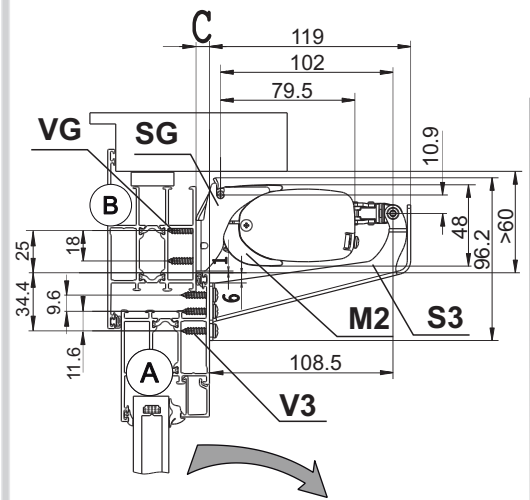
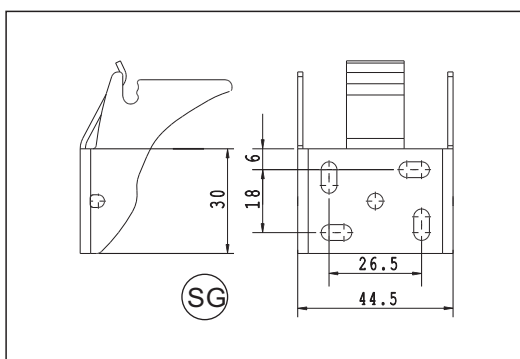
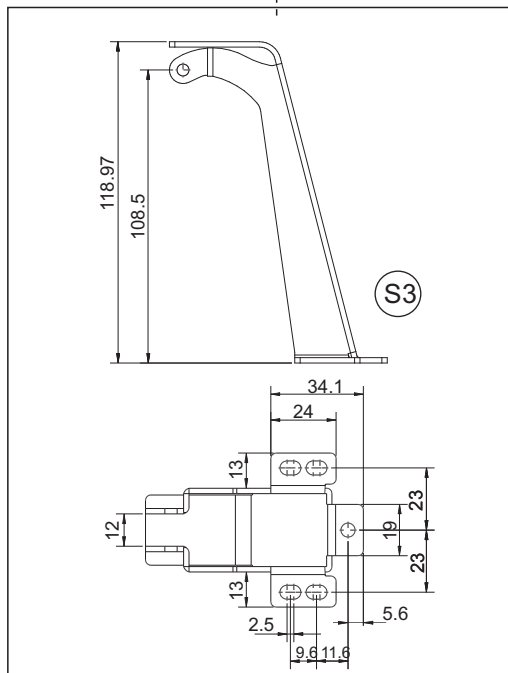
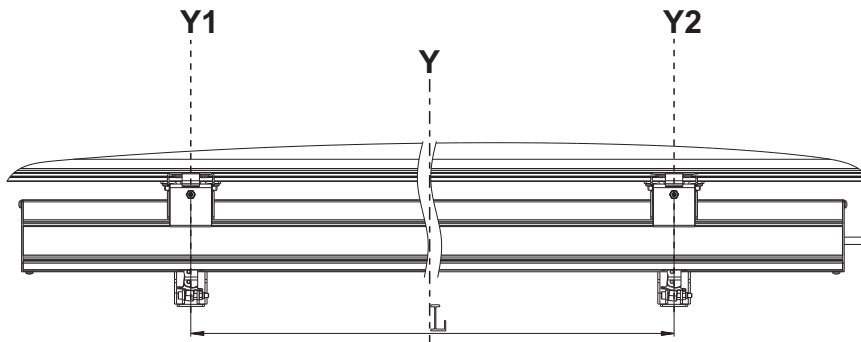
Stroke 360

