

# Installation- and Operating Instructions

## Swing gate operator SLIM S/C





## Important warning and safety notes for installation and operation

- These installation- and operating instructions form an integral part of the product "gate operator". They have been specifically written for professional installers trained and skilled in the trade and should be carefully read in their full length before carrying out the installation. They describe the proper installation and operation of the sliding gate operator only, not of the overall device "automatic gate". After the installation this manual has to be handed over to the user.
- **Installation, connection, adjustments, putting into operation, and servicing may only be carried out by trained professionals in full accordance with these installation- and operating instructions.**
- The EU Machine Directive, laws and rules concerning the prevention of accidents, and laws and standards which are in force in the EU and in the individual countries have to be strictly followed.
- The TOUSEK Ges.m.b.H. cannot be held liable for any claims resulting from disregards of the laws and standards in force during the installation and operation.
- The product may only be used in accordance with its original purpose, for which it has been exclusively designed, and which is described in these installation and operating instructions. The TOUSEK Ges.m.b.H. rejects any liability if the product is used in any way not fully conforming to its original purpose as stated herein.
- **The product is not suitable for installation in explosion-hazardous areas. The existence of inflammable gas and steam is of great danger!**
- The packaging materials (cardboard, plastic, EPS foam parts and filling material etc.) have to be properly disposed of in accordance with the applying recycling- and environmental protection laws. They may be hazardous to children and therefore have to be stored out of children's reach.
- Before beginning with the installation the installer has to make sure that all mechanical components of the gate facility, like carrier profile/rail, gate frame and panels, guiding elements etc. are sufficiently supportive and resistant for the purpose of gate automation. Check also whether the product has transport damages.
- All electrical installations have to be made in full conformity with the applying rules and laws (e.g. using a fault current circuit breaker, proper grounding etc.).
- An all-pole disconnecting main switch with a contact opening-gap of minimum 3 mm has to be foreseen.
- When installing the safety device (photocells, safety edges, emergency-stops etc.) please comply with the valid directives/standards, the criteria of practical rules of conduct, the installation environment, the operating logic of the system and the effected force of the motorised gate. .
- The safety devices must secure possible bruise, shear and general danger areas of the motorised gate.
- **After installation the proper function of the gate facility and the safety devices has to be checked!**
- **After putting the gate in operation, the gate system must be checked with a suitable force measuring device in accordance with the applicable standards EN 12453 or national regulations.**
- Place warning signs and notes of the valid regulations to indicate danger areas .
- With each installation the identification data of the motorised gate has to be placed in a visible place.
- The label for the Handauslöser has to be placed next to its operating element.
- The electric motor heats up during operation. Therefore the device should only be touched after it has cooled off.
- Please make sure that no other persons are on site of the motorised gate area, especially in when operating the facility in hold to run mode (switch with OFF-pre adjustment) . The pre-adjusted OFF-button/switch has to be placed in sight of the actuated gate but away from moving parts. This switch/button (except key-switch) has to be mounted in min. 1,5m height and non-accessible to the public.
- **Children have to be instructed, that the gate facility as well as the belonging parts may not be used improperly, e.g. for playing. Furthermore handheld transmitters have to be kept in safe places and other impulse emitters as buttons and switches have to be installed out of children's reach.**
- Only original spare- and replacement parts may be used for repair of the product.
- The TOUSEK Ges.m.b.H. rejects any liability for claims resulting from usage of the product in combination with components or devices which do not fully conform to the applying safety laws and rules.
- The installer has to inform the user about all aspects of the automatic operation of the complete gate facility, as well as about emergency operation. The installer further has to supply to the user all instructions relating to the safe operation of the gate facility. The installation and operating instructions also have to be handed over to the user.
- The user has to be informed that he has to turn off the main power switch in case of malfunction of the product and that he can use the facility again after repair and adjustment works have been completed.
- **Please notice that the warranty will not be applicable if the label with the engine number has been removed or damaged.**



## Maintenance

- **Disconnect the power supply during mounting, maintenance and repair works.**
- **Maintenance works may only be carried out by qualified personnel.**
- **With every maintenance, the door system must be checked with a suitable force measuring device in accordance with the applicable standards EN 12453 or national regulations.**
- **Check the proper function of the emergency release mechanism periodically.**
- **Check if all mounting screws are securely fastened periodically.**
- **Remove dirt from the operator periodically.**
- **Lubricate the pivot points of the operator with grease and the push rod with WD40 spray (twice a year or as needed).**
- **Maintenance and servicing of the complete gate facility has to be carried out according to the gate builder's/ installer's instructions.**

### Features Swing gate operator SLIM S/C

- for 12V d.c.
- max. weight of gate wing 150 kg
- suitable for later installation on existing gates
- incl. installation hardware (stainless steel)
- self-locking steel spindle
- for private applications (approx. 20 cycles/day)
- 



### General characteristics

The TOUSEK SLIM permits a simple and quick automation of new or already existing swing gates.

