BUCKINGHAM MFG.

301SR Rescue System / 301SRK (301SR with Electric Arc Rated Bag)
Instructions / Warnings:

Warning: Do not use this product if you cannot understand and follow the instructions and warnings that come with it and complete all necessary functions. Read carefully, understand, and heed these and all included instructions, warnings, and cautions before using this equipment. Failure to do so could result in serious injury or death.

Buckingham's P/N 301SR has been designed to provide a means for a worker to rescue himself or a fellow worker from an elevated height. This system and any of its components must not be used for any other purpose. This product has been tested to and meets applicable single use device requirements of ANSI Z359.4.

The P/N 301SR Rescue System contains the following components:

- Two 24" retrofit rappelling loops (1" wide webbing).
- Descender with properly threaded 6.8 mm descent line with a 3600 lb gate rated locking snap hook stitched to one end and a figure '8' stopper knot at opposite end (stopper knot is not shown).
- Triple locking 3600 lb gate rated carabiner attached to the Descender.
- Storage bag.

SELF RESCUE SYSTEM REQUIREMENTS:

In compliance with the ANSI Z359.4 standard, this product has a user weight limit of 130 to 310 lbs. (59 to 140 kg) when fully equipped. Outside of the ANSI Z359.4 compliance, this system can be used as follows:

- Exceptional cases like an accompanied descent (i.e. hurt man rescue): 440 lbs. (200 kg) maximum, when fully equipped. This method of rescue can only be used by rescuers specially trained in this technique.
- Single person load of 420 lbs. (190.5 kg) maximum, when fully equipped and when used with an equivalently rated harness / accessories.

In each of these cases, an additional braking system must be used, no impact loading tolerated and a separate safety or belay line must be used. To add additional braking to the system, the user must route the tail end of the descent line through the carabiner (see Fig. 8) and control the rate of descent to 3.3 ft/sec. (1m/sec.) maximum by varying the angle of the descent line tail against the carabiner frame.

- This rescue system is intended for use by experienced professionals only.
- Safe use of this system requires training by a qualified instructor and practice.
- Buckingham Mfg. recommends that only new, unused 301SR Rescue Systems be issued as part of self rescue gear. For training, it is recommended that separate 301SR Rescue Systems be used under supervision and continuous inspection; with the trainee at all times utilizing a separate safety belay line. After rescue applications, components of this system must be inspected by a competent person. Also ensure the descender adequately brakes before being put back into service.
- To prevent any detrimental effect to the rope in the event of an electric arc exposure (40 cal./cm^2 max.) store rope in the supplied storage bag and in the closed position (PN 301SRK Only).

DESCENDER:

- While the descenders auto-lock feature is designed to allow both hands to be free while exiting a bucket, Safe use of the device during a descent requires use of both hands at all times. One hand releasing the auto-stop lever of the descender and the other hand braking the descent by holding the free end of the descent line to provide additional braking (tailing).
- The descender is designed to be used as an evacuation descent control device only. After use, components of this system must be inspected by a competent person before being put back into service.
- The descender is designed for use with approved ropes only (supplied with product). Do not use this descender with any other ropes. Use of non-approved ropes could result in serious injury or death.

NOTE: TRAINING RECOMMENDATION

- Knowledge of the techniques required to properly and safely use this system can only be acquired through personal instruction received from a qualified trainer. Such instruction will include evaluation of your understanding and ability to perform all tasks required to safely and effectively use this system. Never attempt to use this system until you have received proper instruction and are deemed competent by a qualified instructor.

- For training purposes, it is recommended that a stopper knot be tied in the 6.8 mm diameter descent line to aid in the prevention of the trainee making contact with the ground in the event of improper use of the product. The stopper knot should be adjusted to a height so that the trainee's feet can only make slight contact with the ground, however, the stopper knot should be adjusted low enough that the trainee can stand and disconnect.
- Use Buckingham PN 914-6 training ladder for training operations that require re-entry into the bucket.

