



Fall Protection

ANSI Z359.14 Class B	ANSI A10.32
OSHA	Meets Electrical Arc Flash Requirements of ASTM F887
<i>This manual is intended to meet the Manufacturer's Instructions as required by ANSI Z359.14 and should be used as part of an employee training program as required by OSHA.</i>	

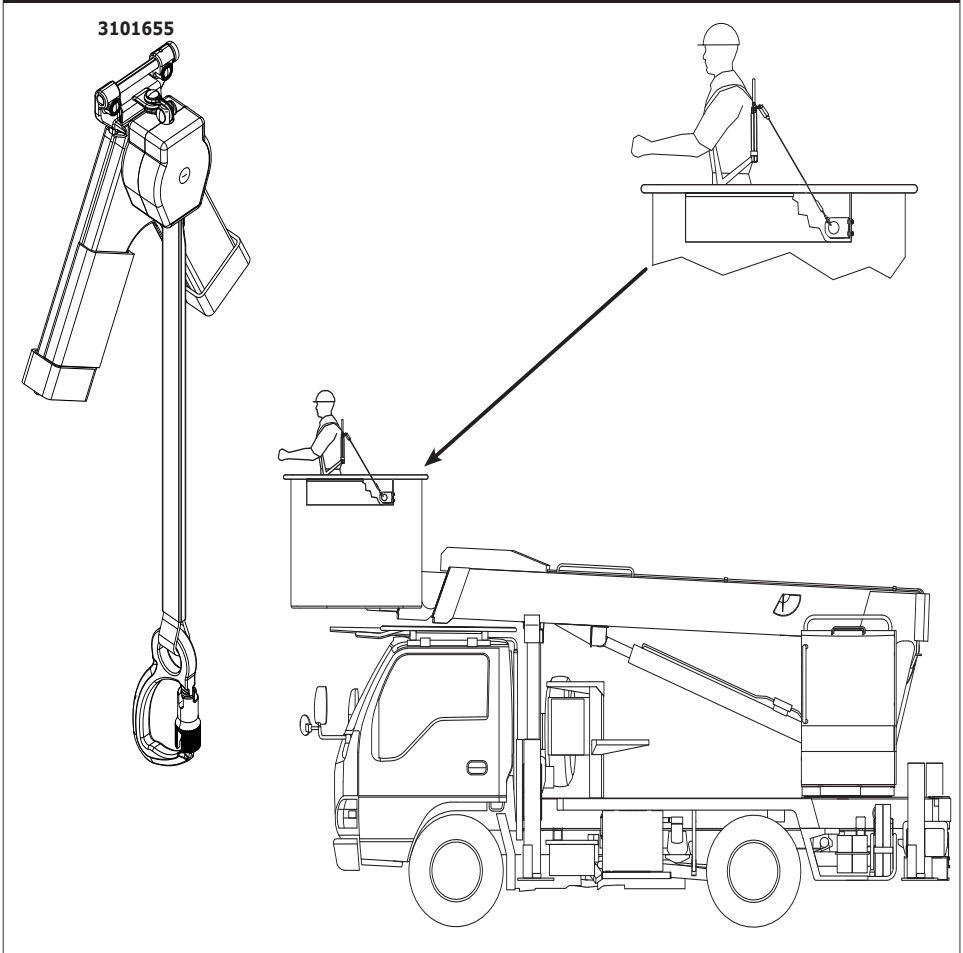
INSTRUCTION MANUAL

NANO-LOK™

**Aerial Work Platform
Self-Retracting Lifeline**

Model: 3101655

Figure 1 – 3M™ DBI-SALA® Nano-Lok™ Aerial Work Platform Self-Retracting Lifeline



WARNING: This product is part of a personal fall arrest, work positioning, or rescue system. The user must follow the manufacturer's instructions for each component of the system. These instructions must be provided to the user of this equipment. The user must read and understand these instructions before using this equipment. Manufacturer's instructions must be followed for proper use and maintenance of this equipment. Alterations or misuse of this product or failure to follow instructions may result in serious injury or death.

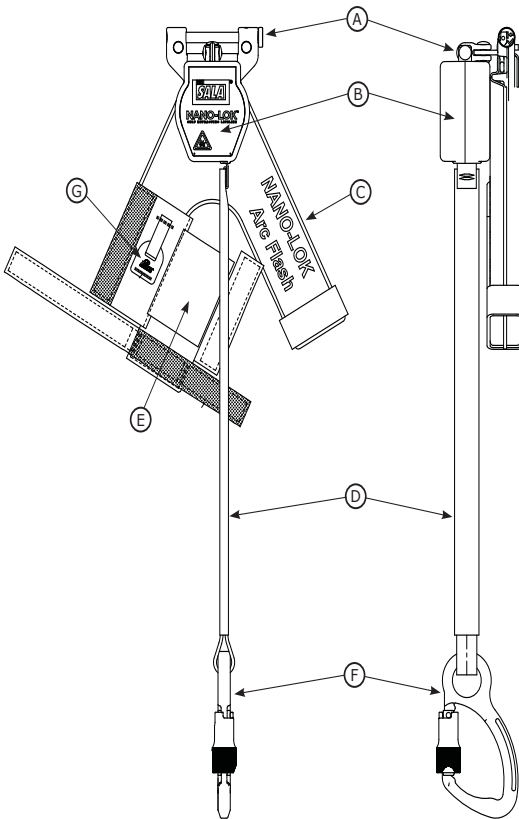
IMPORTANT: If you have questions on the use, care, or suitability of this equipment for your application, contact 3M.

IMPORTANT: Before using this equipment, record the product identification information from the ID label in the inspection and maintenance log of this manual.

DESCRIPTIONS:

Figure 2 illustrates key components of the 3M™ DBI-SALA® Nano-Lok™ Aerial Work Platform Self-Retracting Lifeline (SRL). The Nano-Lok SRL is a 4.5 ft. (1.37 m) long Kevlar® and Nomex® lifeline which retracts into a Thermoplastic Housing. The Nano-Lok SRL automatically locks at the onset of a fall to arrest the fall, but pays out and retracts lifeline during normal movement by the attached user. The Nano-lok SRL includes an integral energy absorber.

