

ASSEMBLY INSTRUCTIONS **MOD. MERLINO KE1**
MOD. MERLINO KE3

MERLINO

MOTORIZED OCTAGONAL TELESCOPIC
TUBE FOR ROLLING SHUTTER

MADE IN ITALY



Watch the video of the
assembly procedure on
www.stafer.com

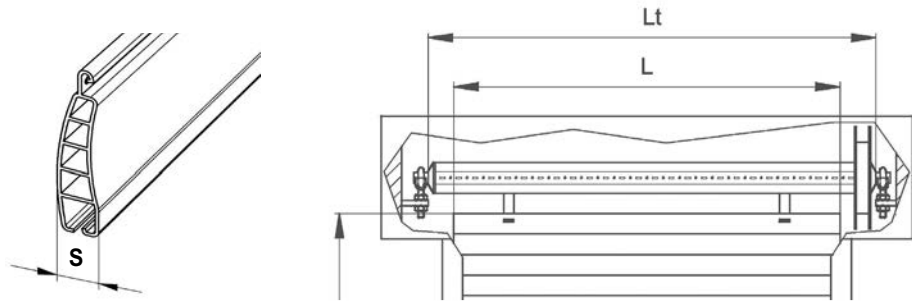
WARNING

- SAFETY INSTRUCTIONS
- FOR PERSONAL SAFETY, ALWAYS FOLLOW CAREFULLY THESE INSTRUCTIONS
- INCORRECT INSTALLATION MAY CAUSE SERIOUS INJURIE

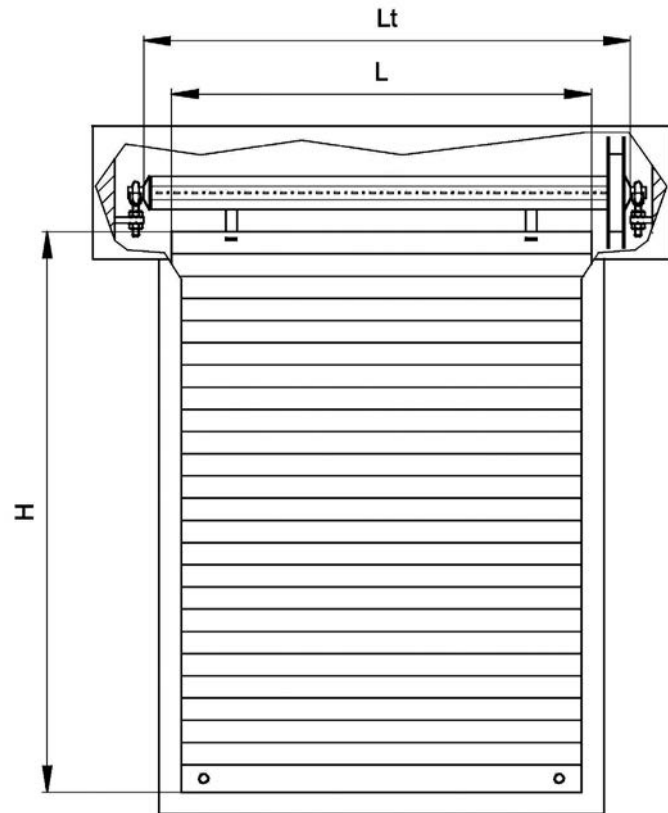
LIMITS OF USE

1 - Limits of use		KE1	KE3
Overall tube length Lt (cm)*	min.**	56	67
	max.	150	200
Shutter slat thickness S (mm)	min.	12	12
	max.	14	14

*Lt = Distance between inner sides of ball bearings. - ** Minimum length obtained by cutting the tube.



2 - EXAMPLE OF ROLLING SHUTTER WITH EXISTING MANUAL SYTEM



SELECTION TABLE

3 - PLASTIC / ROLL FORMED ALUMINIUM SLATS						
Height of the shutter H (cm)	Width of the shutter L (cm)					
	< 75	75 - 100	100 - 125	125 - 150	150 - 175	175 - 200
<125						
125 - 150						
150 - 175		KE1				KE3
175 - 200						
200 - 225						
225 - 250						

