

TOWER-TEK™ RESCUE SOLUTION

KT36171 (25m)
KT36172 (100m)
KT36173 (122m)



PIGEON MOUNTAIN

PMI®

INDUSTRIES

Manufacturer's Instructions



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PRODUCT DESCRIPTION

PMI® Tower-Tek™ Rescue Solution

PMI® Tower-Tek™ Rescue Solution is a tried and true, “plug-and-play” rescue solution designed and built to meet the demanding rescue needs of tower workers. Whether you need to perform self-rescue, tower-based coworker rescue, ground based coworker rescue or a pickoff rescue, the Tower-Tek™ gets the job done. Using ANSI compliant components, the Tower-Tek™ stresses a common sense approach to the complicated problem of tower rescue. As with any life safety or rescue equipment, proper training and documented refresher training on the PMI® Tower-Tek™ Rescue Solution is strongly recommended.

CONTENTS

TOWER-TEK™ RESCUE SOLUTION

- 1 HD26236 Wire Rope Sling, 1m
- 1 HD26268 D4 Multi-Function Descender
- 1 HD26186 Hurricane Pro-Haul Cam Pulley
- 1 SM150000 2" Pulley
- 1 SG51237 30cm Subject Attachment Sling
- 5 SM102100 FP ANSI Lite Alloy Carabiner
- 1 AC10017 EMT Shears
- 1 SG51285 Rescue Solution Bag
- 1 PR110E2XXXUC 11mm Extreme Pro™ Unicore rope with
sewn terminations (Rope Length Varies)
- 1 AC10018 10 Lock Out Tag Out Solution Bag Tags
- 1 RM00412 Tower-Tek™ Rescue Solution
Manufacturer’s Instructions

*Training label included for optional user-designation purposes.

CERTIFICATION

Where applicable, components of the Fall-Tek Rescue Solution are certified to meet ANSI Z359.4 (2013) and related standards. Please refer to the individual component instructions.

Made in the U.S.A.  **MADE IN THE USA**

WARNINGS

WARNING

- ▲ Special training and knowledge are required to use this Rescue Solution.
- ▲ PMI recommends the user conduct a documented refresher training at least once every six months to keep skills current (for more information contact PMI’s Vertical Rescue Solutions at www.verticalrescuesolutions.com).
- ▲ Ensure that each individual Rescue Solution is inspected upon receipt, before and after each use, and at a minimum every 6 months by a designated Competent Person.
- ▲ Ensure that all rescue efforts are undertaken in accordance with predetermined Rescue Plan.

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WARNINGS *(continued)*

- ▲ Manufacturer's instructions shall be provided to the user. Product instructions for every component of the rescue solution are included. Refer to the individual instructions for a product regarding specific questions about that product. Keep all provided instructions, product labels and any equipment inspection logs with the Rescue Solution so that any potential user can read them prior to use and make entries after use.
- ▲ Use appropriate anchorages as identified by a Competent or Qualified Person.
- ▲ Use this Rescue Solution only within the context of a documented Risk Assessment and Rescue Plan. Maintain a copy of these documents for review as appropriate.
- ▲ Ensure that all personnel working at height are using appropriate PPE and fall protection (not included with this solution)
- ▲ Before using this Rescue Solution the user is responsible to determine the compatibility with all anchorages, hardware, ropes and equipment to be used.
- ▲ Use this product only in accordance with these manufacturer's instructions.
- ▲ Inspect and Retire equipment in this Rescue Solution in accordance with these instructions. Do not repair or modify. Repair or modification to any PMI product immediately voids the warranty and may compromise the safety of the product or Rescue Solution.
- ▲ It is essential for the safety of the user that, if the product is re-sold outside the original country of destination, the reseller shall provide instructions for use, maintenance, inspection, and repair in the language of the country in which the product is to be used.
- ▲ Connections should be used within the limitations of stability and compatibility of the surrounding components.
- ▲ Protect the components in this Rescue Solution from any influence that could compromise its integrity.
- ▲ PMI is not responsible or liable in any way for damages of any kind, injury or death resulting from direct or indirect incidents related to the use of its products.
- ▲ Please contact PMI at 706-764-1437 to answer any additional questions regarding safety information and the use of this product.