Figure 2 – Nano-Lok Self-Retracting Lifeline (SRL) Components



A - Harness Interface **B** - Housing **C** - Energy Absorbing Cover **D** - Web Lifeline **E** - Instruction Labels **F** - Carabiner
G - RFID Tag

1.0 APPLICATIONS

- 1.1 PURPOSE:** 3M™ Self Retracting Lifelines (SRLs) are designed to be a component in a personal fall arrest system (PFAS). The Model 3101655 Nano-Lok Self-Retracting Lifeline is a 4.5 ft harness-mounted Arc Flash SRL for use on aerial work platforms or other arc flash environments. Figure 1 illustrates SRLs covered by this instruction manual and their typical applications. They may be used in most situations where a combination of worker mobility and fall protection is required (i.e. inspection work, general construction, maintenance work, oil production, confined space work, etc.).
- 1.2 STANDARDS:** The Nano-Lok Self-Retracting Lifeline conforms to the national standard(s) identified on the front cover of these instructions. Refer to local, state, and federal (OSHA) requirements governing occupational safety for additional information regarding Personal Fall Arrest Systems. Refer to the following national standards on fall protection:

ANSI	Z359.0	Definitions and Nomenclature Used for Fall Protection and Fall Arrest
ANSI	Z359.1	Safety Requirements for Personal Fall Arrest Systems, Subsystems, and Components
ANSI	Z359.2	Minimum Requirements for a Comprehensive managed Fall Protection Program
ANSI	A10.32	Personal Fall Protection use in Construction and Demolition
ANSI	Z359.14	Safety Requirements for Self Retracting Devices for Personal Fall Arrest and Rescue Systems

- 1.3 TRAINING:** This equipment is intended to be used by persons trained in its correct application and use. It is the responsibility of the user to assure they are familiar with these instructions and are trained in the correct care and use of this equipment. Users must also be aware of the operating characteristics, application limits, and the consequences of improper use.

2.0 LIMITATIONS & REQUIREMENTS

Always consider the following limitations and requirements when installing or using this equipment:

- 2.1 CAPACITY:** SRLs are designed for use by one person with a combined weight (person, clothing, tools, etc.) not exceeding 420 lbs (190 kg).

At no time shall more than one person connect to a single SRL for fall arrest applications.

- 2.2 MAXIMUM ARREST FORCE AND MAXIMUM ARREST DISTANCE:** SRLs documented in this instruction meet the following Arrest Force and Arrest Distance maximums:

Weight of Worker	Up to 310 lbs (141 kg)	Greater than 310 lbs (141 kg) Up to 420 lbs (191 kg)
Average Arresting Force	900 lbs (4.0 kN)	900 lbs (4.0 kN)
Maximum Arresting Force	1,350 lbs (6.0 kN)	1,350 lbs (6.0 kN)
Maximum Arrest Distance	30 in (0.76 m)	36 in (0.9 m)

- 2.3 ANCHORAGE:** Anchorages selected for fall arrest systems shall have a strength capable of sustaining static loads applied in the directions permitted by the system of at least:

- 5,000 lbs. (22.2 kN) for non-certified anchorages, or
- Two times the maximum arresting force for certified anchorages.

When more than one fall arrest system is attached to an anchorage, the strengths set forth in (1) and (2) above shall be multiplied by the number of systems attached to the anchorage.

FROM OSHA 1926.500 AND 1910.66: Anchorages used for attachment of personal fall arrest systems shall be independent of any anchorage being used to support or suspend platforms, and capable of supporting at least 5,000 lbs. per user attached, or be designed, installed, and used as part of a complete personal fall arrest systems which maintains a safety factor of at least two, and is under the supervision of a qualified person.

- 2.4 RESCUE PLAN:** When using this equipment, the employer must have a rescue plan and the means at hand to implement it and communicate that plan to users, authorized persons, and rescuers.
- 2.5 INSPECTION FREQUENCY:** SRLs shall be inspected by the authorized person¹ or rescuer² before each use. Additionally, inspections shall be conducted by a competent person³ other than the user, and by a factory authorized inspection entity. The competent person shall use the Inspection Schedule (Table 1) to determine appropriate inspection intervals. Inspection procedures are described in the "Inspection Checklist" (Table 2). Results of the Competent Person inspection should be recorded in the "Inspection and Maintenance Log" on the back pages of these instructions or recorded with the i-Safe™ system (see Section 5).

¹ **Authorized Person:** A person assigned by the employer to perform duties at a location where the person will be exposed to a fall hazard.

² **Rescuer:** Person or persons other than the rescue subject acting to perform an assisted rescue by operation of a rescue system.

³ **Competent Person:** An individual designated by the employer to be responsible for the immediate supervision, implementation, and monitoring of the employer's managed fall protection program who, through training and knowledge, is capable of identifying, evaluating, and addressing existing and potential fall hazards, and who has the employer's authority to take prompt corrective action with regard to such hazards.

Table 1 – Inspection Schedule

Type of Use	Application Examples	Conditions of Use	Inspection Frequency Competent Person
Infrequent to Light	Rescue and Conf ned Space, Factory Maintenance	Good Storage Conditions, Indoor or Infrequent Outdoor Use, Room Temperature, Clean Environments	Annually
Moderate to Heavy	Transportation, Residential Construction, Utilities, Warehouse	Fair Storage Conditions, Indoor and Extended Outdoor Use, All Temperatures, Clean or Dusty Environments	Semi-Annually to Annually
Sever to Continuous	Commercial Construction, Oil and Gas, Mining	Harsh Storage Conditions, Prolonged or Continuous Outdoor Use, All Temperatures, Dirty Environment	Quarterly to Semi-Annually