24V

Standard - RWA



SG, S3, M2



(A)	Casement
(B)	Frame
(C)	Overlap



**BOTTOM HUNG**  
**Inward opening**

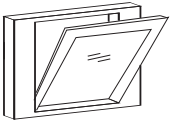
**Double Push point**

A3

**Stroke 360**

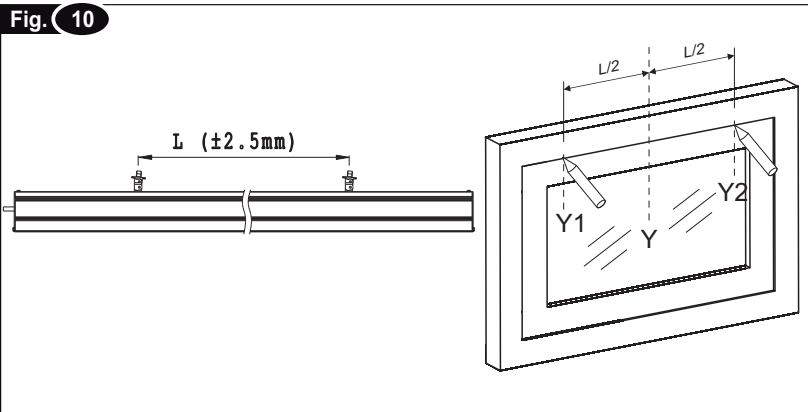
**24V**

**Standard - RWA**

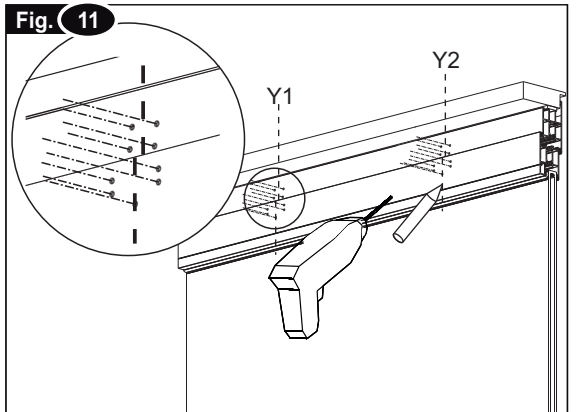


**SG, S3, M2**

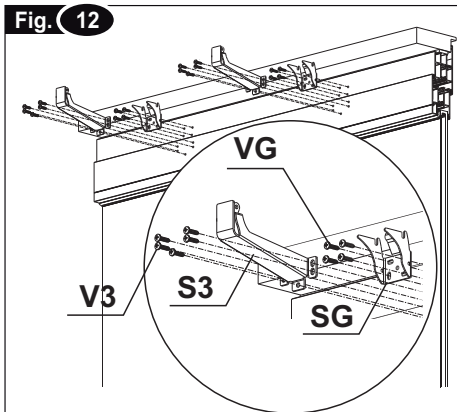
**Fig. 10**



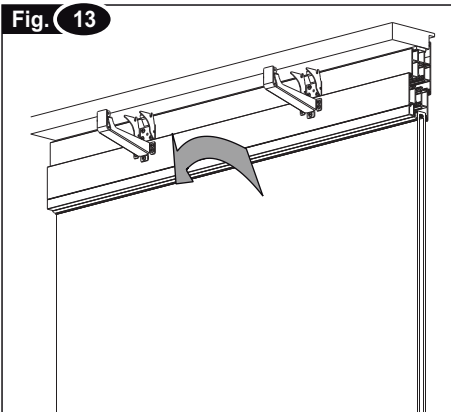
**Fig. 11**



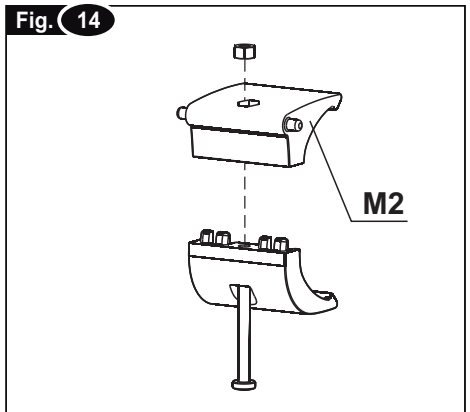
**Fig. 12**



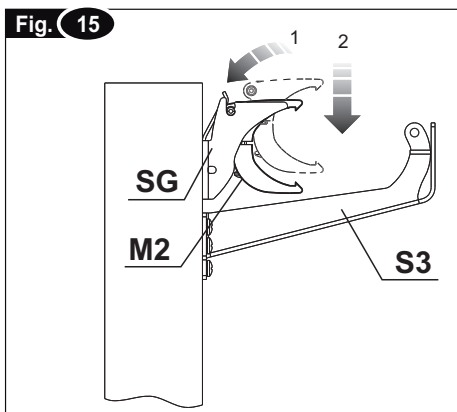
**Fig. 13**



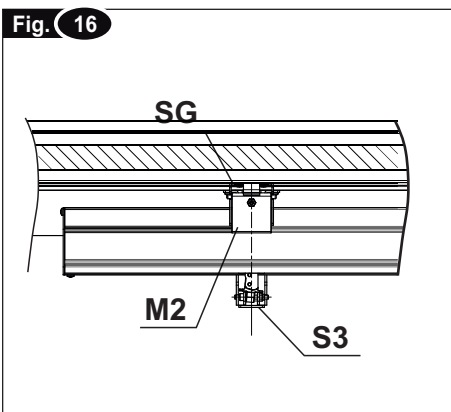
**Fig. 14**



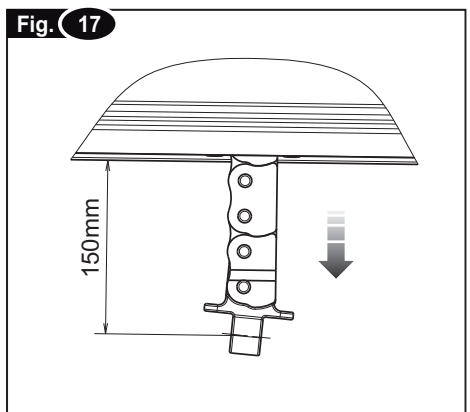
**Fig. 15**

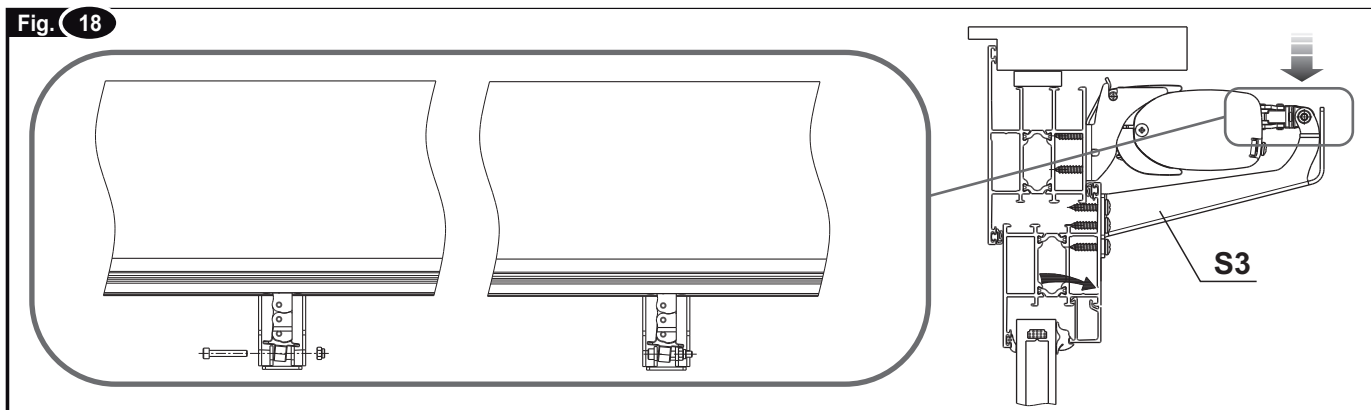


**Fig. 16**



**Fig. 17**





### INSTALLATION

- 1) Open the package and remove the various components;
- 2) **Fig.10** - With a pencil draw the centre line **Y** of the window frame. Measure the distance **L** between the two chain terminals of the actuator and mark it on the window, symmetrically to the midline **Y** marked previously, trace axis **Y1** and **Y2**;
- 3) **Fig.11** - Taking as reference the axis **Y1** and **Y2** previously traced and the hole layout for the application **A3**, mark the points for the holes to fasten the brackets **S3** and **SG**;
- 4) **Fig. 11** - With a suitable drill, create on the window the holes;
- 5) **Fig. 12-13** - Mount the two movable window brackets **S3** with **V3** and the two frame brackets **SG** with **VG**;
- 6) **Fig.14** - Close the two pairs of clamps **M2** for bottomhinged application partially with the screws and nut provided in the package;
- 7) **Fig.15** - Fit the two pairs of clamps previously Assembled **M2** with the brackets for bottom-hinged application **SG** (window frame);

**WARNING: do not damage the swivel bracket when fitting the clamps;**

make sure that the window brackets are correctly fastened to

their clamps.

- 8) **Fig.16** - Fit the actuator into the clamps **M2** through the tracks on the actuator. Centre the chain-end on the bottom-hinged bracket, then firmly close the clamps;

- 9) **Fig.17** - Perform the electric connections according to the provisions of **par. 5.3**, as well as with reference to the wiring diagram. Power the actuator and let the chain come out for at least 150mm of stroke, then disconnect the actuator;

- 10) **Fig.18** - Fasten the chain terminal to the bottomhinged Bracket **S3** (wing) with the screw and nut provided in the package.

**WARNING: tighten the nut up to the stop with the bracket, not over as this may compromise the correct functioning of the actuator.**

The number of clamps necessary for assembly will depend on the length of the actuator: up to 3 meters only 2 clamps are needed, over 3 meters add a third at the center of the actuator.

- 11) Power the actuator. Perform a test of complete window opening and closing. Verify that with open window frame, the stroke is some centimetres lower than the stroke limited by window frame mechanical limit devices. Once the closing phase is ended, verify that the window frame is completely closed by checking the seal deflection.

**SIDE HUNG**  
Outward opening

Double Push point

A4\_1

Stroke 360

24V

Standard - RWA

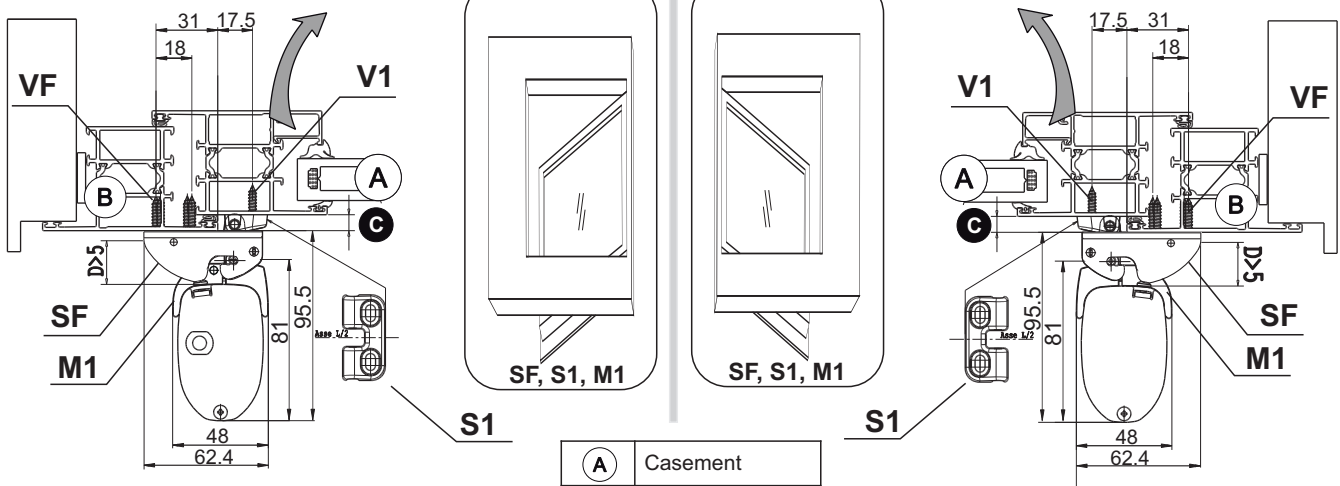
**SIDE HUNG**  
Outward opening

Double Push point

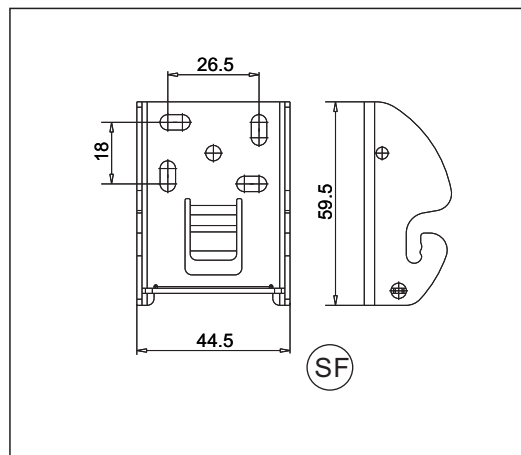
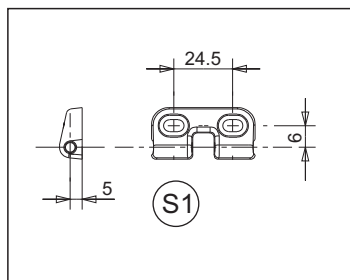
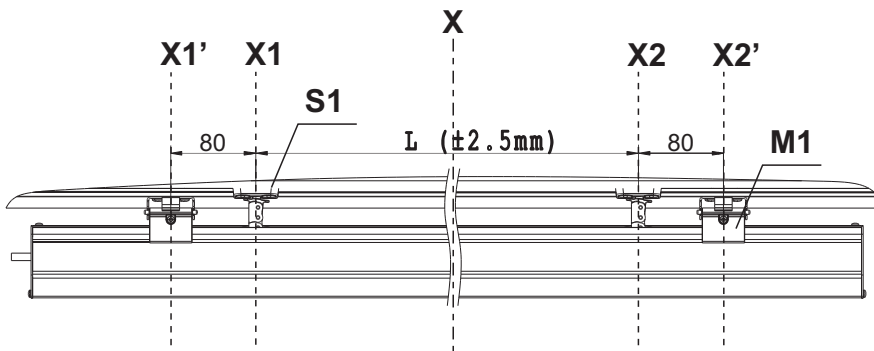
A4\_2

