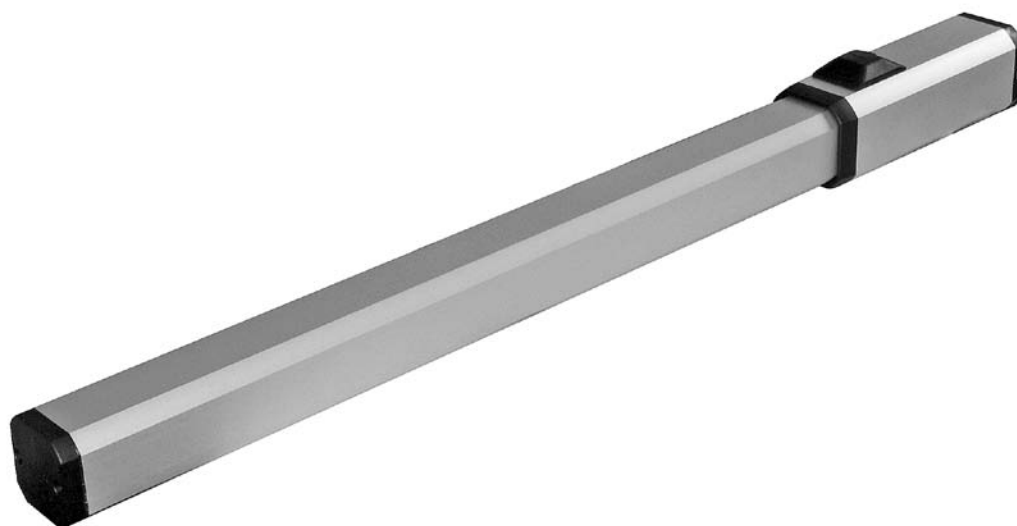


Installation and operating manual

Swing gate operator SWING 225





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!
- 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.**
- **Check the proper force adjustment once a month.**
- **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.**
- **Apply the grease HSW100 at the pivot points of the operator and on the push rod (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.**

EU - Manufacturer's Declaration according to Machine Directive 2006/42/EC:

The company TOUSEK Ges.m.b.H., based in Zetschegasse 1, A-1230 Vienna/Austria, hereby declares that the "swing gate operator SWING 225" is made available only for the purpose of being built into a machine or being joined with other machines or machine components, and that it may not be put into operation until a declaration of conformity according to the Directive 2006/42/EC has been issued for the whole machine.

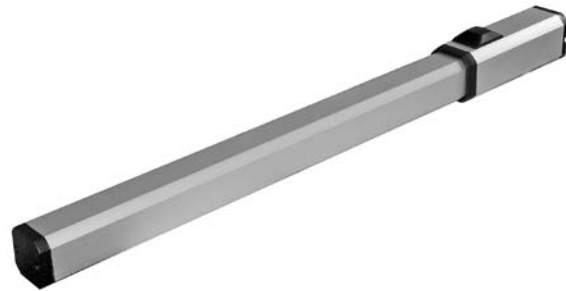
The following directives and standards have been applied:

- Low Voltage Directive 2006/95/EC, incl. changes
- Electromagnetic Compatibility Directive 2004/108/EC, incl. changes

January 2012

Characteristics

- electrohydraulic operator for swing gates 230Va.c.
- max. leaf weight 400kg
- **closed hydraulic system**
- no bleeder screw
- suitable for subsequent installation
- incl. mounting material
- thermic protection
- duty cycle 30%
- **CE**



General characteristics

New or already existing swing gates can be easily and quickly automated with the TOUSEK 225 operator which has been designed for heavy swing gates and high operating frequencies.

The electrohydraulic operator consists of a quiet-running pump, a powerful single-phase electric motor and a precise piston-cylinder-unit.

These components are connected by a fully enclosed hydraulic system and contained in an anodized aluminum housing. Two separate bypass-valves permit the continuous adjustment of the opening and closing forces.

The hydraulically self-locking models provide the safe blocking of the gate in the open and closed position and do normally not require the installation of an electric lock. However, on some installations it can be necessary to use an additional locking device, e.g. an electric lock, in order to achieve a secure fixing of the gate wings in the open and closed positions, even if the self-locking models are used.

With the non-self-locking models an electric lock secures the gate in its closed position. If desired, the gate can be held in the open position by additional electromagnets.

