



# USER MANUAL

## Remote Tire Deflation Device

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# Legal & Warranty Information

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## Warranty.

- a) Warranty.** Seller warrants that the Products provided to Buyer shall for a period of one (1) year from the date of delivery from Seller facility ("Warranty Period") (i) meet the Specifications for the Products if any provided by Seller; and (ii) be free from defects in workmanship and material.
- b) Remedy.** If a Product is defective in workmanship or material or does not meet the Specification, if any, Seller will at its option, during the Warranty Period, (i) repair or replace the Product at no charge to Buyer or (ii) provide to Buyer a credit equal to the purchase price of the Product, provided Buyer provides prompt written notice of the defect within the Warranty Period. Freight charges for Products returned to Seller for repair/warranty analysis are the responsibility of Buyer, and upon such return, Buyer must properly package such Product to protect against risk of loss and damage, including damage from electrostatic discharge. Such repair, replacement or issuance of a credit shall be Buyer's sole and exclusive remedy with respect to a breach of the warranty set forth herein. All costs of de-installation or re-installation of the Product shall be borne by Buyer. Products that are repaired or replaced during the Warranty Period are warranted for a period of six (6) months from the date of repair or replacement or the unexpired term of the original Warranty Period, whichever period is shorter. Where Products are replaced pursuant to this Section, Buyer shall be invoiced for the replaced Products and then issued a credit for such Products to be applied against future orders. If it is determined by Seller that the Product returned is not defective, Buyer agrees to pay Seller a service fee of One Hundred (USD 100) Dollars per Product return.
- c) Warranty Exclusions.** If, however, upon inspection of any of the Products to which this warranty applies, Seller determines that a claimed defect resulted from (i) normal wear and tear, including corrosion; (ii) installation and/or maintenance by Buyer or a third party; (iii) misuse or abuse, whether willful or negligent, of any of the Products by any person other than Seller; (iv) modifications, alterations, service, repair or replacement made by Buyer or a third party during the Warranty Period that were not requested or authorized by Seller; (v) any combination or use of the Products with any incompatible equipment or ancillary products that may be connected to the Products; (vi) failure of Buyer to maintain environmental conditions in accordance with Seller specifications or instructions, including but not limited to, adequate electrical power, temperature and humidity control; (vii) failure to follow all instructions provided by Seller (whether oral or written); (viii) customized equipment manufactured by third parties for incorporation into any of the Products; (ix) defects or errors in any custom specifications provided by Buyer; (x) causes beyond Seller's reasonable control; or (xi) causes other than our workmanship or materials, then the warranty shall be null and void and cease to apply. Seller shall have the sole right to determine whether Products are actually defective and the cause of the alleged defect.

Determination of the suitability of the Products for the use contemplated by the Buyer or the Buyer's customer for such products is the sole responsibility of Buyer or the Buyer's customer, whichever the case may be, and Seller shall have no liability in connection therewith. The Buyer assumes all risk and liability for loss, damage, or injury to person or property of the Buyer or others arising out of the use or possession of the Products furnished hereunder. Buyer shall defend, indemnify and hold harmless Seller and its officers, directors and affiliates from any third party claims in connection with the liabilities described in the prior sentence.

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This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, *and*
- (2) This device must accept any interference received, including interference that may cause undesired operation.

**The user is cautioned that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.**

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

The user is cautioned that changes and modifications made to the equipment without the approval of manufacturer could void the user's authority to operate this equipment.

**IMPORTANT NOTE:** To comply with FCC RF exposure compliance requirements, the following antenna installation and device operating configurations must be satisfied – This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.

## **DECLARATION OF CONFORMITY**

TRADE NAME	Nighthawk V2
MODEL NUMBER	836275
COMPLIANCE TEST REPORT NUMBER	B40609D1
COMPLIANCE TEST REPORT DATE	June 30, 2014
RESPONSIBLE PARTY (IN USA)	Pacific Scientific Energetic Materials Company (California) LLC
ADDRESS	3601 Union Road Hollister, CA 95023
TELEPHONE	831-630-5306

# Safety Information



The NightHawk® Remote Tire Deflation Device should only be used in strict compliance with your department's policies and regulations and product specification.

The NightHawk device should only be used by fully trained personnel. Failure to use the device as designed can result in damage to property and potential injury or death to users and/or bystanders.

Personnel using the NightHawk should be fully trained in the proper use of the device, and have a complete understanding of the correct tactical uses of the device.

The NightHawk uses spike strip tire deflation modules. Spike strips contain very sharp metal spikes. Do not attempt to repair or dismantle individual spike strip modules.

Unexpected sudden deflation of tires can result in loss of vehicle control and serious accidents. Do not use the NightHawk device in situations where bystanders could be injured as a result of suspect vehicles losing control

Never use the NightHawk device on motorcycles or other vehicles with less than four wheels.

