

Picture 1 on top Picture 2 on bottom



Special fixation Contact wire

## Assembly Information

Detailed instruction with pictures see [www.hv-mard.com](http://www.hv-mard.com) for shops and [www.marderbwehr-system.de](http://www.marderbwehr-system.de) for end consumers.

## It is essential to read the Assembly Information before assembly!

**HV-MARD** is a marten defence system for motor vehicles with 12 V electrical system. Due to the complex electronics of modern vehicles, we recommend the installation by a motor mechanic. The installer will be held responsible for the admissible and technically correct connection. If there has been a marten damage before, a motor and underbody wash should be performed. It is recommended to check the electronic system and the battery power.

**Assembly:** Prior to installation remove the fuse from the fuse holder. Fix the control unit with sheet metal screws at an appropriate spot in the engine or passenger compartment. The control lamp must be visible. It must be possible to operate the switch easily. It has to be in position "0". The cable connection can be seen in the drawing. Blue cable to clamp 15 or - depending on the motor vehicle - connection to back-up lamps/radio/fuse box/engine run-on fuse/airconditioning system/ reverse gear etc./observe connection diagram for safety's sake.

**HV-MARD is to be connected according to CE regulation, such that it is only active when the ignition is switched on.**

**Contact sensors:** First of all fasten all red contact sensor blocks loosely with cable clips at the endangered spots and the possible ingress areas of marten at hoses, wiring harnesses or with a screw cap at other appropriate spots. Install it as far to the bottom as possible, remove underbody panels, if required. Then lead the high-voltage cable in series through the bases (picture 1 – cut off/insulate cable after the last base). Stick one of the warning decals enclosed with the high voltage arrow to each contact strip. Put on contact strips and align them in such a way that a maximum blockage of the operating space is ensured (examples picture 1 and picture 2). Distance between contact strip - ground at least 10 mm (also to rubber/plastic parts conducting due to dirt or technical equipment). Make sure that the cables cannot chafe, be squeezed or heated (steering, shock absorbers, heat shields, rotating parts etc.). Check contact strips/wires regularly for firm fixation and make sure that the distance to ground is sufficient (a marten's run from the engine compartment might deform the contact strips/wires). Fasten contact strip by tightening the contact screw by hand (otherwise danger of overtightening) and thus establish electric contact. Now tighten cable clips completely. Stick on the big yellow warning decal visibly in the engine compartment. Insert fuse into fuse holder. Ignition must be off. **Functional test:** Switch **HV-MARD** on at the control unit switch (1). The control lamp green must flash, voltage must be applied to the contacts (verify with suitable voltage tester). When switching on the ignition the LED lamp on the **HV-MARD** control unit has to go out.

Technical Data:	
Voltage supply:	9-15V
Power consumption:	max. 25 mA
Reverse battery protection:	yes
Fuse:	160 mA t 5x20 glass
Interference-free:	EN 61000
Splash guard:	IP 65

If this is not the case, or the red lamp is on or flash, please check whether the unit has been connected according to instruction - the fuse is intact and there is no ground fault. (The unit is switched via the ignition if correctly installed according to the CE-rules).

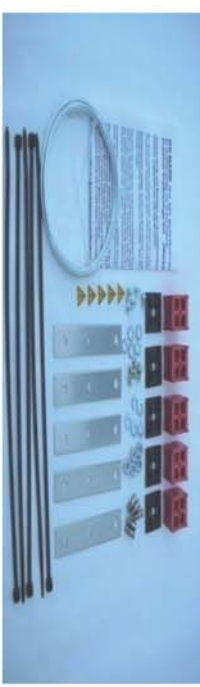
**Wire assembly (optional):**  
In order to additionally block still existing access and movement space, use the rustproof wire. Cut/bend the wire in such a way (straight/zigzag/3D shape etc.) and fasten it with the special screw in such a way to the contact strip that it blocks still existing access areas in shape and size such that the contact wire has to be touched inevitably in case a marten enters, but still has a safe distance to earth. In case of large free space, possibly fix the wire additionally with cable binder/wire (insulate) to other components. Fix the wire electrically safe with the enclosed special screws/loofed washers/circclip/rut to the contact sensor strip (see picture 3). In case there are still too large gaps in the engine compartment, please note our additional kits HV-MARD 2 and HV-MARD (4) (see below).

### WARNING

**Do not touch the contact sensor strips/contact wires. Prior to any work in the engine compartment the power supply has to be switched off/set to position 0 at the appliance switch. In case of quick charging, jump start or bridging the power supply also has to be switched off/set to position 0 at the appliance switch and the fuse in the plus cable has to be taken out. The control LED must not flash. The electrical energy is indeed very low. Nevertheless the electric shock may be dangerous for sick people (pacemakers, danger of shock etc.) Regular inspection of wires and contact sensors for secure mounting and sufficient distance to ground contacts. In case of a fuse failure, use only delay-action glass fuse 5x10 160 mA. Inform your garage on the marten defence system installed. Disposal: scrapyard and/or electronic unit in electronic waste collection place.**

Information regarding warranty/guarantee cases: It is imperative that you observe the information on the warranty/guarantee certificate. You can find the warranty/guarantee certificate at [www.marderbwehr-system.de](http://www.marderbwehr-system.de) - Download center – complaint draft or you may apply for one at 0172-8900769.

Accessory auxiliary **HV-MARD 4** as retrofit kit with further individual contacts



Picture 3

Accessory auxiliary set **HV-MARD 2** / alternative use instead of several individual contacts



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