The electromechanic operator consists of a powerful DC motor and a stainless steel push rod with integrated self-locking spindle. All components are contained in an anodized aluminium housing.

In case of e.g. a power failure the operator can be disengaged with the help of an emergency key, permitting a manual operation of the gate wing. In addition the electronic control can be supplemented with an emergency backup rechargeable battery. Due to the self locking spindle of the operator normally no electric lock is required to provide a secure locking of the gate wing. Depending on the particular situation at the gate facility, however, an electric lock may be required in some cases to guarantee a reliable locking of the gate wing in its closed position.

The operators **SLIM SLR** and **SLIM CLR** are additionally equipped with integrated limit switches.

### Technical specifications

Swing gate operators SLIM-	SR	SLR	CR	CLR		SR	SLR	CR	CLR
supply voltage	12Vd.c.				self-locking in OPEN gate position	•	•	•	•
max. current consumption (ST12/5)	6A				self-locking in CLOSED gate position	•	•	•	•
max. gate wing width	2,5m				mechanical system	•	•	•	•
max. gate weight	150kg				force-adjustment through control unit	•	•	•	•
max. thrust	1800N				built-in limit switches		•		•
piston -/spindle-travel	330mm				emergency release	•	•	•	•
operating factor in operating mode S3	20/Tag				ambient temperature	-15°C to +40°C			
piston speed at 12Vd.c.	16mm/s		13mm/s		article code	11260250	11260260	11260270	11260280



**Note: Max. wing widths do neither apply to full-panel gates (but to stave or trellised gates) nor to non-horizontal gates !**



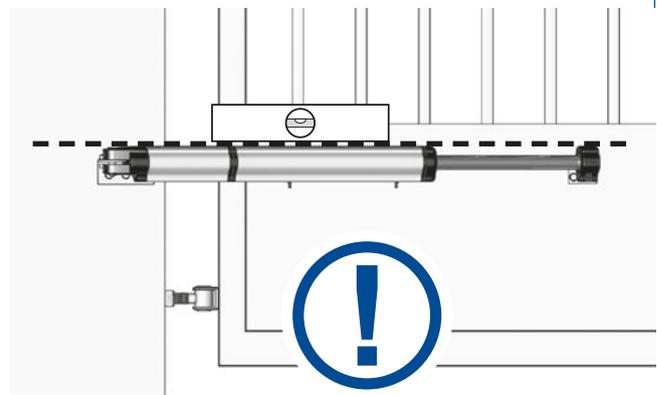
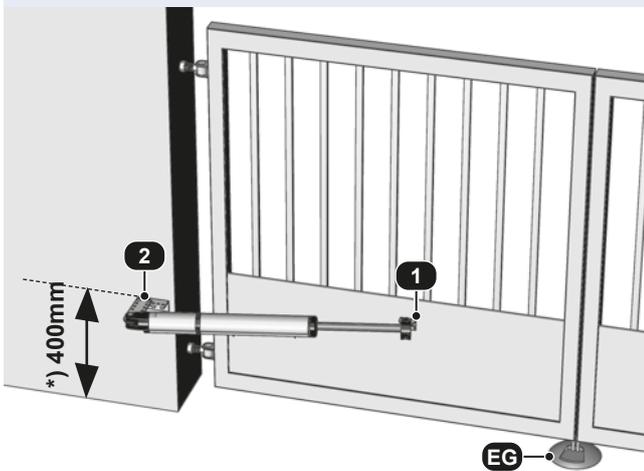
**Attention**

- Before beginning the installation of the operators, please make sure that the gate wings are already limited in their travel by some sort of stopping devices both in the open (EO) and closed (EG) gate positions. If this is not the case, such stopping devices have to be installed or the Tousek piston rod stroke limiting device has to be used.

**Note:**

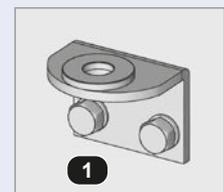
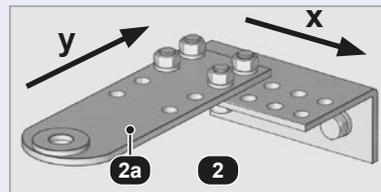
The operators SLIM SLR and SLIM CLR are equipped with integrated limit switches. It is nevertheless recommended to foresee a floor stop, especially in closed position.

