

2011

**U  
C  
S**

**WINDOW  
REMOTE CONTROL  
SYSTEMS**

Supplier Italia Pavilion  
Expo Shanghai 2010

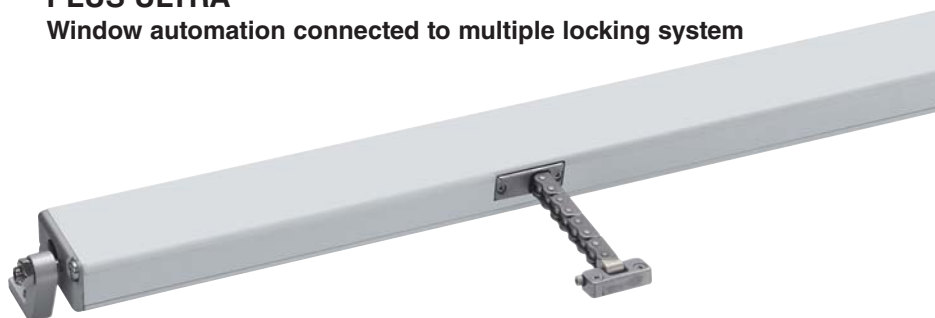
**UCS**

ULTRAFLEX CONTROL SYSTEMS



## **PLUS ULTRA**

Window automation connected to multiple locking system



## **TWIN QUASAR** chain actuator with encoder

Force 600N - stroke 500 mm



## **TWIN VEGA** chain actuator with encoder

Force 600N - stroke 300 mm



## **QUASAR L** chain actuator

Strokes available: 600-750-1000 mm

# NEW 11



**EPS entrapment protection system**



**SUPERNOVA chain actuator**  
Force 300N - stroke 400mm or selectable stroke (0-300 mm)





## ULTRAFLEX GROUP

Ultraflex Group has over 70 years of experience in manufacturing and distributing the highest quality and most innovative products.

The Ultraflex Group affiliate companies design and produce widely known equipments in the Marine, Industrial, Architectural, Led technology and alternative energy fields.



### ULTRAFLEX CONTROL SYSTEMS S.r.l.

Window and skylight remote controls.  
Innovative led sign technology.



### ULTRAFLEX S.p.a.

Steering and control systems for pleasure boats.



### UFLEX S.r.l.

World wide distribution of marine accessories.  
Systems and accessories for alternative energy applications.



### INDUSTRIA di LEIVI S.r.l.

Mechanical remote controls in the industrial field.



### UFLEX USA Inc.

Manufacturing the world finest marine products.

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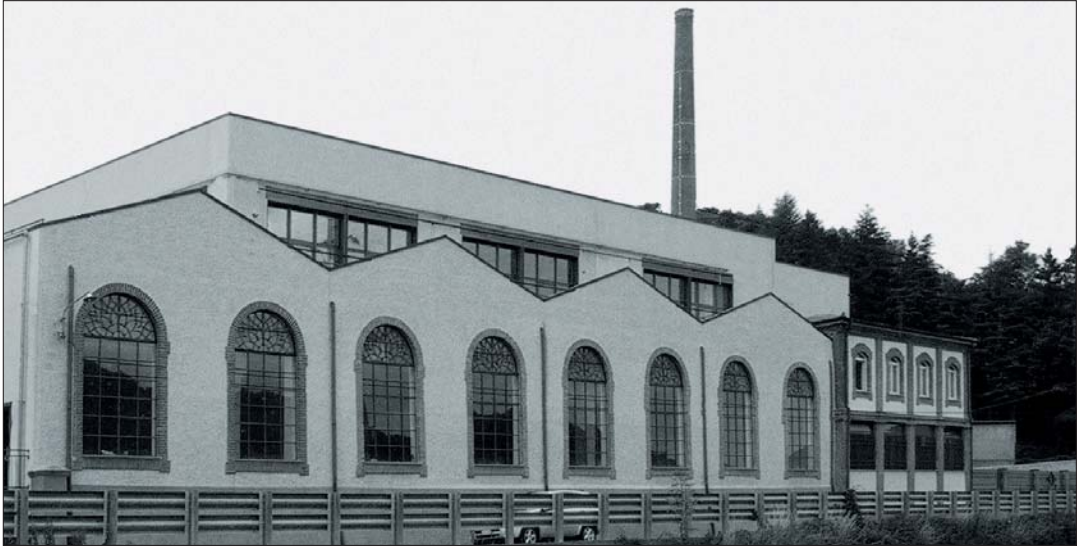


Reggia di Venaria  
Torino

Lebanese University  
Beirut



# QUALITY SYSTEM



The Ultraflex Control Systems Quality System has been certified CISQ-IQNet by RINA Registro Italiano Navale, according to the UNI EN ISO 9001:2000 rule. Certificate No. 621/97/S

The Quality System involves all the resources and the company proceedings starting from the planning in order to:

- guaranteeing the customer the quality of the product
- planning the actions to maintain and improve in time the quality standard
- pursuing a continuous proceedings improvement in order to satisfy the market requirements and increase the customer expectations.



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# QUASAR - SYNCHRO QUASAR

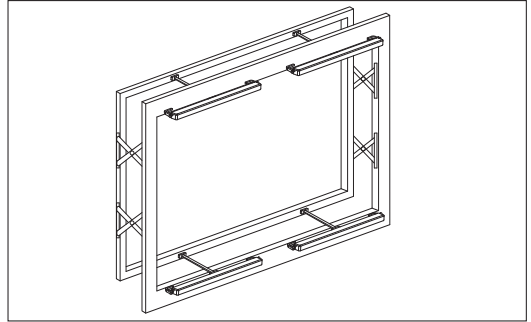
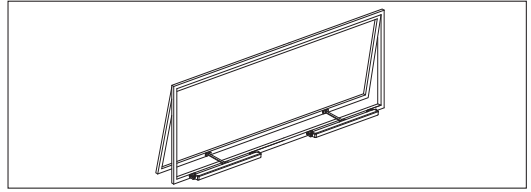
Chain actuator - Force in push action 300 N - Maximum stroke 500 mm



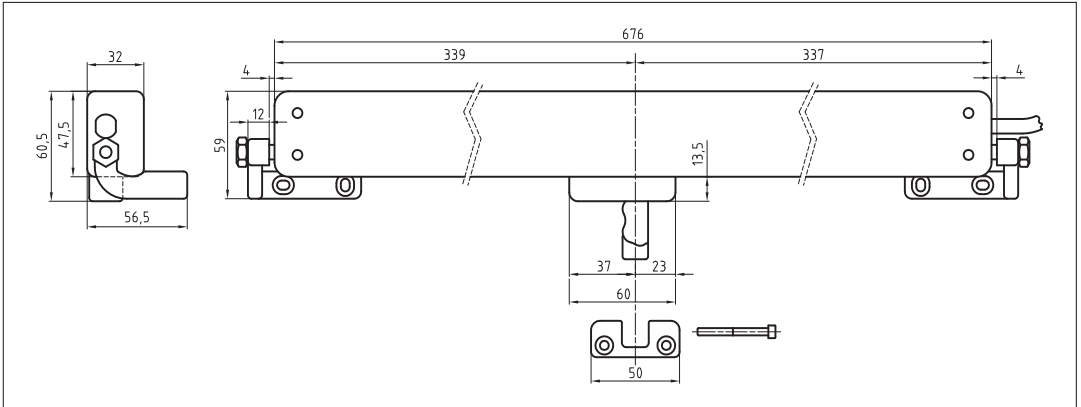
- Highest performance in minimum size: the die-cast aluminium casing has a very small section (47 x 32 mm) and can be easily built-in into the frame of curtain walls.
- New concept double link chain completely in stainless steel.
- Chain exit in central position.
- Quick and easy installation: the manual closing position regulation is not required, avoiding possible mistake. The stop in closing position is regulated by an electronic limit switch.
- If installed on PVC windows, the profile has to be reinforced.
- Electronic stop in the intermediate positions in case of overload.
- Supplied with 1,5 m cable (QUASAR) or 3 m (SYNCHRO QUASAR ) and pivoting brackets.
- The installation without brackets is possible for windows with pivoting hinges only if the vent height is at least 1500 mm.
- In case of vents with four-bar hinges, please contact our Technical Dept. for choosing the suitable fixing brackets.
- 24 Vdc version is suitable for installation on **Smoke and Heat Extraction Systems** in conformity to UNI EN 12101-2 Standard, QUASAR DC approved by **Istituto Giordano** (test report 243340).
- **FALUS** version is available on request for some models.
- **SYNCHRO QUASAR** version is equipped with an integrated speed synchronization control board that allows the mounting of more than one actuator on the same vent, avoiding the installation of an external control panel. **AC version:** Synchro Quasar AC + max 1 Synchro Quasar DC, **DC version:** max 4 synchro Quasar DC.
- **QUASAR DC F-SIGNAL** and **SYNCHRO QUASAR DC F-SIGNAL** are special versions with opening and closing feedback signal (free potential, maintained contact), activated by the current limit. **SYNCHRO QUASAR DC F-SIGNAL** is provided with additional cable
- For a higher resistance against atmospheric agents, it is available on request the Quasar DC version with protection class **IP32**.



VOLTAGE SUPPLY	<b>QUASAR AC</b> 100 Vac – 240 Vac	<b>QUASAR DC</b> 24 Vdc ± 10%	<b>QUASAR DC F-SIGNAL</b> 24 Vdc ± 10%
ELECTRIC CONNECTION	3 wires + earth	2 wires	2 + 3 wires
OPERATION		by polarity inversion	by polarity inversion
STROKE	500 mm	500 mm	500 mm
FORCE (push and pull action)	300N	300N	300N
SPEED	~ 15 mm/s	~ 15 mm/s	~ 15 mm/s
CURRENT ABSORPTION (with max load)	0,4 A – 0,2 A	0,9 A	0,9 A
PARALLEL CONNECTION	YES	YES	YES
LIMIT STOP	Electronic	Electronic	Electronic
SAFETY STOP	Electronic	Electronic	Electronic
PROTECTION CLASS	IP30	IP30	IP30
Part No.			
GREY RAL 9006	40837Z	40840C	41327T
BLACK RAL 9005	40838A	40841D	41328U
WHITE RAL 9010	40839B	40842E	41329V
	<b>SYNCHRO QUASAR AC</b>	<b>SYNCHRO QUASAR DC</b>	<b>SYNCHRO QUASAR DC F-SIGNAL</b>
VOLTAGE SUPPLY	100 Vac – 240 Vac	24 Vdc ± 10%	24 Vdc ± 10%
ELECTRIC CONNECTION	3 wires + earth + 5 wires	5 wires	5 wires + 3 wires
OPERATION		by polarity inversion	by polarity inversion
STROKE	500 mm	500 mm	500 mm
FORCE	300 N	300 N	300 N
SPEED	~ 15 mm/s	~ 15 mm/s	~ 15 mm/s
CURRENT ABSORPTION	0,8 A – 0,4 A	0,9 A	0,9 A
PARALLEL CONNECTION	YES	YES	YES
LIMIT STOP	Electronic	Electronic	Electronic
SAFETY STOP	Electronic	Electronic	Electronic
PROTECTION CLASS	IP30	IP30	IP30
Part No.			
GREY RAL 9006	41316I	41119Z	41319L
BLACK RAL 9005	41317J	41120A	41320M
WHITE RAL 9010	41318K	41121B	41321N

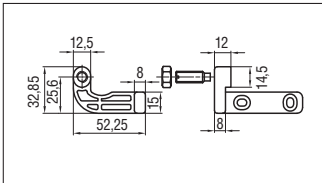


Synchro Quasar installation example

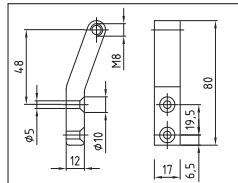


Actuators dimensions

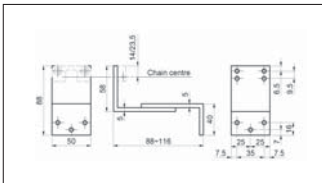
**Accessories**



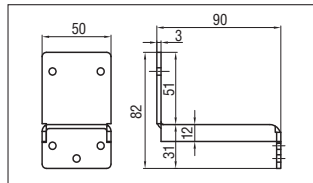
Pivoting brackets kit (included)



Long brackets kit (to be ordered separately)  
 GREY painted RAL 9006 part no. 40941H  
 BLACK painted RAL 9005 part no. 40942I  
 WHITE painted RAL 9010 part no. 40943J

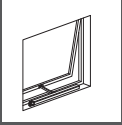


Aluminium adjustable "Z" bracket for bottom hinged window part. no. 41200C

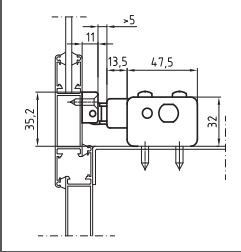


Stainless steel bottom hinged window bracket part No. 40858U

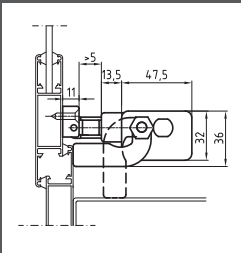
## Installation examples



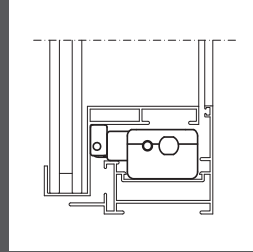
Top hinged windows



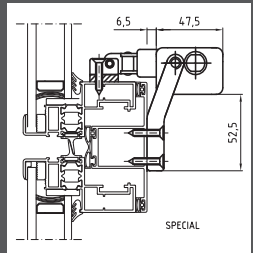
On windows with windowsill



On windows with or without windowsill with pivoting brackets kit included



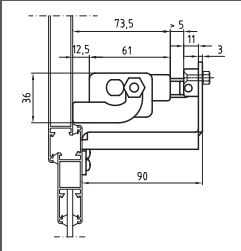
Inside a curtain wall frame



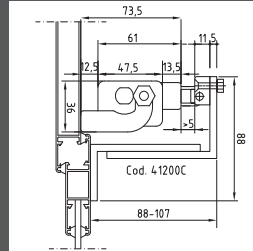
With long brackets kit



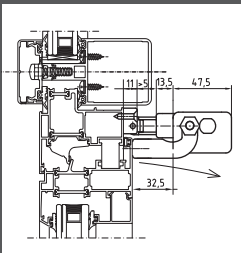
Bottom hinged windows



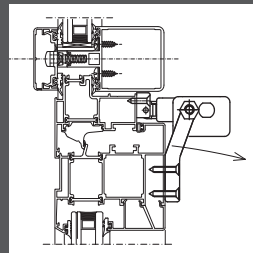
On the frame with pivoting brackets kit and bracket for bottom hinged windows part No. 40858U



On the frame with adjustable "Z" bracket part No.41200C



On the vent with pivoting brackets kit included



On the vent with long brackets kit

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

### SPECIFICATION PROSPECTS

Electric chain actuator Ultraflex Control Systems named Quasar with double link chain completely in stainless steel.

Voltage supply: from 100 to 240 Vac or 24 Vdc – Electronic limit stop; electronic stop in the intermediate positions in case of overload. Casing in painted die-cast aluminium with very small section (47x32 mm). Pivoting brackets included.

The 100-230 Vac version and the 24 Vdc version are conform to 2004/108/CE, the 100-240 Vac version is conform also to 2006/95/CEE directive.

Electric chain actuator Ultraflex Control Systems named Synchro-Quasar with double link chain completely in stainless steel. Suitable for mounting more than one actuators (max 4 actuators) on the same vent.

Voltage supply: from 100 to 240 Vac or 24 Vdc – Electronic limit stop; speed control; electronic stop in the intermediate positions in case of overload. Casing in painted die-cast aluminium with very small section (47x32 mm). Pivoting brackets included.

The 100-240 Vac and the 24 Vdc version are conform to 2004/108/CE directives, the 100-240 Vac version is conform also to 2006/95/CEE directive.



# QUASAR L - SYNCHRO QUASAR L

Chain actuator – Force in push action 300-150-100 N – Stroke 600-750-1000 mm



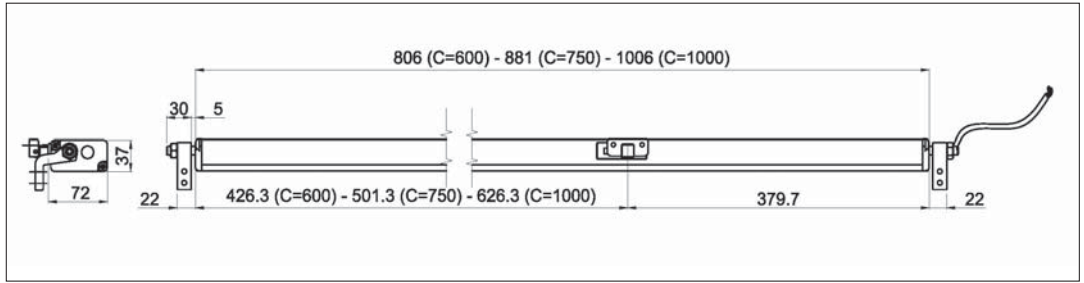
- Available 3 different series strokes: 600 mm – 750 mm – 1000 mm ( 750 and 1000 mm only for bottom hinged windows).
- New concept double link chain completely in stainless steel.
- Anodized (silver) or painted (white or black) aluminium casing.
- Electronic stop in the intermediate positions in case of overload.
- Easy replacement of the cable in case a different / longer cable or a different colour is required; upon request it is possible to supply actuators with cable exit by the opposite side.
- Supplied with 1,5 m cable (QUASAR L) or 3 m (SYNCHRO QUASAR L) and pivoting brackets for top hinged windows.
- 24 Vdc version is suitable for installation on **Smoke and Heat Extraction Systems** in conformity to UNI EN 12101-2 Standard and approved by **IFT Rosenheim** (test report 838-36075-1).
- **SYNCHRO QUASAR L** version is equipped with an integrated speed synchronization control board that allows the mounting of more than one actuator on the same vent, avoiding the installation of an external control panel. **AC version:** Synchro Quasar L AC + max 1 Synchro Quasar L DC, **DC version:** max 4 Synchro Quasar L DC.
- **QUASAR L DC F-SIGNAL** and **SYNCHRO QUASAR L DC F-SIGNAL** are special versions with opening and closing feedback signal (free potential, maintained contact), activated by the current limit. **SYNCHRO QUASAR L DC F-SIGNAL** is provided with additional cable.
- **cULus** version is available on request for some models.
- For a higher resistance against atmospheric agents, it is available on request the Quasar L DC version with protection class **IP32**.