Opening  
LH

Opening  
RH



<b>(A)</b>	Casement
<b>(B)</b>	Frame
<b>(C)</b>	Overlap



SIDE HUNG  
Outward opening

Double Push point

A4\_1

Stroke 360

24V

Standard - RWA

SIDE HUNG  
Outward opening

Double Push point

A4\_2

Opening  
RH

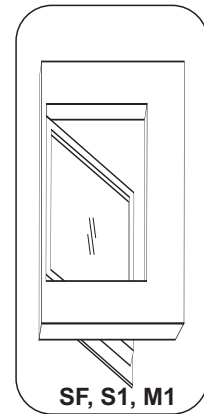
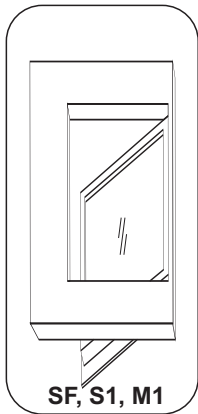


Fig. 10

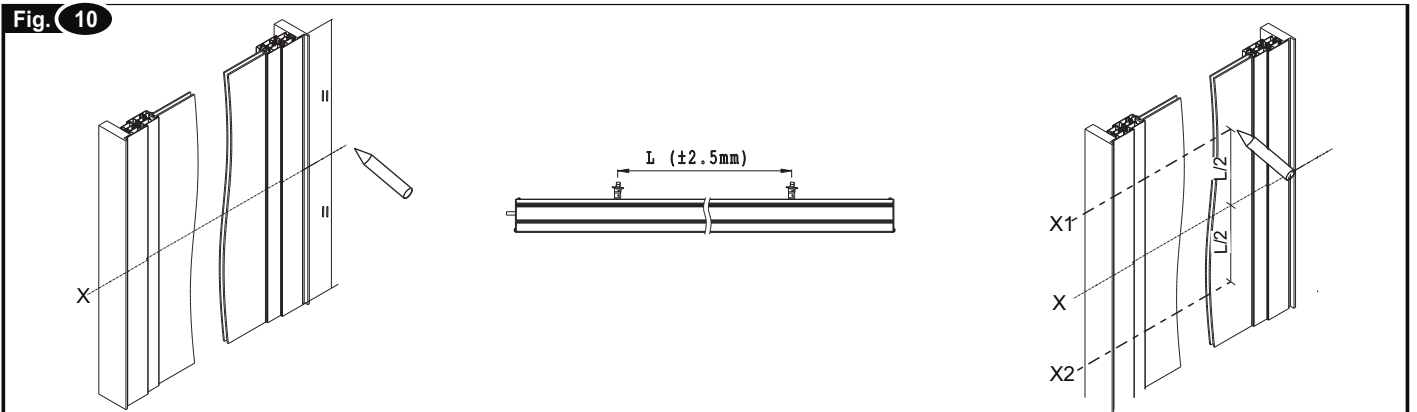


Fig. 11

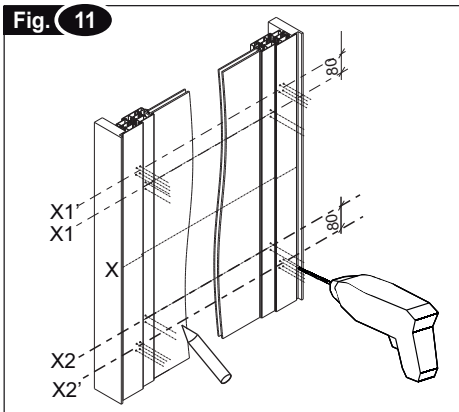


Fig. 12

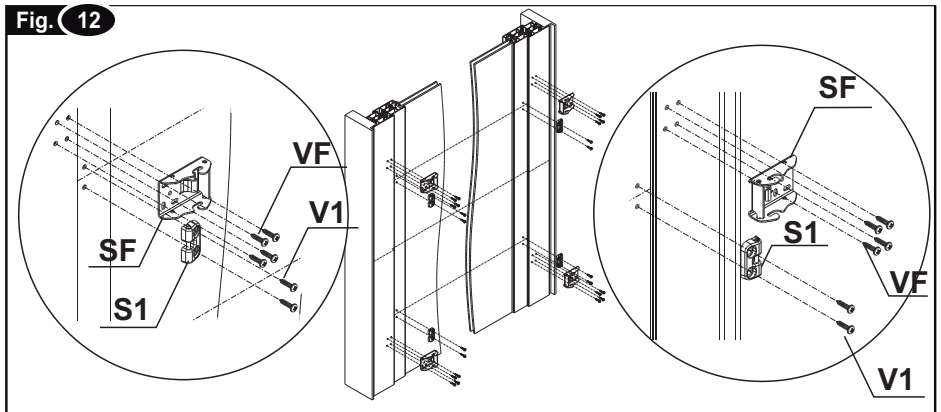


Fig. 13

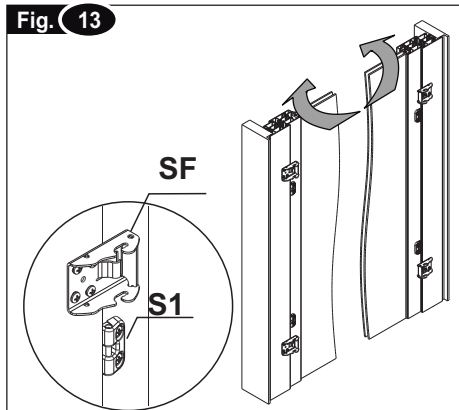


Fig. 14

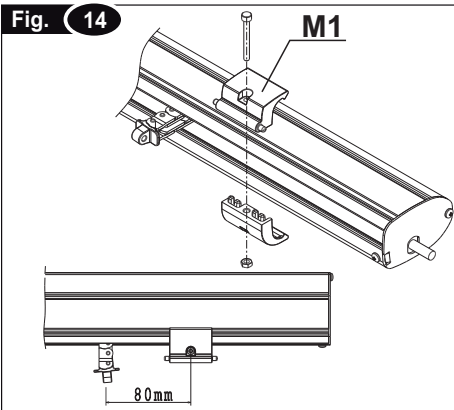
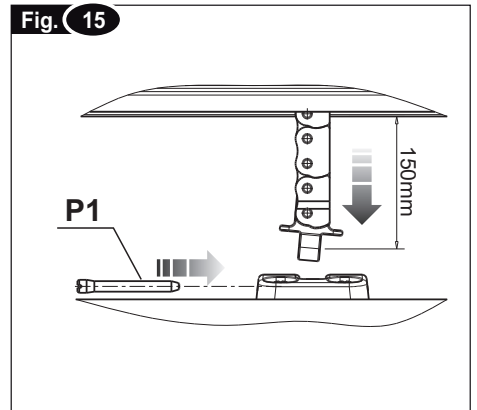
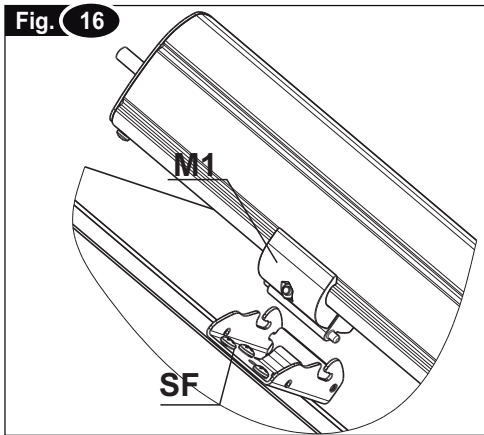


Fig. 15





### INSTALLATION

- 1) Open the package and remove the various components;
- 2) **Fig.10** -With a pencil draw the centre line **X** of the window frame. Measure the distance **L** between the two chain terminals of the actuator and mark it on the window, symmetrically to the midline **X** marked previously, trace axis **X1** and **X2**;
- 3) **Fig.11** - Trace axis **X1'** and **X2'**;  
Taking as reference the axis **X1,X1'** and **X2,X2'** previously traced and the hole layout for the application **A4\_1 (A4\_2)**, mark the points for the holes to fasten the brackets **S1** and **SF**;
- 4) **Fig. 11** - With a suitable drill, create on the window the holes;
- 5) **Fig. 12-13** - Mount the two movable window brackets **S1** with **V1** and the two frame brackets **SF** with **VF**;
- 7) **Fig. 14** - Insert the two pairs of clamps "M1", fitting them in the actuator slider adjacent to the chain terminal, then close them partially with the screw and nut in the package;
- 8) **Fig.14** - Position the clamps 80mm on either side of the chain terminal midline and tighten the screw all the way;
- 9) **Fig.15**- Perform the electric connections according to the provisions of **par. 5.3**, as well as with reference to the wiring diagram. Power the actuator and let the chain come out for at least 150mm of stroke, then disconnect the actuator;
- 10) **Fig.16** - First fasten the chain terminal to the **S1** with **P1**, then

fasten the clamps **M1** to the brackets for connection to the window **SF**;

Make sure the brackets for connection to the window are correctly fastened to their clamps. The number of clamps necessary for assembly will depend on the length of the actuator: up to 3 meters only 2 clamps are needed, over 3 meters add a third at the center of the actuator.