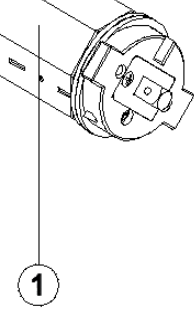
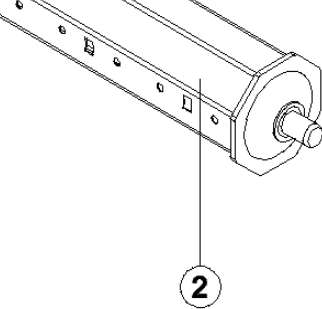
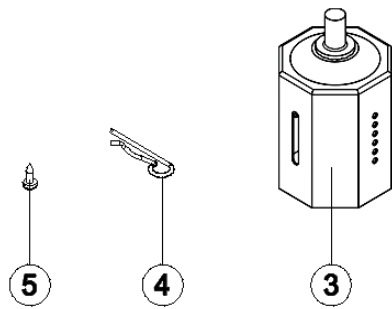
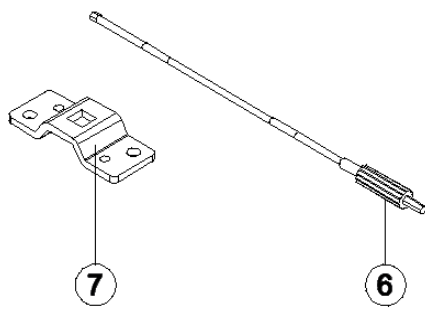
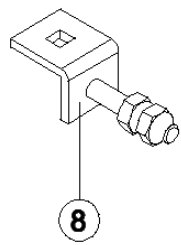
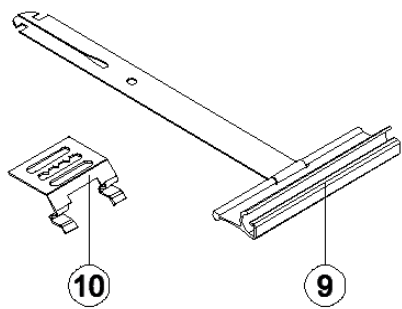
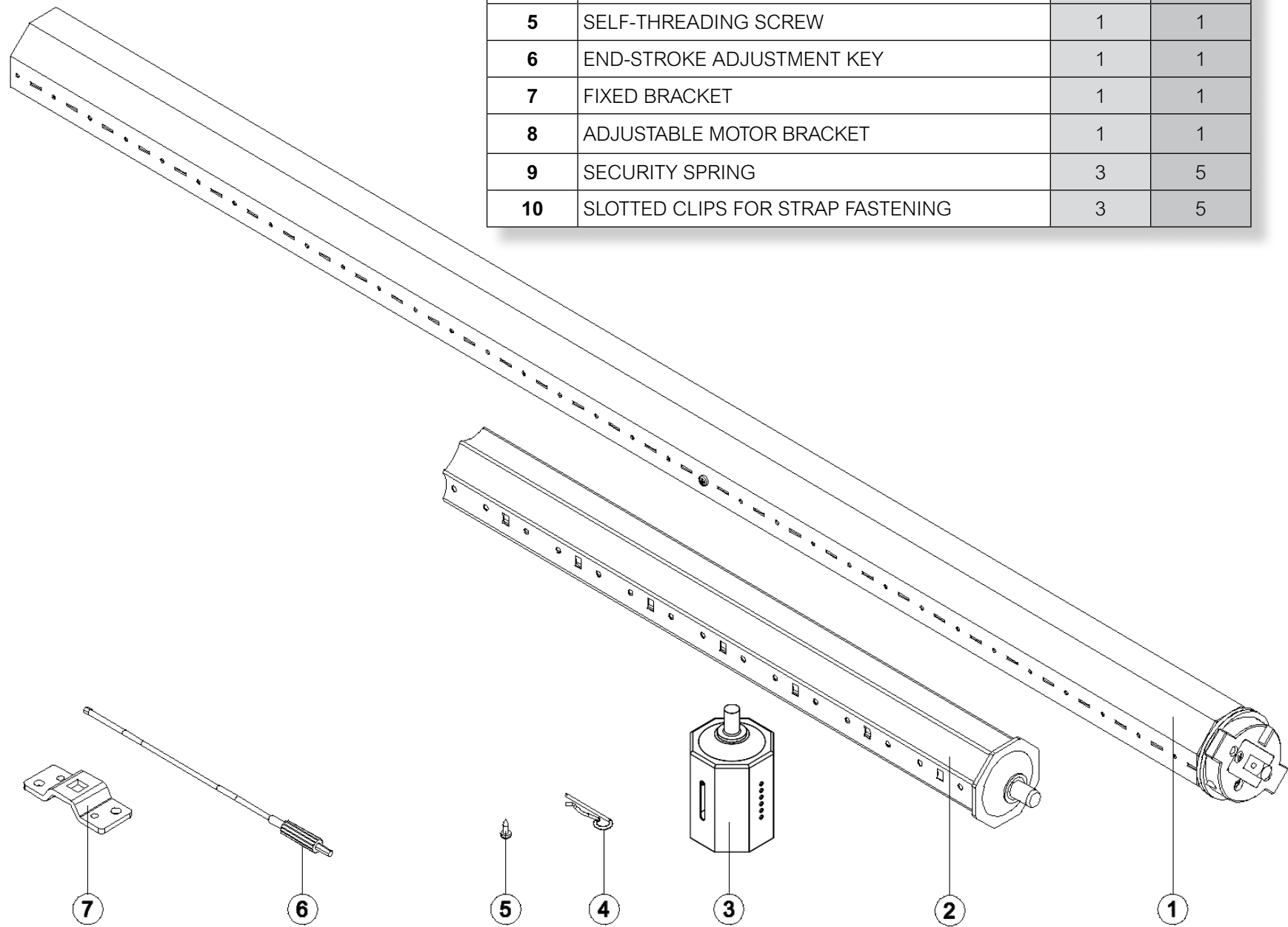
4 - STEEL / EXTRUDED ALUMINIUM SLATS						
Height of the shutter H (cm)	Width of the shutter L (cm)					
	< 75	75 - 100	100 - 125	125 - 150	150 - 175	175 - 200
<125						
125 - 150						
150 - 175		KE1				KE3
175 - 200						
200 - 225						
225 - 250						

MOTOR DATASHEET

5 - Kit version		KE1	KE3
Tubular Motor		V6-15/13	V6-35/13
Torque	(Nm)	15	35
Speed	(rpm)	13	13
Power supply	(Vac / Hz)	230 / 50	230 / 50
Absorbed power	(W)	125	230
Current consumption	(A)	0,55	1,05
Continuos operating time	(min)	4	4
Protection degree		IP 44	IP 44
Insulation class		H	H
Limit switch rotation		0 ÷ 28	0 ÷ 28
Marking		CE	CE

