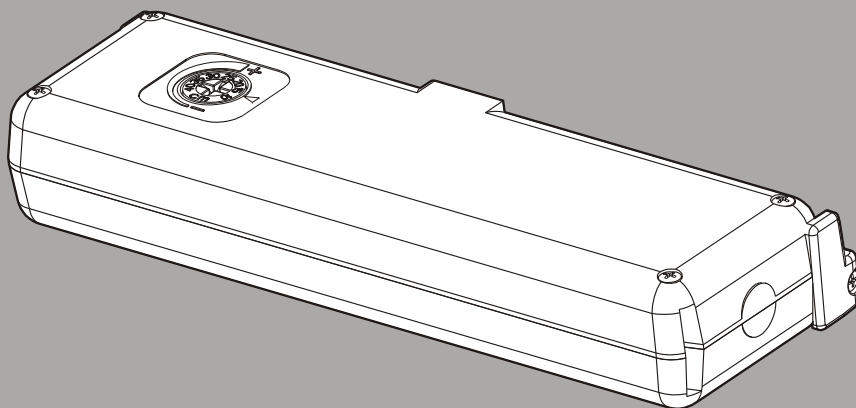


EN

INSTALLATION AND USE INSTRUCTIONS

CHAIN ACTUATOR FOR
WINDOW AUTOMATION

ACK4



PATENTED



P/N 0P5101

VER.1.0

REV.07.04

**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.**

1- DECLARATION OF "CE" CONFORMITYpage 04
2- GENERAL REMARKS	
2.1- General instructions	page 05
2.2- Installer and user	page 05
2.3- Warranty	page 05
2.4- Technical assistance.....	page 05
2.5- Reserved rights	page 05
3- TECHNICAL DESCRIPTION	
3.1- Rating plate and "CE" marking.....	page 06
3.2- Denomination of the components and dimensions.....	page 07
3.3- Technical data.....	page 08
3.4- Formulas for the calculation of thrust force or tractive force.....	page 09
3.5- Destination of use.....	page 09
3.6- Use Limits.....	page 10
3.7- Package.....	page 10
4- SAFETY	
4.1- Protections against electric hazard	page 12
4.2- Residual risks	page 12
5- INSTALLATION	
5.1- General instructions	page 13
5.2- Top hung windows.....	page 14
5.3- Bottom hung windows	page 15
5.4- Electric connections	page 17
5.5- Control devices.....	page 17
5.6- Window closing adjustment.....	page 18
5.7- Emergency procedures	page 19
6- USE AND OPERATION	
6.1- Use of the actuator.....	page 20
7- DEMOLITION	
7.1- General instructions	page 21
8- SPARE PARTS AND ACCESSORIES UPON REQUEST	
8.1- General instructions	page 21
FIGURES	page 25



Declares that the electric device

Called: **CHAIN ACTUATOR FOR WINDOW AUTOMATION**

Type: **ACK4**

Models: **ACK42 - ACK44**

Serial No.: see data plate and CE marking applied on the equipment

Year of manufacture: **2004**

complies with the requirements of the following directives:

73/23/EEC

(Low Voltage Directive: electrical equipment destined to be used within given voltage limits)

89/336/EEC


(Electromagnetic Compatibility Directive - on the approximation of the laws of the Member States relating to electromagnetic compatibility)

and, besides, it declares that the following harmonized standards have been applied:

**EN60335-1:1994; EN60335-1/Ed:1995; EN60335-1/A11:1995
EN60335-1/A1:1996; EN60335-1/A13:1998; EN60335-1/A14:1998
EN60335-1/A15:2000; EN60335-1/A2:2000; EN60335-1/A16:2001
EN55014-1(2000) + EN55014-1/A1(2001) + EN55014-1/A2(2002);
EN61000-3-2 (2000) ; EN61000-3-3 (1995); EN61000-3-3/A1 (2001)
EN55014-2 (1997) + EN55014-2/A1 (2001)**

Date: **07/01/2004**

Surname and name: **Matteo Cavalcante**

Signature: 

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.

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 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- WARRANTY



THE ACTUATOR WARRANTY EXPIRES, IF ITS USE DOES NOT COMPLY WITH THE INSTRUCTIONS AND PRESCRIPTIONS DESCRIBED IN THIS MANUAL, AS WELL AS IF NON-ORIGINAL COMPONENTS, ACCESSORIES, SPARE PARTS, AND CONTROL SYSTEMS ARE USED (SEE LAST PAGE).

2.4- TECHNICAL ASSISTANCE

For the technical assistance apply to your Dealer or to the Manufacturer.

2.5- 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.

3.1- RATING PLATE AND "CE" MARKING

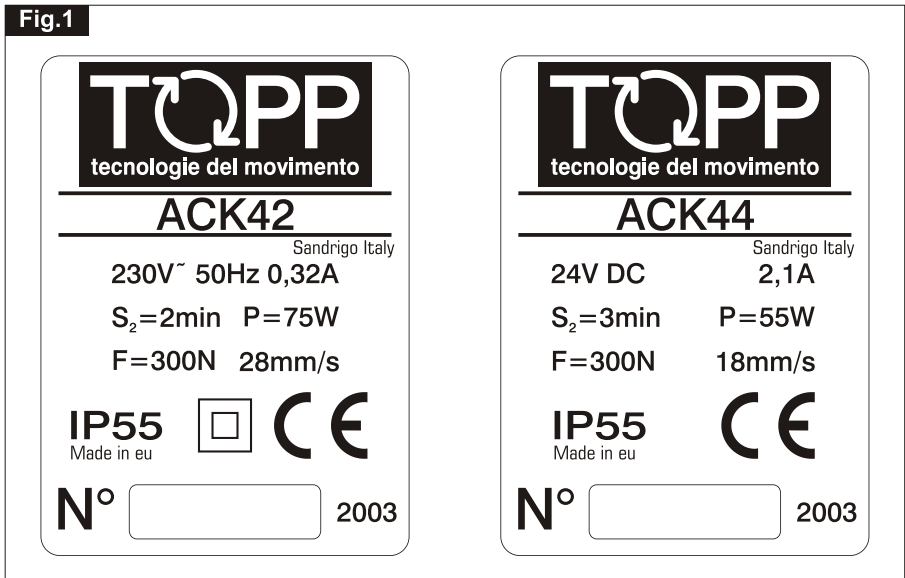
The "CE" marking certifies the compliance of the machine with the essential safety and health requirements foreseen by the product European Directives.

