

GT1 General Installation and Mounting Guide



Step 1: Selecting a Mounting Location

To ensure ideal performance it is advised to consider the following:

- Select a mounting location that provides the **best view of the sky**.
- A flat horizontal mounting position (lying flat, facing skyward) is preferred.
- Vertical mounting orientations (printed face of device facing horizon) are acceptable but may impact performance and overall battery life.
- Mount on the flattest and hardest surface possible.
- Select a mounting location that isolates the GT1 from damage.
- Recommended mounting area size is 5"L x 3.5"W (130mmL x 90mmW).
- Thoroughly clean the mounting area, especially if using VHB mounting.
- DO NOT PAINT OR COVER THE GT1.**

Doing so may negatively impact product performance and battery life.

Step 2: Selecting a Mounting Method

Mechanical Mounting

For use with the stainless steel mounting bezel

Socket-Head Cap Screws (3/8" bolt diameter)

For installations that can be drilled and tapped and do not have access to the back side of the mounting surface.

Hex-Head Cap Screws (3/8" bolt diameter)

For installations that have access to the back side of the mounting surface for securing a nut or bolt.

Self-drilling Sheet-metal Screws (1/4" diameter)

For installations with thinner mounting surfaces where a quicker **less robust** install is needed. Be sure to clean out **all** drill shavings.

It is **highly** recommended to use mounting fasteners made of a material that resists galvanic corrosion and environmental weathering such as stainless steel. **This is especially important for marine applications.**

To minimize electrostatic spark concerns in hazardous locations, ensure the stainless mounting bezel has metal to metal contact with the asset. Once secured, mounting hardware can provide metal to metal contact. See GT1 User Guide Appendix 'C' for EX special use conditions.

Weld-Down Mounting

Optional GT1 Weld-Down and Adapter Plate Accessory

For installations that can allow a welded down and prepared 'Geoforce Ready' surface for the GT1. Refer to the GT1/GTO weld-down plate installation guide for information. (ORDERING SKU: GTXK-BASEPLATE)

VHB Adhesive Mounting

For installations that **do not** require a protective bezel that are **isolated** from abuse, extreme weather and temperatures the GT1 has a pre-installed pad of VHB adhesive tape that can be used to "peel and stick" to any **clean** surface above 50F (10C). The Geoforce VHB Installation and Removal Guide **MUST** be followed to ensure proper adhesion to the asset. VHB is **not recommended** if using a protective bezel mounting option.

Step 3: Record the Asset and GT1 Serial Numbers

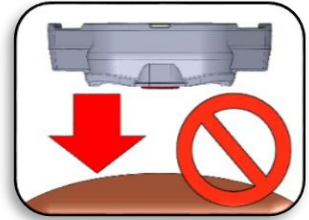
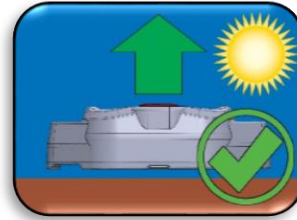
- Record the GT1 serial number.
- Record the asset name and serial number (on which the GT1 was installed).
- Enter the GT1 serial number and asset info into the track and trace software application. Contact your Geoforce account service representative if you require assistance.

Step 4: Initializing the GT1



To begin service (using the pull tab) remove the magnet while outdoors with a good sky view. Removing the magnet indoors may lead the GT1 to enter Power Save Mode.

WARNING: IF YOU DO NOT REMOVE THE MAGNET THE GT1 WILL NOT WORK!!!



Hex Head Cap Screw

The GT1 bezel will capture and hold a Hex-Head Cap Screw or Nut while being secured from the back side.



Socket Head Cap Screw

Geoforce can provide information on example mounting hardware upon request.