The NightHawk device should only be used when the operator has a clear, unobstructed view of the roadway and oncoming vehicles.

Always make sure that other law enforcement personnel involved in a pursuit are aware of the potential deployment of the NightHawk device. Never deploy the device if there is the potential to deflate the tires of law enforcement agency vehicles. Always communicate potential deployment to appropriate individuals.

The NightHawk device uses a gas generator cartridge in a launch tube assembly to propel the spike strip sleeve across the roadway. Never activate the device in close proximity to people, vehicles, or structures to avoid damage due to the launching of the sleeve.

For additional information regarding the gas generator, refer to the MSDS for the Launch Tube Assembly (LTA) 835999-01.

# NightHawk Specifications:

<b>Physical Characteristics</b>	
Weight	≤ 30 pounds
Exterior Dimensions	iM2450 Pelican Storm
Length	19.20 inches
Depth	15.20 inches
Height	9.00 inches
Deployed Length	≥ 24 feet
Effective Length	≥ 12 feet
Null Length	= 12 feet
<b>Deployment and Service Time</b>	
Deployment Time	< 2 seconds
Retraction Time	< 2 seconds
Replacement of Energetics	< 2 minutes
Inspection & Repacking of Deflation Device	< 20 minutes
<b>Remote Deployment</b>	
Operational Range*	Up to 100 feet, within FCC compliance
Frequency Hopping	902 - 915 MHz - Allows for multiple units to be operated simultaneously within immediate proximity
Remote Batteries	Standard AAA
Main Spike System Battery	BOSCH BAT620
Deployment	PSEMC designed Launch Tube Assembly (LTA) - 835999-01
System Status Indication	Battery check capability for both remote and main unit batteries. Expended Unit and Reset Status Indicators
<b>Environmental Capability</b>	
Operational Temperature Range	0 °F to +150 °F (USCAR-24)
Rain & Dust Exposure	Meets requirements IEC 60529, IP 51

\*The Nighthawk Remote Tire Deflation Device utilizes radio frequency to deploy and retract the spike strip assembly. In areas of significant radio frequency interference the transmission range of the remote may be reduced and the operator will have to move closer to the Nighthawk unit to deploy and retract the spike strip assembly.

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# 1. Introduction

**This product has been designed and manufactured to exact specifications. Modification of this product in any respect can be dangerous.**

The NightHawk Remote Tire Deflation Device has been designed and manufactured to be used only by law enforcement, security, and military personnel that are trained in the proper handling, storage, use, application, and maintenance of this product. Pacific Scientific EMC disclaims liability for any personal injury or property damage that results from operation of a product which has been modified from the original design, or for use of the product that is not consistent with the manufacturer's written instructions. Carefully read the instructions in this manual. Dispose of the product in accordance with applicable law. For further information please contact Pacific Scientific EMC at [lawenforcement@psemc.com](mailto:lawenforcement@psemc.com) or call 888-995-5658.

## 1-1. Description

The NightHawk Remote Tire Deflation Device is a self-contained device that enables law enforcement officers to deploy a spike strip tire deflation strip using a hand-held remote control. The ability to deploy the spike strip remotely provides additional security and safety for the law enforcement officer. The NightHawk unit is positioned beside the roadway ahead of the suspect vehicle. When the vehicle approaches, the officer activates the unit by pressing and holding the "arm" button then pressing and releasing the "fire" button on the hand-held remote, launching the spike strips across the roadway. Once the suspect vehicle has passed, the officer presses and holds the "Arm" button then presses and releases the "Fire" button a second time to retract the spike strips, allowing pursuit vehicles to pass safely.