- On thin-walled or wood-panel gate leaves the connector bracket must not be mounted directly on the gate leaf. In these cases a flat steel plate must be installed to support the connector bracket.
- **\*) Attention: To avoid pollution and guarantee a long-lasting reliable operation, a distance of at least 400 mm has to be kept towards the upper edge of the roadway.**
- The installation positions for the front (1) and rear (2) mounting parts have to be determined with regard to the measurements A and B in the below chart. Pay attention to the horizontal alignment of the operator.
- At determining the mounting positions moreover pay attention to the fact, that the push rod **must not travel out its whole length during operation (at least 5mm have to remain).**



**Attention**

- The rear mounting part (2) is adjustable in two directions. A movement of part (2a) towards y, requires a shortening of this part.



**2a. Mounting positions**

**Installation**

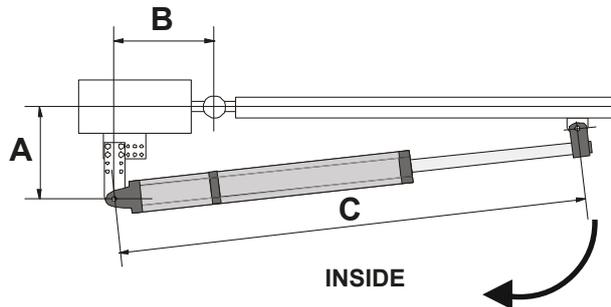


**Important**

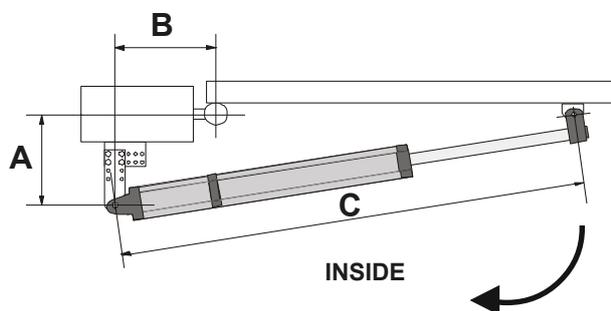
- The installation positions for the front (1) and rear (2) mounting parts have to be determined with regard to the measurements A and B in the beside chart. Pay attention to the horizontal alignment of the operator.
- **The distances A and B always have to be measured from the pivoting point of the gate.**

Swing gate operators SLIM S/C	inside swinging		outside swinging
max. wing width	2,5m	2,0m	2,5m
A (mm)	150	100	150
B (mm)	140	150	140
C (mm)	1095	1095	780
opening angle (Grad)	95°	120°	95°

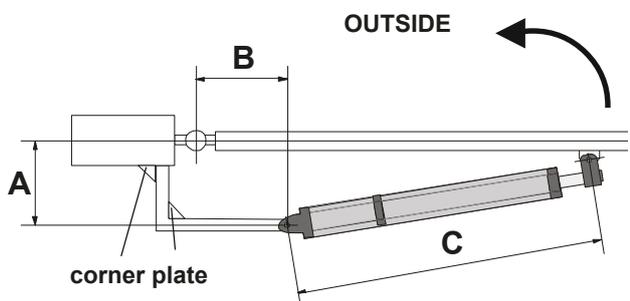
**inside swinging gate wing**  
(Center of rotation in line with center axis of gate wing)



**inside swinging gate wing**  
(Center of rotation not in line with center axis of gate wing)



**Special case - outside swinging gate wing**



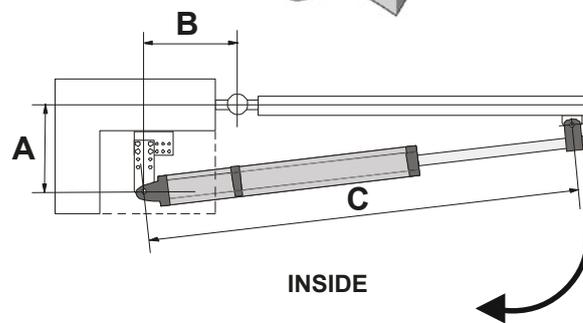
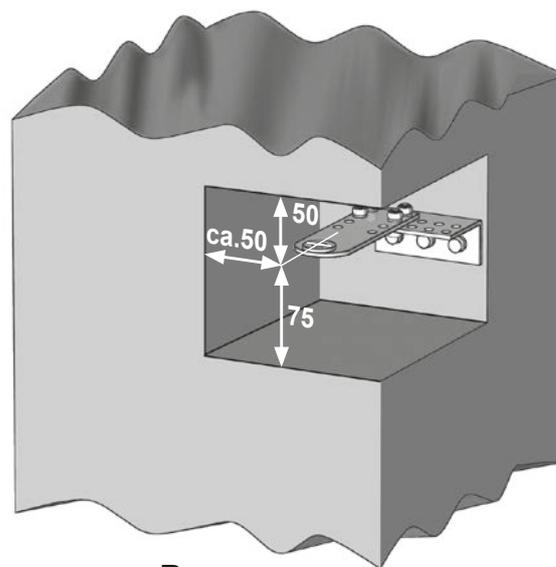
Note: In order to increase the strength of the connections we recommend reinforcing the welding brackets with corner plates.

