

mecline

UCS

UCS[®]

ULTRAFLEX CONTROL SYSTEMS S.r.l.

**MECHANICAL REMOTE CONTROL
SYSTEMS FOR WINDOWS**

**TECHNICAL MANUAL
USE AND INSTALLATION INSTRUCTIONS**

ULTRAFLEX CONTROL SYSTEMS S.r.l.

Via Milite Ignoto, 8A - 16012 BUSALLA (GE) - ITALY

Tel. (010) 9620254 - Fax (010) 9620253

<http://www.ultraflexgroup.it/ucs>

e-mail: ucs@ultraflexgroup.it



GRUPPO ULTRAFLEX

meeline

WES

INDEX

Foreword	Page	5
Warning	Page	5
Sequence of operations	Page	5
The system in general	Page	5
Diagram for selecting the mechanism	Page	6
Diagram for selecting the control operator	Page	7

CONDUIT, ACCESSORIES AND TOOLS FOR CONDUIT PREPARING AND INSTALLING

Conduit	Page	8
Fixing saddle	Page	8
Conduit connector	Page	9
Rotary junction box	Page	9
Cable	Page	9
Lock spring	Page	9

CONTROL OPERATORS

Flat operator	Page	10
Simple operator	Page	11
Mini operator	Page	12
Concealed operator	Page	13
Geared operator	Page	13

OPENING MECHANISMS

Locking opener	Page	16
Chain mechanisms	Page	18
Forks and swivels	Page	22
Telescopic spindle	Page	23

meeline

WES

FOREWORD

- For a correct installation and a successful operation of the system, it is absolutely necessary to follow closely the instructions contained in this Manual.
- Keep this Manual for eventual further consultations
- If not assembled correctly or in case of an improper application, the system does not work properly and therefore it could cause damages to things and/or people.
- The system has been designed and built for interior applications.
- Only use original parts and accessories.

WARNING

- Before installing:
 - check the position of the system components and make sure that the windows work properly.
 - make sure that the performance of the system is the proper one for the expected application.
 - make sure that the bottom hinged windows have a side checks.
- While assembling and disassembling the system, make sure that the windows cannot close accidentally to avoid damages to people.
- Since there are a large number of different windows, as well as many different possible applications, the products and components described in this manual should always be assembled and taken care of by qualified personnel.

SEQUENCE OF OPERATIONS

1. Assess the system's layout and component arrangement.
2. Check free opening-closing movement of windows.
3. Install the control operators.
4. Install the control operators outlet conduit.
5. Install the opening mechanisms on the windows.
6. Install the intermediate conduits and spent travel tubes for cable.
7. Install the helical cable.
8. Connect the opening mechanisms on the windows through the cable.
9. Install lock springs and complete the assembling of the control operators.
10. Make sure the system works properly.

Note:

This sequence is only suggested; always refer to the specific instructions supplied for each opening control system and/or mechanism.

THE SYSTEM IN GENERAL

- The Mecline window remote control systems are highly reliable and can be installed easily and quickly.
- Our products are being continuously improved on the basis of the greatest experience achieved in the window remote control systems field.
- The movement transmission from the control operators to the opening mechanisms is effected through the steel helical cable, which slides inside the metal conduit.
- The assembly must be carried out so that the cable works in traction during the maximum load operation (example: when closing for bottom hinged windows; when opening for top hinged windows.)
- Each system must include the following components:
 - control operator: Flat, Mini, Simple, Concealed or Geared operator,
 - Opening mechanisms: chain mechanisms, forks and locking openers.
 - Transmission elements: cable, conduit, conduit connectors, saddles, lock spring and end plugs.
 - In some cases, rotary junction boxes and bottom hinged window brackets.
- During the installation, it is necessary to utilize the tool for conduit preparation and the conduit bender.

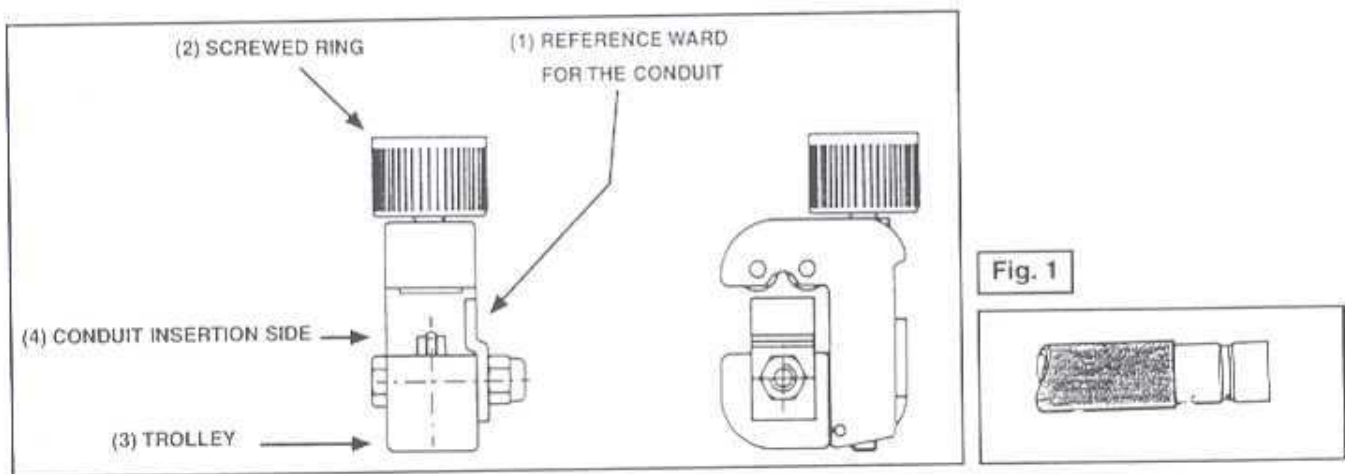
CONDUIT, ACCESSORIES AND TOOLS FOR CONDUIT PREPARING AND INSTALLING

CONDUIT

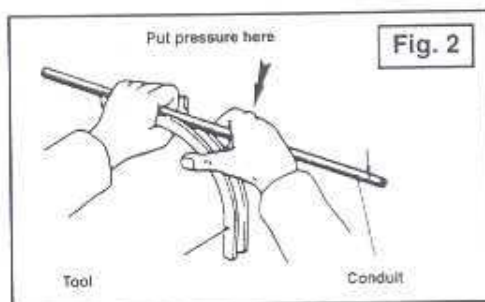
- Consisting of a steel tube protected externally by a PVC sheathing. A self-lubricating polyethylene tube is forced into the steel tube.
- Supplied in 3 m (9') long pieces.

Instructions for conduit preparation

- Use the tool code. 40097R (Fig. 1) for preparing the ends of the conduit.



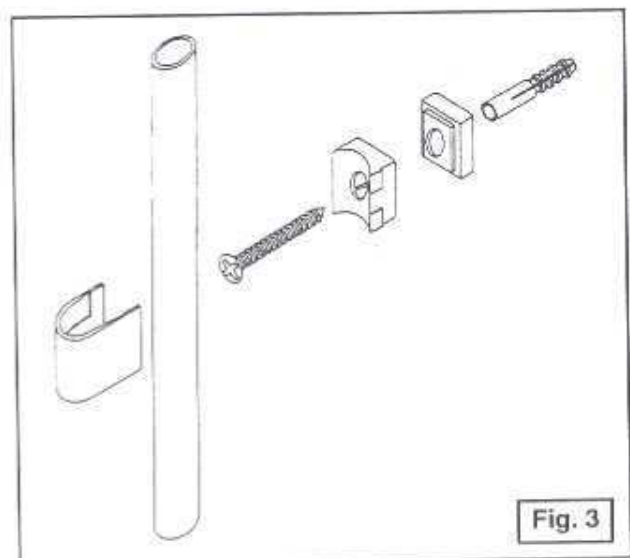
- Cut the external PVC about 15 mm from the conduit end and remove it.
- Eliminate about 20 mm of inner polyethylene pipe using an 8 mm drill.
- Place the conduit in position by resting it on the ward (Fig. 1)
- Tighten the ring nut 2 (Fig. 1) and, at the same time, rotate the tool until the trolley 3 (Fig. 1) reaches the end position, in order to create a groove as shown.



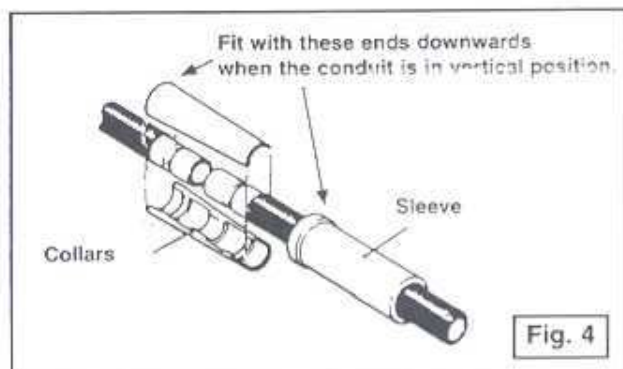
- Bend the conduit using only the conduit bender cod. 30790G (Fig. 2) in order to achieve the correct curve diameter. A lower curve diameter prevents the cable sliding within the conduit.