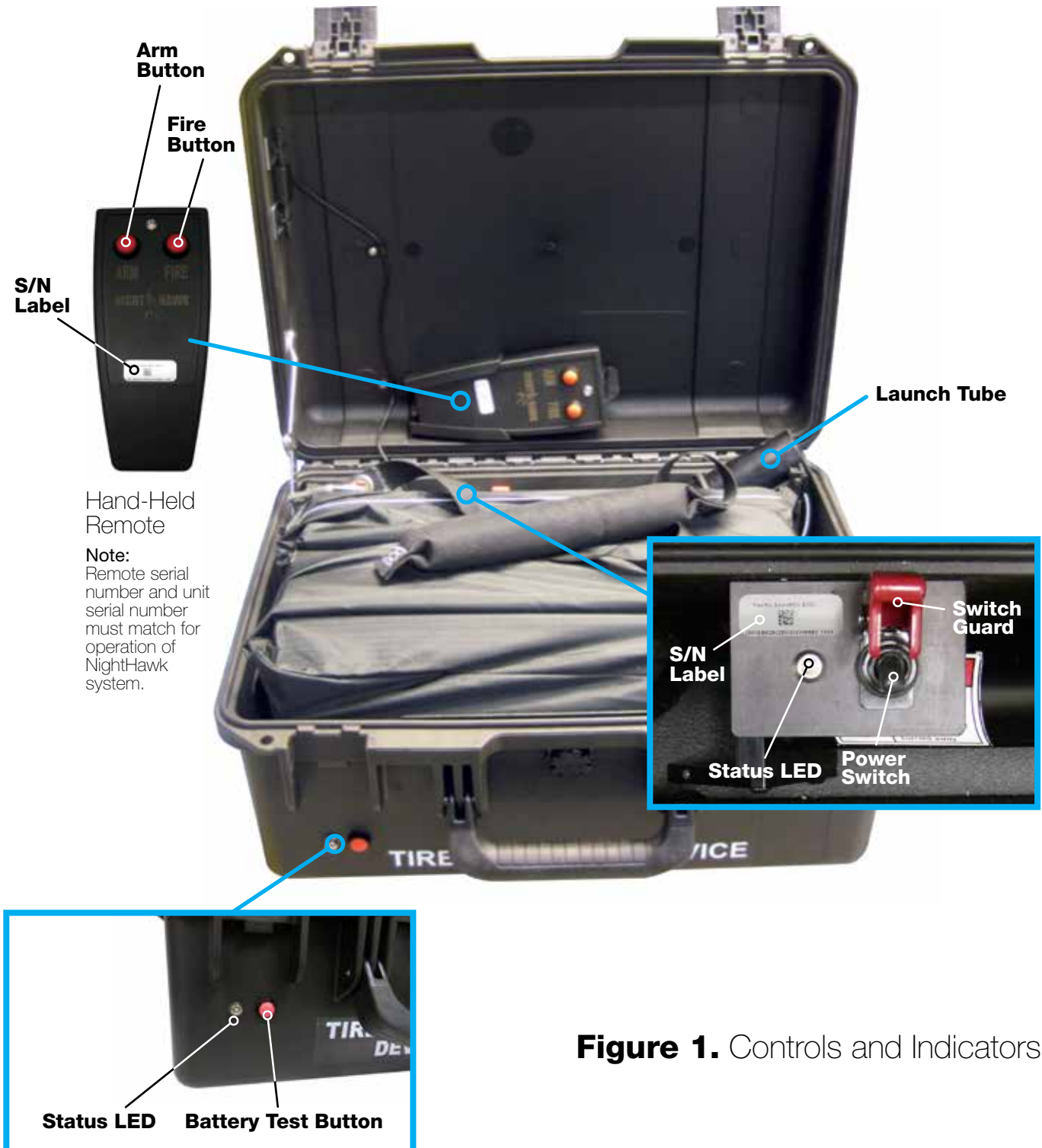
## 1-2. How It Works

NightHawk utilizes a gas generator cartridge similar to the ones used to quickly inflate automotive airbags. The gas generator cartridge is contained in the launch tube assembly. The launch tube assembly propels a weighted sack (called a drogue) across the roadway. As the drogue is launched, it pulls a nylon sleeve containing ten spike strips. The entire action is accomplished in less than two seconds. After the suspect vehicle has passed, the hand-held remote button activates a small electrically-powered winch that pulls the spike strips out of the roadway permitting pursuit vehicles and other traffic to pass without tire deflation.



# 1-3. Controls and Indicators

Figure 1 shows the primary user controls and indicators.



**Figure 1.** Controls and Indicators

# 2. Pre-Deployment



**The NightHawk Remote Tire Deflation Device should ONLY be used by authorized personnel who have been properly trained in its use.**

## 2-1. Proper Use of the Device

The NightHawk device should only be used under conditions that present the least possible risk to law enforcement officers, the general public, and suspects. Officers should be fully trained in the correct operation

of the device. Deployment of the NightHawk should only be executed in accordance with the policies and procedures of your agency.

## 2-2. Situation Considerations

When placing the device be mindful of surroundings especially near an active roadway. There are other factors besides location that should be considered before deploying the NightHawk. One key factor is speed. The user should look for forward markers to determine where the position of the target vehicle will pass to properly time deployment of the spike strips, allowing for the 2 second deploy. The table shows the approximate lead distance for placement of the device relative to vehicle speeds.

**Table 1**

VEHICLE SPEED (MPH)	DEVICE LEAD DISTANCE (FT)
30	90
40	120
50	150
60	180
70	210
80	240
90	270
100	300
110	330
120	360

## 2-3. Location Considerations

There are a number of factors that should be considered before using the NightHawk. The location selected for deployment plays a key role in the success or failure of the operation. The following factors should be considered:

**Traffic Control:** The NightHawk should only be deployed in locations where traffic is controlled, and access is limited to the suspect vehicle and pursuit vehicles. Avoid deploying the device in locations where normal public traffic might interfere with the operation.

