

ON-GUARD

Installation & Operation Guide



Standard Features of the On-Guard

- * *Install-It-Yourself* — The On-Guard system is completely self-contained and can easily be installed in about 30 minutes. All you need is an electric drill with an 1/8" bit, a screwdriver bit and a pair of pliers.
- * *Two Dual-Button Remote Controls* — Provides fingertip command of your On-Guard system from a typical range of 50 feet.
- * *Remote Controlled Panic Feature* — If you are ever confronted or threatened, you can sound the On-Guard siren simply by pressing a button on the remote.
- * *Prior Intrusion Attempt Alert* — When you return to your vehicle and remotely disarm your On-Guard, a special chirp sequence will alert you if the alarm was triggered while you were away.
- * *Chirp Indications*— On-Guard audibly confirms each change in status with one or more "chirp" sounds from the siren. This way, you can tell from a distance whether you've armed or disarmed your On-Guard.
- * *Built-In Multi-Point Monitoring*— While armed, On-Guard checks your car's doors, hood and trunk hundreds of times per second. If any of these points are opened by a thief, On-Guard will sound the alarm.
- * *Anti-Scanning*— Some thieves use digital code "scanners" to rapidly send one car alarm remote control code after another until the scanner hits the one code that is used by the particular alarm. On-Guard's Anti-Scanning feature can detect scanner codes and block them, so your On-Guard system remains armed.
- * *Dual Electronic Vibration/Impact Sensors*— Two separate vibration/impact sensors are built right into the siren housing. The first sensor detects any vibrations or impacts related to an intrusion attempt and instantly sounds the alarm. The second sensor picks up less critical vibrations (such as another car bumping into your vehicle when attempting to park or someone forcefully leaning against your car) and cautions them with three rapid chirp sounds.
- * *Remote Adjustment of the Sensors*— You can, any time and place, remotely adjust and test the sensitivity of each of On-Guard's internal sensors with just a few presses on the remote control buttons. Each sensor has 32 different sensitivity levels, allowing you to set the most suitable detection level.
- * *High-Output Siren* — Loud siren wail for 30 seconds when the alarm detects an intrusion attempt. The system then automatically resets and rearms.
- * *Remote Control Code Learning* — You can within seconds add up to a total of four remotes to your On-Guard system.
- * *Stolen Remote Erasure* — You can within seconds erase the code of a lost or stolen remote control from the system memory so that the missing remote can never again be used to disarm your On-Guard system.
- * *Advanced CMOS Microcomputer* — Monitors all system functions hundreds of times per second, yet consumes less power than your electric clock.
- * *Hood/Trunk Trigger Input*— If your vehicle lacks a trunk and/or hood light, optional pin switches may be added to monitor those points.
- * *5-Year Warranty* — We are so confident in the rock-solid reliability of the On-Guard system, if you ever have a problem within 5 years of the date of purchase, we will, at our

discretion, fix or replace the part free of charge.

Pre-Installation

Tools you will need

- Electric drill and 1/8" drill bit
- Phillips screwdriver
- Pliers or a 20mm wrench
- Wire cutters or scissors
- Pencil
- Rags or paper towels

Things to check on your vehicle

- Locate your vehicle's battery.
- Identify the positive (+) and negative (-) terminals of your battery.
- Make sure the interior dome light turns on when you open a door. On-Guard will not work if the dome light does not work properly.
- Make sure the trunk light turns on when you open the trunk. If there is no trunk light and you want the trunk protected, see the following *Special Requirements* section.
- Make sure the hood light turns on when you open the hood. If there is no hood light and you want the engine compartment protected, see the following *Special Requirements* section.
- Does the car's radiator fan sometimes stay on even after you turn off the ignition? If so, a special connection must be made to the fan wire. See the following *Special Requirements* section.