FIXING SADDLE

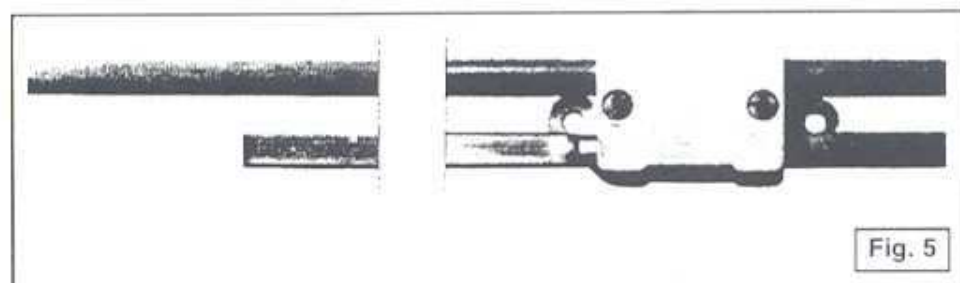
- It must be installed as shown in Fig. 3
- The distance between two saddles must be determined on the basis of the load and must not exceed 1m.
- Install a saddle before and after each conduit curve and close to locking openers for bottom hinged window.



CONDUIT CONNECTOR

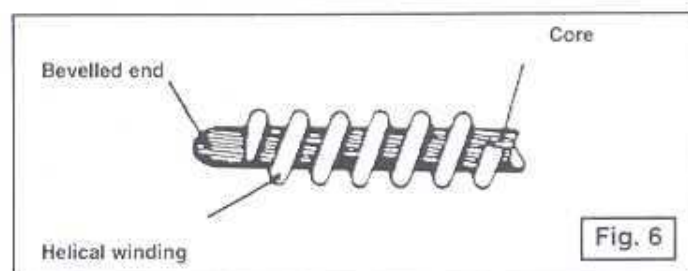


ROTARY JUNCTION BOX



- Used to transfer the movement of the cable from the main line to a secondary one. As shown in Fig. 5 the main line is on the top and on the lower right the secondary line, which goes to the opening mechanism, and on the lower left side the spent travel tube.

CABLE



- The helical cable is supplied in 50 m coils and must be cut on site by the installer.
- Consider that the cable sliding capability inside the conduit is inversely proportional to the no. of bends and to the length of the system.
- Whenever cutting the cable, it is necessary to bevel the ends.

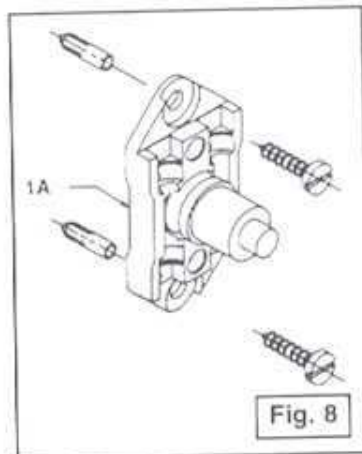
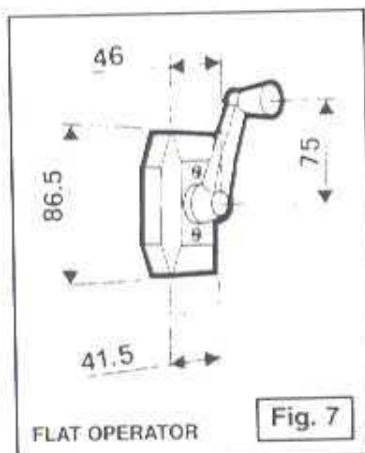
LOCK SPRING

- It must be screwed on the cable; it is the end stroke inside the round conduit.
- It is necessary to remove the inner polyethylene tube from the spent travel tube.

CONTROL OPERATORS

FLAT OPERATOR

- It can only be used on single windows with 250-380 mm (10"-15") chain mechanisms and with a locking opener.
- The inner mechanism and the crank are made of metal while the cover is made of plastic.
- Up to 6 m (20') permitted length of the cable.
- External spent travel tube.



Installation instructions

- Place the control operator allowing clearance for hand operation.
- Fix the metal terminal board with the supplied screws and small blocks, using the terminal board as a template.
- The half-circular slots on the terminal board must be in the direction foreseen for the exit of the conduit; using the right slot, the cable works in traction when the handle is turned clockwise.
- Install the first conduit piece and fix it to the wall through the fixing saddles.
- This type of control requires an external spent travel tube for recovering the cable. It must be carried out as follows: cut approximately 50 cm (1,5') of conduit, remove the inner polythene pipe and make the groove at one end.
- Assemble the plastic cover using the provided screws, making sure that the conduit groove is engaged by the collar on the metal terminal board and on the plastic cover.
- Insert the handle on the control shaft, blocking it with the screw.
- Complete the installation of conduit and opening mechanisms.
- Insert the cable bevelled end in the lower mouthpiece of the control and, using the handle, make the cable slide until it appears out of the spent travel tube at the farthest opening mechanism.
- Rotate the handle bringing the cable back at the spent travel tube edge, and mark it in correspondence to the lower side of the control unit.
- Pull the cable out of the control unit, cut it with a hacksaw, bevel the end and then grease it.
- Screw the limit switch spring on the cable and insert the spent travel tube in the control and fix it to the wall using the end plug.

SIMPLE OPERATOR

- It is entirely made of metal.
- It incorporates the antitorque spent travel tube, which allows a maximum stroke of 250 mm (10"). Therefore it cannot be used with the 380 mm (15") chain mechanism.

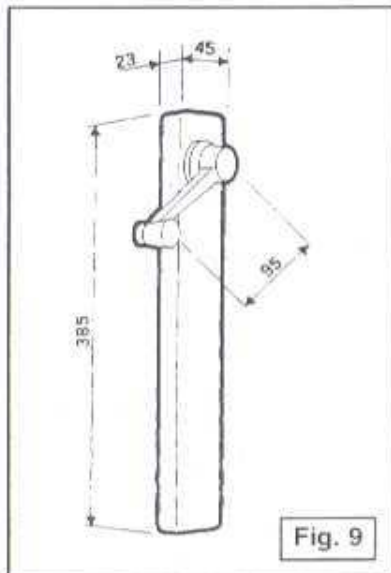
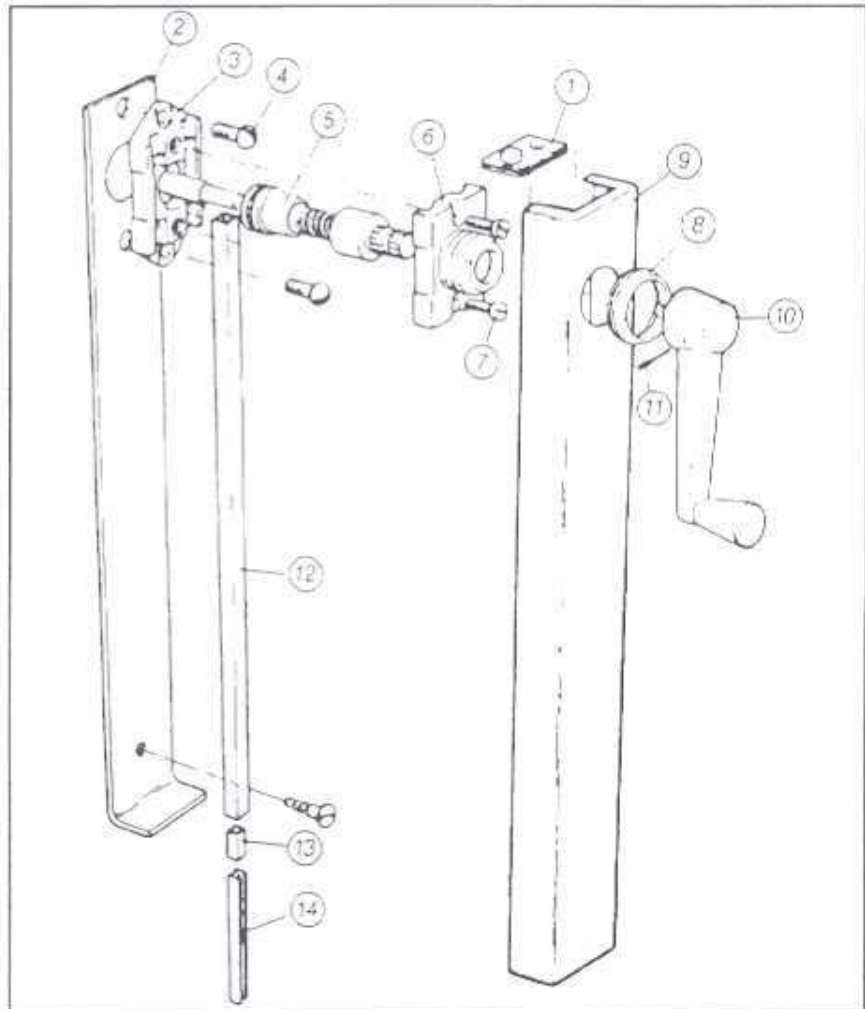


Fig. 9



Installation instructions

- Place the control operator allowing clearance for hand operation.
- Disassemble the cover (9) by turning the ring nut (8) and disassemble the top half operator body (6) from the bottom half operator body (3).
- Use the plate (2) as a template for the three fixing holes.
- Assemble the bottom half operator body (3) on the plate (2) and fix the two parts firmly to the wall using the provided screws and small blocks.
- The half-circular slots on the terminal board must be in the direction foreseen for the exit of the conduit; using the right slot, the cable works in traction when the handle is turned clockwise.
- Install the first conduit piece and fix it to the wall through the fixing saddles.
- Insert the conduit in the plastic plaque (1).
- Re-assemble the top half operator body (6) using the provided screws, making sure that the conduit groove is engaged by the collar on the metal terminal board and on the plastic cover.
- Complete the installation of conduit and opening mechanisms.
- Insert the cable bevelled end in the lower mouthpiece of the control and, using the handle, make the cable slide until it appears out of the spent travel tube at the farthest opening mechanism.
- Rotate the handle bringing the cable back at the spent travel tube edge, and mark it in correspondence to the lower side of the control unit.
- Pull the cable out of the control unit, cut it with a hacksaw, bevel the end and then grease it.
- Assemble the limit stop nut (13) on the cable and insert the square tube (12) in its slot.
- Re-assemble the cover (9), the ring nut (8), insert the handle (10) on the control shaft, blocking it with the screw (11).
- If the stroke limiting device (14) is installed, it reduces the stroke of about 50 mm.

