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OPERATOR

SWING-3000/5000PRO



Installation and Operating Manual

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1. GENERAL INFORMATION

The electromechanical linear operator Swing-3000/5000PRO is intended for automation of a street double-leaf swinging gate with a load-bearing structure. The body of the operator, which consists of two silumin parts, houses a motor, a reducer and a lead screw.

The operator is equipped with built-in electrical limit switches for opening and closing.

A self-blocking system, consisting of a worm gear and a planetary gearbox blocks the gate leaves, if the motor is off. The easy-to-use and safe release system allows the gate leaves to be opened/closed manually, in case of a power cut or control unit failure. Operation of the automatic system is controlled from a remote control unit in a shockproof hermetic case.

1.1. RANGE OF USE

Swing-3000PRO

Leaf width, m	Leaf weight, kg
2.00	400
2.50	300
3.00	200

Swing-5000PRO

Leaf width, m	Leaf weight, kg
2.00	500
2.50	400
3.00	300
4.00	250
5.00	200

1.2. TECHNICAL SPECIFICATIONS

Operator	Swing-3000PRO	Swing-5000PRO
Weight, kg	10	11
Supply voltage, V/Hz	220–240/50	
Rated power, W	150	
Intensity, %	50	
Protection rating	IP54	
Gear ratio	1/36	
Rod speed, mm/s	15	
Force, N	3000	
Working temperature range, °C	–40...+55	
Capacitor, mf	10	

1.3. OPERATOR PACKAGE

Upon receiving the operator, unpack it and inspect it carefully. If any signs of damage are observed, please contact your supplier.

The operator components included in the standard package are listed in the following table.

No	Name	Quantity
1	Operator	2
2	Rear fastening bracket	2
3	Front fastening bracket	2
4	Set of fasteners	1
5	Control unit with case	1
6	Keyswitch	1
7	Signal lamp	1
8	Photo cells	1
9	User manual	1

2. SAFETY INSTRUCTIONS



WARNING! IMPORTANT SAFETY INSTRUCTIONS! It is important for the safety of persons to follow safety instructions. Save these instructions.

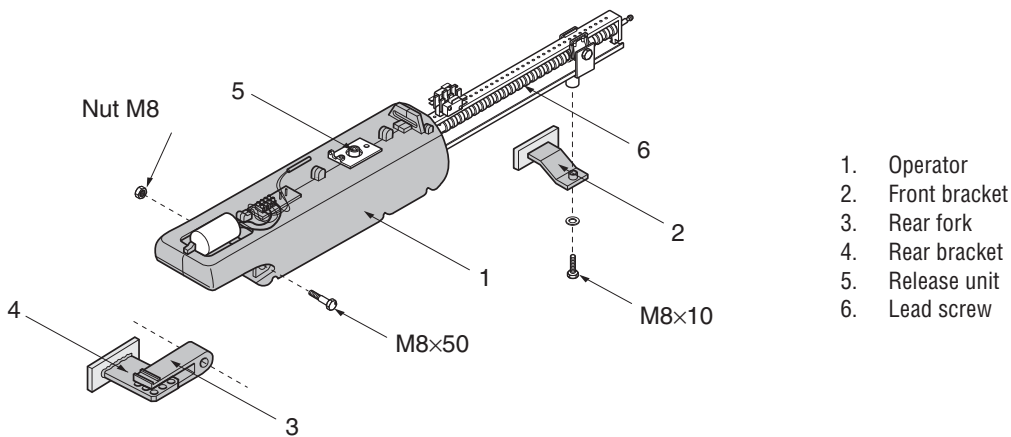
- Follow all instructions since incorrect installation can lead to severe injury.
- Swing-3000/5000PRO was designed for automation of a street doubleleaf swinging gate with a loadbearing structure. Do not use the operator for other than intended purposes.
- DoorHan shall not be held responsible in case of injury caused by misuse of the product.
- Prior to installation make sure that the gate moves smoothly.
- Installation must be performed in accordance with the standards EN12453 and EN 12445. For countries, which are not EC members, these requirements are to be met.
- Check if the gate conforms to the standards EN12604 and EN 12605 (see documentation accompanying the gate). For countries, which are not EC members, the above mentioned requirements shall be met in order to obtain an appropriate safety level.