GT1 Adapter and Weld-Down Plate Accessory



VHB adhesive Pad

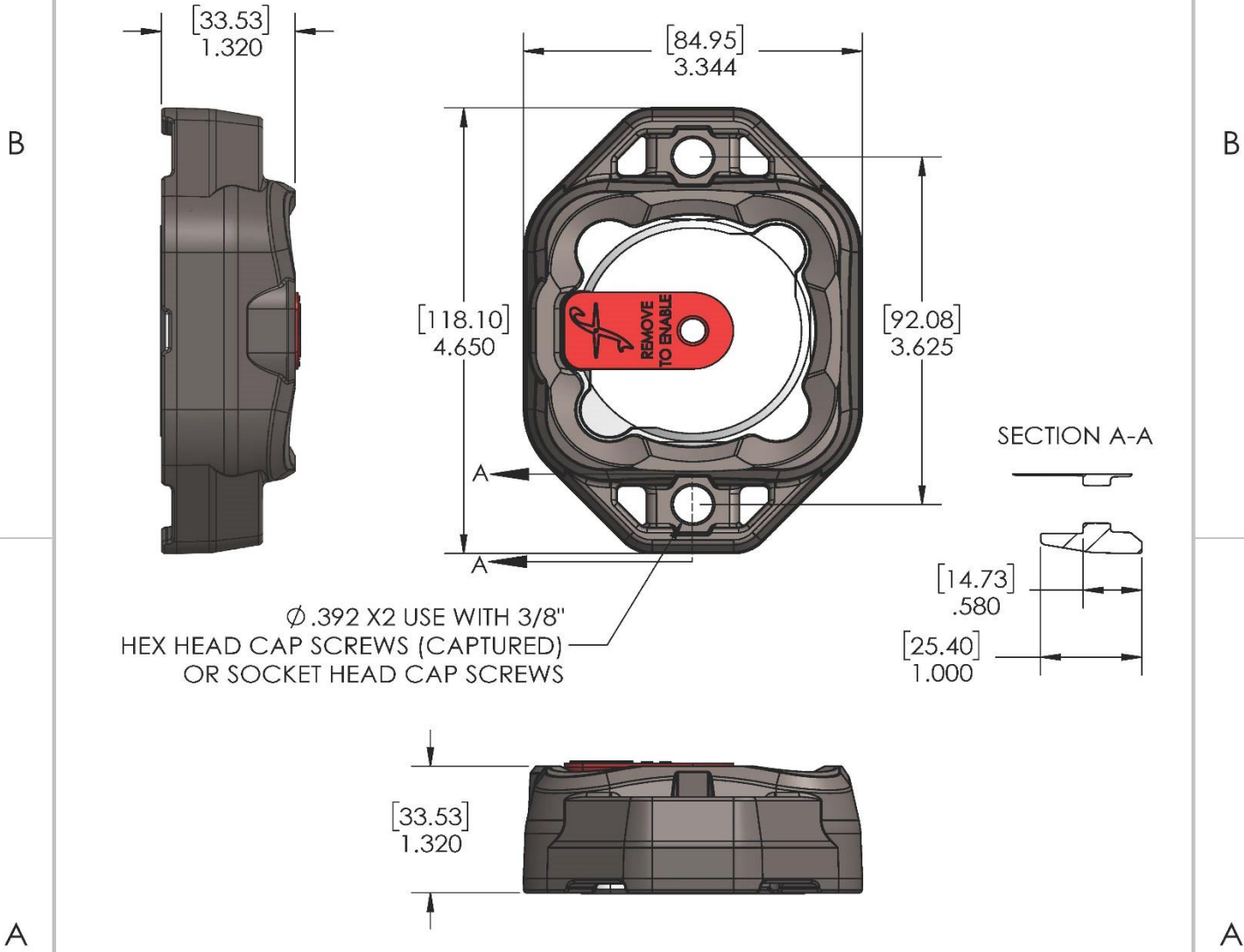
Refer to the **Geoforce VHB Installation and Removal Guide!**



GT1 Installation Drawing

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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
150414a	Initial Release	4/14/2015	BCT
151221a	Dimensional updates	12/21/2015	BCT