	<b>QUASAR L AC</b>			<b>QUASAR L DC</b>			<b>QUASAR L DC F-SIGNAL</b>		
VOLTAGE SUPPLY	100 Vac – 240 Vac			24 Vdc ± 10%			24 Vdc ± 10%		
ELECTRIC CONNECTION OPERATION	3 wires + earth			2 wires by polarity inversion			5 wires		
STROKE	600 – 750 – 1000 mm			600 – 750– 1000 mm			600 – 750– 1000 mm		
FORCE IN PULL ACTION	300N			300N			300N		
FORCE IN PUSH ACTION	300N 600mm – 150N 750mm – 100N 1000MM			300N 600mm – 150N 750mm – 100N 1000MM			300N 600mm – 150N 750mm – 100N 1000MM		
SPEED- 15 mm/s	~ 15 mm/s			~ 15 mm/s			~ 15 mm/s		
CURRENT ABSORPTION (with max load)	0,4 A - 0,2 A			0,9 A			0,9 A		
PARALLEL CONNECTION	YES			YES			YES		
LIMIT STOP	Electronic			Electronic			Electronic		
SAFETY STOP	Electronic			Electronic			Electronic		
PROTECTION CLASS	IP30			IP30			IP30		
Part No.	600 mm	750 mm	1000 mm	600 mm	750 mm	1000 mm	600 mm	750 mm	1000 mm
ANODIZED ALUMINIUM	41052C	41055J	41058R	41061D	41064K	41067S	41277V	41280Y	41283B
BLACK RAL 9005	41053E	41056L	41059T	41062F	41065M	41068U	41278W	41281Z	41284C
WHITE RAL 9010	41054G	41057N	41060B	41063H	41066P	41069W	41279X	41282A	41285D

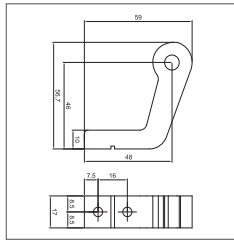
	<b>SYNCHRO QUASAR L AC</b>			<b>SYNCHRO QUASAR L DC</b>			<b>SYNCHRO QUASAR L DC F-SIGNAL</b>		
VOLTAGE SUPPLY	100 Vac – 240 Vac			24 Vdc ± 10%			24 Vdc ± 10%		
ELECTRIC CONNECTION OPERATION				5 wires			5 wires + 3 wires		
STROKE	600 – 750 – 1000 mm			600 – 750 – 1000 mm			600 – 750 – 1000 mm		
FORCE IN PULL ACTION	300 N			300 N			300 N		
FORCE IN PUSH ACTION	300N 600mm – 150N 750mm – 100N 1000MM			300N 600mm – 150N 750mm – 100N 1000MM			300N 600mm – 150N 750mm – 100N 1000MM		
SPEED	~ 15 mm/s			~ 15 mm/s			~ 15 mm/s		
CURRENT ABSORPTION	0,8 A - 0,4 A*			0,9 A			0,9 A		
PARALLEL CONNECTION	YES			YES			YES		
LIMIT STOP	Electronic			Electronic			Electronic		
SAFETY STOP	Electronic			Electronic			Electronic		
PROTECTION CLASS	IP30			IP30			IP30		
Part No.	600 mm	750 mm	1000 mm	600 mm	750 mm	1000 mm	600 mm	750 mm	1000 mm
ANODIZED ALUMINIUM	41286E	41289H	41292K	41189G	41212I	41242M	41295N	41298Q	41301T
BLACK RAL 9005	41287F	41290I	41293L	41190R	41240K	41243N	41296O	41299R	41302U
WHITE RAL 9010	41288G	41291J	41294M	41191T	41241L	41244O	41297P	41300S	41303V

\* if connected to another Synchro Quasar current absorption is double

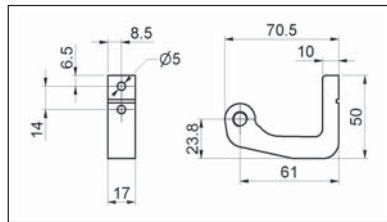


Actuators dimension

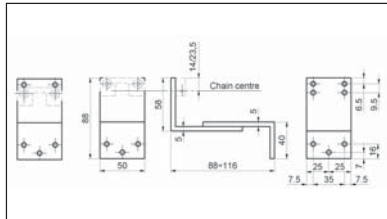
Accessories



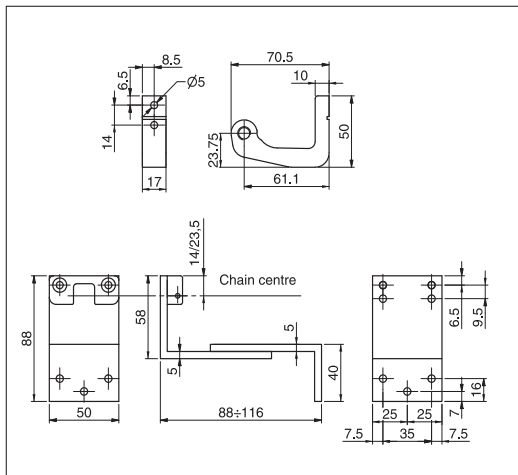
Pivoting brackets kit (2 pcs included)



"C" pivoting brackets (to be ordered separately):  
 GREY anodized aluminium part No. 41197Z  
 BLACK painted RAL 9005 part No. 41198A  
 WHITE painted RAL 9010 part No. 41199B



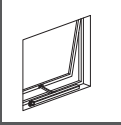
Aluminium adjustable "Z" bracket for bottom hinged window - part No. 41200C



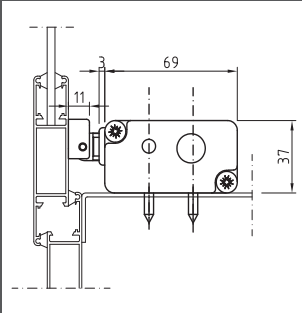
Kit for bottom hinged window with "C" pivoting brackets and aluminium adjustable "Z" bracket (to be ordered separately):  
 GREY anodized aluminium part No. 41104K  
 BLACK painted RAL 9005 part No. 41105L  
 WHITE painted RAL 9010 part No. 41106M



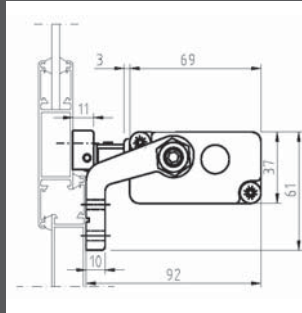
## Installation examples



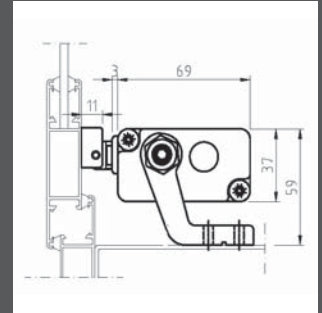
Top hinged windows



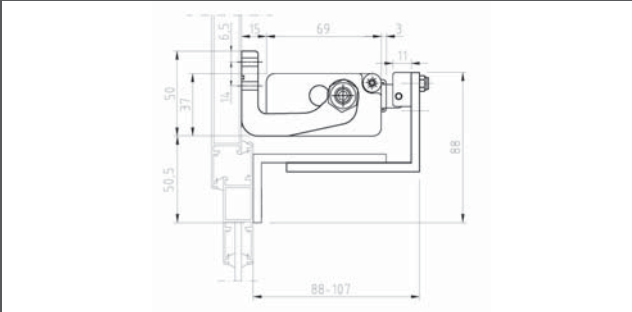
On windowsill without brackets



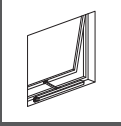
On the frame with pivoting brackets included



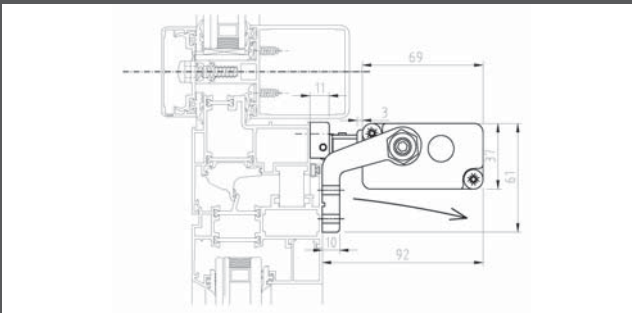
On windowsill with pivoting brackets included



On the frame with brackets for bottom hinged windows



Bottom hinged windows



On the vent with pivoting brackets kit included

**⚠** The instructions for a safe installation are included in the section “SECURITY WARNINGS”

### SPECIFICATION PROSPECTS

Electric chain actuator Ultraflex Control Systems named Quasar L with double link chain completely in stainless steel.

Voltage supply: from 100 to 240 Vac or 24 Vdc – Electronic limit stop; electronic stop in the intermediate positions in case of overload. Casing in aluminium: Anodized (silver) or painted (white or black). Pivoting brackets included.

The 100-240 Vac version and the 24 Vdc version are conform to 2004/108/CE, the 100-240 Vac version is conform to 73/23 LVD directives.

Electric chain actuator Ultraflex Control Systems named Synchro-Quasar L with double link chain completely in stainless steel. Suitable for mounting more than one actuator (max 4 actuators) on the same vent.

Voltage supply: from 100 to 240 Vac or 24 Vdc – Electronic limit stop; speed control; electronic stop in the intermediate positions in case of overload. Casing in aluminium: Anodized (silver) or painted (white or black). Pivoting brackets included.

The 100-240Vac and the 24Vdc versions are conform to 2004/108/CE directives , the 100-240 Vac version is conform also to 2006/95/CEE directive.

# VEGA - SYNCHRO VEGA

Chain actuator - Force in push action 250-300 N - Maximim stroke 300 mm



## PATENTED CHAIN ACTUATOR

- Highest performance in minimum size: the die-cast aluminium casing has a very small section (45 x 32 mm) and can be easily built-in into the frame of curtain walls.
- New concept double link chain completely in stainless steel.
- Chain exit in central position.
- Quick and easy installation: the manual closing position regulation is not required, avoiding possible mistake. The stop in closing position is regulated by an electronic limit switch.
- If installed on PVC windows, the profile has to be reinforced.
- Electronic stop in the intermediate positions in case of overload.
- Supplied with 1,5 m cable (VEGA) or 3 m (SYNCHRO VEGA ) and pivoting brackets.
- The installation without brackets is possible for windows with pivoting hinges only if the vent height is at least 900 mm.
- The VEGA RF version has an integrated radio receiver and it is supplied with radio remote control; the transmitter controls simultaneously more actuators within its field of action; available on request actuators and remote controls with different radio codes.
- In case of vents with four-bar hinges, please contact our Technical Dept. for choosing the suitable fixing brackets.
- **RF** version available on request for some models
- **SYNCHRO VEGA** version is equipped with an integrated speed synchronization control board that allows the mounting of more than one actuator (max 4) on the same vent, avoiding the installation of an external control panel.
- **VEGA DC F-SIGNAL** and **SYNCHRO VEGA DC F-SIGNAL** are a special version with opening and closing feedback signal (free potential ,maintained contact), activated by the current limit. **SYNCHRO VEGA DC F-SIGNAL** is provided with additional cable.
- For a higher resistance against atmospheric agents, it is available on request the VEGA DC version with protection class **IP32**.





	<b>VEGA AC</b>	<b>VEGA RF</b>	<b>VEGA RF-RAIN</b>
VOLTAGE SUPPLY	100 Vac - 240 Vac	100 Vac - 240 Vac	100 Vac - 240 Vac
ELECTRIC CONNECTION	3 wires + earth	4 wires + earth	4 wires + earth
OPERATION			
STROKE	300 mm	300 mm	300 mm
FORCE (push and pull action)	250 N	250 N	250 N
SPEED	~ 9 mm/s	~ 9 mm/s	~ 9 mm/s
CURRENT ABSORPTION (with max load)	0,3 A - 0,15 A	0,3 A - 0,15 A	0,3 A - 0,15 A
PARALLEL CONNECTION*	YES	YES	YES
LIMIT STOP	Electronic	Electronic	Electronic
SAFETY STOP	Electronic	Electronic	Electronic
PROTECTION CLASS	IP 30	IP 30 Integrated radio receiver Radio control included	IP 30 Integrated radio receiver Direct connection at the rain sensor Radio control included

**PART No.**

GREY RAL 9006	40900K	40906Q	41015D
BLACK RAL 9005	40901L	40907R	41016E
WHITE RAL 9010	40902M	40908S	41017F

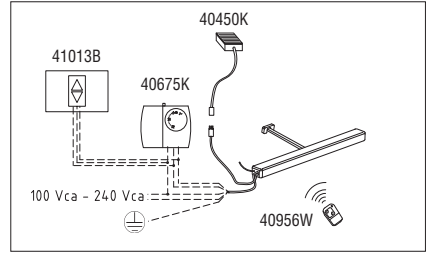
	<b>VEGA DC</b>	<b>VEGA DC F-SIGNAL</b>	<b>SYNCHRO VEGA DC</b>	<b>SYNCHRO VEGA DC F-SIGNAL</b>
VOLTAGE SUPPLY	24 Vdc ± 10%	24 Vdc ± 10%	24 Vdc ± 10%	24 Vdc ± 10%
ELECTRIC CONNECTION	2 wires	2 + 3 wires	2 + 3 wires	5 + 3 wires
OPERATION	by polarity inversion	by polarity inversion	by polarity inversion	by polarity inversion
STROKE	300 mm	300 mm	300 mm	300 mm
FORCE (push and pull action)	300 N	300 N	300 N	300 N
SPEED	~ 9 mm/s	~ 9 mm/s	~ 9 mm/s	~ 9 mm/s
CURRENT ABSORPTION (with max load)	0,7 A	0,7 A	0,7 A	0,7 A
PARALLEL CONNECTION*	YES	YES	YES	YES
LIMIT STOP	Electronic	Electronic	Electronic	Electronic
SAFETY STOP	Electronic	Electronic	Electronic	Electronic
PROTECTION CLASS	IP 30	IP 30	IP 30	IP 30

**PART No.**

GREY RAL 9006	40903N	41304W	41122C	41307Z
BLACK RAL 9005	40904O	41305X	41123D	41308A
WHITE RAL 9010	40905P	41306Y	41124E	41309B

\* Only the same model of VEGA actuator can be connected in parallel (VEGA RF can be connected in parallel with VEGA RF-RAIN)

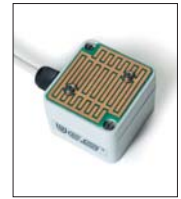
**VEGA - SYNCHRO VEGA**



For a more detailed wiring layout see the manual of instructions



Radio control supplied with VEGA RF and VEGA RF-RAIN part No. 40956W



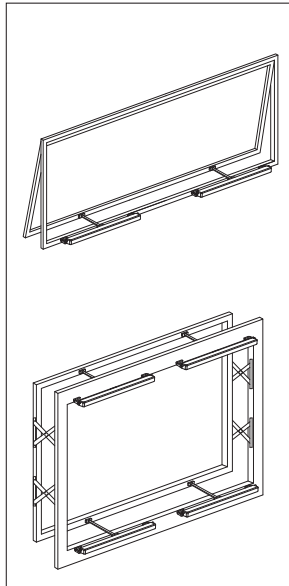
Rain sensor RS part No. 40450K

**VEGA RF / RF-RAIN**

The VEGA RF and RF-RAIN models are controlled by a radio transmitter (frequency 433,92 MHz) and are predisposed for the direct connection at a thermostat without any control panel.

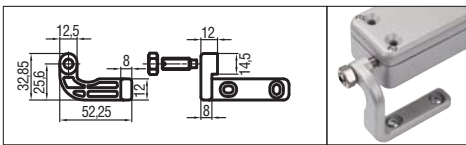
VEGA RF-RAIN version is supplied with cable for direct connection to a rain sensor (rain sensor not included).

It is possible to order VEGA RF actuator without radio control and the radio control separately (it is possible to control more actuators with the same radio transmitter). Available on request actuators + remote control with different radio codes.

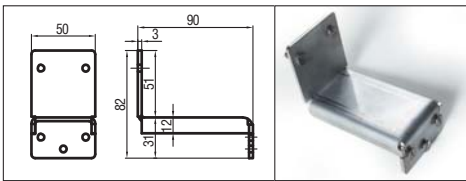


Synchro Vega installation example

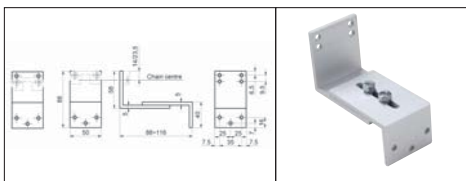
**Accessories**



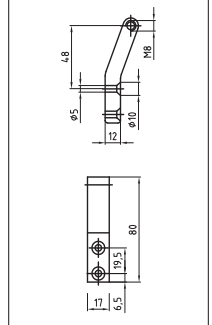
Pivoting brackets kit (included)



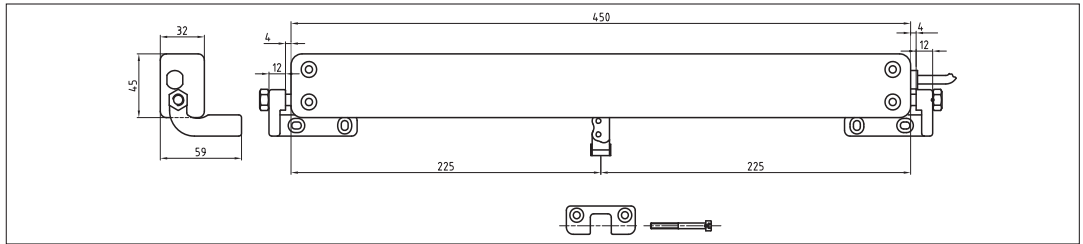
Stainless steel bottom hinged window bracket part No. 40858U



Aluminium adjustable "Z" bracket for bottom hinged window part No.41200C



Long brackets kit (to be ordered separately)  
 GREY RAL 9006 part No. 40941H  
 BLACK RAL 9005 part No. 40942I  
 WHITE RAL 9010 part No. 40943J

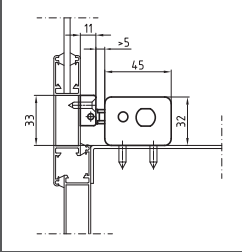


Actuator dimensions

## Installation examples



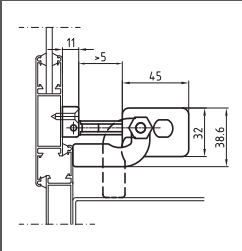
Top hinged windows



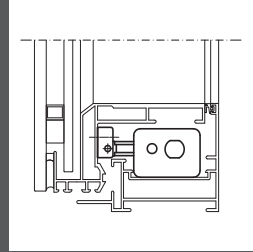
On windows with windowsill



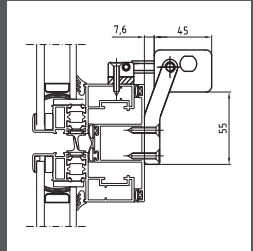
Top hinged roof windows



On windows with and without windowsill with pivoting brackets kit included



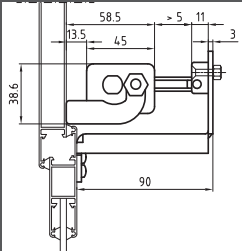
Inside a curtain wall frame



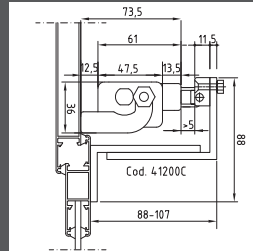
With long brackets kit



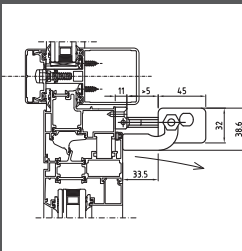
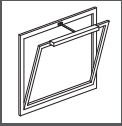
Bottom hinged windows



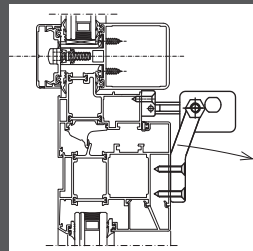
On the frame with pivoting brackets kit and bracket for bottom hinged windows part No. 40858U



On the frame with adjustable "Z" bracket part No.41200C



On the vent with pivoting brackets kit included



On the vent with long brackets kit

### SPECIFICATION PROSPECTS

Electric chain actuator Ultraflex Control Systems named Vega with double link chain completely in stainless steel.

Voltage supply: from 100 to 240 Vac or 24 Vdc – Electronic limit stop; electronic stop in the intermediate positions in case of overload. Casing in painted die-cast aluminium with very small section (45x32 mm). Pivoting brackets included.

The 100-240 Vac version and the 24 Vdc version are conform to 2004/108/CE directives, the 100-240 Vac version is conform also to 2006/95/CE directive.

Electric chain actuator Ultraflex Control Systems named Synchro-Vega with double link chain completely in stainless steel. Suitable for mounting more than one actuators (max 4 actuators) on the same vent.

Voltage supply: 24 Vdc – Electronic limit stop; speed control; electronic stop in the intermediate positions in case of overload. Casing in painted die-cast aluminium with very small section (45x32 mm). Pivoting brackets included.

It is conform to 2004/108/CE directive.

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

# TWIN QUASAR and TWIN VEGA

Chain actuator with encoder

**Twin Quasar : Force 600 N - Maximum stroke 500 mm**

**Twin Vega : Force : 600 N - Maximum stroke 300 mm**



- Stainless steel double link chains
- The control electronic circuit synchronizes the speed of the motors through encoder.
- Anodized (silver) or painted (white or black) aluminium casing.
- The manual closing position regulation is not required: the stop in closing position is regulated by an electronic limit switch.
- Being provided with two chains, both TWIN QUASAR and TWIN VEGA are particularly suitable for very wide windows (minimum 1550 mm width). For a better aesthetic result, on request, it is possible to supply actuators with customized distance between the chains (minimum 720 mm for TWIN QUASAR and 480 mm for TWIN VEGA) in order to install an actuator as long as the window.
- Supplied with 1,5 m cable and pivoting brackets
- The installation without brackets is possible only if the height of the vent is at least 1500 mm for TWIN QUASAR and 900 mm for TWIN VEGA
- In case of vents with four-bar hinges, please contact our Technical Dpt. for choosing the suitable fixing bracket.
- If installed on PVC windows, the profile has to be reinforced.
- **TWIN QUASAR DC F-SIGNAL** and **TWIN VEGA DC F-SIGNAL** are special versions with opening and closing feedback signal (free potential, maintained contact), activated by the current limit.