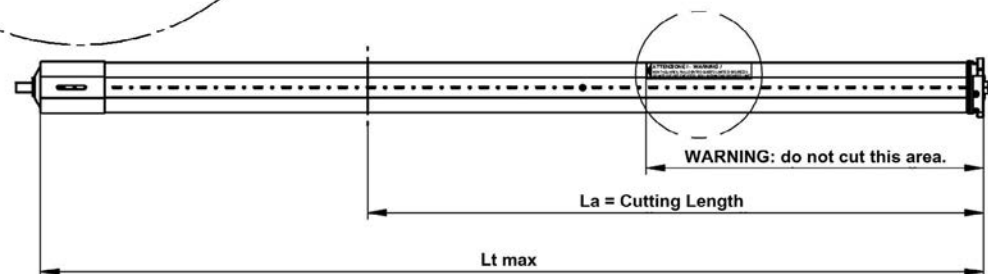
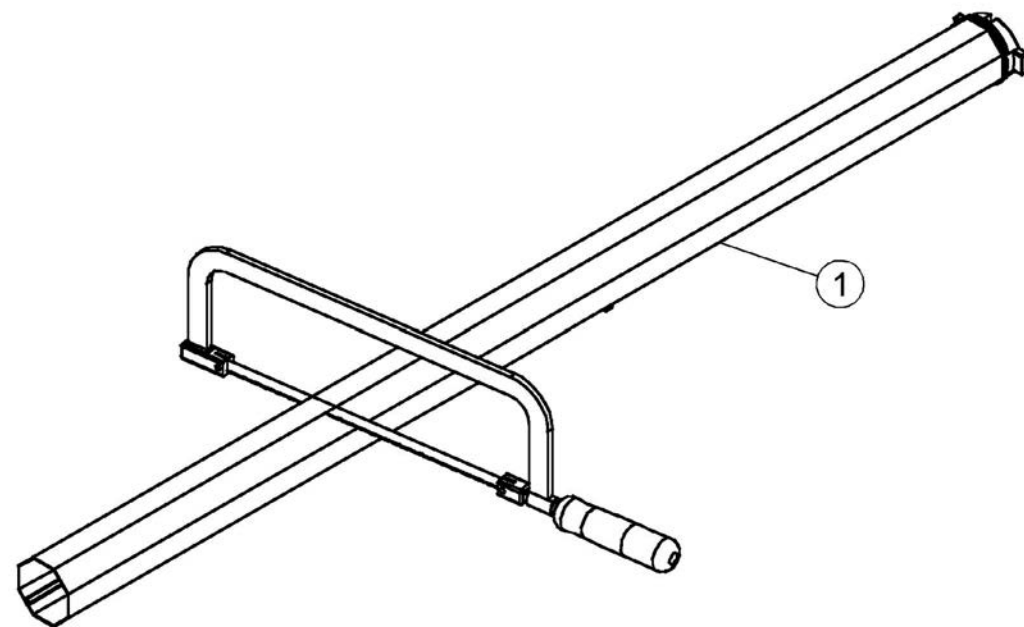
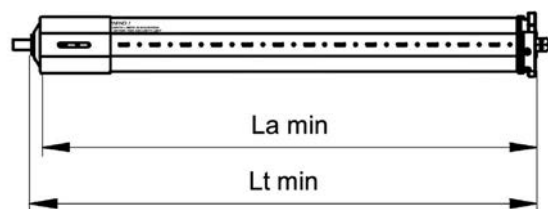
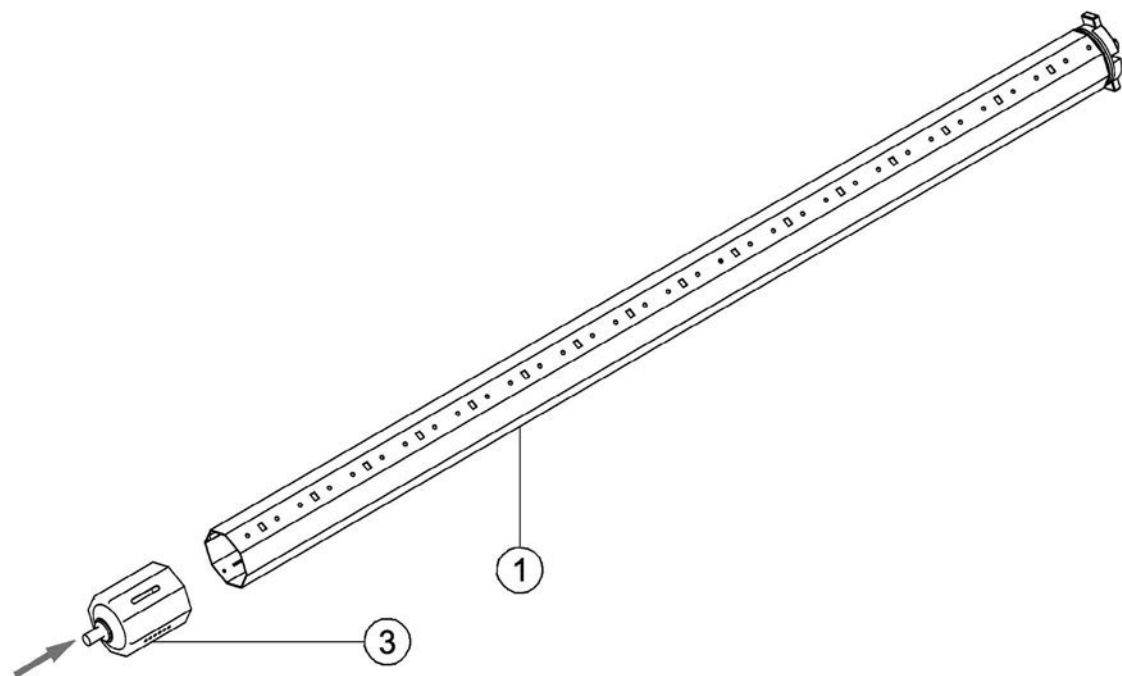