Special Requirements

- **No trunk light:** An optional pin switch must be installed and a wire (preferably tan in color) must be routed into the engine compartment. Any local car alarm dealer can do this for you for a nominal fee.
- **No hood light:** An optional pin switch must be installed with a 1-2 foot length of wire (preferably tan in color). Any local car alarm dealer can do this for you for a nominal fee.
- **Radiator fan can continue running after ignition is turned off:** A wire (preferably yellow in color) will need to be connected to the positive (+12V) line of your vehicle's underhood fan motor. Any local car alarm dealer can do this for you for a nominal fee.

Installation

Installation is so easy, you will be able to do it yourself in about 30 minutes.

- **NOTE:** If you have trouble with any of the following steps, call Avital Technologies' toll-free installation help line: 800-ONGARD1.



Step 1: Select a mounting location

Your On-Guard system will be mounted under the hood. Select a location on the wheel well (as shown in photo #1) or on the upper front metal crossbeam (as shown in photo #2).



- **WARNING:** The location must be away from sources of extreme heat, such as right next to the radiator, engine block or exhaust manifold.
- **WARNING:** The location must be clear of the hood and any moving parts.
- **WARNING:** The RED and BLACK twinlead wires must easily reach the battery. Set the system near the location and route the wires along the inside walls of the engine compartment toward the battery. You should have at least one foot of wire remaining.
- **WARNING:** There MUST be at least 1/2-inch of clearance for the mounting screws. **TIP:** If you can't fit your flat palm in to check the clearance, select a location where you can.



- **WARNING:** To ensure against moisture collection, the siren opening must point toward the ground.

Step 2: Marking and Drilling the Mounting Holes

A. Hold the system in place in the location you selected. Use a pencil to mark the metal surface where the three screws will be driven (as shown in photo #3).

- **TIP:** If the pencil marks are hard to see, use white correction fluid or even spots of toothpaste to mark the mounting holes.

- **TIP:** Before drilling, make sure there is ample clearance.

B. Using a 1/8-inch drill bit, carefully drill a hole for each screw (as shown in photo #4).

- **WARNING:** Apply very light pressure when drilling to avoid drilling into anything on the other side.



Step 3: Attaching the system

Position the system and *firmly* secure it with all three of the supplied screws. Then use pliers or a 20mm wrench to firmly tighten the bolt on each side of the On-Guard unit.

- **WARNING:** If you don't firmly tighten the screws and bolts, the internal sensors will not be able to properly pick up vibrations and impacts.

Step 4: Battery connections

- **WARNING:** Make sure that the two amber 5-amp fuses are **NOT** in the two fuseholders on the system's RED twinlead wires. **DO NOT INSERT THESE FUSES UNTIL STEP 7!**



A. Take the RED battery cable block with the two *empty* fuseholders. Slip the battery's heavy POSITIVE (+) cable into the red cable block as shown in photo #5.

- **WARNING:** Make sure the cable is attached to the POSITIVE (+) battery post!

B. Slide the block to a point on the positive battery cable where the block will not be able to touch any metal portion of the vehicle and will not interfere with closing of the hood.

C. Use the supplied allen wrench to tighten the block's screw until the screw pierces the cable insulation and penetrates into the cable. Turn the screw another full turn. This ensures that the block is making a very solid contact with the cable.

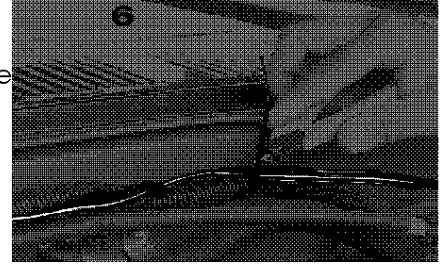
D. Attach the BLACK cable block to the NEGATIVE (-) cable. Use the same method as before. Make sure that

this block will not be able to touch the POSITIVE (+) cable's block.

Step 5: Special Requirements

If you had a local car alarm installer put in a pin switch or fan motor wire (as noted in the Special Requirements section on the previous page), make the following wire connection(s). Otherwise, skip this section and go to step 6.

- If you had a hood and/or trunk pin switch installed: Connect the system's TAN wire to the hood and/or trunk pin switch wire(s). Either solder these wires together and insulate with electrical tape, or use crimp connectors (available at any electronics store).
- If you had a wire connected to the power supply of the radiator fan motor: Connect the system's YELLOW wire to the wire the alarm installer added. Either solder these wires together and insulate with electrical tape, or use crimp connectors (available at any electronics store).