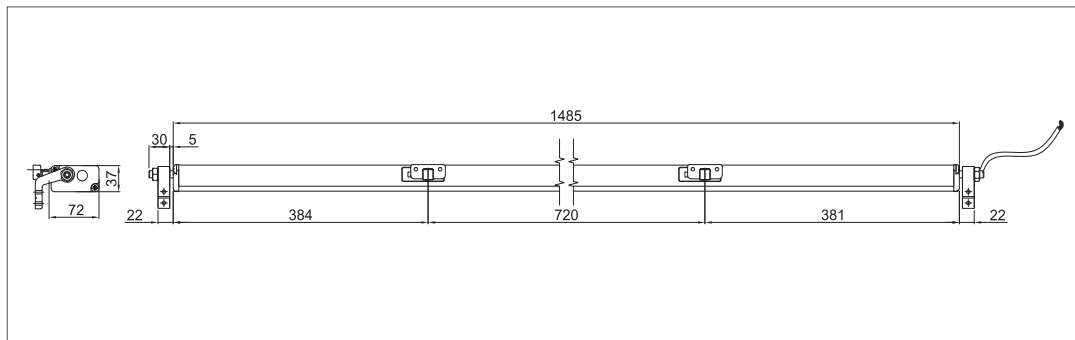
	<b>TWIN QUASAR AC</b>	<b>TWIN QUASAR DC</b>	<b>TWIN QUASAR DC F-SIGNAL</b>	<b>TWIN VEGA DC</b>	<b>TWIN VEGA DC F-SIGNAL</b>
VOLTAGE SUPPLY	100 Vac - 240 Vac	24 Vdc $\pm$ 10%	24 Vdc $\pm$ 10%	24 Vdc $\pm$ 10%	24 Vdc $\pm$ 10%
ELECTRIC CONNECTION	3 wires + earth	2 wires	2+3 wires	2 wires	2+3 wires
OPERATION		by polarity inversion	by polarity inversion	by polarity inversion	by polarity inversion
STROKE	500 mm	500 mm	500 mm	300 mm	300 mm
FORCE (push and pull action)	600 N	600 N	600 N	600 N	600 N
SPEED	~ 15 mm/s	~ 15 mm/s	~ 15 mm/s	~ 9 mm/s	~ 9 mm/s
CURRENT ABSORPTION (with max load)	0,8 A - 0,4 A	1,8 A	1,8 A	1,4 A	1,4 A
PARALLEL CONNECTION	YES	YES	YES	YES	YES
LIMIT STOP	Electronic	Electronic	Electronic	Electronic	Electronic
SAFETY STOP	Electronic	Electronic	Electronic	Electronic	Electronic
PROTECTION CLASS	IP 30	IP 30	IP 30	IP 30	IP 30

**Part No.**

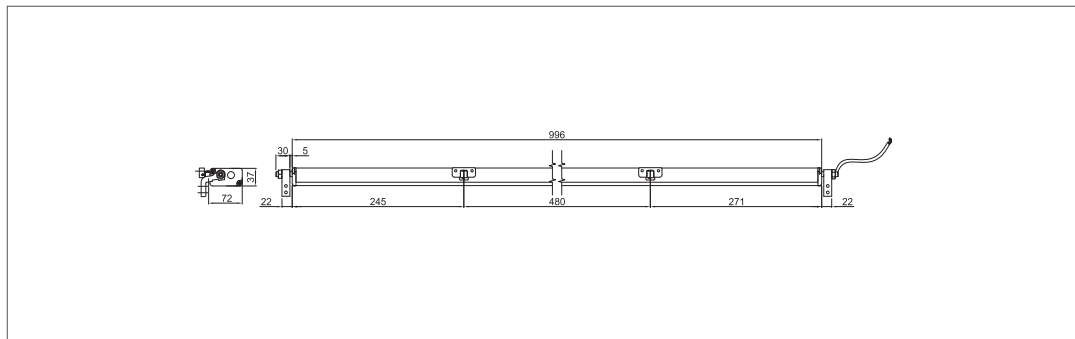
SILVER ANODIZED	40989D	40992G	41310C	41245P	41313F
BLACK RAL 9005	40990E	40993H	41311D	41246Q	41314G
WHITE RAL 9010	40991F	40994I	41312E	41247R	41315H



## TWIN QUASAR AND TWIN VEGA

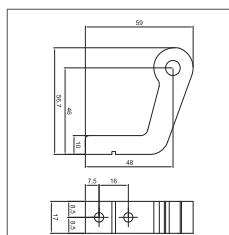


Twin Quasar dimensions

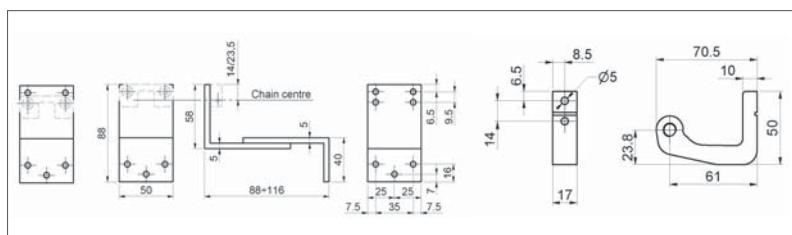


Twin Vega dimensions

## Accessories



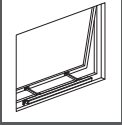
Pivoting brackets kit (2 pcs included)



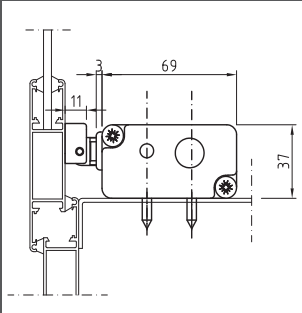
Brackets kit for bottom hinged windows:  
 GREY anodized aluminium part No 41101H  
 BLACK painted RAL 9005 part No 41102I  
 WHITE painted RAL 9010 part No 41103J



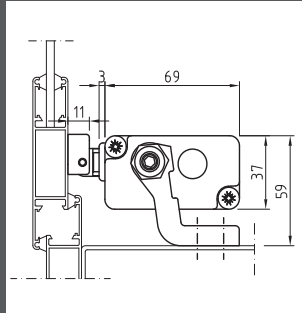
## Installation examples



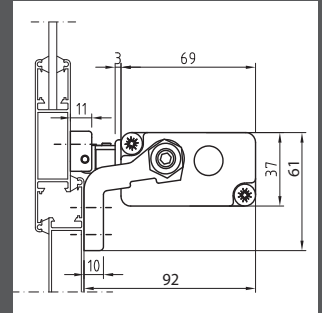
Top hinged window



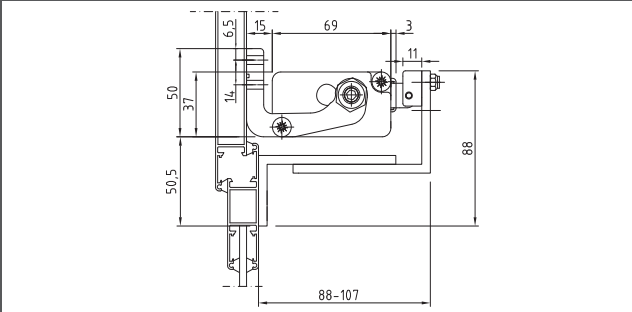
On windowsill without brackets



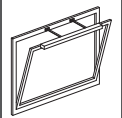
On the frame with pivoting brackets included



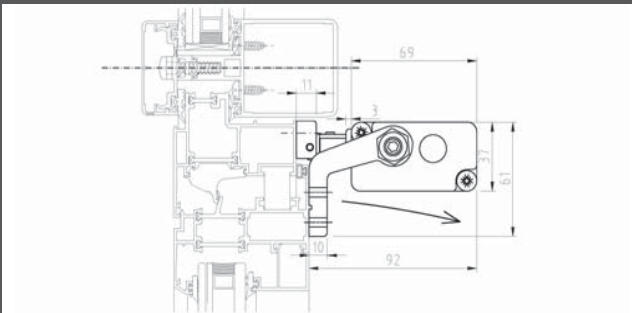
On windowsill with pivoting brackets included



On the frame with brackets for bottom hinged windows



Bottom hinged windows



On the vent with pivoting brackets included

### SPECIFICATION PROSPECT

Electric chain actuator Ultraflex Control System named Twin Quasar with two stainless steel double link chains and electronic circuit for the two internal motors control. Force 600 N. Stroke 500 mm. Voltage supply 100-240 vac or 24 Vdc. Electronic limit stop and electronic stop in the intermediate positions in case of overload. Pivoting brackets included. Parallel connection. Aluminium casing anodized or painted. Conform to 2006/95/CE and 2004/108/CE directives (the 24 Vdc version is conform to 2004/108/CE directive).

Electric chain actuator Ultraflex Control System named Twin Vega with two stainless steel double link chains and electronic circuit for the two internal motors control. Force 600 N. Stroke 300 mm. Voltage supply 24 Vdc. Electronic limit stop and electronic stop in the intermediate positions in case of overload. Pivoting brackets included. Parallel connection. Aluminium casing anodized or painted. Conform to 2004/108/CE directive.

# SUPERNOVA

Chain actuator – Force 300 N – Maximum stroke 400 mm



## PATENTED CHAIN ACTUATOR

- Double link chain that leads to better load resistance in case of top hinged windows, heavy windows or roof windows.
- Two available versions: **SUPERNOVA** with a stroke of 400 mm and **SUPERNOVA R** with a maximum stroke of 400mm, selectable from 0 to 300mm, by positioning a magnet on the chain during installation.
- Glass strengthened nylon casing.
- Double electric insulation actuator (no electric connection to earth is needed).
- Exclusive system for a quick and safe installation.
- Quick release system for an easy window cleaning.
- Supplied with electrical connector (no cable) and pivoting brackets suitable for low windows.
- In case of vents with four-bar hinges, please contact our Technical Dept. for choosing the suitable fixing brackets.
- End stroke feedback signal in closing position.



VOLTAGE SUPPLY	<b>SUPERNOVA</b> 230 Vac 50/60 Hz	<b>SUPERNOVA R</b> 230 Vac 50/60 Hz
ELECTRIC CONNECTION	3 wires (*)	3 wires (*)
MAXIMUM STROKE	400 mm	400 mm: adjustable from 0 to 300 mm
FORCE	300 N (**)	300 N (**)
SPEED	~ 30 mm/s	~ 30 mm/s
CURRENT ABSORPTION (with max load)	0,8 A	0,8 A
PARALLEL CONNECTION	YES	YES
LIMIT STOP	Micro switches	Micro switches/Hall sensor
SAFETY STOP	Thermic	Thermic
PROTECTION CLASS	IP 20	IP 20
<b>Part No.</b>		
GREY	40986A	41322O
BLACK	40987B	41323P
WHITE	40988C	41324Q

(\*) Double electric insulation actuator: no electric connection to earth is needed

(\*\*) In case of push action and full stroke, maximum force is intended for short period only.



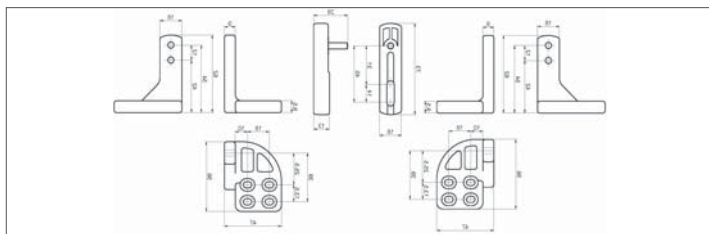
**Accessories**



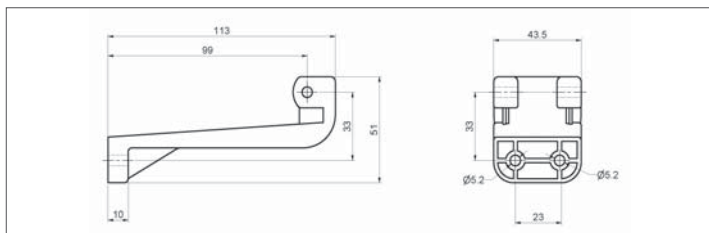
Electrical connector included (no cable)



Spacer for chain connector, included



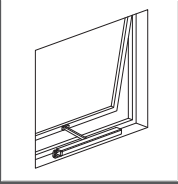
Fixing brackets, included



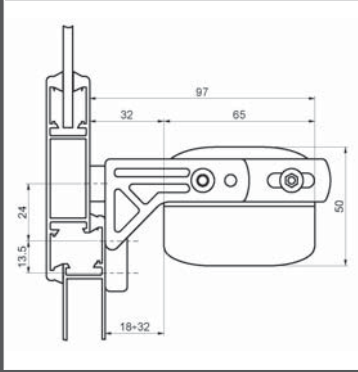
Bottom hinged window plastic bracket part No. 40997L, to be ordered separately



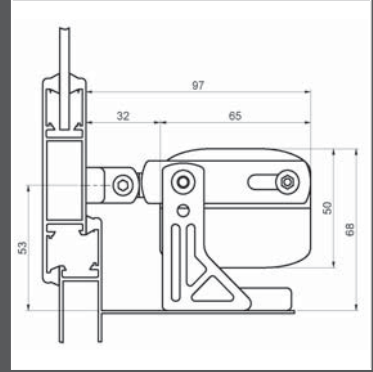
## Installation examples



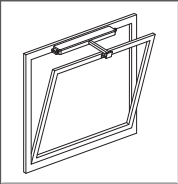
Top hinged windows



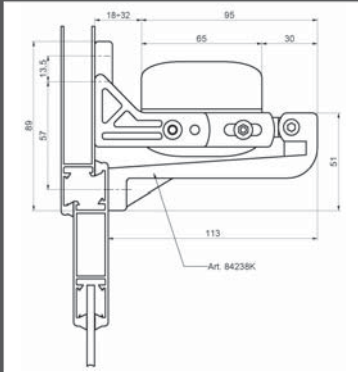
On the frame with pivoting brackets included



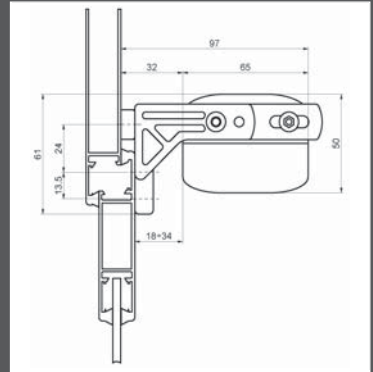
On the windowsill with pivoting brackets included



Bottom hinged windows

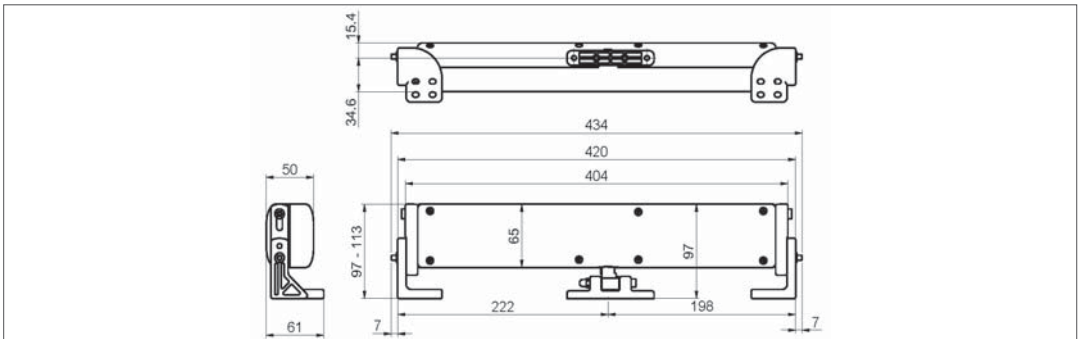


On the frame with pivoting brackets included and bottom hinged brackets pn. 40997L



On the vent with pivoting brackets included

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



Actuator dimensions

### SPECIFICATION PROSPECT

Double electric insulation chain actuator Ultraflex Control Systems named Supernova with double link in two versions: fixed stroke 400 mm or adjustable stroke 400 mm, selectable from 0 to 300 mm. Voltage supply: 230Vac . Parallel connection. Limit stop by micro switches and thermal protection. Plastic scratch resistant finish. Conform to 2006/95/LE LVD and 2004/108/CE EMC directives.

# SINTESI

Chain actuator - Force in pull action 300 N - Stroke 250-380 mm

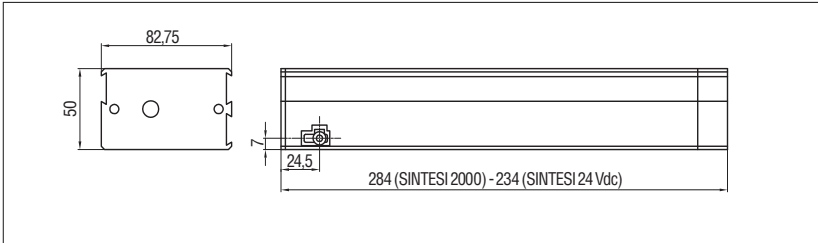


- Possibility of selecting two different strokes: 250 mm or 380 mm.
- Three dovetail slides for an easy installation; the sliding fixing bracket is included in the package.
- SINTESI 2000: Exclusive system for electrical connection. The special removable plug allows a very quick and easy connection. It is ideal for the final test of the actuators on the building site.
- Quick release system for an easy window cleaning.
- For installation on top hinged windows select the 250 mm stroke in order to better resist to the wind load.
- In case of vents with four-bar hinges, please contact our Technical Dpt. for choosing the suitable fixing brackets.
- Minimum window height: 500 mm with 250 mm stroke, 800 mm with 380 mm stroke. In case of lower windows install the pivoting bracket part No. 40560T.
- A longer eyelet is available on request in case of wooden or PVC windows.
- For installation of two SINTESI 2000 on the same vent it is available a control coupling unit 230 Vac, part. No. 41089V.

	<b>SINTESI 2000</b>	<b>SINTESI 24 V DC</b>
VOLTAGE SUPPLY	230 Vac $\pm$ 10%	24 Vdc $\pm$ 10%
ELECTRIC CONNECTION	3 wires + earth	2 wires
OPERATION		by polarity inversion
STROKE	Selectable 250 mm/380 mm	Selectable 250 mm/380 mm
FORCE IN PUSH ACTION	180 N (stroke 250 mm) 90 N (stroke 380 mm)	180 N (stroke 250 mm) 90 N (stroke 380 mm)
FORCE IN PULL ACTION	300 N	200 N
SPEED	~ 40 mm/s	~ 14 mm/s
ABSORPTION (with max load)	0,65 A	1 A
END STROKE POSITION SIGNAL	closing	opening/closing
PARALLEL CONNECTION	YES	YES
LIMIT STOP	Micro switches	Micro switches
SAFETY STOP	Thermic	Electronic
PROTECTION CLASS	IP 20	IP 20
<b>PART No.</b>		
SILVER ANODIZED	40313C	37127H
DARK BROWN ANODIZED	40314D	37128K
WHITE PAINTED RAL 9010	40316F	37129L





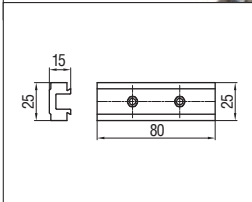


Actuator dimensions

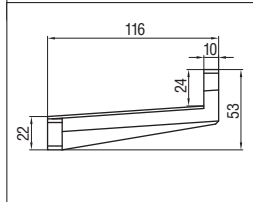
**SPECIFICATION PROSPECTS**

Electric chain actuator Ultraflex Control Systems named Sintesi with selectable stroke 250 mm or 380 mm. Voltage supply 230 Vac or 24 Vdc. Removable plug for electrical connection (230 Vac version). Parallel connection. Limit stop by micro switches, thermal protection in case of overload (230 Vac version) or electronic safety stop (24 Vdc version). Casing in silver anodized, dark brown anodized, white painted RAL 9010. The 230 Vac version and the 24 Vdc version are conform to 2004/108/CEE directive, the 230 Vac version is conform also to 2006/95/CE directive.

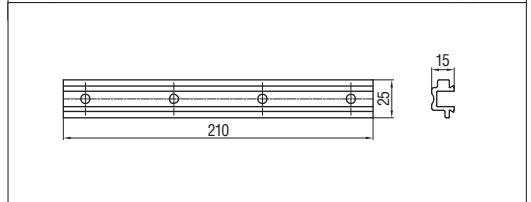
**Accessories**



Sliding plastic fixing bracket (included)



Bottom hinged window plastic bracket part No. 40625V

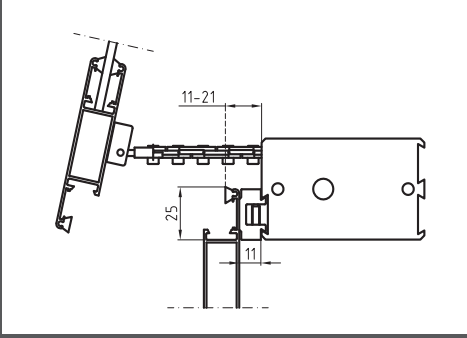


Long sliding aluminium bracket part No. 37021U for heavy windows and smoke and heat extraction installation

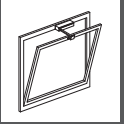
## Installation examples



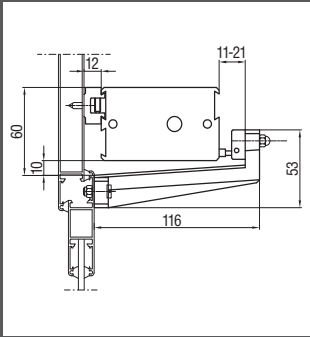
Top hinged windows



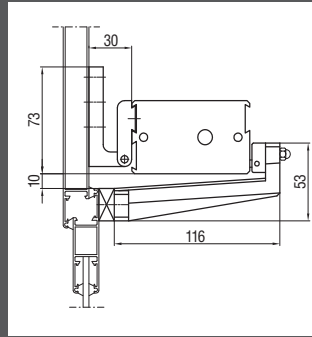
On the frame with the sliding fixing bracket included



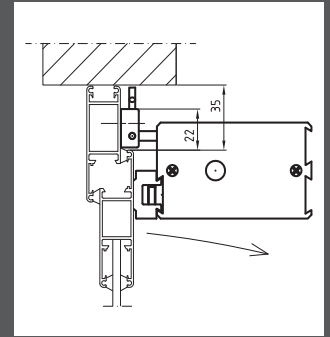
Bottom hinged windows



On the frame with the sliding fixing brackets included and the bottom hinged window bracket part No. 40625V



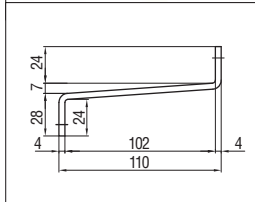
On the frame with the bottom hinged window brackets part No. 40625V and pivoting brackets part No. 40560T



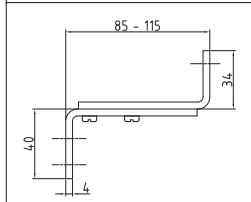
With sliding fixing bracket included

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

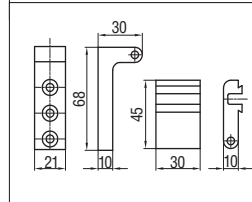
## Accessories



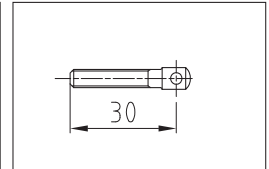
Bottom hinged window bracket part No. 401571 for smoke extraction installation and heavy windows



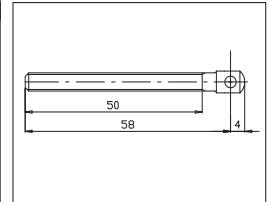
Adjustable aluminium bracket for bottom hinged window part No. 37493H



Aluminium dovetail pivoting bracket part No. 40560T



Included



Chain tie-rod for special installation (for example wood or PVC window frame) part No. 81222C

# SUPERMASTER

Chain actuator - Force in push action 400 N - Stroke 450-600-800 mm



- The longest stroke (800 mm) and the highest force (400 N) for a chain actuator: it solves the problems to operate very heavy vents and the necessity of wide opening without taking up space inside the room (800 mm only for bottom hinged windows).
- Double link chains.
- Red lamp placed on the actuator to signal the window closed position.
- Supplied with 2 m cable (450-600 mm), 3 m cable (800 mm).
- For windows without windowsill a fixing bracket (sliding within the dovetail slide) is available for an easy installation.
- Minimum window height: 900 mm for 450 mm stroke, 1200 mm for 600 mm stroke, 1600 mm for 800 mm stroke. In case of lower windows install the "pivoting brackets" part No. 40560T (see installation examples).
- In case of vents with four-bar hinges, please contact our Technical Dpt. for choosing the suitable fixing brackets.
- Available on request a coupling control box for two actuators on the same window.
- 24 Vcc version is suitable for installation on smoke and heat extraction systems in conformity to UNI EN 12101-2.
- (\*) SUPERMASTER 24 Vdc approved by TÜV test (Nr. KH99.8.2).