MINI OPERATOR

It can be used with all types of opening mechanisms.

- It is entirely made of metal.
- External spent travel tube (not supplied).

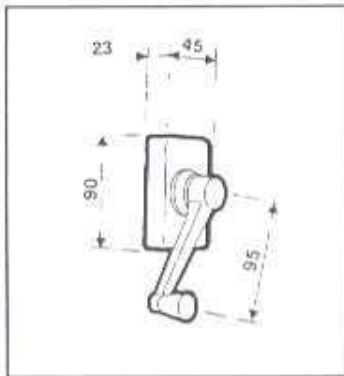
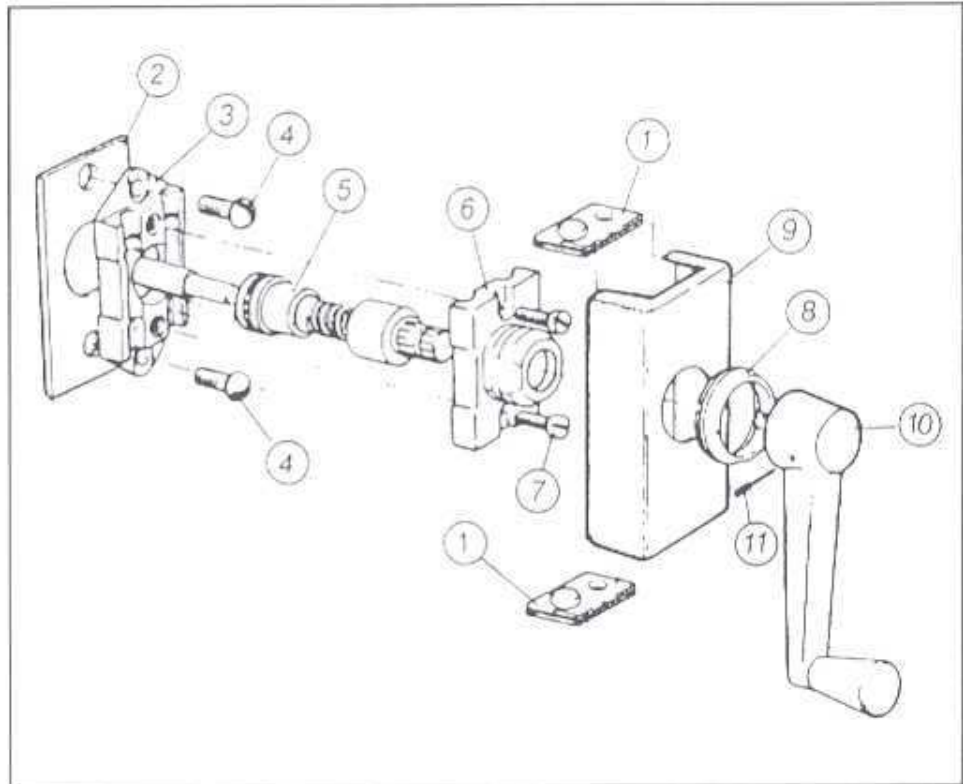


Fig. 10

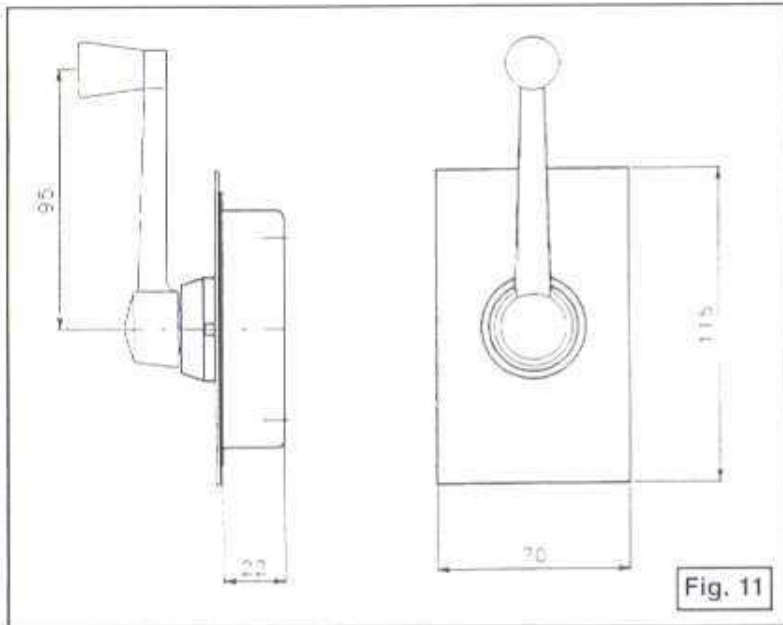


Installation instructions

- Place the control operator allowing clearance for hand operation.
- Disassemble the cover (9) by turning the ring nut (8) and disassemble the top half operator body (6) from the bottom half operator body (3).
- Use the plate (2) as a template for the three fixing holes.
- Assemble the bottom half operator body (3) on the plate (2) and fix the two parts firmly to the wall using the provided screws and small blocks.
- The half-circular slots on the terminal board must be in the direction foreseen for the exit of the conduit; using the right slot, the cable works in traction when the handle is turned clockwise.
- Install the first conduit piece and fix it to the wall through the fixing saddles.
- Insert the conduit in the plastic plaque (1).
- This type of control requires an external spent travel tube for recovering the cable. It must be carried out as follows: cut approximately 50 cm (1,5') of conduit, remove the inner polythene pipe and make the groove at one end.
- Re-assemble the top half operator body (6) using the provided screws, making sure that the conduit groove is engaged by the collar on the metal terminal board and on the plastic cover.
- Complete the installation of conduit and opening mechanisms.
- Insert the cable bevelled end in the lower mouthpiece of the control and, using the handle, make the cable slide until it appears out of the spent travel tube at the farthest opening mechanism.
- Rotate the handle bringing the cable back at the spent travel tube edge, and mark it in correspondence to the lower side of the control unit.
- Pull the cable out of the control unit, cut it with a hacksaw, bevel the end and then grease it.
- Assemble the lock spring on the cable, disassemble the top half operator body (6) and insert the spent travel tube in its seat, making sure that it goes through the plastic plaque (1). Screw the top half operator body back on (6).
- Re-assemble the cover (9), the ring nut (8) and fix the handle (10) with the screw (11).

CONCEALED OPERATOR

- It can be used with all types of opening mechanisms.
- It is entirely made of metal.
- It can be built in the wall or in the window profile together with the spent travel tube (not supplied).



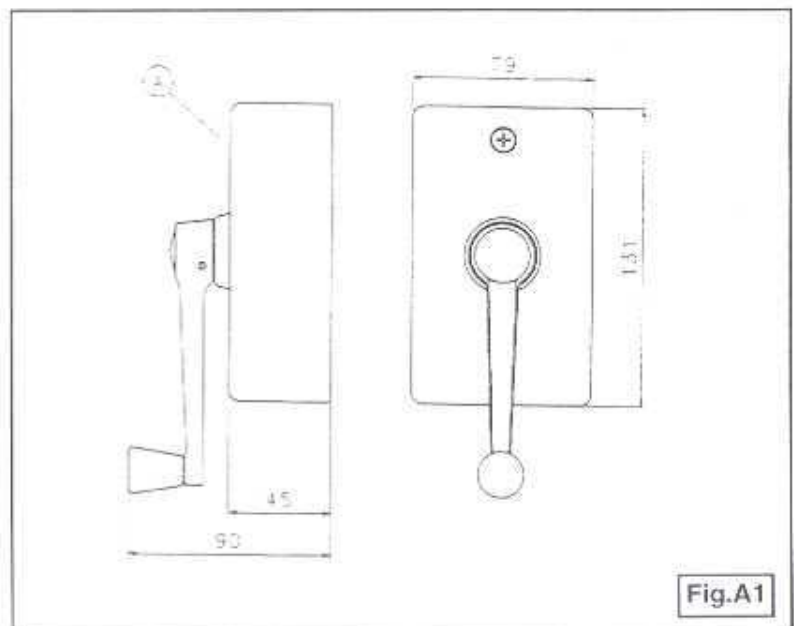
Installation instructions

The installation procedure is similar to the "Mini" control operator instructions, except for the following differences:

- Before installing, check that the wall thickness or the profile depth allow the control installation (Fig. 11).
- The conduit and the metal container must be built in the wall or inserted and fixed inside the window profile.
- The cover plate is an anodised aluminium plaque, held in place by the ring nut.
- If installed inside a concrete wall, make the system work before the cement or plaster harden, so that the conduit can make a proper seat for working.
- Pay particular attention when making the bends; their curve ray must be not lower than the ray of the conduit bender, supplied as an accessory.