USE

There are many ways that this Rescue Solution can be used for the at-height rescue of an injured or suspended worker. In this section are the types of rescues that are typically employed. The Rescue Solution will be used to raise the subject up enough to detach them from their equipment. Once they are detached and on the rescue system, then the rescuer(s) will use a method described in this section to get the subject to safety. Workers should always include the Rescue Solution and specific method of rescue for each job site during the Job Hazard Analysis prior to beginning work so that a rescue can be performed quickly and safely. Before using the Rescue Solution it is highly recommended that you receive training by a Vertical Rescue Solutions approved trainer.

USE *(continued)*

WHEN YOU RECEIVE YOUR RESCUE SOLUTION

Take the rope and all contents out of the bag. Make sure the contents are assembled correctly and they are exactly what you ordered. Make sure that you pay attention to how it is assembled so that if you take it apart, you can properly put it back together for quick use in a rescue. Inspect the all components right away and document the results in a designated Equipment Log.

- If the box in which it was shipped, was damaged during shipping notify PMI at 706-764-1437.
- Retain the product labels and instructions found in the Rescue Solution packaging as a permanent record. Keep a copy of these instructions with the Rescue Solution.
- Use some means of identifying the rope, such as a PMI Rope ID Kit, and begin an Equipment Log for it. PMI provides a sample Equipment Log with every rope, but if you don't have one or if you need more you can copy the sample provided or you can make your own. Keep this and all of the instructions and paperwork which came with the Rescue Solution in a safe, conspicuous place where all potential users will see the warnings and information prior to using it.
- Contact PMI IMMEDIATELY at 706-764-1437, if you have any questions or concerns about your Rescue Solution and any of the components!

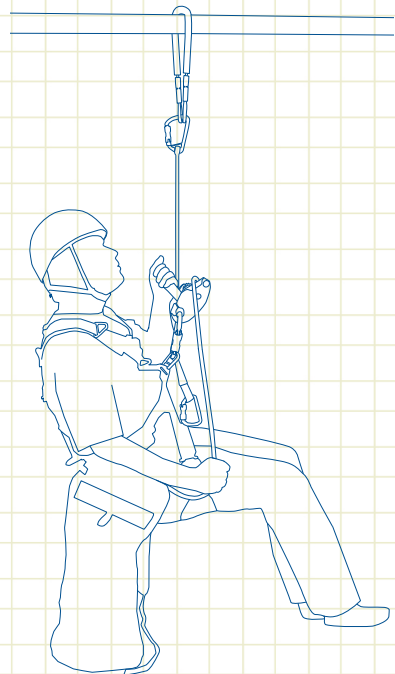
SELF- RESCUE

Self-rescue is usually the fastest and most desirable type of rescue. Simply stated, the injured or suspended worker uses the Rescue Solution to descend (rappel) to safety.

Rope connected to the anchor with a carabiner clipped to the sewn eye termination as seen in **DIAGRAM A**.

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DIAGRAM A



Self-Rescue Diagram

USE *(continued)*

RESCUE BY RAISING THE SUBJECT

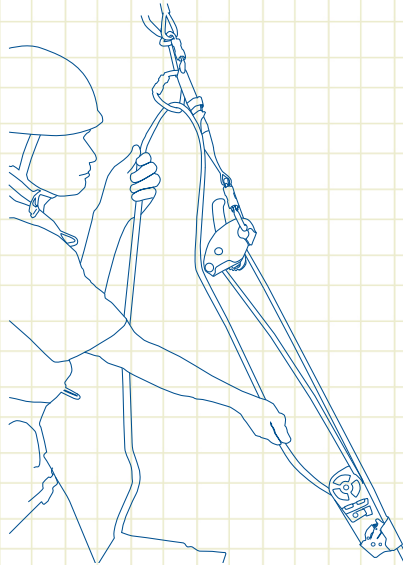
The Rescue Solution can be used to raise an injured or suspended worker. This may be necessary because the suspended worker is hanging a short distance from a platform or because the rescuer would want to raise an injured or suspended subject from their fall protection equipment in order to transfer them to the rescue system. The raise is accomplished by attaching the haul cam to the loaded rope and used with the descender to create a theoretical 3:1 mechanical advantage (see **DIAGRAM B**). As the rescuer pulls on the rope, the descender acts as a progress capture device.

