

Target Mounted Hit/Miss Indicator

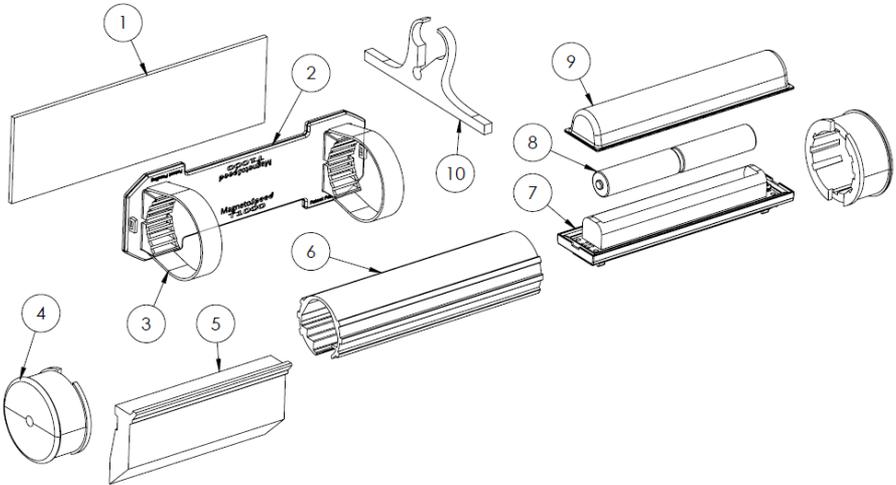


T1000

Instructions

The T1000 is a rugged hit indicator with an extremely long battery life. It is weather proof and tough enough to “live” on the back of AR500 grade steel targets with diameter or width of 10 inches or greater. Its replaceable flexible rubber reflector is designed to withstand many impacts before needing to be replaced. Target preparation for the T1000 is quick and simple and it is also easily transferable to multiple targets using common Industrial Velcro tape. The T1000 has multiple operating modes to best suit your shooting situation and is easily seen through any optic that is capable of seeing the target at that shooting distance.

Kit Includes:



Item #	Quantity	Name
1	2	Loop Velcro
2	1	Mounting Plate
3	2	Velcro Strap
4	2	Rubber End Cap
5	2	Rubber Reflector
6	1	Aluminum Housing
7	1	Electronics Core
8	2	AA Battery
9	1	Battery Cover
10	1	Alignment Tool

Electronics Setup

Easy Start:

The T1000 electronics are set at the factory to indicate a hit and miss with the following sequence:

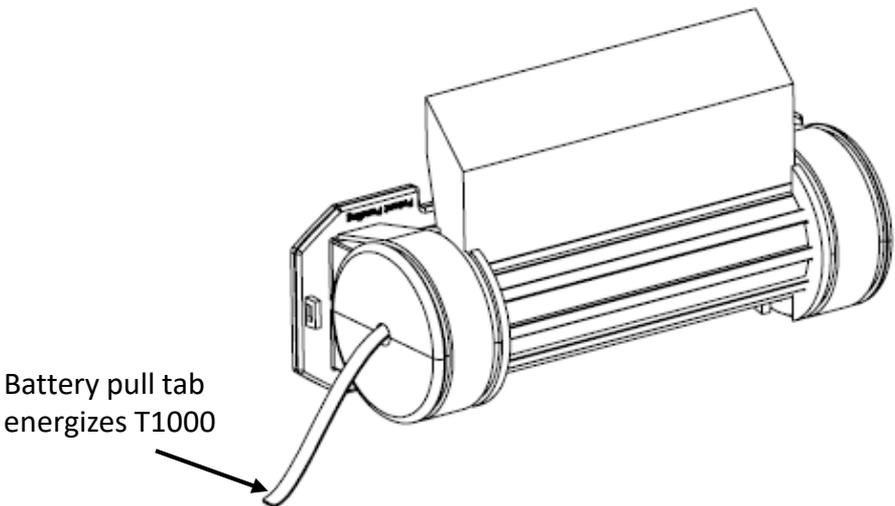
Hit = Red

Miss= Yellow

If this will work for your application all you need to do is pull the battery pull tab located on one side of the T1000 protruding from the rubber end cap. This will energize the T1000 and you should see the a bootup sequence that flashes red then yellow. After the yellow lights come on there is a sequence of red flashes that indicate current battery life.

