

**INSTALLATION MANUAL  
ROAD GATE BARRIER  
BARRIER-5000**

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## 2. Package

After receiving of the road gate it must be unpacked and examined to make sure, that it is not damaged. If any damages are discovered, please, contact the supplier.

### Standard package includes:

Title	Quantity
Cabinet with integral control unit	1 pc
Anchor bolts	4 pc
Boom fastening panel	1 pc
Boom (5 метров)	1 pc
Key-switch	1 pc
User manual	1 pc
Photocells	1 pair
Signal lamp	1 pc

### 3. Safety rules

- Read carefully these directions.
- Installation and putting into operation of the road gate must be carried out by the qualified workers.
- Check for compliance of the supply mains characteristics with the requirements specified in the present directions.
- Do keep children away from the opening key to avoid unintended move of the boom. Do not let children play with automatic system.
- Do not go/drive under the road gate while opening or closing it. Do not restrict move of the road gate.
- Installation, adjustment and repair must be carried out at only when the road gate is de-energized.
- Safety requirements must be observed when displacing the equipment.
- All metal elements of the road gate must be grounded.
- Make certain, that the boom of the road gate is balanced properly: it must keep the position it was put in.
- In case of break the road gate should be unblocked, then you should wait until the specialists arrive.
- Use the road gate for its direct purpose only, any other usage is forbidden.
- The company "**DoorHan**" shall be not responsible for possible injuries and damage to people, animals and things in case of misuse of the equipment and/or use of an unauthorized modification.

#### 4. General information

- Road gate **BARRIER-5000** is an ideal barrier to control automobile access to the territory with average and high traffic capacity and passage width up to 5 m.
- The cabinet encloses the motor, reduction gear, boom fastening unit, balancing mechanism, magnetic end switches and control board in a separate casing.
- The boom is made of an aluminium profile with red light-reflectors, which are easy to see in the dark.
- The system ensures fixation of the boom in any position, that's why manual opening is possible only if the system is released.
- The signal lamp is blinking during moving of the boom.
- Road gates **BARRIER-5000** are designed with a glance to the Russian conditions and have the following advantages:
  - ✓ Extended working temperature range -20..+55 °C;
  - ✓ Extended supply voltage range;
  - ✓ Dust protection and moisture protection grade IP44;
  - ✓ Quick going into operation;
  - ✓ Usable and durable construction of the release;
  - ✓ Special servicing is not required;
  - ✓ Easy electrical circuit.

This directions contain all necessary information on installation of the equipment and its operation.

We recommend you to use original spare parts and accessories only for installation and further operation of the equipment.

#### 4.1 Technical characteristics

Maximum boom length, m	5	Motor rotation speed	1400
Maximum opening time, sec	6	Power consumption, W	220
Supply voltage	220V,50Hz	Thermal protection	120°C
Boom type	rigid	Working temperature range	-40..+55°C
Use intensity (at 20°C)	70%	Capacity, W	220
Overall dimensions LxWxD, mm	270x1015x140	Protection class	IP54

## 5. Mechanical mounting

### 5.1 Cable laying scheme



1 Road gate **BARRIER-5000**

2 Photocells

3 Control button

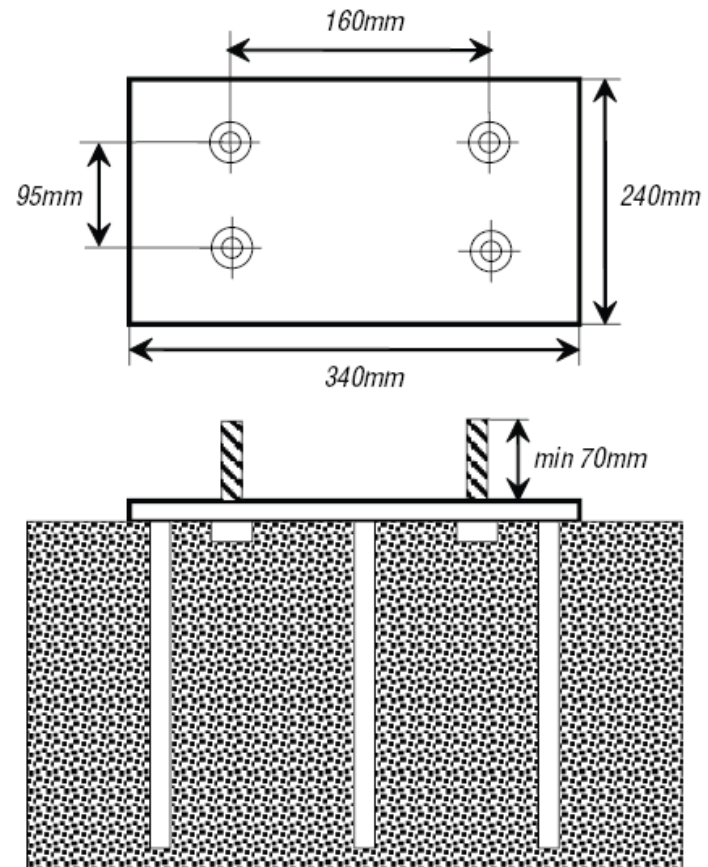
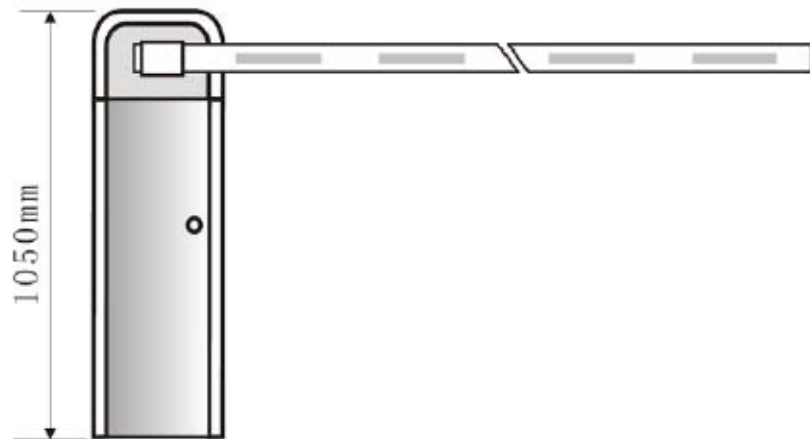
4 Signal lamp