Step 6: Route and Secure Wires.

Use the supplied wire ties to gather system wires and secure them as shown in photo #6. *Do not route wires near any hot or moving parts.*

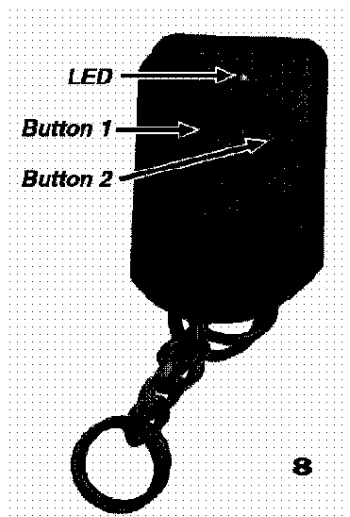
- **TIP:** When finished, cut off the tail of each wire tie with scissors or wire cutters.



Step 7: Powering up and testing basic operation

A. Firmly insert an amber 5-amp fuse into each of the two fuseholders (see photo #7). The On-Guard siren may make a slight noise when you do so.

B. Close the doors, trunk and hood, then **WAIT at least 30 SECONDS until you hear 5 siren "chirps."**



C. After the 5-chirp confirmation, press and release button 1 on your remote control. You will hear 2 chirps to indicate the system is now armed.

- **TROUBLE- SHOOTING:** If you don't hear any chirps when you press button 1, remove and reinsert both fuses. Then IMMEDIATELY press button 1 on the remote control. You should hear 5 siren chirps when you do so to indicate that the remote control has been reprogrammed. Remove the fuses, then repeat steps 7A, B and C.
- **TROUBLE-SHOOTING:** If you still don't hear chirps, remove the fuses. Ensure that each battery cable block is piercing into its cable by turning the cable block's screw with the allen wrench another full turn clockwise. Then repeat steps 7A, B and C.
- **TROUBLE-SHOOTING:** Still not working? Call our toll-free On-Guard Installation Helpline: (800) 253-0334.

D. Press and release button 1 again. You will hear 1 chirp to confirm that the system is now disarmed.

E. Press and hold button 1 for 3 seconds. This will "panic" the siren. Press and release button 1 again to silence the siren.

F. Press button 1 to arm the system (2 chirps). Then wait 10 seconds (if your vehicle's dome light normally stays on or slowly dims a few seconds after you close all the doors, wait 10 seconds *after* the light has turned off). Open a door. The alarm will sound immediately. Press and release button 1 to disarm and silence the alarm.

G. Repeat step 7F but open the trunk instead of the door. The alarm will sound immediately. Press and release button 1 to disarm and silence the alarm.

H. Repeat step 7F but open the hood instead of the door. The alarm will sound immediately. Press and release button 1 to disarm and silence the alarm.

- **TROUBLE-SHOOTING:** If the alarm does not sound when you perform step 7F, 7G or 7H, repeat the step and make sure you *wait at least 10 seconds* before opening the door, hood or trunk. If it still does not sound, go to *Step 8: Current Level Testing Mode*.

Step 8: Special Current Level Testing Mode

This step is required ONLY if your siren does NOT sound when a door, the trunk and/or the hood is opened after the system has been armed. If you are NOT having this problem, skip this step and go to Step 9: Sensor Adjustment.

Your On-Guard system, while armed, continually measures the background current draw. The current draw rises when the vehicle's trunk light, hood light or passenger compartment dome light turns on. This indicates that the trunk, hood or a door has been opened by a thief. This in turn triggers the On-Guard system to sound the alarm.

On-Guard's current level measurements were preset at the factory to operate without adjustment on 90% of all vehicles. Your vehicle seems to be an exception to the rule. Your On-Guard system will need to directly test those levels. However, before resetting the levels, please verify that:

- The passenger compartment dome light(s) turn on when you open each door.
- The trunk light turns on when you open the trunk (or the trunk pin switch plunger extends up when you lift the trunk lid).
- The hood light turns on when you open the hood (or the hood pin switch plunger extends up when you lift the hood).

