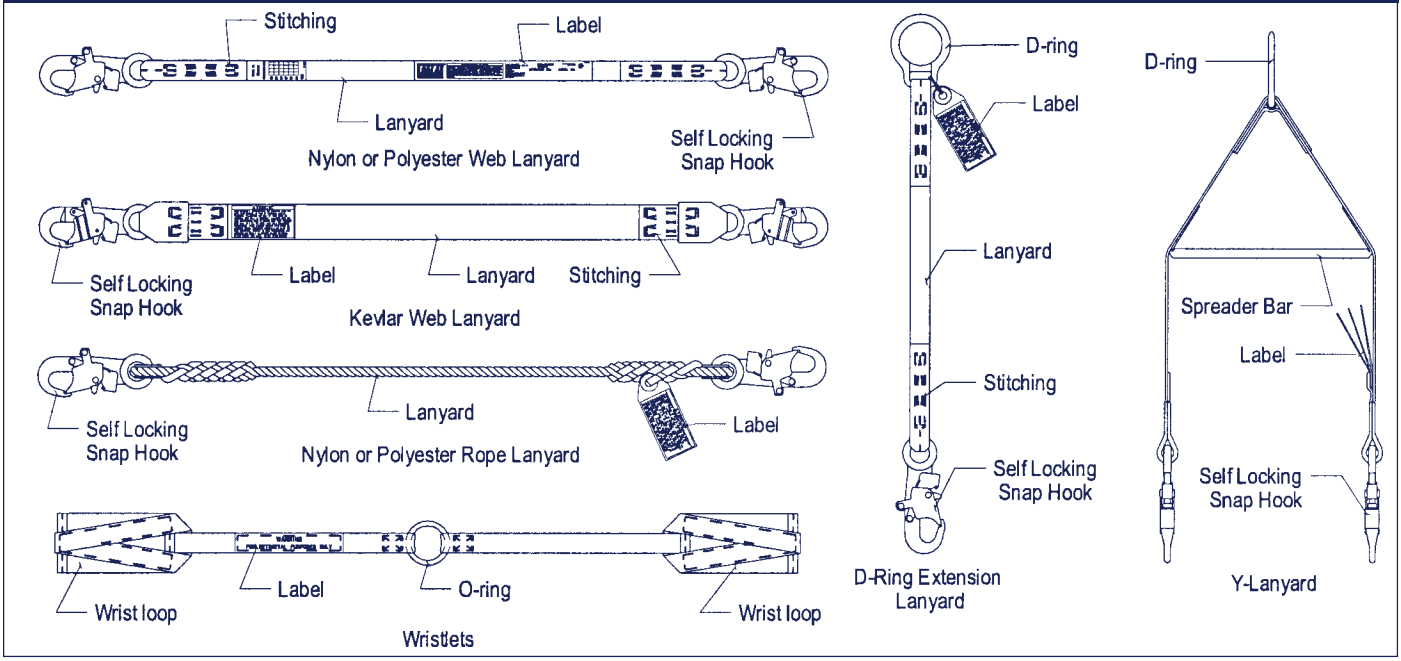
**Instructions for the following series products:**
Web Lanyards
Rope Lanyards
D-Ring Extensions

(See back pages for specific model numbers.)

# User Instruction Manual
# Web and Rope Lanyards, D-Ring Extension

*This manual is intended to meet the Manufacturer's Instructions as recommended by OSHA, and should be used as part of an employee training program.*

**Figure 1 - Web and Rope Lanyards**




## *DESCRIPTION*

**Nylon Rope Lanyards:**
Adjustable 1/2 inch rope, self locking snap hook each end.
Adjustable 5/8 inch rope, self locking snap hook each end.
1/2 inch rope, self locking snap each end.
1/2 inch rope, self locking snap hook, carabiner other end.
5/8 inch rope, self locking snap hook each end.

**Polyester Rope Lanyards:**
Adjustable 1/2 inch rope, self locking snap hook each end.
Adjustable 5/8 inch rope, self locking snap hook each end.
1/2 inch rope, self locking snap hook each end.
1/2 inch rope, self locking snap hook, carabiner other end.
5/8 inch rope, self locking snap hook each end.

**Polyester Y-Lanyards:**
1-3/4 inch polyester web, self locking snap hook each end, spreader bar, center D-ring.
1-3/4 inch polyester web, self locking snap hook each end, center D-ring.

**Polyester Web Lanyards/D-Ring Extension:**
Adjustable 1 inch web, self locking snap hook each end.
1 inch web, self locking snap hook each end.
1 inch web, self locking hook, D-ring (D-ring extension).
1 inch web, self locking snap hook, carabiner other end.
1 inch web, self locking snap hook, closed loop choker.

**Kevlar Web Lanyards:**
1-3/4 inch Kevlar web, self locking snap hook each end.
1-3/4 inch Kevlar web, self locking snap hook, 1-3/16 inch throat carabiner.

**Nylon Web Lanyards:**
Adjustable 1 inch web, self locking snap hook each end.
1 inch web, self locking snap hook each end.