- Mechanical units of the gate shall conform to the standards EN12604 and EN 12605.
- Prior to installation, check that the location of operator installation is suitable by its climatic conditions to technical specifications of the operator.
- Do not install the operator in premises containing quick inflammable substances or other dangerous environments as it can cause explosion or fire.
- During assembly, installation and adjustment use tools specified in section “Tools” of this manual.
- When performing operation at height, use a stable support.
- The operator is not intended for installation at a height exceeding 2.5 m.
- When drilling holes, use protection for hands and eyes.
- For fastening of the item, use hardware supplied with the operator or other analogous one.
- Disconnect the supply when cleaning or other maintenance is being carried out, if the appliance is automatically controlled.
- If the operator is installed on the gate with a wicket door an additional safety device should be used to prevent operator activation when the wicket door is open.
- Ensure that entrapment between the driven part and the surrounding fixed parts due to the opening movement of the driven part is avoided.
- It is highly recommended to use DoorHan optional equipment as the accessories produced by other manufacturers can damage the automated system.
- DoorHan is not responsible for unstable work of the automatic system when using safety devices and accessories, which are produced by other manufactures without agreement with DoorHan.
- Never leave the electric motors in released condition. This may cause uncontrolled movement of the gate leaves and, consequently, their breakdown.
- Do not use the operator if it needs repair or adjustment as installation defects or unbalanced door can cause injury.
- DoorHan shall not be held liable in case of improper installation of the item and damage arisen during operation.
- Since the operator does not have a power cord with a plug it shall be connected to the mains supply via automatic switch with a minimal distance of 3 mm between the neighboring contacts. It is recommended to use a 10 A double-pole circuit-breaker.
- Be sure there are no obstructions to door travel.
- Do not make any changes in the automatic system not specified in this manual.
- Remove package of the item and dispose of it. Keep the package materials away from children.
- Always keep remote controls out of reach of children. Never permit children to operate or play with garage door control push buttons or remote controls.
- No one should cross the pass of the moving door.
- The content of the manual shall not be basis for any claim.
- The manufacturer reserves the right to modify the design of the product described in this manual without preliminary notice.

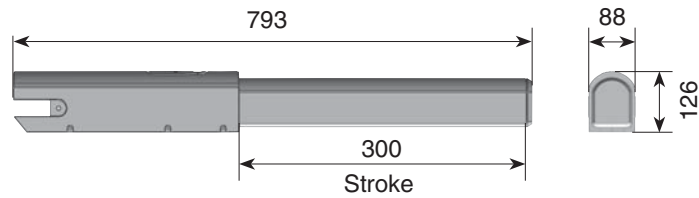


WARNING! For safe and correct operation of the operator it is necessary to install mechanical stoppers to limit gate wing travel.

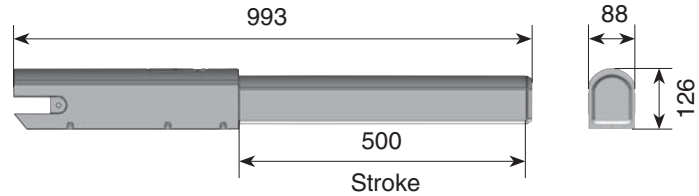
3. OPERATOR UNIT



Swing-3000

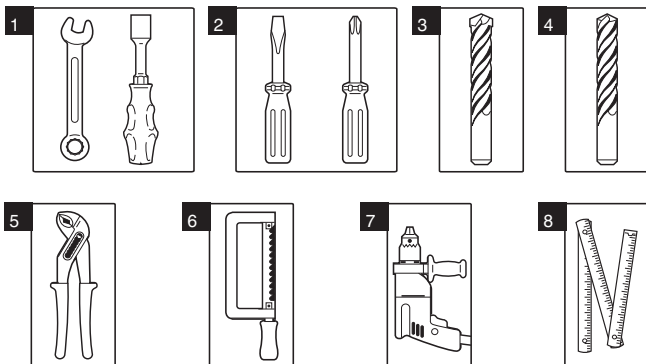


Swing-5000



4. OPERATOR INSTALLATION

4.1. TOOLS



1. Set of spanners
2. Set of slotted and cross screwdrivers
3. Set of drills for metal
4. Set of drills for concrete
5. Pliers
6. Hacksaw for metal
7. Electric drill
8. Tape measure (folding rule)

