

MANUAL REMOTE CONTROLS

Mechanical systems for ventilation



The Mec Line mechanical systems for the window remote control are super-tested, reliable, economical, easy and quick to install.

The products are constantly improved thanks to the greatest experience in the window manual controls field.

The movement transmission from the control operator to the opening mechanism is effected by a steel helical cable which runs inside a steel conduit.

The installation must be carried out in order to allow the cable working in pull action during the load operation (ex. in the closing phase for bottom hinged windows and in the opening phase for top hinged windows).

Every system has to be provided with the following items:

- CONTROL OPERATOR, flat, mini, simple, concealed and geared operator (see page 56)
- TRANSMISSION ELEMENTS: cable, conduit, connectors, saddles, lock springs, end plugs (see page 57)
- OPENING MECHANISM, chain openers, forks and locking openers for bottom hinged windows (see page 58-60)

To open no more than one window with one control operator, the previous items are also contained all together in the "BRAVO" or in the "KIT for BOTTOM or TOP HINGED WINDOWS" (see pages 61-63).

In case of installations with more than one locking opener or fork, rotary junction boxes are required.


For a right installation the tool for conduit preparation and the conduit bender are very useful (see page 57).

For further information regarding the installation of the Mec Line product, please ask for the installation manual.

SPECIFICATION PROSPECTS

The Mec Line mechanical systems for the windows remote control made by Ultraflex Control Systems is composed by the following items:

- Control operators with painted steel handle named: FLAT, CONCEALED, MINI, SIMPLE AND GEARED OPERATOR.
- Transmission line formed by a steel helical cable running inside a steel conduit externally coated in PVC with an internal antifriction polyethylene tube. Other accessories allow a correct installation.
- Chain opening mechanisms both for top and bottom hinged windows with painted or anodized aluminium casing; available stroke 250 and 380 mm.
- Steel forks and swivel 250 mm stroke for sun louvre blades.
- Painted aluminium locking openers for bottom hinged windows, maximum stroke 250 mm.

 The instructions for a safe installation are included in the section "SECURITY WARNINGS"

It's possible to find the most appropriate opening mechanism and handle operator for the required system, referring to the following charts.

OPENING MECHANISM SELECTION

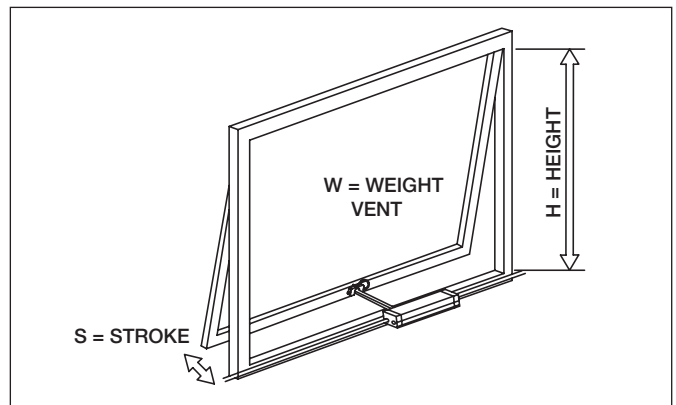
WINDOW TYPE	ADVISED MECHANISM	
	 Chain mechanism	 Cat
	 Chain mechanism	 Cat
	 Chain mechanism	 Locking opener

WINDOW TYPE	ADVISED MECHANISM	
	 Telescopic spindle	 Cat
	 Fork	
	 Fork	

CONTROL OPERATOR SELECTION

Following charts refer to accurate installation, executed with our tools, with only one 90° bend of the conduit and with no rotary junction box included; the wind load has not been considered. Every additional bend or rotary junction box has to be counted as an additional window. For intermediate window heights refer to the directly lower height; in case of window lower than 750 mm it is necessary to reduce the actuator stroke to 1/3 of the window height. For windows with four-bar hinges the calculation of the necessary force depends on the hinge model. Please contact our Technical Dpt. for any specific application.

THESE SELECTION GUIDES HAVE TO BE CONSIDERED AS A GENERAL DIRECTION AND MUST BE CHECKED BY THE INSTALLER. FOR ANY SPECIFIC APPLICATION, PLEASE CONTACT OUR TECHNICAL DEPT.