STROKE  
 VOLTAGE SUPPLY  
 ELECTRIC CONNECTION  
 OPERATION  
 FORCE (push action)  
 FORCE (pull action)  
 SPEED  
 CURRENT ABSORPTION (with max load)  
 PARALLEL CONNECTION  
 LIMIT STOP  
 END STROKE POSITION SIGNAL  
 SAFETY STOP  
 PROTECTION CLASS

**SUPERMASTER 230 V AC**

450 - 600 - 800 mm  
 230 Vac  $\pm$  10%  
 3 wires + earth  
 400 N (300 N for 800 mm stroke)  
 400 N  
 ~ 23 mm/s  
 0,8 A  
 YES  
 Micro switches  
 Thermic  
 IP 20

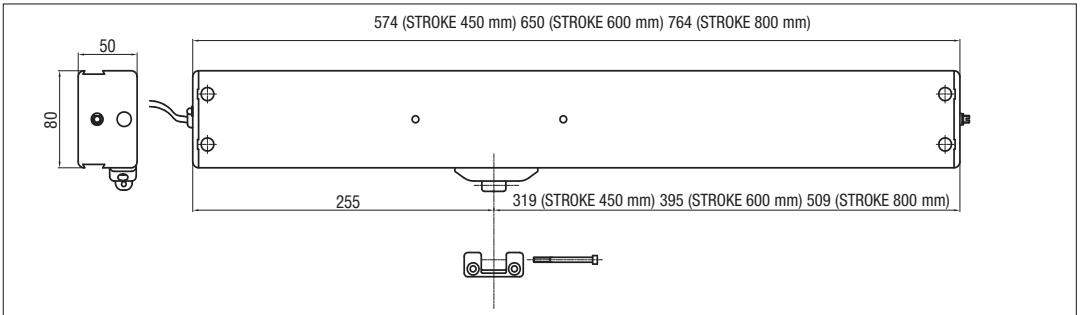
**SUPERMASTER 24 V DC \***

450 - 600 - 800 mm  
 24 Vdc  $\pm$  10%  
 3 wires  
 by polarity inversion  
 400 N (300 N for 800 mm stroke)  
 400 N  
 ~ 20 mm/s  
 2 A  
 YES  
 Micro switches  
 Opening/Closing  
 Electronic  
 IP 20

**PART No.**

**STROKE**  
 SILVER ALUMINIUM  
 DARK BROWN ANODIZED  
 WHITE PAINTED RAL 9010

	<b>450 mm</b>	<b>600 mm</b>	<b>800 mm</b>	<b>450 mm</b>	<b>600 mm</b>	<b>800mm</b>
	40462T	40452P	40518U	40506L	40461R	40469H
	40465Z	40464X	40753T	40509T	40467D	40470S
	40466B	40454U	40774O	40507N	40468F	40471U

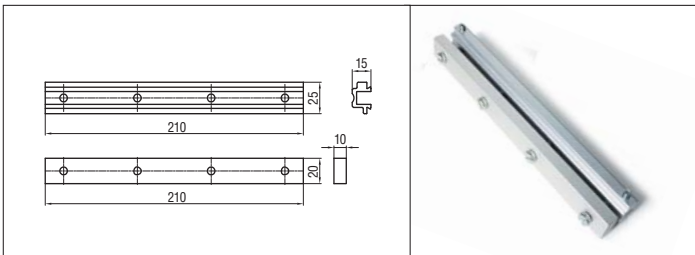


Actuators dimension

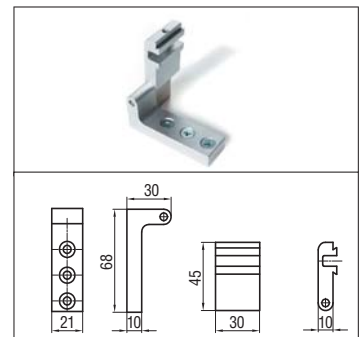
**SPECIFICATION PROSPECTS**

Electric chain actuator Ultraflex Control Systems named Supermaster with double link chain. Force 400 N. Strokes: 450-600-800 mm. Voltage supply 230 Vac or 24 Vdc. Limit stop by micro switches and thermal protection (230 Vac version) or electronic safety stop (24 Vdc version). Parallel connection. Casing in silver anodized or painted aluminium. The 230 Vac version and the 24 Vdc version are conform to 2004/108/CE directive, the 230 Vac version is also conform to 2006/95/CE directive.

**Accessories**

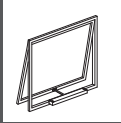


Sliding aluminium bracket with shim part No. 40460N

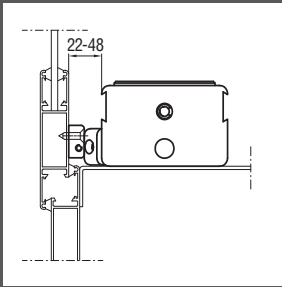


Pivoting brackets kit part No. 40560T

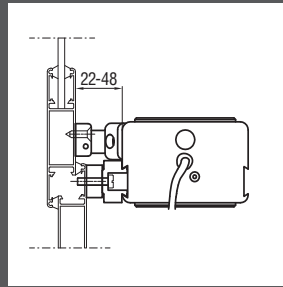
## Installation examples



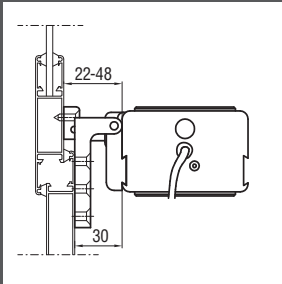
Top hinged windows



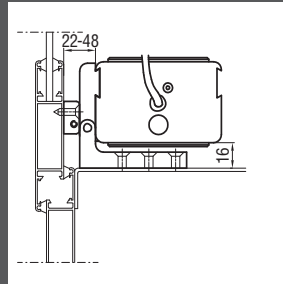
On windows with windowsill without brackets



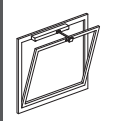
Without windowsill with bracket part No. 40460N



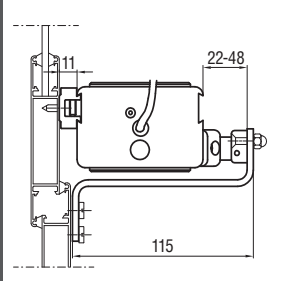
On the frame with pivoting brackets part No. 40560T



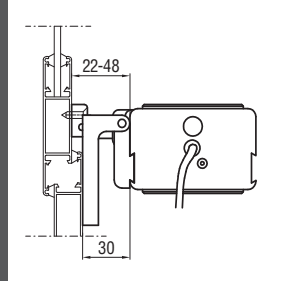
On windows with windowsill with pivoting brackets part No. 40560T



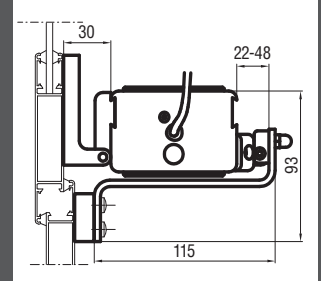
Bottom hinged windows




On the frame with bracket or bottom hinged window part No. 40472W



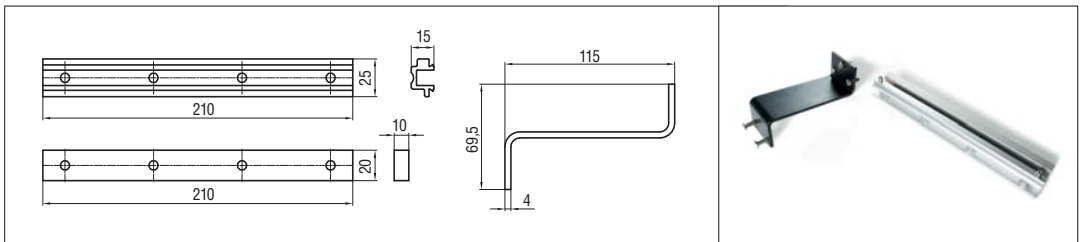
On the vent with the pivoting bracket part No. 40560T



On the frame with the pivoting bracket part No. 40560T and bracket part No. 40472W

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

## Accessories



Sliding aluminium steel bracket with shim and bottom hinged painted steel bracket part No. 40472W



# PLUSULTRA

## Window automation connected to multiple locking system

The **PlusUltra** system consists of a Quasar or Vega actuator and a patented mechanical device that controls the multiple locking hardware before and after the operation of the sash. The force to release the locking points (before opening) and engage them again (after complete closing) is supplied by the chain of the actuator in its first part of the travel.

### PLUSULTRA TURN

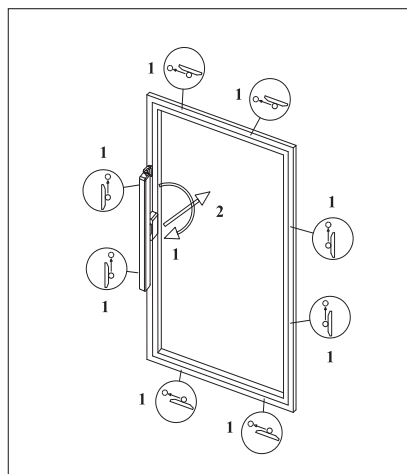
The patented mechanical device works through the gearbox integrated into the profile: that works on the bars of the multiple locking hardware: the transmission of the movement is made by 90° rotation of the standard pin for internal gear (7 x 7 mm)



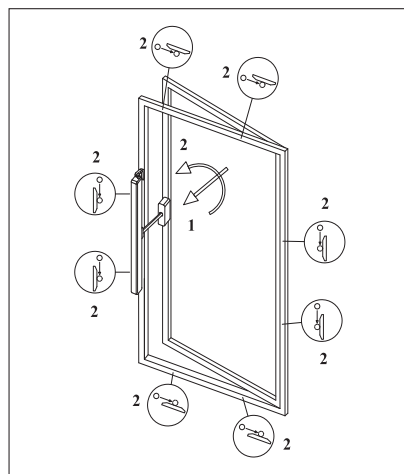
PLUSULTRA QUASAR AC-TURN GREY RAL9006 system composed by 1 Quasar AC + 1 PlusUltra Turn mechanical device  
 PLUSULTRA QUASAR DC-TURN GREY RAL9006 system composed by 1 Quasar DC + 1 PlusUltra Turn mechanical device  
 PLUSULTRA VEGA AC-TURN GREY RAL9006 system composed by 1 Vega AC + 1 PlusUltra Turn mechanical device  
 PLUSULTRA VEGA DC-TURN GREY RAL9006 system composed by 1 Vega DC + 1 PlusUltra Turn mechanical device  
 NOTE: The **PlusUltra** system is available also with QUASAR and VEGA in other colours and in SYNCHRO and F-SIGNAL versions.

### PART No.

40837TRN  
 40840TRN  
 40900TRN  
 40903TRN



Opening: **PlusUltra** system releases the locking points before the window opening



Closing: **PlusUltra** system engages the locking points after the complete window closing

The **PlusUltra** system is an easy and inexpensive solution for the automation of windows with multiple locking points, avoiding the installation of additional electric actuators (or electronic locks) and complicated systems of synchronization. The PlusUltra system works with every kind of window hardware with movement of the bars inferior to 22 mm; suitable for top or side hinged windows opening outward.

**PLUSULTRA PUSH**

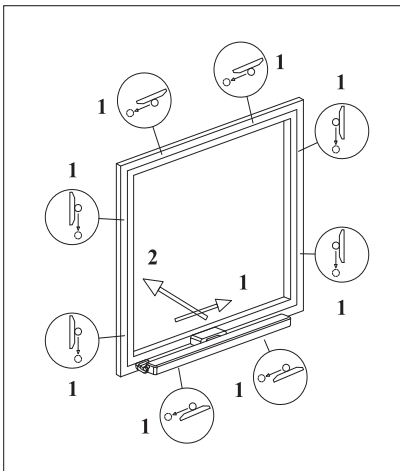
The patented mechanical device works directly on the bars of the multiple locking hardware.



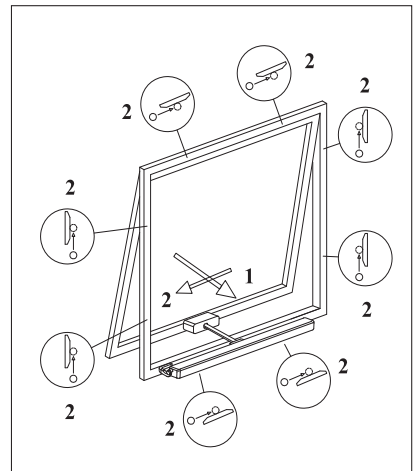
- PLUSULTRA QUASAR AC-PUSH GREY RAL9006 system composed by 1 Quasar AC + 1 PlusUltra Push mechanical device
- PLUSULTRA QUASAR DC-PUSH GREY RAL9006 system composed by 1 Quasar DC + 1 PlusUltra Push mechanical device
- PLUSULTRA VEGA AC-PUSH GREY RAL9006 system composed by 1 Vega AC + 1 PlusUltra Push mechanical device
- PLUSULTRA VEGA DC-PUSH GREY RAL9006 system composed by 1 Vega DC + 1 PlusUltra Push mechanical device

**PART No.**  
 40837PSH  
 40840PSH  
 40900PSH  
 40903PSH

NOTE: The **PlusUltra** system is available also with QUASAR and VEGA in other colours and in SYNCHRO and F-SIGNAL versions.



Opening: **PlusUltra** system releases the locking points before the window opening



Closing: **PlusUltra** system engages the locking points after the complete window closing

# MAX

Linear spindle actuator - Force in push action 450 N with stroke 180 mm and 300 mm and 350 N with stroke 500 mm



- High protection from atmospheric agents.
- Load transmission by rigid spindle.
- Equipped with an adjustable eyelet for an easier installation.
- Supplied with end bracket.
- Supplied with 1 m cable.
- To make the installation easy also on window with windowsills or other internal obstacles, the external side of the actuator is supplied with two dovetail guides in which a sliding bracket, to be ordered separately part No. 40536W, can slide for the whole length of the profile.
- Two holes for more versatile installation of the fixing brackets.
- A kit to reduce the stroke is available, part No. 40921N.
- MAX stroke 180mm has a reduced encumbrance to 300 mm total length.

VOLTAGE SUPPLY	230 Vac $\pm$ 10%
ELECTRIC CONNECTION	3 wires + earth
STROKE	180/300/500 mm
FORCE (push and pull action)	450 N (180 - 300 mm) / 350 N (500 mm)*
SPEED	~ 20 mm/s
CURRENT ABSORPTION (with max load)	0,7 A
PARALLEL CONNECTION	YES
LIMIT STOP	microswitches
SAFETY STOP	Thermic
IP PROTECTION	IP 65

PART No.	STROKE 180 mm	STROKE 300 mm	STROKE 500 mm
SILVER ANODIZED	41325R	40541N	40614P
DARK BROWN ANODIZED	41326S	40542R	40615S

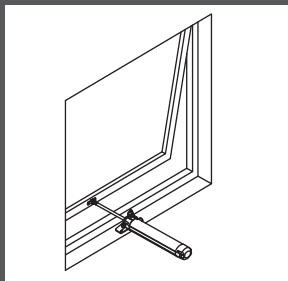
## SPECIFICATION PROSPECTS

Electric Linear actuator Ultraflex Control Systems named Max with load transmission by rigid spindle, stroke 180, 300 or 500 mm fixing end bracket included. Force 450 N (350 N for stroke 500). Protection class IP65, Voltage supply 230 Vac.

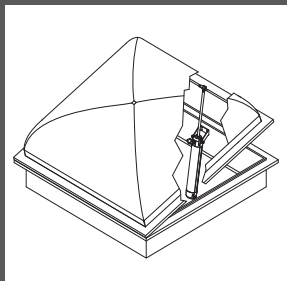
Limit stop by micro switches and thermal protection. Parallel connection. Casing in silver anodized, dark brown anodized. Conform to 2006/95/CE and 2004/108/CE directives.

\* in case of installation on top hinged windows, maximum force is intended for short period only.

## Installation examples



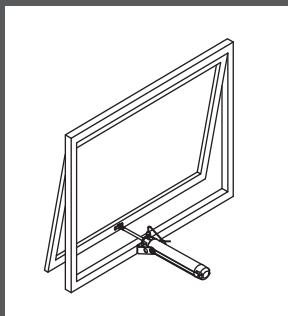
Installation on top hinged window with windowsill with fixing end bracket included



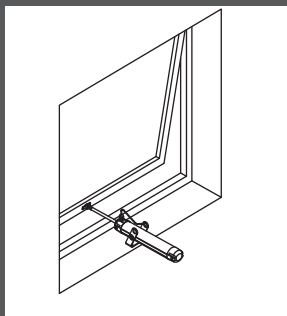
Installation on dome with fixing end bracket



Installation on dome with fixing end brackets included

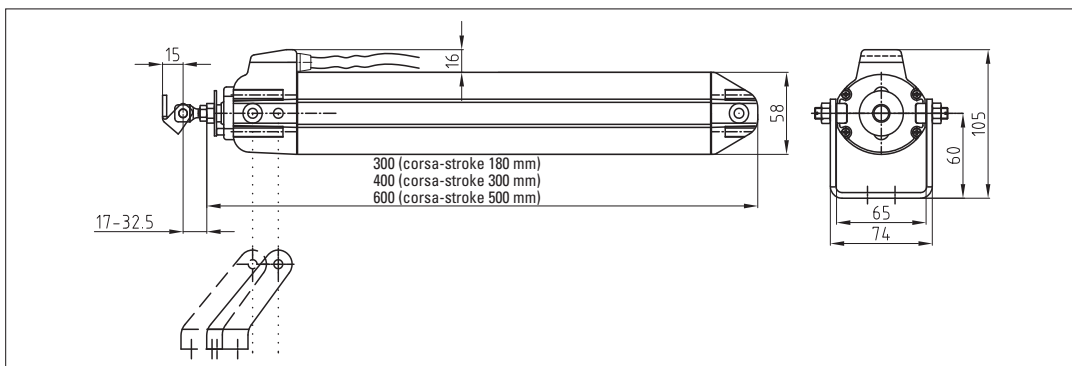


Installation on top hinged window without windowsill with fixing end bracket included or with sliding bracket part No. 40536W



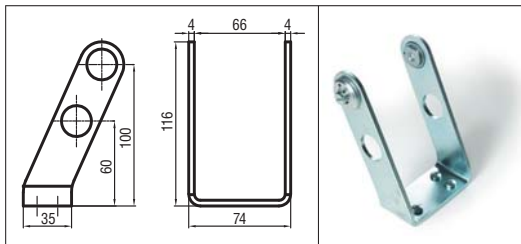
Installation on top hinged window with windowsill with sliding bracket part No. 40536W

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

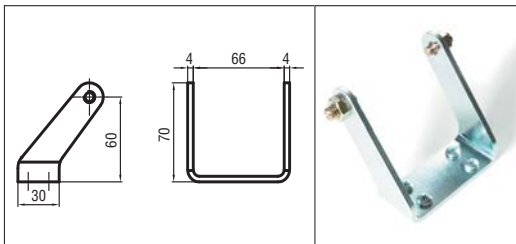


Actuators dimensions

## Accessories



Sliding steel brackets part No. 40536W



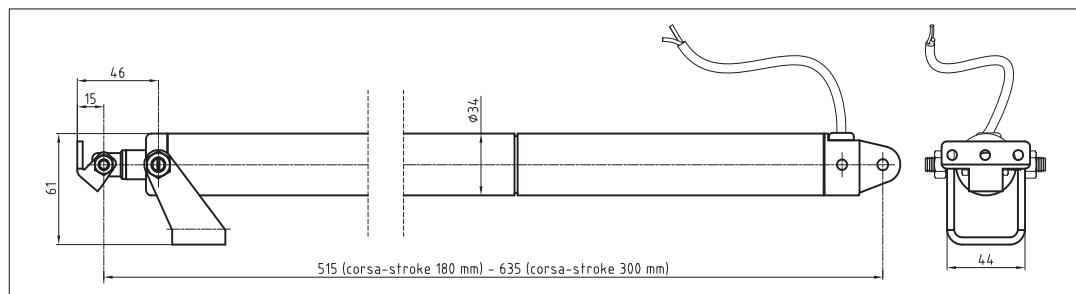
Fixing steel end bracket included

# ULYSSES

Linear spindle actuator - Force in push action 650 N - Stroke 180 and 300 mm



- Minimum size: external diameter 34 mm.  
Suitable to be put in the profile of the window.
- Load transmission by rigid spindle.
- Particularly suitable to operate sun blades.
- High protection from atmospheric agents (IP 65).
- Supplied with fixing bracket and connector. Front or back fixing possibility.
- Back bracket to be ordered separately part No. 35697P
- A kit to reduce the stroke is available part No. 40735V



Actuators dimensions

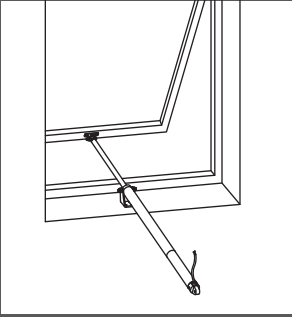
VOLTAGE SUPPLY	24 Vdc $\pm$ 10%
ELECTRIC CONNECTION	2 wires
OPERATION	by polarity inversion
STROKE	180/300 mm
FORCE (in push and pull action)	650 N
SPEED	6 mm/s
CURRENT ABSORPTION (with max load)	$\sim$ 1 A
PARALLEL CONNECTION	YES
LIMIT STOP	Electronic
PROTECTION CLASS	IP 65

**PART No.**  
SILVER ANODIZED

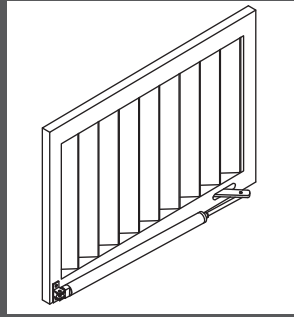
**STROKE 180 mm**  
40759Z

**STROKE 300 mm**  
40760A

## Installation examples



On top hinged window with windowsill with end bracket included



Installation on vertical sun blades with back fixing bracket part No. 35697P




On dome with fixing end bracket included



On horizontal louvre with back fixing



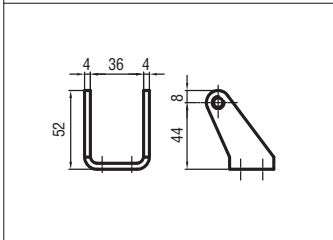
On horizontal louvre with back fixing bracket part No. 35697P

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

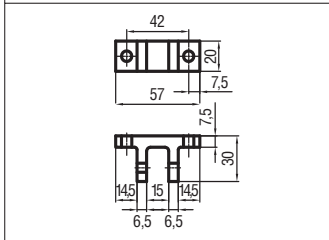
### SPECIFICATION PROSPECTS

Electric linear actuator Ultraflex Control Systems named Ulysses - Load transmission by rigid spindle, stroke 180 mm or 300 mm, external diameter 34 mm, fixing bracket included. Force 650 N. Protection class IP 65. Voltage supply 24 Vdc. Parallel connection. Electronic safety limit stop. Casing in silver anodized. Conform to 2004/108//CE directive.