An emergency release mechanism permits the manual operation of the gate in case of e.g. a power failure.

Technical Data

Swing gate operator SWING-	225 AEB/29 N	225 NB/29 N
Power supply	230V ± 10%, 50Hz	
capacitor	10µF	
current consumption	0,9A	
max. piston force	3000N	
piston speed	10,0mm/s	
motor r.p.m	30bar	
max. stroke length	285mm	
duty cycle	30%	
max. leaf weight	400kg	
max. leaf width	1,8m	2,5m
blocking with closed gate	•	
Art.no.	11210210	11210220
Other	closed hydraulic system • force regulation through bypass valves • emergency release	

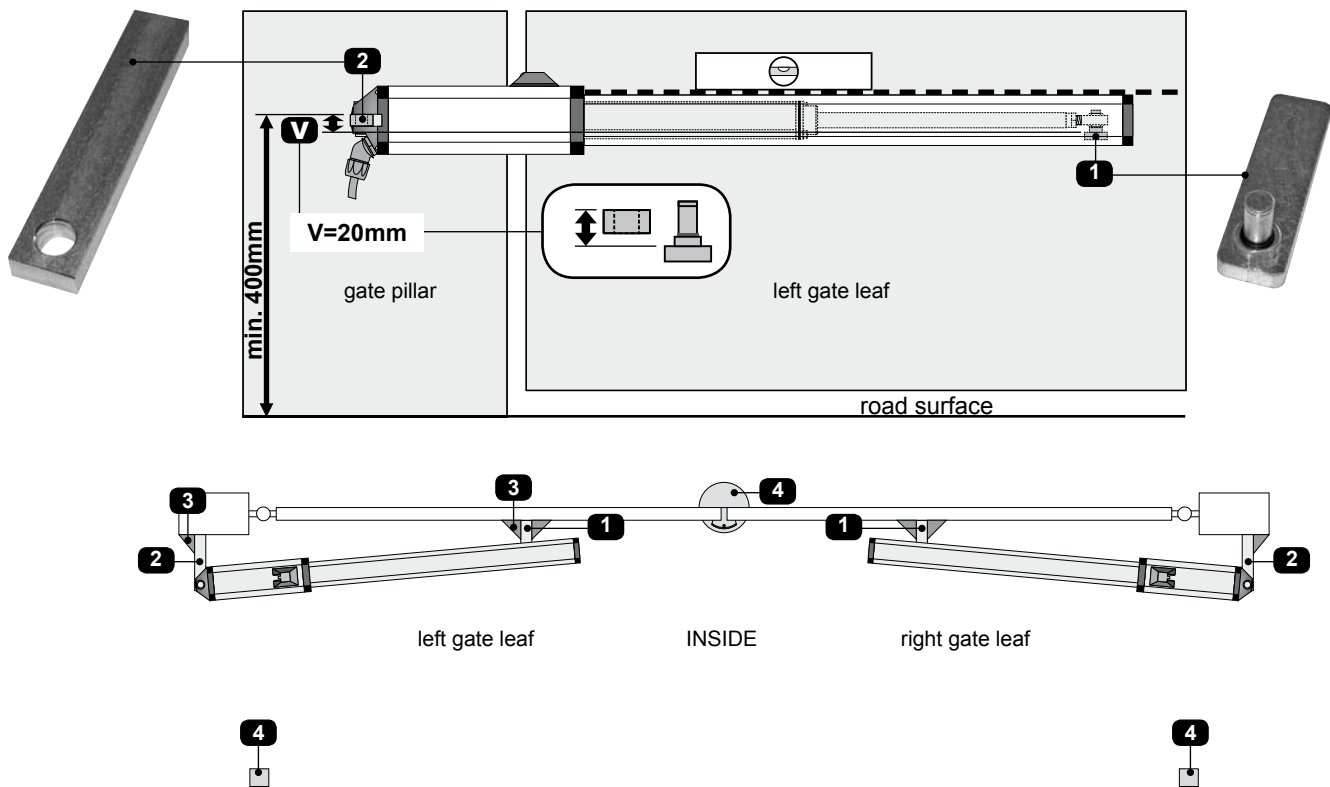


Note: the max. gate leaf widths are for wind permeable and horizontal gates only!