PUTTING THE 301SR RESCUE SYSTEM INTO SERVICE

The 301SR should be packed / stored appropriately for quick deployment. Rope for the PN 301RSK must be stored upright in the closed, supplied storage bag to prevent any detrimental effect that would result from an electric arc exposure (40 cal./cm^2 max.). A safe descent using this system requires pre-planning. Please follow your organization's protocol when using this product. See proper packing section of these instructions for packing procedure.

- The descender should be secured on the descent line at the ideal location to ease the process of climbing out of the bucket. (see recommended placement of descender Figures 15 & 16 on page 6).
- The descender, when packaged from the factory, is placed on the descent line approximately 36" from the anchor attachment snap.
- Anchor attachments and buckets differ, therefore set up the location of the descender ideal for each truck.
- Suspend the storage bag from its steel mounting ring to a nylon bucket hook on either the inside or outside of the bucket (Buckingham recommends our PN 2401-3 bucket hook).

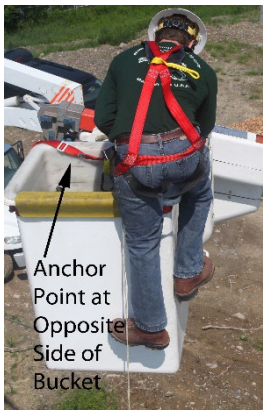


Fig. 1

Note: Prior to using the 301SR Rescue System, it is necessary to determine if your harness has factory attached rescue loops or if you need to use the included retro repelling loops.

The included 24" retrofit rappelling loops or the following rappelling loops may be used for self-rescue: style 'A1', style 'A2', or the cross-over ("X" style) harness with a web loop at the cross-over on the front of the harness (harness styles 3B, 3E, 3F). The included rappelling loops and style A1 are to be used for self-rescue only.

- If using the supplied retrofit rappelling loops, remove the rappelling loops from storage bag.
- Next slide the end of the rappelling loops with the 4" diameter loop under the harness strap at the point where the lower portion of the shoulder strap crosses the upper portion of the leg straps (Fig.2). Hitch the rappelling loop to the harness as shown in Fig. 3.

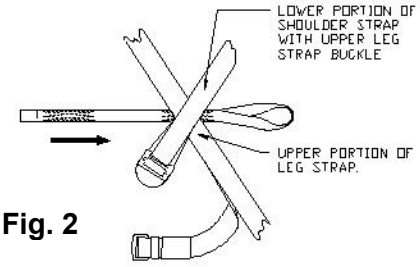


Fig. 2

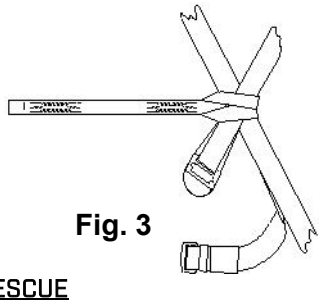


Fig. 3

HANDLE SHOULD ALWAYS FACE AWAY FROM USER

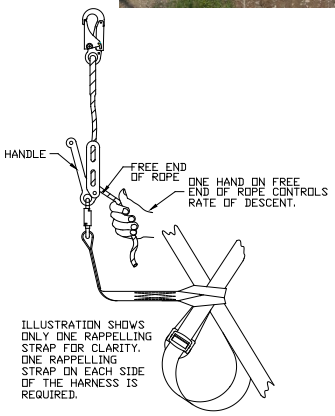


Fig. 4

USE INSTRUCTIONS FOR BUCKET SELF RESCUE

Note: Prior to using the 301SR Rescue System, it is necessary to determine the safest, easiest way of exiting the aerial bucket. We suggest exiting over the top of the aerial bucket directly across from the anchor point. (Fig. 1)