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

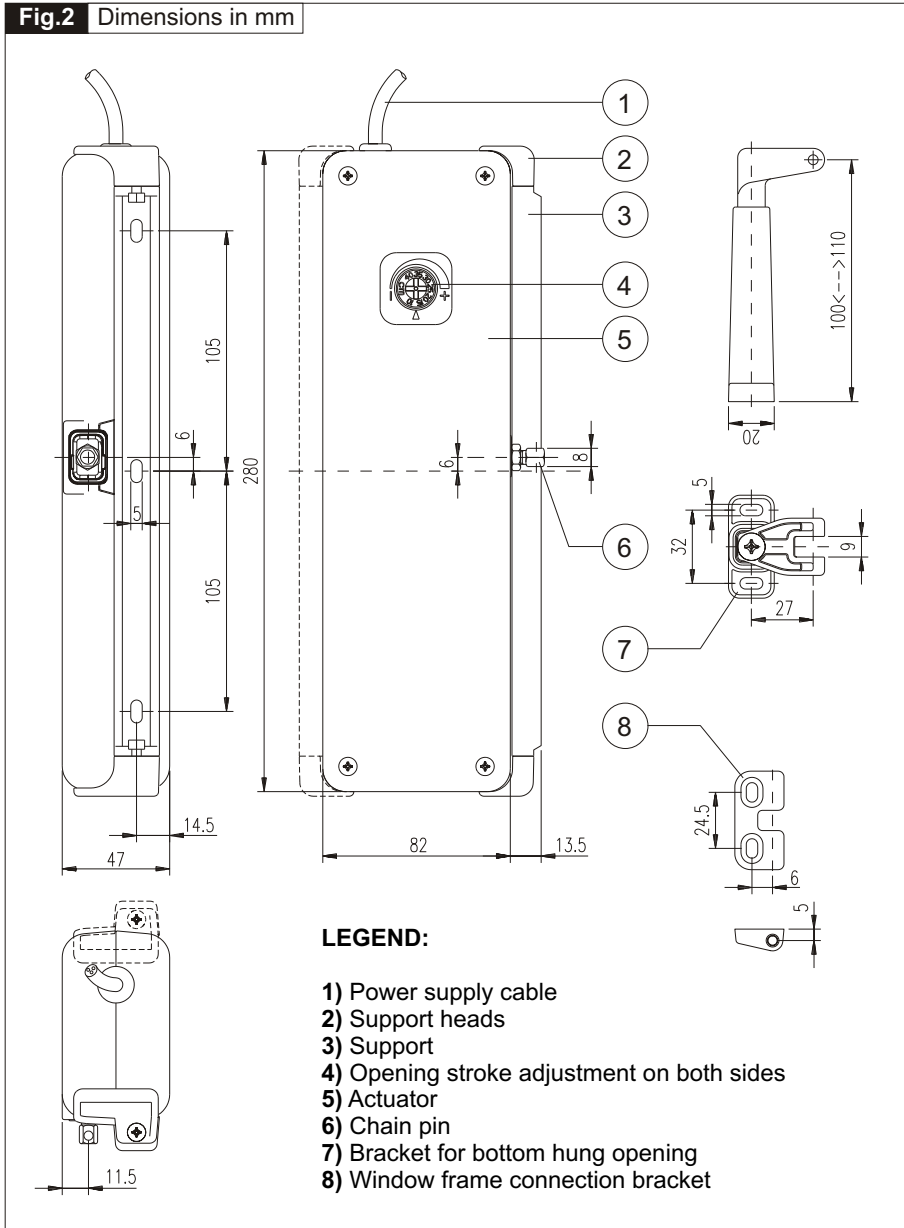
It is applied externally on the actuator. The plate (**Fig.1**) bears in readable and indelible way the following data:

- logo and address of the manufacturer
- type and model
- voltage and intensity of power supply (V - A)
- type of service S_2 (min)
- absorbed electric power P (W)
- thrust and tractive force F (N)
- idle translation speed (mm/s)
- protection degree (IP)
- symbol of double insulation (only for mod. ACK42)
- "CE" marking
- serial number
- year of construction

Fig.1



3.2-DENOMINATION OF THE COMPONENTS AND DIMENSIONS



3.3- TECHNICAL DATA

Tab.1 contains the technical data characterising the actuators.

	ACK42	ACK44
Power supply voltage	230 V - 50 Hz	24 V DC
Absorbed current	0,32 A	2,10 A
Absorbed power with load	75 W	55 W
Thrust force	300 N	
Tractive force	300 N	
Idle translation speed	28 mm/s	18 mm/s
Duration of idle stroke	14 s	22 s
Minimum window frame height ⁽¹⁾	H = 800 mm	
Adjustable stroke end ⁽²⁾	10 - 15 - 20 - 25 - 30 - 35 - 40 cm	
Electronics with warning horn to signal to the user the wrong assembling ⁽³⁾		
Double electric insulation <input type="checkbox"/>	yes	/
Type of service S ₂ ⁽⁴⁾	2 min	3 min
Operating temperature	- 5 °C + 50 °C	
Protection degree of electric devices	IP 55	
Adjustment of the window frame connection	10 mm	
Parallel electric connection of more actuators on the same window	Only with proper electronic device	
Parallel electric connection of more actuators on different windows	Yes (see wiring diagram)	
Actuator weight with brackets	1,7 kg	
Gross weight	1,9 kg	
⁽¹⁾ Actuator distance from the window frame opening hinge ⁽²⁾ Tolerance on the precision of the output limit switch tripping: +/- 1 cm ⁽³⁾ The "buzzer" device is enabled automatically and emits a continuous "beep" as long as the actuator is fed. For further details on its operation see paragraph 5.6 ⁽⁴⁾ Service of limited duration according to EN 60034		

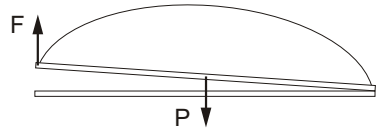
Tab.1

3.4- FORMULAS FOR THE CALCULATION OF THRUST AND TRACTIVE FORCE

Fig.3

Horizontal domes or skylights

- F** = Force necessary for opening or closing
- P** = Weight of the skylight or dome (Only movable part)

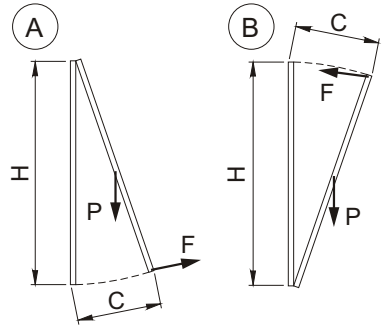


$$F = 0,54 \times P$$

Fig.4

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

- F** = Force necessary for opening or closing
- P** = Weight of the window (only movable part)
- C** = Window opening stroke
- H** = Window height



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

3.5- DESTINATION OF USE



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

3.6- USE LIMITS

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



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



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



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



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

3.7- PACKAGE

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

- No. 1 Actuator equipped with power supply cable;
- No. 1 Support (**Ref.A**);
- No. 1 Bracket for hopper opening (**Ref.B**);
- No. 1 Small parts package (window connection bracket, nuts, pin and fastening screws for aluminium window frames) (**Ref.C**);
- No. 1 Adhesive drilling template (**Ref.D**);
- No. 1 Installation and use instructions (**Ref.E**).



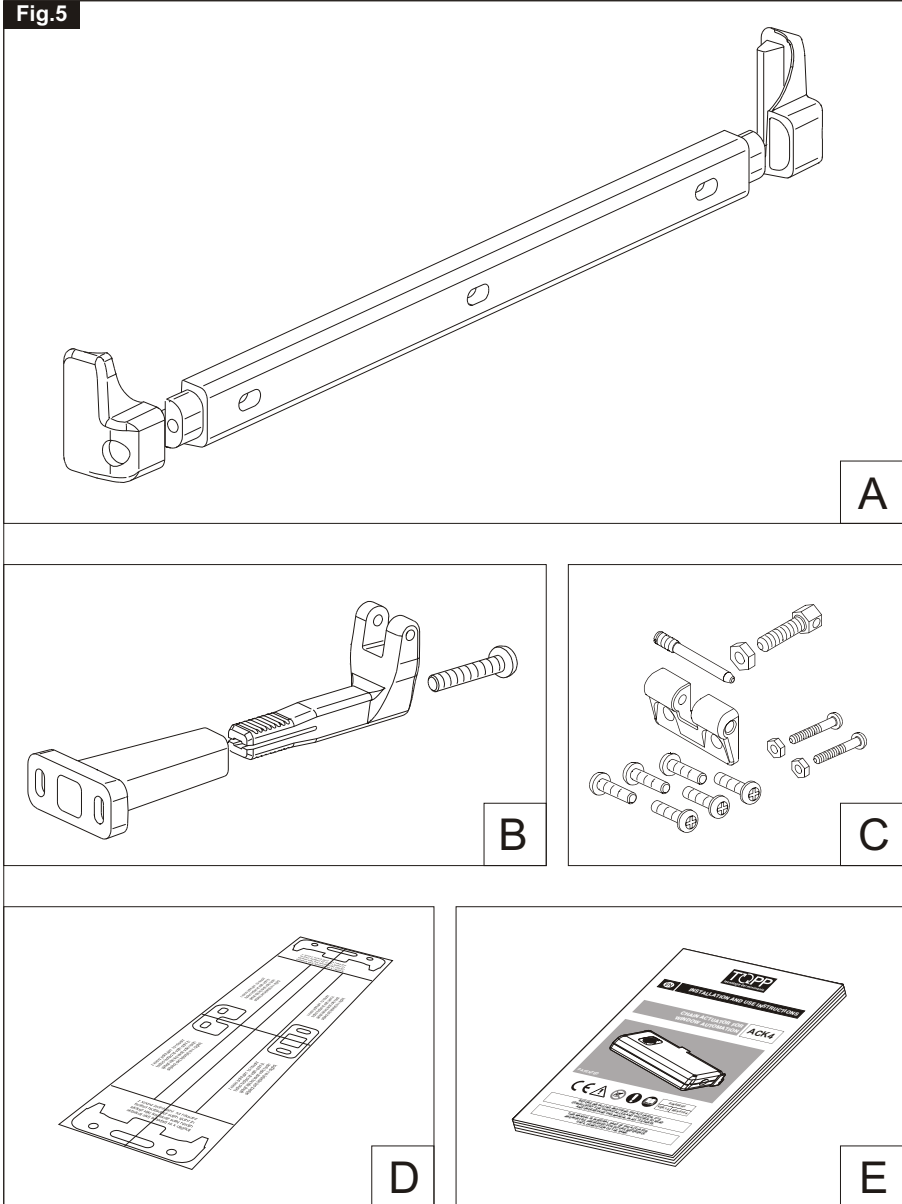
MAKE SURE THAT THE ABOVE DESCRIBED COMPONENTS ARE CONTAINED IN THE PACKAGE, AS WELL AS THAT THE ACTUATOR HAS NOT BEEN DAMAGED DURING TRANSPORT.