**Wristlets:**
1 inch web, center O-ring, wrist loop each end.
1 inch web, Y style, center D-ring, wrist loop each end.
1 inch web, Detachable style, O-ring, 1 wrist loop.

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

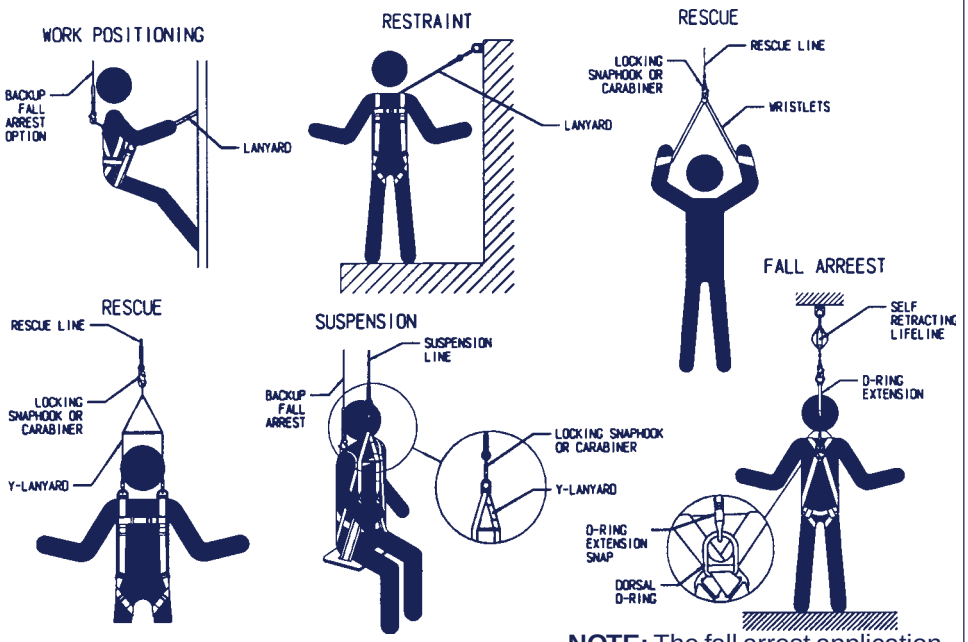
***IMPORTANT:*** *If you have questions on the use, care, application, or suitability for use of this equipment, contact DBI/SALA.*

***IMPORTANT:*** *Before using this equipment record the product identification information (found on the I.D. label) in the inspection maintenance log in section 9.0 of this manual.*

## *1.0 APPLICATION*

**1.1 PURPOSE:** DBI/SALA lanyards are to be used as part of a personal restraint, work positioning, suspension, or rescue system. The D-ring extension assembly may also be used as part of a personal fall arrest system only if it is attached to a self retracting lifeline or an energy absorbing lanyard. Applications include: inspection work, construction, demolition, maintenance, oil production, and confined space rescue. See Figure 2.

**Figure 2 - Applications**




**NOTE:** The fall arrest application is for the D-ring extension only.

**A. RESTRAINT:** The lanyard is used to prevent the user from reaching a hazard, such as leading edge work. No vertical free fall possible.

**B. WORK POSITIONING:** The lanyard is used to position or support (with a harness or body belt) the user at the work position, such as window washing or steel workers. Two feet maximum free fall.

**C. SUSPENSION:** The lanyard (generally a Y-type) is used with a chair or other support system to suspend or transport the user vertically, such as in a boatswain's chair. No vertical free fall possible.

**D. RESCUE:** The lanyard (generally a Y-type or wristlet) is used to retrieve a victim in a rescue, such as confined space rescue and retrieval. No vertical free fall possible.

**E. FALL ARREST:** The D-ring extension is used in-line wih a personal fall arrest system to assist in attachment to the system.

**1.2 LIMITATIONS:** The following application limitations must be recognized and considered before using this product:

**A. CAPACITY:** This equipment is for use by persons with a combined weight (person, clothing, tools, etc.) of no more than 310 lbs.

**B. FREE FALL:** Lanyards used for work positioning applications must be rigged to minimize any potential vertical free fall. In no case should the potential free fall be greater than two feet. For situations where the free fall may exceed two feet, a backup fall arrest system should be used. The Y-lanyards and wristlets may only be used where there is no possible vertical free fall.

If the D-ring extension assemblies are used in conjunction with a self retracting lifeline or an energy absorbing lanyard in a fall arrest application, the length of the D-ring extension assembly must be taken into account when calculating the free fall distance and the fall clearance requirements.

**C. FALL CLEARANCE:** Ensure that enough clearance exists in your fall path to prevent striking an object. The amount of clearance needed is dependent on the type and length of the lanyard used and anchorage location. See section 1.2 B.

**D. BACKUP FALL ARREST SYSTEM:** Some applications of this equipment may require the use of a backup fall arrest system; such as when using a Y-lanyard to suspend a person in a boatswain's chair.