Battery level, three red flashes = full, two = medium, one = low.

Battery life in standby: 1 year | Indications in normal mode: 2,500

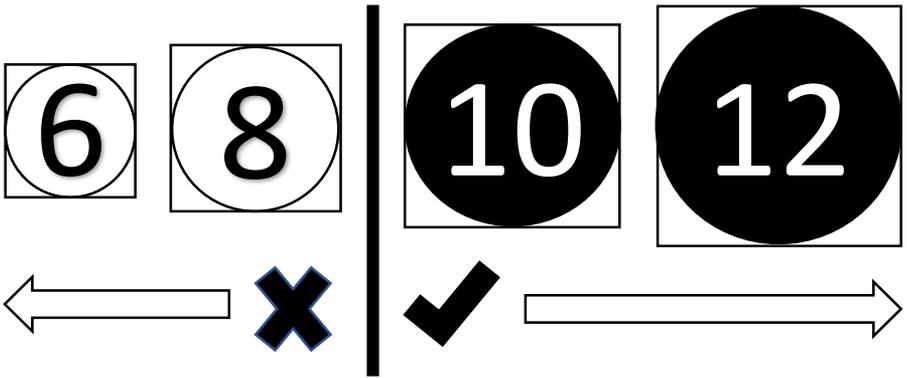


The T1000 should now be ready to strap to the mounting plate and ready to use.

Mounting to Target

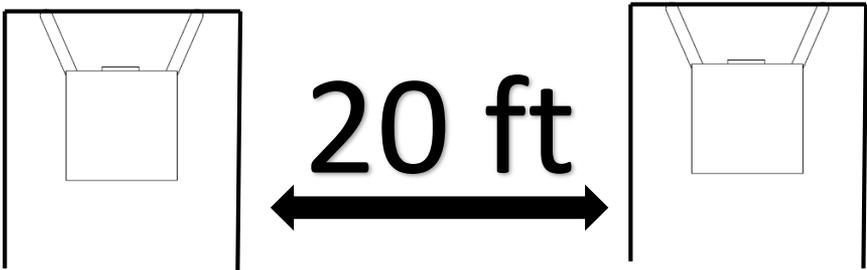
Target Size:

The T1000 is intended for use on to the back side of steel targets 10 inches in diameter or width. Targets smaller than 10 inches in diameter will not be able to fully hide the electronics package behind the steel target and thus should not be used. **Make sure your target steel is rated for the caliber and velocity of the rounds you will be shooting!**



Target Location:

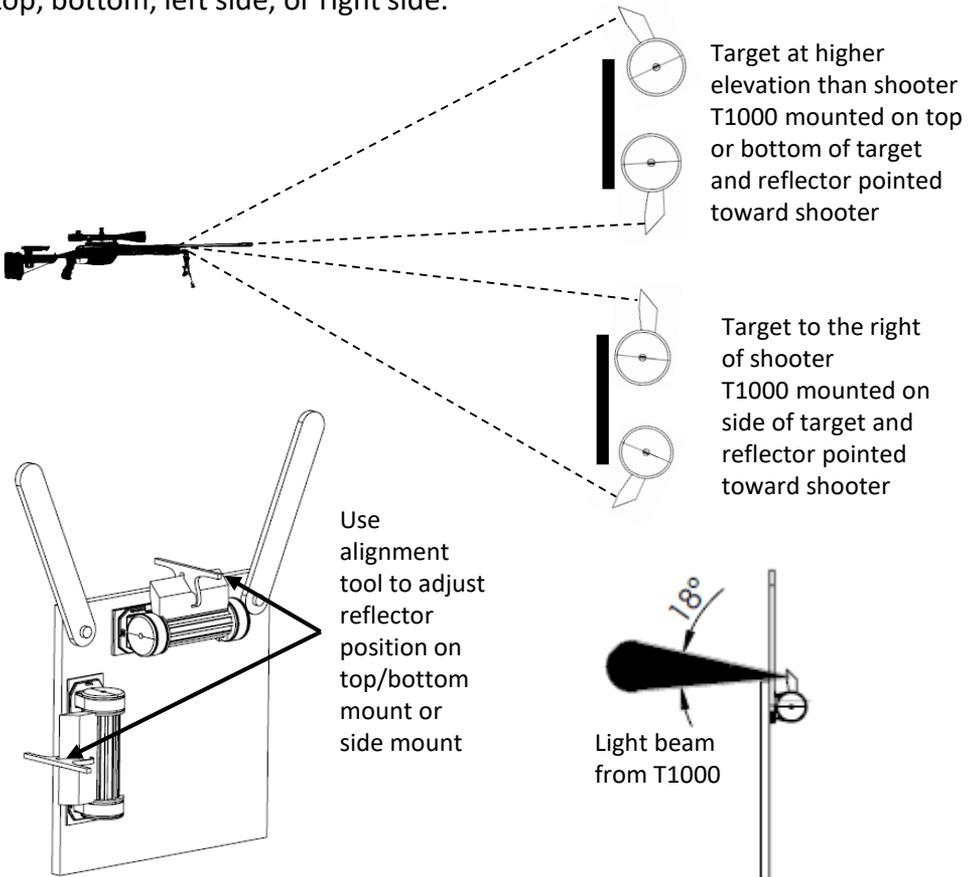
The T1000 body is shielded from bullet strikes by the target that it is mounted to, however, nearby targets can send shrapnel and lead spray several feet in either direction. We recommend placing nearby targets at least 20 feet away (further is recommended) to avoid damage to the T1000 housing on the adjacent target.