**Installation on larger gate columns**



**Note**

- On larger gate columns and inside swinging gate leaves a recess according to the illustration below has to be made. This will help you keeping the distances A, B.
- **Note:** The recess in the gate column has to be big enough to make sure that the electrical supply cable of the operator will not be buckled.



**Installation of the rear mounting part**

- After having determined the pivoting point of the operator with regard to the measurements A and B please mount the rear mounting part (2) at this position on the gate column (wall).

**Installation of the front mounting part**

- Connect the front mounting part (1) to the gate leaf, keeping the **distance C**. Please make sure that the gate is fully closed and that the operator will be mounted horizontally.
- **On thin-walled or wood-panel gate leaves the connector bracket must not be mounted directly on the gate leaf. In these cases a flat steel plate must be installed to support the connector bracket.**



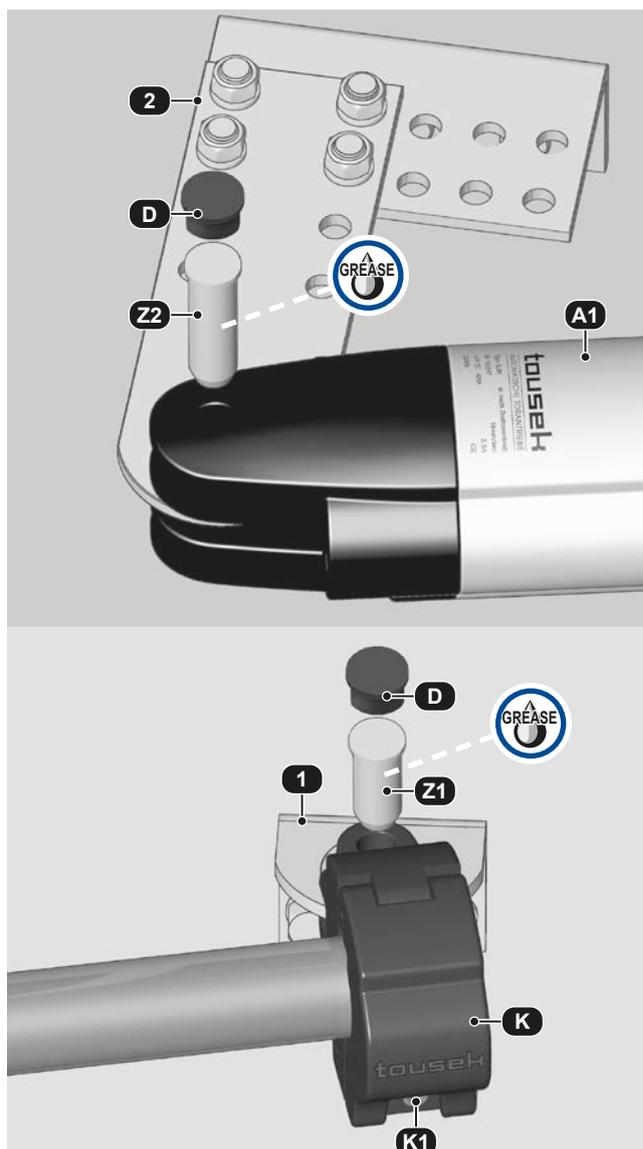
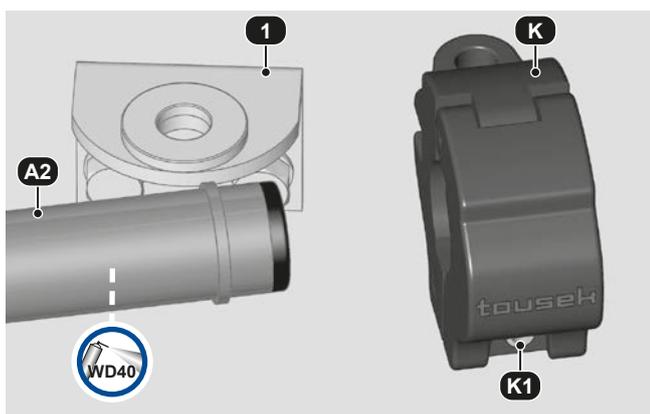
**Important**

- **The operator piston rod must not travel out its whole length (at least 5 mm have to remain)! Thus the travel of the gate wing has to be limited by floor stoppers, or the Tousek piston rod stroke limiting device has to be used.**



### Important

- The operator always has to be installed with the rear cable inlet facing downwards.
  - After installing the mounting parts the operator itself can be mounted. Before, grease the mounting parts at their pivot points, as well as the push rod (in extended position)!
  - Therefore set the operator (A1) motor-sided on the rear mounting part (2) and insert the longer one of both cylindrical bolts (Z2) as well as the cover (D) from above.
  - Open the hexagon socket screw (K1) and put the clamping piece (K) on the push rod (A2). Position the clamping piece exactly on the circular nose of the push rod and tighten the hexagon socket screw.
  - Now insert the clamping piece (K) in the front mounting part (1) and insert the cylindrical bolt (Z1) and the cover (D) from above.
- Note: The push rod can be brought in the desired position by turning it.
- Tighten the hexagon socket screw (K1).