DIAGRAM C shows that when raising a subject, sometimes the system is easier to manage by yourself when adding a redirect carabiner to the anchor. The redirect is NOT required for the proper function of this method and is mentioned only as a system management technique.

RESCUE BY LOWERING THE SUBJECT FROM ABOVE

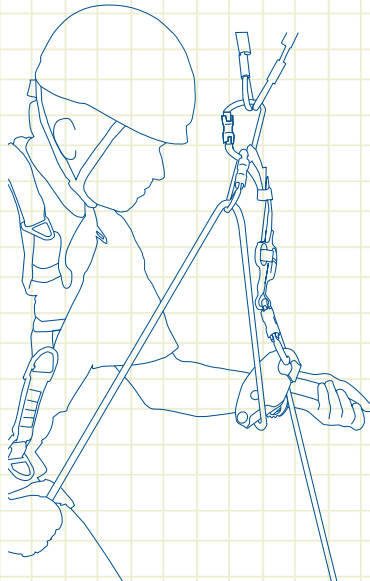
Depending on the situation, the most desirable rescue could be to lower the subject to the ground from an anchor point above them. To perform a Rescue by Lower, the rescuer inverts the system (see **DIAGRAM D**) and attaches it to an appropriate anchor on the structure directly above the subject. Once the subject is attached to the end of the rope and transferred onto the rescue system, the rescuer removes the Hurricane Pro-Haul Cam Pulley and lowers the subject to the ground from above. The redirect carabiner placed at the anchor in **DIAGRAM D** helps to manage the lowering system from above and is NOT required to lower the subject.

DIAGRAM C



Rescue by Raising the Subject with a redirect carabiner Diagram

DIAGRAM D



Rescue by Lowering the Subject from Above with a redirect carabiner Diagram

USE *(continued)*

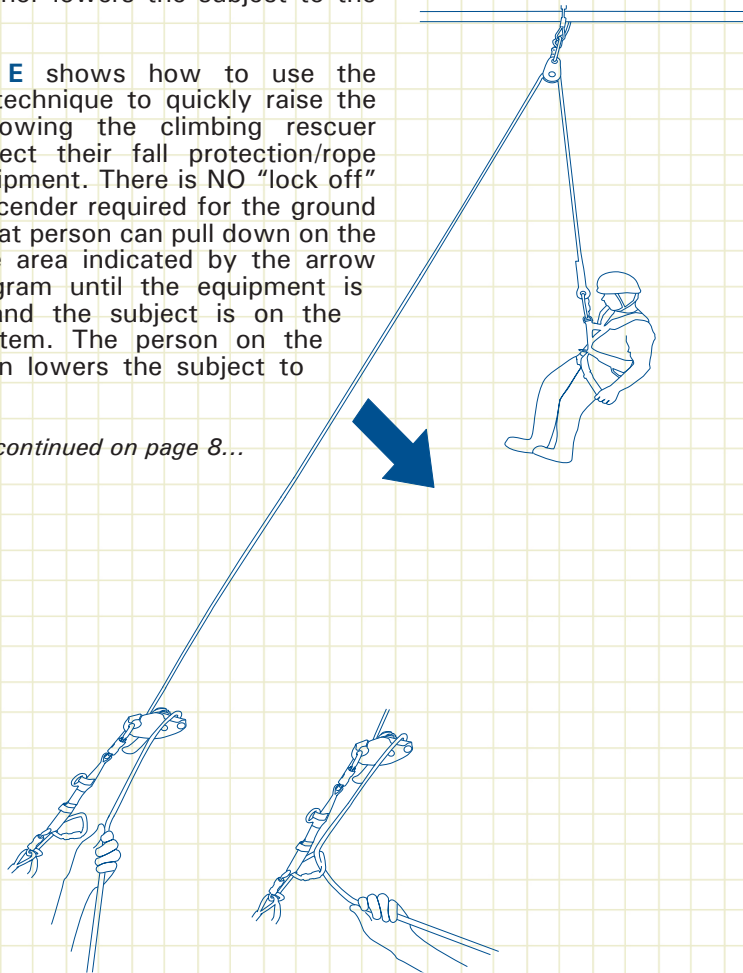
GROUND BASED RESCUE

If there are suitable anchors located on the ground, and the rescuer has enough rope (generally two and a half times as much as the height at which the subject is located), a Ground Based Rescue might be the best approach. This rescue is designed using two rescuers. One rescuer at the anchor on the ground to raise and lower the subject. The other rescuer climbs using fall protection/rope access equipment, clips the rope to a full strength attachment point on the subject's harness and establishes a full strength anchor point above the subject. The pulley in the Rescue Solution is to be used as the high directional point above the subject. Once the subject is raised on the rescue system, the climbing rescuer disconnects their fall protection/rope access equipment and the rescuer stationed at the ground anchor lowers the subject to the ground.