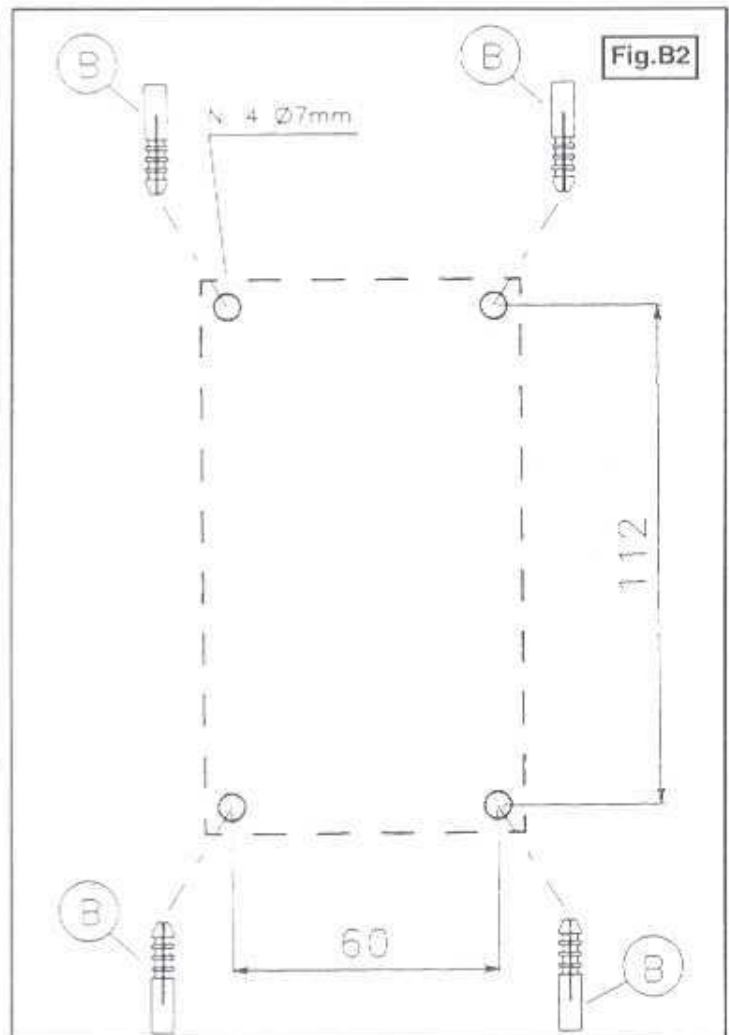
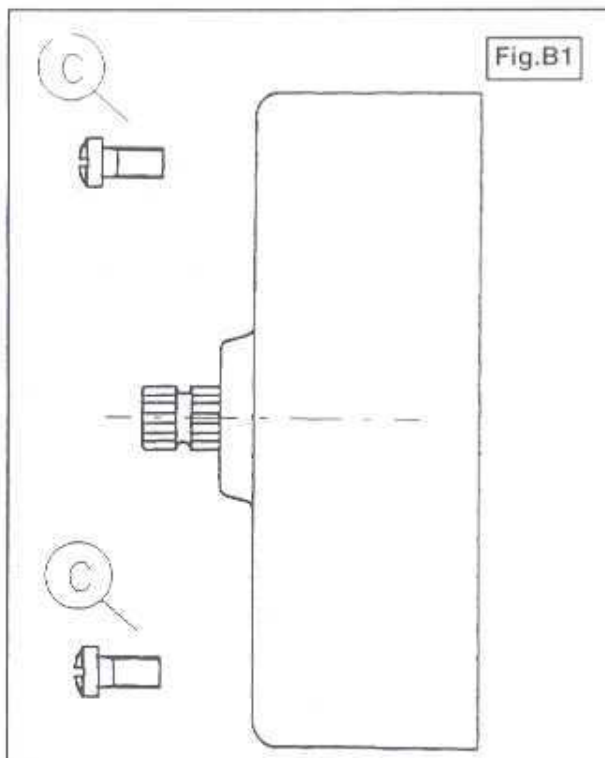
GEARED OPERATOR

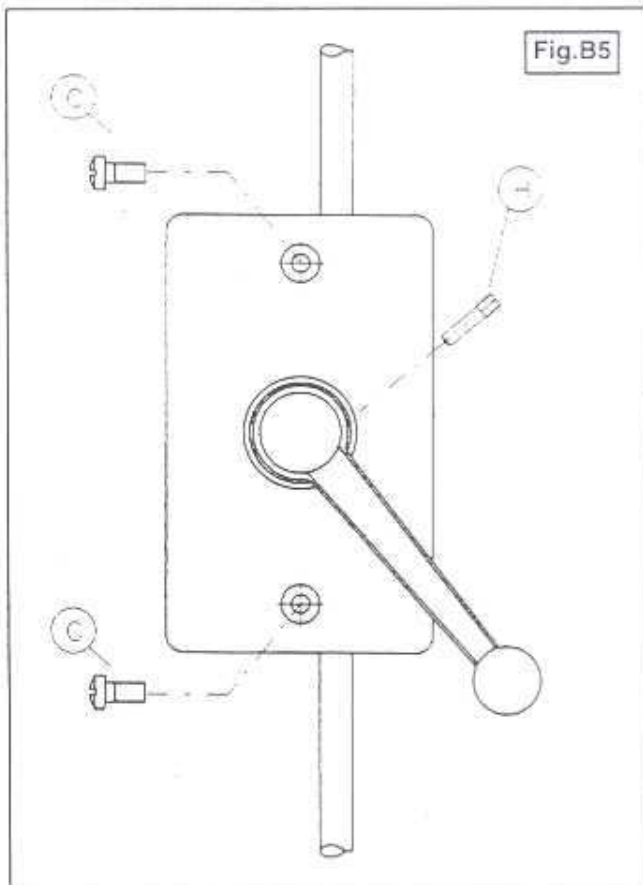
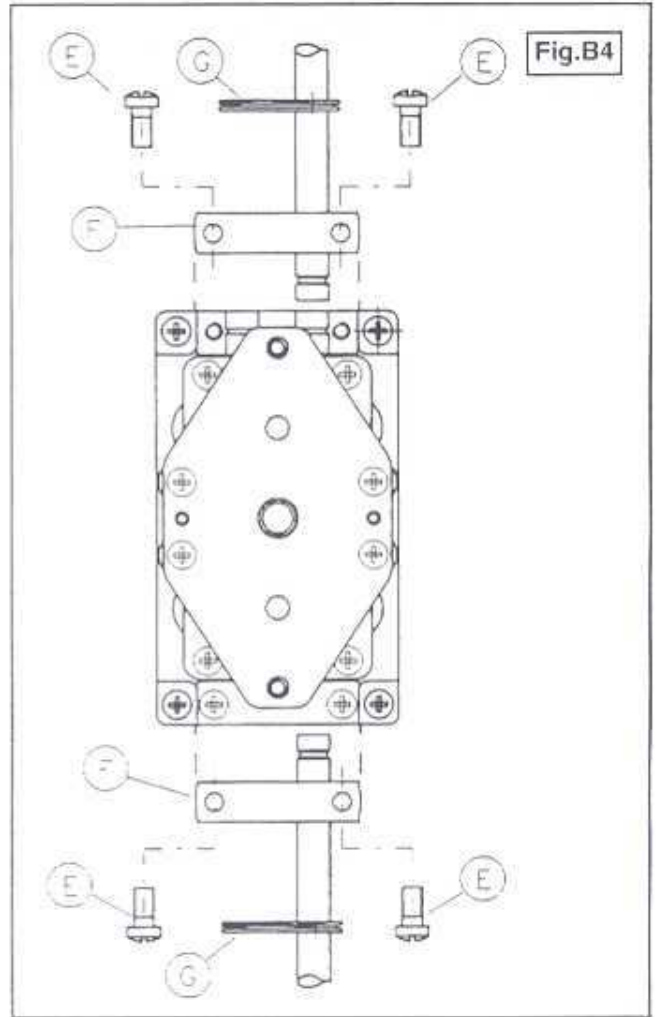
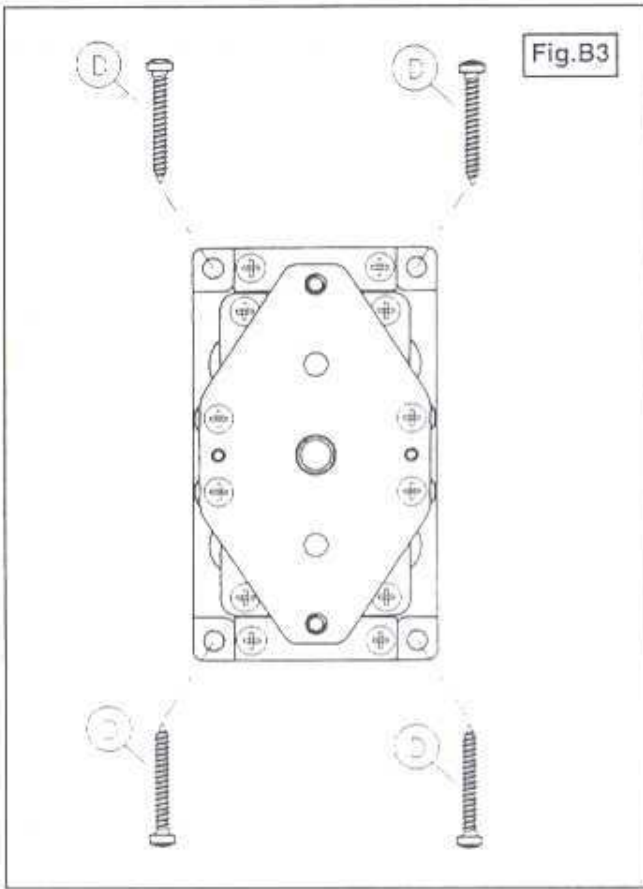
- It can be used with all types of opening mechanisms.
- It is entirely made of metal.
- External spent travel tube (not supplied).