### Greasing of the moving mounting parts and of the push rod

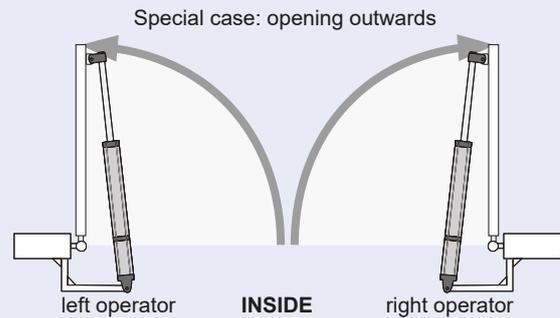
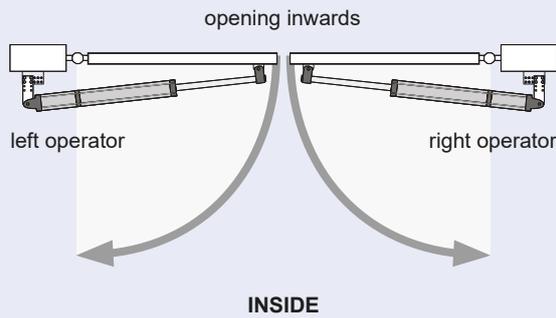
- All the pivot points (the drills of the mounting parts and the corresponding bolts, which allow a defined mounting of the actuator) have to be lubricated with grease before mounting the automation!
- Also spray the push rod (in extended position) with WD40!
- Let the automation run two or three times (open and close it)
- Grease the automation regularly ( according to the maintenance instructions).





## Pay attention to the door situation!

When connecting the operators to the control unit, always pay attention to the door situation, ie whether the door opens inwards or outwards (= special case). The drive connection (see control manual) and the function of the limit switches are dependent on this. (see below).



### 2c. Electric connections and force adjustment

Installation

- Before carrying out the electrical connections, the power supply of the gate facility must be turned off.
- Connect the operator according to the manual of the control.
- Connect various safety devices, impulse emitters and other accessories according to their manuals (pay attention to the cable plan).
- The force adjustment of the operator is carried out in the control (see control manual).



### Attention

- At connection-, adjustment and maintenance works please make sure, that the electronic printed circuit board is not damaged by moisture (rain).
- At force adjustment the valid standards and safety regulations must be kept.

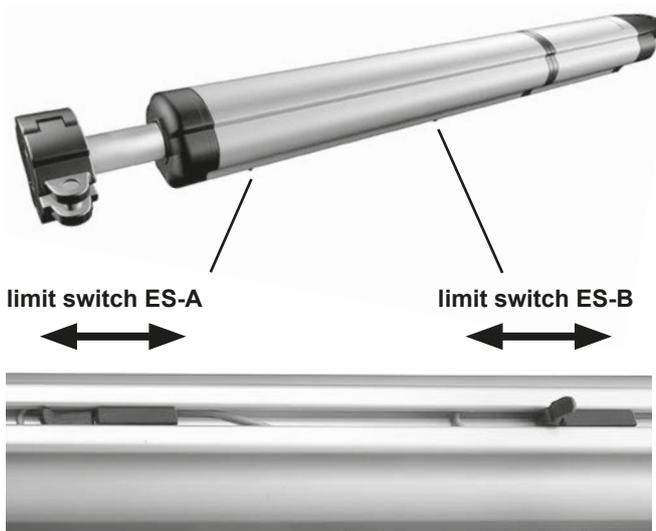
### 2d. Limit switches

Installation

- The operator types **SLIM SLR** and **SLIM CLR** are equipped with **limit switches**. It is nevertheless recommended to foresee floor stops, especially in position "gate closed". The adjustment of the end positions is done with the limit switches for positions "gate opened" and "gate closed" which are on the underside of the operator (by moving them laterally). For adjustment please see *manual of control*.

#### internal limit switches of SLIM SLR, -CLR

door situation	opening inwards	opening outwards
limit switch	for gate end position	
ES-A	CLOSED	OPEN
ES-B	OPEN	CLOSED



For moving the limit switches you have to unfix the latching at first.



- All other operator types work **without limit switches**. The control turns the motors off automatically, when they reach their end positions (by current measurement). Floor stops have to limit the travel of the gate in opened as well as in closed position.

### 2e. Dismounting the operator



It has to be taken care, that the power supply of the operator is turned off before dismantling! Dismounting the motor is done in the reverse mounting order.

