Saflok™

Steel Structure Fall Arrest System

Models			
ISO 9001 Certificate No. FM 39709	**2104810** ANSI Z359-1		**2104811** CSA Z259.2.1

USER INSTRUCTION MANUAL: SAFLOK™ STEEL STRUCTURE FALL ARREST SYSTEM

This manual is intended to meet the Manufacturer's Instructions requirement of applicable standards defined in Section 1.2 and should be used as part of an employee training program as required by the identified agencies.

***WARNING:** This product is part of a personal fall arrest system[1]. 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, or suitability of this equipment for your application, contact Capital Safety.*

***IMPORTANT:** Record the product identification information from the ID label in the Inspection and Maintenance Log in Section 9.*

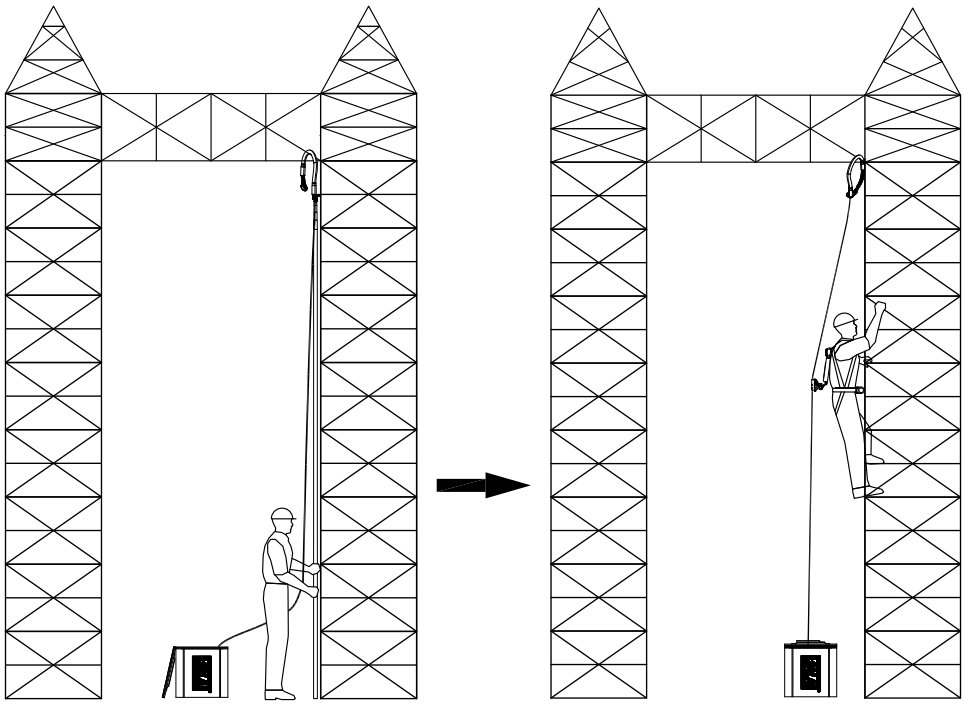
DESCRIPTION:

Figure 1 illustrates the components that comprise the Saflok™ Steel Structure Fall Arrest System. The Steel Structure Fall Arrest System consists of a dielectric Vertical Lifeline Rope (A) passing through a formed Anchor Tube (B). The Anchor Tube drapes over steel lattice or steel beam structures and is placed with a Telescoping Hot Stick (C) and attached Installation/Removal Tool (D) to suspend the lifeline vertically for attachment of a fall arrest subsystem: Rope Grab (E) with Shock Absorber (F), and Full Body Harness. A Web Strap (H) is provided to secure the bottom end of the lifeline to the base of the structure.

Figure 1 – Saflok™ Steel Structure Fall Arrest System

Item	Description	Qty.
A	Vertical Lifeline Rope	1
B	Anchor Tube	1
C	Telescoping Hot Stick *(purchased separately)*	0
D	Installation/Removal Tool	1
E F	Rope Grab with Shock Absorber	1 1
G	Web Strap	1
H	Carabiner	1
I	Carrying Bag	1

2-Rope Grabs:
Model 2104810 comes with Fuji Rope Grab
Model 2104811 comes with Protecta Rope Grab



*1 **Fall Arrest System:** A system that prevents the worker from colliding with an obstruction or lower level by arresting a fall.*

1.0 APPLICATION

1.1 PURPOSE: The Saflok™ Steel Structure Fall Arrest System is is a Vertical Lifeline System for use as part of a Personal Fall Arrest System (PFAS) when climbing and working on steel structures (I-Beam, Angle Iron, Bar Joist, Lattice Steel, etc.) in powerplants, substations, switchyards, manufacturing facilities, construction sites, etc. The system can also be used to provide an overhead anchor point on a steel structure.