10) Connect the power actuator.

Perform a test of complete window frame opening and closing. Verify that with open window frame, the stroke is some centimetres lower than the stroke limited by window frame mechanical limit devices. Once the closing phase is ended, verify that the window frame is completely closed by checking the seal deflection.

**SIDE HUNG**  
Inward opening

Double Push point

A5\_1

Stroke 360

24V

Standard - RWA

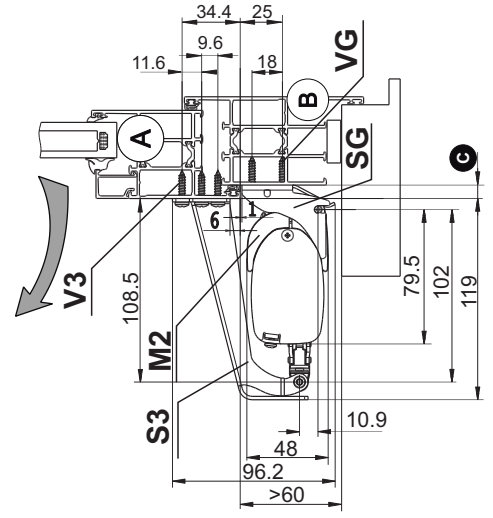
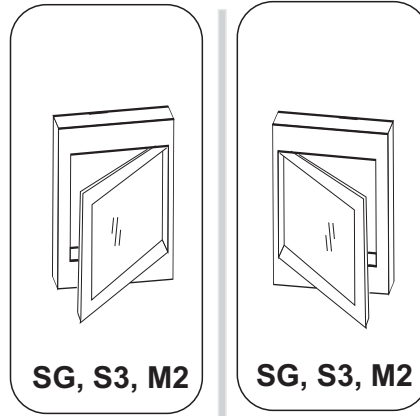
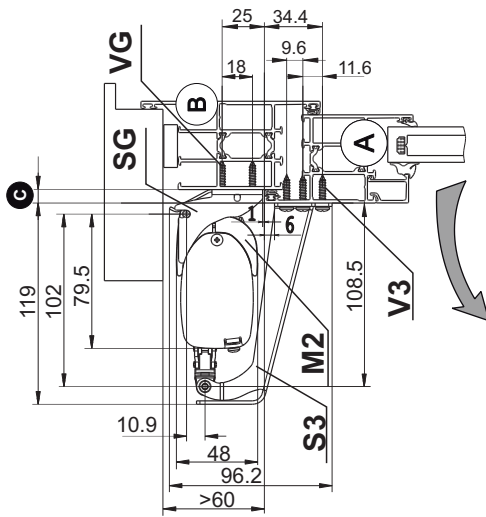
**SIDE HUNG**  
Inward opening

Double Push point

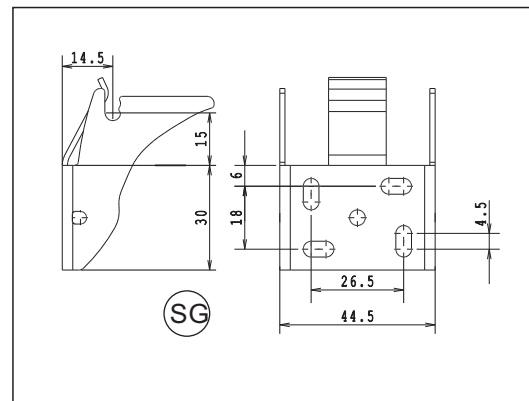
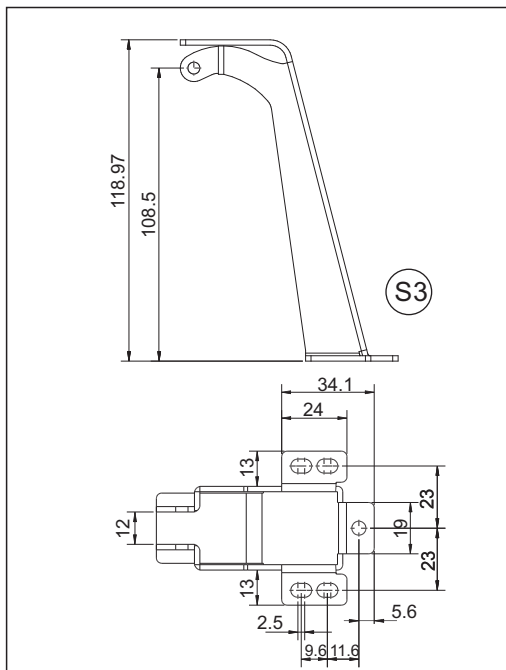
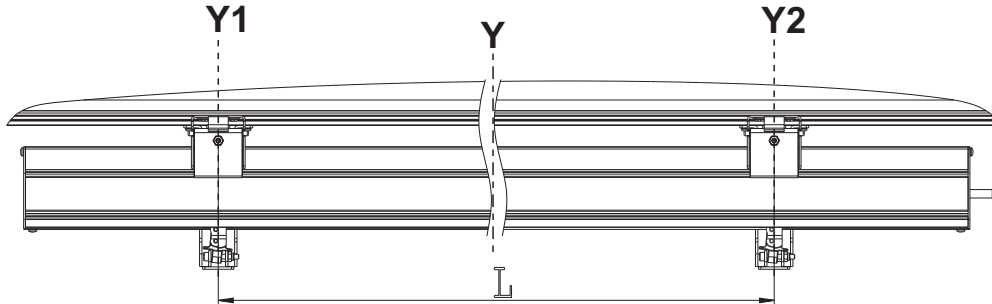
A5\_2