4.2. INSTALLATION LAYOUT

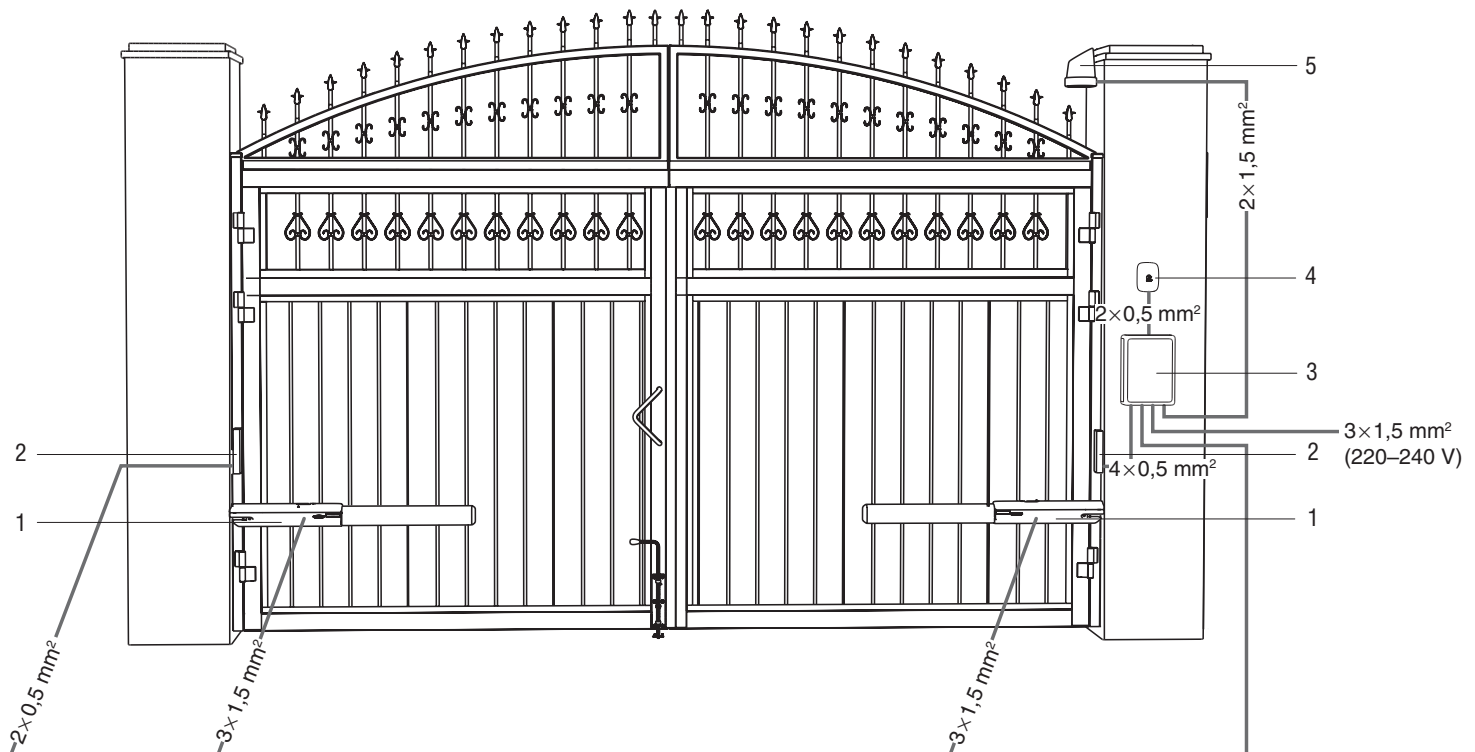


WARNING! RISK OF INJURY!

Have a qualified technician lay the cables 220-240 V AC. The cables must be laid in protective corrugated tubes. Avoid contact of cables and moving parts of the door. In case of supply cable damage, use the suitable type of the cable.

Cables needed for installation of the Swing-3000/5000PRO operator and accessories (if available):

- cable 2×0.5 mm² (photocell transmitter, stepped control button);
- cable 2×1.5 mm² (signal lamp);
- cabel 4×0.5 mm² (photocell receiver);
- cable 3×1.5 mm² (power supply);
- the cables should be appropriately insulated.



1. Operators
2. Photocells
3. Control block
4. Keyswitch
5. Signal lamp



WARNING! Before installation make sure, that the gate moves freely and it is possible to install the operator on the pole and the leaf securely.

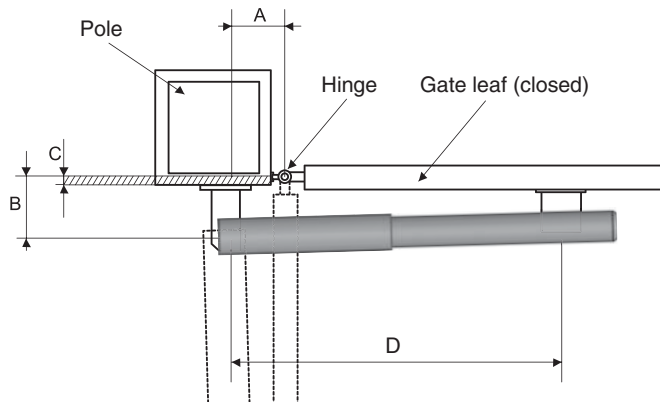
Operator installation procedures are given below in accordance with the gate opening direction.