5 External receiver

1) For laying of the cable use rigid or/and flexible protective tubes.

2) Lay power cable 230V separately from signal cables to avoid pickups and disturbances

**5.2 Overall dimensions**

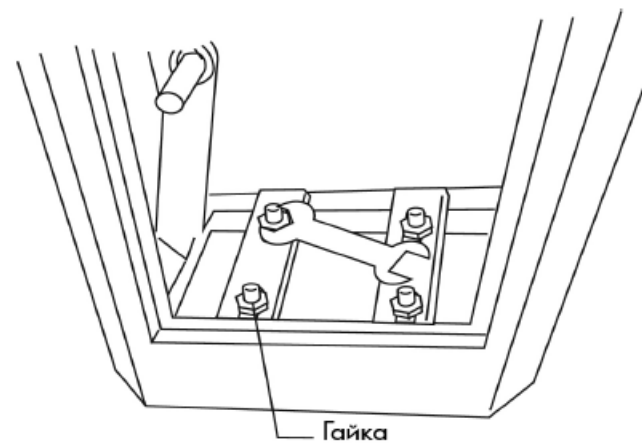
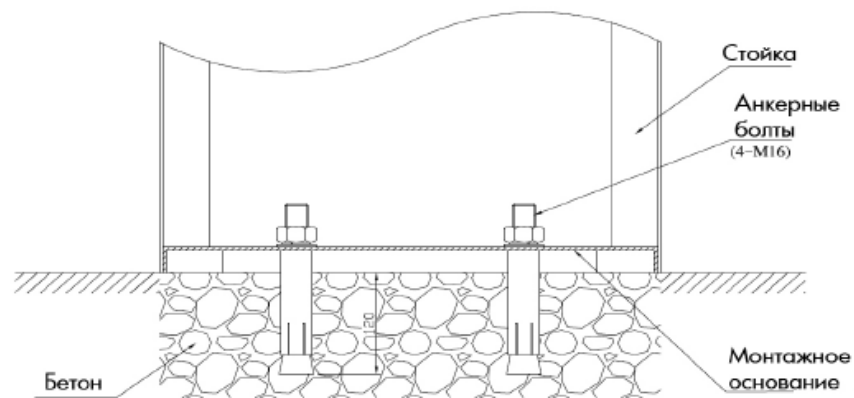




