

# **StarLine L11+, L11, L10**

Hood locks

Installation and user manual

# Contents

<b>The locks function.....</b>	<b>3</b>
<b>Parameters of electromechanic motor.....</b>	<b>4</b>
<b>Wires functions.....</b>	<b>4</b>
<b>Delivery set.....</b>	<b>5</b>
<b>The design of spherical locking mechanizm.....</b>	<b>6</b>
<b>Mounting the hood lock with spherical bracket.....</b>	<b>7</b>
<b>Mounting the anti-saw sleeve and anti-screw .....</b>	<b>10</b>
<b>The rope length adjusting .....</b>	<b>11</b>
<b>Control over StarLine L11+, L11, L10 hood locks .....</b>	<b>12</b>
<b>Hood lock operating .....</b>	<b>15</b>
<b>Unlocking with the emergency rope .....</b>	<b>15</b>

## The lock function

StarLine L11+, L11 or L10 hood locks are used for the vehicle anti-theft protection with fixing the hood to the front engine panel. The hood lock is the eletromechanic device which prevents from unauthorized access to the vehicle engine compartment. In case of integrated switch available it blocks the engine start while the hood lock is locked. The lock is designed with use of the rust proof and long life time materials.

**For the long-time and correct use of StarLine L11 +, L11 or L10 locks, the following requirements must be observed:**

- the parts of lock should be placed in hidden way, protected for the outside access and breaking;
- the emergency unlock rope should be mounted in a hard-to-reach hidden place and the way preventing it's bending in less than 40mm radius;
- avoid water falling to the lock moving parts and electrical components while a car wash;
- place the lock mechanism in correct direction when mounting into vehicle;
- connect the lock to electronic devices, which provide correct control commands;

The lock patented design allows installation to any car with the permissible plane deviation up to 20°.

The engine structure does not prevent from the bonnet opening in case of vehicle body deformations caused with road accidents or other circumstances.

## Technical parameters of electromagnetic drive

Operating temperature .....	from -40 to + 95 °C
Input voltage .....	9 - 14,4 V
Maximum consumption current .....	4 A
Control type .....	impulse (polarity reversal)
Impulse duration .....	0,7 - 1,0 sec with not less than 2 sec periodicity
Maximum current throught the integrated switch contacts .....	2 A

## Wiring functions

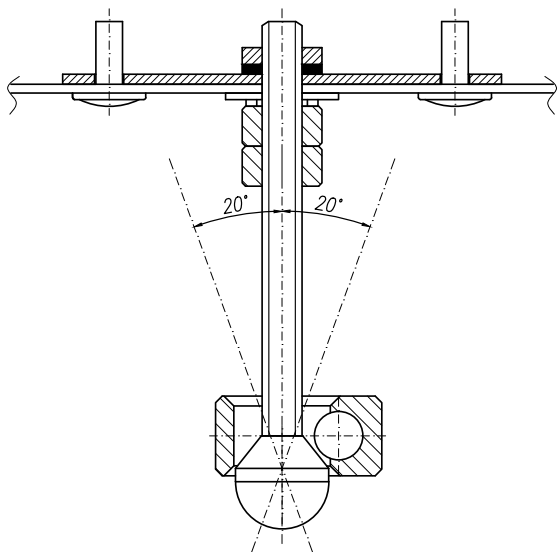
Green .....	drive motor
Yellow .....	drive motor
White .....	normally open contact
Black .....	common contact
Brown .....	normally closed cobtact

## Delivery set

- installation manual;
- lock drive with pin and emergency rope;
- screw washer M4,2x16 (5 шт.);
- plate for the spheric bracket;
- nut M6 (2 шт.);
- screw 3,5x45 (2 шт.);
- screw 4,2x25 (2 шт.);
- washer M6 (2 шт.);
- fixing washer M6;
- plastic strap 100 мм (2 шт.);
- retainer M3x3;\*
- hexagonal wrench 1,5 мм;\*
- rivet (2 шт.);\*
- screw M5x16 (2 шт.);
- spherical lock housing;
- spherical bracket 85 mm;
- fitting for the housing;
- anti-screw;\*
- anti-saw sleeve.\*

*\* only for StarLine L11+ lock*

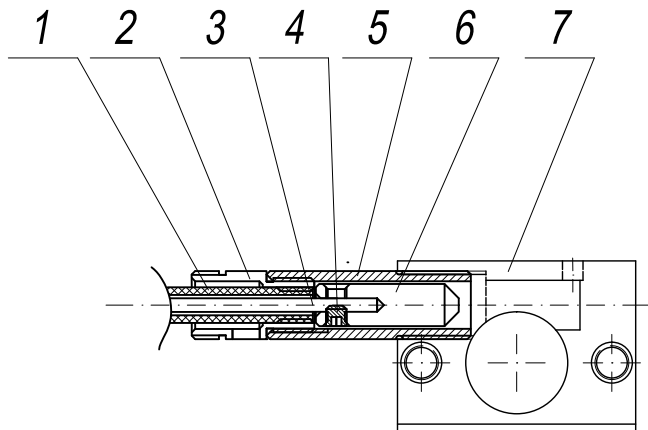
## The spherical locking mechanism design