The following instructions – only examples as the place for installation of the drive and accessories can differ. The assembler's task – to choose the most suitable decision.

4.3. INWARD GATE OPENING

WARNING! Make sure, that the dimension C does not exceed the value indicated in the table below. Otherwise it is necessary to improve the pole according to the indicated dimension value.

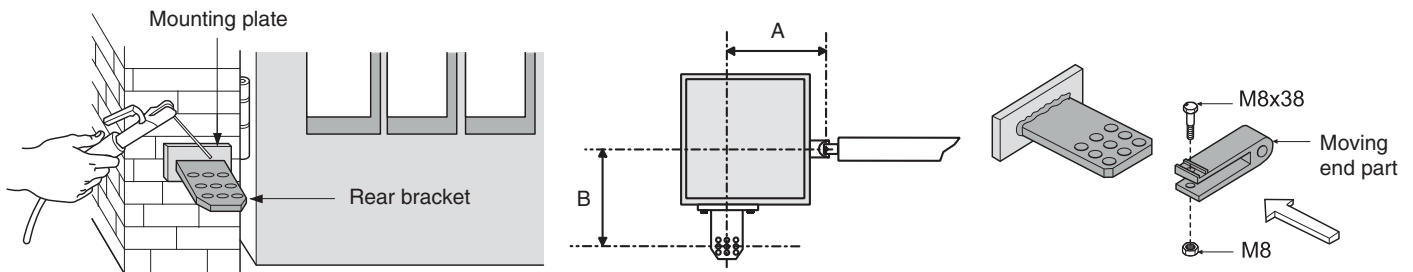


Swing-3000PRO

Opening angle	A, mm	B, mm	C _{max} , mm	D, mm
90°	130	130	60	720
120°	130	110	50	720

Swing-5000PRO

Opening angle	A, mm	B, mm	C _{max} , mm	D, mm
90°	200	200	120	920
120°	200	140	70	920

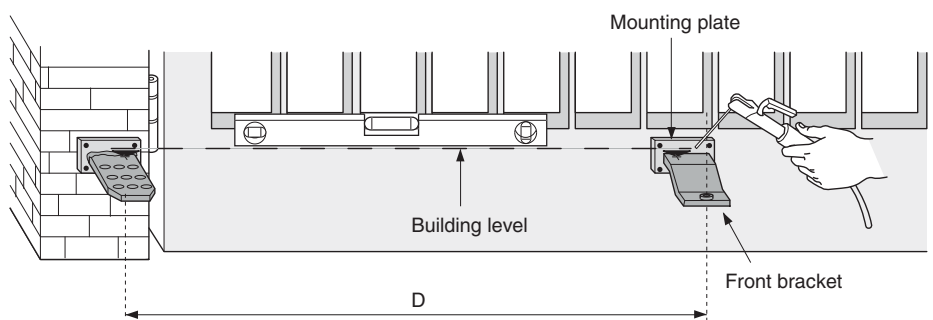


1) Fasten the rear bracket with the appropriate fastening plate to the pole, as shown in the picture above, observing dimensions A and B, namely, the distance between the axis of the bracket's central hole and of the gate hinge shank. The rear bracket has several holes, which make installation of the operator easier and allow changing of the gate opening angle. Depending on the position of the gate hinges you can lengthen or shorten the rear bracket.

WARNING! Increase of dimension B results in decrease of the gate opening angle and leaf angle speed, and in increase of the operator's linear force. Increase of the dimension B results in increase of the gate opening angle, leaf angle speed, and the operator's linear force.

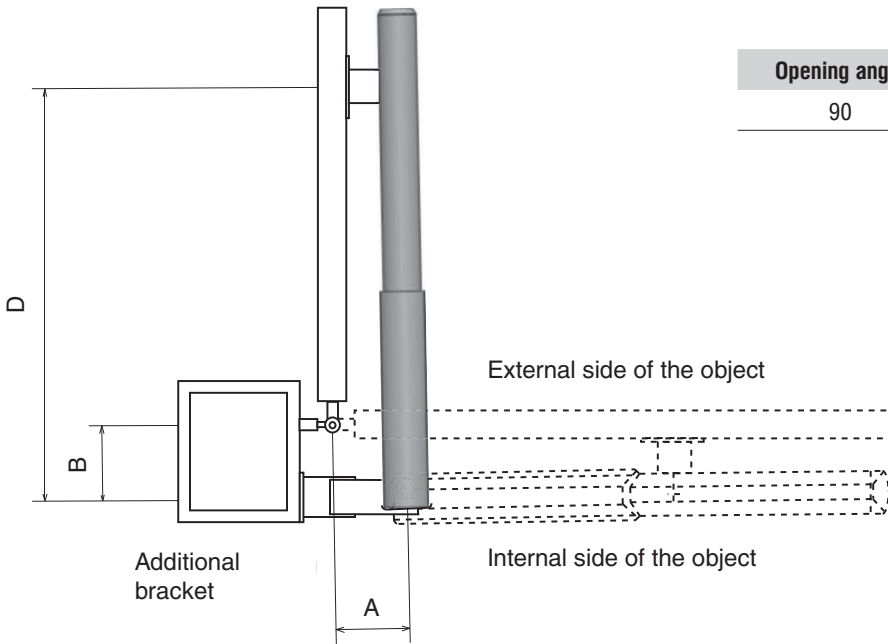
2) Install steel end piece and lubricate all the parts with neutral grease.