Mounting to Target

Target Alignment:

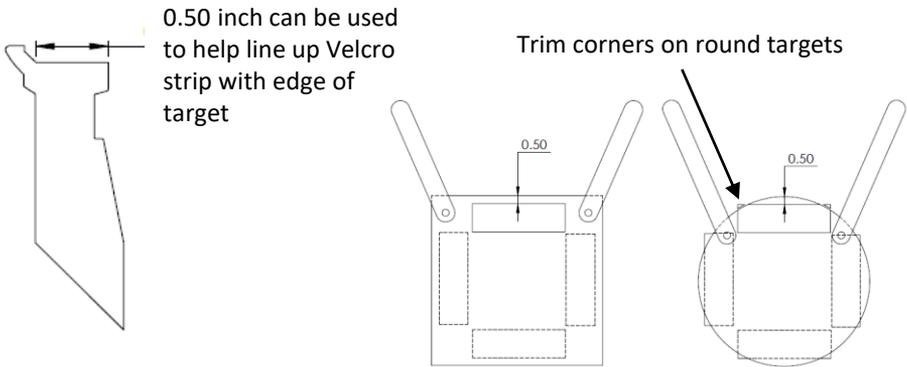
The T1000 rubber reflector sends light out at approximately an 18 degree angle and thus the target alignment to the shooter can come into play. For most applications the best place to mount the T1000 is at the top of the target, however, the T1000 reflector was designed to be able to rotate in its mounting plate to accommodate some misalignment. Elevation misalignment can be overcome by mounting the T1000 at the top or bottom of the target and either rotating it up or down to shine back at the shooter. Windage misalignment can be overcome by mounting the T1000 to the side of the target and rotating the reflector right or left to align with the shooter. Care must be taken on extreme angles to make sure the T1000 body is not exposed to possible direct hits from bullets. An alignment tool has been included in the kit to help aim the reflector back at the shooting position to aide in getting the best alignment. Use this step to decide the best position to mount the T1000: top, bottom, left side, or right side.



Mounting to Target

Target Velcro Mounting:

Once you have decided on the placement of the T1000 (Top, Bottom, or Side) on the target the next step is to adhere the Velcro loop strip to the back of the target. Use the below instructions from Velcro for surface preparation and cure times for the adhesive. Attach the loop strip of Velcro approximately $\frac{1}{2}$ inch from the nearest edge. The bottom surface of the extra reflector is approximately $\frac{1}{2}$ inch and can be used as a guide. On round targets trim corners of Velcro that protrude over the edge.



VELCRO® Brand 19 is a rubber-based pressure sensitive adhesive.