### Accessories



Steel end bracket included



Aluminium back bracket part No. 35697P



Kit to reduce the stroke part No. 40735V



Galvanized steel connector kit to fix the spindle on the vent (included).

# FORCE

Linear spindle actuator - Force in push action 1000 N - Stroke 500, 750 and 1000 mm



- Load transmission by stainless steel spindle diameter 22 mm.
- High protection from atmospheric agent (IP 65).
- Supplied with fixing bracket and connector. Front or back fixing
- For a smaller dimension is available a back bracket to be ordered separately part No. 803821
- Warning: the actuator is provided with electronic limit stop. When the actuator is in stroke end positions, if in closing, do not repeat the closing operation, and vice versa in opening.

VOLTAGE SUPPLY	24 Vdc $\pm$ 10%
ELECTRIC CONNECTION	2 wires
OPERATION	by polarity inversion
STROKE	500/750/1000 mm
FORCE (in push and pull action)	1000 N
SPEED	~ 6 mm/s
CURRENT ABSORPTION( with max load)	~ 1 A
PARALLEL CONNECTION	YES
LIMIT STOP	Electronic
SAFETY STOP	Electronic
PROTECTION CLASS IP	65

**PART No.**  
SILVER ANODIZED

**STROKE 500 mm**  
40204U

**STROKE 750 mm**  
40103Q

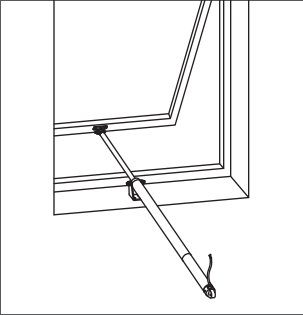
**STROKE 1000 mm**  
40236G

## SPECIFICATION PROSPECTS

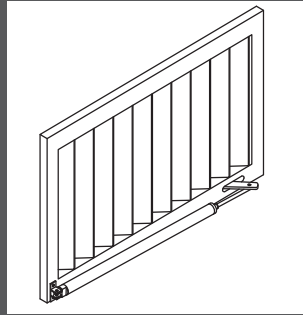
Electric linear actuator Ultraflex Control Systems named Force with load transmission by rigid stainless spindle  $\varnothing$  22 mm. Stroke 500, 750 - 1000 mm. Voltage supply: 24 Vdc. Force 1000 N. Class protection IP 65. Parallel connection. Electronic safety limit stop. Casing in silver anodized. Conform to 2004/108/CE directive.



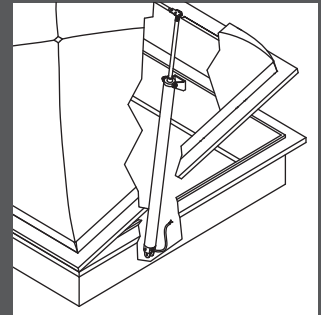
## Installation examples



Installation on top hinged window with windowsill with fixing end bracket included

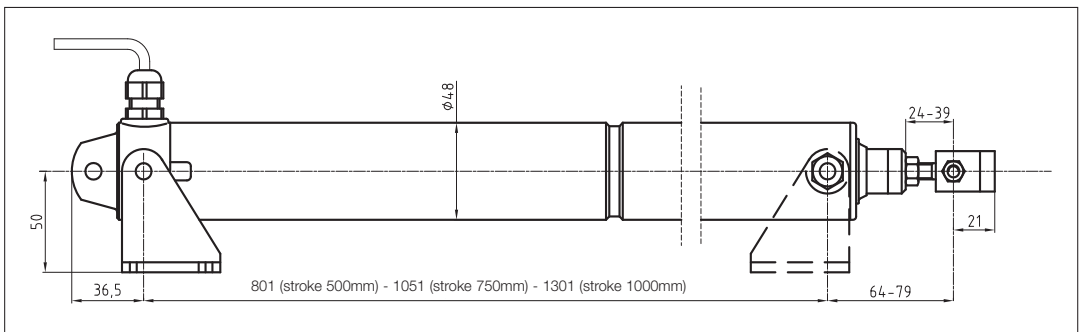


Installation on sun blades with back fixing through bracket included or through bracket part No. 803821 (for smaller dimension)



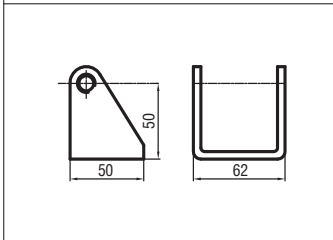
Installation on dome with fixing end bracket included

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

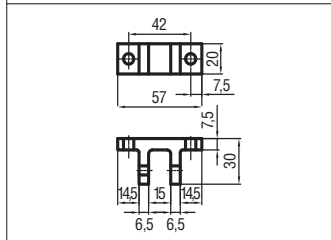


Actuator dimensions

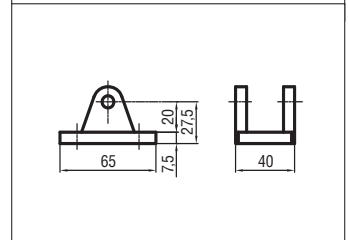
## Accessories



Aluminium end bracket (included)



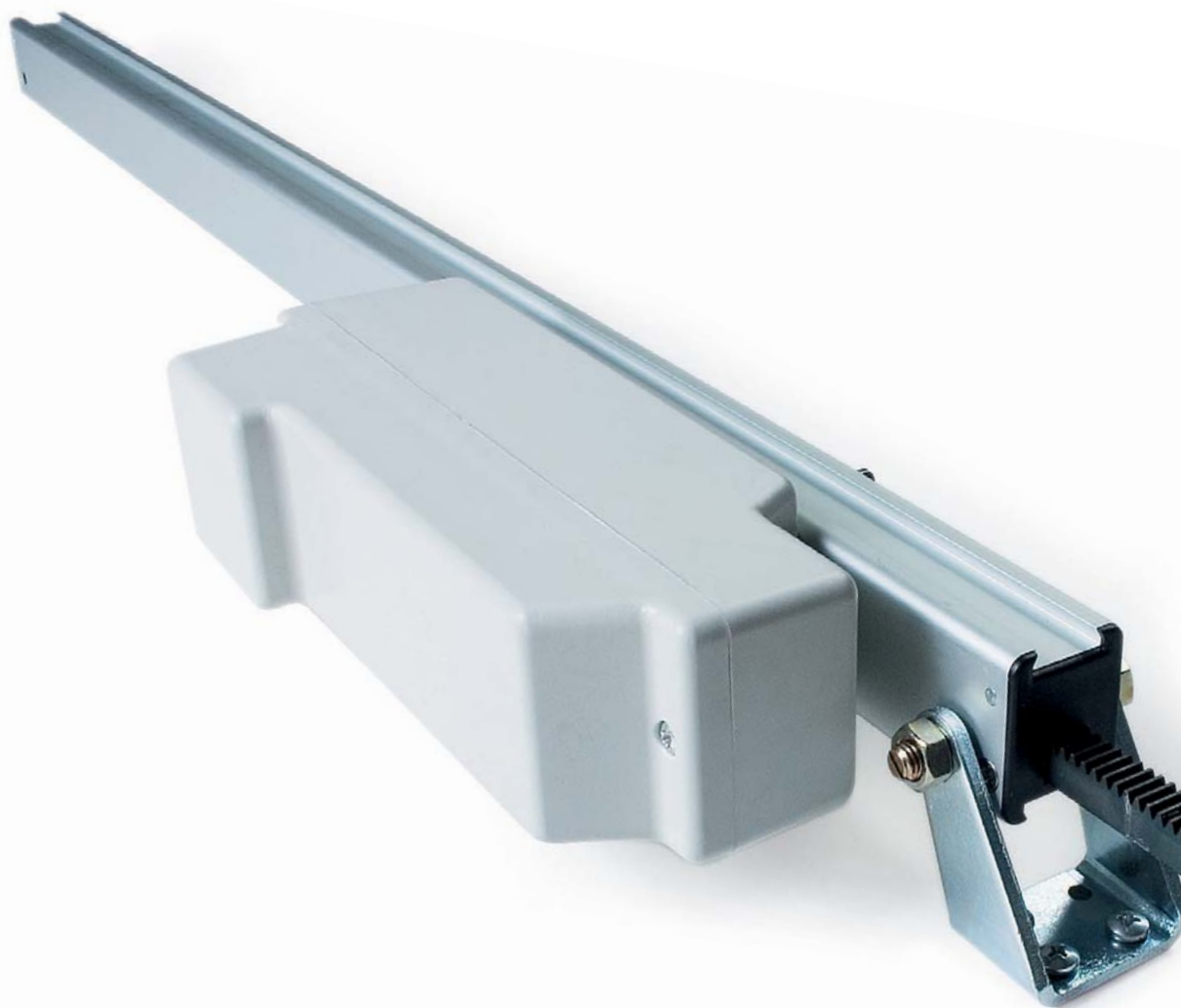
Connector kit to fix the spindle on the vent (included)



Aluminium back bracket part No. 803821

# RACK DUAL and DOUBLE RACK

Linear rack actuators - Force in push action 650/1500 N - Stroke 180, 350, 550, 750 and 1000 mm



- 10 mm square rack transmission for stroke 180 mm, 350 mm, 550 mm and 12 mm square rack transmission for stroke 750 mm e 1000 mm.
- Supplied with 1,5 m cable.
- Available end brackets or sliding brackets (to be ordered separately); the dovetail slide allows the fixing on the whole length of the rack actuator.
- 24 Vdc version is suitable for installation on smoke and heat extraction systems in conformity to UNI EN 12101-2.
- (\*) RACK 24 Vdc approved by **Istituto Giordano** (test report 243341)

## MULTIPLE SYSTEMS

- To guarantee more push points on the same vent the rack actuator can be used either in the Dual Rack version with rack groups or in the Double rack version with auxiliary rack actuators; these systems, since guarantee stability, are particularly adapt to open domes and very large top hinged windows.
- **Dual Rack:** Force 650 N (230 Vac) - 750 N (24 Vdc) For each system assembly are necessary 1 Rack actuator, 1 Rack group, 1 connecting rod and 2 end brackets (part No. 40234E see following accessories)
- **Double Rack:** Force 1300 N (230 Vac) - 1500 N (24 Vdc) For each system are necessary 1 Rack actuator, 1 Auxiliary Rack actuator in parallel connection, 1 connecting rod, and 2 end brackets (part No. 40234E see following accessories)
- **Other multiple systems:**  
It is also available a rack group double pivot for 3 or more push - points systems.

VOLTAGE SUPPLY  
ELECTRIC CONNECTION  
OPERATION  
FORCE IN PUSH ACTION  
FORCE IN PULL ACTION  
SPEED  
CURRENT ABSORPTION (with max load)  
PARALLEL CONNECTION  
LIMIT STOP  
SAFETY STOP  
SIGNAL LIMIT STOP POSITION  
PROTECTION CLASS

**RACK 230 V AC**  
230 Vac  $\pm$  10%  
3 wires + earth

650 N  
350 N  
~ 8 mm/s  
0,1 A  
YES  
Electronic  
Electronic

IP 55

COLOUR

SILVER ANODIZED

**PART No.**

STROKE 180 mm	(A = 400 mm)	40209F
STROKE 350 mm	(A = 570 mm)	40211T
STROKE 550 mm	(A = 770 mm)	40213V
STROKE 750 mm	(A = 970 mm)	40789D
STROKE 1000 mm	(A = 1220 mm)	40790E

Note: A = lenght of the actuator  
(see next page)

**RACK 24 V DC \***  
24 Vdc  $\pm$  10%  
3 wires  
by polarity inversion  
750 N  
650 N  
~ 8 mm/s  
1 A  
YES  
Electronic  
Electronic  
open/close  
IP 55

SILVER ANODIZED

40400A  
40217D  
40219H  
40791F  
40792G

**Part. No**

STROKE 180 mm  
STROKE 350 mm  
STROKE 550 mm  
STROKE 750 mm  
STROKE 1000 mm

**RACK GROUP**

40223B  
40225D  
40227F  
40754U  
40755V

**RACK GROUP DOUBLE PIVOT**

40379W  
40380U  
40381V  
40851N  
40852O

**AUXILIARY RACK 230 VAC**

40631P  
40632S  
40633U  
40847J  
40848K

**AUXILIARY RACK 24 VDC**

40636A  
40637C  
40638E  
40849L  
40850M

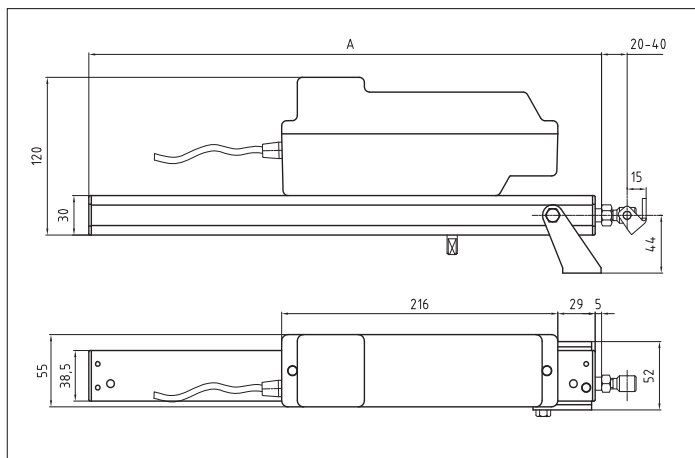
**CONNECTING ROD:**

Diameter 12 mm in stainless steel. Quick clutch: fixing accessories are not necessary.  
Available lengths (distance between racks) are:

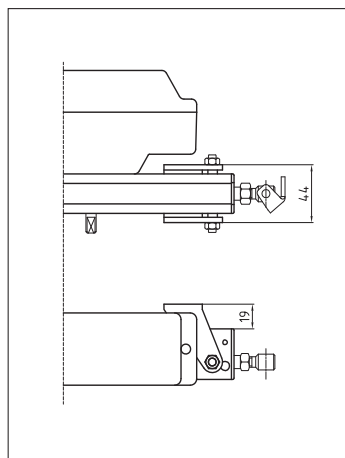
**PART No.**

1000 mm	40231B
1500 mm	40232C
2000 mm	40233D



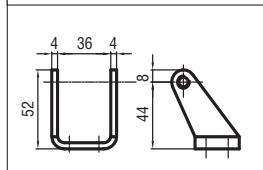
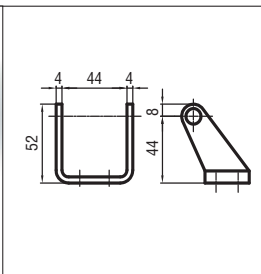


Rack actuator with sliding bracket part No. 40235F



Rack actuator with end bracket part No. 40234E

**Accessories**



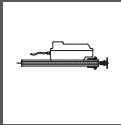
Galvanized steel sliding bracket part No. 40235F. It allows the fixing for the whole length of the actuator. To use only for single Rack.



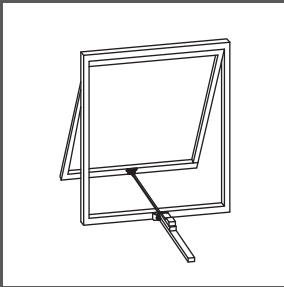
Galvanized steel connector kit to fix the rack on the vent.

Galvanized steel end bracket part No. 40234E. To use for Dual Rack and Double Rack system or single Rack.

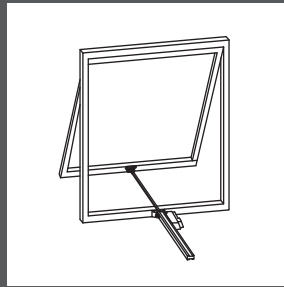
## Installation examples



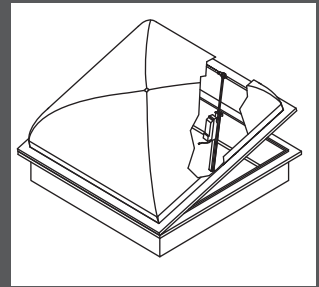
Single rack



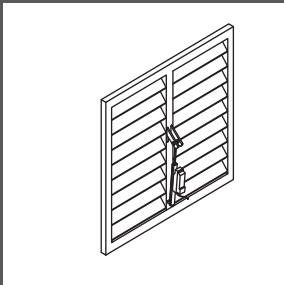
On top hinged window without windowsill with front fixing through sliding bracket part No. 40235F



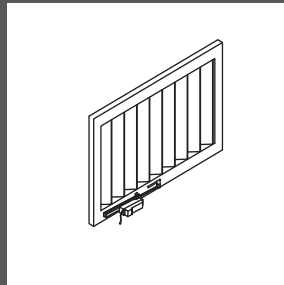
On top hinged window without windowsill with front fixing through end bracket part No. 40234E



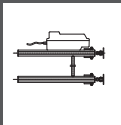
On domes with front fixing through sliding bracket part No. 40235F



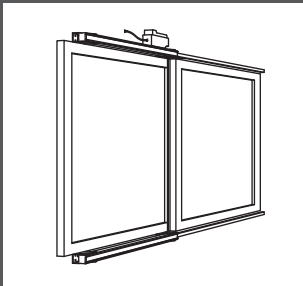
On horizontal louvers with back fixing through sliding bracket part No. 40235F



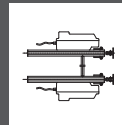
On vertical sun blades with back fixing through sliding bracket part No. 40235F



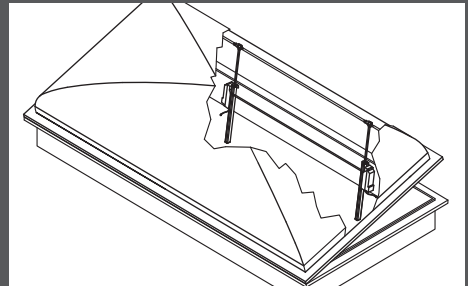
Dual Rack




Installation of the Dual Rack on sliding windows with end bracket part No. 40234E and connection of the two actuators through rod



Double Rack



Installation of the Double Rack on domes with end bracket part No. 40234E and connection of the two actuators through rod

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

### SPECIFICATION PROSPECTS

#### RACK

Electric linear actuator Ultraflex Control Systems. Available strokes 180, 350, 550, 750 or 1000 mm. Voltage supply: 230 Vac or 24 Vdc. Electronic safety limit stop and electronic stop in the intermediate positions. Parallel connection. Colour: silver anodized.

#### DUAL RACK

System with a second push point composed by one Rack Actuator, one Rack Group, and a connecting rod. Force 650 N/750 N

#### DOUBLE RACK

System with a second push point composed by one Rack Actuator, one auxiliary Rack and a connecting rod. Force 1300 N/1500 N. Systems with more than two push points can be obtained putting a Rack Group double pivot. Rack 230 Vac and Rack 24 Vdc are conform to 2004/108/CE directive, the 230 Vac version is also conform to 2006/95/CE directive.