3) When the gate is closed, install the mounting plate on the gate leaf. Make sure, that the front bracket is positioned horizontally on the same level with the rear bracket and that the dimension D has been observed.



4.4. OUTWARD GATE OPENING (SWING-5000PRO)

- 1) Position the rear bracket in accordance with the dimensions A and B, listed in the table.
- 2) Install and fasten the rear bracket to the pole using an additional bracket.
- 3) Open the gate, measure distance D and fasten the front bracket to the gate leaf.



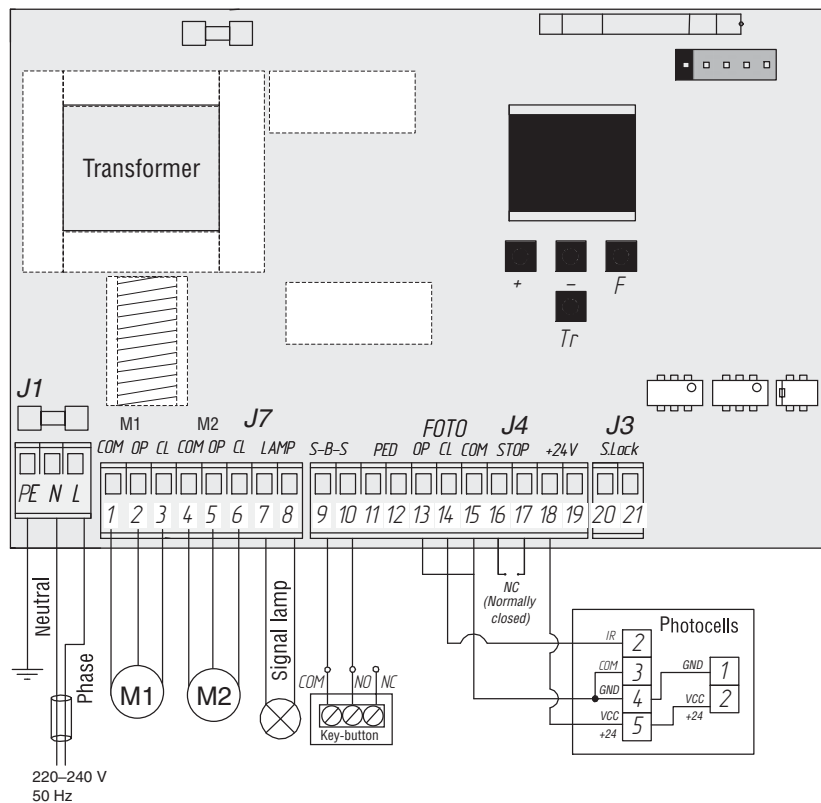
Opening angle	A, mm	B, mm	D, mm
90	200	200	920

5. ELECTRICAL CONNECTIONS



WARNING! The cable wires must be protected from contact with any rough or sharp parts. All connections shall be made only when power is off.

5.1. CONTROL BLOCK WIRING DIAGRAM



5.2. CONTROL BLOCK TERMINALS

Power supply connector (J1)

~220-240 V (RE, N, L) — connector on the control unit used for connection to supply voltage unit.

PE — connection to earth

N — power supply (neutral)

L — power supply (phase)

Connector for electric operators and signal lamp (J7)

1-2-3. M1 (terminals COM/OO/CL) — for connection of the first electric operator. Can be used to open one leaf (in case of motorized wicket or motorized single-leaf gate).

4-5-6. M2 (terminals COM/OO/CL) — for connection of the second electric operator. **CANNOT BE USED TO OPEN ONE LEAF.**

7-8. LAMP — output for connection of a signal lamp (230V~40 W max).