Fig. 5

- Remove the 6.8 mm diameter descent line with attached locking snap hook from the storage bag.
- Cold conditions may cause a wet system to freeze, therefore it is imperative to inspect for frozen conditions before use. Ensure the descender handle moves freely though all positions and that the rope will feed through the descender as intended. Ensure the gate and locking mechanism of the snaphook will open and spring back closed. A frozen system will not operate as intended.
- Locate the bucket's anchor point and connect the locking snap hook to the anchor point. Anchor points must be OSHA compliant.
- Ensure the proper connection of the locking snap hook to the anchor point and that it's gate is fully closed and locked.
- Verify the descender is in the proper location. The descender should be positioned on the descent line such that when the line is tight the descender will be located just under the lip of the bucket.
- Attach the triple locking carabiner connected to the descender to an approved attachment point (repelling loops, free end eye of retro repelling loops or sternal attachment point) on your ANSI Z359.11 rated full body harness.
- Ensure the proper connection of the carabiner connected to the descender to an approved connection point on your ANSI Z359.11 rated full body harness.
- Ensure the handle of the descender is facing away from the body. This ensures the handle cannot compress against the body. When installation is complete, assembly should look similar to the illustration in Fig. 4.

Note: When using a "cross-over" ('X') style harness (style 3B, 3E, or 3F) attach the triple locking carabiner directly to the web loop at the cross-over on the front of the harness

- Inspect the area directly below the bucket for any hazards.
- Ensure that the descent line cannot come into contact with any sharp edge tools that may be in the bucket.
- Face the front side of the bucket and drop the storage bag with remaining descent line to the ground, being careful not to come in contact with power lines or hazards on the ground. Ensure that the descent line (and bag) reaches the ground. Note: If anyone is in the immediate area below the bucket a warning (Headache, Heads up) should be given prior to dropping the bag.
- Test the function of the descender with the handle released (position 1, Fig. 5) by pulling upward on the descent line (the end with the snap hook) to ensure the brake mechanism is working properly. Perform the same test with the handle squeezed completely (position 3, Fig. 5). Squeeze the handle to the midpoint (position 2, Fig. 5) while again pulling upward on the descent line to ensure the descent line slides smoothly through the descender in this position.

Fig. 6

- Disconnect the shock absorbing lanyard from either the anchor point on the aerial bucket or from the fall arrest attachment of the harness. Note: connecting the anchor end of the lanyard onto a breakaway lanyard parking loop and pinning the lanyard under your arm is helpful to keep it out of the way when exiting the bucket.
- Carefully climb out of the bucket as follows:

1. Ensure the descent line is not obstructed.
2. Sit on the top lip of the bucket on the back side (opposite side you will be exiting).
3. While sitting on the back lip of the bucket bring your legs up onto the front lip of the bucket (side you will be exiting).
4. Slowly roll to your side and onto your stomach while keeping yourself positioned on the center of the two lips (front and back) of the bucket so your waist is on the front lip and your legs are hanging down in front of the bucket. Note: While in this position you can verify the connection of your descent line to the anchor and that the descent line is properly lined up and free of obstructions.
5. Use slow and controlled motions to lower yourself out of the bucket and over the front lip until you are supported by your descent device. Never abruptly load the descender or descent line by jumping, bouncing or sharply loading your weight into the system.
6. Never attempt a headfirst or a scuba style back roll (as shown in Fig. 7) out of the bucket and into the system.