**Road Surface:** The spike strip tire deflation sticks work in a variety of terrain.

**Visibility:** The NightHawk should be located such that officers can clearly observe the roadway a considerable distance before and after the deployment zone.

**Potential Avoidance:** The spike strips should be deployed in a location that will make it difficult for the suspect vehicle to avoid the device. Officers should try to position the device where the vehicle cannot easily drive off the roadway or turn onto another roadway to avoid the spike strips.

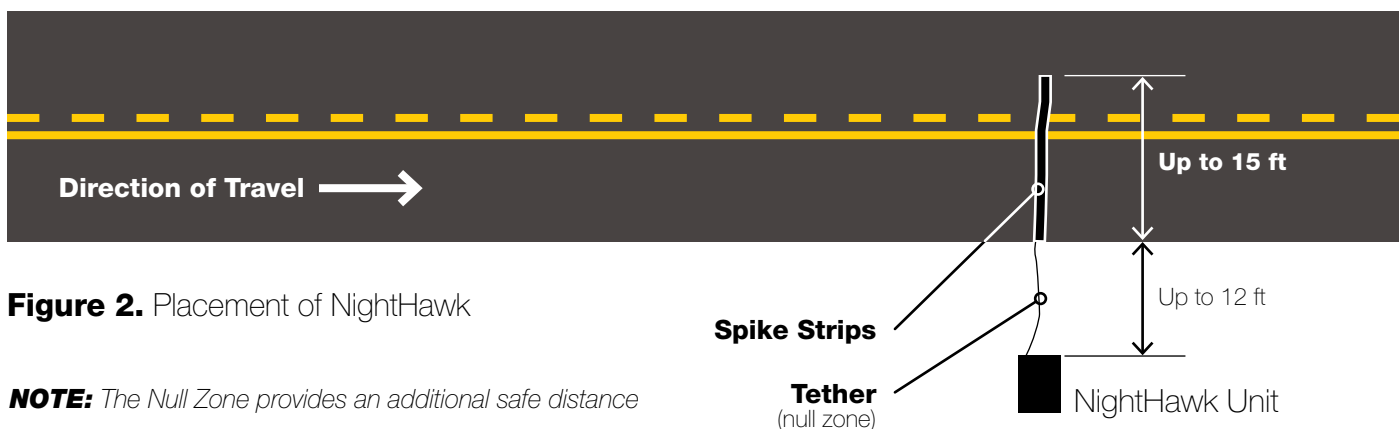
**Safety of the General Public:** For maximum safety, it is recommended that officers deploy NightHawk away from the general public to minimize the risk to bystanders.

**Obstructions:** Avoid deploying the device in locations where the suspect vehicle could lose control and crash into buildings or structures.

## 2-4. Placement on the Roadway

Figure 2 illustrates the proper placement of the NightHawk unit beside the roadway. The important factor is the distance from the edge of the roadway. **The unit should**

**be 12 feet from the edge of the target lane.** The tether for the nylon sleeve is 12 feet long (null zone). There are no spike strips in the 12 foot null zone.



**Figure 2.** Placement of NightHawk

**NOTE:** The Null Zone provides an additional safe distance for the Officer and the NightHawk from oncoming traffic.

## 2-5. Battery and System Status Check

### 2-5.1. External System Readiness Check

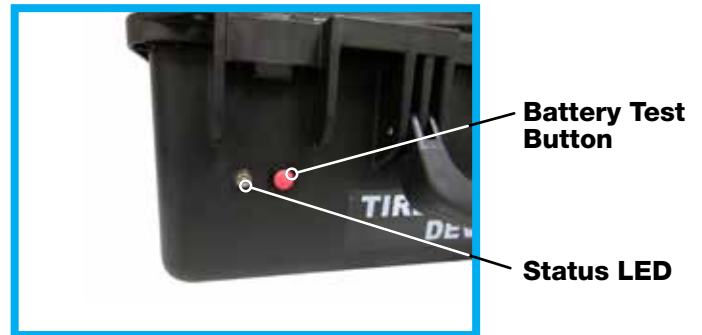
The NightHawk system should be checked to verify it is ready for use. This check will show the battery has sufficient charge to operate the unit and the launch tube reset has been completed. The external system readiness check button and indicator are located near the carrying handle (Figure 3).

**STEADY GREEN:** Battery level is good; Launch tube reset completed. System ready to go.

**BLINKING RED:** Battery level is marginal; should be charged at the earliest opportunity. Unit will still function properly.

**STEADY RED:** System is **NOT** ready to go. Either the battery charge is too low to operate the unit, or the system has not been reset following launch.

**NOTE:** The battery indicator on the outside of the case does not indicate the status of the hand-held remote. Refer to Hand-Held Remote Battery Check.