Connectors for accessories (J4 for 9-19 terminals, and J3 for 20-21 terminals)

9-10. S-B-S — command “Full opening”: after closing the contacts of the device connected to these terminals, the control unit will actuate full opening or closing of both leaves of the gate.

In order to connect several devices, you should connect NO contacts of these devices parallel.

11-12. PED — command “Pedestrian passage” or “Close”: after closing the contacts of the device connected to these terminals, the control unit will actuate stepped opening or closing of the first leaf of the gate.

In order to connect several devices, you should connect NO contacts of these devices parallel.

13-15. OP FOTO — contacts for connection of opening safety devices (NC): these connections are designed to prevent people, animals and other objects from being hit by the opening gate. If the device responds when the operator is activated than the gate leaves reverse or stop immediately and continue to move afterwards. Response of the device does not effect operation of the closing gate.

If the gate is closed and the device has responded, the gate will remain stationary.



WARNING! If these terminals are not used, install a jumper between contacts 13-15.

14-15. CL FOTO — contacts for connection of closing safety device (NC): these connections are designed to prevent people, animals and other objects from being hit by the closing gate. If the device responds when the operator is activated than the gate leaves reverse or stop immediately and reverse afterwards (in case this function is preset). *Response of the device does not effect operation of the opening gate.*

If the gate is closed and the device has responded, the gate will remain stationary.



WARNING! If these terminals are not used, install a jumper between contacts 14-15.

16-17. STOP — if there is a wicket in the gate these contacts are used for connection of safety devices with NC contacts. After breaking the contacts of the device connected to these terminals, the control unit will stop any gate movement. In order to connect several devices, you should connect NC contacts of these devices in series.



WARNING! If these terminals are not used, install a jumper between contacts STOP.

18-19. +24 V — Plus for accessory power supply.

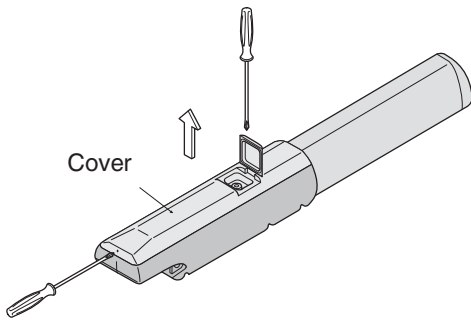


WARNING! Maximal permissible current in these terminals must not exceed 500 mA. Calculate carefully the total current, consumed by the devices.

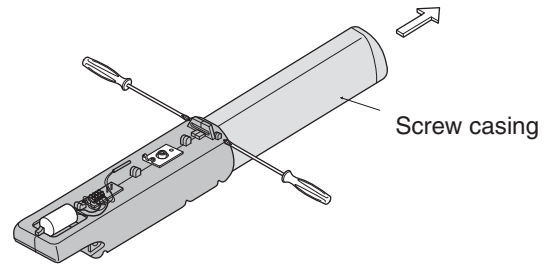
20-21. SLOCK — electromechanical lock supply voltage output. If required, connect 12 V electromechanical lock between the terminals 20 and 21.

6. EXTREME POSITIONS ADJUSTMENT

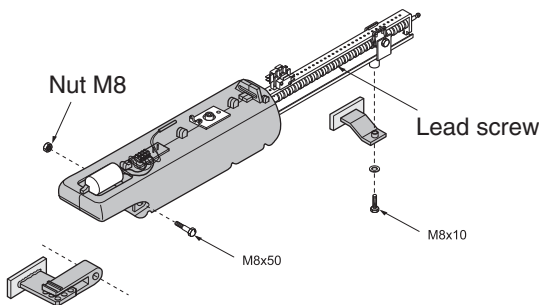
6.1. PREPARATION



1. Unscrew 2 tapping screws and remove the cover.



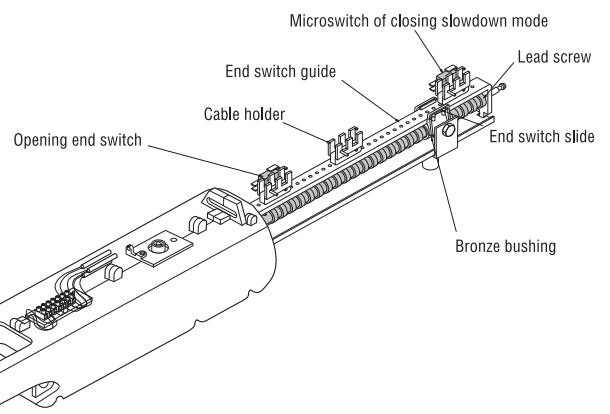
2. Unscrew 2 tapping screws and remove the lead screw casing.