6 - PACKAGE CONTENTS		KE1	KE3
Ref.	Description	Quantity	
1	MOTORIZED OCTAGONAL TUBE	1	1
2	TUBE EXTENSION	1	1
3	ADJUSTABLE CAP	1	1
4	SPLIT PIN	1	1
5	SELF-THREADING SCREW	1	1
6	END-STROKE ADJUSTMENT KEY	1	1
7	FIXED BRACKET	1	1
8	ADJUSTABLE MOTOR BRACKET	1	1
9	SECURITY SPRING	3	5
10	SLOTTED CLIPS FOR STRAP FASTENING	3	5



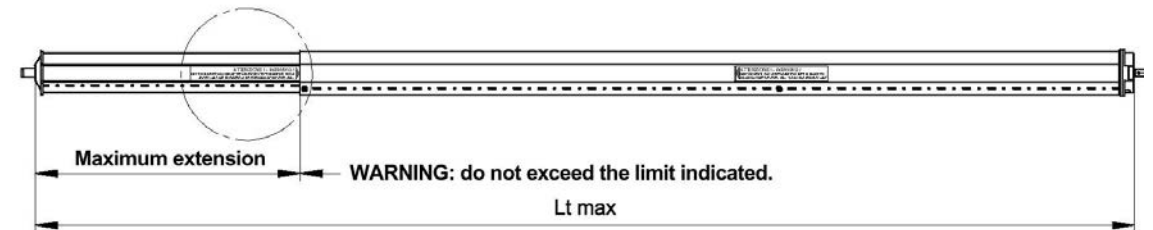
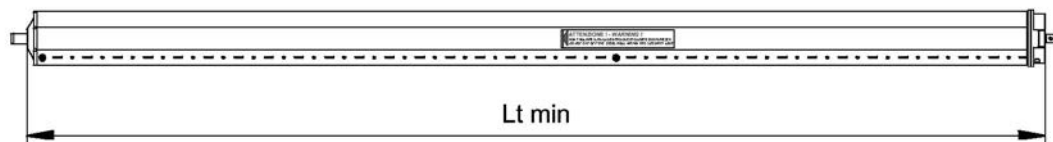
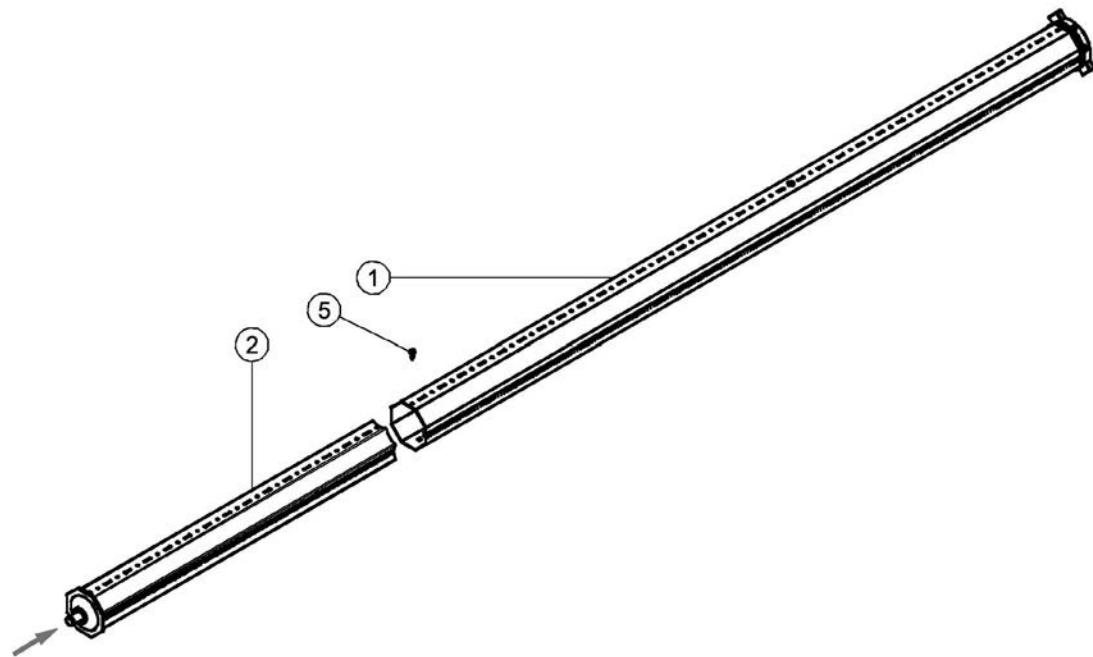
7- CONFIGURATION "A"		KE1	KE3
Overall tube length Lt (cm)	min. **	56	67
	max.	115	150