Installation instructions

- Place the control operator allowing clearance for hand operation.
- Place the control unit against the wall in order to make the holes (Fig. B2 shows the template for making holes with the small blocks B).
- Fix the control unit to the wall using the screws (D) (Fig. B3).
- Work the conduit (see the instructions in the paragraph "Conduit").
- Install the first conduit piece and fix it to the wall through the fixing saddles.
- Insert the conduit in the seat of the control unit through the plastic plaque (G) (Fig. B4) and then re-assemble the conduit holder (F) using the screws (E) (Fig. B4).
- Complete the installation of conduit and opening mechanisms.
- This type of control requires an external spent travel tube for recovering the cable. It must be carried out as follows: cut a piece of conduit as long as the stroke plus at least 100 mm (4") (for example, for a 380 mm (15") stroke cut approximately 500 mm (20") conduit). remove the inner polythene pipe, make the groove at one end.
- Insert the cable bevelled end in the lower mouthpiece of the control and, using the handle, make the cable slide until it appears out of the spent travel tube at the farthest opening mechanism.
- Rotate the handle bringing the cable back at the spent travel tube edge, and mark it in correspondence to the lower side of the control unit.
- Pull the cable out of the control unit, cut it with a hacksaw, bevel the end and then grease it.
- Assemble the lock spring on the cable, disassemble the second conduit holder plate F and insert the spent travel tube in the seat of the control unit through the plaque (G). Screw the conduit holder plate (E).
- Re-assemble the cover, using the screws (C) (Fig. B5) and fix the handle with the screw (H) (Fig. B5).

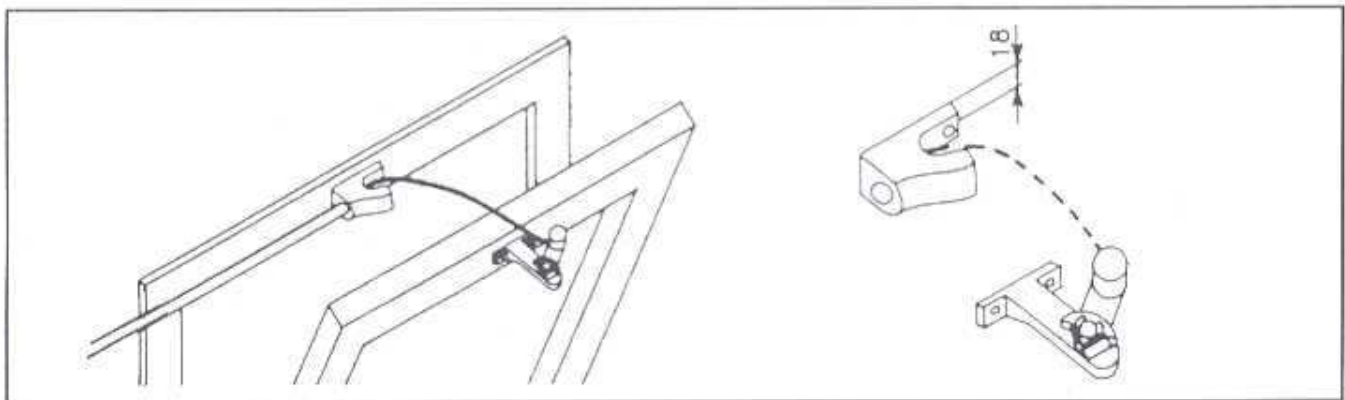




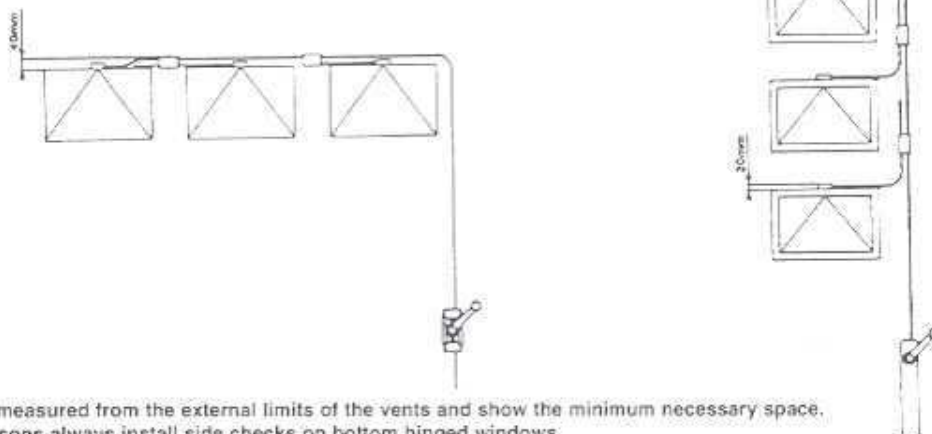
OPENING MECHANISMS

LOCKING OPENER FOR BOTTOM HINGED WINDOWS

- It can only open bottom hinged windows that do not require thrust force for opening.
- Maximum opening stroke: 250 mm (10")
- For windows with less than 500 mm (20") height it is necessary to reduce the opening to 1/3 of the window height.
- The opening stroke can be regulated by operating on the spring (or on the nut) screwed on the cable in correspondence of the control unit.
- For systems with more than one opening it is necessary to use rotary junction boxes in order to transmit the movement of the cable from the main line to the secondary lines (see Fig. 5 and Fig. 12).
- For windows wider than 1,5 m (5') it is necessary to install two or more thrust points.
- In order to avoid damages to things and/or people always install side checks on bottom hinged windows.



EXAMPLES OF INSTALLATIONS WITH LOCKING OPENER

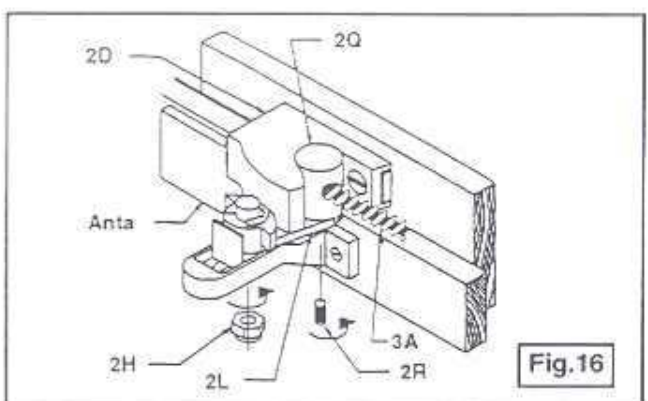
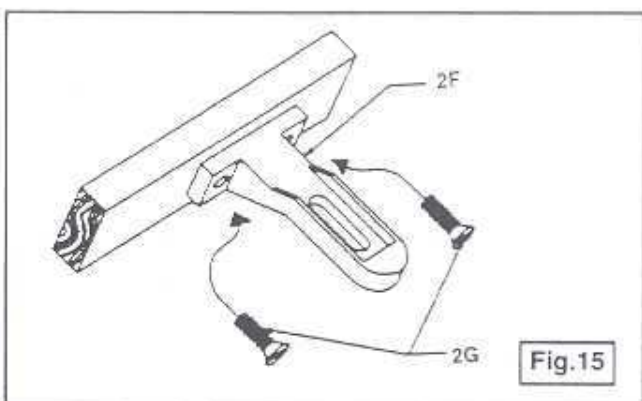
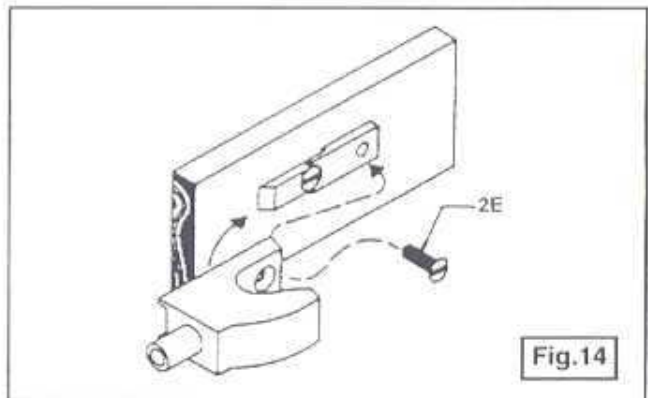
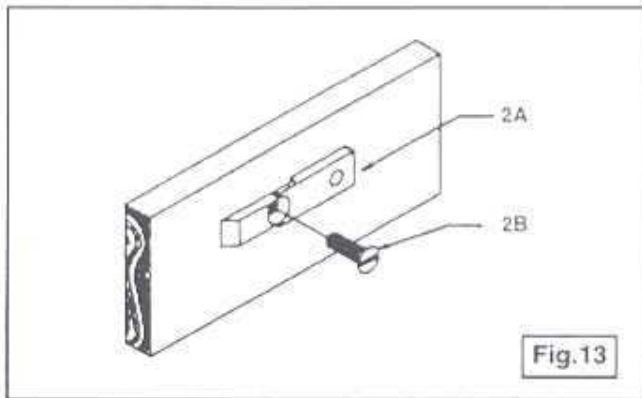


The dimensions are measured from the external limits of the vents and show the minimum necessary space.
 • Note: for safety reasons always install side checks on bottom hinged windows.