Opening  
RH

Opening  
LH



<b>A</b>	Casement
<b>B</b>	Frame
<b>C</b>	Overlap



**SIDE HUNG  
Inward opening**

**Double Push point**

**A5\_1**

**Stroke 360**

**24V**

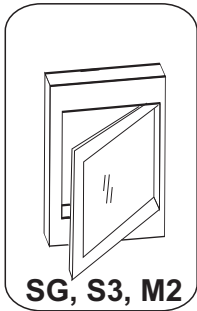
**Standard - RWA**

**SIDE HUNG  
Inward opening**

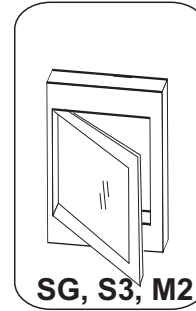
**Double Push point**

**A5\_2**

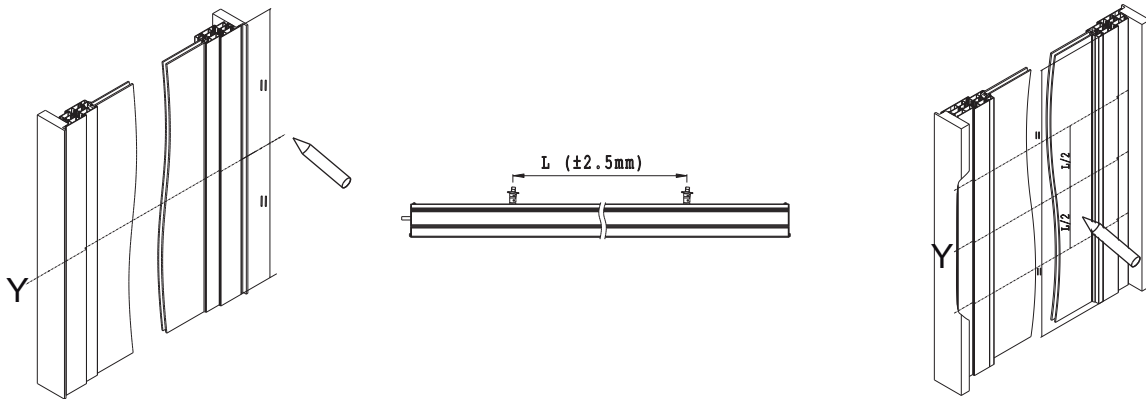
**Opening  
RH**



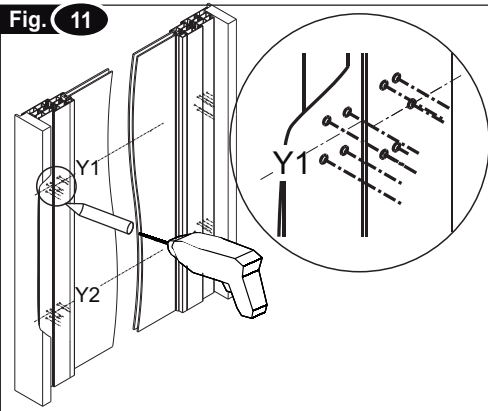
**Opening  
LH**



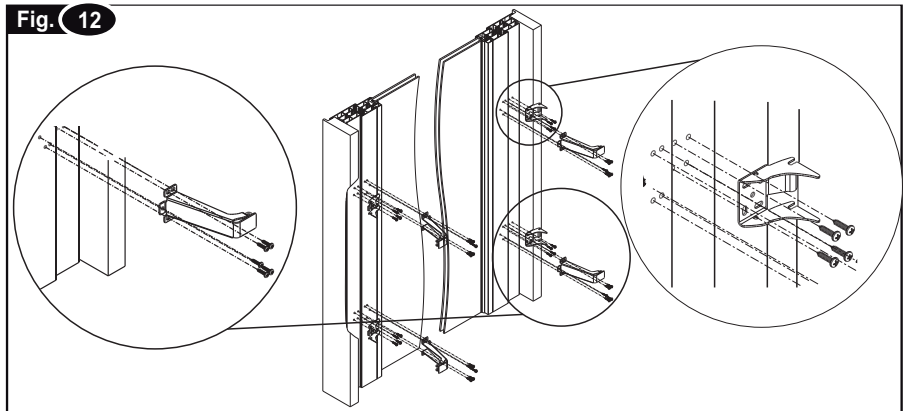
**Fig. 10**



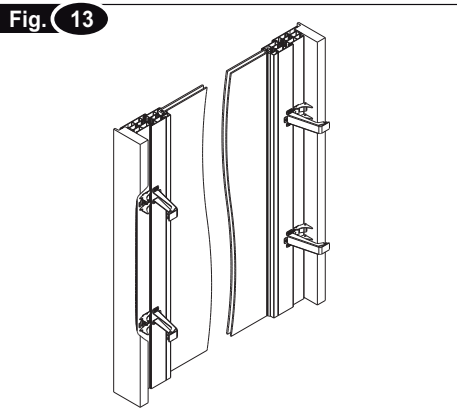
**Fig. 11**



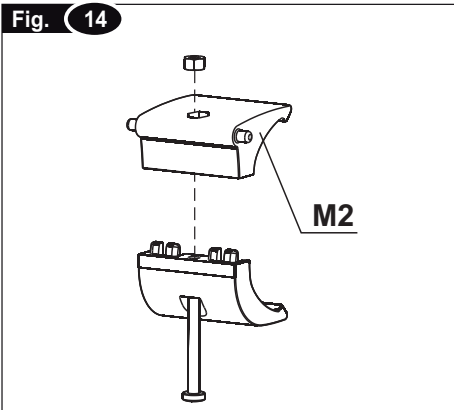
**Fig. 12**



**Fig. 13**



**Fig. 14**



**Fig. 15**

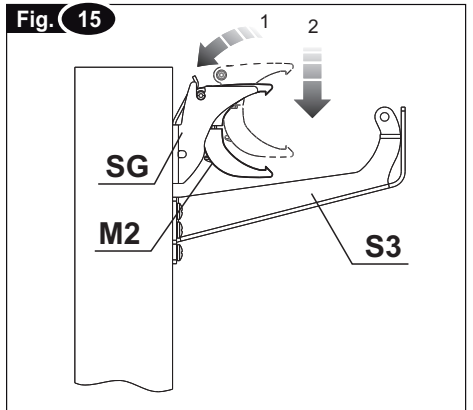


Fig. 16

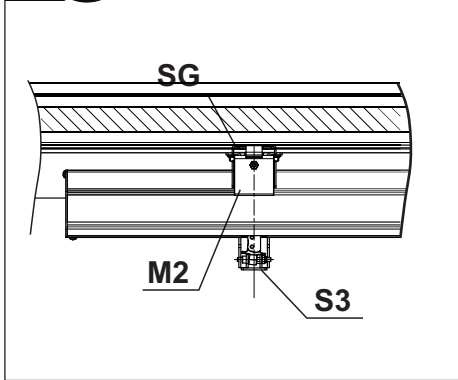


Fig. 17

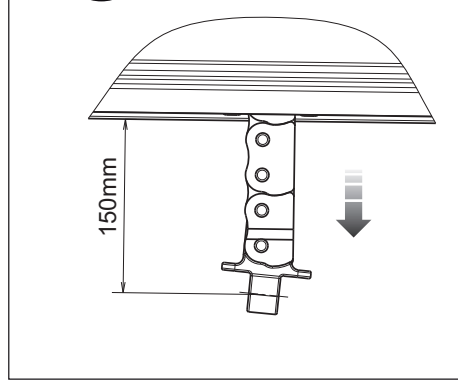


Fig. 18

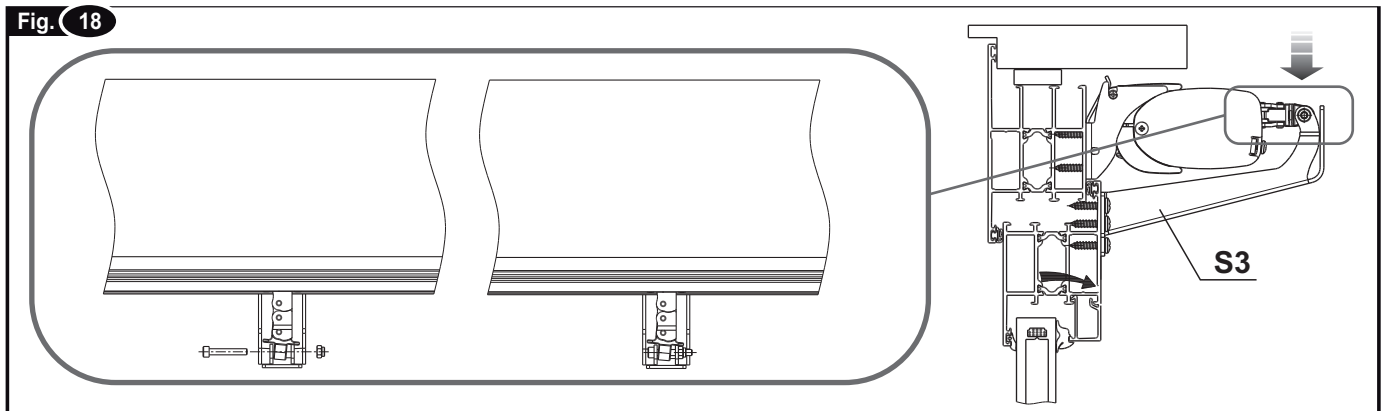
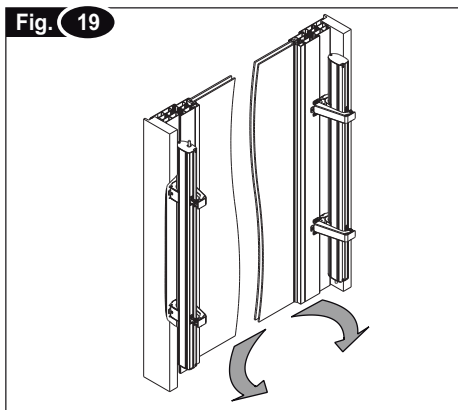


Fig. 19



**INSTALLATION**

- 1) Open the package and remove the various components;
  - 2) Fig.10 - With a pencil draw the centre line **Y** of the window frame. Measure the distance **L** between the two chain terminals of the actuator and mark it on the window, symmetrically to the midline **Y** marked previously, trace axis **Y1** and **Y2**;
  - 3) Fig.11 - Taking as reference the axis **Y1** and **Y2** previously traced and the hole layout for the application **A5\_1(A5\_2)**, mark the points for the holes to fasten the brackets **S3** and **SG**;
  - 4) Fig. 11 - With a suitable drill, create on the window the holes;
  - 5) Fig. 12-13 - Mount the two movable window brackets **S3** with **V3** and the two frame brackets **SG** with **V3**;
- Before using the screws in the hardware package, make sure they are suitable for the type of window;
- 6) Fig.14 - Close the two pairs of clamps **M2** partially with the screws and nut provided in the package;
  - 7) Fig.15 - Fit the two pairs of clamps previously Assembled **M2** with the brackets **SG** (window frame);

**WARNING: do not damage the swivel bracket when fitting the clamps;**

Make sure that the window brackets are correctly fastened to their clamps.

- 8) Fig.16 - Fit the actuator into the clamps **M2** through the tracks on the actuator. Centre the chain-end on the bracket, then firmly close the clamps;

- 9) Fig.17 - Perform the electric connections according to the provisions of par. 5.3, as well as with reference to the wiring diagram. Power the actuator and let the chain come out for at least 150mm of stroke, then disconnect the actuator;

- 10) Fig.18 - Fasten the chain terminal to the Bracket **S3** (wing) with the screw and nut provided in the package.

**WARNING: tighten the nut up to the stop with the bracket, not over as this may compromise the correct functioning of the actuator.**

The number of clamps necessary for assembly will depend on the length of the actuator: up to 3 meters only 2 clamps are needed, over 3 meters add a third at the center of the actuator.

- 11) Power the actuator. Perform a test of complete window frame opening and closing. Verify that with open window frame, the stroke is some centimetres lower than the stroke limited by window frame mechanical limit devices. Once the closing phase is ended, verify that the window frame is completely closed by checking the seal deflection.