## 6. Road gate installation

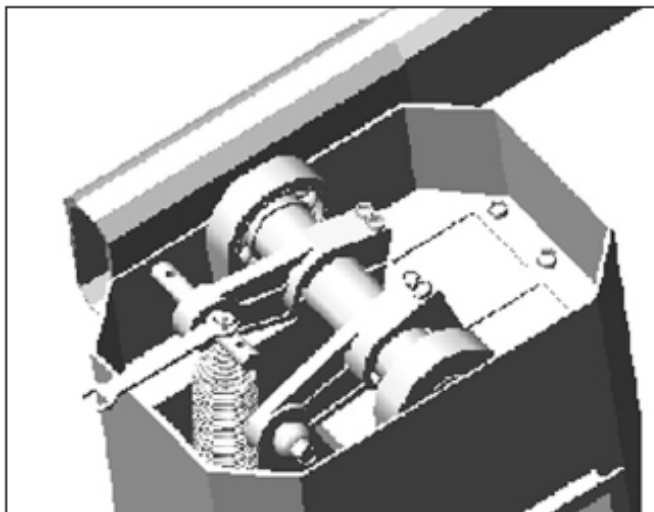
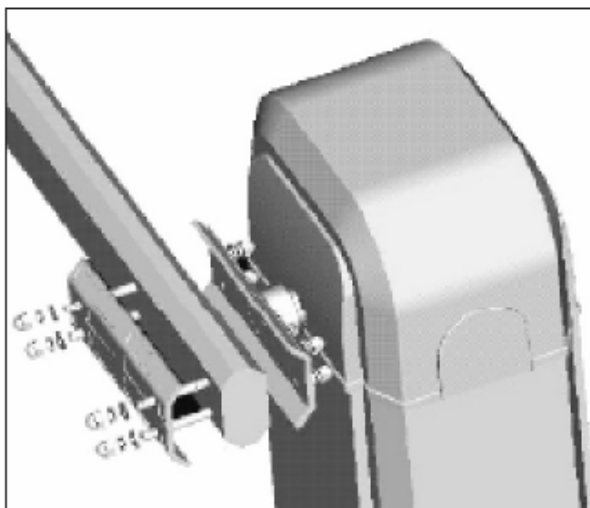
- Follow the directions given below to install the road gate properly:
- Enter the guarded territory and choose the place for the gate road cabinet.
- Make sure, that the boom has no restrictions along the whole its travel (i.e. tree branches) and is at a minimum distance of 2 m from the overhead transmission lines.
- If the case if the road gate does not have protection against accidental damage caused by passing-by automobiles, install an additional protection means, if it is possible .
- The cabinet must be installed on the concrete surface. If the base is not enough strong, make a foundation pit and concrete it. Before concreting the foundation pit must be reinforced and protective tubes (corrugated tubes) for laying of power and supply cables must be laid. Installation must be carried out only after complete concrete congelation.
- The ground in the place of the gate road installation must be stable. If it is not stable enough, increase the depth of the foundation pit according to the recommendations of the specialists.
- There must not be any pipes and/or electric cables on the place of foundation pit.
- Direct the cabinet as it should, level it, using the building level, mark and drill holes for anchor bolts.
- Install the cabinet and tighten the anchor bolt nuts as shown in the picture.

Concrete  
Cabinet  
Anchor bolts (4-M16)  
Mounting base  
Nut



### 6.1 Boom installation.

- Remove the cabinet casing panel.
- Direct the boom profile in accordance with opening direction and insert it in the U-shaped fastening bracket.
- Put on the boom the second U-shaped bracket (as shown in the picture).
- Place and fix 4 fastening brackets.

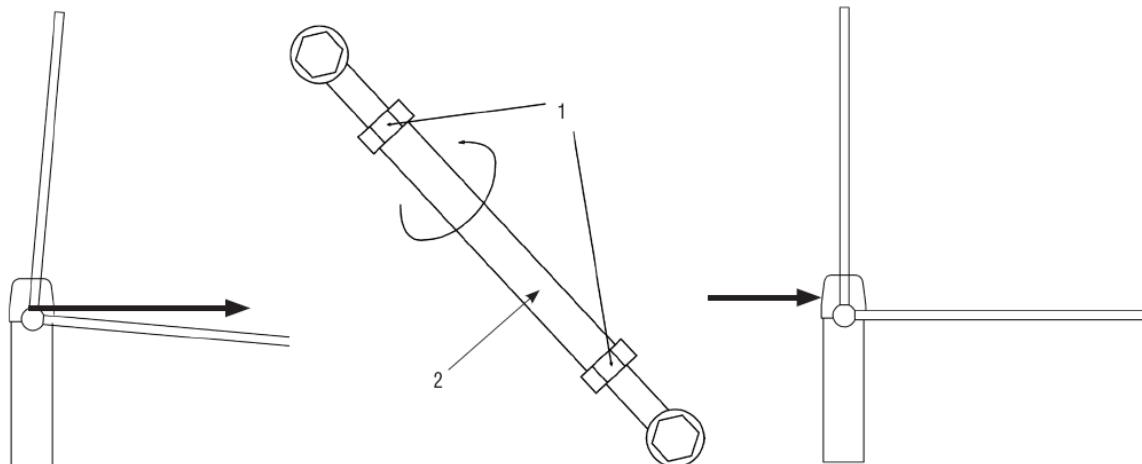


- Install and adjust the balancing springs using tension bolt, so that the boom remains motionless in any position when the operator is released.
- Resume the normal operation, having blocked the release.

## 6.2 Boom extreme position adjustment

In case if the boom does not reach vertical or horizontal positions adjust its position pull rod 2, which is located inside of the cabinet.

- Loosen nuts 1.
- Rotate the pull rod 2 counter-clockwise in order to lift the boom.
- In order to lower it, rotate the pull rod clockwise.
- Tighten nuts 1 in the required position.
- Check vertical and horizontal positions of the boom.
- If required repeat adjustment.