- High tack - quick setting
- Achieves 80% bond strength in about an hour; full strength in 30 hours (at room temperature)
- Temperature operating range -40°F to 185°F

Preparation of VELCRO® Brand Tapes - Pointed corners on VELCRO® Brand hook or loop tape may prevent a good bond. Nipping or rounding each corner of the VELCRO® Brand tape may eliminate this vulnerable area. Velcro USA, Inc. provides a complete range of converting services.

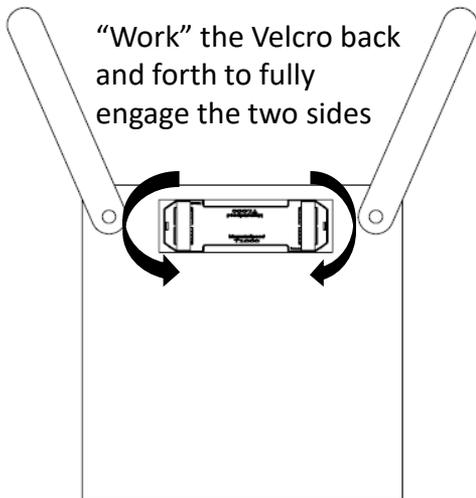
Surface Preparation - It is important that all surfaces be thoroughly cleaned before applying VELCRO® Brand adhesive backed tape. All cleaning agents should be tested prior to using, to be sure that the cleaning agent will not have adverse effects on the substrate. (Citrus cleaners are not recommended.) In some circumstances, isopropyl alcohol (rubbing alcohol) may be a sufficient cleaning agent.

Conditions - It is important to work in an area that is clean and free from dirt and dust in the air. The adhesive should be applied at room temperature, with the ideal room temperatures being 65°F to 75°F, and relative humidity 40% to 65%. (The lower the humidity, the better the bond.) Excessive cold, heat, dirt and relative humidity will be detrimental to your adhesive performance. If adhesive must be applied at temperatures lower than 65°F, warm the substrate and the tape to elevate temperature prior to applying. This may help the adhesive cure.

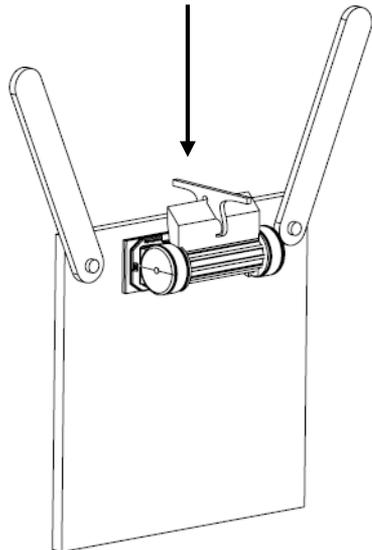
Mounting to Target

Attaching the T1000:

Once the Velcro loop adhesive has had a chance to cure, attach the mounting plate to the target. When attaching the mounting plate be sure to work the hook side of the Velcro by moving the mounting plate in a twisting motion to engage as much of the Velcro as possible. After the mounting plate has been attached to the target, then the straps can be loosened and the T1000 can be strapped into the mounting plate. The straps should be snug enough on the rubber end caps to prevent them from turning, but do not over tighten. Use the alignment tool if needed to realign reflector with shooting position.

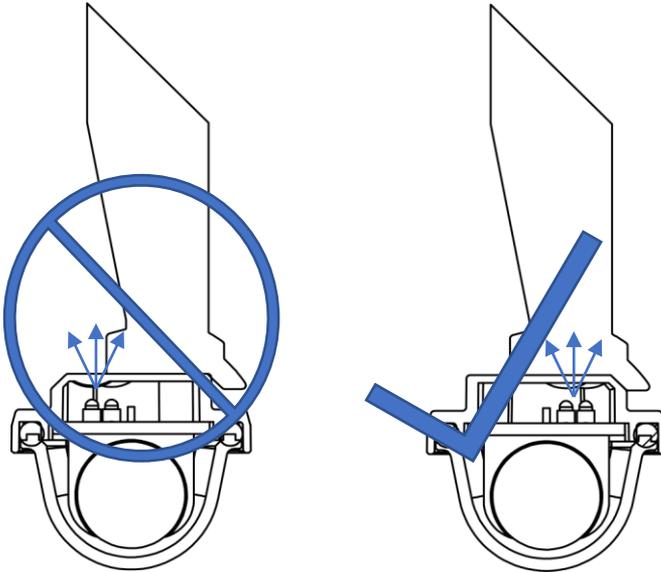


Strap T1000 on to the mounting plate and before tightening straps make sure reflector is still aligned