**Figure 3.** Location of Readiness Check Button and Indicator

## 2-5.2. System Status Check

Inside the case, when the power switch is turned on a system status indicator will verify the battery's charge and launch tube condition (Figure 4); The status LED will indicate as follows for different states:

**STEADY GREEN:** Battery level is good; Launch tube reset completed. System is ready to go.

**BLINKING RED, FOLLOWED BY STEADY GREEN:** Battery level is marginal; should be charged at the earliest opportunity. The unit will still function properly.

**STEADY RED:** System is **NOT** ready to go. Either the battery charge is too low to operate the unit, or the system has not been reset following launch.



**Figure 4.** Battery and Status Check

## 2-5.3. Hand-Held Remote

The hand-held remote battery should be checked to verify it has sufficient charge to operate the unit. To check the remote battery press and hold only the “Arm” button on the remote (Figure 5).

**STEADY GREEN:** Battery level is good; system is ready to go.

**BLINKING RED, FOLLOWED BY STEADY GREEN:** Battery level is marginal and should be replaced. System will still function properly.

**STEADY RED or LED not lit:** Battery is **NOT** sufficient and unit will not operate.



**Figure 5.** Hand-Held Remote

# 3. Deployment



**NightHawk launches the spike strips with significant velocity. Do not activate the unit if there is any possibility the drogue could impact individuals in the path of the launch.**

**Launching spike strips produces a very loud noise (similar to a .38 caliber round). Make sure there are no people within 10 feet of the unit when it is activated.**

**Perform these steps to use the NightHawk.**

- 1.** Place the NightHawk on the ground up to 12 feet from the edge of the roadway, oriented with the red arrow on the case pointing in the direction of the road (Figure 6).
- 2.** Release the two latches and COMPLETELY raise the lid open (Figure 7).
- 3.** Remove the hand-held remote from the case, being mindful to not actuate the Arm or Fire button (Figure 8).
- 4.** Prior to deployment, lift the **(RED)** switch guard and set the power switch to the ON position. Check the System Status indicator and verify that it is illuminated **(GREEN)**, indicating the unit is ready to launch (Figure 9).



**Figure 6.** Place Unit 12 Feet From Roadway



**Figure 7.** Release Latches and Fully Open Cover



**Figure 8.** Remove Hand-Held Remote



**Figure 9.** Lift Switch Guard and Turn Power Switch **on**



Once the power switch is set to ON, the unit is activated. Exercise extreme caution when handling the hand-held remote to avoid accidental launch.

5. Move to a safe location away from the roadway, making sure you have a clear line of sight to the roadway, including clear vision of the approach to the deployment location.
6. IMPORTANT: The system deploys within two seconds. Operator must anticipate the arrival of the suspect vehicle and activate the launch before the vehicle passes the unit's location (Refer to Speed Table 1).  
Press and hold the ARM button on top of the hand-held remote, check that the remote LED is illuminated (GREEN or BLINKING RED (reference 2-5.3)), continue to hold down the button, then press AND RELEASE the FIRE button also on the top of the hand-held remote to launch the spike strips (Figure 10).  
**IMPORTANT:** The LED will not illuminate and the unit will not function if the FIRE button is pressed and held followed by pressing the ARM button.
7. **IMPORTANT:** The LED will not illuminate and the unit will not function if the FIRE button is pressed and held followed by pressing the ARM button.
8. After the vehicle passes the unit, retract the spike strips by repeating the button sequence of step 7 (Press and hold the ARM button, then press AND RELEASE the FIRE button.)

**NOTE:** If you do not wish to retract the spike strips, power off the NightHawk unit by setting the power switch to the OFF position, to prevent accidental retraction.

Arm Button      Fire Button



**REPEAT SEQUENCE TO  
RETRACT SPIKE STRIPS**

**Figure 10.** Hand-Held Remote

Press and Hold Arm Button  
Then Press and Release Fire Button  
to Launch Spike strips

Hand-Held  
Remote



# 4. Post-Deployment



After each NightHawk deployment the unit must be taken to a secure location/depot for resetting. Do not attempt to do this from the roadway.

## 4-1. Inspection

After the NightHawk is used, the unit should be inspected to determine what actions must be taken to return the unit to service. If any components are determined to be damaged or defective during inspection, contact PSEMC for replacement materials. Be sure to perform all steps in paragraphs 4-2 through 4-5 in their entirety before re-fielding the unit. If a vehicle runs over the spike strips, the segments that were impacted by the vehicle's tires must be replaced.

Extend sleeve and drogue out of case in a straight line (Figure 11).

- A. Inspect sleeve and drogue for damage. Replacement of sleeve and spike strips is outlined in Section 4-2. Drogue replacement is included in section 4-4L, of Replacing Launch Tube.
- B. Inspect retraction line for damage
- C. Remove spike strips from pockets if necessary to determine if replacement required.