APPLICABLE PRODUCT	PRODUCT REVISION LEVEL	DRAWN	CHECKED	ENG APPR.	MFG APPR.	Q.A.	NAML	DATE	<p>750 Canyon Drive, Suite 140 Coppell, TX 75019, USA 972-546-3878</p> <p>TITLE: GT1 Installation Drawing</p>
GT1	K	BCT	BCT	BCT	BCT	BCT		12/21/2015	
GT0	K	BCT	BCT	BCT	BCT	BCT		12/21/2015	
								12/21/2015	
								12/21/2015	
								12/21/2015	
UNTOLERANCED DIMENSIONS ARE BASIC: 							COMMENTS:		SUFF DWG. NO. A HW-2P-2-0049
DIMENSIONS ARE IN INCHES and [MM] TOLERANCES: FRACTIONAL: 1/64 ANGULAR: MAC1 ±0.5deg BLND ±2.0deg TWO PLACE DECIMAL ±0.010 THREE PLACE DECIMAL ±0.005							DO NOT SCALE DRAWING		DWG. REV 151221a
PROPRIETARY AND CONFIDENTIAL ALL INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF GEOFORCE INC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF GEOFORCE INC. IS PROHIBITED.							INTERPRET GEOMETRIC TOLERANCING PER: ASME Y14.5-2009		MANUF. PART NO. UNASSIGNED
NOTE: IF A FEATURE IS MARKED WITH THE 'EX' NOTATION THEN NO MODIFICATIONS ARE ALLOWED TO THAT FEATURE WITHOUT THIRD PARTY (CERTIFYING AGENCY) APPROVAL							GEOFORCE PART NO. GT1K		SHEET 1 OF 1

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GT1 Mounting Hardware Guidelines and Examples

- Geoforce **highly** recommends using mounting hardware made from a higher-grade series stainless steel. Other mounting hardware material types may be subject to shortened life and/or galvanic or other types of corrosion.
- Ensure **all** mounting hardware is compatible with the asset.
- Ensure **all** regulatory compliance and asset owner policies and procedures are adhered to during installation.
- When using stainless steel mounting hardware, it is **highly** recommended to use a marine grade anti-seize material on the bolt threads as galling and seizing of stainless nuts and stainless bolts may occur.
- Using smaller bolt sizes (5/16" or 8mm) is possible but not recommended since they will not provide equivalent mounting strength.
- To avoid staining and discoloration, zinc coated mounting hardware should not be used with the metal bezel.

Structural Mounting Hardware Examples

Socket Head Cap Screws (Bolt length may vary depending on mounting surface)

Compatible with the metal mounting bezel.

Option 1 (Less harsh environments):

Vendor: McMaster Carr (www.mcmaster.com)

Part Number: 96006A922

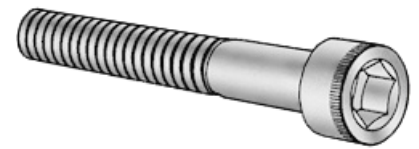
Description: Black Oxide 18-8 Stainless Steel Socket Head Cap Screw 3/8"-16 Thread, 1-1/2" Length

Option 2 (More harsh environments):

Vendor: McMaster Carr (www.mcmaster.com)

Part Number: 92185A677

Description: Type 316 Stainless Steel Socket Head Cap Screw 3/8"-24 Thread, 1-1/2" Length



Hex Head Cap Screws (Bolt length may vary depending on mounting surface)

Compatible with the metal mounting bezel.

Option 1 (Less harsh environments):

Vendor: McMaster Carr (www.mcmaster.com)

Part Number: 92198A628

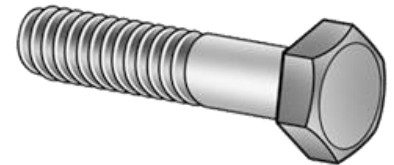
Description: 18-8 Stainless Steel Hex Head Cap Screw 3/8"-16 Thread, 1-1/2" Length

Option 2 (More harsh environments):

Vendor: McMaster Carr (www.mcmaster.com)

Part Number: 93190A367

Description: Type 316 Stainless Steel Hex Head Cap Screw 3/8"-24 Thread, 1-1/2" Length



Non-structural Mounting Hardware Examples

Self Drilling Sheet Metal Screws (Screw length may vary depending on mounting surface)

Compatible with and for quickly securing the metal mounting bezel.

NOTE: Asset metal shavings created by the self-drilling screws can corrode depending on the material.

Clean and remove any drill shavings to prevent rust and discoloration that may come from the shavings.

Vendor: McMaster Carr (www.mcmaster.com)

Part Number: 90822A630

Description: Stainless Steel Drilling Screw for Metal, High-Strength, 1/4"-14 Thread, 1-1/2" Long



Metal Banding (Length may vary depending on mounting surface, requires a crimp tool)

Compatible with the metal mounting bezel.

Tip: This is good for securing the metal mounting bezel when bolts or screws cannot be used.