T1000 Disassembly and Reassembly

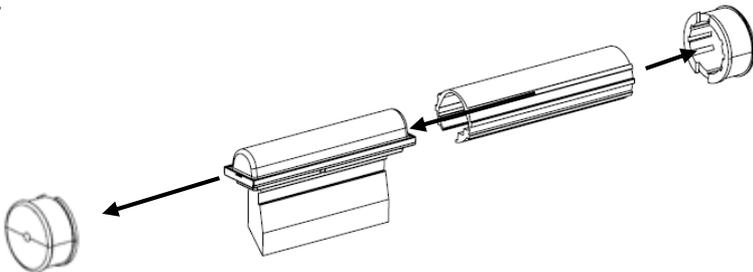
This step can be used to change the batteries, change the operating modes, or switch an old reflector to a new one.



*Before getting started it is important to note that the LEDs are offset from the centerline of the Aluminum body. Care should be taken to assemble components the same way they are disassembled. Failure to do so could still result in lights being seen, but greatly diminished from their full brightness.

Disassembly:

1. Remove T1000 from mounting plate by loosening straps.
2. Remove rubber end caps by pulling straight away from the aluminum body.
3. Push electronics core and rubber reflector out of aluminum body. These components are a snug fit and may take some force to break free.

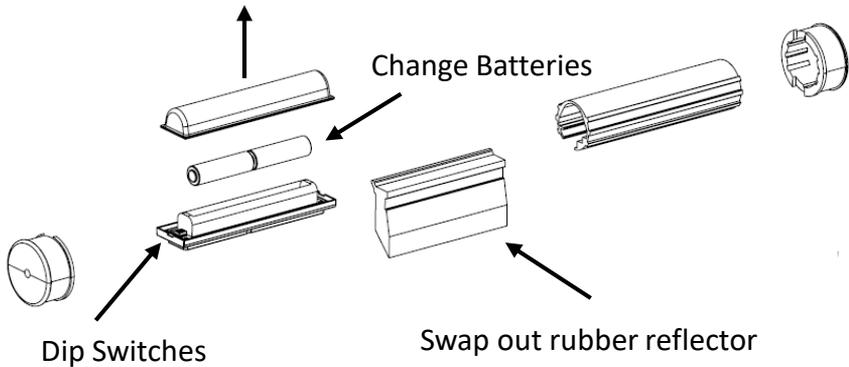


T1000 Disassembly and Reassembly

Disassembly continued:

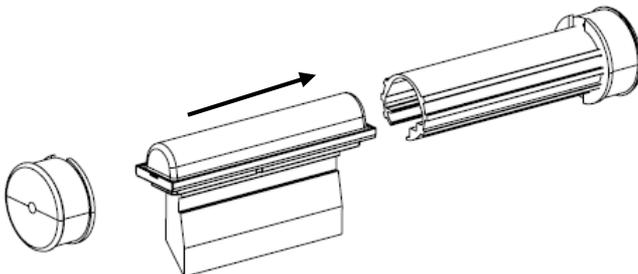
Once the electronics core and rubber reflector are out of the aluminum body the battery cap can be removed. At this point the following can be done:

- Change batteries
- Change the dip switches to change operating mode(see changing operating mode)
- Replace rubber reflector to a new one



Re-assembly:

1. Put one rubber end cap back on the aluminum body
2. Hold battery cap and rubber reflector against the electronics core and slide back into aluminum body. Setting the aluminum body with rubber cap down on a table top usually works best for this.
3. Press on other rubber end cap and tap the T1000 to make sure it is functioning properly