# ENTRAPMENT PROTECTION SYSTEMS EPS

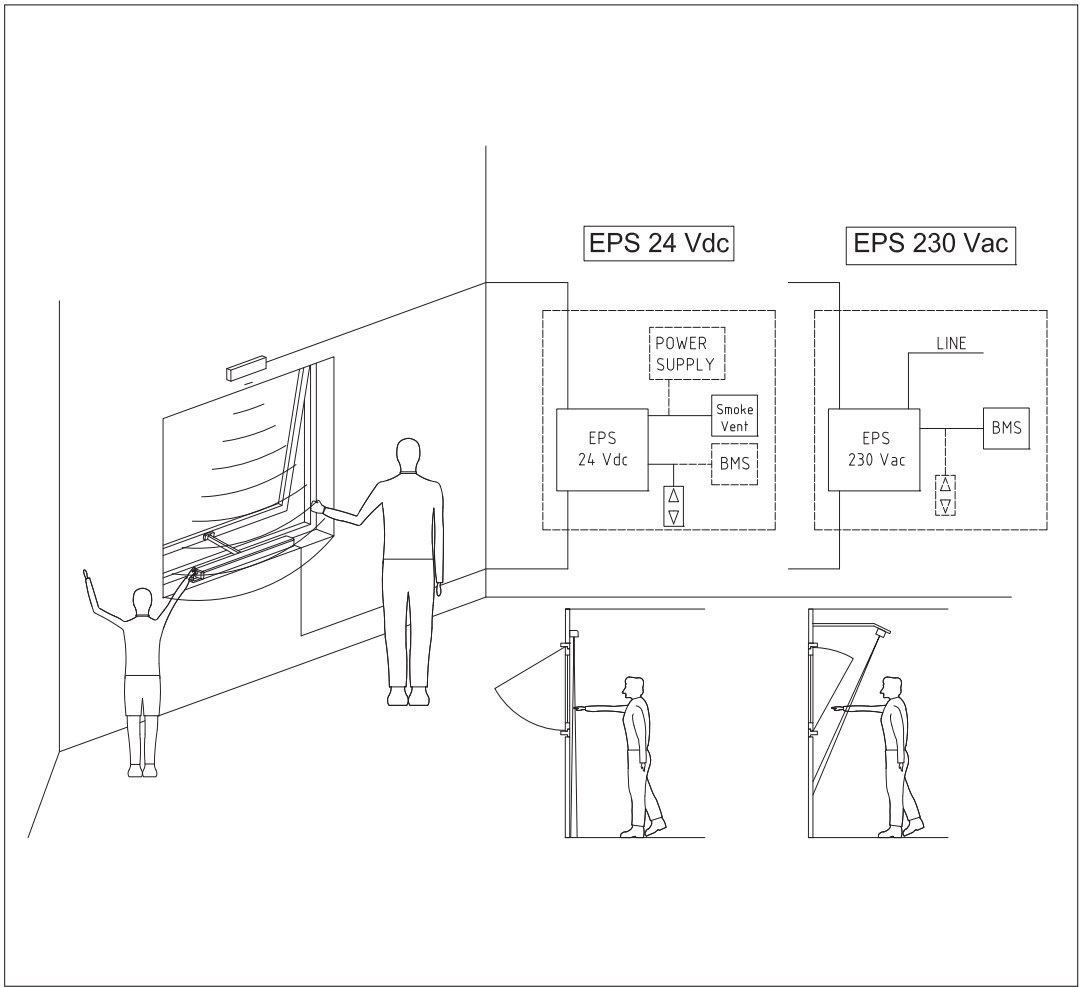
Power actuated window protection system



**EPS Entrapment Protection System** provides protection to people close to the automated window area, also for children or people with reduced attention and response capacity, above all in case of accessible windows or with automatic control without visual contact.

The infra-red active sensor, or other presence sensor, gives a signal to the control unit in case of foreign presence; the EPS system reverses the closing movement for 3 seconds to release possible objects or body parts entrapped in the window, then stops the power to the actuator.

EPS can also provide the visual and acoustic signal in case of intervention of the presence sensor; moreover it is possible to continue the closing action as soon as the foreign presence disappears. It is possible to connect more than one actuator and/or sensor to the control unit.



**EPS 24 Vdc**

PART No. 41342I  
Control unit for 24 Vdc actuators. Inputs: power supply or EFC control panel, push button or BMS system.  
Dimensions: 115 x 155 x 75 mm

**EPS 230 Vac**

PART No. 41341H  
Control unit for 230 Vdc actuators. Inputs: net line – push button or BMS system.  
Dimensions: 115 x 155 x 75 mm



**PRESENCE SENSOR**

PART No. 41343J  
The infra-red presence sensor gives a signal to the EPS control unit in case of foreign presence  
Dimensions: 221 X 63 X 30 mm

For information about EFC control panels see pages 53, 54 and 55, for CRM control panels see page 50, for power supply see page 52, for push button see page 51.



# CONTROL PANEL CRM

Control unit and meteorological detection system



Push button  
part No. 41013B



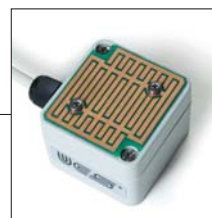
KP Push button  
part No. 40770K



RC Remote Control  
part No. 40771L



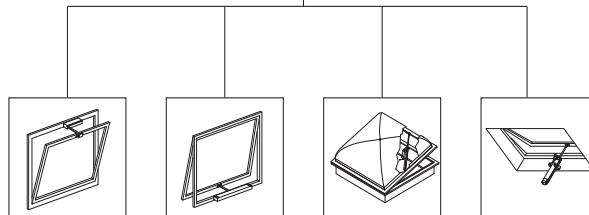
TH Thermostat  
part No. 40675K



RS Rain Sensor  
part No. 40450K



WS Wind detector  
part No. 37185V



Chain actuator

Chain actuator

Rack actuator

Spindle actuator

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

## CRM CONTROL PANEL

The meteorological CRM control panel, controls up to four actuators or group of actuators independently and, allows the automatic closing of the windows in case of rain or wind alarm conditions detected by the sensors or by the intervention of the thermostat.

INPUT VOLTAGE SUPPLY  
OUTPUT VOLTAGE SUPPLY  
OUTPUT (max load each output)

**CRM1**  
230 Vac  
24 Vdc  
4 for 1 A

**CRM2**  
230 Vac  
230 Vac  
4 for 1,7 A

Technical features of the connected actuators:

ELECTRIC CONNECTION  
OPERATION  
ABSORPTION (with max load)

2 wires  
by polarity inversion  
4 A

3 wires + earth  
7 A

**PART NO.**

40769J

40820I

**KP PUSH BUTTON**

PART No. 40770K

Using this push button it is possible to select and drive separately the four actuators or groups of actuators, or operate the four lines contemporary.

**RC REMOTE CONTROL**

PART No. 40771L

On the KP push button there is an infra-red receiver that allows the use of the RC remote control having the same functions of the push button. The remote control is supplied with a proper wall support.

**PUSH BUTTON**

PART No. 41013B

Moreover it is possible to operate manually all the actuators contemporary, connecting to the CRM a standard double push button with return spring. The closing and opening inputs are memorized for three minutes in order to allow also at the actuators with very long stroke to complete their movement.



The control panel is arranged for the connection of three sensors that control the weather events:

**TH THERMOSTAT**

PART No. 40675K

The thermostat, if present, has the priority on the manual control: if the temperature is superior to the set one, the windows open, if inferior the windows close; to disable the thermostat act on its selector.

Particularly suitable for conservatories and mansards. Built in on/off switch.

**RS RAIN SENSOR**

PART No. 40450K

In case of rain, the rain sensor sends the signal for window automatic closing that is indicated by a red LED in front of the control panel; it is possible to disconnect this sensor acting on the on/off switch on the front of the control panel. Further to the sensor intervention it is not possible, without disabling this sensor, to control the actuators until 8 min. after the end of the event.

A heating element prevents dew formation on the surface. Particularly suitable for roof windows and sloping top hinged windows.

**WS WIND DETECTOR**

PART No. 37185V

It emits a variable signal according to the wind intensity and acts on the control panel as the rain sensors do. With reference to the anemometer, it is possible to choose, using a rotating selector with 10 positions, at which wind speed the control panel operates the closing. Selecting 0 the anemometer is disabled while positions from 1 to 9 correspond to Beaufort wind force scale.



# CONTROL ACCESSORIES

## Accessories for electric actuators



### WEATHER CONTROL UNIT FOR 230 Vac ACTUATORS

PART No. 40490Y

The kit includes the operating device with anemometer and rain sensor that operates automatically in case of high wind intensity or rain. It controls the closing of one or more 230 Vac actuators, with a maximum total current absorption inferior to 5 A. A register permits to determine the wind sensibility.  
Dimensions: ø 150 mm x 40 h



### COUPLING CONTROL UNIT CP230

PART No. 41089V

It permits to control a couple of 230 Vac actuators (SUPERNOVA, SINTESI 2000, SUPERMASTER 230 Vac, MAX). In case of sudden failure, or blockage of any of the two actuators the other will also be stopped.



### RELAIS BOX (RB24-E)

PART No. 40995J

It allows to control 24 Vdc actuators (at polarity inversion) through a standard 3 wires operation (open-close-common) and a voltage supply up to 20 A current absorption. It can also be connected to control units UCS-CRM1 to expand the output load.  
Dimensions: mm 199x99x50.



### POWER SUPPLY UNIT 3 A

PART No. 40830S

It is provided with 24 Vdc power supply by 4 non stabilized outputs up to 3 A nominal current absorption.  
Input voltage supply:  
230 Vac ± 10%  
Dimensions: mm 110x70x188



### SWITCHING POWER SUPPLY 6,3 A

PART No. 40775P

It is provided with 24 Vdc power supply by 2 stabilized outputs up to 3 A nominal current absorption.  
Input voltage supply:  
85÷264 Vac  
Dimensions: mm 199x99x50



### SWITCHING POWER SUPPLY 8,4 A

PART No. 40893D

It is provided with 24Vdc power supply by 2 stabilized outputs up to 8,4 A nominal current absorption.  
Input voltage supply: 85÷264 Vac. Dimensions: mm 199x99x50

### SWITCHING POWER SUPPLY 20 A

PART No. 40894E

It is provided with 24Vdc power supply by 3 stabilized outputs up to 20 A nominal current absorption.  
Input voltage supply: 88÷264 Vac. Dimensions: mm 185x120x92. Predisposed for remote control On-Off.



### FLUSH MOUNT DOUBLE PUSH BUTTON

PART No. 41013B

For all the actuators with 3 wires operation.

### FLUSH MOUNT BIPOLAR PUSH BUTTON

PART No. 41014C

For the actuators with polarity inversion operation.



### BOX FOR FLUSH MOUNT PUSH BUTTON

PART No. 83475J

For flush mount push button.



### WALL PUSH BUTTON WITH TWO BUTTONS

PART No. 41019H


For all the actuators with 3 wires operation.  
Dimensions: mm 80x80x30



### SELF FED PUSH BUTTON 230 Vac / 24 Vdc

PART No. 40399H

It can feed and operate 24 Vdc actuators with a current absorption up to 1 A, two wires and polarity inversion operation.

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

# EFC CONTROL PANEL 4A

Electric systems for smoke and heat extraction



Optical smoke detector  
part No. 36418Q



Ventilation push button  
part No. 41013B



Acoustic alarm device  
part No. 40892C



HE 075  
Emergency push button  
part No. 40564B



Quasar 24 Vdc



Twin Quasar  
Twin Vega



Vega 24 Vdc



SuperMaster 24 Vdc



Rack 24 Vdc



Force



Ulysses

Our electric system for smoke and heat extraction are extremely versatile: they allow the single window or more windows control or the smoke and heat extraction in case of fire, always enabling daily ventilation. A wide range of control panels, detectors, electric linear spindle or rack actuators, electric chain actuators and any other accessory is available for the system installation.

## EFC CONTROL PANEL 4 A - PART NO. 40730Q

The EFC control panel, provided with booster batteries, allows to control the windows opening or closing by 24 Vdc actuators.

Opening for smoke extraction is controlled by a smoke detector or an emergency push button.

The control panel allows also the manual control of the windows for ventilation: two groups of 2 A each.

The actuators are fed directly by a power supply unit; batteries are used in emergency case only.

Control, alarm, or voltage supply failure of the EFC control panel are signalled both on the front of the control panel and on the emergency push button HE 075 part No. 40564B.

This panel can be linked to building management systems (BMS) for "free potential - normally closed" inputs.



VOLTAGE SUPPLY: 230 Vac

OUTPUT: 24 Vcc with polarity inversion

NOMINAL CURRENT: 4 A (maximum current absorption of the connected actuators)

## BATTERIES FOR EFC 4 A - PART NO. 40911V

Spare part for EFC 4 A control panel formed by two batteries of 12V, 4 Ah.

See page 55 for other accessories.

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

# EFC CONTROL PANEL 10-20 A

Electric systems for smoke and heat extraction and for meteorological detection

TH Thermostat  
part No. 40675K



RS Rain sensor  
part No. 40450K



WS Wind detector  
part No. 37185V



Optical smoke detector  
part No. 36418Q



HE 075  
Emergency push button  
part No. 40564B



Acoustic alarm device  
part No. 40892C



Ventilation push button  
part No. 41013B



Quasar 24 Vdc



Twin Quasar  
Twin Vega



Vega 24 Vdc



SuperMaster 24 Vdc



Rack 24 Vdc




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Our electric systems for smoke and heat extraction are extremely versatile: they allow the single window or more windows control or the smoke and heat extraction in case of fire, always enabling daily ventilation. A wide range of control panels, detectors, electric linear spindle or rack actuators, electric chain actuators and any other accessory is available for the system installation.

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



#### EFC CONTROL PANEL 10-20 A

EFC 10A CONTROL PANEL - PART NO. 40731R

EFC 20A CONTROL PANEL - PART NO. 40732S

The EFC control panel, provided with booster batteries, allows to control the windows opening or closing by 24 Vdc actuators. Opening and closing operation can be controlled as follows:

- emergency, controlled by a smoke detector or an emergency push button.
- weather conditions, controlled by sensors as anemometer, thermostat and rain detector.

The control panel allows also the simultaneous manual control of the windows by specific push buttons. In the two different power sizes available, it is covered a very high number of actuators directly controlled by the control panel. The actuators are fed by batteries always connected to a battery charger. Control, alarm, or voltage supply failure of the EFC control panel are signalled by the emergency push button HE 075 part No. 40564B

This panel can be linked to Building Management Systems (BMS) for "free potential - normally closed" inputs.

VOLTAGE SUPPLY: 230 Vac

OUTPUT: 24 Vdc with polarity inversion

NOMINAL CURRENT: 10 A / 20 A models

(maximum current absorption of the connected actuators)

#### BATTERIES FOR EFC 10-20 A

PART NO. 40912W

Spare part for EFC 10-20 A control panel or for expansion module 20 A, formed by two pieces of 12 V, 7 Ah batteries.

#### EXPANSION MODULE 20 A

PART NO. 40786A

The expansion module, provided with booster batteries and controlled directly by the EFC control panel, allows to improve the number of actuators up to 20 A.



#### HE 075 EMERGENCY PUSH BUTTON

PART NO. 40564B

It's necessary to break the glass to operate it. Control signal through the green led. Alarm signal through the red led. Voltage supply failure through yellow led. Reset function.



#### ACOUSTIC ALARM DEVICE

PART NO. 40892C

Outward self-fed siren 24 V, stainless steel box with polycarbonate cover, sonorous power 115 dB, voltage supply 24 V - 2 A, battery 12 V, 2 Ah.

Dimensions: 236x280x99 mm



#### OPTICAL SMOKE DETECTOR

PART NO. 36418Q

Smoke detection by infrared light diffusion for Tyndall effect. It is certified according to the UNI EN 54 - 7/9 regulations. Alarm signal through the red led.

RESPONSE TIME 3 sec approx.

VOLTAGE SUPPLY 24 V (min. 10 V, max. 30 V)

TEMPERATURE RANGE -10° + 80° C

DEGREE OF HUMIDITY < 95%

MAX AIR SPEED 10 m/s

DETECTED SURFACE 40 m<sup>2</sup>

A frequent cleaning, especially in dusty environments, is recommended.

RAIN SENSOR (part No. 40450K), WIND SENSOR (part No. 37185V), THERMOSTAT (part No. 40675K) see page 51.

# PNEUMATIC CYLINDERS

Pneumatic systems for smoke and heat extraction



- The Redline cylinders are manufactured using corrosion-resistant materials.
- Suitable for smoke and heat exhaust systems according to the UNI EN 12101-2 standard.
- Double action cylinders, they can open and close.
- Provided with a mechanical locking device in the end stroke positions. It can be pneumatically or manually (pressing the corresponding end button) unlocked.
- On request (min. 50 pieces):
  - any intermediate stroke
  - rear feeding
  - cylinders without locking device
- Fixing brackets, accessories and connectors must be ordered separately
- The Redline cylinders can be used for ventilation where a compressed air system is available
- The installation of two cylinders on the same vent requires the version without locking device (stroke 500mm part No.40344H – stroke 700mm part No 40610F)

BORE	35 mm
ROD	Ø 12 stainless steel
MAX WORKING PRESSURE	20 bar
TEMPERATURE RANGE	- 30°+ 120°C
FEED	front
THRUST	1900 N a 20 bar
LOCK RESISTANCE	3000 N up to 300°C

**PART No.**

**STROKE 300 mm**  
40083L

**STROKE 500 mm**  
40085N

**STROKE 700 mm**  
40087P

**STROKE 1000 mm**  
40090K

## Accessories



### PIVOT NIPPLE WITH FLOW LIMITING DEVICE

PART NO. 40424I

It is necessary for the cylinder assembly with the bracket.

The flow limiting device allows to reduce the speed during the window opening.



### SYNERIZED FLOW LIMITING DEVICE

PART NO. 41225D

More effective than the standard device, where a more smooth opening is required. It can be installed on opening or closing side.



### ROTATING NIPPLE

PART NO. 40356N

It allows the ø 6x4 mm copper tube connection and is necessary. For the cylinder assembly with the bracket.

### NIPPLE WITH FLOW LIMITING DEVICE

PART NO. 36924K

The same as part No. 40356N but with flow limiting device.



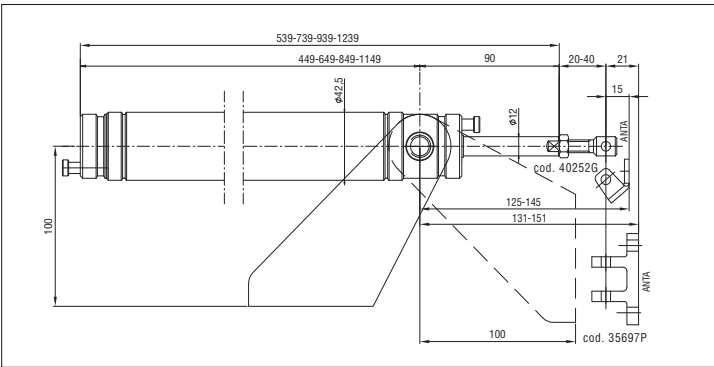
## Installation examples



Installation on top hinged window with connection to compressed air system



On dome with thermal valve

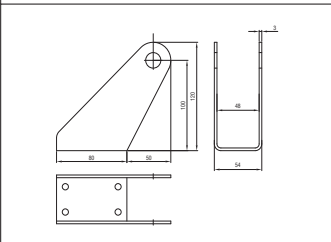


Actuators dimensions

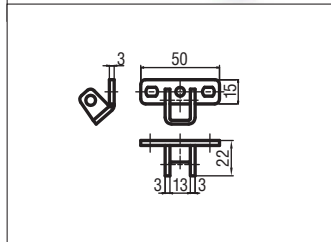
### SPECIFICATION PROSPECTS

Pneumatic cylinder Ultraflex Control Systems - Red Line, used in smoke and heat extraction systems according to UNI EN 12101-2 standard. Aluminium casing. The standard version is provided with mechanical locking device in the end stroke positions in order to keep the windows or domes open even without air pressure. It is possible the direct installation of the thermal valve.

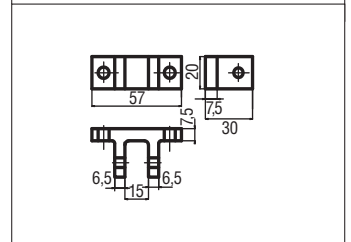
**⚠** The instructions for a safe installation are included in the section "SECURITY WARNINGS"



Aluminium front bracket part No. 356960  
It allows the fixing of the cylinder to the frame and the cylinder rotation during the opening phase.  
The bracket is connected to the cylinder by pivot or nipples.



Galvanized steel connector (cylinder-vent) for ventilation part No. 40252G



Aluminium connector (cylinder-vent) part No. 35697P



# VALVES AND ACCESSORIES



The valves pierce the CO<sub>2</sub> cartridge in response to a thermal or electric (when the pyrotechnic device is installed) signal. The CO<sub>2</sub> flows into the cylinder and causes the window opening.

Ultraflex Control Systems was in 1985 the first company in Italy starting the production of these emergency systems, contributing operatively and technically to carry on the experimental tests coordinated by the "National Center for Fire Prevention".

The Ultraflex Control Systems valves grant a safe operation in case of fire and have been tested by an authorized Institute according to the UNI EN 12101-2 standard. The valves are supplied with the 68°C (180°F) thermal bulb.

Available on request other temperatures calibrated thermal bulb. CO<sub>2</sub> cartridge are to be ordered separately.

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



## **THERMAL VALVE WITH THERMAL BULB**

PART No. 36751B

It is screwed directly to the cylinder (instead of one of the two nipples).

The pin pierces the CO<sub>2</sub> cartridge when the temperature reaches the fusible link set value (68°C).

The thermal valve is arranged for the pyrotechnic device application, also successively.