General installation notes

- before mounting make sure that the gate positions for gate open/gate closed are defined by floor limit stops (4) (if this is not the case then these have to be installed or as alternative you can use the Tousek travel limiter). The limit shall not be made through end positions of operator (the piston rod must NOT be completely driven to the limit – min. 5mm of spare travel) !
- In order to increase the strength of the connections we recommend reinforcing the welding brackets (1+2) with corner plates (3). The welding brackets included in the shipment may have to be modified to adapt to different gate wings and columns.
- for slim/wooden gates the front welding part (1) must not be mounted directly on the gate. It should be placed under a flat steel.
- control the robustness of the gate structure, the easy movement of gate leaves and for older gates the wearout of all components. Broken or worn out parts have to be repaired or replaced.
- *) Attention: in order to avoid dirt and to ensure a reliable long term use, a minimum distance of **400mm to the passage way should be foreseen.**
- The mounting positions for the front (1) and rear (2) welding brackets can be seen in the following charts.
For a horizontal alignment of the motor a vertical backfill (V=20mm) has to be used between den welding parts.



2a. Assignment of mounting points and attachment of welding parts

Installation

Mounting positions



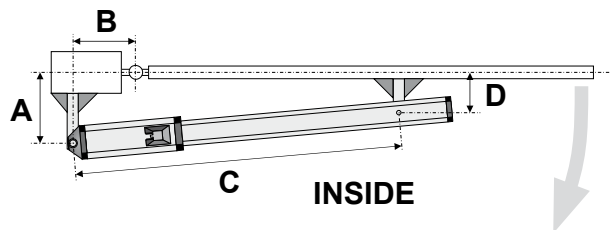
NOTE

The mounting positions for the front (1) and rear (2) welding brackets can be seen in the following charts. The A, B, and D distances always have to be measured from the center of rotation of the gate wing's hinge.
For a horizontal alignment of the motor a vertical backfill (V=20mm) has to be used between den welding parts.

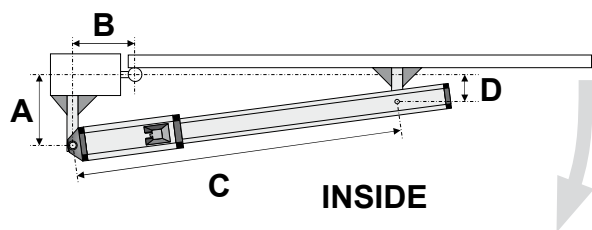
Mounting measures with different swing gate installations

Opening to the INSIDE (Center of rotation in line with center axis of gate wing)

- profile strength max. 60mm



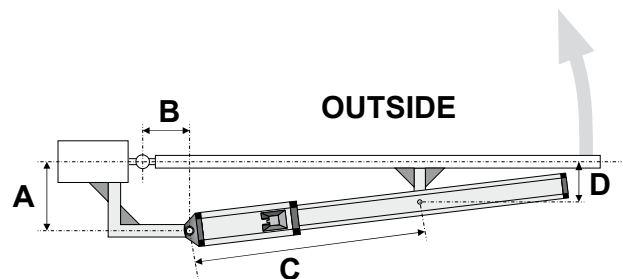
Opening to the INSIDE (Center of rotation not in line with center)



Mounting measures SWING 225/29 opening to the INSIDE

Application	standard	dimensions for max. opening angle
leaf width max. up to	2,5m	
A (mm)	130	110
B (mm)	130	120
C (mm)	900	900
D (mm)	100	95
max. opening angle	90°	110°