**E. PHYSICAL AND ENVIRONMENTAL HAZARDS:** Use of this equipment in areas with physical or environmental hazards 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; heat, chemicals, corrosive environments, high voltage power lines, gases, moving machinery, and sharp edges. Contact DBI/SALA if you have any questions about using this equipment where physical or environmental hazards exists.

**F. TRAINING:** This equipment must be used by persons who have been properly trained in its correct application and use.

**1.3** Refer to applicable local, state, and federal (OSHA) requirements governing this equipment for more information on lanyards and associated system components.

## *2.0 SYSTEM REQUIREMENTS*

**2.1 COMPATIBILITY OF COMPONENTS:** DBI/SALA equipment is designed for use with DBI/SALA approved components and subsystems only. Substitutions or replacements made with non-approved components or subsystems may jeopardize compatibility of equipment and may effect the safety and reliability of the complete system.

**2.2 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 DBI/SALA 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 3. Connectors must be compatible in size, shape, and strength. Self locking snap hooks and carabiners are required by ANSI Z359.1 and OSHA.

**2.3 MAKING CONNECTIONS:** Only use self-locking snap hooks and carabiners with this equipment. Only use connectors that are suitable to each application. 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.

DBI/SALA connectors (snap hooks and carabiners) are designed to be used only as specified in each product's user's instructions. See Figure 4 for inappropriate connections. DBI/SALA snap hooks and carabiners should not be connected:

**A.** To a D-ring to which another connector is attached.

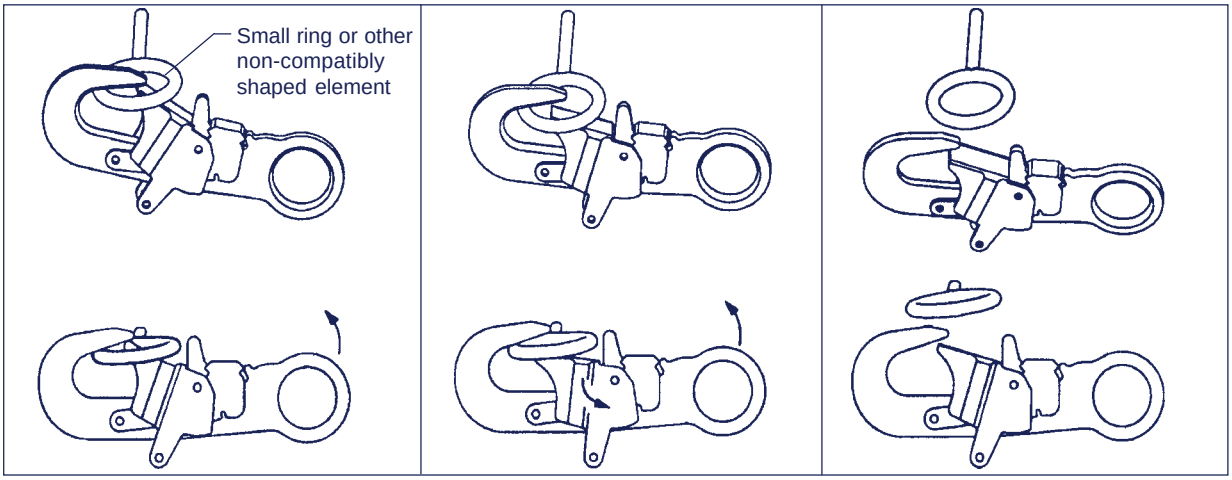
**B.** In a manner that would result in a load on the gate.

***NOTE:*** *Large throat opening 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. Large throat snap hooks are designed for use on fixed structural elements such as rebar or cross members that are not shaped in a way that can capture the gate of the hook.*

**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.

**Figure 3 - Unintentional Disengagement (Roll-out)**

If the connecting element that a snap hook (shown) or carabiner attaches to 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.