**NOTE:** The nylon sleeve is divided into five pockets, each pocket holding two spike strips. Each sleeve pocket has an opening for removing / inserting spike strips.

- D. If no items require replacement, proceed to step 4.3, Repacking Sleeve into NightHawk case.



**Figure 11.** Extended Sleeve and Drogue

## 4-2. Replacement of Sleeve and/or Spike Strips

A. Replacement of Sleeve (if required). Detach nylon sleeve from the clip securing it to the retraction assembly inside the case (Figure 12).

Lay out new nylon sleeve completely in a straight line and attach new sleeve tether to retraction assembly inside the case using small clip (Figure 12).

B. Populate the sleeve with the spike strips by inserting them into the sleeve pockets (if required). The squared end of each stick is to be facing the tether end connected to the case.

**NOTE:** All spike strips have a squared end and a beveled end. All spike strips must be inserted into the nylon sleeve oriented in the same direction, with the squared end closest to the tether end of the sleeve (Figure 13).

C. Extend retract line full extent of sleeve and connect loop into Quick-link. (Figure 14).



**Figure 12.** Attach Tether to Retract Bracket



**Figure 13.** Replacing Spike strips

## 4-3. Repacking Sleeve into NightHawk case

After any maintenance or deployment, the sleeve populated with spike strips must be repacked into the NightHawk case. Follow these steps to repack the unit.

**NOTE:** It is important for the spike strips to be properly packed into the case to ensure a successful deployment. Pay careful attention to the way the spike strips are oriented in the tray.

**NOTE:** It is important to get the retraction line properly routed and secured. This will aid in packing the spike strips into the case and prevent inadvertent tangling of the line during deployment. **During packing pay careful attention to position the retract line so it does not become entangled with any fixed components in the NightHawk system** (i.e. edges of the tray, case, hinges, etc). Ensure all retract line is inside the tray.

- A. Inspect the retraction line and insert through the fabric loops and Velcro tabs along the nylon sleeve. Make sure each Velcro tab is securely fastened around the retraction line (Figure 14).
- B. At the case, pull in tether and layer it in the bottom of the tray in back-and-forth fashion (Figure 15).
- C. Place the first spike strip into the tray closest to the lid as shown (Figure 16).
- D. Fold the nylon sleeve over and place the second spike strip next to and underneath the first spike strip as shown.
- E. Continue this pattern, packing the first five spike strips in the bottom of the tray, in alternating fashion (Figure 17).

- F. Fold the nylon sleeve over again and place the sixth spike strip on top of the bottom layer. The sixth spike strip will be furthest away from the lid. Continue the folding pattern, with the last spike strip closest to the lid, and directly on top of the first spike strip (Figure 18).

**NOTE:** When packed correctly the Quick-link that is attached to the sleeve will be located on the battery side of the box.



**Figure 14.** Inspect the Retraction Line



**Figure 15.** Tether and Retraction String Layered in Tray



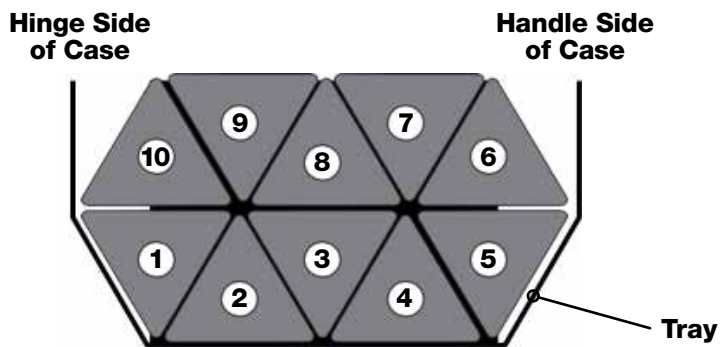
**Figure 16.** First Spike strip With Tether to the Left Side



**Figure 17.** Spike strips Layered in Tray in Alternating Fashion



**Figure 18.** Last Spike strip With Loop End (and Quick-Link) to the Left Side



**Figure 19.** End View of Spike strips Loaded in Tray

## 4-4. Replacing Launch Tube



**Only trained personnel should attempt replacing the Launch tube! Always ensure the end of the launch tube is pointed away from personnel and never look down the launch tube. Drogue exits launch tube at approximately 100ft/sec.**

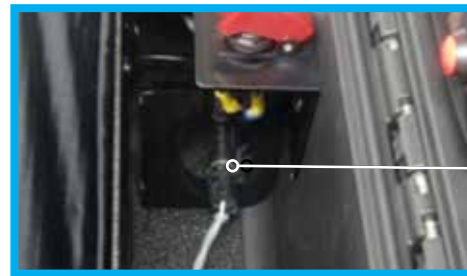
**Always ensure the operator replacing the launch tube has direct control over the location of the hand-held remote. Prevent misplacement and/or inadvertent operation of the hand-held remote during the reloading operation.**

**Read the following instructions completely to familiarize yourself with the sequence of events prior to attempting to reload the system.**

Each time the NightHawk is activated, the launch tube must be replaced. Follow these steps to replace the launch tube.