Special case: opening to the OUTSIDE



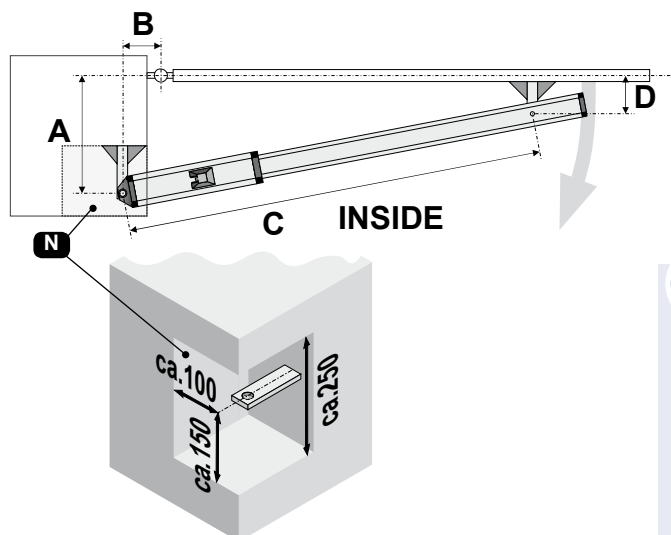
Note

- In this special case where a type 265 operator is installed on the inside of an outside swinging gate leaf, the version 225 AEB can be used up to a gate leaf width of 1.8 m. On wider gate wings the 225 NB version has to be used, and an additional electric lock has to be installed.
- Furthermore, the rear connecting bracket has to be very strong or supported in order to limit vibrations

Mounting measures SWING-225 AEB opening to the OUTSIDE

	225 AEB/29	225 NB/29
leaf width max. up to	1,8m	2,5m
A (mm)	125	
B (mm)	125	
C (mm)	630	
D (mm)	110	
max. opening angle	95°	

Installation on larger pillars



NOTE

- On existing larger gate columns the operator series 265/44 can be used.
- On larger gate columns it may be necessary to make a recess (N) in order to achieve the dimensions A and 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**

Installation of welding parts

Installation of the rear welding bracket

- After having determined the center of rotation of the operator with the help of the chart, the rear welding bracket (2) can be installed (please reinforce with a corner plate (3)).

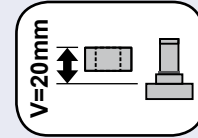
Installation of the front welding bracket

- Please fix the front welding bracket (1) to the gate wing in conformity with the dimension C. **Attention: check upper-/lower side** (see pict.).
- **Make sure that the gate is completely closed, and that the operator will be installed in a level position.**
- **On gate leaves with thin panels or on wooden gate leaves the front welding bracket (1) cannot be directly attached to the gate wing. In such cases the front welding bracket has to be connected to a piece sheet metal which has been previously mounted to the gate wing.**
- The operator piston rod is then connected to the welding bracket with the help of a bolt and a Seeger circlip ring.
- **also the front welding bracket (1) should be reinforced with a corner plate (3).**



Important

- **keep backfill of welding parts!**



2b. Installation of operator

Installation

- after having installed the welding parts **and** corner plate (3) install the operator as follows:
- **Before mounting make sure that the movable parts on the rotation points are lubricated!**
- place piston rod (KS) of operator with drilling of ball bearing (KL) onto the front welding part (1) and fix with snap ring (1a).



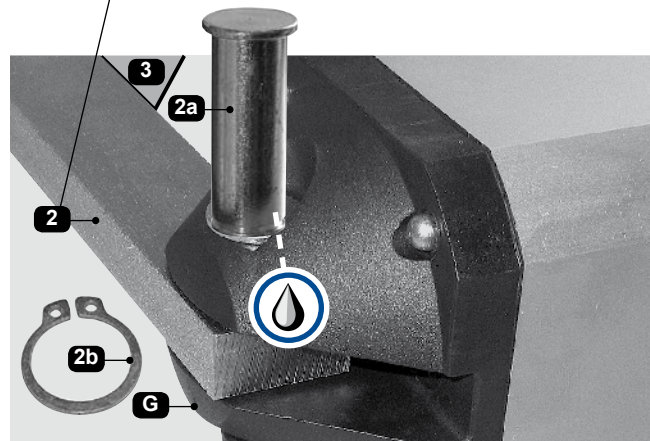
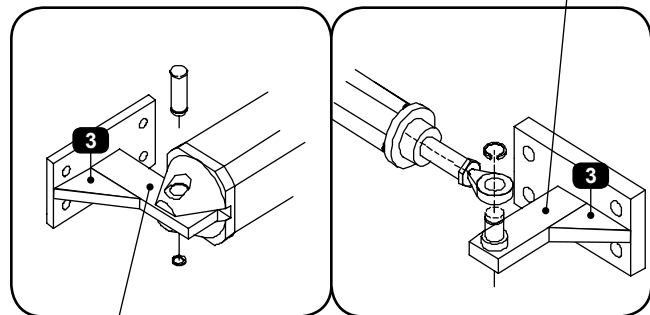
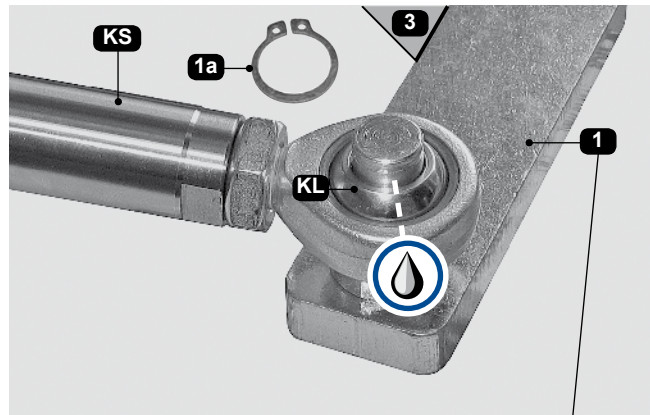
IMPORTANT