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.



4.1- 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. ACK42 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 perform the connection to the earthing system of the actuators equipped with double insulation).

4.2- RESIDUAL RISKS

The actuator does not have 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 FORESEEN BY THE LAWS IN FORCE IN THE COUNTRY OF INSTALLATION.



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



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



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

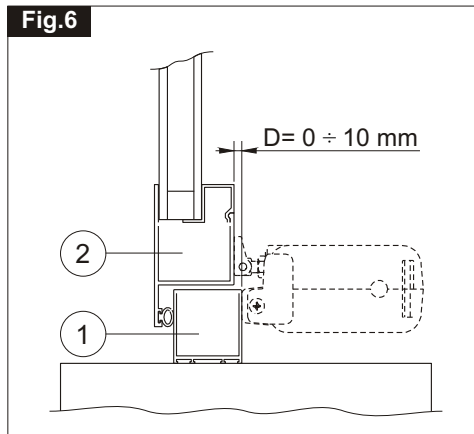


FOR CORRECT OPERATION OF THE ACTUATOR, THE WINDOW MUST HAVE A MINIMUM HEIGHT OF 800 mm (DISTANCE OF THE ACTUATOR FROM THE WINDOW OPENING HINGE). OTHERWISE, ASK YOUR DEALER OR THE MANUFACTURER FOR THE NECESSARY ACCESSORIES FOR A CORRECT INSTALLATION.



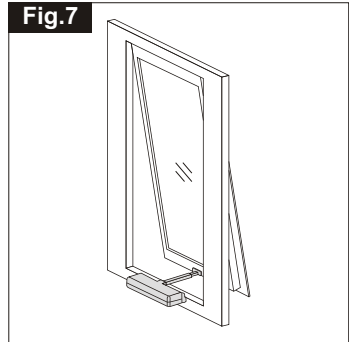
VERIFY THAT THE DISTANCE "D" BETWEEN THE FIXED PART OF THE WINDOW (ON WHICH THE FIXING OF THE ACTUATOR IS FORESEEN - FIG.6-REF.1) AND THE MOVABLE PART OF THE WINDOW (ON WHICH THE BRACKET FIXING IS FORESEEN - FIG.6-REF.2) IS INCLUDED WITHIN 0 AND 10 mm. OTHERWISE, ASK YOUR DEALER OR THE MANUFACTURER FOR THE NECESSARY ACCESSORIES FOR A CORRECT INSTALLATION (SEE CHAP.8)

Fig.6



5.2- TOP HUNG WINDOWS (Fig. 7 and 15÷24)

- 1) Open the package (**par.3.7**) and extract the various components;
- 2) **Fig.15-** With a pencil draw the centre line "X" of the window frame;
- 3) **Fig.16-** Select the following components: bracket "S1", support "SA", two nuts "D1", two screws "V1", heads "T1" and "T2";
- 4) **Fig.17-** Insert the two nuts "D1" on the support "SA" and mount the head "T1" by fixing it using screw "V1";
- 5) **Fig. 18-** Cut out the adhesive template "DS" and apply it on the window frame centring it on the previously drawn centre line "X";

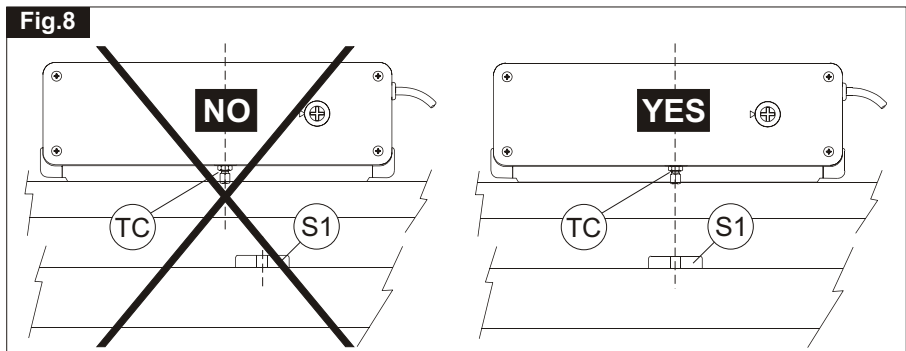


CAUTION: FOR NON-COPLANAR WINDOW FRAMES, IT IS NECESSARY TO CUT THE TEMPLATE CONCERNED PART AND TO APPLY IT ON THE WINDOW FRAME PAYING ATTENTION TO KEEP IT IN THE SAME REFERENCE POSITION.

- 6) With a suitable drill, create on the window frame holes having the related diameter, given on the adhesive template "DS";
- 7) **Fig.19-** Mount the support "SA" on the fix window frame with the screws "V2"; Check the perfect horizontal and vertical alignment with the window frame;
- 8) **Fig.20-** Mount the bracket "S1" on the movable window frame with the screws "V2";
- 9) Mount the actuator on the support "SA", place the head "T2" and tighten the screw "V1";



VERIFY THAT THE CHAIN END "TC" IS ON THE SAME AXIS OF THE BRACKET "S1". OTHERWISE, LOOSEN THE FIXING SCREWS AND POSITION IT CORRECTLY. WHEN THE DEVICES ARE NOT COAXIAL, THIS MAY DAMAGE THE ACTUATOR AND THE WINDOW FRAME (FIG. 8).



- 10) **Fig.21-** Mount the nut "D2" on the screw "V3" and then it on the chain ending "TC";
Fig.22- Connect the bracket "S1" to the screw "V3" by means of the pin "P";
- 11) Perform the electric connections according to the prescriptions of **par.5.4**, as well as with reference to the wiring diagram;
- 12) **Fig.23-** Act with a screwdriver or with a coin on the adjustment screw "VR", setting the wished opening stroke (cm);



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

- 13) **Fig.24-** Perform a test of complete window frame opening and closing. After the closing phase, verify that the chain end "TC" is completely returned in its seat (**Ref.A**);
- 14) If the closing is right (**Ref.A**), fix the screw "V3" with the nut "D2" and the pin "P".
If the closing is not precise (**Ref.B**), perform the necessary adjustment of the screw "V3" and of the nut "D2".

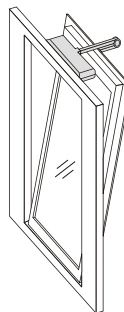


FOR A CORRECT ADJUSTMENT OF THE WINDOW FRAME CLOSING SEE THE INDICATIONS GIVEN IN PAR. 5.6.