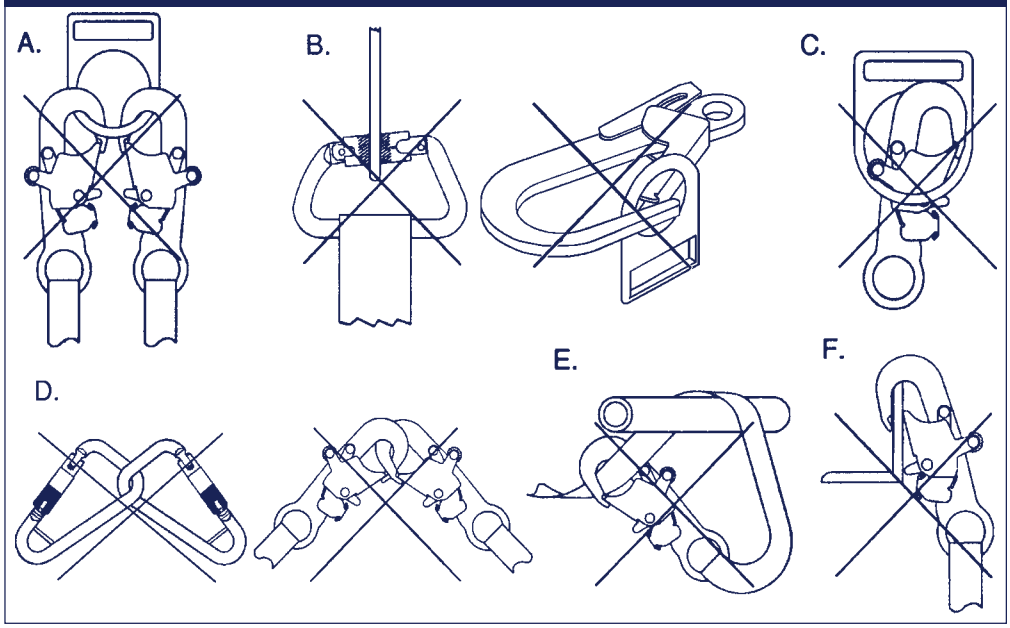

1. Force is applied to the snap hook.
2. The gate presses against the connecting ring.
3. The gate opens allowing the snap hook to slip off.

**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 allow 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.

**Figure 4 - Inappropriate Connections**




**2.4 ANCHORAGE STRENGTH:** The anchorage strength required is dependent on the application type. The following are guidelines for some application types:

**A. RESTRAINT:** Anchorages must support a minimum of 3,000 lbs. per person attached.

**B. WORKING POSITIONING:** Anchorages must support at least 3,000 lbs. per person attached; or be designed, installed, and used under the supervision of a qualified person as part of a complete system, maintaining a safety factor of at least two.

**C. SUSPENSION:** Anchorages must support a minimum of 2,500 lbs. per person attached.

**D. RESCUE:** Anchorages must support a minimum of 2,500 lbs. per person attached.

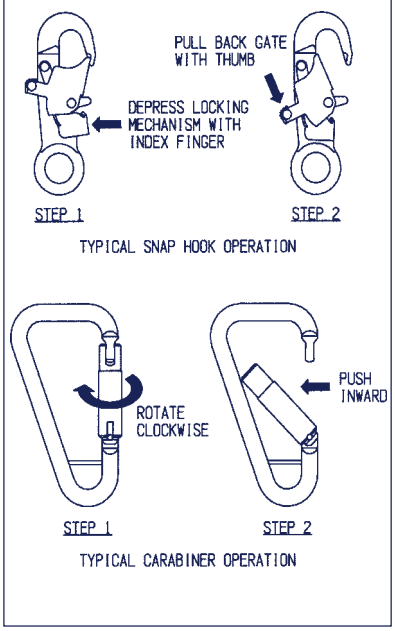
***WARNING:*** *Anchorages used for restraint, rescue, or suspension may only be used where there is no possible vertical free fall. These anchorages do not have sufficient strength for work positioning or fall arrest. Do not connect work positioning or fall arrest systems to these anchorages. Anchorages intended for work positioning may not be suitable for use for use for fall arrest systems (fall greater than two feet) and should not be used for fall arrest unless specifically designed to do so.*

## *3.0 OPERATION AND USAGE*

***WARNING:*** *Do not alter or intentionally misuse this equipment. Consult DBI/SALA 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, and sharp edges.*

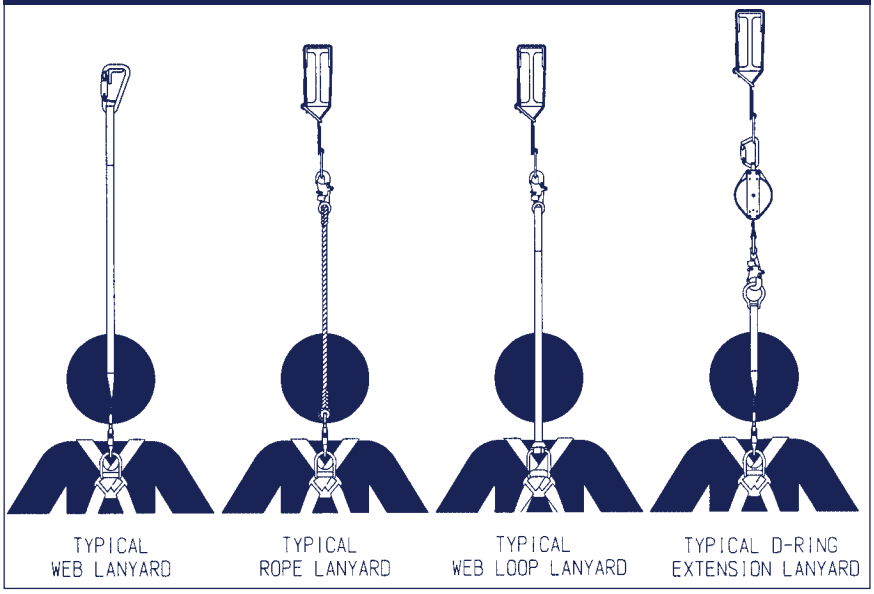
***WARNING:*** *Consult your doctor if there is reason to doubt your fitness to safely absorb the shock from a fall arrest. Age and fitness seriously affect a worker's ability to withstand falls. Pregnant women and minors must not use this equipment.*

**Figure 5 - Hook Operation**




**3.1** **BEFORE EACH USE** of this equipment, carefully inspect it to assure that it is in serviceable condition. Check for worn or damaged parts. Ensure that all hardware is present and secure. Inspect for sharp edges, burrs, cracks, or corrosion. Ensure self locking snap hooks or carabiners work properly. See Figure 5. Inspect the rope or webbing for wear, cuts, burns, frayed edges, breaks, or other damage. Refer to section 5.0 for further inspection details. Do not use if inspection reveals an unsafe condition.