- 2.6 LOCKING SPEED:** Situations which do not allow for an unobstructed fall path should be avoided. Working in confined or cramped spaces may not allow the body to reach sufficient speed to cause the SRL to lock if a fall occurs. Working on slowly shifting material, such as sand or grain, may not allow enough speed buildup to cause the SRL to lock. A clear path is required to assure positive locking of the SRL.
- 2.7 NORMAL OPERATIONS:** Normal operation will allow the full length of the lifeline to extend and retract with no hesitation when extending and no slack when retracting as the worker moves at normal speeds. If a fall occurs, a speed sensing brake system will activate, stopping the fall and absorbing much of the energy created. For falls which occur near the end of the lifeline travel, a reserve lifeline system or Load Indicator has been incorporated to assure a reduced impact fall arrest. If the SRL has been subjected to fall forces, remove the SRL from service, mark "UNUSABLE", and dispose of in the recommended manner (see "Section 5.6 - Disposal"). Sudden or quick movements should be avoided during normal work operation, as this may cause the SRL to lock up.
- 2.8 FREE FALL:** When anchored overhead, SRLs will limit the free fall distance to 2 ft. (61 cm) or less. To avoid increased fall distances, anchor the SRL directly above the work level. Avoid working where your lifeline may cross or tangle with that of another worker. Avoid working where an object may fall and strike the lifeline; resulting in loss of balance or damage to the lifeline. Do not allow the lifeline to pass under arms or between legs. Never clamp, knot, or prevent the lifeline from retracting or being taut. Avoid slack line. **Do not lengthen SRL by connecting a lanyard or similar component without consulting 3M.**
- 2.9 FALL CLEARANCE:** Figure 3A illustrates Fall Clearance requirements. Ensure adequate clearance exists in the fall path to prevent striking an object during a fall. If the worker will be working at a position that is not directly below the SRL anchorage point, the clearance required and vertical fall distance will be greater.
- 2.10 SWING FALLS:** Swing falls occur when the anchorage point is not directly above the point where a fall occurs (see Figure 3B). The force of striking an object in a swing fall may cause serious injury. In a swing fall, the total vertical fall distance will be greater than if the user had fallen directly below the anchorage point, thus increasing fall clearance required to safely arrest the user. Use Figure 3A to determine the fall clearance for your application. Minimize swing falls by working as directly below the anchorage point as possible. Never permit a swing fall if injury could occur.
- 2.11 HAZARDS:** Use of this equipment in areas where surrounding hazards exist may require additional precautions to reduce the possibility of injury to the user or damage to the equipment. Hazards may include, but are not limited to: high heat, caustic chemicals, corrosive environments, high voltage power lines, explosive or toxic gases, moving machinery, sharp edges, or overhead materials that may fall and contact the user or fall arrest system.
- 2.12 SHARP EDGES:** Avoid working where the lifeline will be in contact with or abrade against unprotected sharp edges. Where contact with a sharp edge is unavoidable, cover the edge with a protective material.
- 2.13 BODY SUPPORT:** A Full Body Harness must be used with the Self Retracting Lifeline. The harness connection point must be above the user's center of gravity. A body belt is not authorized for use with the Self Retracting Lifeline. If a fall occurs when using a body belt it may cause unintentional release and possible suffocation because of improper body support.
- 2.14 COMPATIBILITY OF COMPONENTS:** Unless otherwise noted, 3M equipment is designed for use with 3M approved components and subsystems only. Substitutions or replacements made with non approved components or subsystems may jeopardize compatibility of equipment and may affect safety and reliability of the complete system.

IMPORTANT: Read and follow manufacturer's instructions for associated components and subsystems in your personal fall arrest system.

Figure 3 – Fall Clearance and Swing Falls

Figure 3A:

Clearance required in feet (meters) between Working Level and Nearest Obstruction for User with Total Weight up to 310 lbs (141 kg)

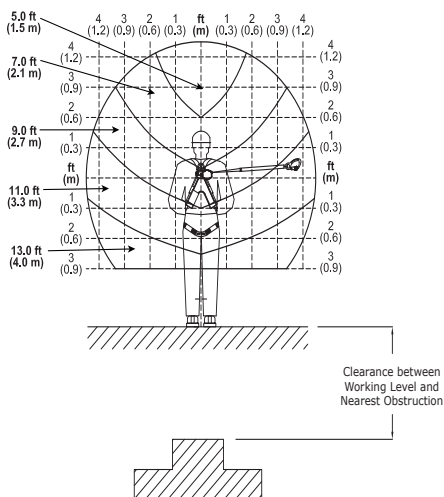
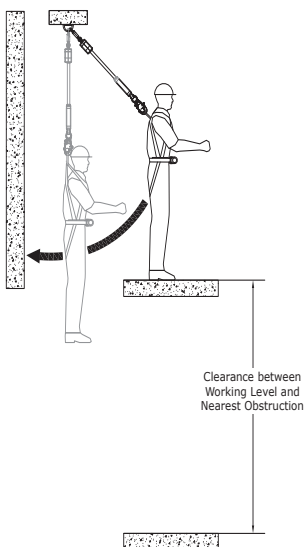


Figure 3B:

Swing Falls



To determine the clearance required: Measure the distance from the user's harness dorsal connection to the anchorage for the Nano-Lok SRL. Both horizontal and vertical distances are required. Use Figure 3A above to determine the required clearance. The dotted lines in the figure represent 1 foot (0.3 m) increments from the user's harness dorsal connection to the anchorage. For example, 7 ft (2.1 m) of clearance is required when the Nano-Lok unit is anchored 3 ft (.9 m) above and 3 ft (.9 m) to the side of the user's harness dorsal connection, 13 ft (4.0 m) of clearance is required when the Nano-Lok is anchored 1 1/2 ft (0.5 m) below and 4 ft (1.2 m) to side of the user's dorsal connection.

NOTE: The clearances provided above assume the fall occurs from the standing position. If the worker is kneeling or crouching an additional 3 ft (0.9 m) of clearance is needed.

USERS BETWEEN 310 AND 420 LBS (141-191 kg): Users with a combined weight (person, clothing, tools, etc.) between 310 and 420 lbs (141-191 kg) need 1 ft (0.3 m) more clearance than what is shown in the Figure 3A. 310 lb to 420 lb (141-191 kg) users must never anchor the Nano-Lok more than 2 ft (0.6 m) below their harness dorsal connection.

2.15 COMPATIBILITY OF CONNECTORS: Connectors are considered to be compatible with connecting elements when they have been designed to work together in such a way that their sizes and shapes do not cause their gate mechanisms to inadvertently open regardless of how they become oriented. Contact 3M if you have any questions about compatibility.

Connectors (hooks, carabiners, and D-rings) must be capable of supporting at least 5,000 lbs. (22.2 kN). Connectors must be compatible with the anchorage or other system components. Do not use equipment that is not compatible. Non-compatible connectors may unintentionally disengage (see Figure 4). Connectors must be compatible in size, shape, and strength. Self-locking snap hooks and carabiners are required by ANSI Z359 and OSHA.

2.16 MAKING CONNECTIONS: Snap hooks and carabiners used with this equipment must be self-locking. Ensure all connections are compatible in size, shape and strength. Do not use equipment that is not compatible. Ensure all connectors are fully closed and locked.

3M connectors (snap hooks and carabiners) are designed to be used only as specified in each product's user's instructions. See Figure 5 for examples of inappropriate connections. Do not connect snap hooks and carabiners:

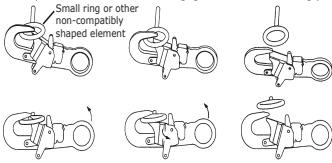
- A. To a D-ring to which another connector is attached.
- B. In a manner that would result in a load on the gate.

NOTE: Large throat snap hooks should not be connected to standard size D-rings or similar objects which will result in a load on the gate if the hook or D-ring twists or rotates, unless the snap hook complies with ANSI Z359.1-2007 or ANSI Z359.12 and is equipped with a 3,600 lb (16 kN) gate. Check the marking on your snap hook to verify that it is appropriate for your application.

- C. In a false engagement, where features that protrude from the snap hook or carabiner catch on the anchor, and without visual confirmation seems to be fully engaged to the anchor point.
- D. To each other.
- E. Directly to webbing or rope lanyard or tie-back (unless the manufacturer's instructions for both the lanyard and connector specifically allows such a connection).
- F. To any object which is shaped or dimensioned such that the snap hook or carabiner will not close and lock, or that roll-out could occur.
- G. In a manner that does not allow the connector to align properly while under load.