## 10.2- Actuator mounting on movable windows.

On the window  
BOTTOM HUNG  
Inward opening

B1

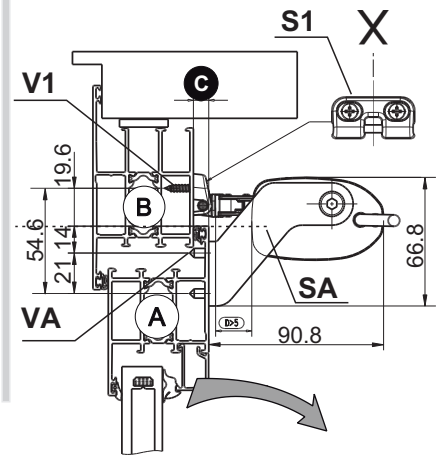
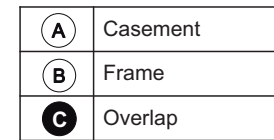
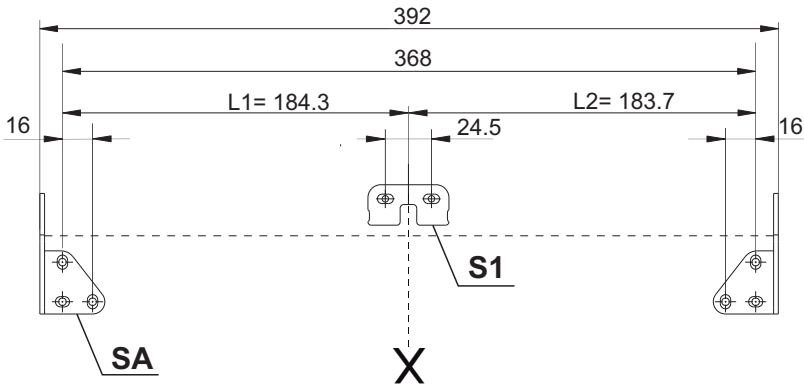
Stroke 360

24V - 230V

Standard - RWA



SA, S1



On the window  
BOTTOM HUNG  
Inward opening

B1

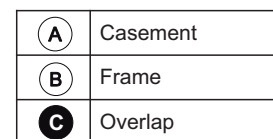
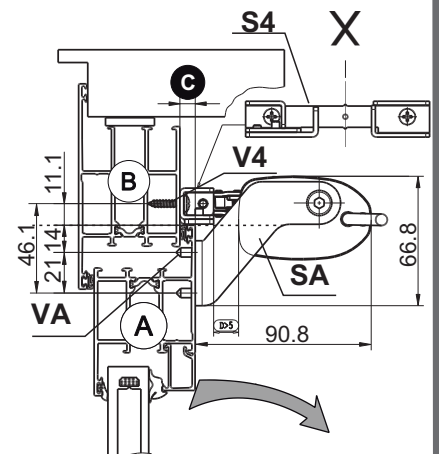
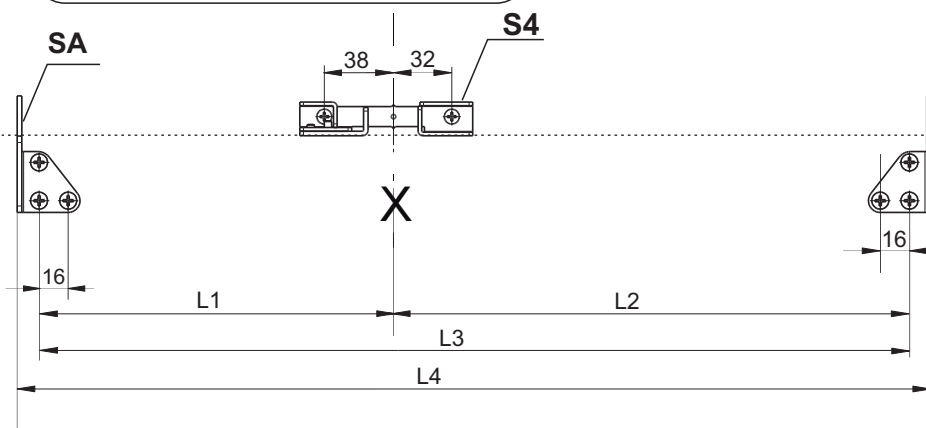
Stroke 600 - 1000

24V - 230V

Standard - RWA



SA, S4



	L1	L2	L3	L4
<b>Stroke 600</b>	194	283	477	501
<b>Stroke 1000 24V</b>	194	423	617	641
<b>Stroke 1000 230V</b>	290	423	713	737

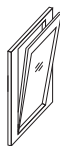
On window  
**BOTTOM HUNG**  
 Inward opening

B1

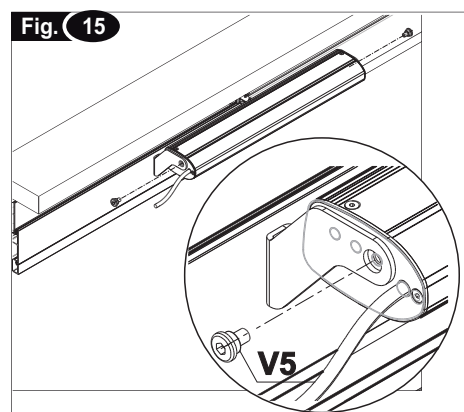
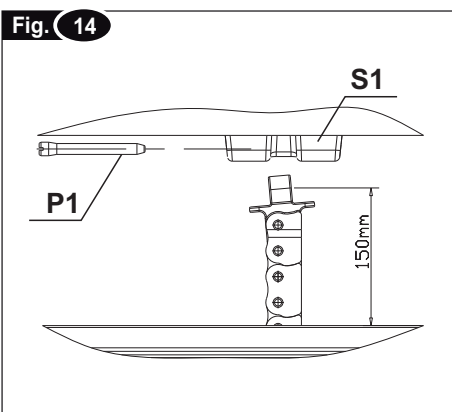
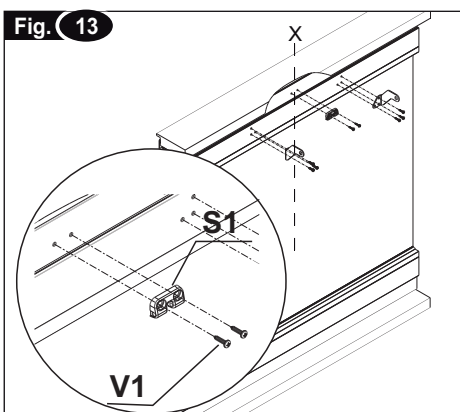
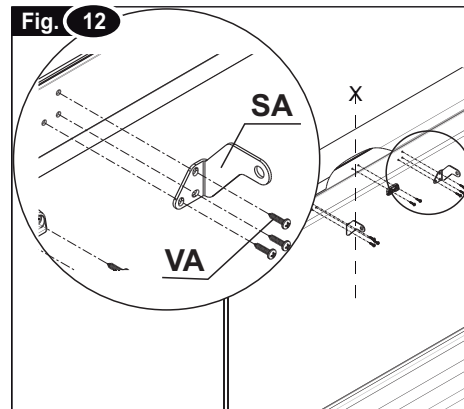
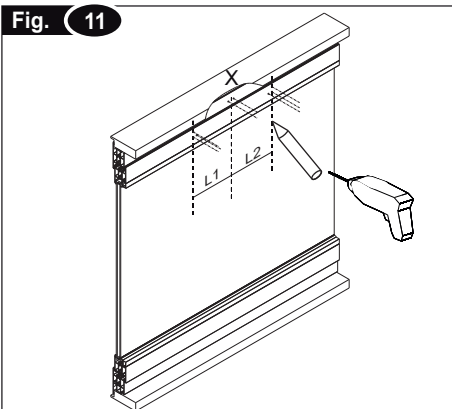
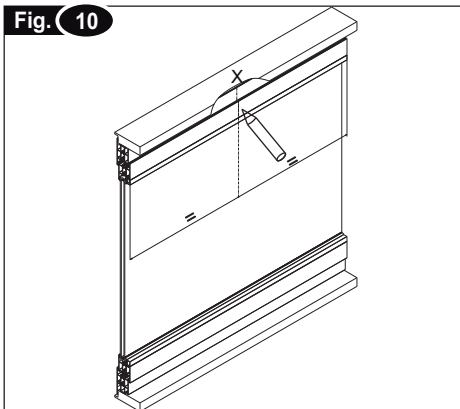
Stroke 360

24V - 230V

Standard - RWA



SA, S1



## INSTALLATION

- 1) Open the package and extract the various components;
- 2) **Fig. 10-** With a pencil draw the centre line **X** of the window frame;
- 3) **Fig. 11-** Taking as reference the **X-axis** previously traced and the hole layout for the application **B1**. Mark the points for the holes to fasten the brackets **S1** and **SA**;
- 4) With a suitable drill, create on the window the holes;
- 5) **Fig. 12-** Mount the supports **SA** (RH-LH) on the movable window frame with the screws **VA**; check the perfect horizontal and vertical alignment with the window frame;
- 6) **Fig. 13-** Mount the bracket **S1** on the fix window frame with the screws **V1**;
- 7) Perform the electric connections according to the provisions of par. 5.3, as well as with reference to the wiring diagram. Power the actuator and let the chain come out for at least 150mm of stroke, then disconnect the actuator;
- 8) **Fig. 14-** Connect the bracket **S1** to the chain end using the pin **P1**;
- 9) **Fig. 15-** Place the actuator on the support **SA** inserting the screw **V5** on the support bracket;



**VERIFY THAT AFTER THE TIGHTENING THE BRACKETS "SA" ADHERE TO THE ACTUATOR IN ORDER TO ASSURE A CORRECT APPLICATION.**

- 10) Perform a test of complete window frame opening and closing. Verify that with open window frame, the stroke is some centimetres lower than the stroke limited by window frame mechanical limit devices. Once the closing phase is ended, verify that the window frame is completely closed by checking the seal deflection.