** Minimum length obtained by cutting the tube



CONFIGURATION "B"

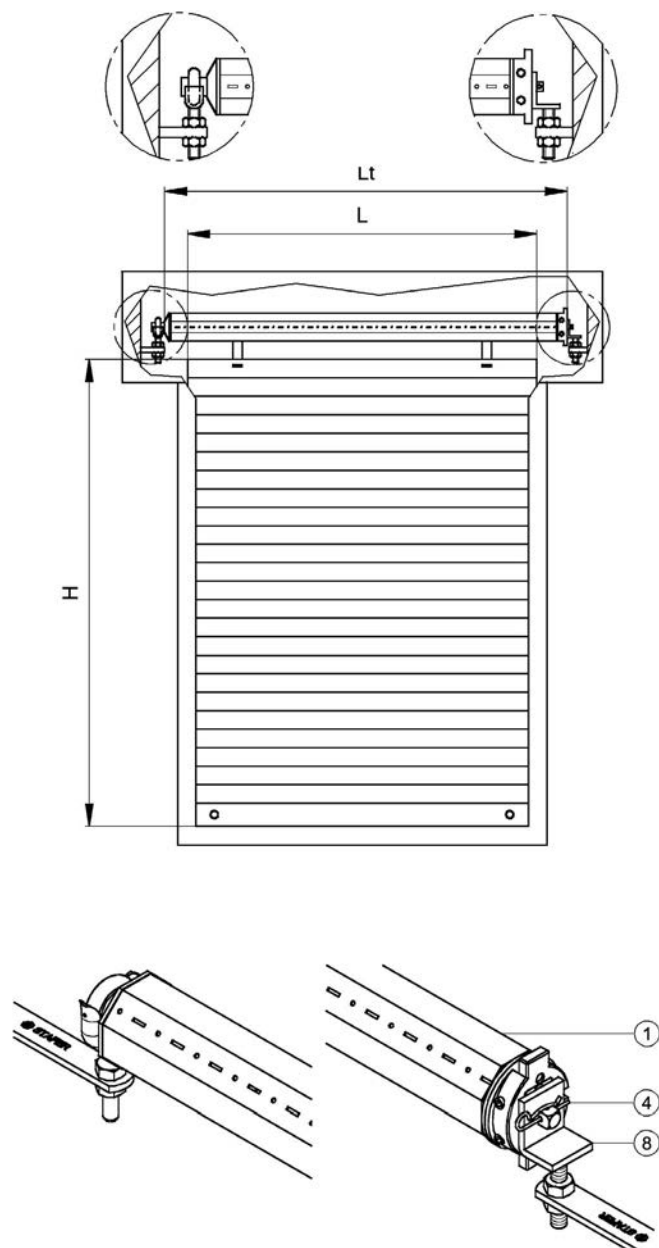
8 - CONFIGURATION "B"		KE1	KE3
Overall tube length L_t Lt (cm)	min.	115	150
	max.	150	200



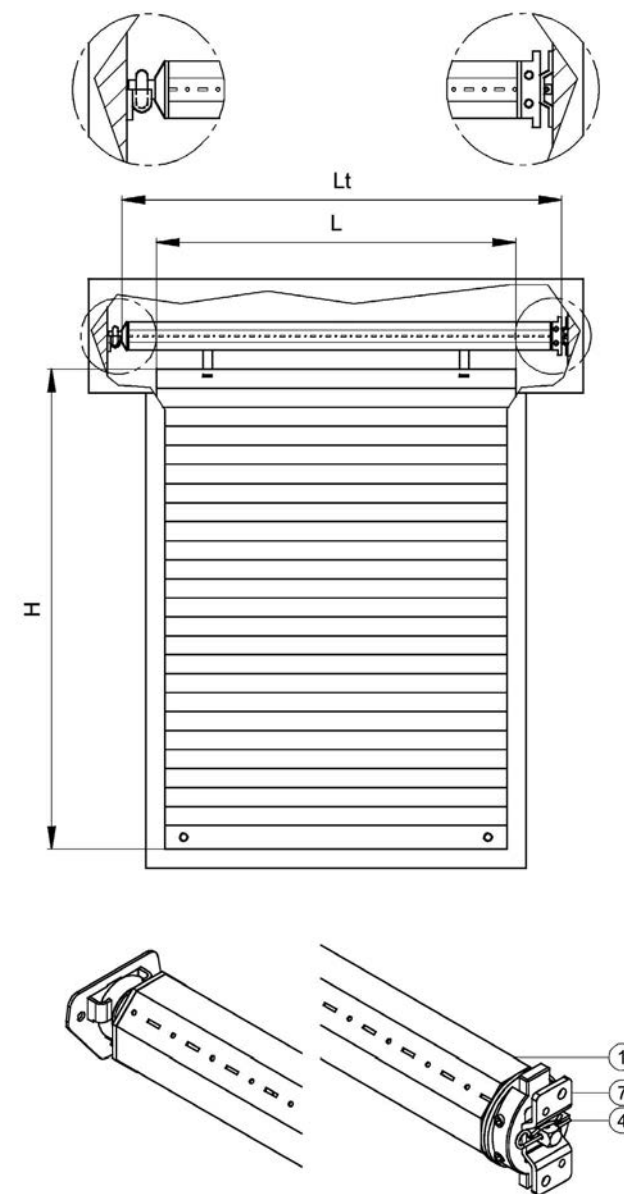
ASSEMBLY STEPS

1. Make sure that the kit version purchased is suitable for lifting your rolling shutter, please follow tables 1 - 3 -4. In case the situation is not within the limits of use, do not proceed any further with the installation of the kit and contact qualified service personnel.
2. Pull down the shutter and remove hooking devices from the tube after having opened the housing box.
3. Remove the existing tube from the box. Remove also the existing equipment (pulley, strap, gear etc.).
4. Replace the ball bearing used on the operation side with the adjustable bracket (8). Height of support (8) can be regulated by adjusting the nuts (verify the alignment with the axis of the ball bearing used on the opposite side). Once the regulation is done, lock the support (8) by tightening the lower nut. In case of new installation, screw the fixed bracket (7) to the inner side of the wall/box and check carefully the assembly of components.