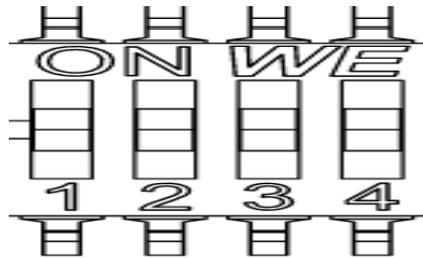
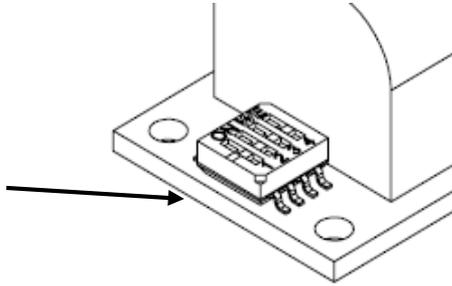


Changing the Operating Mode

Allows the user to set options (sensitivity, miss-indication, and indication-mode) with the switches on the battery side of the printed circuit board (PCB).

Use a pen or knife to flip the switches to set the options you want. Power does not have to be cycled for these settings to take effect, but the device must be woken from its sleep state. Once settings are changed, tap the device against a hard surface to enable changes.

Set switches 1-4 to desired location based on table below



Operation Modes	1	2	3	4
Sensitivity High	↑			
Sensitivity Normal	↓			
Miss Indication Off		↑		
Miss Indication On		↓		
Normal length indication			↓	↓
Short length indications			↑	↓
Long length indications			↓	↑
Rapid Fire mode			↑	↑

Changing the Operating Mode

Sensitivity Levels

For most uses the T1000 will remain in normal sensitivity for most center fire rifles. If using a very small caliber at long distances on large targets, or using rimfire ammunition the T1000 should be changed to high sensitivity.

Miss Indication

With miss indication turned on, the unit will signal with yellow flashes for shots that only register through an audible signal. The distance of the miss detected will vary greatly based on the type of ammunition and if the round impacts anything within a reasonable distance from the target.

Indication Modes

There are 4 operating modes: normal, short, long, and rapid fire. The first three only differ in indication times while rapid-fire keeps a running tally of the hits until there is a gap of more than 2 seconds, then it slowly blinks back the number of hits it registered in the series. For general shooting, we recommend normal mode as it gives shooters plenty of time to get back on target to spot the detector but is short enough to not limit fire rate. For competition and tactical shooting, use short mode. Long mode provides extended indication times for very long distance shots. The table below lets you compare the timings for the various modes

Indication Cycle Explained

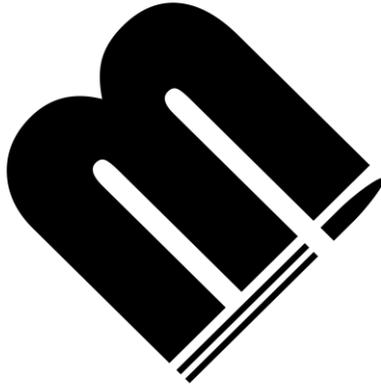
There are two parts to a hit indication: a solid-red hold and red flashes. During the solid-red time, new hits or misses are both ignored. Once the indication has moved into the flashes, hits will be detected again. If there is a second hit during the red flashes, the indicator will again go solid, thereby indicating the second hit. If the battery is low, the device will quickly flash red-yellow 3 times after a hit. Change the batteries as soon as you can. If the T1000 detects a problem, it will flash very quickly between red and yellow 25 times.

	Normal	Short	Long	Rapid Fire
Hit Flash Cycle time (s)	1.5	0.75	2.5	0.1
Number of Flashes for Hit	10	10	20	0
Hit Flash Rate (hz)	5	10	2.5	n/a
Miss Flash Rate (Hz)	0.5	1	0.25	20

Other Points of Interest

Hit/Miss Determination

The T1000 was designed to use very little power. When not being used it goes into a deep sleep mode, but will wake up when hit or if a supersonic bullet flies close by (a miss). It uses an accelerometer to track hits and a microphone to detect misses. The system has a basic level of redundancy as it checks both sensors to verify hits and misses. Depending on the sensitivity level, a hit that does not trigger the required level to be registered as a hit then the T1000 will flash yellow. This is to help filter out false hits like ricochets and target stand hits.



Magnetospeed LLC
8801 Tara Lane
Austin, TX 78737
(512) 284-8161
info@magnetospeed.com