On window  
**BOTTOM HUNG**  
 Inward opening

B1

Stroke 600 - 1000

24V - 230V

Standard - RWA



SA, S4

Fig. 10

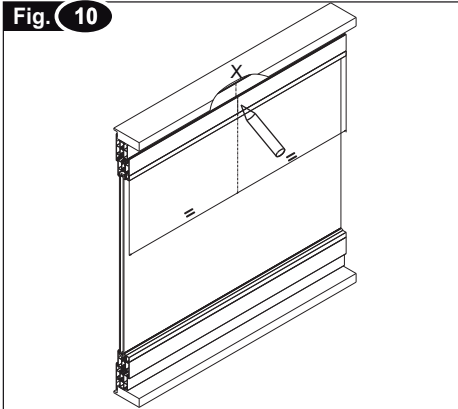


Fig. 11

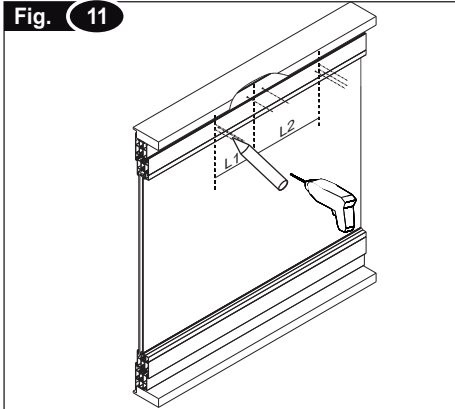


Fig. 12

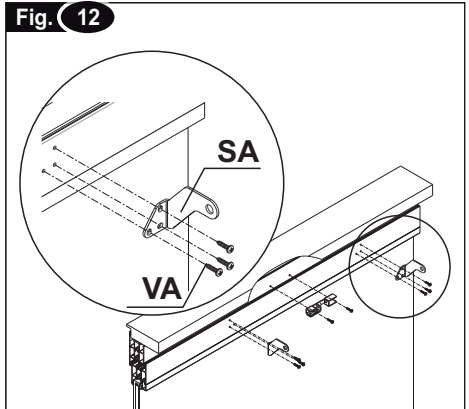


Fig. 13

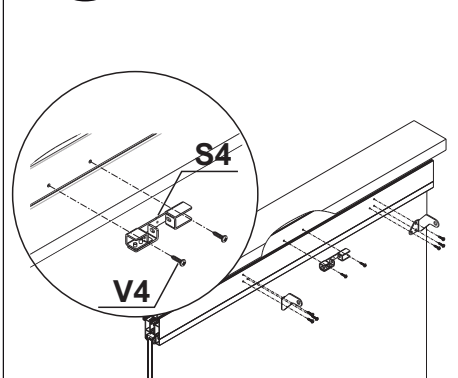


Fig. 14

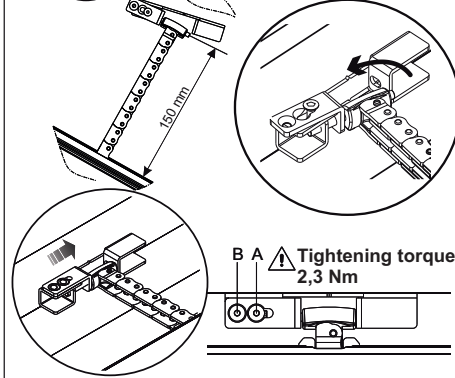
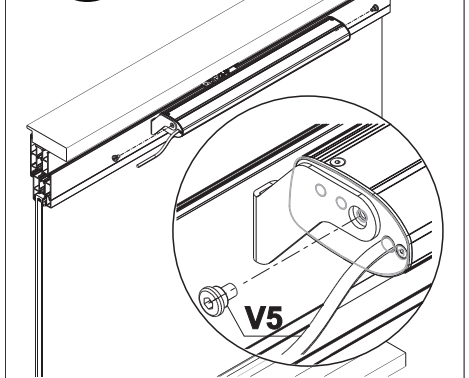


Fig. 15



## INSTALLATION

- 1) Open the package and extract the various components;
- 2) Fig. 10- With a pencil draw the centre line X of the window frame;
- 3) Fig. 11- Taking as reference the X-axis previously traced and the hole layout for the application B1. Mark the points for the holes to fasten the brackets S4 and SA;
- 4) With a suitable drill, create on the window the holes;
- 5) Fig. 12- Mount the supports SA (RH-LH) on the movable window frame with the screws VA; check the perfect horizontal and vertical alignment with the window frame;
- 6) Fig. 13- Mount the bracket S4 on the fix window frame with the screws V4;
- 7) Fig. 14- Perform the electric connections according to the provisions of par. 5.3, as well as with reference to the wiring diagram. Power the actuator and let the chain come out for at least 150mm of stroke, then disconnect the actuator; secure the chain terminal to the frame mount; first fit the long side of the shaft and then insert the entire assembly. 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);

- 8) Fig. 15- Place the actuator on the support SA inserting the screw V5 on the support bracket;



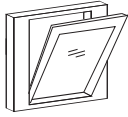
**VERIFY THAT AFTER THE TIGHTENING THE BRACKETS "SA" ADHERE TO THE ACTUATOR IN ORDER TO ASSURE A CORRECT APPLICATION.**

- 9) Perform a test of complete window frame opening and closing. Verify that with open window frame, the stroke is some centimetres lower than the stroke limited by window frame mechanical limit devices. Once the closing phase is ended, verify that the window frame is completely closed by checking the seal deflection.i.

On the window  
**BOTTOM HUNG**  
 Inward opening

B1

Double push point

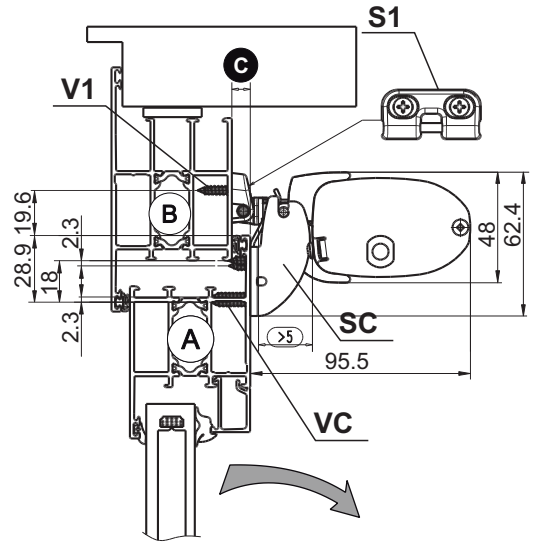
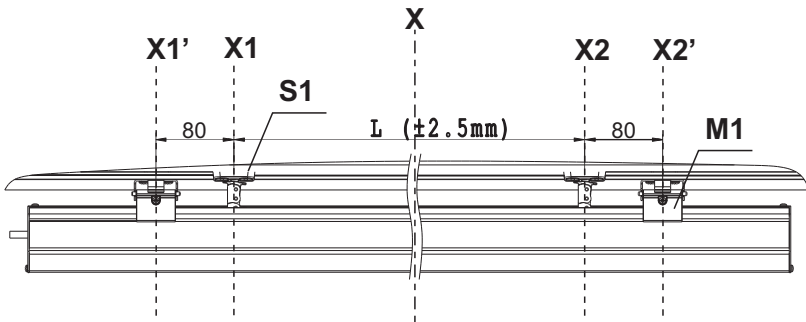


SC, S1, M1

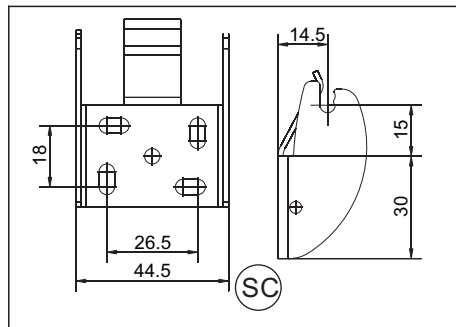
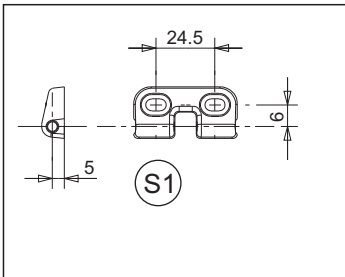
Stroke 360

24V

Standard -RWA



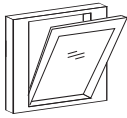
<b>A</b>	Casement
<b>B</b>	Frame
<b>C</b>	Overlap