- A. Place the unit on a suitable work surface. A suitable surface should be a little higher than waist high and capable of supporting approximately 50 pounds or more. Position the unit with the handle towards the operator, and the red arrow pointing toward the right.
- B. Open the case and make sure the power switch is in the OFF position.
- C. Remove the hand-held remote and place in a secure location near the left side of the case.
- D. Disconnect the launch tube electrical connector (Figure 20).
- E. Release the anchor strap by lifting the strap from its position around the button located on the deployment system bracket (Figure 21).
- F. Lift the right (output) end of the launch tube from its support, and then slide the tube toward the right to free the breech end from its support bracket.

**NOTE:** The new launch tube will have a safety plug installed at one end and a short electrical harness exiting the breech end. This safety plug must be removed and discarded prior to installation.



**Electrical Connector**

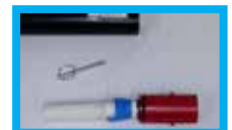
**Figure 20.** Launch Tube Electrical Connector



**Figure 21.** Launch Tube Anchor Strap



**Figure 21A.**



**Figure 21B.**

**Anchor Strap**

G. Install the new launch tube with the MUZZLE END TOWARD THE RIGHT, and THE PLUG END TOWARD THE LEFT.

**NOTE:** Make sure that the plug end of the launch tube is seated firmly into the holder and the wires are not pinched. Be careful to make sure the retention strap is not trapped below the launch tube.

H. Attach the anchor strap around the launch tube by carefully placing the open loop of the strap around the retention button. Make sure that the strap is routed over the launch tube.

I. Connect the electrical connector on the NightHawk case to the connector on the launch tube (Figure 22).

J. Remove the safety plug from the end of the launch tube.

K. The launch tube will have two (2) strings inside. Remove the rubber band securing the strings and gently extend the strings approximately two (2) feet.

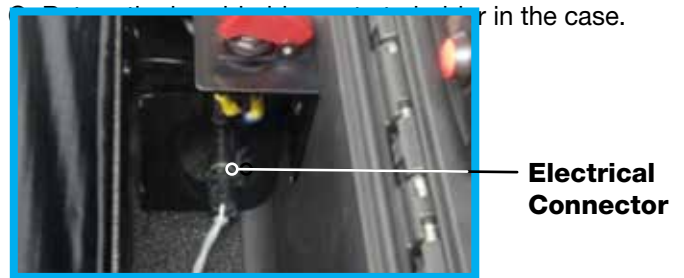
L. Insert the drogue into the launch tube and push it down into the tube as far as possible (Figure 23). Only the tether portion should extend from the open end of the launch tube. At this point, you should have the tether and the two (2) strings inside hanging from the end of the launch tube.

M. Attach the tether and the two (2) lines from the launch tube to the Quick-link at the end of the nylon sleeve (Figure 23A and 23B).

N. Make sure that both the tether and strings are routed neatly to avoid being caught on any system components during deployment.

**NOTE:** Each hand-held remote is coded to work with a specific NightHawk unit. Ensure the serial number on the remote and the NightHawk System match (Figure 1).

**Do not switch remotes between units or they will not operate!**



**Figure 22.** Reconnect Electrical Connector



**Figure 23.** Insert Drogue in Launch Tube



**Figure 23A.** Launch Tube Lines Before Attachment to Drogue



**Figure 23B.** Launch Tube Attachment to Drogue Clip



## 4-5. System Reset

Each time the NightHawk unit is deployed, the system must be reset. Confirm new launch tube has been installed and connected then follow these steps to reset the system.

- A. Ensure all people are clear down range.
- B. Set the power switch to the ON position. The status LED will be **RED**, indicating the system is NOT ready for deployment.
- C. Locate the reset button on the left side of the chassis surface facing the power switch (Figure 24).
- D. Press the reset button, then set the power switch to the OFF position.
- E. Set the power switch back to the ON position. The status LED should be **GREEN**, indicating the unit is charged and ready for deployment.
- F. Set the power switch to the OFF position. Close and latch the case lid.

**NOTE:** If the status LED remains **RED**, repeat steps 4-5 a-d, if status remains **RED** then this may be an indication the battery requires charging. (Refer to section 2-5.1.)

Once the system is reset and the battery has enough charge the system indicators will show green EVEN IF THE LAUNCH TUBE HAS NOT BEEN REPLACED.