Fig.12

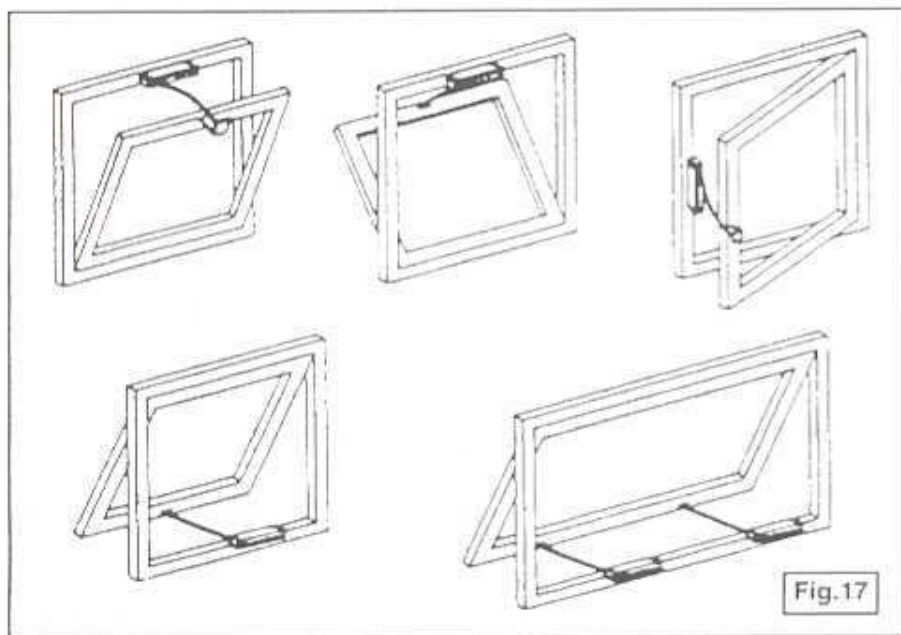
Installation instructions

- Make sure that the minimum space of 20 mm over the vent is available.
- Using the provided template, make the holes for the screws on the vent and the fixed frame.
- Fix the plate (2A) on the frame using the screws (2E) (Fig. 14).
- Fix the bearing (2F) on the vent using the screws (2G) (Fig. 15).
- Holding firmly the vent in closed position swing the pivoting arm (2L) into engagement of the pin (2Q) in the notch of the hook (2D). Fasten the nut (2H) (Fig. 16).
- Insert the helical cable (3A) in the hole of the pin (2Q). Keeping the vent closed, block the cable by locking the screw (2R). Cut the cable leaving at least 5 mm out of the pin.
- Check the proper functioning of the system and, if necessary, shift the pivoting arm (2L) by acting on the nut (2H) (Fig. 16) in order to adjust the closing of the window.
- If the system is difficult to be operated, limit the opening by screwing the spring or the stop nut some more on the cable.



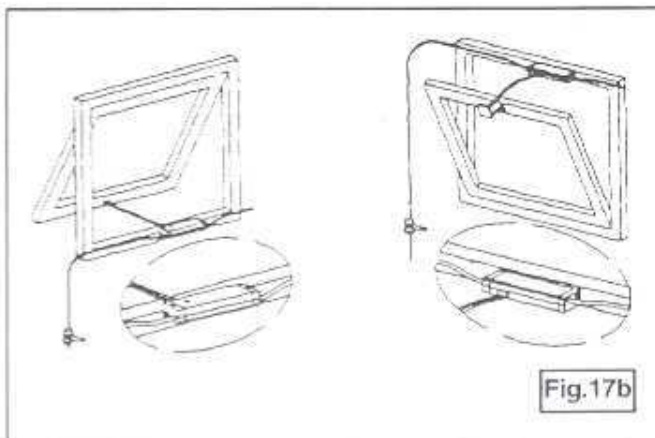
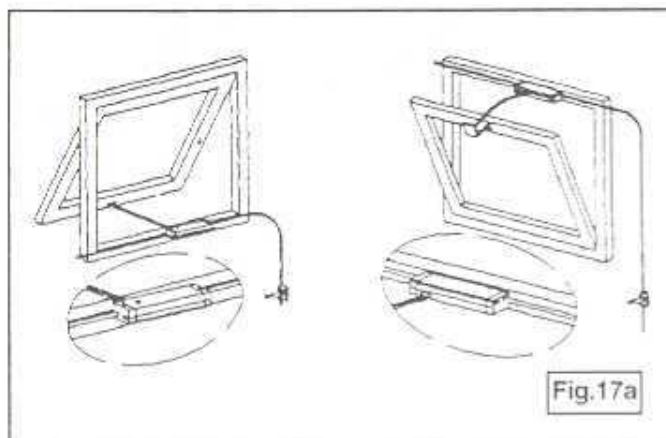
CHAIN MECHANISMS

- Suitable for bottom hinged, top hinged, balanced windows and for skylights.
- Available versions with 250 mm (10") or 380 mm (15") stroke.
- The window opening cannot be more than 1/3 of the window height.
- The stroke can be regulated by operating the lock spring (or nut), which is screwed on the cable in correspondence to the control unit.
- Quick connection of the conduit to the mechanism; it is not necessary to work the conduit.
- Chain with stainless steel pivots.

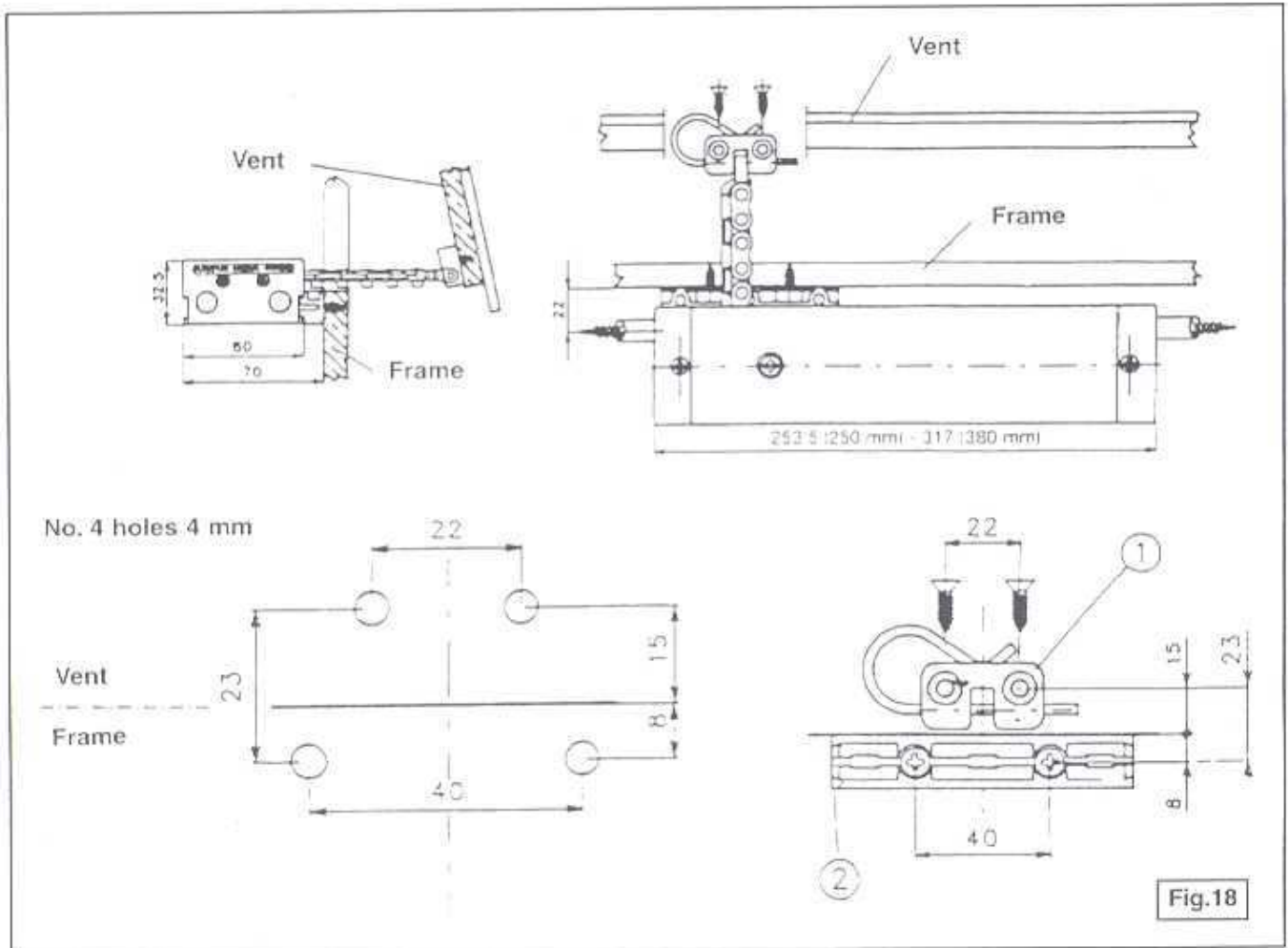


General installation instructions

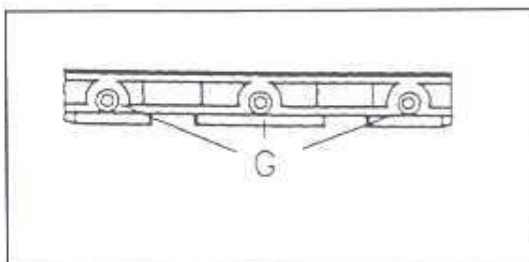
- the mechanism has two openings for the cable. For a proper functioning, use the opening that allows the cable working in traction during the load operation (opening for top hinged windows; closing for bottom hinged windows). Install a spent travel tube to recover the cable of the farthest chain mechanism from the control unit.
- in order to allow the cable working in traction during the load operation, the control operator must be installed on the right of the window, using the cable opening in the mechanism that is closest to the window. If not possible, install the control unit on the left side of the window, using in this case the cable opening in the mechanism that is closest to the window (see Fig. 17a and 17b).
- Install two or more chain openers on windows wider than 1.5 m (5').