On the window  
**BOTTOM HUNG**  
 Inward opening

B1

Double push point



SC, S1, M1

Stroke 360

24V

Standard -RWA

Fig. 10

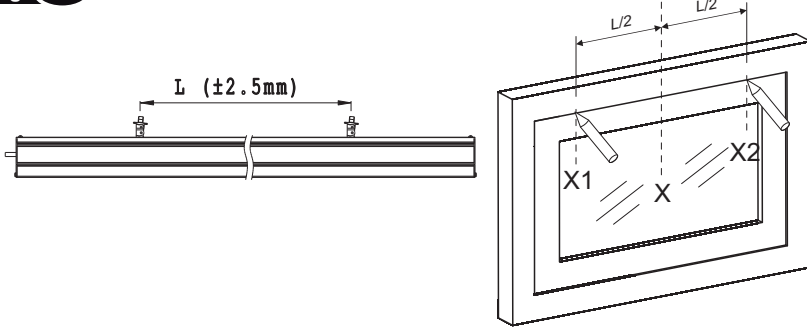


Fig. 11

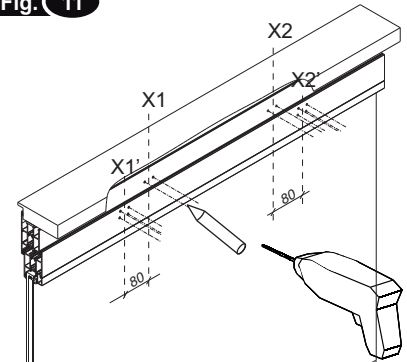


Fig. 12

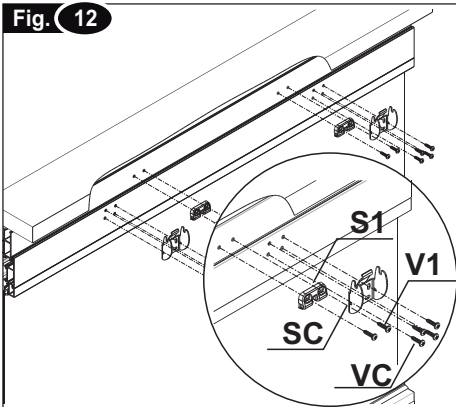


Fig. 13

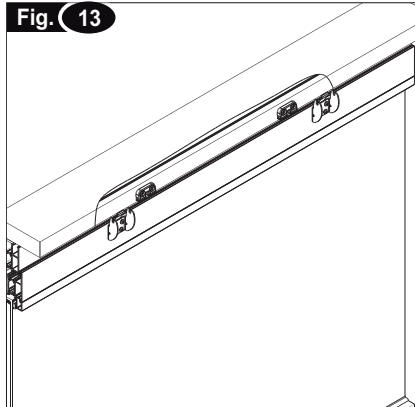


Fig. 14

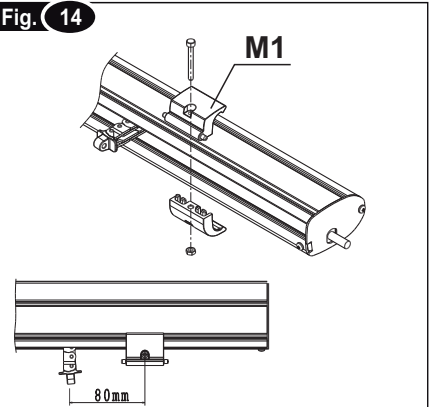


Fig. 15

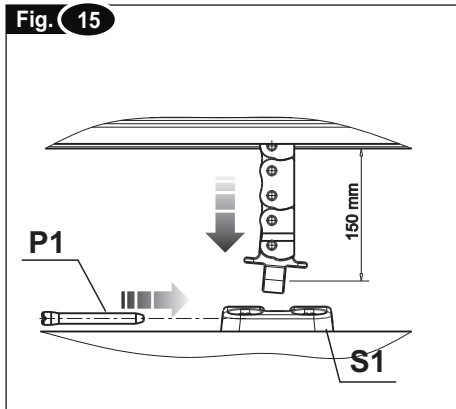
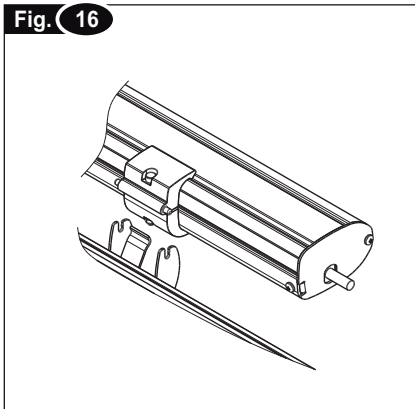


Fig. 16



6) Fig. 14 - Insert the two pairs of clamps "M1", fitting them in the actuator slider adjacent to the chain terminal, then close them partially with the screw and nut in the package;

7) Fig. 14 - Position the clamps 80mm on either side of the chain terminal midline and tighten the screw all the way;

8) Fig. 15 - Perform the electric connections according to the provisions of par. 5.3, as well as with reference to the wiring diagram. Power the actuator and let the chain come out for at least 150mm of stroke, then disconnect the actuator;

9) Fig. 15- 16 - First fasten the chain terminal to the S1 with P1, then fasten the clamps M1 to the brackets for connection to

## INSTALLATION

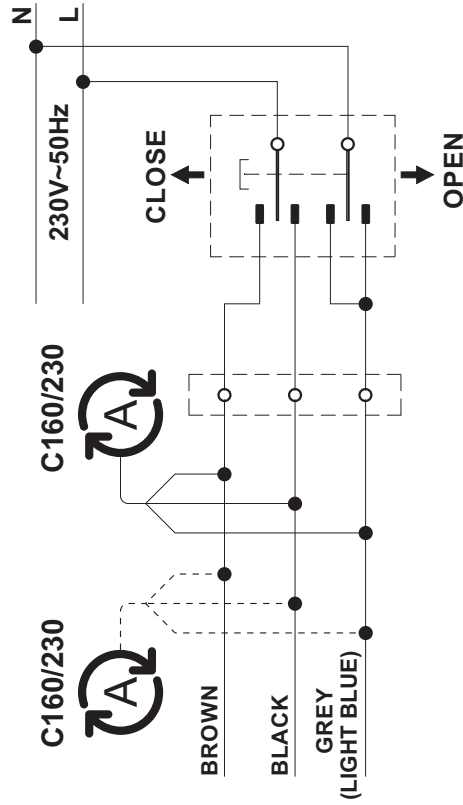
- 1) Open the package and remove the various components;
- 2) Fig. 10 - With a pencil draw the centre line X of the window frame. Measure the distance L between the two chain terminals of the actuator and mark it on the window, symmetrically to the midline X marked previously, trace axis X1 and X2;
- 3) Fig. 11 - Trace axis X1' and X2'; Taking as reference the axis X1, X1' and X2, X2' previously traced and the hole layout for the application B1, mark the points for the holes to fasten the brackets S1 and SC;
- 4) Fig. 11 - With a suitable drill, create on the window the holes;
- 5) Fig. 12-13 - Mount the two fix window brackets S1 with V1 and the two brackets SC with VC on the movable frame;

the window SC. Make sure the brackets for connection to the window are correctly fastened to their clamps. The number of clamps necessary for assembly will depend on the length of the actuator: up to 3 meters only 2 clamps are needed, over 3 meters add a third at the center of the actuator.

10) Connect the power actuator. Perform a test of complete window frame opening and closing. Verify that with open window frame, the stroke is some centimetres lower than the stroke limited by window frame mechanical limit devices. Once the closing phase is ended, verify that the window frame is completely closed by checking the seal deflection.

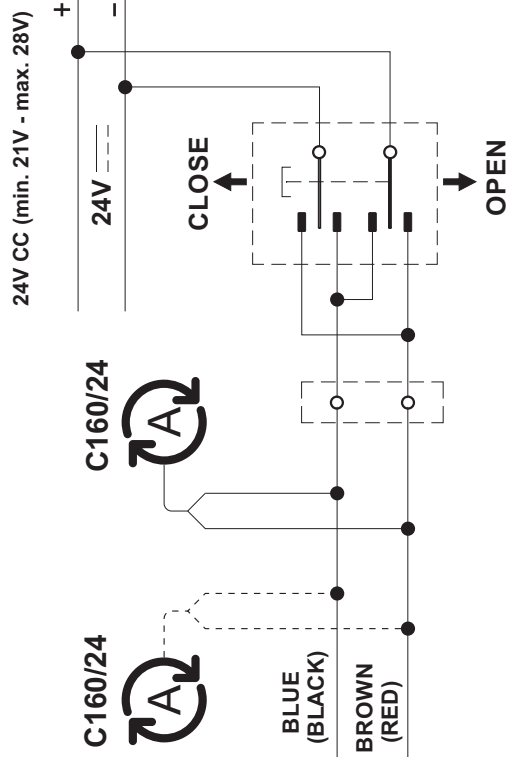
Wiring Diagram

230 V



THIS SYMBOL IDENTIFIES THE TOPP ELECTRICAL ACTUATOR IN WIRING DIAGRAMS.

24 V



THIS SYMBOL IDENTIFIES THE TOPP ELECTRICAL ACTUATOR IN WIRING DIAGRAMS.





TOPP S.r.l.

Società a Socio Unico soggetta a direzione e coordinamento di 2 Plus 3 Holding S.p.a.

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