3. Install the front and back brackets on the operator.

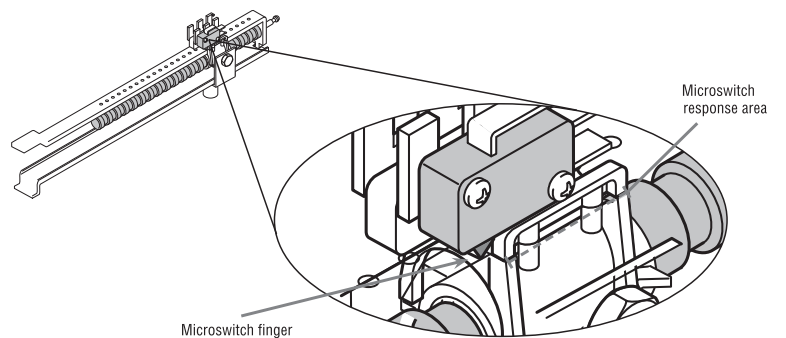
6.2. OPEN POSITION

1. Release the operator and put the gate leaf in fully open position.
2. Unscrew fastening of the opening limit switch.
3. Move the limit switch along the guide, until the microswitch contacts with the slide.
4. Fix the microswitch.



6.3. CLOSED POSITION

1. Put the gate leaf in fully closed position, which can be determined by the mechanical stop.
2. Unscrew fastening of the closing microswitch.
3. Move the end microswitch along the guide until the microswitch contacts with the slide.
4. Move the microswitch ahead until the microswitch finger leaves response area.
5. Fix the microswitch.



WARNING! When the end positions are adjusted, make sure, that the limit switches work correctly: after pressing the microswitch the gate movement should be stopped.

7. OPERATOR PROGRAMMING

7.1. BASIC PROGRAMMING

To go into the BASIC PROGRAMMING MODE, press the key “F”. On the left display you will see the name of the function, which is to be programmed and on the right display you will see current value of this function. The value can be changed by pressing keys “+” or “-”. If you press the key “F” again, you will see the name of the next function on the display and you will be able to program it and so on. After you have programmed all the functions you can exit the programming mode by pressing the key “F”.

Display	Function	On default
<i>A</i>	Programming of pause time before automatic closing: 1 — 10 s, 2 — 20 s, 3 — 30 s, 4 — 60 s, 5 — 90 s, 6 — 120 s, 7 — 180 s, 8 — 360 s, 9 — 420 s	0
<i>b</i>	Programming of the first motor force: b1 — minimal; b9 — maximal	9
<i>C</i>	Programming of the second motor force: C1 — minimal; C9 — maximal	9
<i>d</i>	First leaf closing delay: 1 — 1 s, 2 — 5 s, 3 — 10 s, 4 — 15 s, 5 — 20 s, 6 — 25 s, 7 — 30 s, 8 — 35 s, 9 — 40 s	0
<i>E</i>	Second leaf opening delay: 1 — 1 s, 2 — 2 s, 3 — 3 s, 4 — 4 s, 5 — 5 s	2
<i>F</i>	Programming of the motor operation time	
00	Counter of the cycles (one division — 100 cycles)	00

7.2. ADVANCED PROGRAMMING

To go into ADVANCED PROGRAMMING mode, press the key “F” and holding it down, press the key “+”. You will see the name of the function to be programmed. On the right display you will see the current value of the function, which can be changed by pressing the keys “+” or “-”. If you press the key “F” repeatedly, you will see the name of the next function on the display and you will be able to program it. After all the functions have been programmed, you can exit the programming mode by pressing the key “F”.

Display	Function	On default
<i>H</i>	Maximal force at the starting time: Y — on; n — off	<i>n</i>
<i>L</i>	Pre-activation of a signal lamp (5 s): Y — on; n — off	<i>n</i>
<i>n</i>	Indicator light: 1 — 10 s, 2 — 20 s, 3 — 30 s, 4 — 60 s, 5 — 90 s, 6 — 120 s, 7 — 180 s, 8 — 360 s, 9 — 420 s	0
<i>O</i>	Safety devices: Y — immediate reverse; n — reverse after the opening is cleared	<i>n</i>
<i>P</i>	If the function is on and the pause time is preset than the gate closes as soon as the safety devices are actuated Y — on; n — off	<i>n</i>
<i>S</i>	If the function is on the gate closes/opens only if a corresponding button is hold down Y — on; n — off	<i>n</i>
<i>//</i>	If the function is on the opening gate can be stopped only by the limit switches, the closing gate can be stopped in a usual way Y — on; n — off	<i>n</i>

7.3. OPERATION TIME PROGRAMMING

In order to program the motor operation time, close the gate and couple the operators (if there is a rabet, program a leaf opening/closing delay). Then enter the basic programming mode, select function “F”, press and release “+.” The leaves will begin to open. After they reach the limit switches, the leaves will stop. At this moment give a control command. Programming is done. Press “F” again to leave the basic programming mode. When the next control command is given the leaves will start moving in accordance with the programmed operation mode.