## 7. Connection of electrical wires

### 7.1 Control unit connection

The wires in the cable must be protected against contact with any rough and sharp parts. Connect the control unit to the terminal block, located inside if the road gate cabinet.

Motor			End switch		
U blue	V red	W white	OP red	COM green/yellow	CL blue

## ***7.2 Connection of accessories***

### ***7.2.1 Control board elements description***

TF1	Power supply transformer
Radio	Radio receiver speed connector
Sw1	Dip-switches
F1	Fuse 2,5A
F2	Fuse 0,5 A
TMR	Working time adjustment
ACL	Autoclose pause adjustment
FRC	Force adjustment
Photocells	1 pair of photocells
Signal lamp	Lamp

### ***7.2.2 Control board connector's description***

~220 (N, L, PE)	Power supply
Motor (N, L1, L2)	Motor connection
Lamp	Signal Lamp connection
"-"	Negative for accessories (24 V), 600 mA
"+24V"	Positive for accessories (24 V), 600 mA
Sw Op	Open limit switch (NC)
Sw Cl	Close limit switch (NC)
EMRG	Emergency stop (NC)
Ph Op	Open photocells (NC)
Ph Cl	Close photocells (NC)
Ped	Pedestrian opening impulse contact (Dip2 is on) (NO)
Start	Full opening impulse contact (NO)

### 7.2.3 Control board led's description

Led	purpose	on	off	The condition of light-emitting diodes at the collars which are on the average position at rest, is allocated by a bold type.
PWR	Power	Power supplied	not supplied	
A	Overloading of maximum current	Overload current	ok current	
B	Overloading of fixed current	Overload current	ok current	
ST	START impulse	activated	inactive	
PED	PED impulse	activated	inactive	
Ph1	Close photocells	disengaged	engaged	
Ph2	Open photocells	disengaged	engaged	
STOP	STOP command	inactive	activated	
Sw1	Close limit switch	disengaged	engaged	
Sw2	Open limit switch	disengaged	engaged	

#### The description of sockets of electric connections.

~220 (N, L, PE) the socket on the block serves for connection to the block of pressure of a food

PE: earth connection

N: a Food (neutral)

L: a Food (phase)

**MOTOR (N, L1, L2)** the socket on the block serves for connection to the electric motor block

**LAMP** the socket on the block serves for connection of an alarm lamp 230V, max. 40W<sub>T</sub>.

Works at any movement of a cloth of gate. The lamp blinks with the period = 0.5-1 seconds

**Further contacts of the low-voltage socket intended for connection of accessories are described.**

#### 1. START – a command “Complete opening” (N.O.)

Short circuit of contacts of the system connected to this plug, leads to operation of the block of management on complete opening and-or closing of gate (the exact logic of work depends on switch Dip1 position).



Dip1 - off. Commands in a cycle mode - Open-Stop-Close-Stop are produced.

Dip1 - on. Commands in a mode - Open-Close-Stop-Open (at the opening the stop is not provided) are produced

After the first inclusion of an electricity the first command Start leads to movement of gate on opening.

If from the first command Start of a collar have started to move on closing, it is necessary to change position of switch Dip3 answering for an opening direction.

Command Start is perceived by the management block through the period of time equal ~1-2 sec after its previous receipt on an input of the block.

For connection of several systems, it is necessary normally opened NO. Contacts of these systems to connect in parallel.

## **2. Ped - command Pedestrian (1 meter opening) (N.O.)**

Dip2 - off. Command Ped leads to opening of gate approximately on 1 m. Repeated command Ped leads to closing of gate.

If after a command Ped command Start follows, the management block produces a command on complete opening of gate.

Command Ped at Dip2-off is fulfilled

Only in the closed position of gate, and as at its repeated giving on an input after opening on 1m.

Dip2 - on. Separate management of a drive is realised, i.e. Command Start opens gate, Ped - closes.

For connection of several systems, it is necessary normally opened NO Contacts of these systems to connect in parallel.

## **3. SW OP / SW CL - signals from trailer switches of extreme positions of a cloth of gate.**

Operation (contact disconnection) КОНЦЕВИКА SW OP / SW CL means that the cloth of gate is in extreme opened / the closed

Position and the further movement in the same direction is forbidden.

**4. Photo Cl** - contacts of connection of safety controls on closing (N.C.). Appointment of the given connections - protection of a cloth of gate at the close. Operation of systems leads to immediate reversive movement of a cloth of gate before complete opening. Operation of the systems connected to these plugs, does not render any influence on work during opening of gate.

If gate are opened also the gauges connected to given plugs, have worked, it will prevent movement of gate on closing.

For connection of several systems with H.3. Contacts, it is necessary to connect contacts of these systems consistently.

The note: If no systems are connected to the given plugs, it is necessary to establish a crosspiece between

Contact plugs “Ph CL” and “-” (fig. see).