Tip: This is good for providing a method to put a security seal around the GT1 mounting bolts.

Vendor: McMaster Carr (www.mcmaster.com)

Banding Part Number: 5422K11

Description: Low-Profile Hose Banding Type 201 Stainless Steel, 3/8" Wide, 0.025" Thick

Buckle Part Number: 5422K68

Description: Type 201 Stainless Steel Ear Style Buckle for 3/8" Wide Low-Profile Hose Banding



Zip Ties (Length may vary depending on mounting surface)

Compatible with the GT1 plastic assembly when a mounting bezel is not used.

Tip: For strapping over a GT1 or to provide a quick mechanical backup to a VHB mounted GT1 without a mounting bezel.

Vendor: McMaster Carr (www.mcmaster.com)

Part Number: 70215K93

Description: Harsh-Environment Cable Tie Chemical-Resistant/Fire-Retardant Tefzel, 14-1/2" Length



GT1 Maintenance and Replacement

General Maintenance

The GT1 is maintenance free other than general upkeep for cleanliness to maintain normal device operation. To maintain a long product life and optimal performance the GT1 should be kept as clean as possible of dirt, grease, and chemical buildups.

Light amounts of red rust may occur on the optional GT1 metal bezel and/or weld plate. This red rust generally originates from free iron, surface deposits, and general contamination from weathering and dirt. The presence of light amounts of red rust does not affect the integrity or function of the product and does not originate from the metal part structure.

Warning: For Hazardous Locations Safety, when working with or cleaning the GT1, it is advised to do so outside of hazardous locations. If this is not possible it is advised to be mindful at all times of electro-static discharge (ESD) shock hazards and ESD avoidance by using proper grounding techniques when touching this device or the asset it is mounted on. Note additional EX conditional warnings in Appendix C.

GT1 Maintenance and Replacement

Step 1: Verify the old GT1 mounting area prior to removal

To ensure ideal performance it is advised to VERIFY the following:

- Select a mounting location that provides the **best view of the sky**.
- A flat horizontal mounting position (lying flat, facing skyward) is preferred.
- Vertical mounting orientations (printed face of device facing horizon) are acceptable but may impact performance and battery life.
- Mount on the flattest and hardest surface possible.
- Select a mounting location that isolates the GT1 from damage.
- Recommended mounting area size is 5"L x 3.5"W (130mmL x 90mmW).
- Thoroughly clean the mounting area, especially if using VHB mounting.



Step 2: Remove the old GT1 assembly

- Record the old GT1 serial number for deactivation.
- Record the asset name and serial number (on which the GT1 was installed).
- Remove the old GT1 assembly from its mounting position by loosening and removing its mounting bolts. Be mindful of dropped object hazards.
- Separate the GT1 electronics assembly from the protective bezel by hand pressing the two apart.
- If unit is installed with VHB refer to the Geoforce VHB installation and removal guide for removal steps.



Step 3: Replace with a new GT1 assembly

- Ensure the mounting bezel and its mounting surface are clean and free of dirt, grease and chemicals.
- Install the new GT1 electronics assembly by firmly hand pressing it into its protective bezel. The GT1 electronics assembly is keyed to ensure it can only be inserted into the metal bezel in one orientation.

Step 4: Reinstall the GT1 assembly

- Record the new GT1 serial number for activation.
- Record the asset serial name and number (on which the GT1 was installed).
- Reinstall the GT1 assembly back onto its mounting location and secure. It is advised to use new mounting hardware to ensure long service life.
- DO NOT PAINT OR COVER THE GT1.**
Doing so may negatively impact product performance and battery life.



Step 5: Initializing the new GT1



To begin service (using the pull tab) remove the magnet while outdoors with a good sky view. Removing the magnet indoors may lead the GT1 to enter Power Save Mode.

WARNING: IF YOU DO NOT REMOVE THE MAGNET THE GT1 WILL NOT WORK!!!

Disposal Notice

WARNING: DO NOT DISPOSE OF PRODUCT OR BATTERIES IN MUNICIPAL WASTE AREAS

IT IS ADVISED TO DISPOSE OF OLD RETIRED GT1 DEVICES IN ACCEPTABLE LOCAL E-WASTE RECYCLING LOCATIONS.