Also verify that:

- You have pressed button 1 to arm the system and have heard the 2-chirp confirmation of arming.
- You have waited at least 10 seconds *after* arming and *after* the passenger compartment dome light(s) have completely turned off *before* opening a door.

If you still have a problem with On-Guard not sounding the alarm, perform the following steps exactly as noted:

A. Make sure the doors and trunk are closed.

B. Open the hood and remove both 5-amp fuses.

C. Firmly re-insert both fuses (the siren may make a slight noise when you do so.)

D. Immediately close the hood. Then *simultaneously* press and release *both* buttons 1 and 2 on the remote control. You will hear 3 chirps.

- **TROUBLE-SHOOTING:** If you hear 2 chirps instead of three, it means that you pressed button 1 without or before pressing button 2. The 2 chirps indicate that the system is armed. To disarm, press button 1 (you will hear 1 chirp to confirm disarming). Then repeat steps 8B-D.

E. Now press and release button 1. You will hear 3 chirps.

F. Wait 10 seconds.

G. Open a door. You should hear 2 chirps. Close the door.

- **TROUBLE-SHOOTING:** If you don't hear the two chirps, make sure that the dome light is, in fact, illuminated while the door is open. If not, correct it, then repeat steps 8A-G.

H. Open the door again. You will hear 1 chirp. Close the door.

I. With all the doors closed, open the trunk. You should hear 1 chirp. Close the trunk.

- **TROUBLE-SHOOTING:** If you do not get the 1 chirp trunk open confirmation, remove the fuses. Then

repeat steps 8C–F. At steps 8G and H, open and close the *trunk* instead of a door.

J. With all the doors and the trunk closed, open the hood. You should hear 1 chirp. Close the hood.

- TROUBLE-SHOOTING: If you do not get the 1 chirp hood open confirmation, remove the fuses. Then repeat steps 8C–F. At steps 8G and H, open and close the *hood* instead of a door.

K. Simultaneously press both remote control buttons 1 and 2. You will hear 5 chirps to confirm exiting of the Current Level Testing Mode.



Step 9: Sensor Adjustment

On-Guard has two internal sensors: the ALARM SENSOR that activates a full siren blast for 30 seconds when it detects vibrations/impacts caused by forced entry, and the WARNING SENSOR that sounds a series of 3 rapid low-level chirps when it detects less serious threats (such as someone forcefully leaning against your parked vehicle).

You will use your remote control to adjust these sensors to accurately pick up genuine threats but not cause false alarms. For sensing accuracy, each sensor has a total of 32 sensitivity levels. To adjust the sensors, do the following:

A. Disarm the alarm (if it was armed). Then simultaneously press and hold *both* remote control buttons 1 and 2 until you hear 3-chirps.

- TIP: If you previously set the ALARM SENSOR sensitivity and only want to change the WARNING SENSOR sensitivity, skip to step 8G.

B. To adjust the ALARM SENSOR, press button 1. You will hear a 3-chirp confirmation.

- NOTE: If you pause more than 15 seconds between steps, the system will automatically exit sensor adjustment mode and sound 5 chirps. If this happens, just start over.

C. With your fist, *firmly* strike the window pillar (see photo #9). DO NOT hit the glass, the roof, or any soft metal part of the vehicle! You will hear 1 chirp if the sensor picked up the strike.

- NOTE: If you do not hear the 1-chirp confirmation, you need to increase sensitivity; if you hear a chirp when you strike the window pillar rather lightly, you need to decrease sensitivity.

D. Press button 1 to increase sensitivity (you will hear 2-chirps for each sensitivity step increase) or button 2 to decrease sensitivity (1 chirp for each sensitivity step decrease).

E. Retest your new sensitivity setting by repeating step 8C. Remember, if sensitivity is set too high, your system may false alarm. If set too low, it may not respond to genuine intrusion attempts.