5.3- BOTTOM HUNG WINDOWS (Fig.9 and 25÷34)

- 1) Open the package (**par. 3.7**) and extract the various components;
- 2) **Fig.25-** With a pencil draw the centre line "Y" of the window frame;
- 3) **Fig.26-** Select the following components: bracket "S2" and "S3", support "SA", two nuts "D1", two screws "V1", screw "V4", heads "T1" and "T2";
- 4) **Fig.27-** Insert the two nuts "D1" on the support "SA" and mount the head "T2" by fixing it using screw "V1";
- 5) **Fig.28-** Cut out the adhesive template "DV" and apply it on the window frame centring it on the previously drawn centre line "Y";

Fig.9



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

- 6) With a suitable drill, create on the window frame holes having the related diameter, given on the adhesive template "DV";
- 7) **Fig.29-** Mount the support "SA" on the fix window frame with the screws "V2"; check the perfect horizontal and vertical alignment with the window frame;
- 8) **Fig.30-** Mount the bracket "S2" on the movable window frame with the screws "V2";
- 9) Mount the actuator on the support "SA", place the head "T1" and tighten the screw "V1";



VERIFY THAT THE CHAIN END "TC" IS ON THE SAME AXIS OF THE BRACKET "S1". OTHERWISE, LOOSEN THE FIXING SCREWS AND POSITION IT CORRECTLY. WHEN THE DEVICES ARE NOT COAXIAL, THIS MAY DAMAGE THE ACTUATOR AND THE WINDOW FRAME (SEE Fig.8).

- 10) **Fig.31-** Mount the nut "D2" on the screw "V3" and then it on the chain end "TC";
Fig.32- Connect the bracket "S3" to bracket "S2" and fix it with the screw "V4". Connect the bracket "S3" with the screw "V3" by means of the pin "P";
- 11) Perform the electric connections according to the prescriptions of **par. 5.4**, as well as with reference to the wiring diagram;
- 12) **Fig.33-** Act with a screwdriver or with a coin on the adjustment screw "VR", setting the wished opening stroke (cm);



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

- 13) **Fig. 34-** Perform a test of complete window frame opening and closing. After the closing phase, verify that the chain end "TC" is completely returned in its seat (**Ref.A**);
- 14) If the closing is right (**Ref.A**), fix the screw "V3" with the nut "D2" and the pin "P". If the closing is not precise (**Ref. B**), perform the necessary adjustment of the screw "V3" and of the nut "D2". If necessary, act also on the bracket "S3", unscrewing the screw "V4" it is possible to unhook the two brackets modifying their coupling position.



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

5.4- ELECTRIC CONNECTIONS (Wiring diagram)



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



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



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



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



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



IT IS COMPULSORY TO INSTALL UPSTREAM OF THE MAINS A SECTIONING DEVICE WITH A 30 mA DIFFERENTIAL PROTECTION, ASSOCIATED WITH THE EARTHING PLANT.



IT IS FORBIDDEN TO PERFORM THE CONNECTION TO THE EARTHING PLANT OF THE ACTUATORS EQUIPPED WITH DOUBLE INSULATION (MOD. ACK42).

5.5- CONTROL DEVICES



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

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

1) MANUAL PUSH-BUTTON:

Open/closed electric switch (I-0) controlling the single actuator or more than one actuator simultaneously;

2) CONTROL AND FEEDING UNIT:

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

To these control units, it is possible to connect the rain sensors (**RPR - 12V**), the wind sensor (**RW**) and the brightness sensor (**RL**);

3) SYNCHRONIZATION UNIT:

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

5.6- ADJUSTMENT OF THE WINDOW FRAME CLOSING (Fig.24-34)

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

A good method to perform the adjustment is to let the chain go back without load into the actuator and, then, to measure the position of the chain ending with reference to the external casings.

Then, tighten the window frame fixing screw and let the chain go back.

The adjustment is right, when with closed window the chain ending has the same position detected during the test without load.

As given in **Fig.24-B** (top hung windows) and in **Fig.34-B** (bottom hung windows), although the window is closed, part of the chain ending or of the chain itself has not come back completely into the actuator casings causing the failed tripping of the related limit switch related to the chain re-entering. In this case, the actuator motor remains under conditions of maximum stress, until the electronic protection trips and the **"BUZZER" is enabled.**

This warning horn emits a continuous "beep" as long as the actuator is connected to the power supply.



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

5.7- EMERGENCY PROCEDURES

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



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



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

- 1) Act on the pin "P" until it is completely extracted from the bracket "S1" (top hung windows - **Fig.10**). Act on the pin "P" until it is completely extracted from the bracket "S3" (bottom hung windows - **Fig.11**);
- 2) Open the window manually.

Fig.10

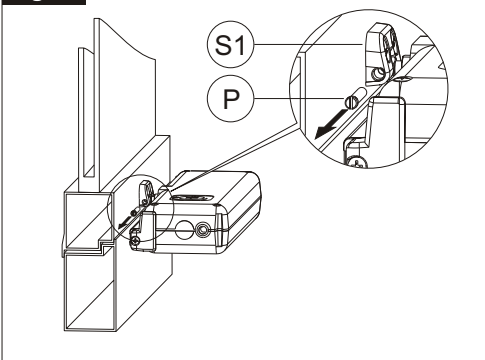
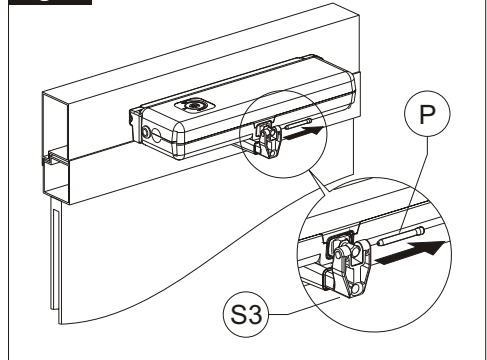


Fig.11



6.1- USE OF THE ACTUATOR



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



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



BEFORE OPERATING THE ACTUATOR, THE USER MUST COMPULSORILY VERIFY THAT NEAR AND/OR UNDER THE WINDOW THERE ARE NOT ANY PERSON, ANIMAL AND THING WHOSE SAFETY MAY BE ACCIDENTALLY JEOPARDISED (SEE PAR. 4.2).



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



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



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

The use of the actuator allows to control automatically the opening and closing of the window according to the type of control device installed (see par. 5.5).

7.1- GENERAL INSTRUCTIONS



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.).

8.1- GENERAL INSTRUCTIONS



THE USE OF "NON-ORIGINAL" SPARE PARTS AND ACCESSORIES WHICH MAY ENDANGER THE SAFETY AND THE EFFICIENCY OF THE ACTUATOR IS FORBIDDEN. THIS ACTION SHALL INVOLVE THE WARRANTY EXPIRATION.