**Figure 6 - Anchorage**




**3.2** **PLAN** your restraint, working positioning, suspension, or rescue system before starting your work. Consider all factors that affect your safety at any time during use. The following list gives some important points to consider when planing your system.

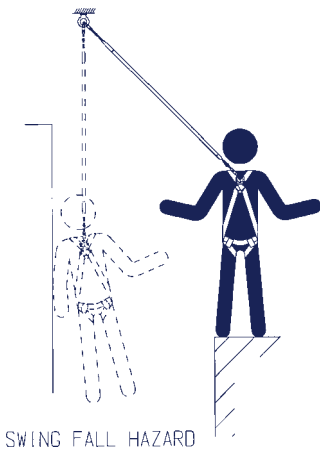
**A.** **ANCHORAGE:** Select a rigid anchorage point that is capable of supporting the required loads. See section 2.4. For work positioning systems, the anchorage location must be selected to limit the free fall to two feet, to reduce swing fall hazards, and to avoid striking an object during a fall. See Figures 6 and 7.

**B.** **FREE FALL:** Depending on the lanyard type and the application, the allowable free fall ranges from no free fall to two feet. See section 1.2.B.

**C.** **FALL CLEARANCE:** Should a fall occur, there must be sufficient clearance in the fall area to arrest the fall before striking the ground or other objects.

**D.** **BACKUP FALL ARREST:** Some suspension and work positioning applications of this equipment may require a backup fall arrest system and independent fall arrest anchorage. See OSHA guidelines when designing the system.

**Figure 7 - Swing Fall**



**E. SHARP EDGES:** Avoid working where the lanyard, subsystem, or other system components will be in contact with, or abrade against unprotected sharp edges. Do not loop the lanyard around small diameter structural members. If working with this equipment near sharp edges is unavoidable, protection against cutting must be provided by using a heavy pad or other means over the exposed sharp edge.

**F. RESCUE:** Should a fall occur, the user (employer) must have a rescue plan and the means at hand to implement it.

**G. AFTER A FALL:** Any equipment which has been subjected to the forces of arresting a fall must be removed from service immediately and destroyed or contact a factory authorized service center for repair.

***WARNING:*** *Follow the manufacturer's instructions for associated equipment (full body harness, workseat, etc.) used in your restraint, work positioning, suspension, or rescue system.*

***IMPORTANT:*** *For special (custom) versions of this product, follow the instructions herein. If included, see supplement for additional instructions.*

**3.3 MAKING CONNECTIONS:** Do not use hooks or connectors that will not completely close over the attachment object. For these situations, use a "tie-off" adapter or other anchorage connector to allow a compatible connection. Do not knot a lanyard in any manner. Do not attach a snap hook directly to a horizontal lifeline or to a webbing loop. Lanyards with web loops must only be attached to other components with compatible connections. When a web lanyard is used as a D-ring extension on a harness, connect the snap hook to the dorsal connector on the back of the harness. Always follow the manufacturer's instructions supplied with each system component.

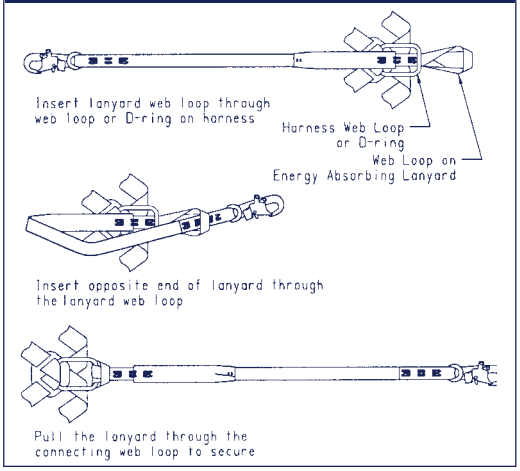
**A. CONNECTING TO ANCHORAGE OR ANCHORAGE CONNECTOR:** When using a lanyard connect one end of the lanyard to the full body harness. Connect other end of the lanyard to the anchorage or anchorage connector. Ensure the connector (self locking snap hook or carabiner) is fully engaged and locked onto the body support connecting point and anchorage or anchorage connector. See Figure 5 for operation of hooks. Ensure connections are compatible in size, shape, and strength. See the manufacturer's instructions for the anchorage for more information on making connections.