- **The operator piston rod (KS) 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.**



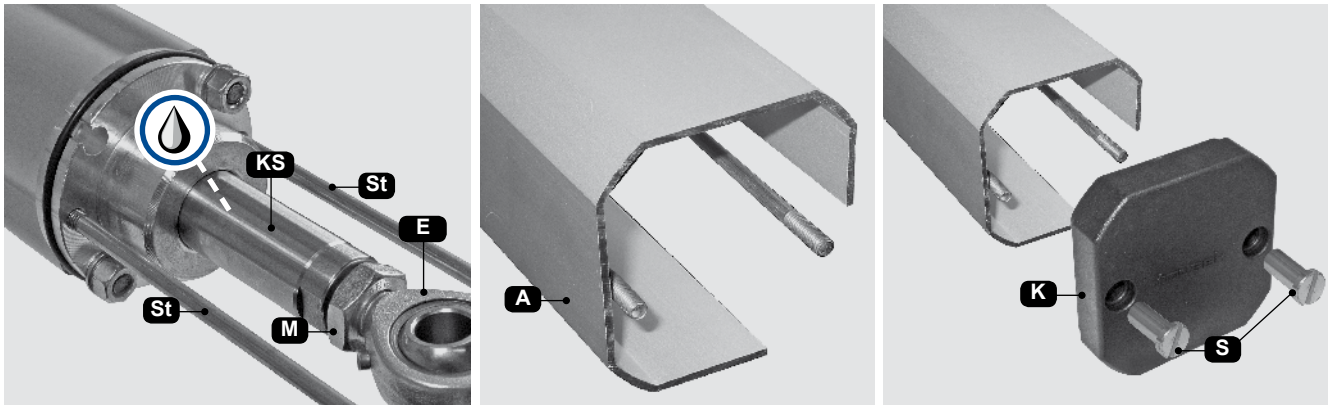
Lubricate movable parts

- **the rotation points of the operator before mounting must be well lubricated with HSW100! (e.g. drillings of welding parts and bolts/anchors for mounting the operator to the welding parts)**
- **Grease the automation regularly (according to the maintenance instructions)**
- now turn the gate leaf as much as the fork (G) of the operator can be suspended onto the rear welding part (2)
- now insert the bolt/anchor (2a) from above and fix it with snap ring (2b) .



Readjustment and und attachment of cover

- Spray the piston rod (in extended position) with HSW100 Spray!
- In case the necessary remaining travel way of the piston rod (KS) can not be reached (min. 5mm) because of unprecise measurements, it is possible to unscrew a little bit the end of the piston rod (E).
- Make sure to tighten the screw nut (M).
- Now screw the two rods (St) into corresponding drillings of the operator.
- After having slid on the cover (A) put on the cap (K) and fix it with the 2 bolts (S) on the two rods (St).



Greasing of the piston rod

- Spray the piston rod (in extended position) with HSW100 Spray!
- Let the automation run two or three times (open and close it)
- Grease the automation regularly (according to the maintenance instructions).

2c. Electrical connections

Installation



Warning

- Before carrying out the electrical connections, the power supply of the gate facility must be turned off
- The safety regulations for electric shock prevention have to be complied.
- The device should only be connected by qualified personnel
- The device should not be used in an explosive environment !
- An all-pole disconnecting mains switch with a contact opening gap of min. 3 mm has to be foreseen. The gate facility has to be secured according to the valid safety regulations!
- **IMPORTANT:** The control lines (buttons, radio, photocells, etc.) have to be laid separately from the 230V lines (supply line, motors, signal lamp) and can have a max. length of 50m. For lengths > 50m please use decoupling methods!