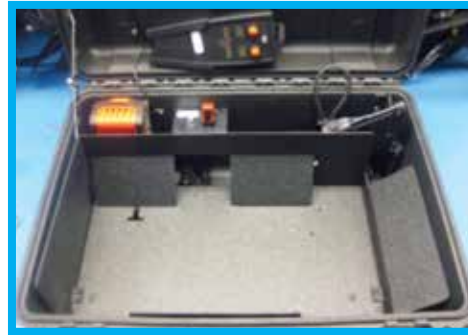
**Reset Button**

**Figure 24.** Locate Reset Button Facing the Power Switch

## 4-6. Additional System Replacement Instructions

### 4-6.1. Installation of New Retract Line

- A. Extend sleeve and drogue out of case in a straight line (Figure 11).
- B. Disconnect retract line from sleeve by removing retract line from Quick-link that connects sleeve, drogue and retract line (Figure 14).
- C. Remove retraction line from fabric loops and Velcro tabs along the nylon sleeve (Figure 14).
- D. Remove tray from NightHawk case by removing two button head screws in the front two corners of the tray on the handle side of the case. Slide tray toward the handle side of the case. Lift out the tray (Figure 25).
- E. Rotate spool wheel to expose spool screw that retains the line to the spool (Figure 26).
- F. Loosen spool screw with Philips screw driver and remove any remaining line from the spool and fairleads.
- G. Install new line into the front of the fairlead and down through the square opening at the lower center of the bracket. Install line into the thru hole on top of the spool and attach to screw by wrapping line 3 times around screw between the washer and spool. Tighten screw and torque to 8 +/- 0.5 inch pounds (Figure 27).
- H. Rotate spool wheel clockwise (as shown) until extended line length is equal to the length of the extended sleeve assembly at the Quick-link.
- I. Replace tray. Torque two button head screws to 8 +/- 0.5 inch pounds.
- J. Refer to section 4-3 "Repacking Sleeve into NightHawk case".



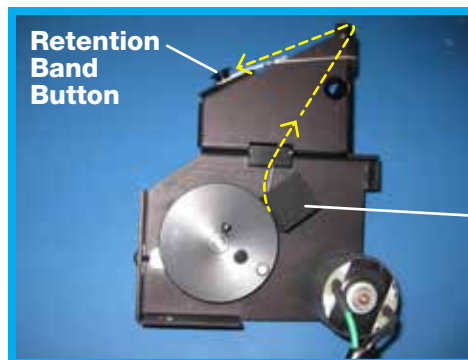
**Tray as shown in #1**

**Figure 25.** Tray



**Spool Screw**

**Figure 26.** Exposed Spool Screw



Insert Braided Line thru Fairlead blocks and loop into Retention Band Button.

Place Neoprene Block against spool for line resistance.

**Figure 27.** Install New Line

Figure shows retract assembly removed from case for clarity. DO NOT remove assembly from case when installing new line.



## 4-6.2. Battery Replacement for Remote

- A. Make sure System power switch is off (refer to figure 4).  
Remove the remote from the NightHawk system.
- B. Close the Nighthawk case and latch.
- C. Use a small torx T6 screw driver to remove the four screws in the corners of the rear face of the remote.
- D. Separate the front and back pieces of the case
- E. Batteries will be visible, remove and replace with new AAA batteries.
- F. Carefully reposition the front and back pieces of the case, ensuring the wires are routed around the outside of the post and not pinched (Figure 28).
- G. Replace the four screws removed in step C.



**Figure 28.** Reposition Front and Back Pieces of the Case

## 4-6.3. System Battery Removal, Charging and Replacement

### A. Changing the battery

- Remove the battery by depressing the tab button on the battery and sliding up and out of the assembly (Figure 29).
- Install fully charged battery by sliding down into the assembly until the battery clicks in place. Press the battery check button on the outside of the case next to the handle and verify a green indication. If no **GREEN** indication, then check to see if the battery is fully seated.



**Figure 29.** Remove Battery

### B. Charging the battery pack

- Use BOSCH battery charger model BC660. The following information is cited from the BOSCH manual.
- Plug charger cord into a standard 120v power outlet.
- With no battery pack installed, a **GREEN** light **ON** indicates the charger has power and is ready for operation.
- With the battery pack installed, a **BLINKING GREEN** indicator shows the battery is receiving a charge.
- With the battery pack installed, a steady **GREEN** light **ON** indicates the battery is charged and can be removed.
- If the **GREEN** light is **ON** steady as soon as the battery is installed, that could mean the battery is too hot or too cold. As soon as the battery reaches the correct temperature range, charging will begin.





For more information regarding NightHawk, please contact us at: [lawenforcement@psemc.com](mailto:lawenforcement@psemc.com) or call 888-995-5658



**PSEMC**

7073 W. Willis Road  
Chandler, AZ 85226 USA  
Phone: (888) 995 5658  
Fax: 480 346 7803  
[www.psemc.com](http://www.psemc.com)