Fig. 7

- Proper usage of the descender will allow descent at a controlled, safe rate. Maximum rate of descent for a user up to 310 lbs. must be no more than 6.6 feet / second. In the cases where the users weights is above 310 lbs., maximum rate of descent must be no more than 3.3 feet / second. Safe use of the device during a descent requires use of both hands at all times. One hand releasing the auto-stop lever of the descender and the other hand braking the descent by holding the free end of the descent line to provide additional braking (tailing) (see Fig. 8). Activate the braking position feature (position 3, Fig. 5) and the descent will be stopped or considerably slowed. Releasing the handle completely (position 1, Fig. 5) will also activate the braking feature. If extra braking is required, ensure before starting to rappel that the free end of the descent line is through the carabiner. Control the rate of descent by varying the angle of the free end of the descent line against the carabiner frame. Make sure the action of the descent line will not unscrew the carabiners gate (Fig. 17).
- To rappel, slowly squeeze the handle toward the body of the descender with one hand (Fig. 6) to the midpoint (position 2, Fig. 5) while the other hand controls the free end of the descent line to provide additional braking (tailing) (Fig. 8). Make a slow controlled descent to the ground. Control the rate of descent by varying the amount of angle and grip pressure applied to the free end of the descent line as shown in Fig. 8. To stop descending at any time release pressure on the lever and/or increase tension on the free end of the rope.

Fig. 8

Warning: The stop feature is a convenience for temporarily stopping on descent and <u>not</u> to arrest a free fall.

ADDITIONAL USE INSTRUCTIONS FOR ASSISTED RESCUE

- The total weight of the rescuer & victim including all associated equipment must be under 440 lbs.
- The rescuer must wear an 'X' style harness or an 'H' style harness with 'A2' or 'A3' high mount rappelling loops. 'A1' rappelling loops / low mount attachment can not be used.
- An additional PN 7003S Pick Off Strap must be used. Pick Off Strap is to be attached to the rescuers harness frontal attachment and to the victims fall arrest or rescue loop attachment (Fig. 9a). The Pick Off Strap must be properly adjusted to remove all slack to eliminate the risk of shock loading the 301SR system when transferring the victim's weight to the 301 system.
- The descent needs to be slow and controlled with no impact loading allowed (maximum rate of descent must be no more than 3.3 feet / second).
- Safe use of the device during a descent requires use of both hands at all times. One hand releasing the auto-stop lever of the descender and the other hand braking the descent by holding the free end of the descent line to provide additional braking (tailing).
- Additional braking must be used (free end of the descent line is through the carabiner). Control the rate of descent by varying the angle of the free end of descent line against carabiner frame (Fig. 8).
- A separate safety or belay line must be used for accompanied descent (Fig. 9a).

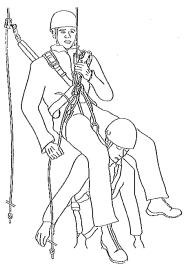
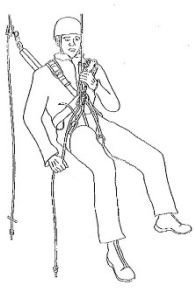


Fig. 9a

ADDITIONAL USE INSTRUCTIONS FOR A SINGLE PERSON LOAD OF 420 LBS.



- The descent needs to be slow and controlled with no impact loading allowed (maximum rate of descent must be no more than 3.3 feet / second).
- Safe use of the device during a descent requires use of both hands at all times. One hand releasing the auto-stop lever of the descender and the other hand braking the descent by holding the free end of the descent line to provide additional braking (tailing) (see Fig. 8).
- Additional braking must be used (free end of the descent line is through the carabiner). Control the rate of descent by varying the angle of the free end of descent line against carabiner frame (Fig. 8).
- A separate safety or belay line must be used. (Fig. 9b).

Fig. 9b

Warning: The stop feature is a convenience for temporarily stopping on descent and not to arrest a free fall.

Fig. 10a

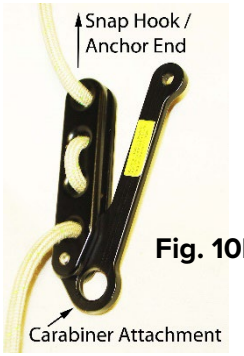


Fig. 10b

INSPECTION

Prior to, and after each use, carefully inspect each component. It is also recommended all components be removed from the storage bag and inspected at least every six months by a competent person. The inspection should include, but not be limited to the following:

Descent Line

- Inspect to ensure no cuts, kinks, abrasions, burns, broken fibers, chemical or physical exposures, excessive wear, discoloration, swelling, or herniated descent line core popping through cover) exist.
- Inspect stitched eye to ensure no excessive wear, abrasions, cut, broken, missing or unraveling thread, or broken fibers where the descent line attaches to the snap hook eye exist.