S = Stroke 250 mm

H WINDOWS	No.	WEIGHT OF THE WINDOW (Kg)									
		10	15	20	25	30	35	40	45	50	60
750 - 1150	1	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light
	2	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light
	3	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light
	4	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light
	5	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light
	6	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light
	7	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light
1151 - 1400	1	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light
	2	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light
	3	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light
	4	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light
	5	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light
	6	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light
	7	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light
1401 - 1600	1	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light
	2	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light
	3	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light
	4	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light
	5	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light
	6	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light
	7	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light

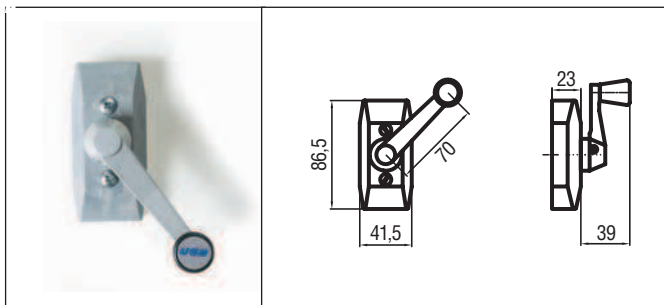
S = Stroke 380 mm

H WINDOWS	No.	WEIGHT OF THE WINDOW (Kg)									
		10	15	20	25	30	35	40	45	50	60
1150 - 1400	1	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light
	2	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light
	3	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light
	4	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light
	5	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light
	6	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light
	7	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light
1401 - 1600	1	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light
	2	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light
	3	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light
	4	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light
	5	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light
	6	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light
	7	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light

No.=No.windows+No.rotary junction boxes+No.bends (over 1)

- FLAT OPERATOR
- SIMPLE, MINI, CONCEALED OPERATOR
- GEARED OPERATOR

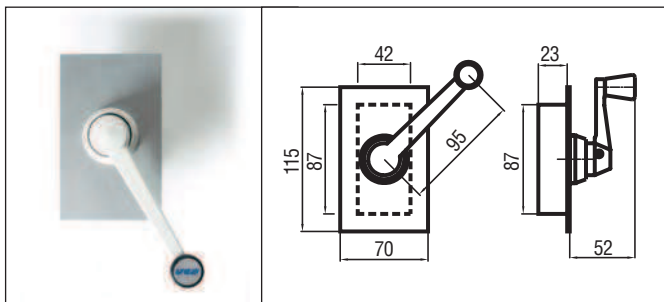
CONTROL OPERATORS TRANSMISSION



FLAT OPERATOR

PART No.	White	31560R
	Black	37161J
	Grey	40133A

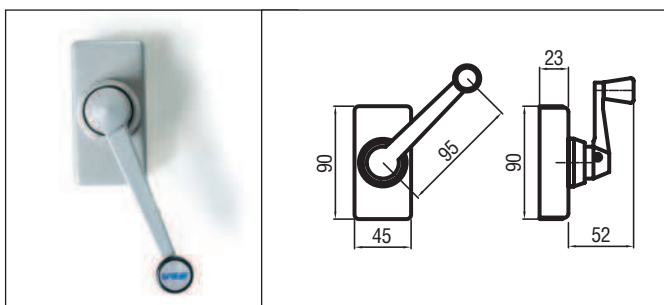
- It can be used with the 25 cm and 38 cm chain openers and with the locking opener for single bottom hinged windows.
- The inside mechanism and the handle are made in metal and the cover in plastic.
- Maximum cable length: 6 m. The spent travel tube is external.



CONCEALED OPERATOR

PART No.	30745X
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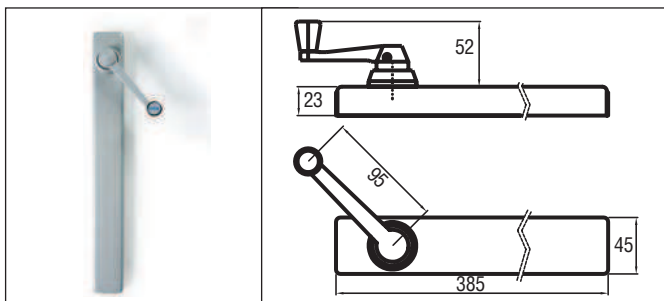
- It can be used with all opening mechanisms.
- It can be concealed into the wall or into the aluminium frame together with the spent travel tube.
- Completely made in metal with painted handle and aluminium anodized cover.