**B. CONNECTING TO THE BODY SUPPORT:** For general restraint, connect the lanyard to the dorsal D-ring between the shoulders on a full body harness. If using a body belt connect the lanyard to the D-ring and position the belt so the D-ring is located on your back side. For positioning applications connect the lanyard to the side D-rings or the front D-ring on the full body harness or body belt. Some full body harnesses incorporate shoulder D-rings. A Y-lanyard may be connected to these for rescue and suspension applications. Ensure the connections are compatible in size, shape, and strength. See the body support manufacturer's instructions for more information on making connections.

**Attaching a Lanyard with Web Loops:** See Figure 8.

1. Insert the energy absorbing lanyard web loop through the harness web loop or the D-ring.
2. Insert the opposite end of the energy absorbing lanyard through the connecting web loop.
3. Pull the attached energy absorbing lanyard through the connecting web loop to secure it.

**Figure 8 - Web Loop Connection**




***WARNING:*** *Only compatible connections may be made with the connecting loops. Use of snap hooks (self locking and non-locking types) may result in inadvertent disengagement from the web loops. Failure to follow these instructions may result in serious injury or death.*

**C. CONNECTING TO A ROPE GRAB:** For restraint or work positioning applications only. When connecting a lanyard to a rope grab connect one end to the attachment point of the rope grab and connect the other end to the body support. Some rope grabs may be supplied with a permanently attached lanyard or an energy absorbing lanyard. For these cases, use of an additional lanyard connected between the rope grab and the

body support is not recommended. In all cases, ensure that the length of the lanyard does not exceed the rope grab manufacturer's recommended maximum connection length. Ensure the connections are compatible in size, shape, and strength. See the rope grab manufacturer's instructions for more information.

**D. CONNECTING TO SELF RETRACTING LIFELINE:** For restraint applications only. DBI/SALA does not recommend connecting a lanyard to a self retracting lifeline. Special applications exist where it may be permissible.

**E. CONNECTING TO THE WRISTLET:** For emergency rescue use only. The wristlets provide a limited support and should only be used when other emergency rescue devices are impractical. Consult a qualified medical personnel before using the wristlet. To use, place at wrist location. Locate wrist between the web strap and the pad. Pull the web tight to secure the wrist. Make certain the wrist is securely captivated and the wristlet will not slide or release.

**F. CONNECTING TO THE D-RING EXTENSION ASSEMBLY:** The D-ring extension assembly may be attached to a self retracting lifeline or an energy absorbing lanyard for fall arrest applications only. The D-ring extension snap hook should be connected to the dorsal D-ring on the full body harness. The D-ring on the extension assembly is used for attachment of the snap hook on the self retracting lifeline or the energy absorbing lanyard. Ensure the connections are compatible in size, shape, and strength. See the body support, self retracting lifeline, and energy absorbing lanyard manufacturer's instructions for more information on making connections.

**3.4** After use return the lanyard for cleaning or storage as described in section 6.0.

## *4.0 TRAINING*

**4.1** It is the responsibility of all users of this equipment to understand these instructions, and to be trained in the correct installation, use, and maintenance of this equipment. These individuals must be aware of the consequences of improper installation or use of this equipment. This user manual is not a substitute for a comprehensive training program. Training must be provided on a periodic basis to ensure proficiency of the users.

***IMPORTANT:*** *Training must be conducted without exposing the trainee to a fall hazard. Training should be repeated periodically.*

## *5.0 INSPECTION*

### 5.1 FREQUENCY:

- Before each use visually inspect per steps listed in section 5.2 and 5.3
- The lanyard must be inspected by a competent person other than the user at least annually. See section 5.2 and 5.3 for guidelines. Record the results of each inspection in the inspection log found in section 9.0.

***IMPORTANT:*** *If this equipment has been subjected to forces resulting from the arrest of a fall, it must be immediately removed from service and destroyed or returned to DBI/SALA for possible repair. See section 5.2.*

***IMPORTANT:*** *Extreme working conditions (harsh environment, prolonged use, etc.) may require increasing the frequency of inspections.*

### 5.2 INSPECTION STEPS:

**Step 1.** Inspect the lanyard hardware (snap hooks, adjusters, thimbles, spreader bar, etc.). These items must not be damaged, broken, distorted, or have any sharp edges, burrs, cracks, worn parts, or corrosion. Ensure the connecting hooks work properly. The hook gates must move freely and lock upon closing. Ensure the adjusters, if present, work properly.

**Step 2.** Inspect the lanyard per the following as applicable:

**WEBBING AND STITCHING:** Inspect the webbing. The material must be free of frayed, cut, or broken fibers. Check for tears, abrasions, mold, burns, or discoloration. Inspect the stitching. Check for pulled or cut stitches. The webbing must be free of knots, excessive soiling, heavy paint buildup, and rust

staining. Check for chemical or heat damage, indicated by brown, discolored, or brittle areas. Check for ultraviolet damage, indicated by discoloration and the presence of splinters or slivers on the webbing surface. All of these above factors are known to reduce the webbing strength. Damaged or questionable webbing should be replaced.