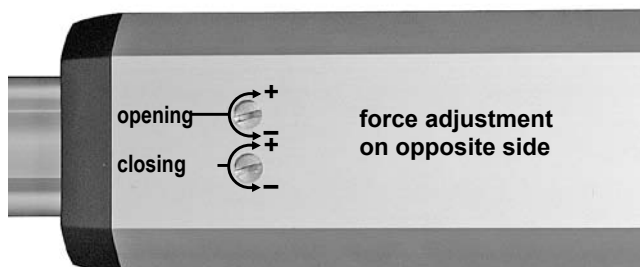
- The gate facility must be turned off from power supply when making the electrical connections..
- For the connection with the control unit please check the corresponding manual.
- For the connection of diverse safety devices, transmitters and other accessories please check the corresponding manuals (please note cable/wire plan).



Warning

- For force adjustment please turn valves smoothly, without bolting or unbolting them completely. Please note that the motors are delivered with already optimal force adjustment.
- To ensure optimal safety against crushes the shear force should only be slightly higher than necessary in order to move the leaves for opening and closing. The force measured at the end of the leaf should not exceed the nationally prescriptive limits.
- Never completely screw in the bypass valves.
- The operator is not equipped with electronic limit stops. Therefore the motors will stop when the adjusted travel time on the control board has expired. The operating time (travel time) has to be adjusted so that when the gate leaves meet the end stops on the ground it still runs for 5-10 seconds.

- Two force-adjustment-screws are situated on the lower side of the operator.
- when turning **clockwise** the force will be increased.
- when turning **counter clockwise** the operator force will be **decreased**.
- The forces for opening and closing have to be adjusted



2e. Dis-installing the operator


To dis-install the operator please follow the reverse installation procedure.



Before dismantling the operator please make sure that the power supply has been disconnected!

3. Emergency release of motor

Swing gate operator SWING 225

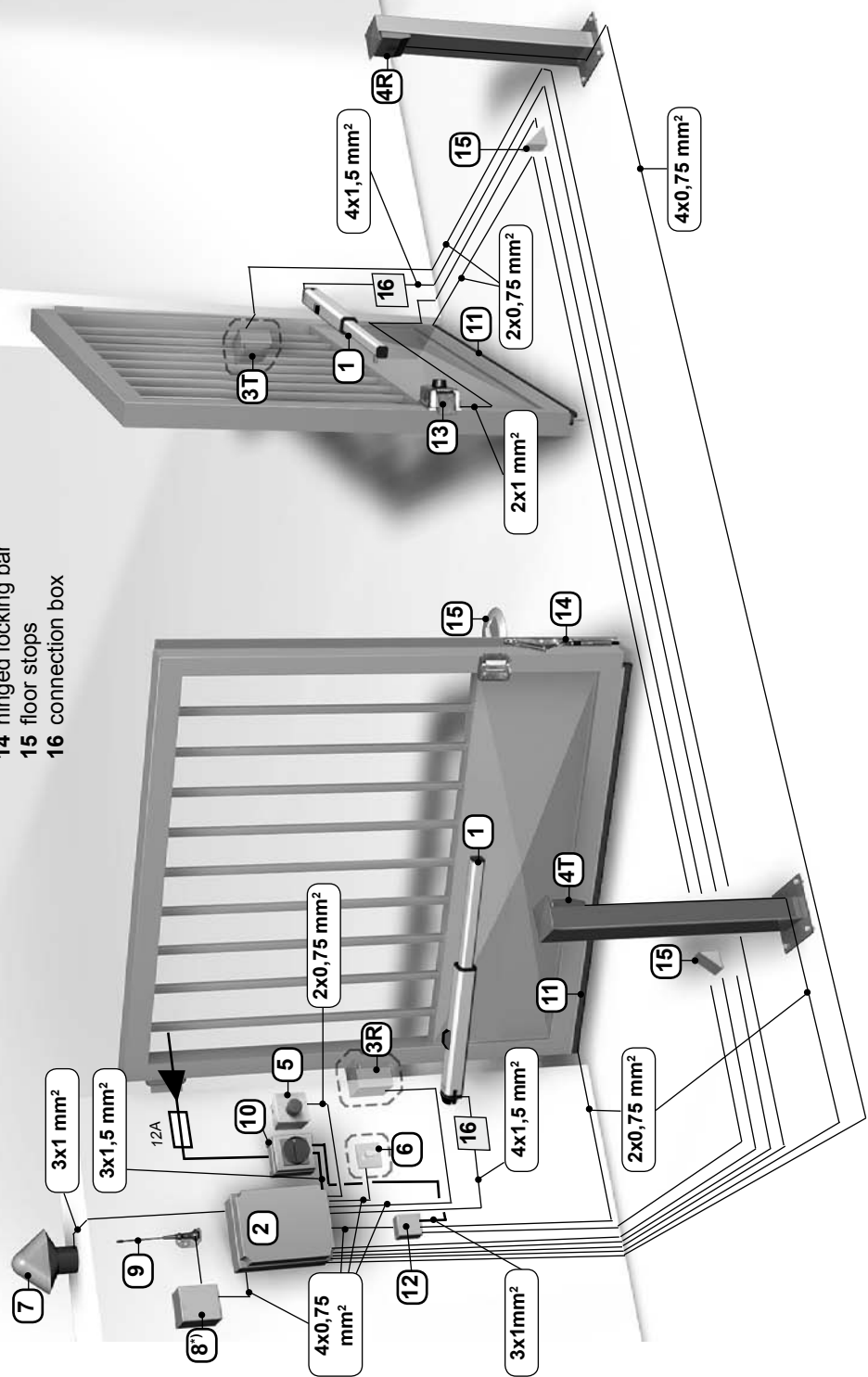
- If you need to release the motor for manual use, please proceed as follows:
 - **Turn off power supply !** 
 - First, remove the plastic cover lid from the override mechanism, situated on the upper side of the operator. then insert the emergency override key and turn it max. 2 turns counterclockwise.
 - Now the gate leaf can be slowly moved by hand (don't try to move it faster than the motor would do).
 - To set the operator back into its normal operation mode please turn the emergency override key clockwise until a firm resistance can be felt.
 - Then put back the cover and turn on power supply.