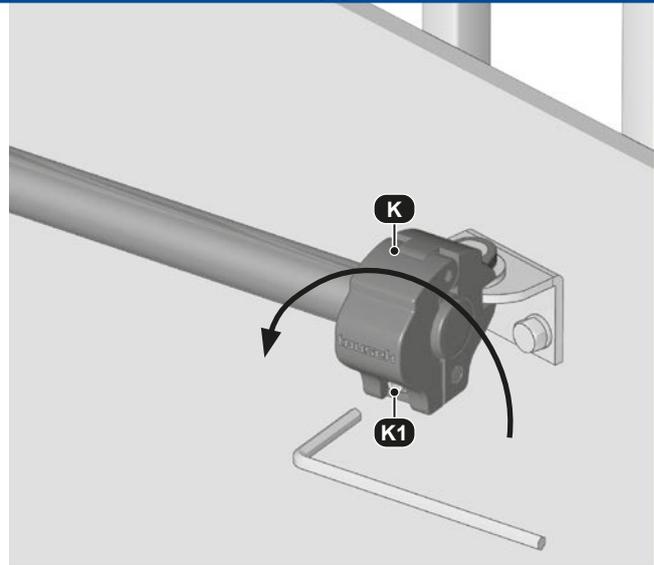
### 3. Emergency release in case of power failure

Swing gate operator SLIM S/C

Basically, the control unit can be equipped with an optional emergency backup battery which keeps the gate operational also in case of power failures. Should it become necessary to disengage the operator please follow the below steps:

- Open the hexagon socket screw (**K1**) so far, that you can open the clamping piece a bit and move out the push rod.
- Now push rod and gate are no longer connected and the gate can be operated manually. Move the gate slowly (not faster than in motor operation).
- To return to motor operation insert the push rod in the opening of the clamping piece and tighten the hexagon socket screw.

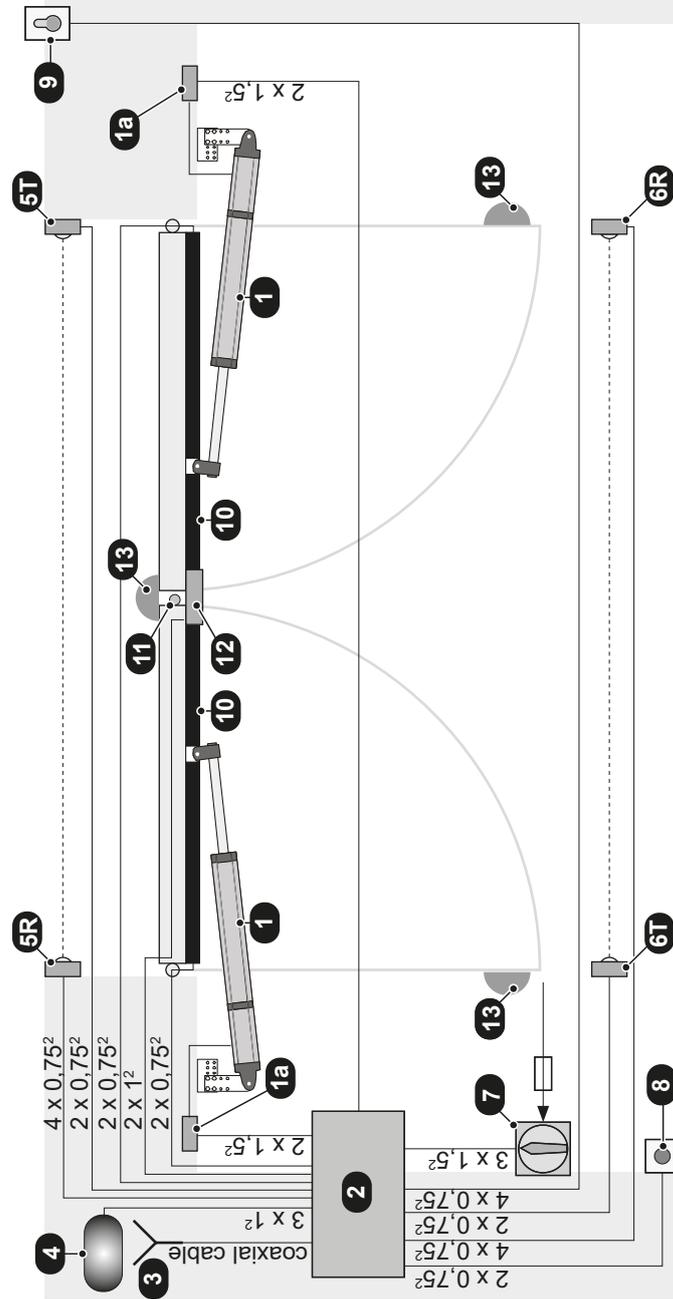
**Before tightening please make sure, that the clamping piece is positioned at the circular nose of the piston rod.**