**pic. 1**

## Installation the hood lock with spherical bracket

1. Define the place to mount the lock mechanism on a front car panel.  
Make sure that the bracket is mounted on the bonnet to be matching the hole on the front panel when bonnet closed.
2. Mark the points for the holes to fix the housing on a front panel.  
Drill 2 holes of D 6 mm and 2 holes of D16 mm for the bracket installation.
3. Assemble the lock according pic. 1-2, reduce the rope shell length if necessary (see pic. 5)

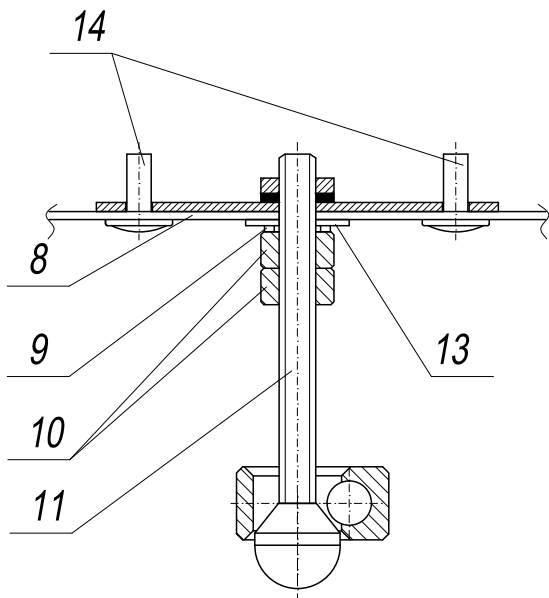


1 — rope shell  
2 — shell fitting  
3 — rope  
4 — retainer M3x3

5 — fitting  
6 — locking pin  
7 — locking mechanism casing

**pic. 2**

4. Fix the spherical locking mechanism casing with 2 screws M5x16 on the front panel of vehicle.
5. Mount the spherical bracket on the bonnet according pin. 3.



8 — mounting plate  
 9 — fixing washer M6  
 10 — nut M6

11 — spherical bracket  
 13 — washer  
 14 — rivets

**pic. 3**

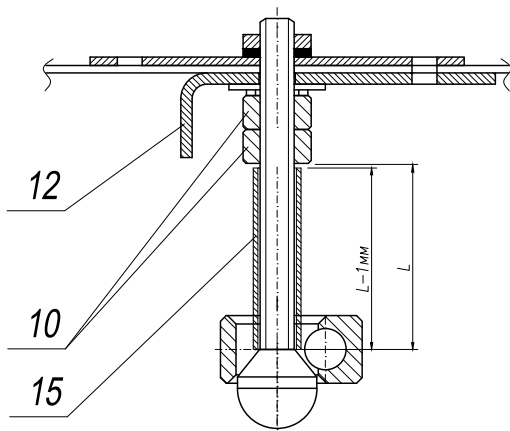


6. Check the correct installation closing the bonnet carefully.  
The bracket should enter inside the hole on the panel without force.
  
7. Adjust the pin length the way it partially overlaps the hole where the bracket is coming when the bonnet is fully closed. The bonnet should not open to the gap enough to reach and brake the bracket. If the bracket mounting cannot prevent from it's sawing, so the anti-saw sleeve need to be installed (see pic. 4).
  
8. Mount the plastic shield hiddenly the way that prevents it from reaching and breaking from outside.
  
9. Fix the elctromeachanic drive inside the engine compartment with 2 screws 3,5 x 45 mm.
  
10. Mount the emergency rope in a hidden and hard-to-reach place without bending less than 40 mm radius. Check the rope operating after mounting (see pic. 16).
  
11. Connect the electromechanic drive to the StarLine security system, immobilizer or relay module R4 or R6. Check the drive operating and the engine blocking.

## Installation of the anti-saw sleeve and anti-screw\*

Measure the length of the spherical bracket as shown on pic. 4 till the fixing washer M6. Cut the tube 1mm shorter than the measured length  $L$ . Take the bracket off the panel, mount the anti-saw sleeve on the bracket. Fix the bracket on the panel. Make sure the sleeve is easily spinning on the bracket.

Mount the spherical bracket to the bonnet. Adjust the bracket length the way providing the minimal rebound while the lock mechanism is locked. Loose the fixing nut M6, not changing the bracket length, mount the anti-screw (see pic. 4), tighten the fixing nut M6.



10 — nut M6

12 — anti-screw

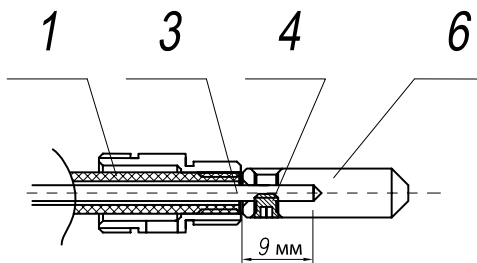
15 — anti-saw sleeve

### pic. 4

\*For the StarLine L11+ hood lock

## Changing the emergency rope length

For changing the rope length need to unscrew retainer M3x3. Remove the pin from the rope. Remove the fitting from plastic shell. Cut the shell to the necessary length. Pull the rope till the stop. Mount the fitting to the plastic shell. Cut the rope to the length 9 mm more than the plastic shell (pic. 5). Mount the pin and fix with retainer M3x3.