**5. Photo Op** - contacts of connection of safety controls on opening (N.C.). Appointment of the given connections - protection of a cloth of gate at opening. Operation of systems leads to an immediate stop of movement. Operation of the systems connected to these plugs, does not render any influence on work in a lock-up of gate. If gate are closed also the gauges connected to given plugs, have worked, it will prevent movement of gate on opening. For connection of several systems with H.3. Contacts, It is necessary to connect contacts of these systems consistently.

The note: If no systems are connected to the given plugs, it is necessary to establish a crosspiece between the contact Plugs “Ph Op” and “-” (fig. see).

**6. EMRG** – contact for connection of systems of an emergency stop (N.C.). Appointment of the given connections - protection of a cloth of gate

At the close and opening. Any logic of work of the block of management on a signal from these systems in the course of opening and closing of gate provides an immediate stop of movement of gate. If gate are at rest and the gauges connected to given plugs, have worked, it will prevent any movement of gate. For connection of several systems with H.3. Contacts, it is necessary to connect contacts of these systems consistently.

*The note: If no systems are connected to the given plugs, it is necessary to establish a crosspiece between the contact Plugs EMRG (the Fig. see).*

24V DC - plugs of an exit from the transformer of a food 24 In a direct current, макс. Load 600 mA.

**ATTENTION:** At change of position of DIP-switches or mechanical regulators it is necessary to switch off and again to include pressure of a food of a drive. Otherwise change of options will not occur.

## **9.2 Description Dip - switches**

Dip1 - The mode of operation. At switched off Dip1 during opening of gate command Start is not perceived (On/Off)

Dip2 - Separate management. At included Dip2 separate management at which the system connected to plug Start sends a command on opening, and the system connected to plug Ped - a command on closing of gate (On/Off) is realised.

Dip3 - A direction of opening of a drive. Included Dip3 corresponds to position of a drive to the right of an aperture,

switched off Dip3 - a drive to the left of an aperture.

Dip4 - Reserve. It is not used.

### **9.3 Description of mechanical regulators**

TMR - adjustment of an operating time of the engine. It is used in case of work of a drive without trailer switches. The operating time is regulated in the range from 0 to 100 seconds Extreme right position of an arrow corresponds to the maximum operating time.

ACL - adjustment of time of a pause before automatic closing of gate. Pause time is regulated in the range from 0 to 70 seconds In extreme left position of a regulator function of automatic closing switched off.

FRC - adjustment of traction effort of a drive (installation of the maximum current of consumption). In extreme right position of a regulator the effort of a drive has a peak figure, and the drive works at full capacity it (is not recommended).

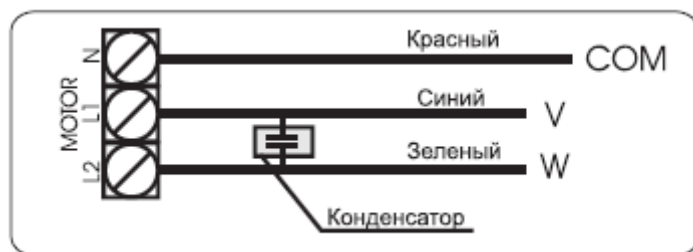
### **9.4 Automatic closing**

Automatic closing of a drive is adjusted by means of regulator ACL. For this purpose he is necessary for establishing in any position,