Snap Hook and Carabiner

- Ensure locking device and keeper / gate operate freely and smoothly.
- Inspect to ensure no cracks, distortion, corrosion, or nicks exist.

Descender

- Inspect to ensure no cracks, distortion, nicks, burrs, sharp edges, or excessive wear exist and perform an operational test as outlined in “WARNINGS” above.
- Make sure the descent line is woven through the descender correctly as illustrated on the unit and in figures 10a and 10b.
- Inspect for proper operation of both the brake mechanism and the descent handle mechanism. Also make sure that the descent line slides smoothly through the unit when the handle is depressed to the midpoint (position 2, Fig.5).
- Inspect for excessive wear marks on the descender due to friction from the descent line. Descent Line friction can cause wear marks with sharp edges which will be detrimental to the performance of the rope (see Fig. 11a, 11b & 11c).

NOTE: Excessive wear to the descender may be indicated by visible wear grooves through the protective coating and into the aluminum frame due to use. If grooves are visibly worn into the aluminum and touching remove the unit from service.

Fig. 11a

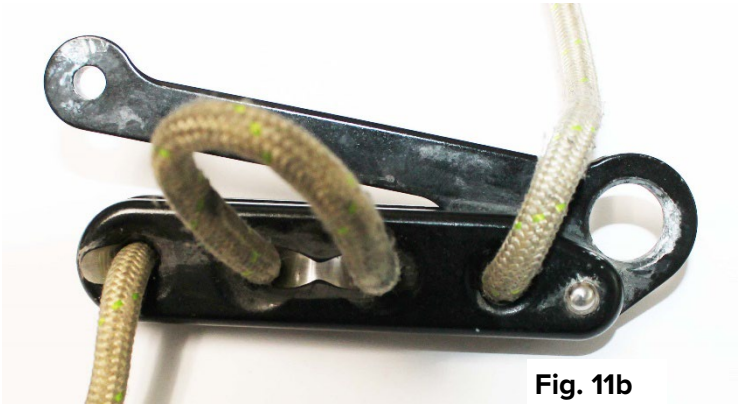


Fig. 11b

C0RRODED DESCENDER WITH EXCESIVE WEAR GROOVES / MARKS FROM DESCENT LINE FRICTION

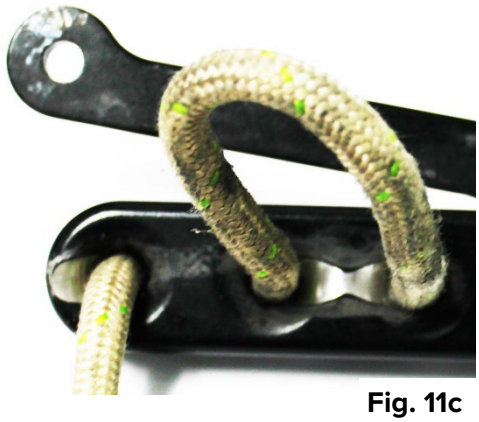


Fig. 11c

WEAR GROOVES / MARKS TOUCHING.

On the Ground Operational Inspections

- Inspect function by standing with both feet on the ground and with no slack in the descent line. Slowly transfer your body weight into the descent line with hands off the descender (Fig. 12a). The descender should not slip on the descent line. If descender slips remove it from service.

Fig. 12a

Fig. 12b

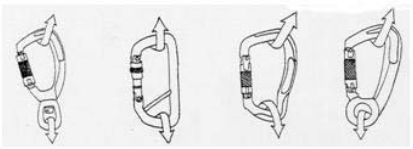
- Inspect function by standing with both feet on the ground and with no slack in the descent line. Slowly transfer your body weight into the descent line and fully depress the descender handle with one hand and tail the rope with the other (Fig. 12b). The descender should not slip on the descent line. If descender slips remove it from service.