## 9. Cable plan

- 1 operator Tousek SLIM
- 1a connection box
- 2 electronic logic control (optional with integrated radio receiver)
- 3 external antenna (for increased range)
- 4 signal light
- 5 external photocell
- 6 internal photocell (T: transmitter, R: receiver)

- 7 main power switch and fuse 12A
- Note: An all-pole disconnecting main switch with a contact opening-gap of minimum 3 mm has to be foreseen.
- 8 pushbutton momentary contact switch
- 9 key-operated momentary contact switch
- 10 safety sensing edges
- 11 hinged locking bar
- 12 electric lock
- 13 floor stops



## Swing gate operator SLIM S/C



### NOTE concerning cable laying

The electric cables have to be laid in insulating sleeves which are suitable for underground usage.

230 V cables and control lines have to be laid in separate sleeves.

Only double-insulated cables, which are suitable for underground usage may be used.

In case that special regulations require another type of cable, cables according to these regulations have to be used.



### SAFETY NOTE

Please be aware that the beside picture is only a symbolic sample illustration of a gate facility and may therefore not show all safety devices required for your specific application.

To achieve an optimum safety level at your gate facility, please make sure that all safety components and accessories which - according to the applying safety rules and laws - are required in your particular case (e.g. photocells, induction loops, sensing edges, signal lamps, traffic lights, mains- and emergency power off switches etc.) are properly installed, operated, and serviced.

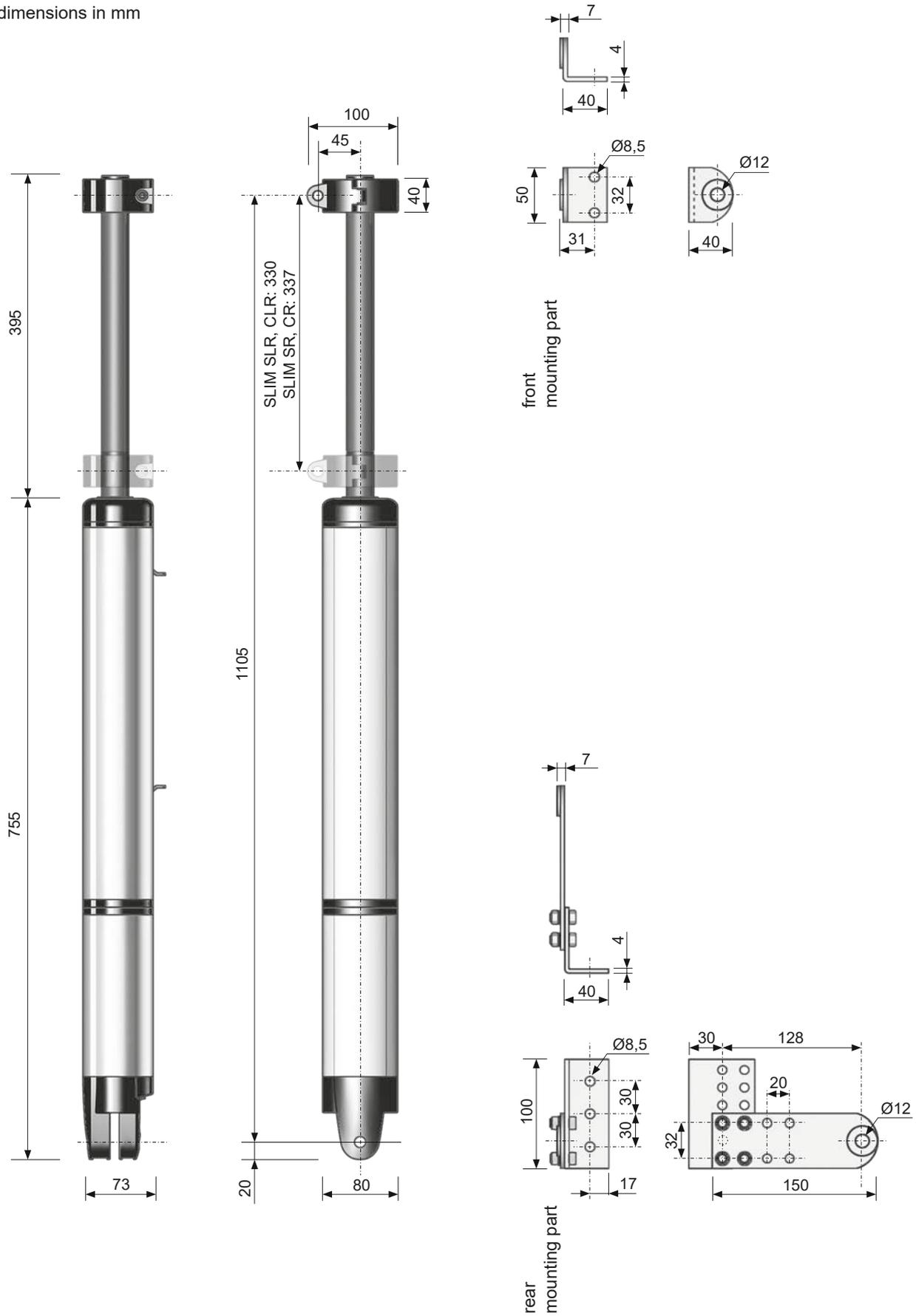
In this context please follow the EU Machine Directive, accident prevention rules and laws, as well as applying EU- and national standards in force at the time of installation and operation of the gate facility.