1.2 STANDARDS: 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 User 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
CSA	Z259.2.1	Fall Arrestors, Vertical Lifelines, and Rails

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 SYSTEM LIMITATIONS & REQUIREMENTS

Consider the following limitations/requirements prior to installing or using this equipment:

2.1 CAPACITY: This equipment is designed for use by a one climber at a time. Combined weight of the climber (person, clothing, tools, etc.) should not exceed 310 lbs (141 kg).

2.2 ANCHORAGE: In accordance with ANSI Z359.1, anchorages selected for Fall Arrest Systems must have a strength capable of sustaining static loads applied in the directions permitted by the system of at least:

Non-Certified Anchorages:	5,000 lbs (22.2 kN)
Certified Anchorages:	2 times the Maximum Arresting Force

2.3 FALL ARREST FORCES: The Personal Fall Arrest System must limit fall arrest forces to 1,800 lbs (8 kN) and deceleration distance must not exceed 42 inches (107 cm).

2.4 FREE FALL: Per ANSI Z359.1, Personal Fall Arrest subsystems used with the Steel Structure Fall Arrest System must limit free fall to 6 feet (1.8 m). To avoid increased fall distance, do not work above the anchorage level.

2.5 FALL CLEARANCE: Ensure that adequate clearance exists in the fall path to prevent striking an object during a fall. The clearance required is dependent on the type of connecting subsystem (rope grab, lanyard), the anchorage location, and the elongation characteristics of the lifeline. Table 1 approximates elongation for varied lengths of dry Lifeline. Wet Lifelines generally elongate further than dry Lifelines.

Table 1 – Lifeline Elongation

	Lifeline Length							
	10 ft (3.0 m)	**20 ft (6.1 m)**	**30 ft (9.1 m)**	**40 ft (12.2 m)**	**50 ft (15.2 m)**	**60 ft (18.3 m)**	**70 ft (21.3 m)**	**80 ft (24.4 m)**
Elongation:	0.4 ft (11.1 cm)	0.7 ft (22.6 cm)	1.1 ft (33.7 cm)	1.5 ft (45.2 cm)	1.9 ft (56.3 cm)	2.2 ft (67.5 cm)	2.6 ft (78.7 cm)	3.0 ft (90.1 cm)

2.6 ENVIRONMENTAL HAZARDS: Use of this equipment in areas where environmental 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, or sharp edges.

2.7 BODY SUPPORT: A Full Body Harness must be used with the Saflok Steel Structure Fall Arrest System. The harness connection point must be above the user's center of gravity. A body belt is not authorized for use with the Steel Structure Fall Arrest System. If a fall occurs when using a body belt it may cause unintentional release and possible suffocation because of improper body support. Substitutions of equipment or system components must not be made without the written consent of Capital Safety.

2.8 COMPATIBILITY OF COMPONENTS: Unless otherwise noted, 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 affect safety and reliability of the complete system.

2.9 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. Connectors (hooks, carabiners, and D-rings) must be capable of supporting at least 5,000 lbs. (22 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 2). Connectors must be compatible in size, shape, and strength. Self-locking snap hooks and carabiners are required by ANSI Z359.1 and OSHA.

2.10 MAKING CONNECTIONS: Use only 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 3 for illustration of the inappropriate connections stated below. 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.

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.

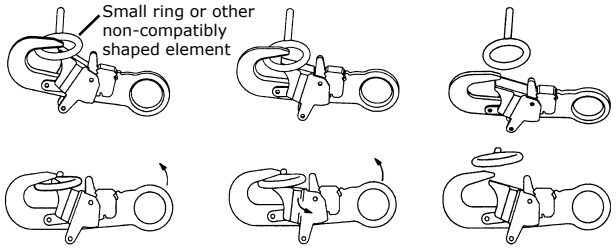
E. Directly to webbing or rope lanyard or tie-back (unless the manufacturer's instructions for both the lanyard and connector specifically allow such a connection).