1 — rope shell

3 — rope

4 — retainer M3x3

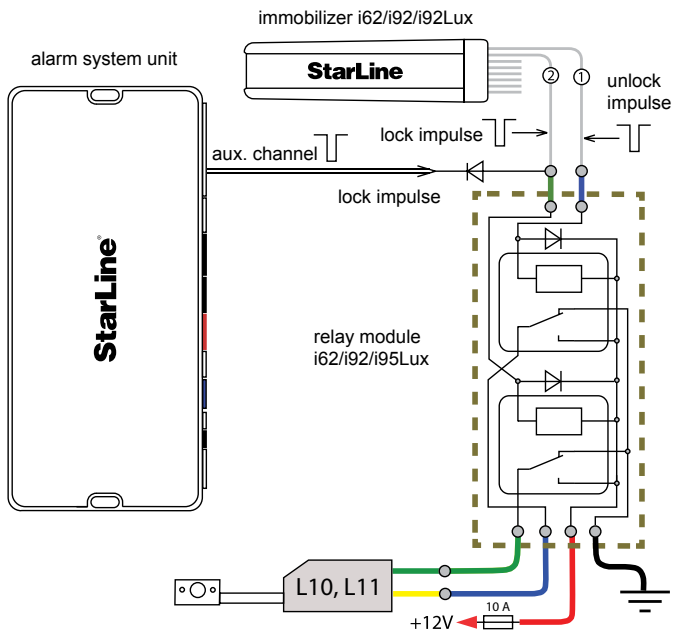
6 — locking pin

**pic. 5**

## Control over the lock StarLine L11+, L11, L10

### Variant 1: control by the immobilizer i62/i92/i92LUX with locking from the auxiliary channel of security system

In this scheme the combined control from immobilizer and alarm system is performed.

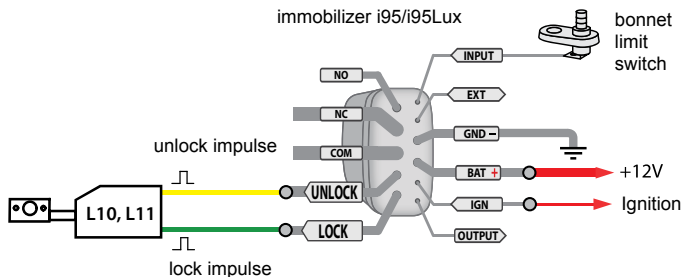


**The hood lock unlocked when:**

- the registered tag is detected by immobilizer;
- immobilizer is turned to the service mode or programming mode;
- emergency unlocking code is entered.

**The hood lock is locked when:**

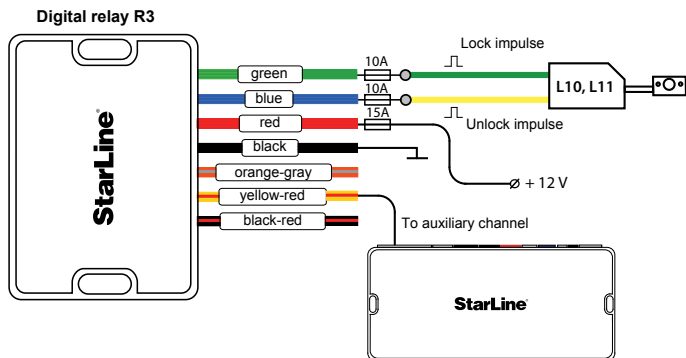
- in anti-hijack mode if the tag is lost for more than 30 sec;
- security system is armed (from the auxiliary channel of alarm system).

**Variant 2: control from immobilizer i95/i95Lux**

Find the more detailed information on the hood lock control algorithms and immobilizer operating modes in installation manual for i95/i95Lux immobilizer.

### Variant 3: control from digital relay module R3

Unlocking/locking the hood lock is made along with disarming / arming the StarLine security system.



Find the detailed information about connection and programming the relay module in StarLine R3 installation manual.

## Maintenance of the hood lock

The hood lock does not require often maintenance. Periodically once per year in case of normal conditions use and once per 3 months in case of hard conditions use clean it from dirt and grease the locking mechanism with the consistent dust-proof lubricant.

## Unlocking the mechanism with use of use of emergency rope

In case of the car battery is broken or the lock control is faulty, need take the rope from the hidden place. Make sure the bonnet is not hanging on the locking mechanism pin and pull the rope loop with the force not exceeding 9 - 12 kg.

Warning!!! The emergency unlocking mechanism has the short stroke, not exceeding 21 mm.

Only after unlocking the meachnism pull the original bonnet opening rod. Then place the emergency rope in a hidden and hard-to-reach place again.

The manufacturer claims the right to make the changes to the product design and parts without notice.

Manufacturer:

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