4. Cable plan

- 1 operator Tousek SWING 225
- 2 electronic logic control
- 3 external fotocell (T: transmitter, R: receiver)
- 4 internal fotocell (T: transmitter, R: receiver)
- 5 pushbutton momentary contact switch
- 6 key-operated momentary contact switch
- 7 signal light

- 8 radio remote receiver, *) included into the logic control box on the „ST“-models)
- 9 antenna (connection to radio receiver with coaxial cable)
- 10 main power switch and fuse 12 A
Note: An all-pole disconnecting main switch with a contact opening-gap of minimum 3 mm has to be foreseen
- 11 safety sensing edges
- 12 switching device for safety sensing edges
- 13 electric lock
- 14 hinged locking bar
- 15 floor stops
- 16 connection box



NOTE concerning cable laying

The electric cables have to be laid in insulating sleeves which are suitable for underground usage. The insulating sleeves have to be lead into the inner of the operator housing.

The control lines (buttons, radio, photocells, etc.) have to be laid separately from the 230V lines (supply line, motors, signal lamp) and can have a max. length of 50m. For lengths > 50m please use decoupling methods!

Only double-insulated cables, which are suitable for underground usage (e.g. E-YY-J) 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.

All possible bruise, shear and general danger areas of the motorised gate have to be secured.

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.