9 - EXAMPLE OF ROLLING SHUTTER WITH ADJUSTABLE MOTOR BRACKET



10 - SAMPLE OF ROLLING SHUTTER WITH FIXED MOTOR BRACKET

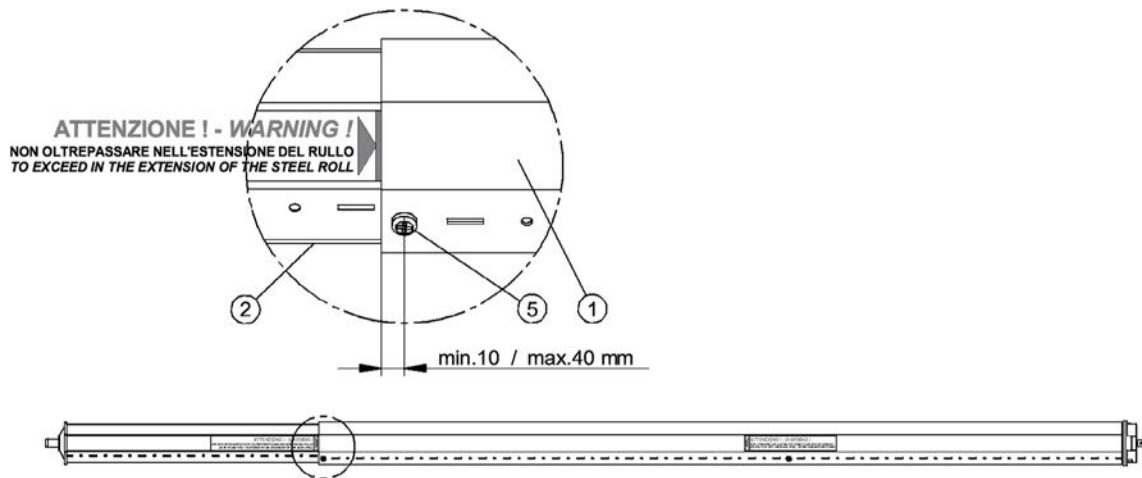


5. Make sure that the existing ball bearing (opposite side of the support to operation side), has an inner diameter $\varnothing 12 \text{ mm (+1/0)}$. In case the ball bearing cannot be used, replace it with a new one and/or in accordance with the requirements.
6. Measure the distance L_t between inner sides of existing bearing and support (8).
7. Depending on the measured value of L_t distance, determine the correct configuration to be used following tables 7 – 8.

8. **CONFIGURATION "A"**

- 8.1 Shorten the tube (1) by using a hacksaw for steel. Cut the tube to a measure L_a obtained by calculating: $L_a = L_t - 2,5 \text{ cm}$. **WARNING: Cut the tube between the indicated limits avoiding to damage the tubular motor.**
- 8.2 Remove burrs and/or deformation at the shorten extremity of the tube.
- 8.3 Insert the cap (3) onto the motorized tube (1), take care to align its longitudinal holes with the ones on the tube (1).
- 8.4 Assembly the motorized tube into the box by coupling the square pin of the motor to the respective motor bracket (operation side) (8). Insert the pivot of the cap (3) into the ball bearing (opposite to operation side). The white end-stroke regulation screws face towards you for the regulation of the limits. You may need to remove the ball bearing, to couple it onto the pivot of the cap (3) and reinsert it in its place together with the motorized tube.
- 8.5 Block the sliding of the tube extension (3) by inserting a self-threading screw (5) into the hole closest to the end of the tube (1) on the opposite side of the motor. Tighten the screw (5) by using a crosshead screwdriver.

9. **CONFIGURATION "B"**



- 9.1 Insert the tube extension (2) into the tube (1), take care to align its longitudinal holes with the ones on the tube (1).
- 9.2 Assembly the motorized tube into the box by coupling the square pin of the motor to the respective motor bracket (operation side). Insert the pivot of the cap (3) into the ball bearing (opposite to operation side). The white end-stroke regulation screws face towards you for the regulation of the limits. You may need to remove the ball bearing, to couple it onto the pivot of the cap (3) and reinsert it in its place together with the motorized tube.
- 9.3 Adjust the length of the tube extension (2) in order to obtain the measure L_t . **WARNING: do not exceed the limit indicated.**
- 9.4 Block the sliding of the tube extension (2) by inserting a self-threading screw (5) into the hole closest to the end of the tube (1) on the opposite side of the motor. Tighten the screw (5) using a crosshead screwdriver.