- NOTE: If you reach the minimum or maximum setting of the sensor, you will hear a 3-chirp confirmation.

F. Repeat steps 8C-E until you are satisfied with the sensitivity of the ALARM SENSOR. Then simultaneously press *both* buttons 1 and 2 to set the ALARM SENSOR sensitivity (confirmed with 3 chirps).

- TIP: If you previously set the WARNING SENSOR sensitivity, you may exit sensor adjustment mode at this point. Just press both buttons 1 and 2 until you hear 5 chirps.

G. To adjust the WARNING SENSOR, press button 2. You will hear a 3-chirp confirmation.

H. Firmly strike the window pillar of the vehicle with your fist, but with somewhat less force than before. You will hear a single chirp if the sensor picked up the strike.

I. Repeat steps 8C-E until you are satisfied with the sensitivity of the WARNING SENSOR. Then simultaneously press *both* buttons 1 and 2 to set the WARNING SENSOR sensitivity (confirmed with 3 chirps).

J. To exit sensor adjustment mode, again simultaneously press both buttons 1 and 2 (you will hear a 5-chirp confirmation).

K. Wait at least 10 seconds, then press button 1 to arm the system (you will hear the 2-chirp arming confirmation).

L. Once the interior light has turned off, wait an additional 10 seconds. Then hit the window pillar with your closed fist. If the strike wasn't forceful enough to set off the full alarm, you will hear the rapid 3-chirp warning sound. If the strike was strong enough to set off the alarm, you'll hear the full siren blast (press button 1 to disarm and silence the alarm).

Step 10: Final Preparation

The short white wire is the system's antenna. Do not clip this wire nor connect it to anything. For maximum range, the antenna wire should remain straight.

OPERATION

Your 2-button/3-channel remote controls

The 2-button/3-channel remote controls that come with your On-Guard system are miniature radio transmitters each powered by a tiny 12-volt battery (replacement batteries are available directly from Avital Technologies and from most electronics stores). Range is up to 50 feet (a weak remote control battery will reduce range).

TO ARM On-Guard: Make sure the hood, trunk and all the doors are closed, then press button 1 once. You will hear a *2-chirp* confirmation. The system will be fully armed 10 seconds later (if your vehicle has a dome light that stays on or slowly dims a few seconds after you close the doors, the system actually arms 10 seconds after the light turn off).

TO DISARM On-Guard: Press button 1 again. You will hear a *1-chirp* confirmation to indicate that the system is now disarmed and you may enter the vehicle.

TO ACTIVATE THE PANIC FEATURE: Press and hold button 1 for 3 seconds. The siren will sound for 30 seconds or until you press button 1 again to turn it off.

TO ACTIVATE YOUR GARAGE DOOR OR GATE OPENER: If you have the optional *On-Guard GARAGE DOOR INTERFACE* installed, you may use button 2 on your On-Guard remote control to open or close your home's garage door or electric gate. See the back cover for ordering information.

Dual Vibration/Impact Sensors

On-Guard has two internal sensors: An ALARM SENSOR that detects intrusion-related vibrations and impacts and activates the full siren blast, as well as a WARNING SENSOR that causes the system to sound a rapid 3-chirp warning tone if another car lightly taps your vehicle's bumper while parking or if someone forcefully leans on your parked vehicle. You can remotely adjust the sensitivity of either or both of these sensors via your remote control (see *Step 9: Sensor Adjustment* on page 5).

High-output siren

In its armed state, On-Guard issues a loud 30-second siren wail whenever the ALARM SENSOR is triggered and/or whenever either the trunk, hood or a door is opened.

False Alarms

Certain conditions, such as a very loud clap of thunder or a very heavy truck driving close to your parked car, may set up enough ground vibrations to trigger the ALARM SENSOR and sound the siren.

To silence the system while the alarm is sounding, just press button 1 on your remote control. If you find that your On-Guard system issues false alarms or false warning tones too often, it means the sensitivity of one or both of the sensors too high. Follow the directions noted in *Step 9: Sensor Adjustment* on page 5 and decrease the sensitivity of the ALARM and/or WARNING sensor(s) one or two steps. Repeat if the falsing problem persists.