## **THERMAL VALVE WITH THERMAL BULB WITH 1/8" THREAD**

PART No. 40242E

Same features as thermal valve part No. 36751B: the 1/8" thread allows a direct connection to copper tubes by standard nipples (not supplied).



**THERMAL VALVE WITH SELECTOR**

PART NO. 36756G

It has the possibility to operate the cylinder by another energy supply such as a manual valves control box or a compressed air system.

It is supplied with connectors for the direct installation to cylinders and for connection to copper tubes.



**SELECTING VALVE**

PART NO. 36753D

It can be installed in any point of the system and allows to feed the cylinder by different energy supplies such as a manual valves control box or a compressed air system.

It is supplied with nipples for the copper tube connection.



**MICRO CYLINDER**

PART NO. 40932Y

It can be used for additional lock on the vent in case of installation of cylinders without lock.

1/8" input and output attacks. Box in aluminium and stainless steel rod ø 14

Dimensions: ø 38x126 mm.



**MANUAL VALVE FOR VENTILATION**

PART NO. 37878Y

Connected to a compressed air line, it allows the window opening and closing for daily ventilation.

The five ways valve with exhaust centres leaves the feeding ways free to enable the automatic operation in case of emergency.

It has 1/8" attacks and standard connectors are supplied for the 6x8 mm Rilsan tube.



**MANUAL VALVE CONTROL BOX**

It is the opening manual remote control. In case of fire for the operation it is necessary to break the glass and pull the lever down in order to obtain the punching of the CO<sub>2</sub> cartridge internally installed. It is in red painted metal and provided with a sealable lock to prevent possible tamperings. The cartridges are to be ordered separately, according to the needs.

Available versions

for cartridges from 20 up to 50g

for cartridges up to 500g

PART No. 36453R

PART No. 40389F



**CO<sub>2</sub> CARTRIDGES**

Standard sizes available.  
(coupling to thermal bulbs 68°)

20g PART NO. 41031V

30g PART NO. 56071L

50g PART NO. 56876X

75g PART NO. 56878B

100g PART NO. 57021C



**THERMAL BULBS**

Red: 68°C PART NO. 56901H

Green: 93°C PART NO. 58002C

Blue: 141°C PART NO. 59501R

# ELECTRIC ACCESSORIES

For pneumatic systems

The automatic smoke detection system consists in the electronic control panel and the accessories. The built-in floating batteries guarantee the system operation also in case of main supply failure.



## SINGLE ZONE ELECTRONIC CONTROL PANEL

PART NO. 36414K

The small size electronic control panel is provided with lock and floating battery and allows to connect:

- smoke and/or temperature detectors
- emergency push-buttons
- sirens and magnets

In case of alarm, the control panel sends a 24 Vdc signal to pyrotechnic devices or electro actuating devices, which are installed in the thermal valves.

VOLTAGE SUPPLY	230 Vac
OUTPUT	24 Vdc/1,1 A
SIREN OUTPUT	24 Vdc/0,5 mA
AUTONOMY	2 hours with standard floating battery
SMOKE/TEMPERATURE DETECTORS	no. 10 x 2 lines max 20 sensor

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



## PYROTECHNIC DEVICE

PART NO. 36754E

It is a small piston containing a primer. It can be applied to the thermal valve or to the thermal valve with selector. The detonation occurs when it is fed at 12 V or 24 V; its effect pushes a piston against the thermal bulb, breaking it.



## ELECTRO ACTUATING DEVICE

PART NO. 41093Z

It has to be applied on the thermal valve. When fed at 24Vdc it releases the thermal bulb allowing the thermal valve to puncture the CO2 cartridge in order to open the cylinder. It is reusable, it has the same function of the pyrotechnic device but has not to be discarded after use, the thermal bulb as well will not be lost (except after a real fire situation: in this case the whole system must be renewed).



Pyrotechnic device together with thermal valve and cartridge.



## EMERGENCY PUSH BUTTON

PART NO. 37170K

To operate the emergency push-button it is necessary to break the non-shattering glass. It is provided with a test device.

The box is red. Pyrotechnic Device together with thermal IP 40 protection class, manufactured valve and cartridge according to the BS5839 regulations part II (CEN-En 54 part IV).



## OPTICAL SMOKE DETECTOR

PART NO. 36418Q

Smoke detection by infrared light diffusion for Tyndall effect. It is certified according to the UNI EN 54-7/9.

ALARM SIGNAL	through the red LED (light emitting diode).
RESPONS TIME	3 sec. approx.
VOLTAGE SUPPLY	24 V (min. 10 V, max. 30 V)
TEMPERATURE RANGE	-10° + 80° C
DEGREE OF HUMIDITY	< 95%
MAX AIR SPEED	10 m/s
DETECTED SURFACE	40 m <sup>2</sup>

A frequent cleaning, especially in dusty environment, is recommended.

**SPECIFICATION PROSPECTS**

The system for smoke and heat extraction with pneumatic cylinders must be completed with the following component according to the different kinds of installation:

Single System with automatic opening at 68° C:

- Thermal valve with CO<sub>2</sub> cartridge and thermal bulb set at 68° C

System with automatic opening at 68° C and ventilation control:

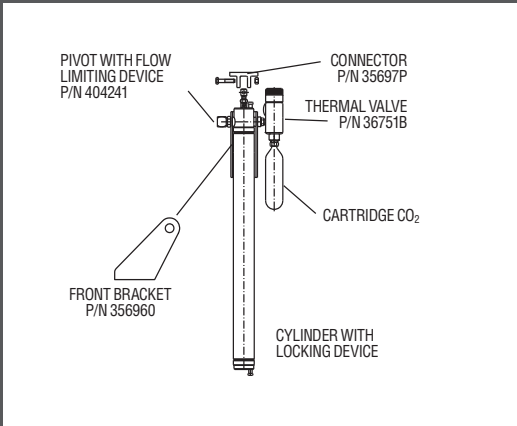
- Thermal valve with CO<sub>2</sub> cartridge and thermal bulb set at 68° C
- Selecting valve
- Manual valve for ventilation to be connected to a compressed air system.

System with automatic opening at 68° C and smoke detector:

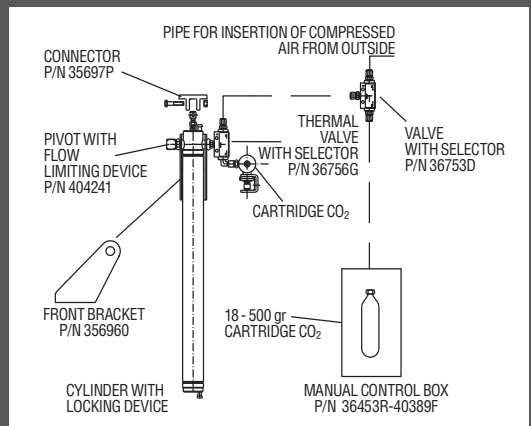
- Thermal valve with CO<sub>2</sub> cartridge and thermal bulb set at 68° C
- Pyrotechnic device for breaking the thermal bulb.

- Single zone electronic control panel with floating batteries and lock, suitable to be connected to optical smoke detectors, push buttons and sirens, emergency push buttons.

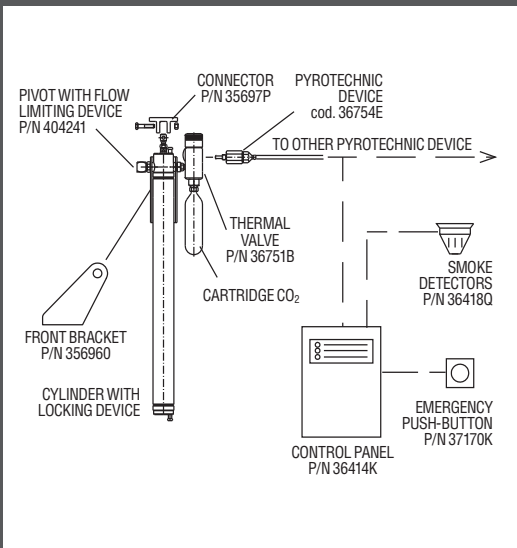
**Installation examples**



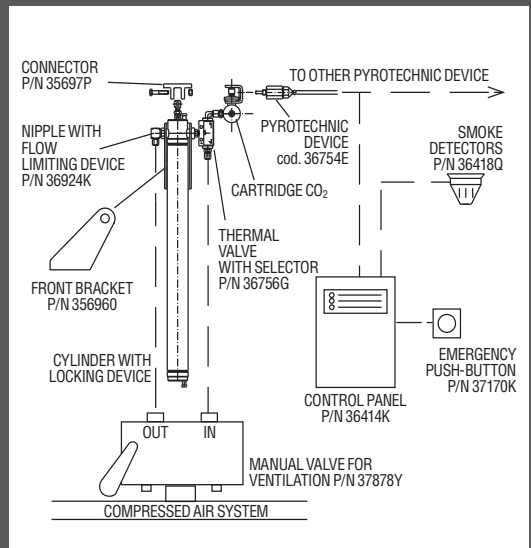
Single system with automatic opening at 68° C



Single system with automatic opening at 68° C and manual control box and opening from outside for maintenance



System with automatic opening at 68° C and smoke detection



System with automatic opening at 68° C smoke detection and ventilation control

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

# 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 64)
- TRANSMISSION ELEMENTS: cable, conduit, connectors, saddles, lock springs, end plugs (see page 65)
- OPENING MECHANISM, chain openers, forks and locking openers for bottom hinged windows (see page 65-68)

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 69-71).

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 65).

**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**

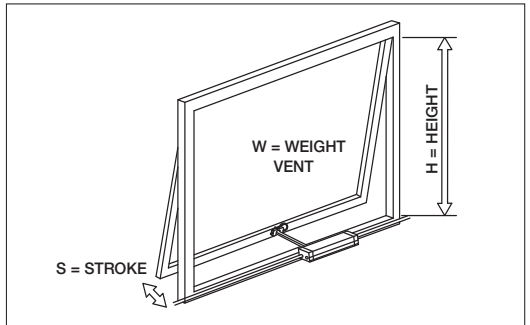
WINDOW TYPE	ADVISED MECHANISM	
	Chain mechanism	Cat
	Chain mechanism	Cat
	Chain mechanism	Locking opener

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																					
	2																					
	3																					
	4																					
	5																					
	6																					
	7																					
1151 - 1400	1																					
	2																					
	3																					
	4																					
	5																					
	6																					
	7																					
1401 - 1600	1																					
	2																					
	3																					
	4																					
	5																					
	6																					
	7																					

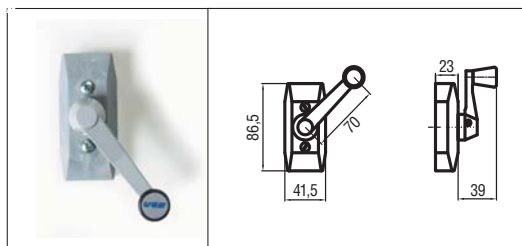
S = Stroke 380 mm

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

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

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

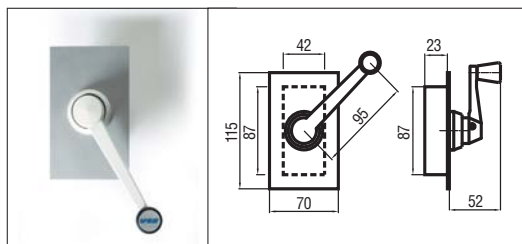
# CONTROL OPERATORS TRANSMISSION



## FLAT OPERATOR

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

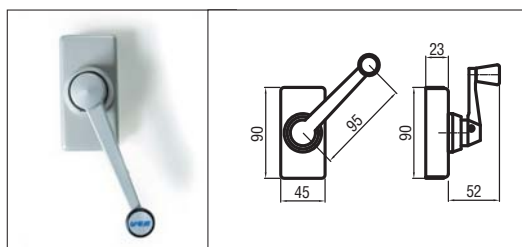
- It can be used with the 25 cm and 38 cm chain openers and with the locking opener for single bottom hinged windows.
- The inside mechanism and the handle are made in metal and the cover in plastic.
- Maximum cable length: 6 m. The spent travel tube is external.



## CONCEALED OPERATOR

PART No.	30745X
----------	--------

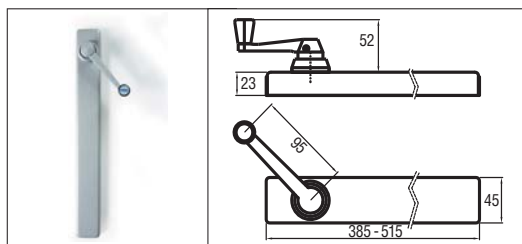
- It can be used with all opening mechanisms.
- It can be concealed into the wall or into the aluminium frame together with the spent travel tube.
- Completely made in metal with painted handle and aluminium anodized cover.



## MINI OPERATOR

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

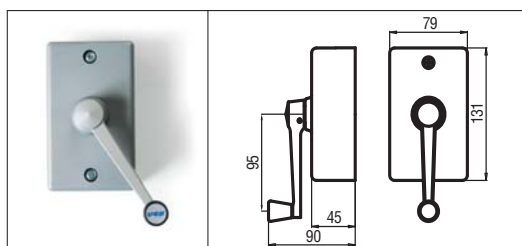
- It can be used with all opening mechanisms.
- Completely made in metal. The spent travel tube is external.



## SIMPLE OPERATOR - EXTENDED SIMPLE OPERATOR

PART No.		STROKE 250 mm	STROKE 380 mm
	White	RAL 9010 30750U	41344K
	Black	RAL 9005 32594G	41345L
	Grey	RAL 9006 37035E	41346M

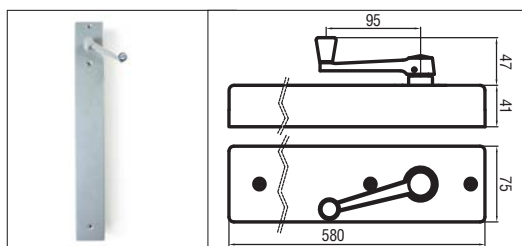
- Style and efficiency are the main features of this operator.
- It incorporates the antitorsion spent travel tube which allows a maximum stroke of 25 cm or 38 cm.
- Completely made in metal.



## 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 following:



## 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

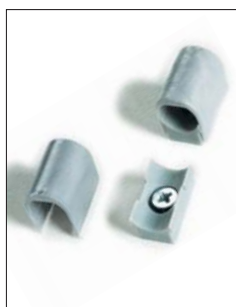
It is supplied in 3 meters steel rods externally coated in white, black or grey PVC. The internal tube is in polyethylene to make the cable sliding easier.



## 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**

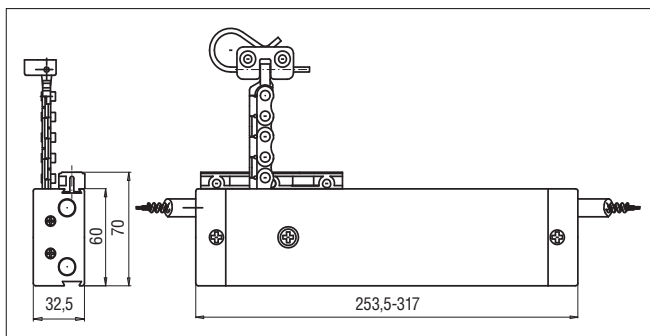
37569I  
37568H  
37567E



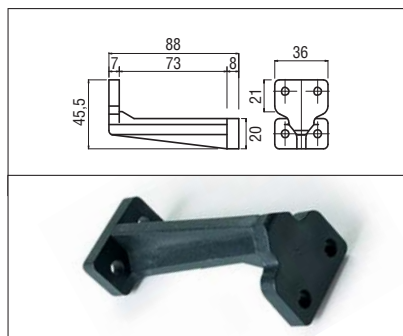
The instructions for a safe installation are included in the section "SECURITY WARNINGS".  
On bottom hinged windows for safety reasons always install side checks.



Bracket for top hinged window (included)

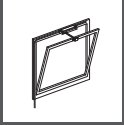


Mechanism dimensions

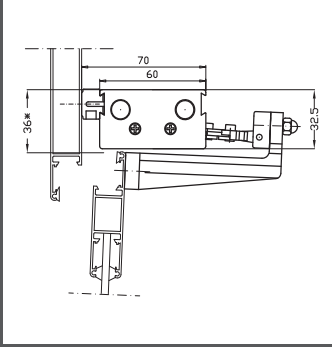


Bracket for bottom hinged part No. 37616T

## Examples of multiple installations



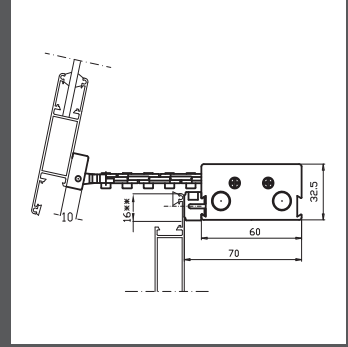
Bottom hinged windows



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

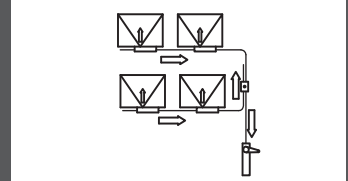
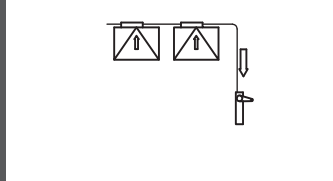
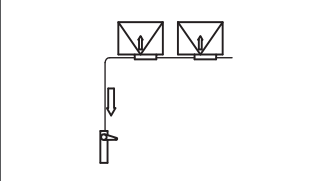


Top hinged window



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

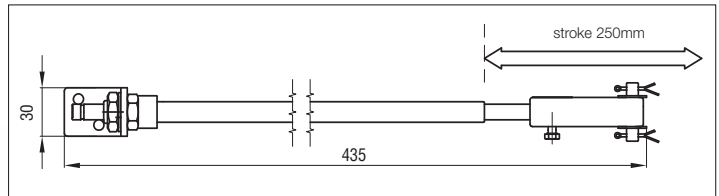
## Example of multiple installation



The arrows show direction of cable run during window opening

## FORKS

Opening mechanisms for louvres



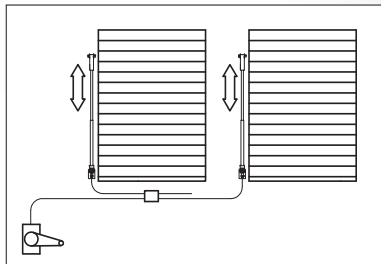
Fork dimensions



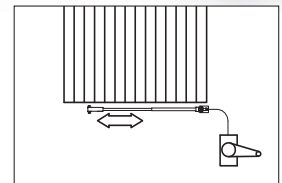
### FORK AND SWIVEL - HEAVY DUTY (travel 250 mm)

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

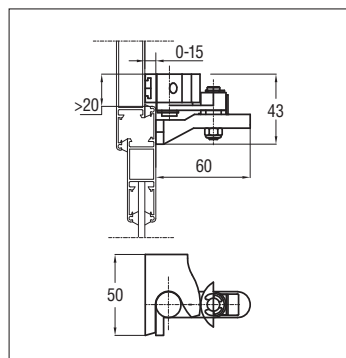
# LOCKING OPENERS

Opening mechanisms for bottom hinged windows

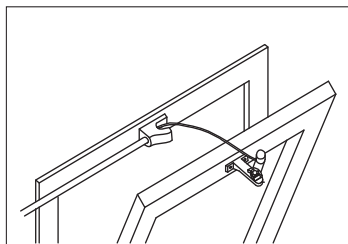


PART No.	WHITE	RAL 9010	30754Y
	BLACK	RAL 9005	37156M
	GREY	RAL 9006	37239Q

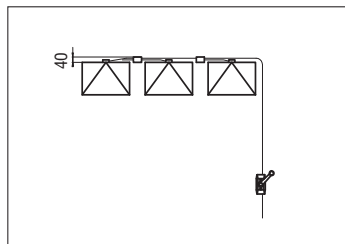
- It can only open bottom hinged windows which not require pushing force for the opening.
- Minimum size; the needed space for the installation is 20 mm from the vent external limit
- Maximum opening stroke: 25 cm; it can be adjusted on the end stroke spring placed in correspondence of the control operator.
- For windows with height inferior to 50 cm it is necessary to reduce the stroke to 1/3 of the window height.
- It is not necessary to work the conduit.
- In systems with more windows it is necessary to use rotary junction boxes to transmit the cable movement from the main line to the auxiliary ones.
- For windows wider than 1,5 m it is necessary to apply two or more thrust points.