**SYNTHETIC ROPE:** Inspect the rope for concentrated wear. The material must be free of frayed or broken strands, cuts, abrasions, burns, and discoloration. The rope must be free of knots, excessive soiling, heavy paint buildup, and rust staining. Rope splices must be tight, with five (5) full tucks, and the thimbles must be held by the splice. Check for chemical or heat damage indicated by brown, discolored, or brittle areas. Check for ultraviolet damage, indicated by discoloration and the presence of splinters and slivers on the rope surface. All of the above factors are known to reduce the rope strength. Damaged or questionable ropes should be replaced.

**Step 3.** Inspect the labels. All labels must be present and fully legible. See section 8.0.

**Step 4.** Inspect each system component or subsystem according to the associated manufacturer's instructions.

**Step 5.** Record the inspection date and results on the inspection log. See section 9.0.

**5.3** If inspection reveals a defective condition, remove the unit from service immediately and destroy, or contact a factory authorized service center for repair.

***IMPORTANT:*** *Only DBI/SALA or parties authorized in writing may make repairs to this equipment.*

## *6.0 MAINTENANCE - SERVICING - STORAGE*

**6.1** Clean the lanyard with water and a mild detergent solution. Wipe the hardware off with a clean, dry cloth, and hang it to air dry. Do not force dry with heat. If you have any questions regarding the cleaning of this equipment, or require more information contact DBI/SALA. An excessive buildup of dirt, paint, etc., may prevent the lanyard from working properly, and in severe cases degrade the webbing or rope to a point where it has become weakened and should be removed from service. If you have any questions concerning the condition of your lanyard, or have any doubt about putting it into service, contact DBI/SALA.

**6.2** Additional maintenance and servicing procedures (i.e. replacement parts) must be completed by a factory authorized service center. Authorization must be in writing.

**6.3** Store the lanyard in a cool, dry, clean environment out of direct sunlight. Avoid areas where chemical vapors may exist. Thoroughly inspect the lanyard after extended storage.

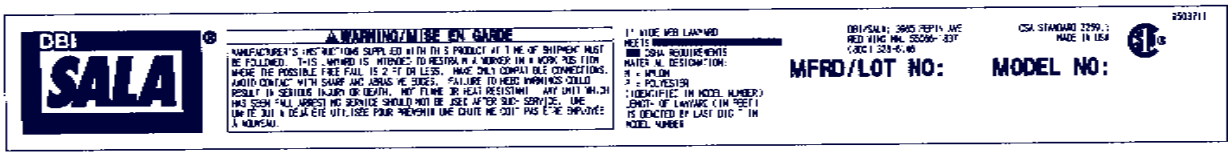
## *7.0 SPECIFICATIONS*

- Meets OSHA requirements.
- U.S. Patent Number 4,977,647 (9503175 snap hook)
- Canadian Patent Number 2,027,787 (9503175 snap hook)

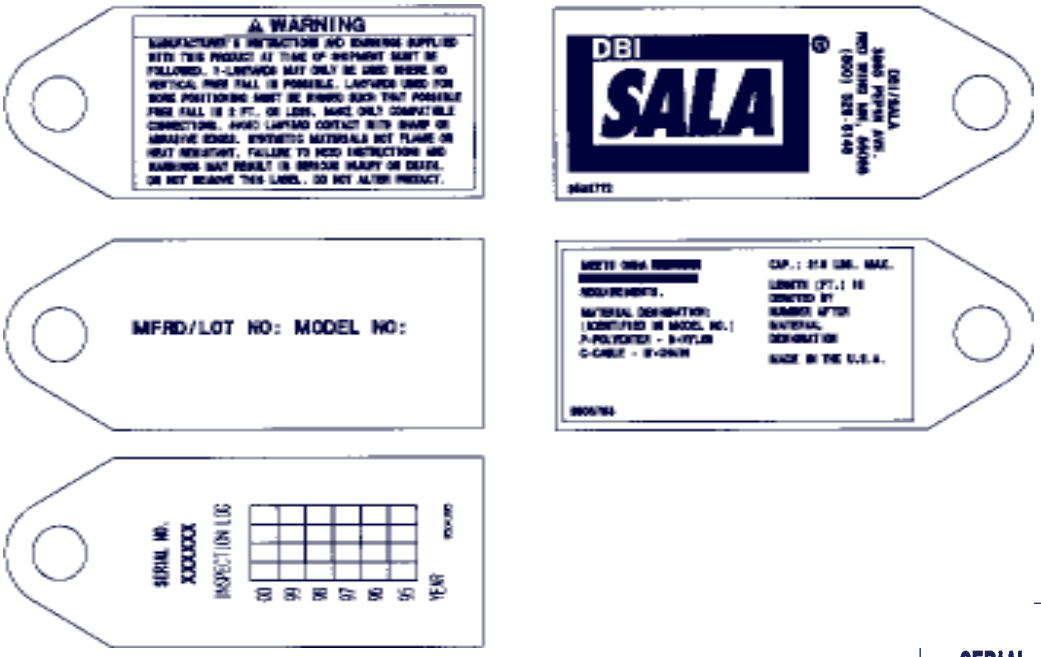
| Rope Type | Lanyard | Material Length | Hardware |
|---|---|---|---|
| Nylon | 1/2 inch diameter, 5,750 lbs. tensil strength, or 5/8 inch diameter, 9,350 lbs. tensil strength, three strand nylon rope | Fixed<br>Adjustable | Drop forged alloy steel self locking snap hook with 5,000 lbs. tensil strength. Steel self closing/locking carabiner with 5,000 lbs. tensil strength. |
| Polyester | 1/2 inch diameter, 5,750 lbs. tensil strength, or 5/8 inch diameter, 9,000 lbs. tensil strenth, three strand polyester rope | Fixed<br>Adjustable | |
| **Web Type** | **Lanyard** | **Material Length** | **Hardware** |
| Nylon | 1 inch wide adjustable, 9,000 lbs. tensil strength, or 1 inch wide fixed, 7,500 lbs. tensil strength, latex treated nylon web | Fixed<br>Adjustable | Drop forged alloy steel self locking snap hook with 5,000 lbs. tensil strength. Steel self closing/locking carabiner with 5,000 lbs. tensil strength. Drop forged alloy steel link, (adjustable models only), drop forged steel D-ring with 5,000 lbs. tensil strength. |
| Polyester | 1 inch polyester webbing, 9,800 lbs. tensil strength | Fixed<br>Adjustable | |
| Ployester | 1 3/4 inch ployester webbing, 8,800 lbs. tensil strength | Fixed | Drop forged alloy steel self locking snap hook and D-ring with 5,000 lbs. tensil strength. Aluminum spreader bar (Y-Lanyards only), covered with nylon tubular webbing. |