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

Fig.12

FRAME ADJUSTMENT PINS

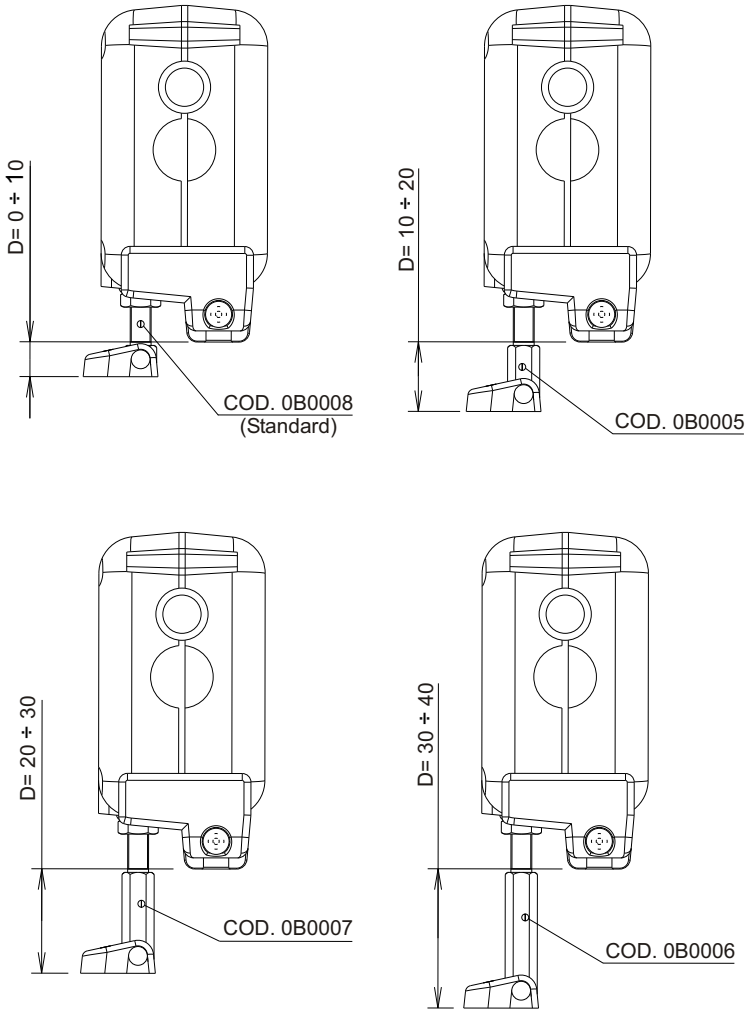
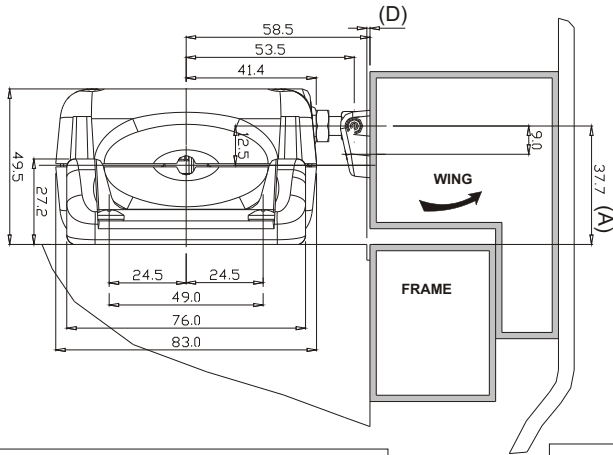


Fig.13

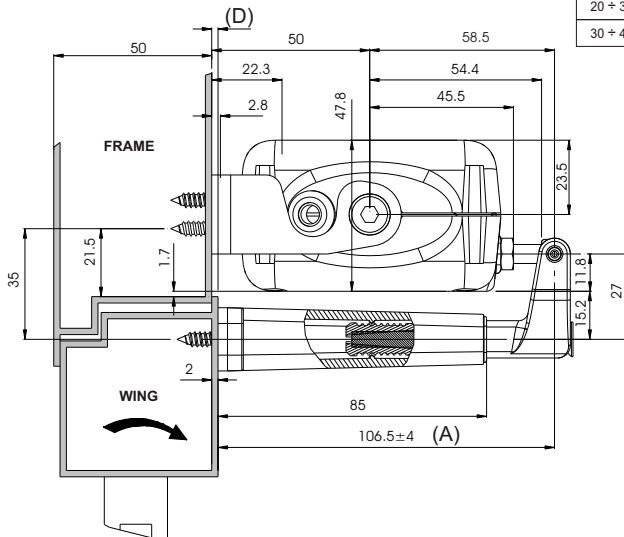
VERTICAL MOUNTING BRACKET (COD. 3A1380-81-82)



FOR A CORRECT OPERATION, THE WINDOW MUST HAVE A MIN. HEIGHT OF 800 mm (ACTUATOR DISTANCE FROM THE WINDOW FRAME OPENING HINGE).

Overlapped part (D)	Window frame adjustment pin code
0 ± 10 mm	0B0008 (Standard)
10 ± 20 mm	0B0005
20 ± 30 mm	0B0007
30 ± 40 mm	0B0006

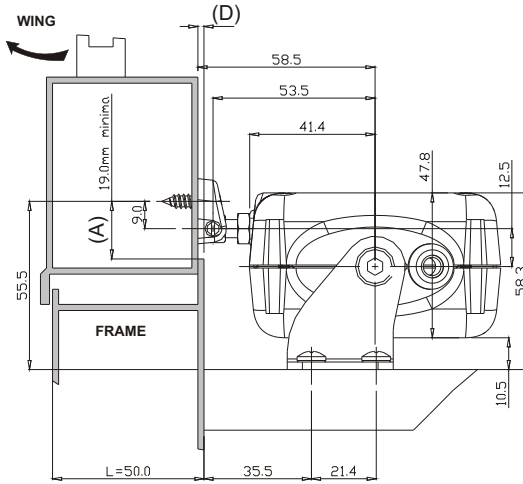
SINGLE SWIVEL BRACKET (COD. 1A1665-66-67)



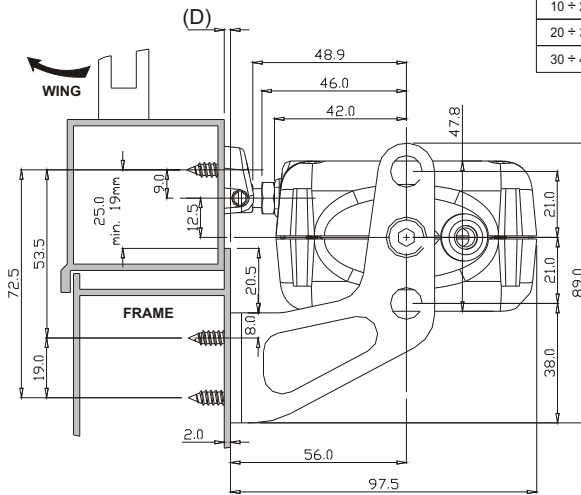
THE FIXING POSITION (A) HAS TO BE VERIFIED AND EVALUATED ACCORDING TO THE PROFILE/WIDTH OF THE WING/FRAME AND OF THE WINDOW LIGHT. THEACTUATOR WITH SWIVEL BRACKET CAN BE SUBJECT TO A MAX. THRUST FORCE NOT EXCEEDING 250N. FOR A CORRECT OPERATION, THE WINDOW MUST HAVE A MIN. HEIGHT OF 400 mm (ACTUATOR DISTANCE FROM THE WINDOW FRAME OPENING HINGE).

Fig.14

SMALL SWIVEL BRACKET (COD. 3A1396-97-98-99)



BIG SWIVEL BRACKET (COD.3A1391-92-93-94)



Overlapped part (D)	Window frame adjustment pin code
0 ± 10 mm	0B0008 (Standard)
10 ± 20 mm	0B0005
20 ± 30 mm	0B0007
30 ± 40 mm	0B0006



THE FIXING POSITION (A) HAS TO BE VERIFIED AND EVALUATED ACCORDING TO THE PROFILE/WIDTH OF THE WING/FRAME AND OF THE WINDOW LIGHT. THEACTUATOR WITH SWIVEL BRACKET CAN BE SUBJECT TO A MAX. THRUST FORCE NOT EXCEEDING 250N. FOR A CORRECT OPERATION, THE WINDOW MUST HAVE A MIN. HEIGHT OF 400 mm (ACTUATOR DISTANCE FROM THE WINDOW FRAME OPENING HINGE).