Prior intrusion attempt alert

If you hear 3 chirps when you remotely disarm (instead of the usual 1 chirp) it means that the hood, trunk or one of the doors was opened while you were away. If you hear 4 chirps upon disarming, it means that the ALARM SENSOR was tripped.

How to add new remote controls

Your On-Guard system will respond to as many as a total of 4 On-Guard remote controls. Each remote control has its own unique digital code (to make sure that one person's remote cannot disarm a stranger's On-Guard system). To make your system recognize the digital code of the new remote control(s), use the following procedure:

1. Disarm your On-Guard system.
2. Remove both 5-amp fuses from the On-Guard system's two fuseholders connected to the positive cable of your vehicle battery.
3. Firmly reinsert both fuses (the siren may make a slight noise when you do so).
4. Within 25 seconds, press button 1 on the new remote control(s). You will hear 5 chirps to acknowledge that the new remote control code(s) have been read and memorized.

How to erase the code of a lost or stolen remote control

If one of your remote controls is ever lost or stolen, you can erase its digital code from the system memory. This ensures that the missing remote control can never again be used to disarm your system. Since the system can memorize up to a total of four different remote control codes, you simply need to "push" the old code(s) out with the remaining remote control(s). To do so, use the *How to add new remote controls* procedure above for a total

of four times (e.g., if you have one remote control remaining, repeat steps 1-4 a total of four times; if you have two remote controls, repeat steps 1-4 twice for each).

TROUBLE-SHOOTING

System does not respond to remote control:

- Replace the remote control battery. Replacement batteries are available directly from Avital Technologies and from most electronics stores (it's always a good idea to carry an extra battery in your vehicle's glove compartment).
- Make sure that the system's power and ground connections are solid (see installation steps 3 and 6).
- Have your vehicle battery checked. On-Guard will not work properly unless the vehicle battery is in good operational condition.

Remote control range is poor:

- Replace the remote control battery.
- Reposition the system's antenna wire. It should be as straight as possible and pointed away from any nearby electronic modules or heavy wires in the vehicle.
- Have your vehicle battery checked. If your vehicle battery's voltage is low, range will be poor.

The alarm does not sound when either a door, the hood and/or the trunk are opened:

- Is the system armed?
- You must wait at least 10 seconds after arming the system before testing any of these points.
- Make sure that the hood light, trunk light and/or passenger compartment dome light does indeed illuminate when you open that point. If it doesn't, have it corrected.

Even a strong impact to the vehicle does not sound the alarm:

- Is the system armed?
- You must wait at least 10 seconds after arming the system before testing the sensor.
- Make sure that the system bracket is very firmly mounted to the vehicle and that the bolts that connect the bracket to the system are firmly tightened. If the system is loose, the sensors will not operate properly.
- Adjust and test the sensitivity of the sensors as noted in *Step 9: Sensor Adjustment*.

The system repeatedly false alarms:

- The sensor sensitivity is set too high. Adjust and test the sensitivity of the sensors as noted in *Step 9: Sensor Adjustment*.
- If your vehicle's radiator fan can turn on or continue to run after you park your car and turn off the engine, you must have a car alarm installer connect the system's YELLOW wire to the power line of the radiator fan motor (see Special Requirements on page 2)

Still have a problem you can't resolve?

Call our toll-free help line at 800-ONGARD1.

To order optional accessories

Enhance your On-Guard system with these great accessories:

- *On-Guard Garage Door Interface:* Throw away that big, bulky garage door remote control on your car's sun visor. Use button 2 on your On-Guard remote control instead. This interface works with all electric garage door and gate openers, even if they don't currently have a remote. \$109.95
- *Additional On-Guard Remote Controls:* For other drivers of the vehicle. Your On-Guard system accepts up to a total of four different On-Guard remote controls \$39.95
- *12-Volt Mini Battery for Remote Control* . . . \$1.95

Add all applicable taxes plus a shipping and handling charge of \$9.95 per order. To order, have your MasterCard or Visa handy and call:

800-ONGARD1