If any evidence of wear or deterioration as outlined is observed, or if wear marks are touching each other as shown above or the rope slips through the descender when performing the On The Ground Operational Inspections immediately cease use, destroy the product, and replace it with new equipment. Should any unusual conditions not outlined above be observed or you have reasonable doubt about a particular condition, remove the equipment from service and notify your Supervisor, Safety Director, or contact Buckingham Mfg. Co. for clarification

WARNINGS

- Read, understand, follow, and retain all instructions and warnings attached and/or packed with this product before use.
- This equipment is intended for use by properly trained professionals only.
- Fall protection equipment, (i.e. fall arrest, work positioning belts, retrieval, suspension etc.) should not be resold or provided to others for re-use after use by original user.
- Before use: 1. Ensure that descent line is in good condition. 2. Is properly installed in the descender. 3. Descent line is properly attached to anchor point. 4. Operational test by loading with your bodyweight is performed.
- Safe use of the device during a descent requires use of both hands at all times. One hand releasing the auto-stop lever of the descender and the other hand braking the descent by holding the free end of the descent line to provide additional braking (tailing) (see Fig. 8).
- Ensure a stopper knot is tied in the end of the descent line to prevent the descender from slipping off the descent line. The stopper knot must be properly positioned as noted in the Training Recommendation section of these instructions.
- Anchor points must be OSHA compliant.
- Avoid rubbing of unit components against abrasive surfaces and sharp edges.
- Use this product only in combination with compatible equipment.
- Use with approved rope (Descent Line) only. Do not use this descender with a substitute rope.
- Guard against debris which could block the action of the descender handle (pebbles, twigs, ice, snow, etc.).
- Guard against frozen conditions. Excessive ice or snow buildup will adversely affect the proper operation of the mechanical devices supplied with this system.
- Do not use this system if frozen conditions exist.
- Equipment subjected to impact loading must be immediately removed from service, destroyed, and discarded.
- Always visually check that the snap hook / carabiner freely engages the anchor point and the keeper / gate is completely closed. Never rely on the feel or sound of a snap hook / carabiner engaging.
- Be certain the snap hook / carabiner is positioned so that its keeper / gate is never load bearing.
- Ensure loads applied to carabiners are directed in the proper orientation. Proper and improper loading techniques are shown below in Figure 13.
- Always use slow and controlled motions when exiting the bucket and lowering yourself into the system.
- Never abruptly load the descender or descent line by jumping, bouncing or sharply loading your weight into the system.
- Never attempt a headfirst or a scuba style back roll (see Fig. 7) out of the bucket and into the system.
- Ensure there are no uncovered sharp edge tools in the bucket that the descent line can come in contact with.

Proper Loading Techniques



Improper Loading Techniques

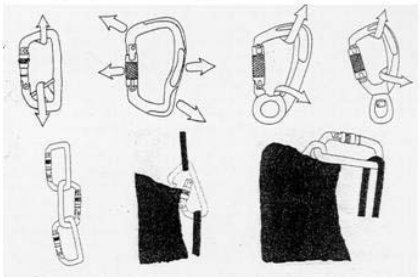


Fig. 13

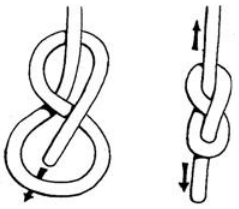
- Never disable the locking mechanism on the snap hook / carabiner, punch holes in or alter a connecting device or any part of this system in any way.
- Only Buckingham Mfg. Co. or those people authorized in writing by Buckingham Mfg. Co. may make repairs to this equipment.
- Do not let any part of this system come into contact with any chemicals, corrosive materials, acids or basic solvents.
- Wearing gloves while using this product is highly recommended. The descender may become very hot over long descents.
- Product covered under these instructions / warnings should not be resold / redistributed or re-used after use by original user.
- Employer - instruct employees as to proper use, warnings and cautions before use of this equipment.