Locking opener dimensions

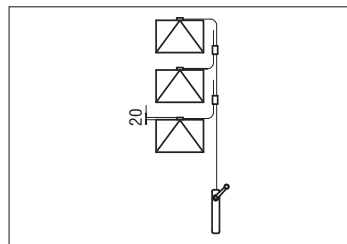


Examples of single installation



Examples of multiple installation

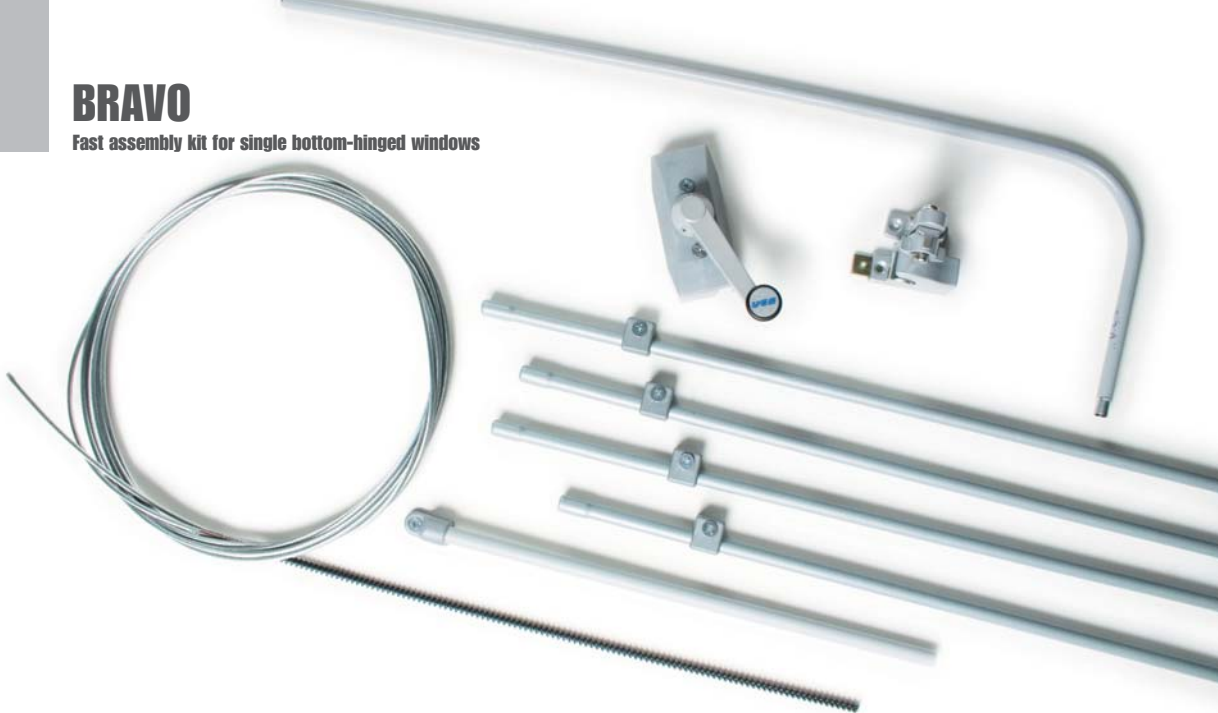
The dimension are measured from the external limits of the vent and show the minimum necessary space



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

# BRAVO

Fast assembly kit for single bottom-hinged windows



- BRAVO is a fast assembly kit for single bottom-hinged window whose width does not exceed 1,5 m.
- Minimum space required: 20 mm from the vent upper profile.
- The conduit is supplied in 0,6 m bars, down at one end: speed of assembly is ensured thanks to its insertion, with no need of joints.
- One bar of the conduit is already bended (50 mm radius), there is no need of any tool.
- Blister package for display in the shop, easy transport and storage guaranteed.
- Maximum opening: 250 mm; the kit is supplied complete with a pre-cut spent travel tube.
- For vents lower than 500 mm, reduce the stroke to 1/3 of the height by adjusting the end stroke spring, located by the control operator.



NOTE: to open more than one window, loose elements must be ordered (see pages 64-68).

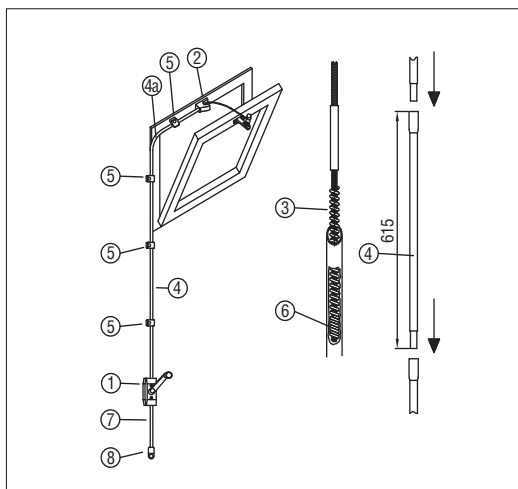
- ⚠** The instructions for a safe installation are included in the section "SECURITY WARNINGS".  
On bottom hinged windows for safety reasons always install side checks.

## PART No.

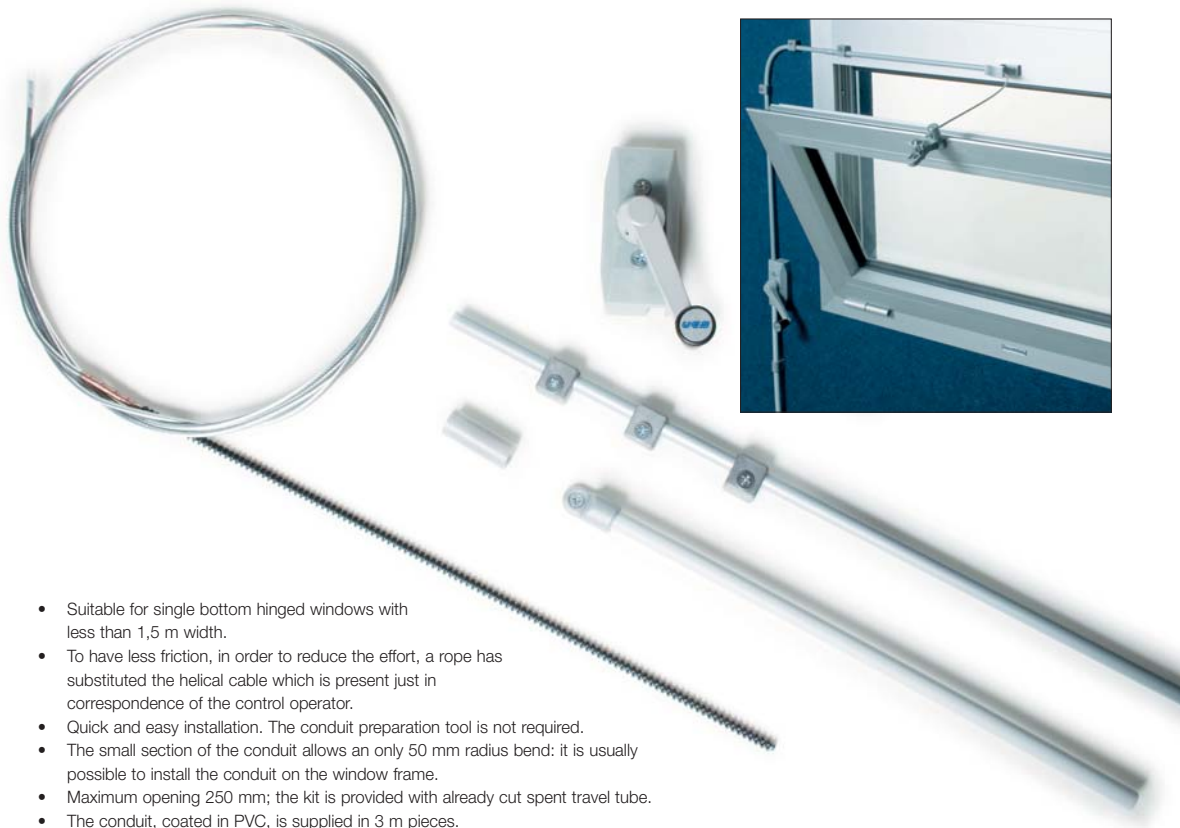
Conduit length		3,05 m	4,25 m	6,05 m
Color	WHITE	40649K	40650U	40651W
	BLACK	40652Y	40653A	40654C
	GREY	40655E	40656G	40657J

## Items contained in BRAVO

Pos.	Description	Q.ty	Q.ty	Q.ty
1	Flat operator	1	1	1
2	Locking opener	1	1	1
3	Cable	3,5 m	4,7 m	6,5 m
4	Conduit	4	6	9
4A	Bent conduit	1	1	1
5	Saddle	4	6	8
6	Lock spring	1	1	1
7	Spent travel tube	1	1	1
8	End plug	1	1	1



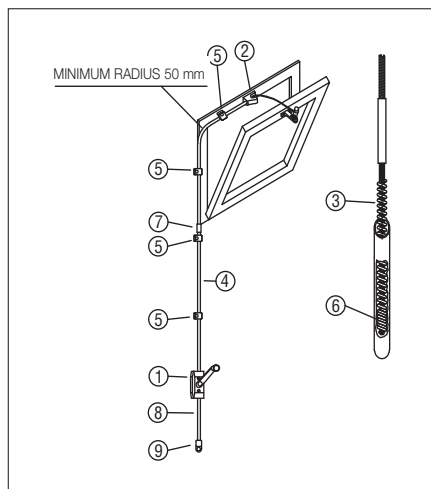
# KIT for single bottom hinged windows with rope



- Suitable for single bottom hinged windows with less than 1,5 m width.
- To have less friction, in order to reduce the effort, a rope has substituted the helical cable which is present just in correspondence of the control operator.
- Quick and easy installation. The conduit preparation tool is not required.
- The small section of the conduit allows an only 50 mm radius bend: it is usually possible to install the conduit on the window frame.
- Maximum opening 250 mm; the kit is provided with already cut spent travel tube.
- The conduit, coated in PVC, is supplied in 3 m pieces.

NOTE: to open more than one window, loose elements must be ordered (see pages 64-68).

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



## PART No.

Conduit length		3,00 m	4,50 m	6,00 m
Color	WHITE	40166J	40167K	40168N
	BLACK	40171G	40172H	40173I
	GREY	40194R	40195S	40196T

## Items contained into the KIT

Pos.	Description	Q.ty	Q.ty	Q.ty
1	Flat operator	1	1	1
2	Locking opener	1	1	1
3	Cable	3 m	4,5 m	6 m
4	Conduit	3 m	4,5 m	6 m
5	Saddle	4	8	8
6	Lock spring	1	1	1
7	Connector	0	1	1
8	Spent travel tube	1	1	1
9	End plug	1	1	1

# KIT for single top hinged windows



- Suitable for top hinged windows with less than 15, m width
- Maximum opening: 250 mm; the kit is provided with two already cut spent travel tube.
- The conduit is supplied in 3 m pieces.
- Available version: 3 m.
- Suitable for bottom hinged windows adding the bracket part No. 37616T.

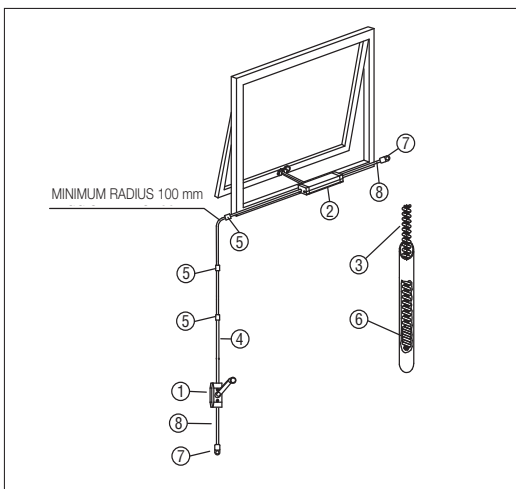
**⚠** The instructions for a safe installation are included in the section "SECURITY WARNINGS"

## PART No.

WHITE	36715U
BLACK	37642Y
GREY	40138H

## Items contained into the KIT

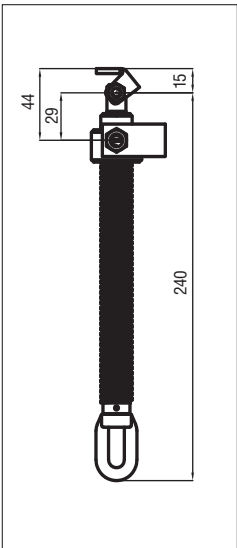
Pos.	Description	Quantity
1	Flat operator	1
2	Chain opener	1
3	Cable	3 m
4	Conduit	3 m
5	Saddle	3
6	Lock spring	2
7	End plug	2
8	Spent travel tube	2



# 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 is supplied with a handle for installation on windowsill or eyelet for operation by crank handle for skylights or roof windows.

### PART No.

CAT CHAIN OPENER WITH HANDLE

CAT CHAIN OPENER WITH EYELET

### WHITE RAL 9010

40761WIN

40761SKY

### BLACK RAL 9005

40807WIN

40807SKY

### GREY RAL 9006

40808WIN

40808SKY

CRANK HANDLE

Lenght

1500 mm

2000 mm

2500 mm

3000 mm

40764E

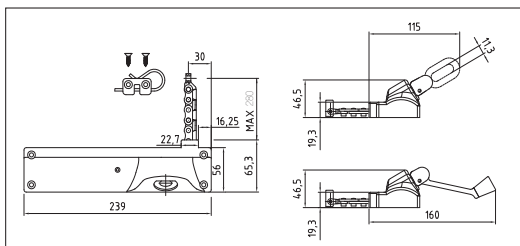
40765F

40766G

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"



# GUIDE TO SELECT THE ACTUATOR

Ultraflex Control Systems proposes a complete line of electric chain and linear actuators, that allows the choice of the more suitable actuator for every kind of requirement. The following technical details are a valid support to this choice that must be effected considering the following elements:

## WINDOW TYPE



**Bottom hinged windows** (hinges on the bottom side, inside opening): chain actuators installation is recommended because they do not take up space inside the room and are aesthetically discreet.

Moreover, for these kind of installations, are not usually required special protection class for water or powder. The installation of linear actuators would need very long brackets (not available). For windows wider than 1,5 m we suggest to install actuators with two thrust points.

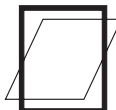


**Top hinged windows** (hinges on the top side, outside opening): it is recommended the installation of actuators with a special protection class and enough powerful to support with sufficient rigidity the maximum load that occurs when the window is completely opened.

We suggest actuators like Quasar, Twin Quasar-S, Vega, Master, Twin Master or Supermaster with double link chains . It is possible to install also linear or rack actuators, considering their encumbrance, the rotation of actuator's body and aesthetic effect. For window wider than 1,5 mm we suggest to install actuators with two thrust points, rack systems connected by connecting rod, or two actuators with control coupling unit.



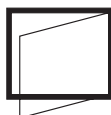
**Roof windows** (skylights, domes, etc.): see the installation instructions for top hinged windows. The hinges can be on one of the two horizontal sides or on the two vertical sides (central rotation axis). In that case it has to be considered as height of the window, the distance between the hinges and the fixing point of the actuator; besides, consider weight as zero if window is not equipped with brakes.



**Horizontal pivoting windows:** see the installation instructions for top or bottom hinged windows and bottom hinged windows according to actuator fixing position on the pivoting window. In the calculation of the opening and closing effort it is necessary to consider the height of the window as a distance between the fixing position of the actuator and the rotation point of the window, in order to avoid an extreme bending of the chain. Besides, consider weight as zero if window is not equipped with brakes.



**Louvres or sun blades windows:** it is necessary to specify the control level stroke for their movement and the necessary force to apply on it. After this choose an adequate rack/spindle actuator (Ulysses, Max, Rack). In case the actuator is installed exposed to bad weather conditions we suggest to contact our technical department.



**Normal turn window** with hinges on the vertical sides and inside or outside opening: it is necessary to install a chain actuator on the vertical side (with the same kind of brackets for bottom and top application), considering the right installation way of the chain: it doesn't have to be bent because of the gravity force to choose the adequate stroke and brackets. For choosing the adequate stroke and brackets consider as "height" of the window the distance between the hinges and the fixing point of the actuator.

## ACTUATOR STROKE

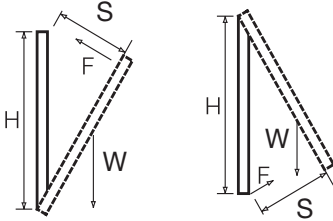
The necessity of a wide window opening contrasts with the following factors:

- for a chain actuator, if it is not used the pivoting brackets kit, the stroke must not exceed 1/3 of the window height, otherwise the chain bending would cause a loss of rigidity and for this reason a loss of performance in the long run. In case of vents with four-bar hinges please contact our Technical Dpt.
- for a linear actuator it is necessary to consider the actuator encumbrance inside the room; aesthetic effect apart, it grows as much as the required stroke increases, and it must be considered also the actuator rotation angle. In order to avoid interferences of the actuator with the elements in the room, it is necessary to evaluate carefully the position of the rotation axis opportunely choosing and positioning the fixing brackets. For this purpose, UCS proposes for all the linear actuators side fixing brackets, sliding within the proper dovetail slide on the actuator.

### ACTUATOR FORCE

To calculate the window opening and closing force, please refer to the following simplified formula:  
In case of vents with four-bar hinges please contact our Technical Dpt.

#### For vertical bottom or top hinged windows:



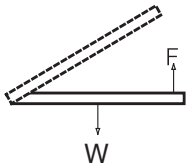
$$F \text{ (kg)} = \frac{W \text{ (kg)}}{2} \times \frac{S \text{ (mm)}}{H \text{ (mm)}}$$

$$W_{\text{max}} \text{ (kg)} = 2 \times F \text{ (kg)} \times \frac{H \text{ (mm)}}{S \text{ (mm)}}$$

W = window leaf weight  
Wmax = max window leaf weight  
S = actuator stroke  
F = required force (in kg, 1kg ~10 N)  
H = window leaf height

Therefore, the required force is lower as higher is the window leaf and shorter is the required stroke.

#### For horizontal windows (roof windows, skylights, domes, etc.):



$$F \text{ (kg)} = \frac{W \text{ (kg)} + SI \text{ (kg)}}{2}$$

$$W_{\text{max}} \text{ (kg)} = [2 \times F \text{ (kg)}] - SI$$

W = window leaf weight  
SI = snow load  
Wmax = max window leaf weight  
F = required force (in kg, 1kg ~10 N)

**For inclined windows** apply the formula for the horizontal windows; that is necessary if during the opening the window lies in horizontal position, and anyhow for higher safety margin.

**NOTE In the above mentioned formulas the wind load has not being considered:** it is necessarily to be considered above all for wide windows; if they are very high, for example, the greatest part of their weight is loaded on the hinges and the required opening force is very reduced, but in case of wind the effect on the large surface is considerable and the actuator must be chosen carefully.

### PROTECTION CLASS

The chain actuators are less protected from water or solid bodies (dust, sand, etc.) than the linear actuators. Some linear actuators, with protection class IP 65, are practically watertight in static conditions. For this reason we suggest to install chain actuators on bottom hinged windows or, in connection with a rain sensor, on top hinged windows. An excellent compromise are our chain actuators Master and Twin Master (protection class IP 44), as their electronic component is closed inside a watertight plastic box.

### LARGE WINDOWS

For very large windows only one pushing point in the central position cannot be sufficient.

When the window is closed its corners cannot be watertight or airtight and, anyway, when it is opened the stability is compromised in case of wind. We recommend to install two pushing points (or pulling points) if the window is larger than 1,5 m and also for an inferior width if the window leaf rigidity (profile + glass or polycarbonate) is not sufficient.

The installation of two electric actuators on the same window leaf is not possible if it is not used a suitable electronic (coupling) control system, because it is not possible to guarantee the constancy in time of the actuators speed, with consequent probable break of one of them.

In this case if the actuators are not equipped with the electronic stop system, it results the break of one actuator or of the window.

The control panel for coupling two 24 Vdc actuators on the same vent, controls only the current absorption of the connected motors, so it can be supplied only with couples of actuators selected during their production by UCS.

Only the same model of actuator can be connected in parallel (VEGA RF can be connected in parallel with VEGA RF-RAIN).

The UCS range proposes exclusive solutions to solve this problem like the installation of Twin Master or Dual Rack actuators.

For any further information do not hesitate to contact our technical department.



## SECURITY WARNINGS

- Before proceeding to install an actuator, verify the following:
  - the technical features of the actuator and its own fixing accessories are suitable to the advised application, to the type, weight and dimensions of the window; in case of actuator with available fixing brackets both in plastic and aluminium, use the aluminium ones if the performances required to the actuator are close to the nominal values;
  - window frame and accessories have to be correctly sized to stand the actuator load stress;
  - the window has to be free from any window hinge or other obstacle to open for the whole stroke of the actuator;
  - the electric system has to comply with current specifications;
  - power supply has to be the one indicated by the technical features of the actuator.
- The declared nominal values do not consider any wind stress: it is necessary to evaluate it correctly to avoid any failure of the actuator or of the window, particularly in case of large windows.
- The electric actuators have to be installed on windows out of range for people only. If the windows are within reach of people, provide systems of protection against squeezing.
- For safety reasons always install side checks on bottom hinged windows.
- If the window is visible, it is advisable to install a contact maintained push-button panel to make an emergency stop.
- In case of actuator installed on the vent, verify the electric cable not to be stressed or cut or pinched during operation.
- During installation or release of the actuator, be careful to avoid accidental closing of the window causing damage to people (bruise-squeezing-cut).
- The installation of two actuators on the same window is possible, only with an adequate control system.
- In case of actuators with electronic limit stop connected to automatic control systems, an approval by our technical department has to be required.
- The installation and the actuator's connection to electrical net has to be done from qualified people only in accordance with the directives.
- Installations and/ or equipments using our products must be carried out by UCS.
- The power control and the actuators included in this catalogue are not to be considered "macchine" o "componenti di macchina" as pointed out in the directive 89/392/CEE and following modification. In case they are included in systems that are part of the application field of these directives, it is responsibility of the installer the fulfilment of the safety requisites.

## GENERAL INFORMATIONS

- The actuators are tested one by one and periodically endurance tests (10.000 cycles with maximum load) are carried out, in compliance with specifications for actuators used both for ventilation and for smoke and heat extraction.
- The technical data reported in this catalogue are referred to tests carried out in room temperature.
- The working temperature of actuators are: from - 10°C to + 60°C with maximum relative humidity 60%.
- Notes about actuators voltage supply:
  - 230 Vac actuators: voltage supply has to be 230 Vac  $\pm$  10% through pure sine wave;
  - 24 Vdc actuators: voltage supply has to be 24 Vac  $\pm$  10%.





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