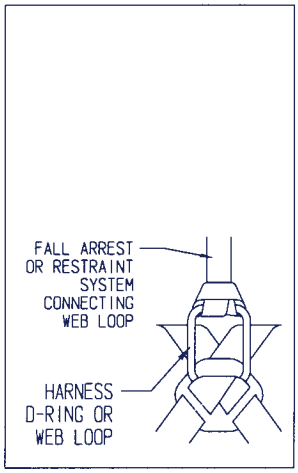
## *8.0 LABELING*

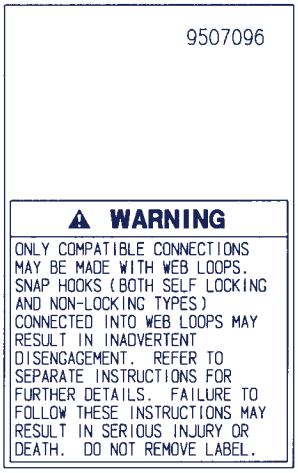
**8.1** These labels must be present and fully legible:

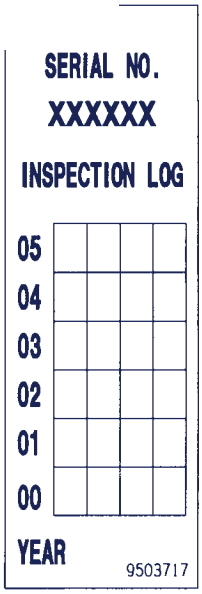




## *9.0 INSPECTION AND MAINTENANCE LOG*

**DATE OF MANUFACTURE:** _____

**MODEL NUMBER:** _____

**DATE PURCHASED:** _____

| INSPECTION DATE | INSPECTION ITEMS NOTED | CORRECTIVE ACTION | MAINTENANCE PERFORMED |
|---|---|---|---|
| | | | |
| Approved By: | | | |
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## *9.0 INSPECTION AND MAINTENANCE LOG*

**DATE OF MANUFACTURE:** _____

**MODEL NUMBER:** _____

**DATE PURCHASED:** _____

| INSPECTION DATE | INSPECTION ITEMS NOTED | CORRECTIVE ACTION | MAINTENANCE PERFORMED |
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## *9.0 INSPECTION AND MAINTENANCE LOG*

**DATE OF MANUFACTURE:** _____

**MODEL NUMBER:** _____

**DATE PURCHASED:** _____

| INSPECTION DATE | INSPECTION ITEMS NOTED | CORRECTIVE ACTION | MAINTENANCE PERFORMED |
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This instruction applies to the following models:

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1104738
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Additional model numbers may appear on the next printing of these instructions

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This instruction applies to the following models:

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Additional model numbers may appear on the next printing of these instructions

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This instruction applies to the following models:

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**USA**
3965 Pepin Avenue
Red Wing, MN 55066-1837
Toll Free: 800-328-6146
Phone: (651) 388-8282
Fax: (651) 388-5065
www.salagroup.com

**Canada**
260 Export Boulevard
Mississauga, Ontario L5S 1Y9
Toll Free: 800-387-7484
Phone: (905) 795-9333
Fax: (905) 795-8777
www.salagroup.com

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Rev: G