DIAGRAM E

DIAGRAM E shows how to use the deflection technique to quickly raise the subject allowing the climbing rescuer to disconnect their fall protection/rope access equipment. There is NO "lock off" for the descender required for the ground rescuer. That person can pull down on the rope in the area indicated by the arrow in the diagram until the equipment is detached and the subject is on the rescue system. The person on the ground then lowers the subject to the ground.

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Ground Based Rescue Using Deflection Diagram

Smaller Diagram shows the redirect carabiner set up which is NOT required for this system but can help with rope management.



Comments		Name

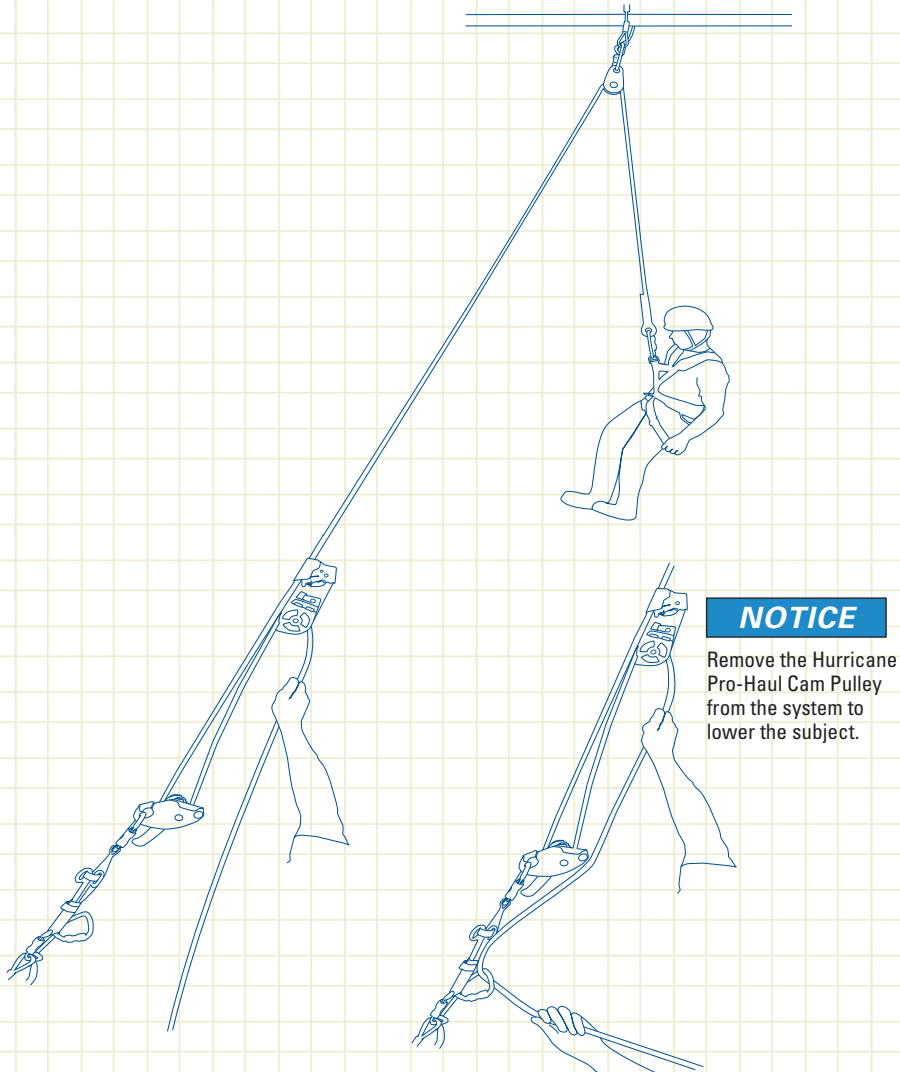
Fax: 706-764-1531 | Email: custserv@pmirope.com

USE *(continued)*

This is how the system set up should look when anchored at the ground level and using the Haul Cam to raise the subject. (See **DIAGRAM F**)

DIAGRAM F shows how to raise a subject using the Haul Cam enough to allow the climbing rescuer to detach the persons fall protection/rope access equipment and secure them on the rescue system. The rescuer on the ground then removes the Haul Cam and lowers the subject to the ground using the descender.