Fig.15

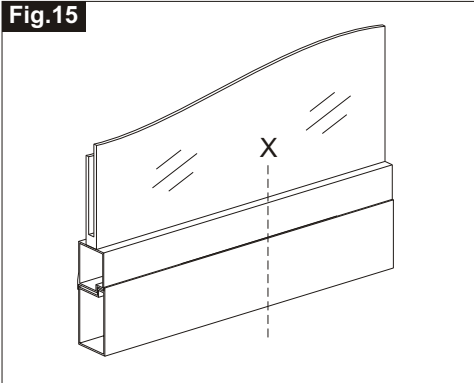


Fig.16

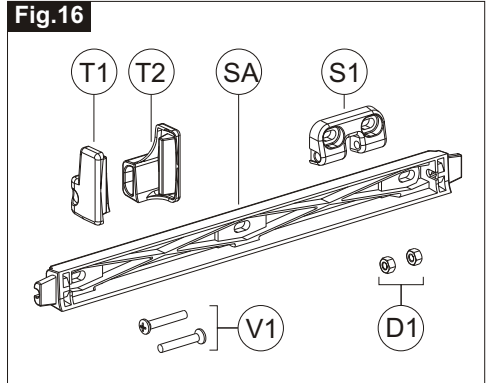


Fig.17

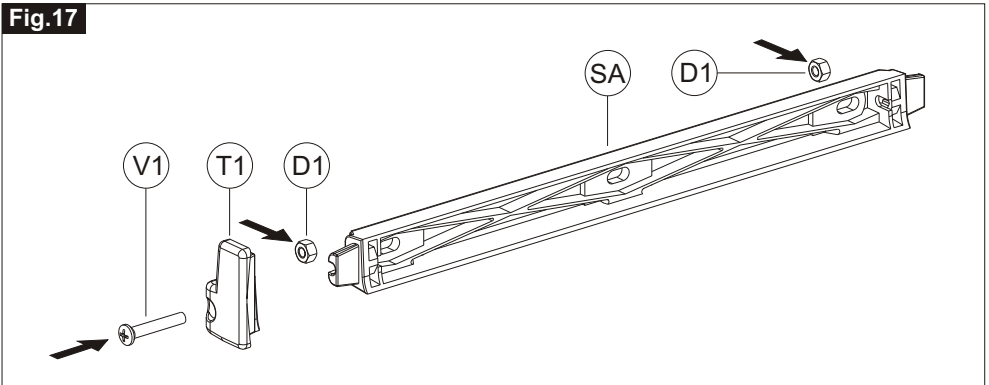


Fig.18

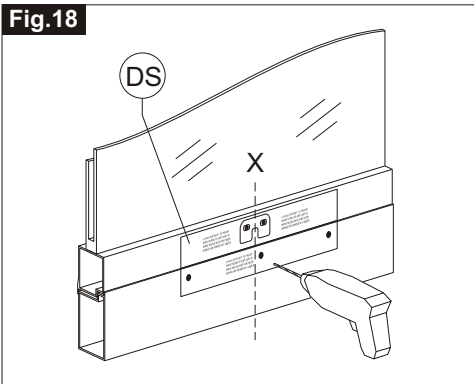


Fig.19

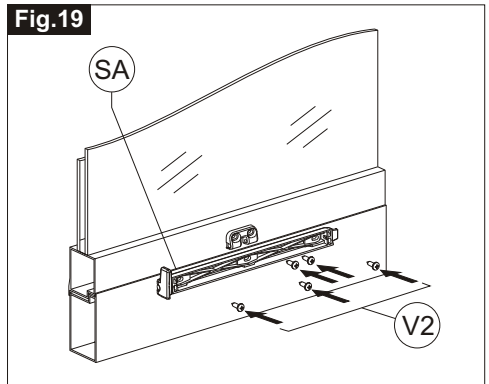


Fig.20

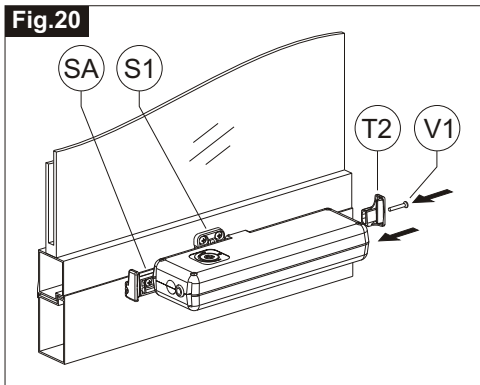


Fig.21

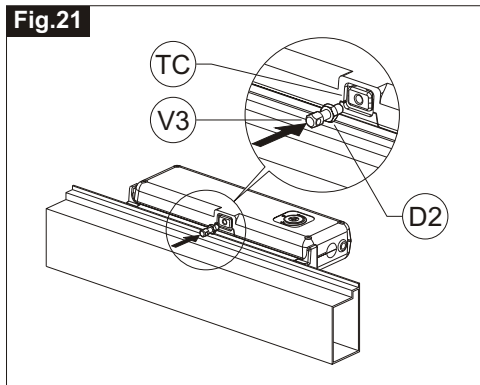


Fig.22

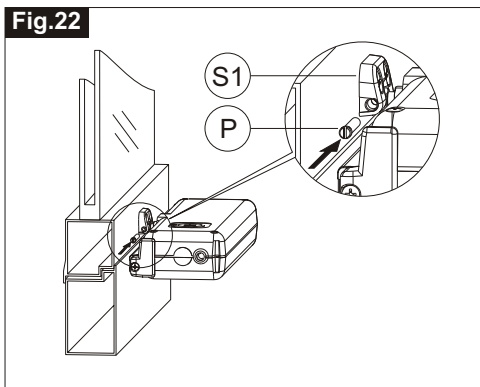


Fig.23

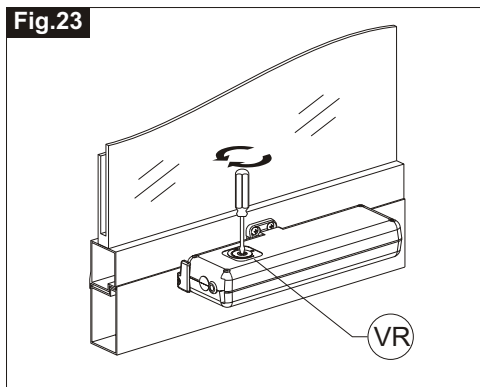


Fig.24

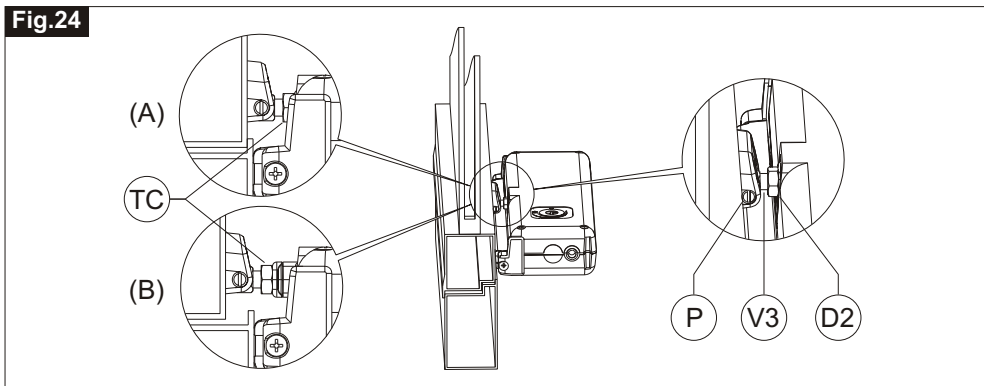


Fig.25