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.

NOTE: *Other than 3,600 lb. (16 kN) gated hooks, 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.*

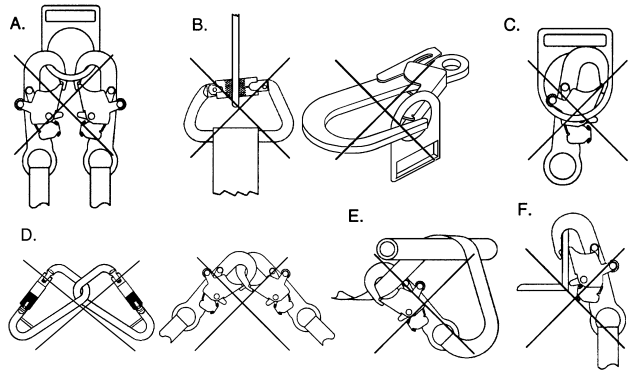
Figure 2 – Unintentional Disengagement (Rollout)

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 3 – Inappropriate Connections



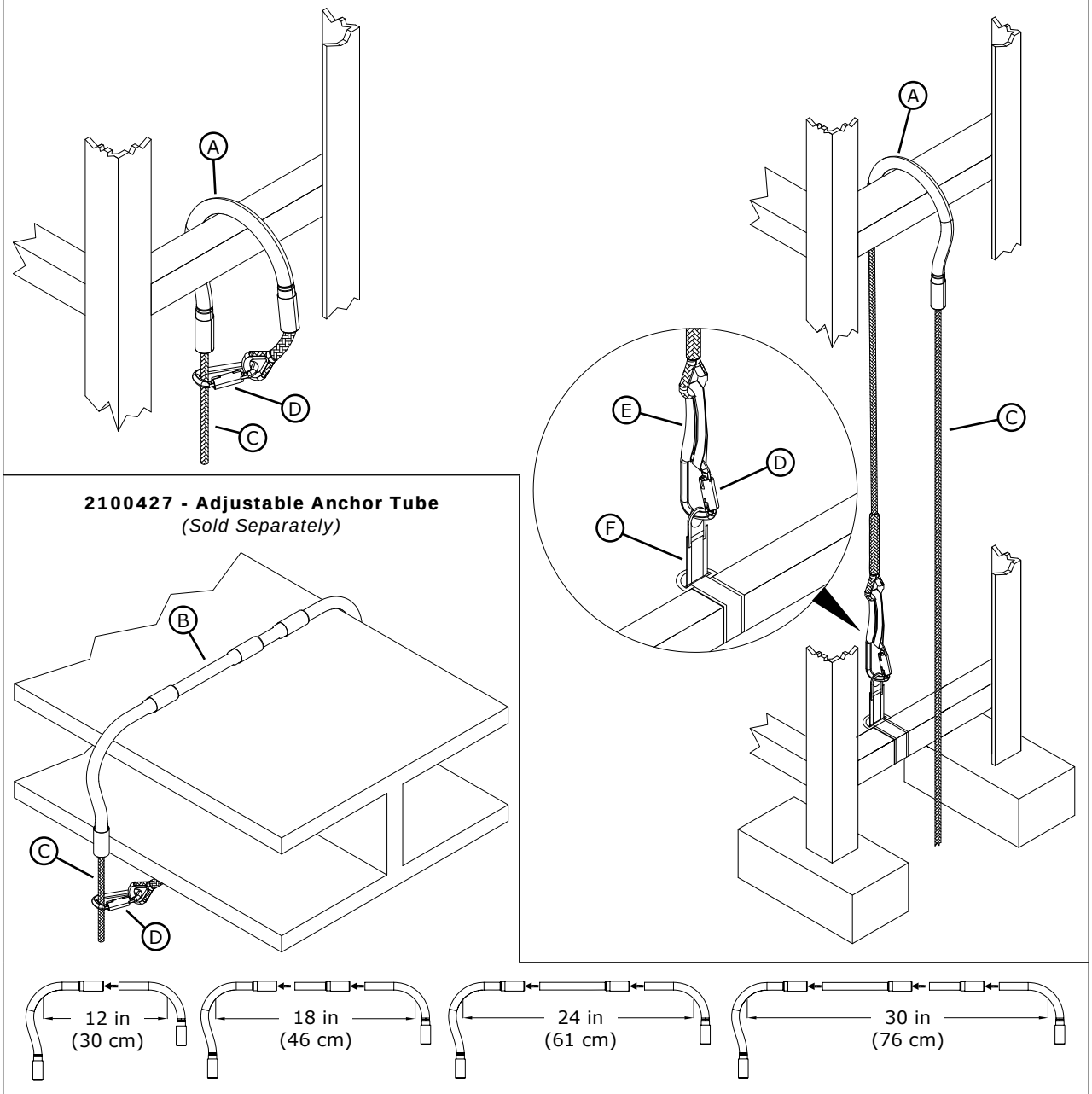
3.0 SYSTEM INSTALLATION

3.1 PLANNING: Plan your Fall Arrest System before using the Saflok™ Steel Structure System. Consider all limitations and requirements defined in Section 2 and the following logistical aspects:

A. ANCHORAGE: Figure 4 illustrates anchorage of the Vertical Lifeline with the Anchor Tube. The Anchor Tube hangs the Vertical Lifeline securely on the desired structure and shields the rope from potential abrasion with sharp edges. Select a rigid anchorage point that is capable of sustaining the loads specified in Section 2. The Anchor Tube should be positioned so it can not slide off the end of the structure on which it hangs. The Anchor Tube fits widths up to 8 in. (20 cm). For wider structures (e.g., I-Beams), an Adjustable Anchor Tube (2100427) is available that fits widths from 12 inches to 30 inches (30 cm - 76 cm). Always use the smallest tube combination required to span the steel structure.

NOTE: *The Carrying Bag is equipped with a hook and loop strap to allow use of the excess rope as a counterweight to ensure the lifeline remains taut.*

Figure 4 – Anchor Tube Anchorage



A - 2100425 Anchor Tube **B** - 2100427 Adjustable Anchor Tube *(Sold Separately)* **C** - Vertical Lifeline
D - Carabiner **E** - Web Strap **F** - Tie-Off Adapter *(Sold Separately)*