DIAGRAM F



Ground Based Rescue Diagram

Smaller Diagram shows the redirect carabiner set up which is NOT required for this system but can help with rope management.

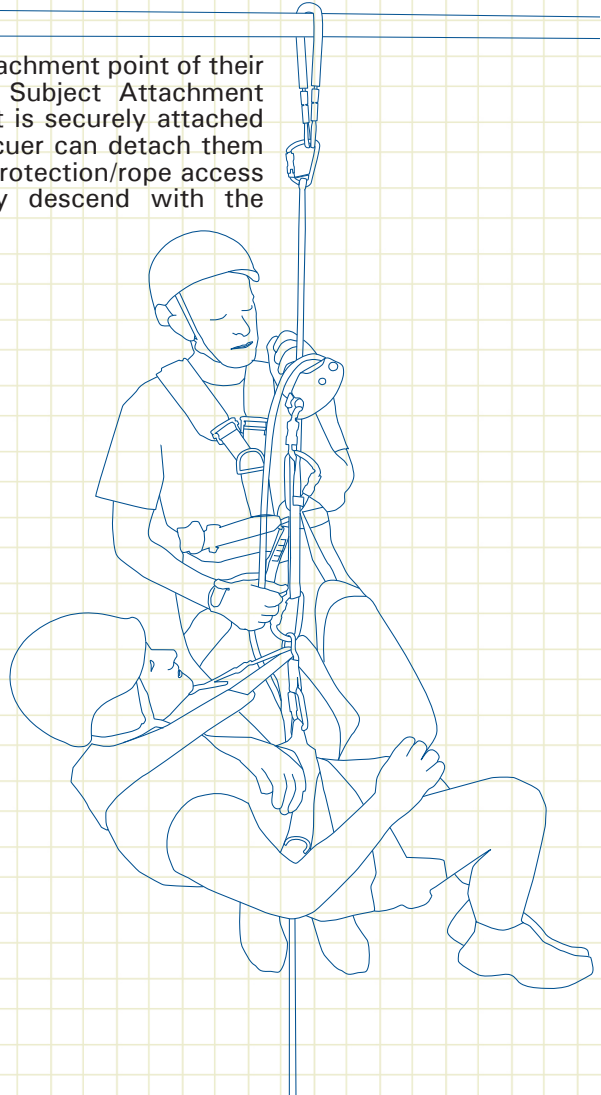
USE *(continued)*

PICKOFF RESCUE

The Pickoff Rescue might be the best option available to the rescuer if the subject is unconscious or if obstacles below make other rescues high risk. The rescuer would start by attaching the end of the system to the structure above the subject, attaching themselves to the rescue system using the descender that is attached to the rope.

The rescuer rappels to the subject and attaches them to the rescue system preferably at the Sternal full strength attachment point of their harness by using the Subject Attachment Sling. Once the subject is securely attached to the system, the rescuer can detach them from their original fall protection/rope access system, then carefully descend with the subject to the ground.

DIAGRAM G



Pickoff Rescue Diagram

CARE & MAINTENANCE OF SOFT GOODS

This entire "CARE & MAINTENANCE" section only applies to the 11mm PMI Extreme Pro Rope with Sewn Eye Terminations and Subject Attachment Sling in this Rescue Solution. For CARE & MAINTENANCE of any of the hard goods or any other equipment in this Rescue Solution please refer to the specific instructions for that piece of equipment included with the Rescue Solution. To order replacement components for the Tower-Tek™ Rescue Solution, contact PMI. If you cannot locate the individual instructions that you need for any piece of equipment in this Rescue Solution, please contact PMI at 706-764-1437.

CLEANING

This "CLEANING" section only applies to the 11mm PMI Extreme Pro Rope with Sewn Eye Terminations and Subject Attachment Sling in this Rescue Solution.