Installation of the chain mechanism on top hinged windows



- Make sure that the minimum space of 16 mm under the upper edge of the frame is available
- Fix the connector (1) on the middle of the vent and the plastic bracket (2) on the fixed frame using the self-threading screws supplied, respecting the dimensions indicated in the figures.
- Insert the three nuts in the three seats of the bracket (2).
- Insert the mechanism in the bracket (2) making it slide on the dovetail guide. The exit of the chain must coincide with the connector (1) previously fixed on the vent and screw the screws (G) using a hexagonal key (2,5 mm).



Installation of the chain mechanism on bottom hinged windows

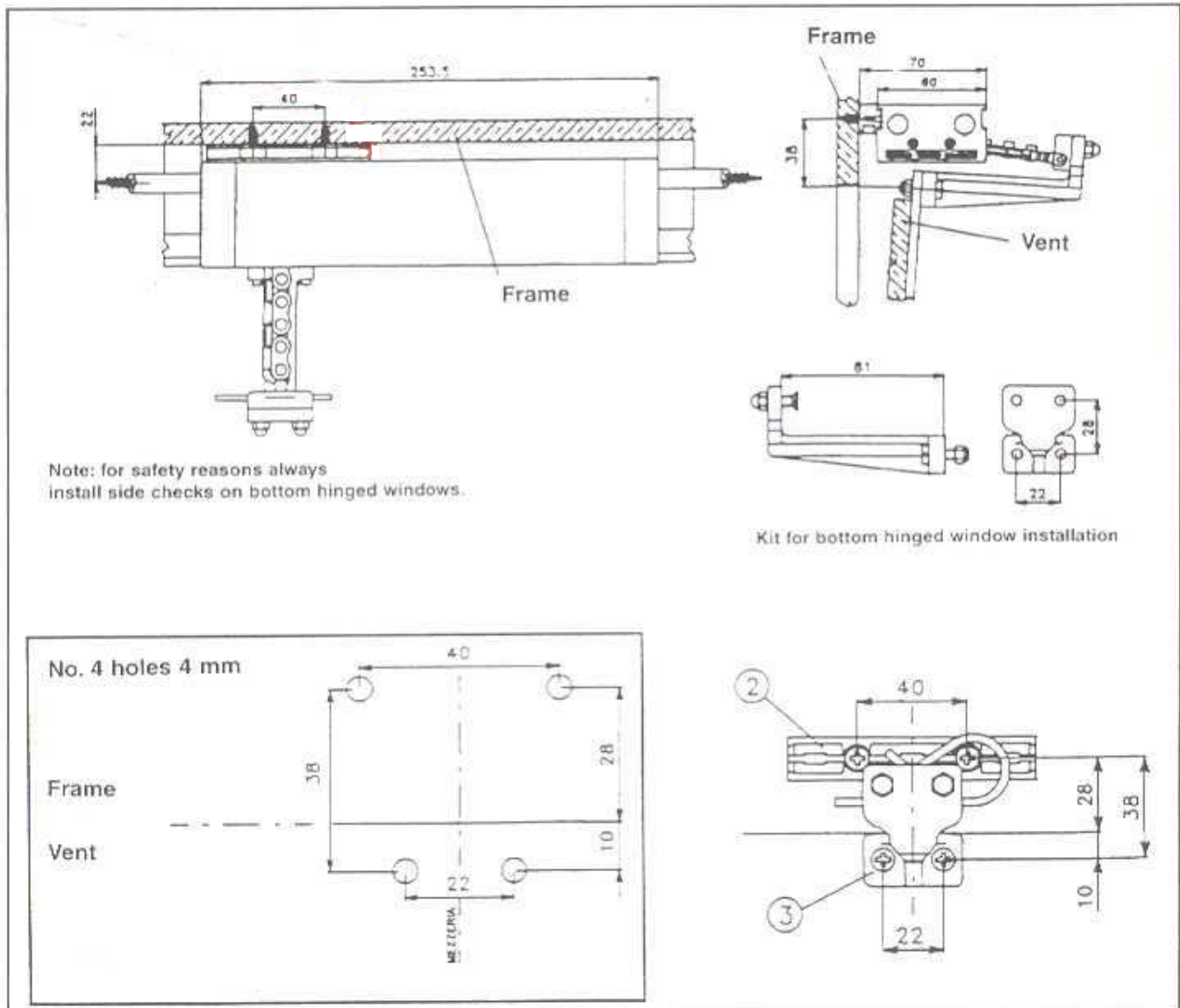
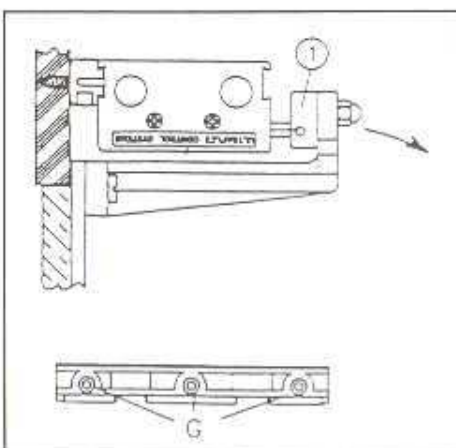
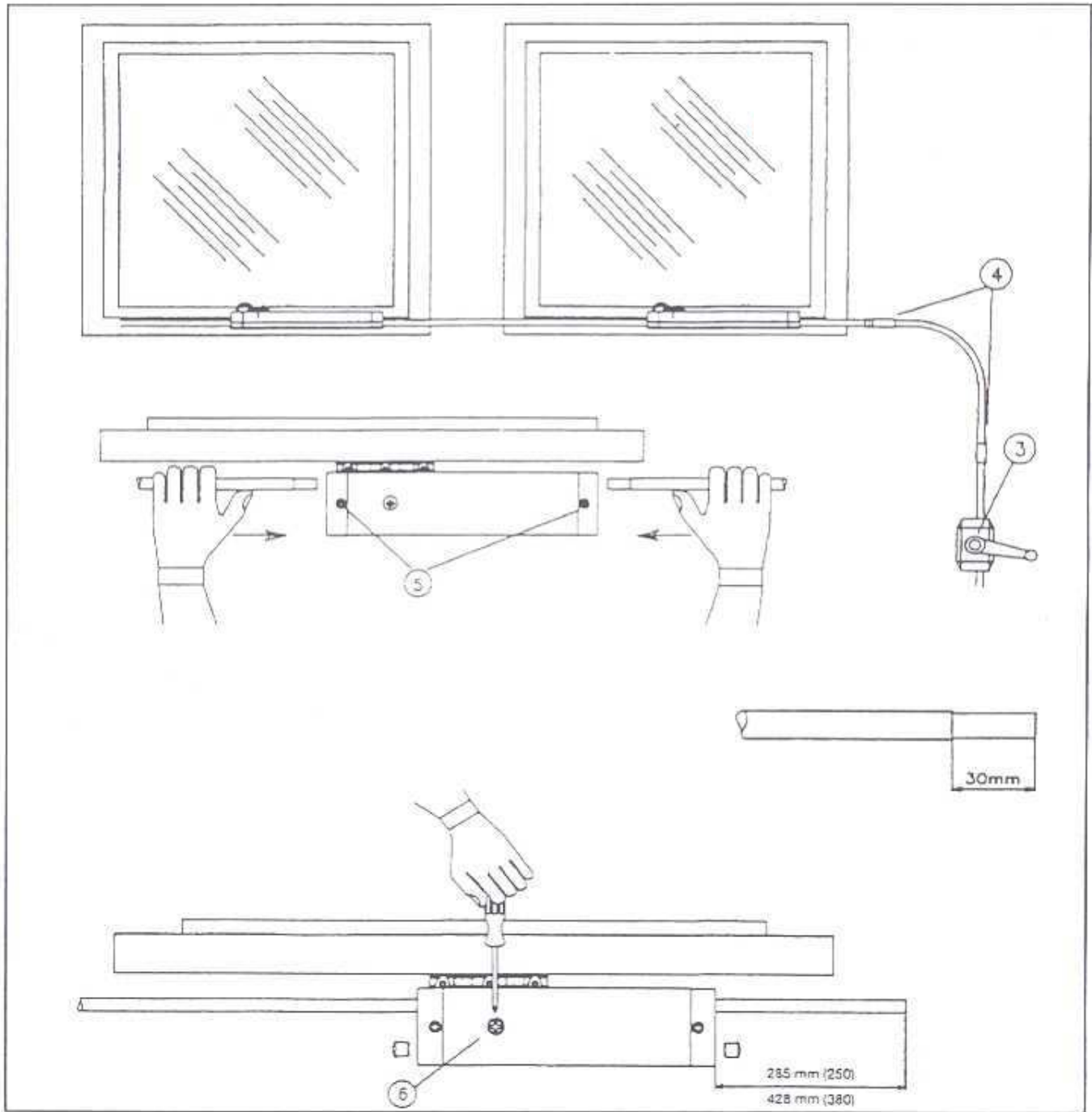


Fig.19



- Make sure that the minimum space of 36 mm over the vent is available.
- Fix the connector (1) on the bracket for the bottom hinged window installation (3) and this on the middle of the vent; fix the plastic bracket (2) on the fixed frame using the self-threading screws supplied, respecting the dimensions indicated in the figures.
- Insert the three nuts in the three seats of the bracket (2).
- Insert the mechanism in the bracket (2) making it slide on the dovetail guide. The exit of the chain must coincide with the connector (1) previously fixed on the bracket on the vent and screw the screws (G) using a hexagonal key (2.5 mm).