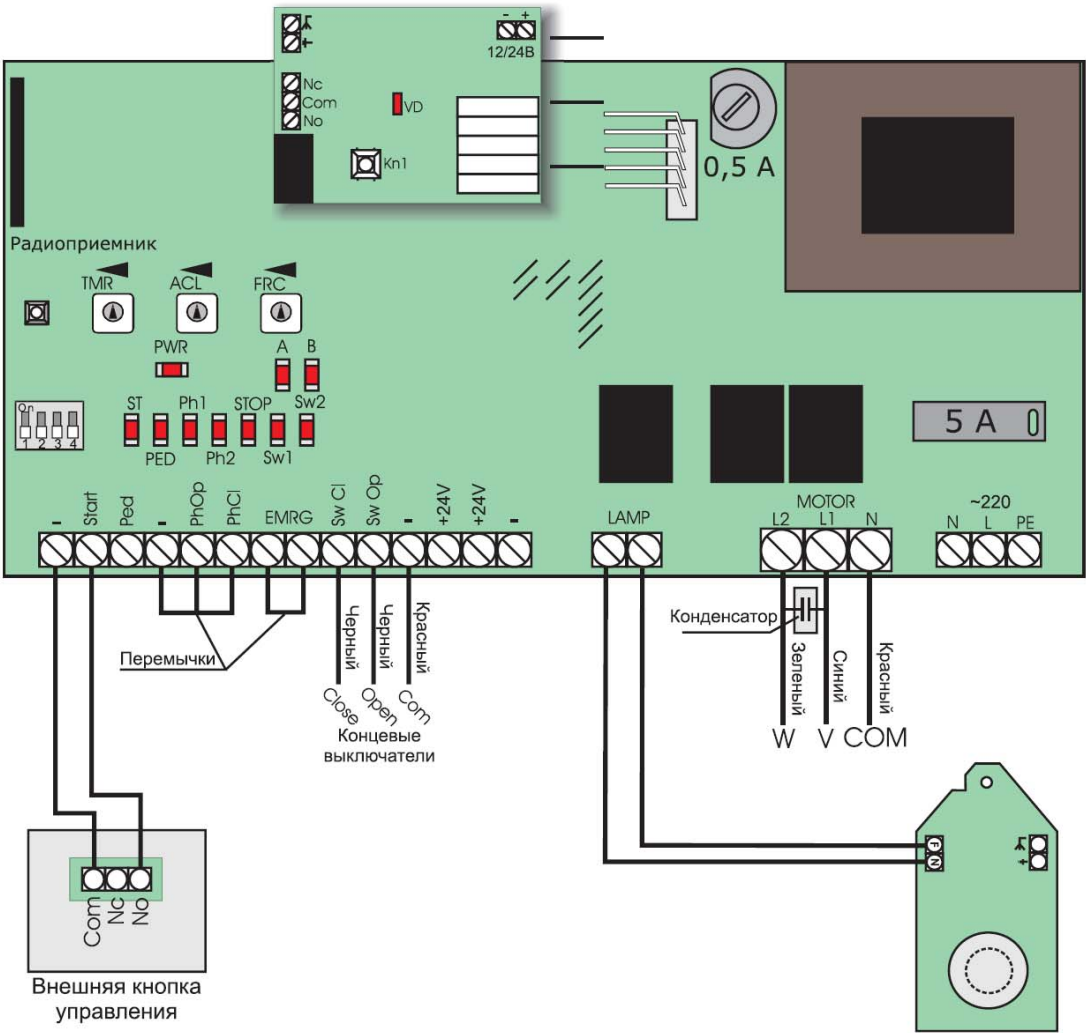
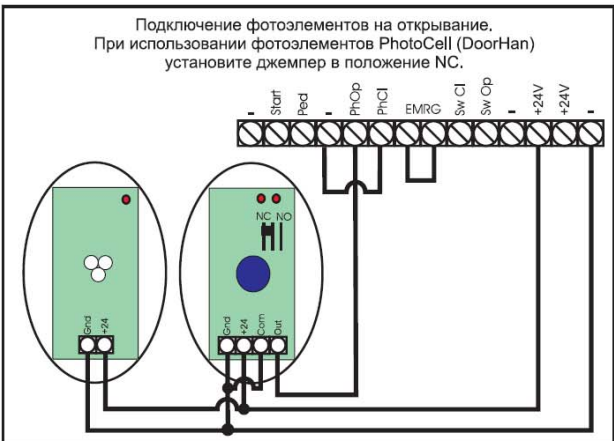
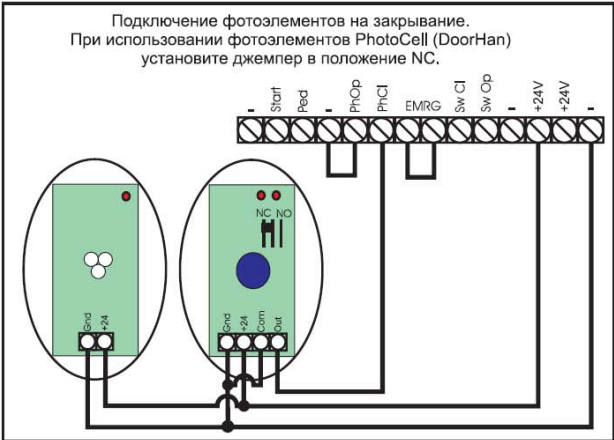
Distinct from the extreme left. At regulator turn to the right pause time before automatic closing increases.

### 9.5 Check of connection of the engine

Check up, that the engine has been connected, as It is shown in drawing.



Attention: Before the beginning of work with a management payment always disconnect a food. Always lay power cables Separately from the alarm. For reduction of the induced noise use a cable with shielded braid. Wires in cables should be protected from contact to any rough and sharp details.