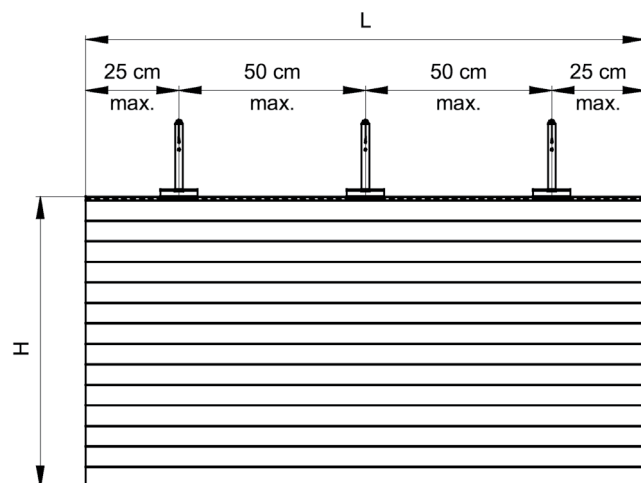
- 10. Lock the motorized tube by inserting the supplied split pin (4) in the hole of the motor square pin. Be careful to avoid axial play end float between the tube and the two brackets. In case the play end float is bigger than 2 mm, loose the self-threading screw (5) and adjust the length of the tube extension (2) taking care not to exceed the limit. Once the previous step is done, tighten the self-threading screw (5). In case of configuration "A", if there is a play end float bigger than 2 mm, it means that the tube (1) has been cut too short. Consequently you need to disassemble the motorized tube (1) and replace it with another octagonal tube of appropriate length. **WARNING: the tube (1) should have octagonal section of 60 mm (externally), thickness between 0.8 and 1 mm and should be the same type as the one supplied.**
- 11. Verify shutter conditions and check for clearing and removing any thing that could create friction between vertical rail and the shutter. Remove any fastening elements between tube and rolling shutter. Only in case of wooden shutters, leave the existing fastening straps but first check for their integrity.
- 12. Hook the security springs (9) into the top slat of the shutter. For the adequate number of springs to be used, please look at tables 12 – 13. Hook the springs equally spaced as shown in picture 13. In case of wooden shutters do not use this type of safety springs (9) and move to next step.

NUMBER OF SECURITY SPRINGS TO BE USED

11 - PLASTIC / ROLL FORMED ALUMINIUM SLATS						
Height of the shutter H (cm)	Width of the shutter L (cm)					
	< 75	75 - 100	100 - 125	125 - 150	150 - 175	175 - 200
<125	2	2	3	3	4	4
125 - 150	2	2	3	3	4	4
150 - 175	2	2	3	3	4	4
175 - 200	2	2	3	3	4	4
200 - 225	2	2	3	3	4	4
225 - 250	2	2	3	3	4	4

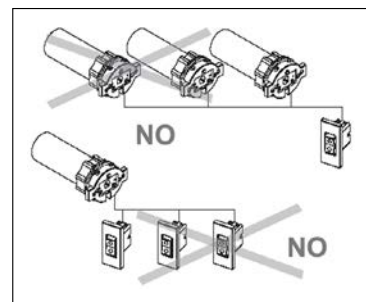
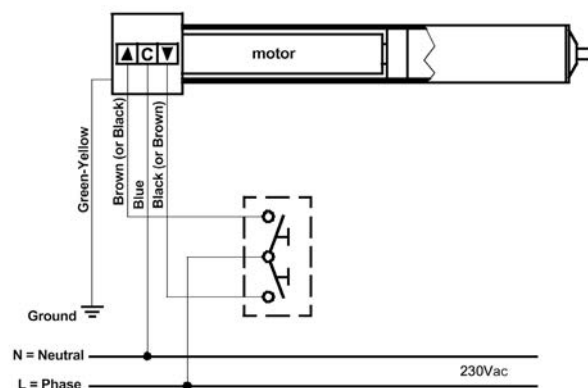
12 - WOODEN / STEEL / EXTRUDED ALUMINIUM SLATS						
Height of the shutter H (cm)	Width of the shutter L (cm)					
	< 75	75 - 100	100 - 125	125 - 150	150 - 175	175 - 200
<125	2	2	3	3	4	4
125 - 150	2	2	3	3	4	4
150 - 175	2	2	3	3	4	4
175 - 200	2	2	3	3	4	4
200 - 225	2	3	3	4	4	5
225 - 250	2	3	4	4	5	5

13 - POSITIONING OF SECURITY SPRINGS



In case of wooden shutter, use the slotted clips for strap fastening (10) instead of springs (9). Check for integrity of existing strap and join it in the slotted clip holes (10) adjusting the length for obtaining the same distance from the top of the shutter for each clip.

14 - ELECTRICAL CONNECTIONS

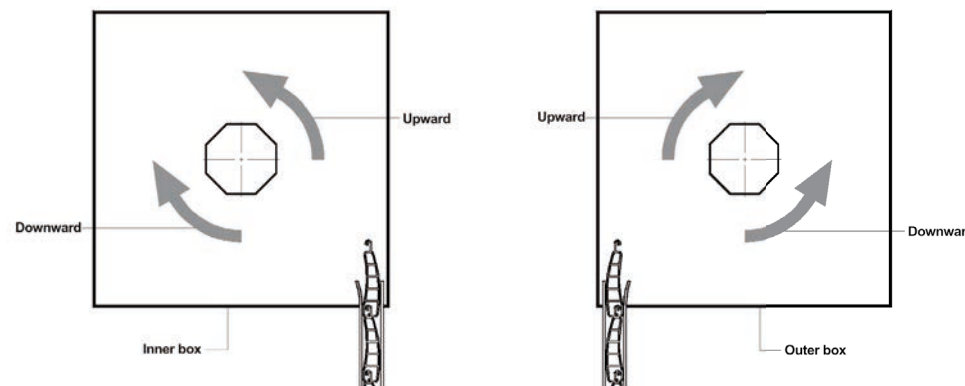


WARNING:

- do not connect 2 or several push buttons to a single motor.
- do not connect 2 or several motors to a single push button.
- do not use buttons that allow the simultaneous control of both operating directions, i.e. without an electronic interlock.