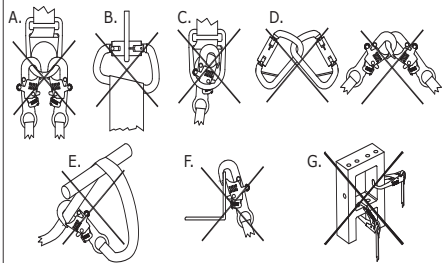
Figure 4 – Unintentional Disengagement

If the connecting element to which a snap hook (shown) or carabiner attaches is undersized or irregular in shape, a situation could occur where the connecting element applies a force to the gate of the snap hook or carabiner. This force may cause the gate (of either a self-locking or a non-locking snap hook) to open, allowing the snap hook or carabiner to disengage from the connecting point.



Force is applied to the Snap Hook. The Gate presses against the Connecting Ring. The Gate opens allowing the Snap Hook to slip off.

Figure 5 – Inappropriate Connections



3.0 INSTALLATION

- 3.1 PLANNING:** Plan your fall protection system before starting your work. Account for all factors that may affect your safety before, during, and after a fall. Consider all requirements and limitations defined in Section 2.
- 3.2 ANCHORAGE:** Figure 7 illustrates typical SRL anchorages and connections. Select an anchorage location with minimal free fall and swing fall hazards (see Section 2). Select a rigid anchorage point capable of sustaining the static loads defined in Section 2.3. Where anchoring overhead is not feasible, Nano-Lok SRLs may be secured to an anchorage point below the level of the user's Dorsal D-Ring. For users up to 310 lbs, (141 kg) the anchorage point must not be more than 3 ft (1 m) below the Dorsal D-Ring. For users exceeding 310 lbs. (141 kg), up to 420 lbs (191 kg), the anchorage point must not be more than 2 ft. (0.6 m) below the Dorsal D-Ring.

IMPORTANT: *It is recommended that this equipment be installed under the supervision of a qualified person, as defined by OSHA 1910.66, Appendix C.*

- 3.3 HARNESS MOUNTING:** Nano-Lok Self-Retracting Lifelines include an interface for mounting on a Full Body Harness just below the Dorsal D-Ring. The worker can then connect the lifeline end of the SRL to anchorage points located throughout the work site. To mount the Nano-Lok Self-Retracting Lifeline on a Full Body Harness (see Figure 6):

- 1. Loosen the Harness Webbing:** Pull out on both Shoulder Straps (A) where they pass through the bottom of the Dorsal D-Ring (B) until there is sufficient space to slide the locking pin between the Shoulder Straps and Back Pad.
- 2. Open the Harness Interface:** Push down on the Locking Buttons (C) simultaneously and slide the Locking Pin (D) out.



NOTE: *Both locking buttons must be fully depressed to allow the locking pin to slide out. To slide the locking pin open, apply firm pressure to both locking buttons with the thumbs while simultaneously pulling on the locking pin head with an index finger.*

- 3. Insert the Locking Pin Through the Shoulder Straps:** With the Locking Buttons (C) facing out and the Locking Pin facing up, insert the Detent Pin (D) of the Harness Interface (E) behind the Shoulder Straps (A) and lock in place. Pull the Shoulder Straps back through the Dorsal D-Ring and Back Pad to remove slack.
- 4. Connect Hook and Loop Straps around the Shoulder Straps:** Open the hook and loop straps located on the bottom of the Energy Absorber Pack. Wrap the hook and loop straps (F) around the shoulder straps and secure.

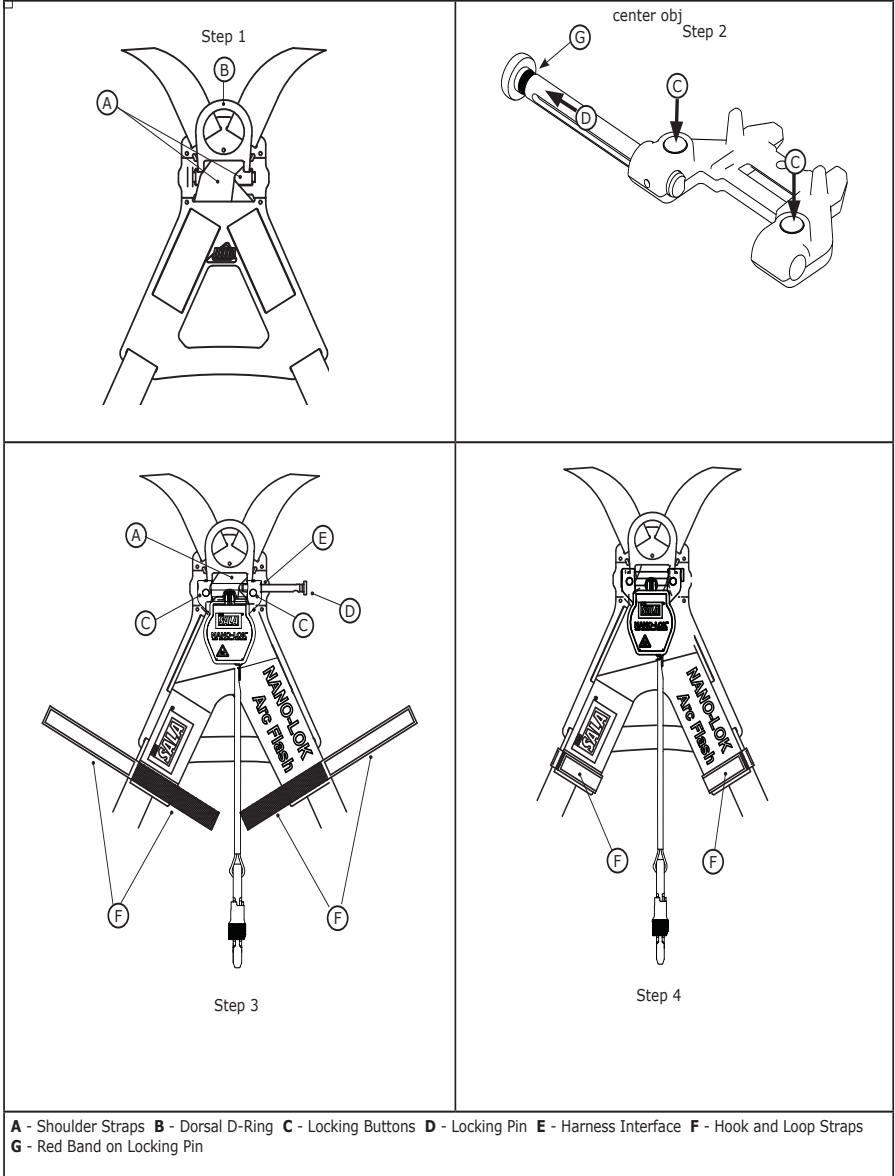


WARNING: *The Red Band (G) on the knob end of the Harness Interface Locking Pin will be exposed if the Harness Interface is unlocked. To avoid accidental release of the connection, always make sure the Harness Interface is locked (the Red Band will not be visible) before using the Harness and attached Nano-Lok Self-Retracting Lifeline. Failure to do so could result in serious injury or death.*



