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MiniMag™ Magnetic Stash Box Outdoor and Under-Vehicle Placement Guide



When it comes to using a magnetic case outdoors and/or on the underside of a vehicle, proper maintenance and placement are key factors to having a great experience with your [MiniMag™ Series Magnetic Stash Box](#).

Monster Magnetics® MiniMag™ cases are used in the field (for GPS tracking purposes) by tens of thousands of law enforcement and professional investigative agencies.

Having worked in the space for over a decade, we know that **proper placement** is a super-important, yet often overlooked factor in the optimal performance of a live GPS tracking device.

Improper placement can render the device useless by blocking GPS and cellular signals. Worse yet, an improperly placed magnetic case (and its contents) can be damaged, destroyed, or lost.

Pre-Use Inspection

Always give a visual and hands-on inspection to your magnetic case prior to deployment. Ensure the magnet(s) are securely attached to the case, clean, and free of corrosion. Inspect the gasket to ensure it is free of breaks, and forms a complete seal around the perimeter of the lid.

Placing a GPS Tracking Device Into the Case

- For the most common and popular GPS tracking devices on the market (Queclink GL200, GL300, Micron Prime, etc), the GPS antenna (receiver) is oriented on the front of the device (the same side of the device that you see the indicator lights). Place the device into the case with the antenna side AWAY from the magnet to avoid any magnetic interference.
- Open the case (the best way to open it is with two hands, and use your thumbs to push up on both sides of the latch simultaneously). With the magnet side down, place the device inside the case so you can see the front of the device.





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FYI... Placement Could be the Most Important Factor!

Most problems with GPS trackers not reporting can usually be traced back to one very important factor – placement!

Proper placement is key to getting the best tracking performance. The optimal placement of a GPS tracker is to position it with the antenna side of the device facing up, with a clear view of the sky. I realize you're likely not using it in this manner, but please allow me to clarify...

The technical reason GPS trackers are best when placed in clear view of the sky is this:

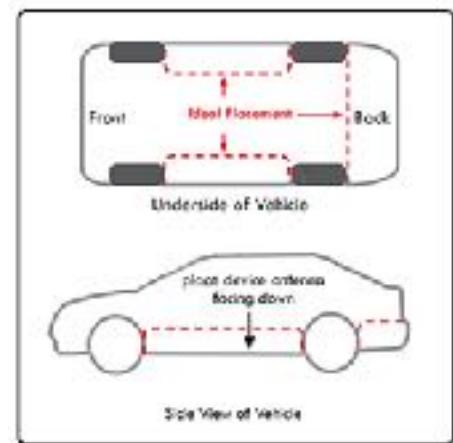
The 31 satellites (as of August 10, 2018) that make up the Global Positioning System orbit Earth at an altitude of about 6.5 million feet (roughly 12,500 miles). That's quite a bit of time and space, and, consequently, the signal is weakened as it travels to Earth. When objects stand in between the GPS satellites and the device, this can degrade the signal. Additionally, GPS signals simply cannot penetrate some solid objects, such as concrete and metal.

They can, however, reflect and bounce. When placed properly, the GPS tracker will receive the GPS signals required to determine its location.

Ideal Placement

- Close to the perimeter of the vehicle
- Away from the engine
- In proximity to the reflected GPS signals

In order for the device to achieve the best possible reception, place the magnetic case beneath the passenger compartment areas or back portion of the underside of the vehicle. GPS antenna side facing DOWN, toward the ground (remember, we put it in the case with the antenna side AWAY from the magnet). Placement in other areas may cause signal obstruction, which can lead to poor or no tracking results.



Improper Placement

- Do not mount the magnetic case or place your GPS tracking device near an extreme heat source (e.g. in the engine compartment or near any part of the exhaust system). The case is made of ABS resin (it cannot be metal as GPS signals would not penetrate and reach the antenna) that can be weakened or even melt if too close to an extreme heat source, and delicate electronics inside your tracker can be damaged by extreme heat.
- Ensure the placement isn't hindered by the vehicle's suspension system. If you're not sure, you can test this by pushing up and down on the car's bumper to see if the shocks/springs will cause the vehicle to touch the magnetic case.
- If you're using a magnetic case with an extended battery, do not place it near the fuel tank or fuel lines of the vehicle. Although very rare, a lithium-ion battery can become a fire hazard.
- The interior of the cab of a vehicle, under the seat, in a seat pocket, or in the trunk of a vehicle are generally **not ideal** for GPS tracker placement because GPS and cellular signals can be obstructed when used in this manner. That said, GPS signal strength is stronger in some areas of the country than others, and we have clients that have



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had success with the tracker placed in any or all of these locations. We recommend testing it out. If it works, then you have great GPS signal strength in your area, which is a huge bonus.

- The receiver in a GPS tracking device is very much like the receiver in a GPS navigation system. Notice that manufacturers have you install GPS navigation systems in the dash board or suctioned right to your windshield. Why? Both are ideal locations... they have an **unobstructed view of the sky**. If you treat your GPS tracking device with the same precision, you will have much more successful results.

Care & Maintenance

- Clean with warm soapy water and dry with a soft cloth or allow to air dry.
- Lubricate the gasket periodically using silicone lubricant (lubricant... not sealant!) or WD-40®. You can do this by putting a dab on the end of your finger and spreading it onto the gasket.
- To repel moisture and help prevent corrosion, use the same silicone lubricant or WD-40® to coat the exterior of the magnet assembly.

Other Considerations

- Soft foam inserts are included (and [replacements can be found here](#)). Use the inserts to prevent things from rattling around, but not so tight that it imparts undue stress on the case latch (or the contents). Use only one foam insert (or none), at your discretion.
- Many automobile parts (especially newer vehicles) are alloys. They may not have enough iron content to adequately hold the case and contents. Be sure to test it prior to deploying it. As a test, stick it to the frame of your vehicle. This is the strength you should feel when you find its final mounting location.
- Make sure the surface is clean. Road grime in between the vehicle and the magnet will degrade the magnetic force.
- Make sure you use the ENTIRE magnet - i.e. do not mount it half-on-half-off the mounting surface.
- For our cases that have a deadeye, add a second layer of protection by running a zip tie or lanyard through the deadeye on the outside of the case and securing it to a fixed location under the vehicle - see example →
- It's always best to mount the case horizontally than vertically (i.e. place it with the magnet parallel to the ground). The reason (aside from the antenna-side of the device facing down) is that you want the direct-pulling force of the magnet to work *against* gravity. Mounted vertically, the general vibration of the vehicle, rough terrain, pot holes, speed bumps, etc, can cause a *sliding* effect. It will slide right off of your vehicle, and you don't want that.
- If you can't find a good place to mount it horizontally, you can always secure the device to the mounting location using straps, zip ties or something else that will ensure it doesn't fall off of the vehicle. In fact, our law enforcement and investigative clients do this as standard operating procedure as a loss-prevention precautionary measure, and we recommend doing the same.

Disclaimer

Due to uncontrollable variables, Monster Magnetics® makes no guarantee, implied or otherwise, and is not responsible for loss or damage resulting from the use or misuse of the magnetic case accessory. Understand that there is inherent risk involved, and that it is ultimately the responsibility of the user to use sound judgement and common sense when installing it on or under a moving vehicle. If you are using this product for GPS tracking purposes, ensure you consult with law enforcement and legal counsel to ensure the legality of the type of tracking you intend to perform. Monster Magnetics® does not support illegal or illicit use of GPS tracking devices. This product is expressly intended for use to secure personal and/or company property, and ensuring the safety of individuals with their consent.