Maintenance / Storage

- Proper maintenance and storage of your equipment will prolong its useful life and contribute toward its performance. Clean equipment with water and mild soap and allow to dry thoroughly without using excessive heat, lubricate as necessary.
- Do not store any parts of this system near solvents or corrosive chemicals or at extreme temperatures. This product should be stored in a clean and dry environment out of direct sunlight and away from extreme climate conditions. Ropes should be stored to provide ventilation and should never be stored on concrete or dirt surfaces. If storing this unit inside the bucket take precautions to ensure unit will remain dry, such as use of Buckingham bucket cover.
- In the event the system becomes wet, the user should ensure it is fully dried before putting the system back into use.
- Lubricate lock mechanisms, keepers and gates at least weekly or as often as required to maintain smooth operation (no binding). Use a lightweight lubricant such as BuckLube, WD-40®, Etc.
- If the descender needs to be cleaned, hand wash with warm water and a mild detergent while working the handle. Do not use corrosive substances such as acetone or petroleum-based solvents for cleaning. Rinse in clean warm water while working the handle and dry immediately.
- Do not store where the descender may be exposed to moist air, particularly where dissimilar metals are stored together.
- Apart from examination of product before and after each use, it should be inspected at least twice a year by a competent person.

Proper Packing:

Fig. 14



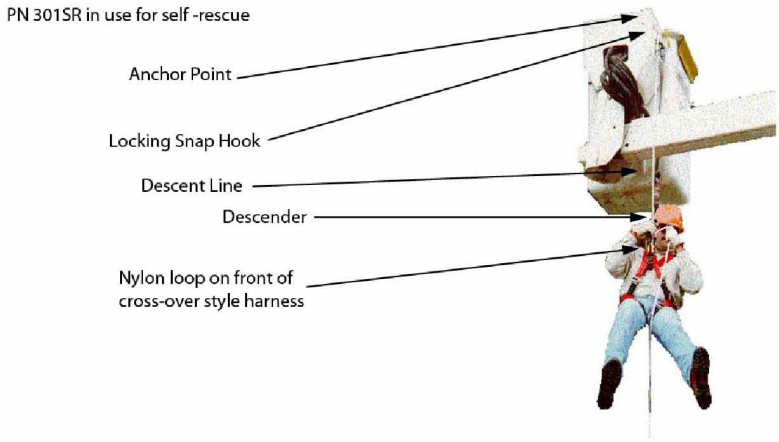
- Ensure descent line is completely dry before packing into the containment bag.
- Make sure a 'figure 8' stopper knot is tied in the free end of the descent line (Fig. 14).
- Start by feeding the descent line (the end with the 'figure 8' stopper knot) into the storage bag. This ensures the descent line will not become tangled when the bag is dropped from the bucket.
- Ensure the descent line is properly weaved through the descender as shown in Fig. 10a and 10b.
- Recommended Placement of the descender outlined below eases the process of climbing out of the bucket.
  A. If the descent line goes across the bucket, extend the descent line and place the descender approximately 1"- 2" below the lip of the bucket (Fig 15 & 16).
  B. if the descent line drops straight down from under the bucket, locate the descender approximately 18" from the locking snap hook.

Fig. 15

Fig. 16

- Inspect the descender to ensure the descent line is correctly woven through and the brake mechanism is functioning properly. The descender must be threaded as shown in the diagram etched into the side of the descender. The diagram is also shown in Fig. 10a.
- Open the locking carabiner gate and insert the descent line from the lower portion of the descender into carabiner so it exits the carabiner on the same side as the handle of the descender (Fig.17).