NOTE: *It is also acceptable to connect the Nano-Lok Self-Retracting Lifeline to the Harness Dorsal D-Ring with the Adapter Loop (P/N 3500046). Attachment Strap (P/N 3100184) can be used to secure the bottom of the Nano-Lok Pack when the harness geometry precludes the use of the integral hook and loop straps.*

Figure 6 – Nano-Lok SRL Harness Interface



4.0 USE

WARNING: Do not alter or intentionally misuse this equipment. Consult 3M when using this equipment in combination with components or subsystems other than those described in this manual. Some subsystem and component combinations may interfere with the operation of this equipment. Use caution when using this equipment around moving machinery, electrical hazards, chemical hazards, sharp edges, or overhead materials that may fall onto the lifeline. Do not loop the lifeline around small structural members. Failure to heed this warning may result in equipment malfunction, serious injury, or death.

WARNING: Consult your doctor if there is reason to doubt your fitness to safely absorb the shock from a fall arrest. Age and fitness seriously affect a worker's ability to withstand falls. Pregnant women or minors must not use DBI-SALA self retracting lifelines.

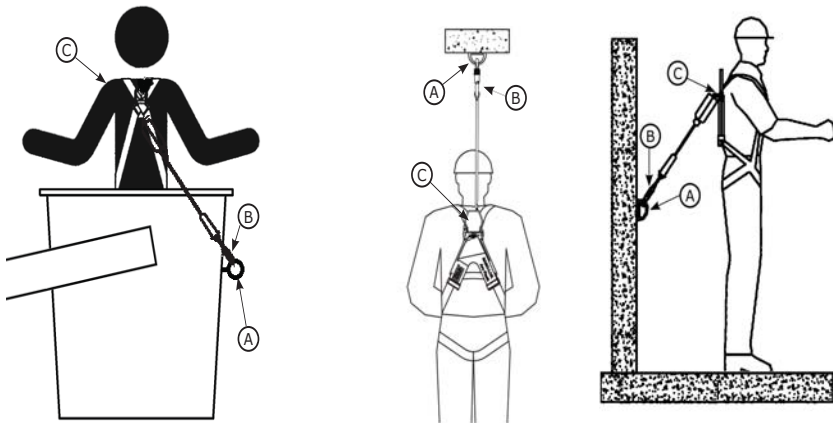
- 4.1 BEFORE EACH USE:** Before each use of this fall protection equipment carefully inspect it to assure it is in good working condition. Check for worn or damaged parts. Ensure all bolts are present and secure. Check that the lifeline is retracting properly by pulling out the line and allowing it to slowly retract. If there is any hesitation in retraction, remove the SRL from service, mark "UNUSABLE", and dispose of in the recommended manner (see "Section 5.6 - Disposal"). Inspect the lifeline for cuts, frays, burns, crushing and corrosion. Check locking action by pulling sharply on the line. See Section 5 for inspection details.
- 4.2 AFTER A FALL:** Any equipment which has been subjected to the forces of arresting a fall or exhibits damage consistent with the effect of fall arrest forces as described in Section 5, must be removed from service immediately, marked "UNUSABLE", and disposed of in the recommended manner (see "Section 5.6 - Disposal").
- 4.3 BODY SUPPORT:** A full body harness must be worn when using Nano-Lok SRLs. For general fall protection use, connect to the back (dorsal) D-ring.

IMPORTANT: Do not use a body belt for free fall applications. See OSHA 1926.502 for guidelines.

- 4.4 MAKING CONNECTIONS:** Figure 7 illustrates harness and anchorage connections for Nano-Lok SRL Fall Arrest Systems. When using a hook to make a connection, ensure roll-out cannot occur (see Figure 4). Do not use hooks or connectors that will not completely close over the attachment object. Do not use non-locking snap hooks. The anchorage must meet the anchorage strength requirements stated in section 2.3. Follow the manufacturer's instructions supplied with each system component.
- 4.5 OPERATION:** Prior to use, inspect the SRL as described in section 5.0. Figure 7 shows system connections for typical Nano-Lok SRL applications. Mount the Nano-Lok SRL on the back of a Full Body Harness per the instruction in Section 3.3. Connect the carabiner to a suitable anchorage. Ensure connections are compatible in size, shape, and strength. Ensure hooks are fully closed and locked. Once attached, the worker is free to move about within the recommended working area at normal speeds. If a fall occurs the SRL will lock and arrest the fall. Upon rescue, remove the SRL from use. When working with an SRL, always allow the lifeline to recoil back into the device under control.

WARNING: Do not tie or knot the lifeline. Avoid lifeline contact with sharp or abrasive surfaces. Inspect the lifeline frequently for cuts, fraying, burns, or signs of chemical damage. Dirt, contaminants, and water can lower dielectric properties of the lifeline. Use caution near power lines.

Figure 7 – Nano-Lok SRL System Connections



A - Anchorage Point B - Snap Hook C - Harness Interface

4.6 AERIAL WORK PLATFORMS: Use of the Nano-Lok Self-Retracting Lifeline on aerial work platforms is permissible, provided the following criteria are met:

1. Nano-Lok SRLs generally will not restrain workers from falling out of aerial work platforms or elevated working surfaces. To restrain users from falling out of aerial work platforms, Positioning Lanyards of sufficiently short lengths should be used.
2. Aerial work platforms must have guardrails or gates at all accessible edges along their perimeter unless anchorages for the Nano-Lok Self-Retracting Lifeline are located overhead. The edges on the top rails of all guardrails and gates over which the user might fall must have a minimum radius of 1/8 in. (0.3 cm).
3. Anchorages of appropriate strength and compatibility must always be used for securing Nano-Lok SRLs (see Section 2).
4. Swing fall hazards may exist, especially when working near corners or out away from anchorage points. Added fall clearance is needed where the potential for swing fall exists (see Figure 3).
5. All sharp edges which the Nano-Lok Self-Retracting Lifeline may contact during a fall must be eliminated or covered over. All edges the SRL lifeline may contact in a fall must be smooth with an edge radius of 1/8 in. (0.3 cm) or greater. Potential pinch points between adjacent surfaces where the lifeline may catch during a fall must be eliminated.