MINI OPERATOR

PART No.	White	RAL 9010	30748C
	Black	RAL 9005	36964S
	Grey	RAL 9006	36813E

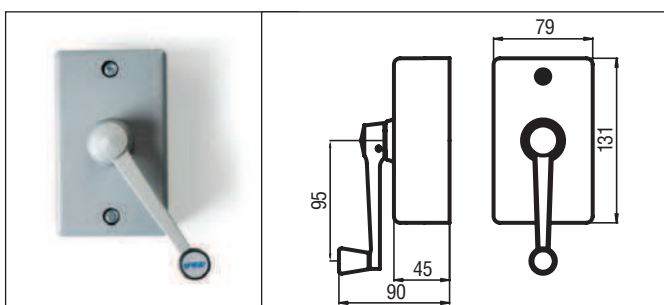
- It can be used with all opening mechanisms.
- Completely made in metal. The spent travel tube is external.



SIMPLE OPERATOR

PART No.	White	RAL 9010	30750U
	Black	RAL 9005	32594G
	Grey	RAL 9006	37035E

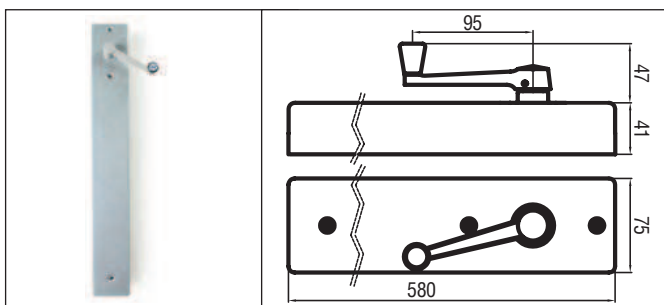
- Style and efficiency are the main features of this operator.
- It incorporates the antitorion spent travel tube which allows a maximum stroke of 25 cm. Therefore it is not suitable to be used with the 38 cm chain openers.
- Completely made in metal.



GEARED OPERATOR

PART No.	White	RAL 9010	40517S
	Black	RAL 9005	40543T
	Grey	RAL 9006	40544V

- Ratio: 5:1
- It can be used with all opening mechanisms.
- Particularly suitable for operating many windows simultaneously and moving heavy windows.
- The inside mechanism and the handle are made in metal. The front cover is made in plastic. The spent travel tube is external.



GEARED OPERATOR WITH LONG METALLIC COVER

PART No.	White	RAL 9010	40777R
	Black	RAL 9005	40778S
	Grey	RAL 9006	40779T

- Version of geared operator with inner anti-torque spent travel tube and metal cover

TRANSMISSION ELEMENTS

In the manual window remote control systems MEC LINE, the transmission elements are the connection between the control operator, a manually moved mechanism through which it is possible to transmit the motion, and the opening mechanism which is directly connected to the window frame and it allows the opening. The transmission elements and accessories required for a correct application are the followings:



HELICAL CABLE

PART No. 30764A

It runs inside the conduit and it is the real transmission element. It is supplied in 50 meters reels.

CONDUIT

PART No.	White	40205V
	Black	40206A
	Grey	36383B

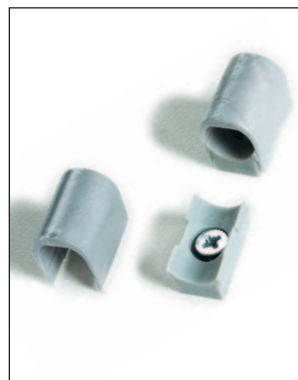
It is supplied in 3 meters steel rods externally coated in white, black or grey PVC. The internal tube is in polyethylene to make the cable sliding easier.



END PLUG

PART No.	White	40139I
	Black	40174J
	Grey	40191O

It fixes the spent travel tube to the wall.



FIXING SADDLE

PART No.	White	30767D
	Black	35446R
	Grey	40134B

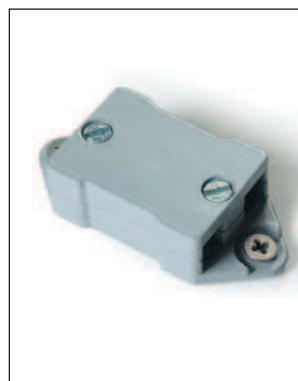
It is the element used to fix the conduit to the wall. It has to be placed one every meter and anyway one before and one after every bend.