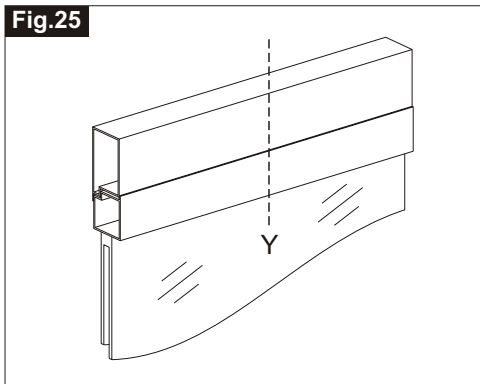


Fig.26

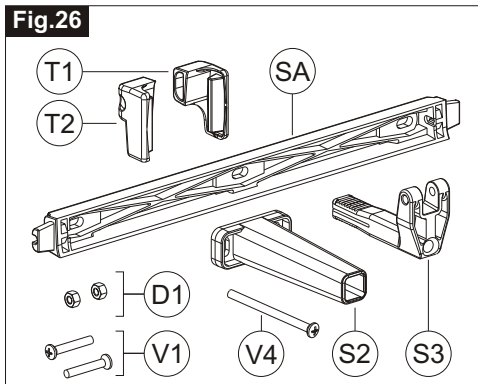


Fig.27

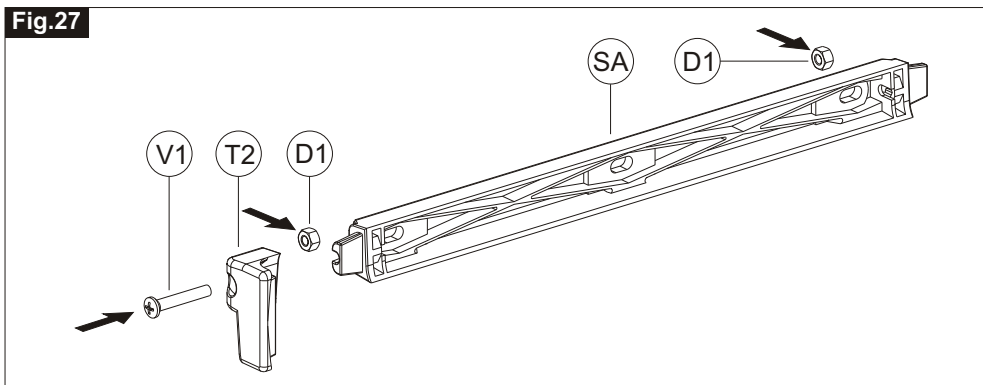


Fig.28

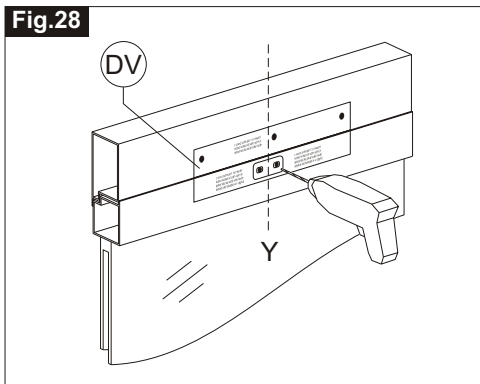


Fig.29

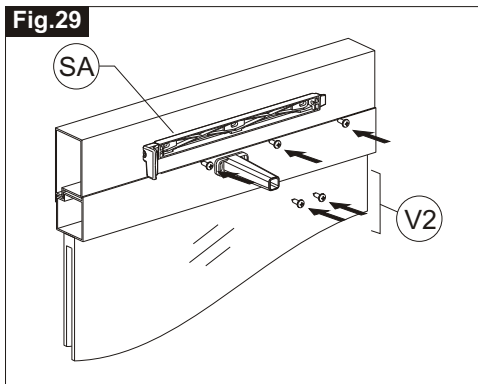


Fig.30

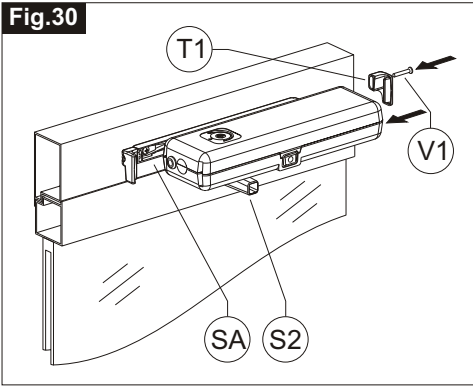


Fig.31

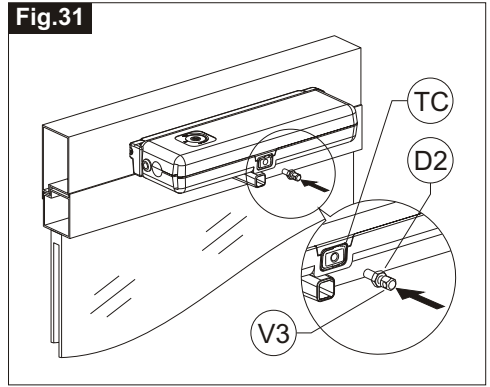


Fig.32

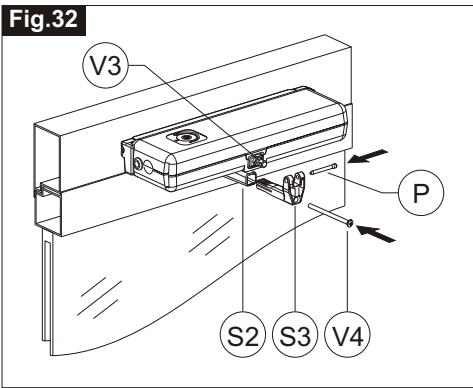


Fig.33

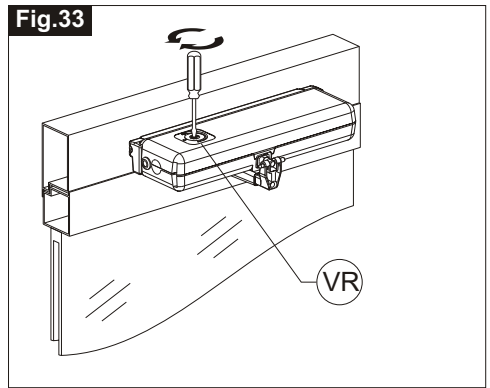
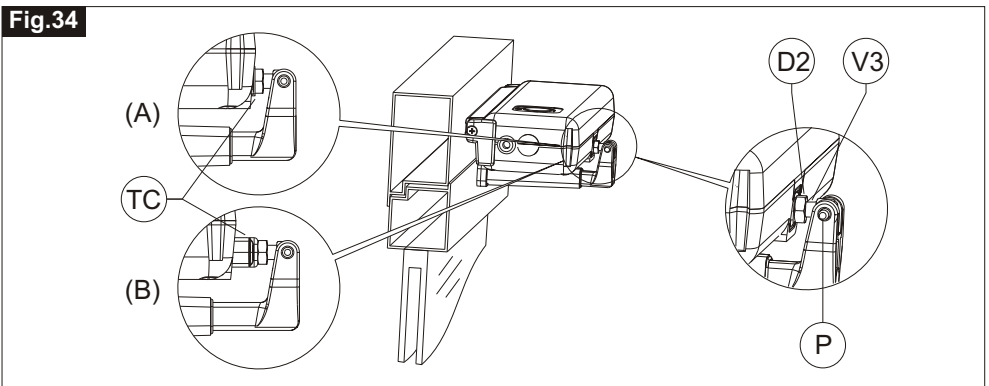
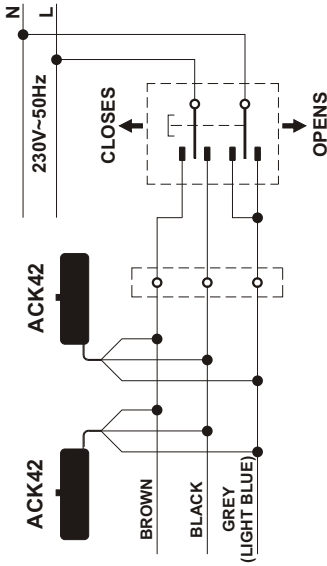