4.7 HORIZONTAL SYSTEMS: In applications where the Nano-Lok Self-Retracting Lifeline is used in conjunction with a horizontal system (i.e. Horizontal Lifeline, Horizontal I-Beams Trolley), the SRL and horizontal system components must be compatible. Horizontal systems must be designed and installed under the supervision of a qualified engineer. Consult the horizontal system equipment manufacturer's instructions for details.

5.0 INSPECTION

- 5.1 BEFORE EACH USE:** Before each use of this fall protection equipment carefully inspect it to assure it is in good working condition. Check for worn or damaged parts. Ensure all bolts are present and secure. Check that the lifeline is retracting properly by pulling out the line and allowing it to slowly retract. If there is any hesitation in retraction, remove the SRL-LE from service, mark "UNUSABLE", and dispose of in the recommended manner (see "Section 5.6 - Disposal"). Inspect the lifeline for cuts, frays, burns, crushing and corrosion. Check locking action by pulling sharply on the line. See Table 2 for inspection details.
- 5.2 RFID TAG:** The Nano-Lok Self-Retracting Lifeline includes a Radio Frequency Identification (RFID) tag. The RFID tag can be used in conjunction with the handheld reading device to simplify inspection and inventory control and provide records for your fall protection equipment. Follow the instructions provided with your handheld reader or software to transfer your data to your database.
- 5.3 INSPECTION FREQUENCY:** The Nano-Lok SRL must be inspected at the intervals defined in "Section 2.5 - Inspection Frequency". Inspection procedures are described in the "Inspection Checklist" (Table 2).
- 5.4 UNSAFE OR DEFECTIVE CONDITIONS:** If inspection reveals an unsafe or defective condition, if inspection reveals an unsafe condition, remove the SRL from service, mark "UNUSABLE", and dispose of in the recommended manner (see "Section 5.6 - Disposal").
- 5.5 PRODUCT LIFE:** The functional life of Nano-Lok Self-Retracting Lifelines are determined by work conditions and maintenance. As long as the SRL passes inspection criteria, it may remain in service.
- 5.6 DISPOSAL:** Dispose of the Nano-Lok Self-Retracting Lifeline if it has been subjected to fall force, the SRL has been subjected to an arc flash, or an inspection reveals an unsafe or defective condition. Before disposing of the SRL, cut the Load Indicator off of the Web Lanyard or otherwise disable the SRL to eliminate the possibility of inadvertent reuse.

Figure 8 – RFID Tag

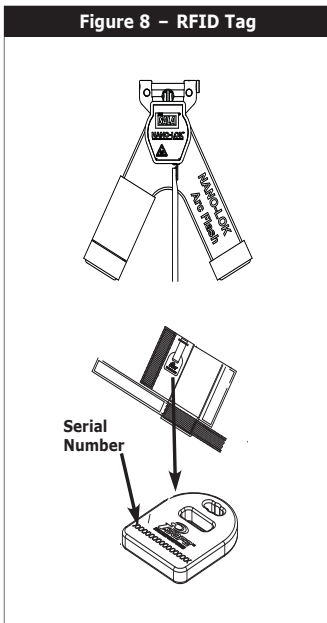


Table 2 – Inspection Checklist

Component:	Inspection:	Pass	Fail
SRL (Figure 9)	Inspect for loose fasteners and bent or damaged parts.	<input type="checkbox"/>	<input type="checkbox"/>
	Inspect the Housing (A) for distortion, cracks, or other damage.	<input type="checkbox"/>	<input type="checkbox"/>
	Inspect the Swivel (B) and Harness Interface (C) for distortion, cracks, or other damage. The Swivel should be attached securely to the SRL, but should pivot freely.	<input type="checkbox"/>	<input type="checkbox"/>
	The Web Lifeline (D) should pull out and retract fully without hesitation or creating a slack line condition.	<input type="checkbox"/>	<input type="checkbox"/>
	Ensure the SRL locks up when the Lifeline is jerked sharply. Lockup should be positive with no slipping.	<input type="checkbox"/>	<input type="checkbox"/>
	All labels must be present and fully legible (see Figure 9). Inspect the entire SRL for signs of corrosion.	<input type="checkbox"/>	<input type="checkbox"/>
Web Lifeline (Figure 10)	Inspect the web lifeline for concentrated wear, frayed strands, broken yarn, burns, cuts, and abrasions. The lifeline must be free of knots throughout its length. Inspect for excessive soiling, paint build-up, and rust staining. Inspect for chemical or heat damage indicated by brown, discolored, or brittle areas. Inspect for ultraviolet damage indicated by discoloration and the presence of splinters and splivers on the lifeline surface.	<input type="checkbox"/>	<input type="checkbox"/>
Shock Pack/Load Indicator	Inspect the shock pack to determine if it has been activated. There should be no evidence of elongation and the cover should be secure and free of tears or other damage.	<input type="checkbox"/>	<input type="checkbox"/>
End Connectors (Figure 11)	Figure 11 identifies the End Connectors that should be included on your Nano-Lok SRL model. Inspect all Snap Hooks, Carabiners, Rebar Hooks, Interfaces, etc. for signs of damage, corrosion, and proper working condition. Where present: Swivels should rotate freely, Gates should open, close, lock, and unlock properly, and Locking Buttons and Locking Pins should function correctly.	<input type="checkbox"/>	<input type="checkbox"/>

Figure 9 – SRL Inspection

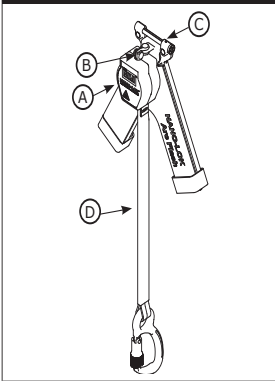


Figure 10 – Web Lifeline

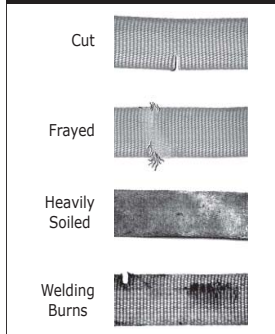
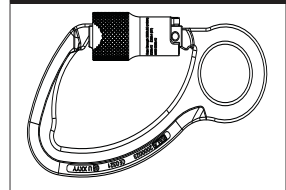


Figure 11 – End Connector



6.0 MAINTENANCE, SERVICING, and STORAGE

6.1 CLEANING: Cleaning procedures for the Nano-Lok Self-Retracting Lifeline are as follows:

- Periodically clean the exterior of the SRL using water and a mild soap solution. Position the SRL so excess water can drain out. Clean labels as required.
- Clean the Web Lifeline with water and mild soap solution. Rinse and thoroughly air dry. Do not force dry with heat. The lifeline should be dry before allowing it to retract into the housing. An excessive buildup of dirt, paint, etc. may prevent the lifeline from fully retracting back into the housing causing a potential free fall hazard.