Instructions for system installation



- Fix the control (3) and the conduit to the wall; make sure that the conduit is well fixed (4) to the wall near the bends and the first mechanism
- Strip the conduit for a length of 30 mm (1") (in order to allow the mechanism to be inserted).
- Insert the conduit in the mechanism and firmly fasten the screws (5) on the cover.
- Link the chain to the vent, insert the helical cable and check that it slides freely.

Note: the end of the cable must be accurately bevelled.

- Operate the manual control until it reaches the closing end stroke; hold firmly the vent in closed position and fasten the screw (6). Insert the supplied plugs in the holes.

FORKS AND SWIVELS

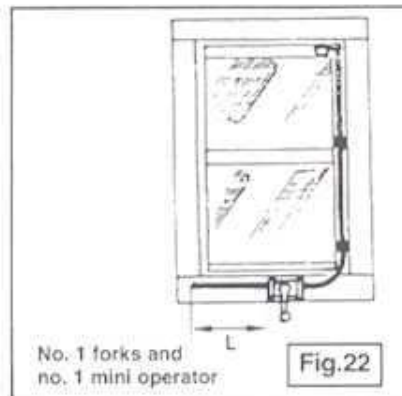
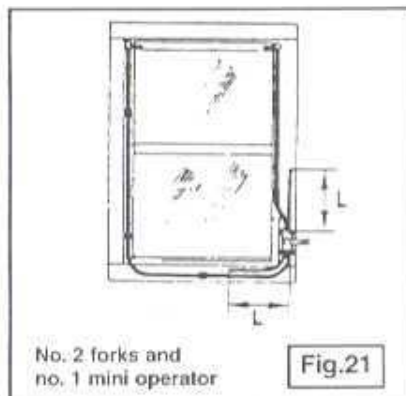
FORKS AND SWIVELS - LIGHT DUTY - 200 MM (8") STROKE (Part n° 30757B)

- Suitable for horizontal, vertical, single, or double louvre, or for sliding windows.
- For interior applications.

FORKS AND SWIVELS - HEAVY DUTY - 250 MM (10") STROKE (Part n° 30758E)

- Suitable for horizontal, vertical, single, or double louvre, for sliding windows or sun blades.
- Made in stainless steel, it is suitable for internal and external applications.

Application on sliding windows



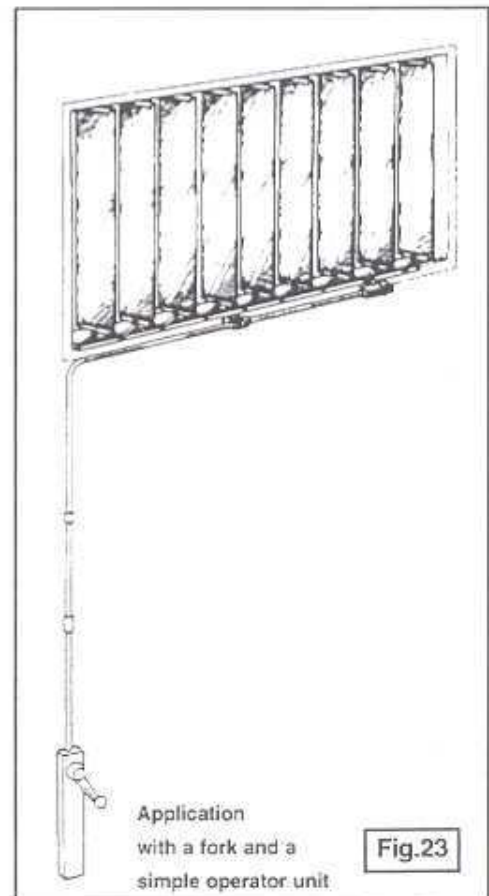
Note: the weight of the vent must not exceed 20 kg. (44 lb)

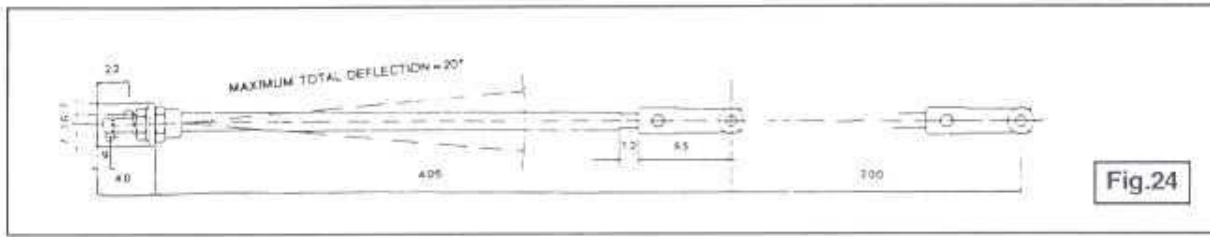
Application on vertical louvre or sun blades

Installation instructions

The installation instructions are the same for forks and swivels light or heavy duty.

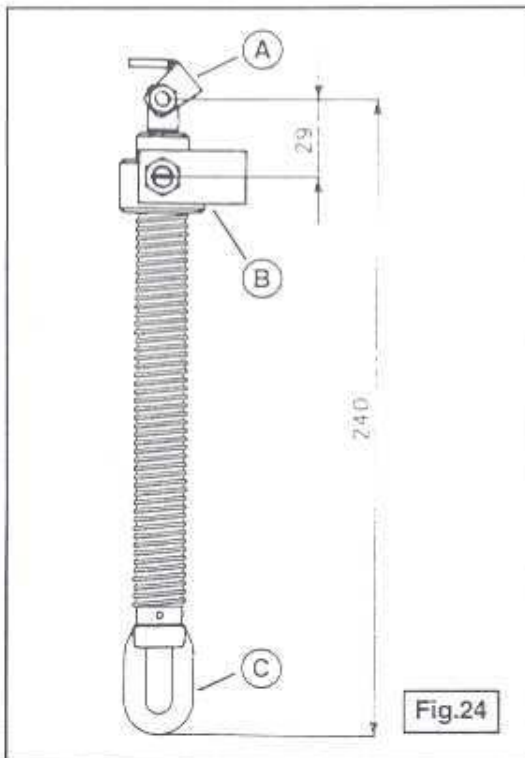
- fix the support bracket considering the dimensions as shown in Fig. 24 and the maximum stroke:
forks and swivels light duty: 200 mm (8")
forks and swivels heavy duty: 250 mm (10")
- Extract the sliding fork from the swivel assembly.
- Work the conduit and connect it to the edge of the articulation using a conduit connector.
- Bevel the end of the helical cable and insert it in the control unit: operating the handle make it slide inside the conduit until the cable comes out of the swivel assembly fixed to the frame.
- Insert the cable on the sliding fork and lock it with the specific screws.
- Connect the fork to the control level of the louvres.
- Turn the handle until the fork is fully extended.
- Cut the surplus cable in correspondence to the control unit and bevel the end.
- Turn the handle until the fork is fully closed.
- Screw the lock spring (or the nut for the simple operator unit) on the end of the cable.
- Prepare the external spent travel tube for recovering the cable: cut a piece of conduit about 50 mm more than the stroke, remove the inner polythene pipe and make the groove at one end (in the simple operator unit the spent travel tube is included).
- Finish assembling the control unit, following the relative instructions.





TELESCOPIC SPINDLE (code 37243K)

- Suitable for operating domes, skylights and roof windows.
- Opening stroke 310 mm (12").
- Supplied with fixing brackets and connector to the vent.
- Operation by pole with crank handle.



Installation instructions

- Choose the most suitable screws (not supplied) for fixing the brackets according to the type and material of the frame.
- Before installing, completely screw the external ring of the jack and the brass screw. Then unscrew the brass screw and place it as shown in the drawing on the packaging (Fig.25).
- Insert the connector A and the bracket B in their seats on the jack, fixing them with the relative screws and nuts supplied.
- Fix the connector A on the vent and the bracket B on the fixed frame, making sure that, in completely open position, it is possible to insert the hook of the control rod in the eyelet of the jack.

Note: make sure that the external ring is completely screwed on the external chromed screw in the closing position, in order to avoid damaging the gaskets and/or the frame.

If the dome does not close completely, disconnect the jack from the connector and screw on the inner screw (keeping in mind that to each turn corresponds about 12 mm stroke). Connect the jack back on the connector and verify that the frame closes completely.