CONNECTOR

PART No.	White	31459U
	Black	36015V
	Grey	40137E

The junction between two conduit rods.



ROTARY JUNCTION BOX

PART No.	White	30768G
	Black	37040B
	Grey	40135C

It is used to transfer the movement of the cable from the main line to the auxiliary ones; it is essential for systems with more than one locking opener, forks or chain openers (only if installed on windows placed upon others).



LOCK SPRING

PART No. 30770Y

It has to be screwed at the end of the helical cable, near the control operator.



CONDUIT BENDER

PART No. 30790G

Bending radius 100 mm. To form the conduit in such an even radius allowing regular operation of the cable.

CONDUIT BENDER FOR KIT WITH ROPE

PART No. 40153E

Bending radius 50 mm.



TOOL FOR CONDUIT PREPARATION

PART No. 40097R

Necessary to prepare conduit ends.

CHAIN OPENERS

Opening mechanisms for top and bottom hinged windows



- Available with 250 mm or 380 mm stroke.
- Suitable for bottom hinged, top hinged and centre hinged windows.
- Versatility and simplicity of installation.
- Quick connection of the conduit to the chain opener: it's not necessary to work the conduit.
- Provided with quick release connector for an easy window cleaning.
- Minimum size: the minimum space for the mounting is 16 mm for top hinged windows and 36 mm for bottom hinged windows.
- The window opening stroke cannot exceed 1/3 of the window height. The chain stroke can be adjusted acting on the lock spring.
- The installation must be carried out in order to allow the cable working in pull action during the load operation (ex. in closing phase for bottom hinged windows and the opening phase for top hinged windows).
- In installations with two or more windows placed side by side, rotary junction boxes mechanism are not required.
- On windows wider than 1,5 m or anyway with a large area, for better stability to wind, it is suggested to install two or more chain openers.

PART No.

WHITE RAL 9010

BLACK ANODIZED

SILVER ANODIZED

Stroke 250 mm

37566D

37565C

37564B

Stroke 380 mm

37569I

37568H

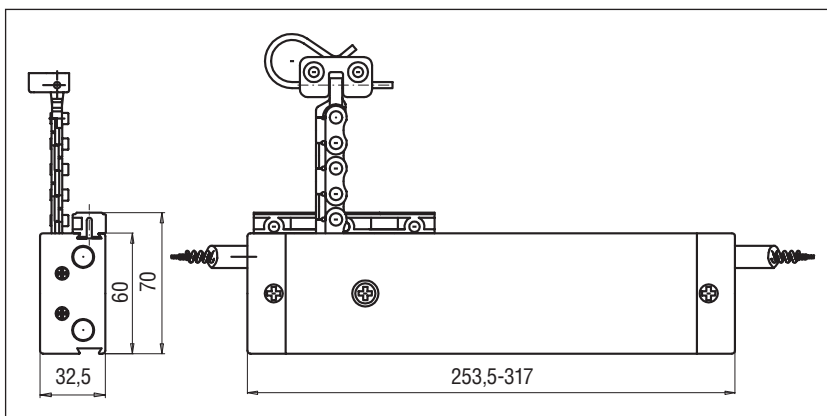
37567E



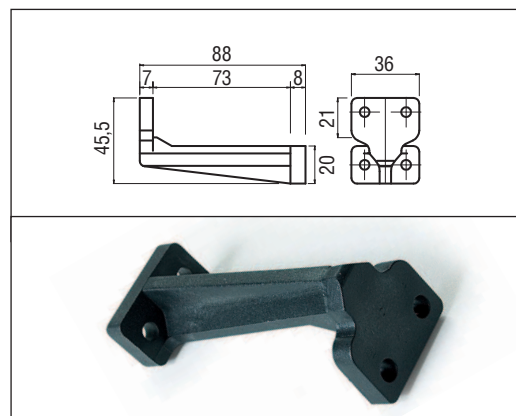
The instructions for a safe installation are included in the section "SECURITY WARNINGS".
On bottom hinged windows for safety reasons always install side checks.