WASH IT - You can wash dirty ropes best by using the Bokart Rope Washer by PMI®. You can also wash ropes/slings by hand or in a front-loading commercial washing machine. Use a PMI® Laundry bag for keeping ropes/slings from getting tangled when washing. Wash using cool to warm water <30°C (<86°F) with a mild soap. PMI recommends using PMI® Rope Soap, otherwise non-detergent soaps are best. Soap used should not contain any bleaching agents. DO NOT use top loading washing machines with agitators because they tangle the ropes/slings severely and might even cause damage from friction produced by rubbing the synthetic rope against the synthetic agitator. Note: Ropes/Slings may shrink up to approximately 6% after washing. In addition, some environments may cause your ropes/slings to shrink over time. The user should verify its length periodically.

DISINFECT IT - Disinfection of a ropes/slings may occasionally become necessary, such as when exposed to bloodborne pathogens. To disinfect a rope/sling from suspected bloodborne pathogens, PMI recommends following the NFPA standard for cleaning rescue gear of bloodborne pathogens. Keeping in mind that undiluted household bleach is known to damage nylon ropes/slings, NFPA calls for using a diluted solution of household bleach to clean rescue gear exposed to bloodborne pathogens. Add 60 ml of household bleach per 4 liters of tap water. That's about one quarter (1/4) cup of household bleach per gallon of water. Be aware that some commercial bleach solutions are stronger than the recommended 1.5% that is typical for household bleach. Soak the gear in the diluted solution for ten minutes, then rinse thoroughly with tap water. The rinsing cycle is critical to prevent any damage to the rope/sling from the bleach. It is good to soak the gear in tap water for the same amount of time it soaked in the bleach solution. Allow the gear to thoroughly dry in a cool place before storing it. Never dry your ropes/slings in direct sunlight or laying on an unprotected surface. Never store ropes/slings and gear wet.

WARNING

The use of bleach over a long period of time, in repeated uses, can cause damage to fibers such as nylon. Disinfection of the ropes/slings using bleach should be used sparingly and only when needed.

CARE & MAINTENANCE OF SOFT GOODS *(continued)*

LUBRICATE IT - Ropes/Slings may dry out and lose some flexibility as a result of washing. You can prevent this by adding a little fabric softener to the rinse cycle during washing. Use manufacturer's recommendations for one load of laundry, which is usually about a cap full of fabric softener. Don't use any more than this or it might damage the rope/sling. Lubricating ropes/slugs using fabric softener should be used sparingly and only when needed.

DRY IT - Dry your soft goods in a clean, dry area out of direct sunlight. For best results, the rope should be laid in a loose coil on a protected surface or coiled around two objects off of the ground in a low-humidity environment.

INSPECTION OF SOFT GOODS

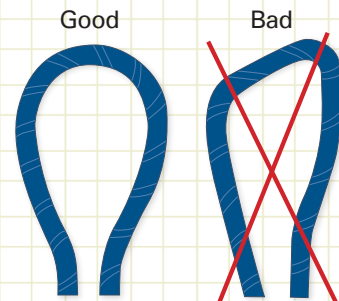
This entire "INSPECTION" section only applies to the 11mm PMI Extreme Pro Rope with Sewn Eye Terminations and Subject Attachment Sling in this Rescue Solution. For INSPECTION instructions of any of the hard goods or any other equipment in this Rescue Solution please refer to the specific instructions for that piece of equipment included with the Rescue Solution. If you cannot locate the individual instructions that you need for any piece of equipment in this Rescue Solution, please contact PMI at (706) 764-1437.

HOW TO INSPECT YOUR ROPE AND CASUALTY

ATTACHMENT SLING

- 1. LOOK AT IT.... ALL OF IT!** Start at one end and look at every inch of the rope and sling. Watch for signs that might indicate possible damage such as discoloration, chemical odors, abrasion, cuts or nicks in the outer sheath and visible differences in the diameter of the rope/sling in one area in relation to the rest of the rope or sling.
- 2. WRAP IT IN SMALL LOOPS AND LOOK!** Use both hands to form a bight of rope/sling beginning at one end and pushing the rope or sling through your hands allowing the bight to maintain its round shape for the entire length of the rope/sling. If it doesn't maintain a rounded shape as seen in **DIAGRAM H** then there might be a problem with the rope's core or integrity of the sling and you should not use it.
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- 3. FEEL THE ROPE/SLING!** While you are looking at every inch of the rope/sling, run it through your bare hands and feel it for changes that might indicate damage to the core or surface. Changes may include any inconsistencies in rope diameter, soft or "mushy" spots, or extraordinarily stiff areas. (**DIAGRAM I** on next page)