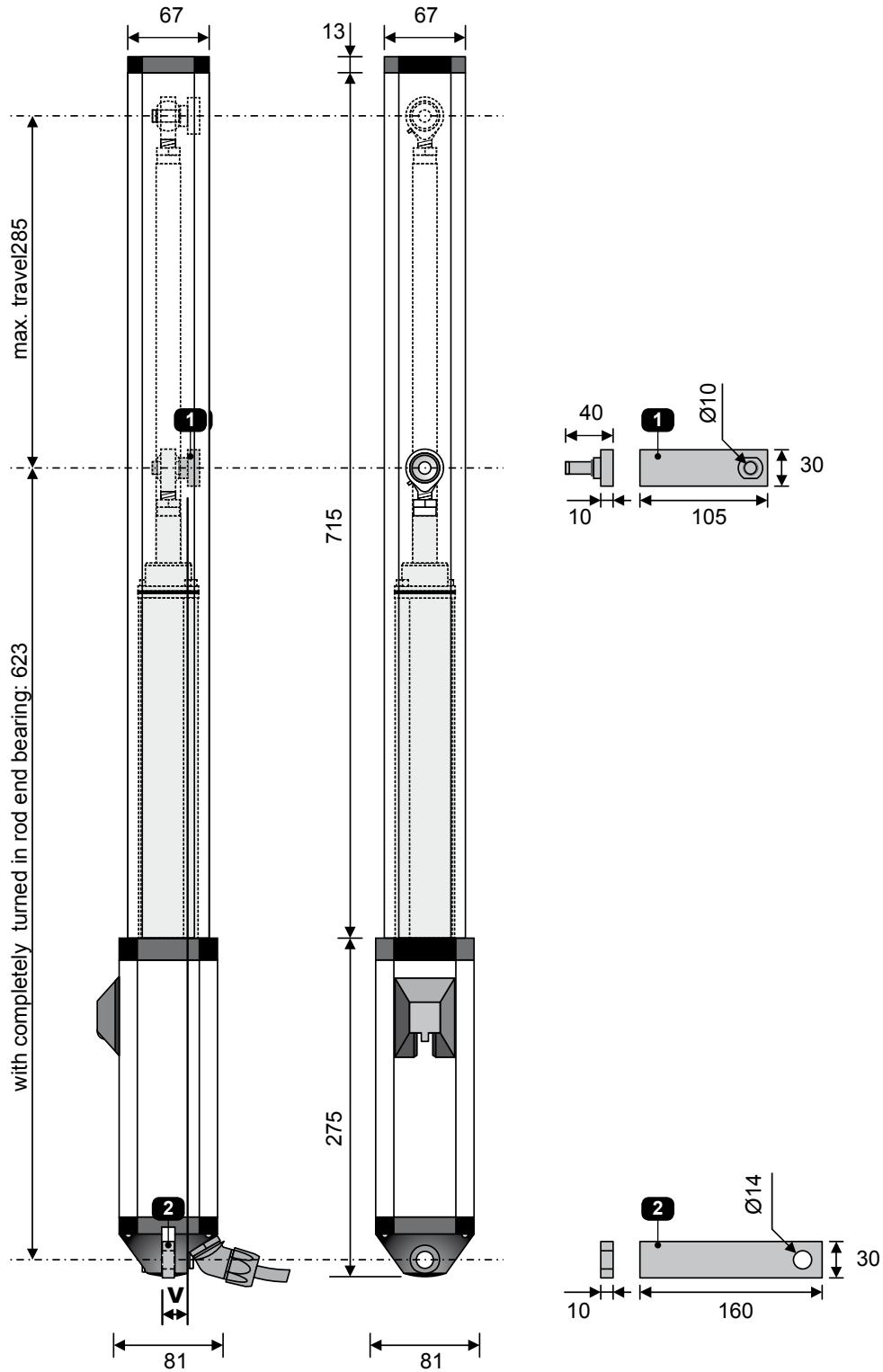
The 0,75mm² control lines are shown without ground lead. In order to facilitate connections we recommend using flexible wires and not using thicker wires for the control lines.

5. Dimensioned drawing

Swing gate operator SWING 225

• dimensions in mm

- (1) front welding bracket (mounting on the gate - supported by gusset plate!)
- (2) rear welding bracket (mounting on the gate pillar/column - supported by gusset plate!)
- (V) respect a **backdraft V (= 20mm)** of front and rear welding part!



measures and technical modifications
subject to change !

tousek PRODUCTS

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

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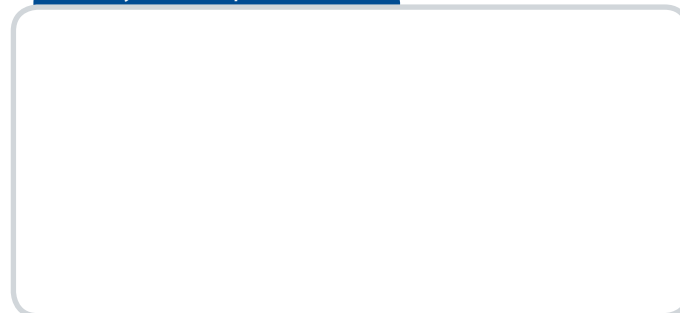
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