Bracket for top hinged window (included)

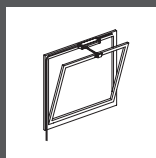


Mechanism dimensions

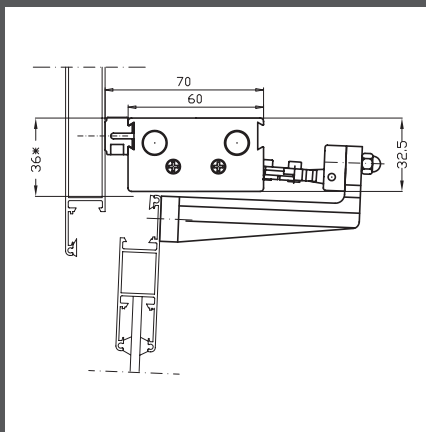


Bracket for bottom hinged part No. 37616T

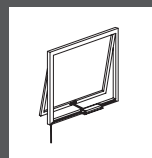
Examples of multiple installations



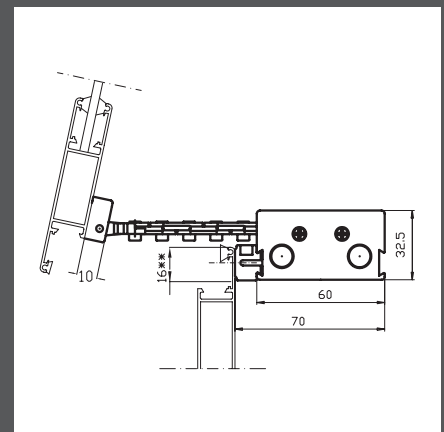
Bottom hinged windows



On window frame with included bracket and bracket for bottom hinged window part No. 37616T. Necessary space for installation 36 mm*

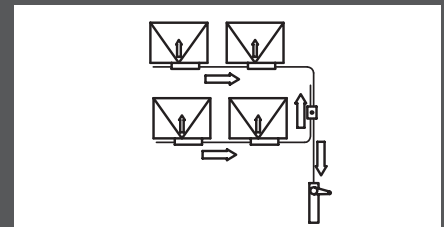
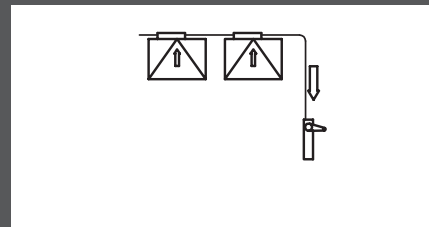
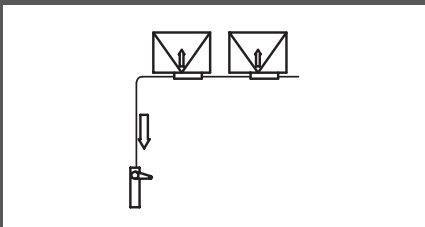


Top hinged window



On window frame with included bracket. Necessary space for installation 16 mm**

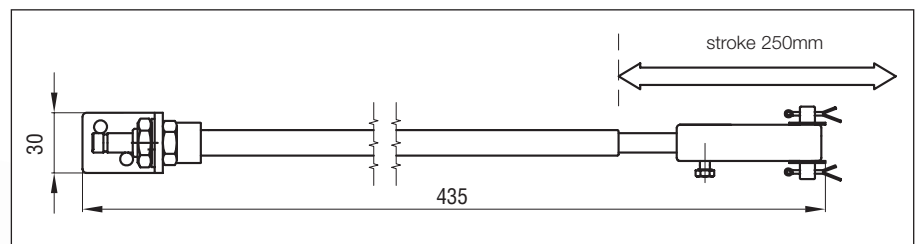
Example of multiple installation



The arrows show direction of cable run during window opening

FORKS

Opening mechanisms for louvres



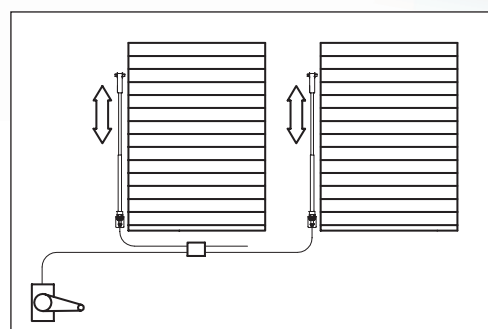
Fork dimensions



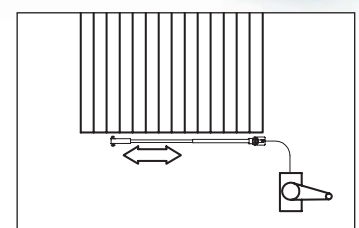
FORK AND SWIVEL - HEAVY DUTY (travel 250 mm)

PART No. 30758E

- Suitable for horizontal or vertical sun louvre blades, both for one or more windows.
- Made in stainless steel, it's suitable both for internal and external installations.
- A geared operator should be used for sun-blades and vertical louvres with more than 10 blades or for horizontal louvres with more than 14 blades.
- For installation with more than one window, rotary junction boxes have to be used.