DIAGRAM H

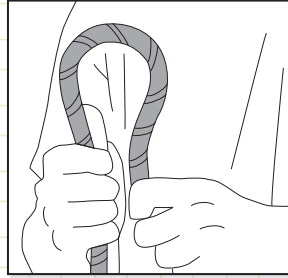


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INSPECTION OF SOFT GOODS *(continued)*

4. **WRITE IT ALL DOWN!** Write the results of your inspection on the Equipment Log included in these instructions. Include anything you find in your inspection that might be or become a concern and document other important information about the rope such as use conditions, rigging notes, date of manufacture and date placed in service. Be sure to document any occurrence of uncontrolled or excessive loading, if it has come into contact with harmful chemicals and all history of use.

DIAGRAM I



5. **IF IN DOUBT, THROW IT OUT** If you are not sure about the integrity of a rope/sling, **DO NOT USE IT**. Consult PMI if you need help.

RETIREMENT OF SOFT GOODS

This entire “RETIREMENT” section only applies to the 11mm PMI Extreme Pro Rope with Sewn Eye Terminations and Subject Attachment Sling in this Rescue Solution. For RETIREMENT criteria of any of the hard goods or any other equipment in this Rescue Solution please refer to the specific instructions for that piece of equipment included with the Rescue Solution. If you cannot locate the individual instructions that you need for any piece of equipment in this Rescue Solution, please contact PMI at (706) 764-1437.

RETIRE IMMEDIATELY:

- Any rope/sling whose strength may have been compromised during use.
- Any rope/sling which is subjected to uncontrolled or excessive loading or a serious fall.
- Any rope/sling which is 10 years old or greater, regardless of history and usage. The age of the rope is calculated from date of manufacture, which can be found on the rope end or ID Tape in the core of the rope.
- Any rope/sling about whose history and past usage you are uncertain.
- Any rope/sling that has been exposed to heat, direct flame or excessive abrasion.
- Any rope/sling that has been visibly damaged, such as glazing, fraying, cuts or discoloration.
- Any rope/sling that has been exposed to liquids, solids, gases, mists, or vapors of any chemical or other material that can deteriorate the fiber from which it is made.
- Any rope/sling that does not pass inspection when inspected by a person following the “INSPECTION OF SOFT GOODS” procedures in these instructions, both before and after each use.
- Any rope/sling when there is any doubt about the safety or serviceability.

RETIREMENT OF SOFT GOODS *(continued)*

CUT RETIRED ROPE/SLING into short lengths to discourage future use or discard it entirely. A retired rope/sling should not be stored, kept or maintained in such a way that it could inadvertently be used inappropriately. Any retired 100% nylon ropes can be sent back to PMI to be included in a Rope Recycling Program. Contact PMI for more information.

For more information about this or other PMI products, please contact us at:



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⚠ WARNING

WORK AND RESCUE AT HEIGHT IS INHERENTLY DANGEROUS! Death or serious injury could occur through misuse. Please thoroughly read and follow these instructions. Substitution or alteration of any of the components of this Rescue Solution are strictly prohibited by the manufacturer, will void any manufacturer warranties and may compromise the safety of the individuals using this product.

PMI LIMITED WARRANTY

PMI products are warranted to the original retail purchaser to be free from defect in material and workmanship for a period of one year. PMI will repair or replace the item without charge provided inspection at our factory discloses no misuse or alteration, which, in our judgment, has affected the condition or functioning of the product. All implied warranties imposed by law in connection with the sale of PMI products are also limited in duration to a period of one year. PMI expressly excludes and shall not be liable for any consequential damages arising out of any breach of the express or implied warranties on sales of PMI products. Because of the high risks involved in high angle rope work such as, but not limited to, rescue, rope access, caving, rappelling, rock climbing and mountaineering, no further warranties exist or are implied by PMI. Regulations issued under the Magnuson-Moss Warranty Act require us to include the following statement: some states do not allow limitations on how long an implied warranty lasts nor the excluding or limitation of incidental or consequential damages, so the above limitations may not apply to you.