Fig. 17



- Place descender, remaining descent line, and then the locking snap hook in the bag.
- Finally, place the supplied rappelling loops and instruction sheet in the bag and seal with the hook and loop closure.
- Make sure the instructions are packed in the storage bag prior to each use.

NOTE: This product cannot be returned unless it is in new / unused condition.

STATEMENT of OBSOLESCENCE:

Precise “useful life expectancy” or “shelf life” for this product is not specified, as the degree of use, conditions of use, and the degree of care and storage determines useful life. All users maintain responsibility to select proper equipment for the job, be properly trained in its use, and ensure all personnel support equipment passes inspection before each use. Upon evidence of defects, damage or deterioration, all equipment shall be removed from service immediately and tagged or marked as unusable or destroyed. Additionally, all equipment shall be inspected on a regular basis not to exceed one year by a Competent Person, as defined by OSHA/ANSI, to verify that the equipment is safe for use. In the event of any question or concern regarding the condition of such equipment, users shall remove the equipment from service for further inspection. All users must comply with OSHA/ANSI/ASTM standards prior to and in using such equipment. For more information regarding safe and appropriate use of equipment, please contact Buckingham Manufacturing at 1-800-937-2825.

INTERNATIONAL USERS:

Notwithstanding the above, please know that certain international jurisdictions require manufacturers of equipment to provide customers with a maximum useful lifespan (sometimes referred to as a “Statement of Obsolescence”). To the extent required, Buckingham personal protective equipment manufactured from synthetic fiber materials including but not limited to items such as webbing and/or rope are subject to a maximum useful lifespan of ten (10) years from the date of manufacture. As stated above proper usage, storage, maintenance, and care impacts the useful lifespan of equipment. Extreme circumstances may require that product must be retired after only one use. This statement is made in conformance and compliance with BS EN 365:2004. International users must ensure that product inspections are completed by Competent Persons as defined by international standards including but not limited to British Standard (“BS”). If equipment fails any inspections, it must be immediately withdrawn from service and destroyed. For more information regarding safe and appropriate use of equipment, please contact Buckingham Manufacturing at 1-800-937-2825.

OUR GUARANTEE:

We guarantee the equipment we manufacture to be free from defects in material and workmanship. We will repair any equipment deemed to be defective which is returned to us by the original purchaser. However, this guarantee is void if any product is changed or altered in any way, or if the product is used in a manner other than for which it is intended. This express guarantee supersedes all other expressed or implied guarantees, obligations or liabilities. THERE ARE NO IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AND AS SUCH, ALL IMPLIED WARRANTIES ARE SPECIFICALLY DISCLAIMED.

LIMITATION ON LIABILITY:

IN NO EVENT WILL BUCKINGHAM OR BUYER BE LIABLE TO THE OTHER FOR LOST REVENUES, LOST PROFITS OR ANY OTHER INDIRECT, CONSEQUENTIAL, SPECIAL OR PUNITIVE LOSSES OR DAMAGES, HOWEVER CAUSED, WHETHER IN ACTION FOR BREACH OF CONTRACT, STRICT LIABILITY, TORT, OR OTHERWISE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH LOSSES OR DAMAGES. IN NO EVENT WILL BUCKINGHAM'S LIABILITY EXCEED THE TOTAL AMOUNT PAID BY BUYER TO BUCKINGHAM FOR THE PRODUCT OR EQUIPMENT GIVING RISE TO SUCH CLAIM(S).

PLEASE SEE OTHER TERMS AND CONDITIONS RELATING TO THIS PRODUCT AT https://buckinghammfg.com/terms-conditions/

REGISTRATION: Before use of the product, ensure to register and confirm the product at www.buckinghammfg.com/register.

BUCKINGHAM MFG.
BINGHAMTON, NY
1-800-937-2825
www.buckinghammfg.com

Information contained in these written instructions supersedes all other information (written, audio, video etc.) produced by Buckingham Mfg. prior to the revision date of this document.