The Tousek Ges.m.b.H. cannot be held responsible for any consequences resulting from disregard of applying standards and laws during installation or operation of the gate facility.

The 0,75mm² control lines are shown without ground lead. In order to facilitate connections we recommend using flexible wires and not using thicker wires for the control lines.

# 10. Dimensioned drawing

• dimensions in mm



We reserve the right to change dimensions and technical specifications without prior notice.



### Declaration of incorporation

In compliance with EC Machine Directive 2006/42/EC, Annex II B for the installation of an incomplete machine.

We hereby declare that the following product, as well as its version, put by us into circulation, complies with the essential requirements of the Machinery Directive (2006/42/EC), due to its design and type of construction.

The validity of this declaration will cease in case of any unauthorized modifications to the products.

#### The product:

#### Swing gate operator SLIM SR, -SLR, -CR, -CLR

is developed, designed and manufactured in accordance with:

Machinery Directive 2006/42/EG  
Low Voltage directive 2014/35/EU  
Electromagnetic compatibility 2014/30/EU

Applied and used standards and specifications:

EN 60335-2-103  
EN 55014-1, -2  
EN 55022  
EN 55024

Following requirements of Annex I of the EC Directive 2006/42/EC are met:

1.1.2, 1.1.3, 1.1.5, 1.2.1, 1.2.2, 1.2.3, 1.2.6, 1.3.2, 1.3.4, 1.3.7, 1.5.1, 1.5.4, 1.5.6, 1.5.8, 1.7

The relevant technical documentation is compiled in accordance with Annex VII, Part B of the EC Machinery Directive 2006/42/EC.

We undertake to submit it in electronic form and within a reasonable time to the market surveillance authorities in response to a duly substantiated request.

**TOUSEK Ges.m.b.H., A1230 Wien, Zetschegasse 1, Austria**

is authorized to compile the technical documentation.

The incomplete machine cannot be put into service, until it is determined that the machine, into which the incomplete machine has to be inserted, complies with the the Machine Directive 2006/42/EC.

Eduard Tousek, CEO

Vienna, 01. 01. 2017

### EC Declaration of Conformity

In compliance with EC Machine Directive 2006/42/EC, Annex II, Part 1 A.

When the described operators are connected to a gate they form a machine in the sense of the EC Machine Directive.

Relevant EU directives:

Construction Products Directive 89/106/EWG  
Machinery Directive 2006/42/EG  
Low Voltage directive 2014/35/EU  
Electromagnetic compatibility 2014/30/EU

We hereby declare that the following product, in the version put by us into circulation, complies with the essential requirements of the Directives mentioned above. The validity of this declaration will cease in case of any unauthorized modifications to the products.

#### Product:

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*Gate description*

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*Motor description*

The incomplete machine cannot be put into service, until it is determined that the machine, into which the incomplete machine has to be inserted, complies with the the Machine Directive 2006/42/EC.

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*Installation company*

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*Address, ZIP code, Place*

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*Date/ Signature*

Motor number (Type plate): \_\_\_\_\_

Other components:

## **tousek PRODUCTS**

- sliding gate operators
- cantilever systems
- swing gate operators
- garage door operators
- folding door operators
- traffic barriers
- electronic controls
- radio remote controls
- key operated switches
- access control
- safety devices
- accessories

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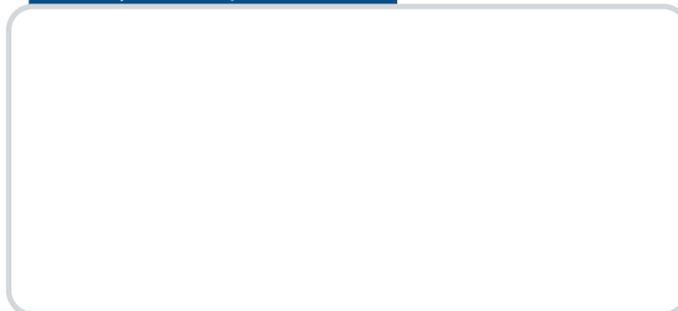
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