IMPORTANT: If the lifeline contacts acids or other caustic chemicals, remove the SRL from service and wash with water and a mild soap solution. Inspect the SRL per Table 2 before returning to service.

6.2 SERVICE: Nano-Lok Self-Retracting Lifelines are not repairable. If the SRL has been subjected to fall force or inspection reveals an unsafe or defective condition, remove the SRL from service, mark "UNUSABLE", and dispose of in the recommended manner (see "Section 5.6 - Disposal").

6.3 STORAGE: Store Nano-Lok Self-Retracting Lifelines in a cool, dry, clean environment out of direct sunlight. Avoid areas where chemical vapors may exist. Thoroughly inspect the SRL after any period of extended storage.

7.0 SPECIFICATIONS

7.1 PERFORMANCE: Your Nano-Lok Self-Retracting Lifeline has been tested and certified to the performance requirements of the standard(s) identified on the cover of this instruction manual. See "Section 2.0 - Limitations & Requirements" for performance specifications.

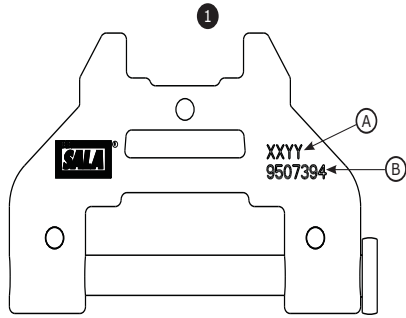
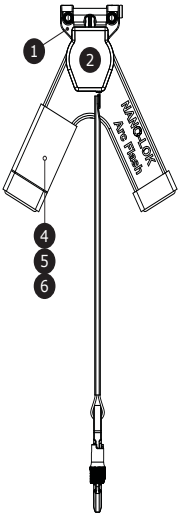
7.2 MATERIALS: Material specifications for the Nano-Lok Self-Retracting Lifeline are as follows:

Housing:	Nylon, UV Resistant	Motor Spring:	Stainless Steel
Drum:	Nylon, Type 6/6	Swivel:	Zinc Plated Steel
Fasteners:	Zinc Plated Steel Screws; Stainless Steel Rivets	Lifeline:	Kevlar® Nomex® Web
Locking Pawls:	Stainless Steel	Energy Absorber	Web: Vectran Polyester Cover: Kevlar® Nomex® fabric Stitching: Nylon Thread
Main Shaft:	Stainless Steel	Carabiner	Aluminum
Harness Connector:	Zinc Plated Steel and Aluminum		

7.3 AVERAGE WORKING RANGE: Average working range for the Nano-Lok Self-Retracting Lifeline is 4.5 ft. (1.37 m), but will vary slightly with length because of various End Connectors options. When retracted, the SRL measures 2.5 ft. (.76m) in length.

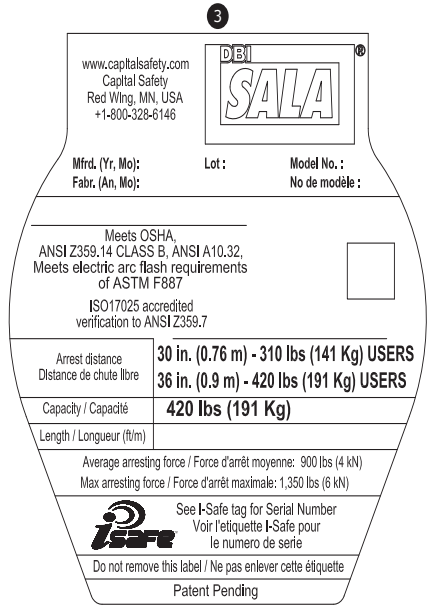
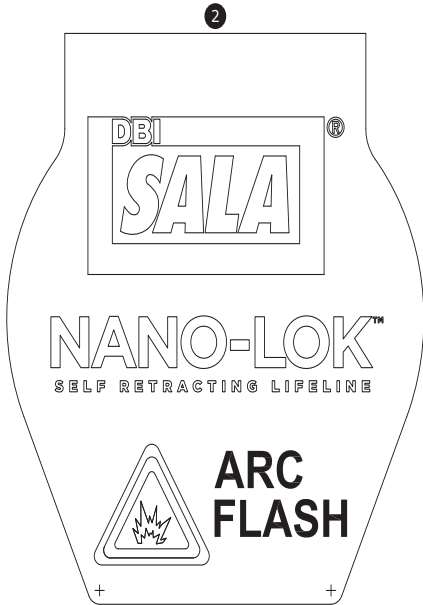
7.4 LABELING: Figure 12 illustrates Nano-Lok Self-Retracting Lifeline labeling. All labels on the SRL must be present and fully legible.

Figure 12 – Labels



Harness Interface Stampings

A	XX = Year Manufactured
B	YY = Heat Lot/Batch Code



Continued...

Figure 12 – Labels

4

DO NOT REMOVE THIS LABEL / Ne pas enlever cette étiquette 9511814 Rev. A

SPECIFICATIONS / CARACTÉRISTIQUES:

Lifeline Material: Kevlar Nomex web .781" (20mm) x .085" (2,16mm)
Matériau de la corde d'assurance: sangle en Kevlar Nomex 20mm (0,781 po) x 2,16mm (0,085 po)

Capacity (when anchored not more than 2ft (0.6m) below Dorsal D-Ring): 75 - 420 lb (34 - 191 kg)
Capacité (ne peut pas être plus bas que 2 pieds (0,6 m) sous l'ancrage dorsal.): 75 - 420 lb (34 - 191 kg)


Capacity (when anchored not more than 3ft (1m) below Dorsal D-Ring): 75 - 310 lb (34 - 141 kg)
Capacité (ne peut pas être plus bas que 3 pieds (1 m) sous l'ancrage dorsal.): 75 - 310 lb (34 - 141 kg)

Free fall limit: < 310 lb (141 kg) users = 2ft (.61m)
310 lb - 420 lb (141 kg - 191 kg) users = 2ft (.61m)

Limit de chute libre: < 310 lb (141 kg) utilisateurs = 3ft (.91 m)
310 lb - 420 lb (141 kg - 191 kg) utilisateurs = 2ft (.61 m)

Average locking speed: 4.5 ft/s (1.4 m/s)
Vitesse de blocage moyenne: 4,5 ft/s (1,4 m/s)

This product is i-Safe enabled and contains an electronic tag that can be read by compatible readers - providing inspection logs, inventory management and other safety information. Ce produit est validé dans i-Safe et contient une rondelle d'identification électronique qui peut être lue par des lecteurs compatibles - en fournissant des registres d'inspection, de l'informations sur la gestion des stocks et d'autre information relative à la protection.