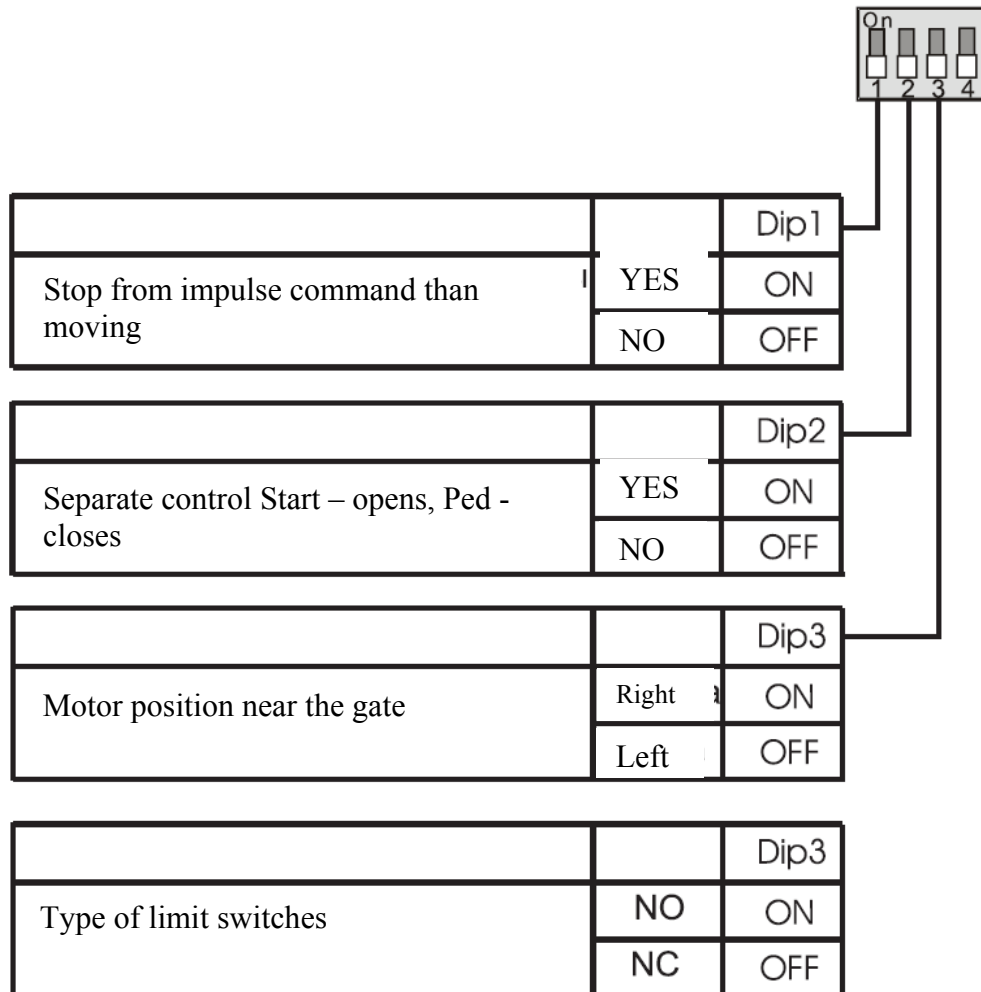


## 10. Programming

### 10.1 Adjustment of Dip-switches

At change of position of Dip-switches or mechanical regulators

It is necessary to switch off and again to include the drive power supply. Otherwise change of options will not occur.



## 8. Recording of remote controllers

Setting of control with radio channel of remote controllers DoorHan:

1. Before programming you can clean the memory of the receiver, erasing all former codes.

(it is recommended by first setting) Turn on the power supply and hold down record key for 10 sec.

The indicator «a» will be blinking for 10 sec, then it will become dim and in 2 sec. it will blink twice to confirm erasing of the former codes.

2. In order to record the code of the remote controller hold down for 3 sec the record key.

The read indicator «a» should blink. Release the key.

While the red indicator is blinking, hold down for 10 sec the selected key on the remote controller (the key, that you want to control the unit). Hold down the key on the trinket until the red indicator «a» lights for 2sec and then goes out, to confirm that the remote controller code is stored in the memory of the receiver.

3. To make setting of several Для настройки нескольких пультов повторите запись кода для других пультов. You can make setting of 65 remote control units.

If the receiver not receives the command in 10 sec, it exits the waiting mode automatically. After the control unit is disconnected from the mains, all programmed data are stored.

## 9. Slowdown adjustment

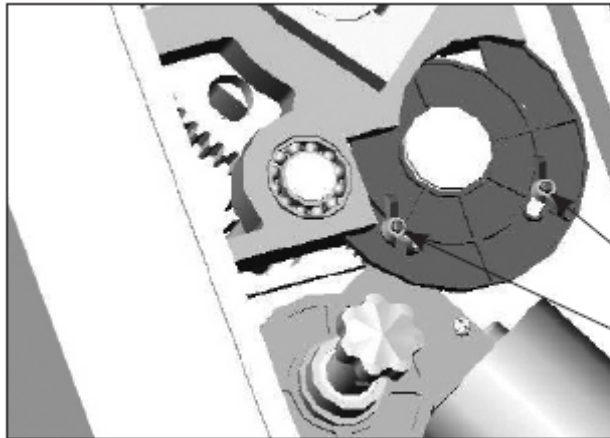
### 9.1 Slowdown before closed position

Make sure, that the barrier is fixed rigidly, shift the boom at angle of about 15 degrees to the horizontal.