Fig.34

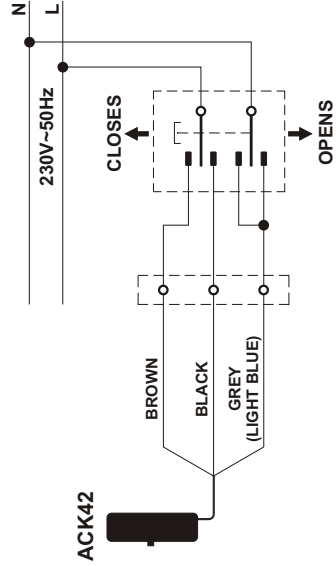


Wiring diagram

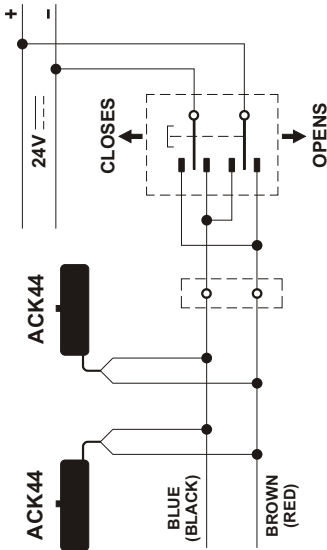
230 V



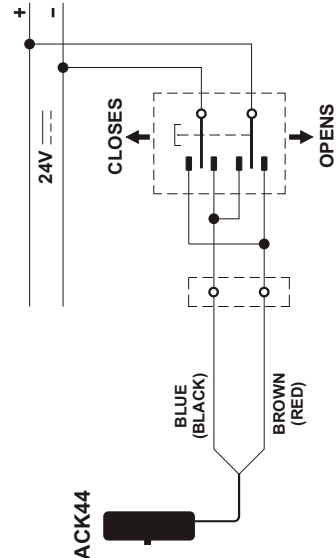
IT IS FORBIDDEN TO PERFORM THE CONNECTION TO THE EARTHING SYSTEM OF THE ACTUATORS EQUIPPED WITH DOUBLE INSULATION (MOD. ACK42).

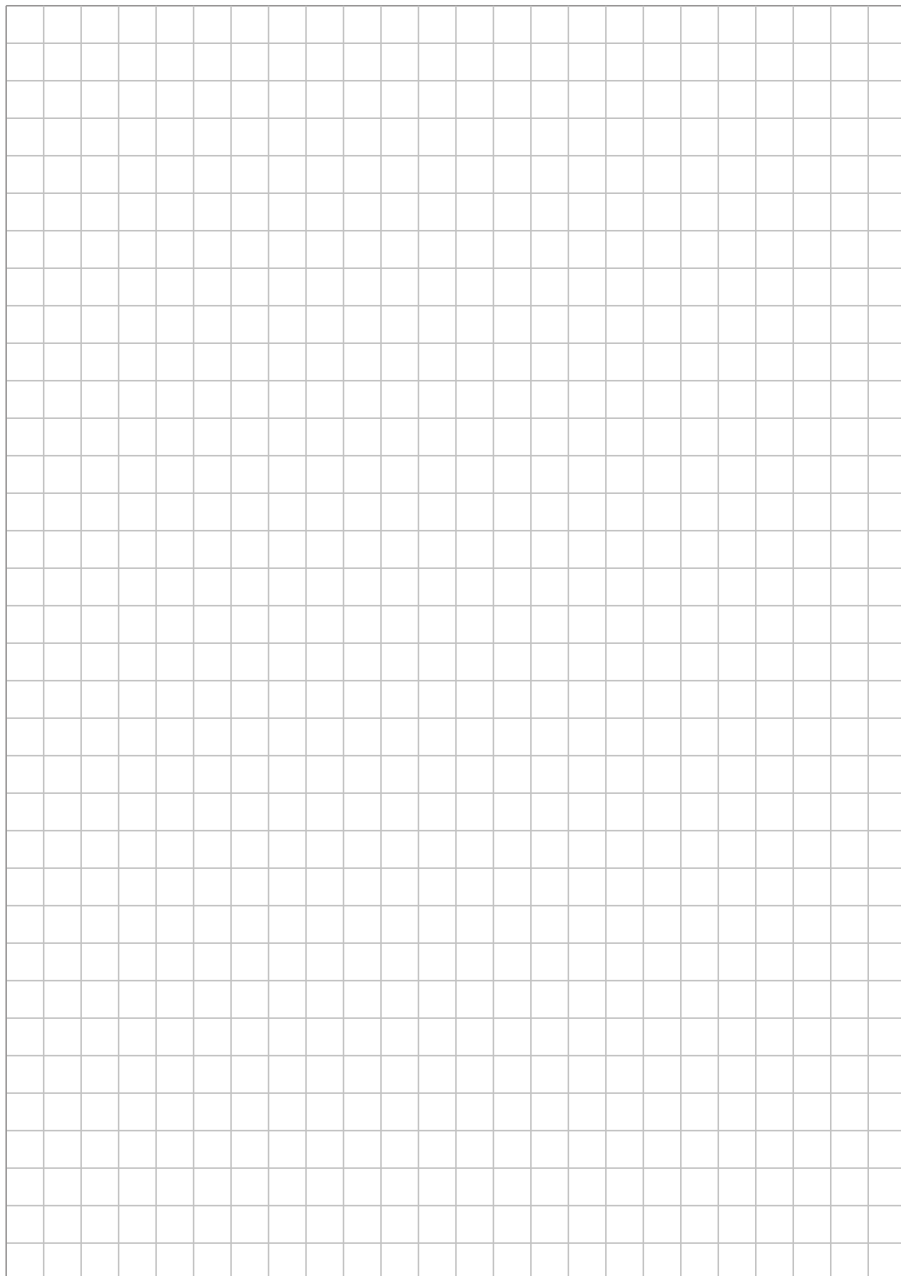


24 V



IT IS COMPULSORY TO INSTALL UPSTREAM OF THE MAINS A SECTIONING DEVICE WITH 30 mA DIFFERENTIAL PROTECTION, ASSOCIATED TO THE EARTHING SYSTEM.






The warranty for the products, and their single parts, defective for poor materials or manufacturing defects is extended for a period of 24 months from the date of dispatch by the manufacturer.

The manufacturer provides that the products are reliable, which means that he undertakes to repair or replace free of charge any of the parts proved to be defective in materials or manufacturing during the warranty period, in the shortest possible time. The purchaser shall not expect any refund for any damage due to improper installation or any other expenses. Such warranty will not however apply to any particularly fragile parts, or to parts exposed to natural wear as well as to corrosive operations and to current overloads (even if only temporary), etc. The manufacturer shall not be considered liable against any damages due to improper installation, manoeuvring or insertion, as well as to excessive solicitations or misuse.

The manufacturer shall not be liable if the product has been modified, dismantled, if the label is missing or if it shows clear signs of collision or other. Repairs under guarantee are considered "ex manufacturer's factory", which means that all the arising transport expenses (in- and outward) are always to the purchaser charge. For any inspections by a skilled staff, cost of labour shall be to the manufacturer charge. Displacement costs (in- and outward journey), journey hours, board and lodging must, on the other hand, be refunded from the purchaser. **Such warranty has validity only if the present form, being part of the instructions manual, is duly filled in and the damage cause is clearly described in the assistance report.**

The products must be installed and used in compliance with the technical features and the instructions given by TOPP, as well as according to the safety regulations and the standards that rule the installation and employment of the electrical devices in the country where the products are installed and used. For such reason, the purchaser expressly relieves TOPP from any responsibility arising from improper use, from the inobservance of the safety regulations, of the technical specifications as well as of the operating instructions.

MODEL	_____	TECHNICAL REPORT									
SERIAL No.	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 15px; height: 15px;"> </td> <td style="width: 15px; height: 15px;"> </td> <td style="width: 15px; height: 15px;"> </td> <td style="width: 15px; height: 15px;"> </td> <td style="width: 15px; height: 15px;"> </td> <td style="width: 15px; height: 15px;"> </td> <td style="width: 15px; height: 15px;"> </td> <td style="width: 15px; height: 15px;"> </td> <td style="width: 15px; height: 15px;"> </td> </tr> </table>										<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
CUSTOMER	_____										
ADDRESS	_____ _____										
RETAILER'S NAME (STAMP AND SIGNATURE)											
											



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