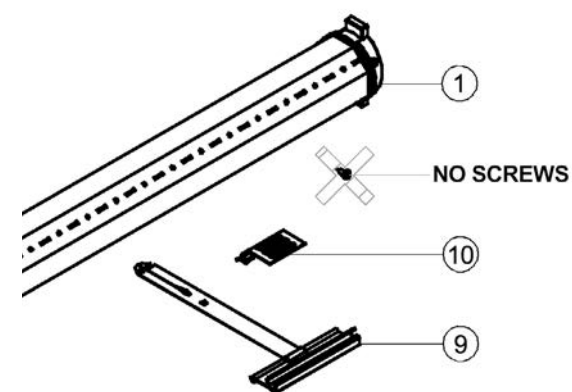
- Disconnect mains power supply, connect motor cables to the mains power supply and to the switch, please follow carefully the instructions scheme 14. In case of using a remote control system, please follow carefully instructions contained into the radio control kit, item number no. 592 KRM00.1.

- Make sure that cables do not interfere with the movement of the rolling shutter, in such a case lock them in a safe position.
- Switch on the mains power supply and make sure that the motorized tube operates properly by prior



to hooking the shutter, act on the switch button for rotating the motorized tube in the sense of descent until automatic stop due to the internal limit switch, (motor will do 1 or 2 turns). In case of reverse rotation, disconnect the mains power supply and reverse brown and black cables in the switch connections.

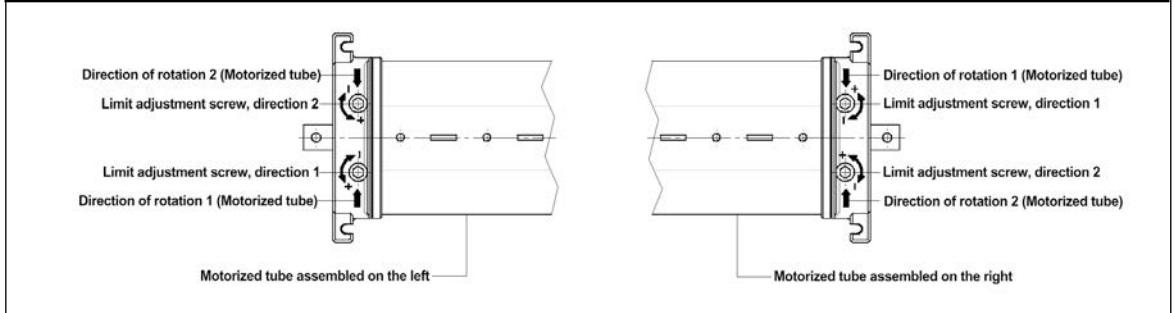
- Hook the rolling shutter to the tube by using security springs supplied (9) or the existing ones. **WARNING: do not use screws for fixing the shutter to the motorized tube.**
- Operate the motorized tube to lift up the rolling shutter until automatic due to internal limit switch (motor will make around 3 turns).
- To change the position of the upper end limit switch, so allowing the complete opening of the shutter, hold the respective button and adjust the limit screw as indicated in picture 15. In case of momentary position button, 2 people are needed. Adjust the limit switch gradually,



in order to avoid forcing the plastic stoppers while the rolling shutter is going upwards.

WARNING: by turning the limit switch screw counterclockwise, the stroke will be increased, by turning it clockwise the stroke will be decreased.

15 - END LIMITS REGULATION



19. By pushing the “up” button, verify the correct working of the internal limit switch while the shutters moves upwards. Motor is equipped with an internal self-resetting thermal switch that stops the motor in case its temperature limits are exceeded. In case of its intervention, you need to wait few minutes in order to allow the temperature to return within the correct operating range.
20. By pushing the “down” button, verify the correct working of the internal limit switch while the shutters moves downwards. To change the position of the lower end limit switch, so allowing the complete closing of the shutter, hold the respective button and adjust the limit screw as indicated in picture 15. In case of momentary position button, 2 people are needed.

WARNING: by turning the limit switch screw counterclockwise, the stroke will be increased, rotate clockwise if you need to shorten the stroke.

GENERAL WARNINGS

- The standards require that upstream of the system, a disconnection switch be fitted with contact opening by at least 3 mm.
 - Use leads with minimum section 1.5mm².
 - The appliance must be regularly examined so as to determine whether there are any unbalances or signs of wear or damage to leads and security springs.
 - In case the supply lead is damaged, replacement by the manufacturer or after-sales service is needed or in any case by someone with a similar qualification, so as to eliminate all risks.
 - Never use the appliance whenever this needs repairs or adjustments.
 - Use only approved switches with at least 10A a 230Vac, fit these at a height not below 1.5 m, in view of the appliance but away from moving parts.
 - Do not allow children to play with fixed control devices.
 - Keep portable control devices (remote) out of reach of children.
- ALWAYS KEEP THESE INSTRUCTIONS TOGETHER WITH THE INSTALLED PRODUCT**



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