INSPECTION LOG RELEVÉ D'INSPECTION			
DATE	INITIAL	DATE	INITIAL

5

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USE/UTILISATION: Anchorage strength requirement 22 kN (5000 lb). Anchor unit as directly above work area as possible to reduce swing fall hazard. Do not work above anchorage level. Full body harness required for use with this device. Capacity is single user only. Avoid lifeline contact with sharp edges. For use by trained persons only. This unit is suitable for use with horizontal lifelines. See user manual for additional information including suitability for horizontal use. Contact Capital Safety with any questions about the proper use of this product. L'ancrage doit avoir une résistance de 22kN (5000 lb). L'ancrage doit être aussi directement que possible au-dessus de la zone de travail pour réduire le risque de chute par balancement. Ne pas travailler au-dessus du niveau de l'ancrage. On doit porter un harnais de sécurité avec ce dispositif. Capacité un seul utilisateur. Faire en sorte que la corde d'assurance n'entre pas en contact avec des arêtes vives. Doit être utilisé seulement par des personnes formées. Cette unité est conçue pour être utilisée avec des lignes de vie horizontales. Pour en savoir plus, y compris sur l'efficacité d'une utilisation horizontale, référez-vous au manuel d'utilisateur. Pour de plus amples renseignements au sujet de l'utilisation de ce produit, veuillez communiquer avec Capital Safety.

▲ WARNING/AVERTISSEMENT Read instructions before use. Manufacturer's instructions supplied with this product must be followed for proper use. Failure to follow instructions may result in serious injury or death. This device shall be removed from service when the impact indicator is deployed. Lisez les instructions avant utilisation. Pour bien utiliser ce produit, on doit observer les instructions du fabricant fournies avec le produit. Négliger d'observer les instructions peut occasionner des blessures graves, voire mortelles. On doit mettre ce dispositif hors de service lorsque l'indicateur de charge est déployé.

6

DO NOT REMOVE THIS LABEL / Ne pas enlever cette étiquette 9511814 Rev. A

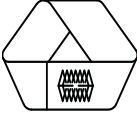
INSPECTION: Before each use, and at least monthly, inspect in accordance with the User Manual including locking function (pull sharply to test), retraction, lifeline condition, function and condition of connector, housing and fasteners, legibility of labels, and any evidence of defects, damage or missing parts. Inspect for ruptured or torn webbing extending from load indicator cover. Ruptured or torn webbing is an indicator that an impact has occurred and the unit must be removed from service. Inspection by a competent person required at least annually. See User Manual. Do not use if inspection reveals an unsafe condition. Not user repairable. Avant chaque utilisation et au moins une fois par mois, procédez à l'inspection du matériel conformément au manuel de l'utilisateur, ce qui inclut la fonction de verrouillage (tirez fermement pour la tester), le mécanisme de rétraction, l'état de la corde d'assurance, le fonctionnement et l'état du connecteur, du boîtier et des dispositifs de fixation et la lisibilité des étiquettes. Assurez-vous en outre qu'il n'y ait aucun défaut, dommage ou aucune pièce manquante. Vérifiez s'il y a une rupture ou déchirement de la sangle qui dépasse du couvercle de l'indicateur de charge. Une rupture ou un déchirement de la sangle indique qu'un impact s'est produit et qu'on doit mettre le dispositif hors de service. Une inspection par une personne compétente doit être réalisée au moins une fois par an. Reportez-vous au manuel de l'utilisateur. Si lors d'une inspection il est remarqué que l'équipement peut représenter un danger, ne l'utilisez pas. N'est pas réparable par l'utilisateur. This product is i-Safe enabled and contains an electronic tag that can be read by compatible readers - providing inspection logs, inventory management and other safety information. Ce produit est validé dans i-Safe et contient une rondelle d'identification électronique qui peut être lue par des lecteurs compatibles - en fournissant des registres d'inspection, de l'informations sur la gestion des stocks et d'autre information relative à la protection.

APPENDIX A - NANO-LOK SRL WEB LOOP HARNESS ADAPTER

The Nano-Lok SRL Web Loop Harness Adapter (P/N 3500046) (see Figure A) is a web loop that allows the SRL to be used on harnesses that are not compatible with the SRL Harness Interface connector (see Figure 2.) This applies primarily to harnesses with fixed D-Rings that do not have enough slack in the harness web to allow the pin of the connector to pass through. (See Harness Mounting procedure, Section 3.3.)

Figure A

Nano-Lok SRL Web Loop Harness Adapter
(P/N 3500046)



Warning: Web Loop Adapter 3500046 is not certified for Arc Flash environments.

Figure B

STEP 1: Position harness D-Ring (1) as shown.



Figure C

STEP 2: From behind and at the bottom of the D-Ring, insert the Web Loop up through the D-Ring and fold the top of the loop down (2).



Figure D

STEP 3: Pull the top of Web Loop (3) down through the bottom of the Web Loop.



Figure E

STEP 4: Open the Nano-Lok SRL Harness Interface. Push down on the Locking Buttons (4) simultaneously and slide the Locking Pin (5) out.

Position the Web Loop between the sides of the Harness Interface as shown.

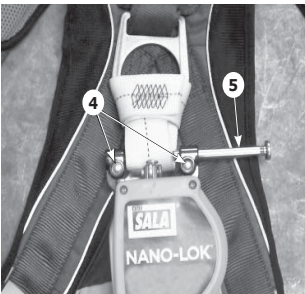


Figure F

STEP 5: Insert the Locking Pin (6) through the Web Loop. Confirm that the Locking Pin has locked in the closed position.

If properly closed, the Red Band on the Locking Pin will not be visible.



LIMITED LIFETIME WARRANTY

Warranty to End User: D B Industries, LLC dba CAPITAL SAFETY USA ("CAPITAL SAFETY") warrants to the original end user ("End User") that its products are free from defects in materials and workmanship under normal use and service. This warranty extends for the lifetime of the product from the date the product is purchased by the End User, in new and unused condition, from a CAPITAL SAFETY authorized distributor. CAPITAL SAFETY'S entire liability to End User and End User's exclusive remedy under this warranty is limited to the repair or replacement in kind of any defective product within its lifetime (as CAPITAL SAFETY in its sole discretion determines and deems appropriate). No oral or written information or advice given by CAPITAL SAFETY, its distributors, directors, officers, agents or employees shall create any different or additional warranties or in any way increase the scope of this warranty. CAPITAL SAFETY will not accept liability for defects that are the result of product abuse, misuse, alteration or modification, or for defects that are due to a failure to install, maintain, or use the product in accordance with the manufacturer's instructions.

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Distributed by Engineered Fall Protection

Sales@EngineeredFallProtection.com

www.EngineeredFallProtection.com

Tel: (314) 492-4422