8. PROGRAMMING OF REMOTE CONTROLS

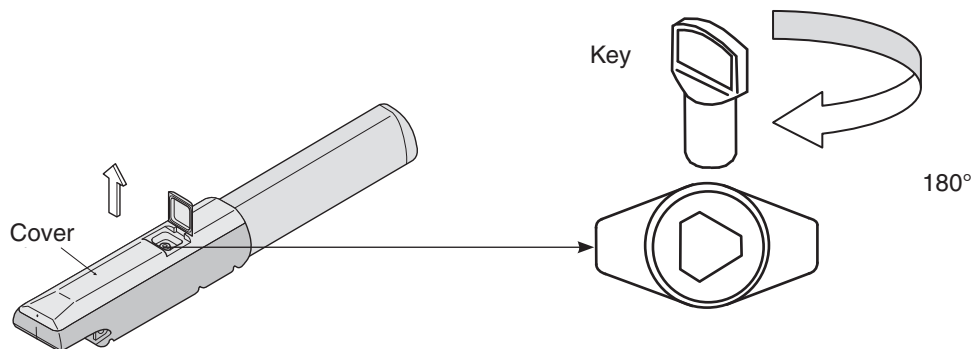
1. Memory cleaning. To erase the codes from the memory press the “Tr” button and hold it down for 10 seconds. After that you will hear a click and two zeros will appear on the display, meaning that all the remote control codes are deleted.
2. Control’s code storing. To store the remote control code, press the “Tr” button and release it after two blinking zeros “00” appeared on the display. Than select a button on the remote control, which you will use to control the unit, and press it. The amount of the remote controls recorded in the receiver will appear on the display, for example “01”. Release the button. Wait until a running zero “0” will appear on the display, meaning that a remote control has been recorded.
3. To add several remote controls, repeat the procedure of code storing for them. You can add 60 remote controls.
4. If no control commands are given, the system will automatically exit from the waiting mode in 10 seconds. Should the control unit disconnect from the mains, the programmed data will be stored.

9. RELEASE OPERATION

1. Lift the cover.
2. Insert the key and turn it by 180°
3. Open or close the gate by hand.
4. To link the operator, turn the key by 180° again.



WARNING! Before releasing (linking) the operator, disconnect power supply.



10. MAINTENANCE

- The Swing-3000/5000PRO automatic system does not require any special servicing.
- Repairs may be carried out only by a qualified technician trained and certified at an authorized DoorHan centre.
- Be sure that after completion of installation the installer has shown the user how to release the door in case of emergency and has given instructions on proper operation and maintenance of the automated system.
- When carrying out maintenance, it is recommended to use DoorHan original spare parts.
- Carry out maintenance of the automatic system at least every six months.
- Regularly check if the door is properly balanced and moves smoothly when automatically operated.
- Regularly check if the extreme positions of door travel are properly adjusted and safety devices are in good working condition.
- In case of power failure you may need to restore operator’s settings. Once the power supply is restored, check the automatic system for proper operation. If the operator settings have changed reprogram them following the instructions given in the corresponding paragraph of this manual (pay special warning to Operation time programming).
- In case of power failure the door will stop. As soon as power supply is restored you can control the operator as usual.
- After expiration of life time, the item shall be delivered in a specialized disposal point!
- If you have lost this Manual, you may request for the duplicate copy to the following address: Kralovsky VRCH 2018, Kadan, 43201, Czech Republic, or by email: europe@doorhan.com.
- The producer (DoorHan) does not supervise the installation of operators, or carry out their maintenance, thus DoorHan cannot be held liable for safety of installation, operation and maintenance of the equipment.

11. TROUBLESHOOTING

Symptom	Possible reason	Solution
Operator does not run	Power is off	Make sure, that the power is on
	Obstruction at gate's movement	Remove the obstruction
	Bad wiring connection	Check reliability of electric wiring connection
	Operator is released	Engage the operator
Operator stops suddenly	Thermal protection is active	Let the operator cool
The gate does not open or close completely	Wrong adjustment of limit switches	Adjust the limit switches
	Wrong operator programming	Reprogram the operator

DOORHAN[®]

We very much appreciate that you have chosen the product manufactured by our company and believe that you will be satisfied with its quality.

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