On horizontal louvre blades

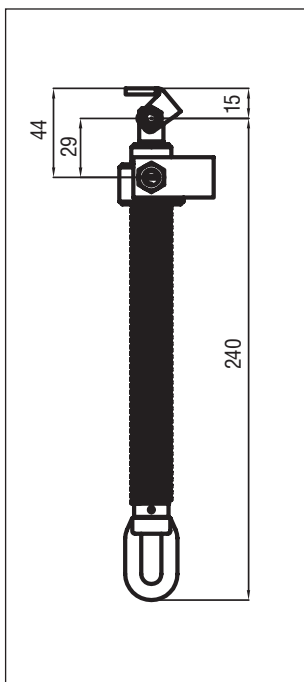


On vertical sun blades

TELESCOPIC SPINDLE



- Suitable for operating skylights, domes and roof windows up to 2000 N weight.
- Opening stroke: 310 mm.
- Chrome-plated surface, spindle in brass.
- Complete bracket set included.
- Operation by crank handle.




PART No.

TELESCOPIC SPINDLE	37243K		
CRANK HANDLE	37244L	Length	1500 mm
	40001L		2000 mm
	40002M		2500 mm
	40003N		3000 mm



SPECIFICATION PROSPECTS

Ultraflex Control Systems telescopic spindle for operating skylights and domes up to 2000 N weight. Maximum stroke 310 mm.

 The instructions for a safe installation are included in the section "SECURITY WARNINGS"

CAT

Manual chain opener

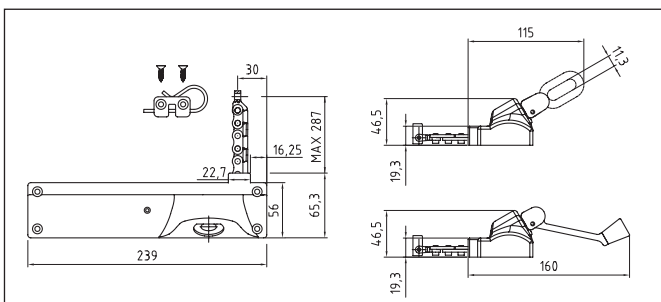


- Manual chain operator for skylights, roof windows and top hinged windows.
- Easy and quick installation on wood, metal and PVC windows.
- Maximum opening approx. 280 mm. It is possible to stop the sash in any position.
- Allows window operation without remove any insect screen.
- When closed it is not possible to open the window from outside.
- Smooth and easy operation.
- Quick release system for easy window cleaning.
- Corrosion protected chain. Suitable for windows with more than 300 mm height.
- The CAT chain actuator can be equipped with a handle for installation on windowsill or eyelet for operation by crank handle for skylights or roof windows.

PART No.		WHITE RAL 9010	BLACK RAL 9005	GREY RAL 9006
CAT CHAIN OPENER		40761B	40807V	40808W
HANDLE		40763D	40811Z	40812A
EYELET		40762C	40809X	40810Y
CRANK HANDLE	Lenght	1500 mm	40764E	
		2000 mm	40765F	
		2500 mm	40766G	
		3000 mm	40767H	

SPECIFICATION PROSPECTS

Ultraflex Control Systems manual actuator with chain for operating top hinged windows by handle or skylights by eyelet and crank handle. Maximum stroke 280 mm.



Actuator dimension

Vent maximum weight for CAT installation:

Top hinged windows

8 Kg	if the vent height is	300 mm
22 Kg	if the vent height is	400 mm
48 Kg	if the vent height is	600 mm
100 Kg	if the vent height is	1000 mm

Roof windows or skylights

35 Kg maximum weight with 280 mm stroke.

Please contact technical service for further informations.
The above values do not include any wind or snow load.



The instructions for a safe installation are included in the section "SECURITY WARNINGS"