- Loosen the nut of the slowdown adjustment screw. (See pic.)
- Move the screw in the slit until the end switch is activated (control activation using the indicator on the control unit).
- Fix the screw in the slit, having tightened the fastening nut.
- Lift and sink the boom, to make certain, that the slowdown end switch works properly.

### 9.2 Slowdown before opened position

Make sure, that the barrier is fixed rigidly, shift the boom at angle of about 15 degrees to the vertical.



- Loosen the nut of the slowdown adjustment screw. (See pic.)
- Move the screw in the slit until the end switch is activated (control activation using the indicator on the control unit).
- Fix the screw in the slit, having tightened the fastening nut.
- Lift and sink the boom, to make certain, that the slowdown end switch works properly.



**Note:**

After slowdown points have been adjusted, make sure, that the end switches work properly: after the end switches snap into action one of the indicator on the control unit must light. If an indicator does not light, make adjustment once more.

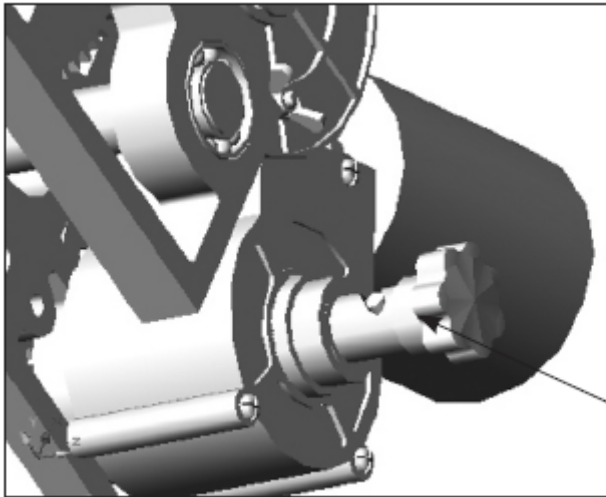
In case if the boom slowdowns but does not reach the extreme position, move the screw so , that the end switch activation occurs at the moment, when the boom is closer to the extreme position.

**10. Release operation**

- Use the lever of the integral release to release the barrier
- After release is completed, the boom can be opened and closed manually.

**In order to lift or to sink the boom if case of power failure you should do the following:**

Turn the release lever (see pic.) clockwise up the stop.  
You can lift or sink the boom by hand.

**In order to enter automatic control mode of the barrier you should do the following:**

Turn the release lever in the mid-position.  
Lift and sink the boom using the operator.

## 11. Maintenance

- Make sure, that the boom is fixed and balanced well.
- Check system unit and safety devices not less than once in 6 months.
- Maintenance of the road gate must be carried out by the qualified specialists.
- Keep the road gate clean.

The manufacturer reserves the right to make alterations and modifications of the construction without preliminary notice.

The present directions describes installation and adjustment operations of the road gate BARRIER-5000..

Following the recommendations on operation, maintenance of the road gate as well as installation operation sequence of the operator and the door given in the Directions will ensure long life of the equipment and reduce the possibility of accidents during installation and operation of the door.

Observe accident prevention rules while installation and operation.

In case of loosing of the present Directions you may request for its duplicate to the following address: 36 Moghaiskoye shosse, Moscow 121354 or e-mail: [info@doorhan.ru](mailto:info@doorhan.ru).

The manufacturer (DoorHan) does not handle direct control of installation, maintenance and operation of the doors and the automatics and shall not be responsible for safety of installation, maintenance and operation of the doors, road gates and the automatics.

Contents of the directions shall not be basis for any claim.

## 12. Diagnostics

Failure	Possible reason	Repair
The road gate does not work.	Electric power is disconnected.	Make sure, that electric power is on.
	Boom movement is restricted.	Remove the restriction.
	Bad connection of electric wires.	Check wires connection.
	The gate road is released.	Engage the road gate.
After the release was used, the road gate does not work by pushing of control keys or remote controllers.	Return in the starting position was not executed.	Turn the release lever in mid-position (refer to “Release operation”)
Sudden stop of the road gate.	Force protection is activated.	Adjust the road gate force.
The boom lifts or sinks in jerks or there is sudden stop of the boom.	The boom is not balanced.	Adjust the balancing spring.
The boom does not open or close in full.	Wrong adjustment of the end switches.	Adjust the end switches.

The logo for DoorHan, featuring the word "DOORHAN" in a bold, blue, serif font with a registered trademark symbol, set against a white oval background which is itself on a dark blue rectangular field.

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DoorHan appreciates your choice and is firmly convinced that you will be satisfied with the quality of your new product.

If you need further information about purchasing, distribution and maintenance servicing contact our regional agents or our central office workers to the following address:

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