B. SHARP EDGES: Avoid working where the Steel Structure System and attached subsystems will contact or abrade against unprotected sharp edges. Do not loop the Lifeline around small diameter structural members with sharp edges. If working with the Steel Structure System around sharp edges is unavoidable, apply a heavy pad over the exposed sharp edge.

C. CLIMBING PATH: Identify the best climbing path prior to hanging the Vertical Lifeline Rope with the Anchor Tube. The Vertical Lifeline Rope will align with the Anchor Tube and should be positioned on the same side of the structure as the work area and best climbing path to avoid tangling the Lifeline.

D. GENERAL USE CONSIDERATIONS: Avoid working where your Lifeline may cross or tangle with that of another worker. Do not allow your Lifeline to pass under you arms or tangle in your feet. Follow *Live Line* procedures when working around exposed energized components. Situate the Vertical Lifeline Rope outside of the minimum approach distance.

E. RESCUE: The employer should always have a Rescue Plan in place and the ability to readily implement the plan.

3.2 INSPECTION: Prior to installing the Steel Structure System, inspect all components per the *Inspection Steps* in Section 5.

3.3 INSTALLATION - HANGING THE VERTICAL LIFELINE ROPE: After planning your Fall Arrest System (see Section 3.1), hang the Vertical Lifeline Rope from the structure with the Anchor Tube:

Step 1. Thread the Vertical Lifeline Rope through the Anchor Tube: Thread the running end of the Vertical Lifeline Rope through the Anchor Tube until the Eye Splice is fully retracted into the tube body (Figure 5).

Step 2. Install the Installation/Removal Tool on the end of the Telescoping Extension Pole: Attach the Installation/Removal Tool to the end of a dielectric tested Telescoping Extension Pole. Insert the Installation/Removal Tool in the Anchor Tube so the trailing end of the Lifeline aligns in the tapered groove on the Adapter (Figure 6).

Step 3. Raise the Anchor Tube and Vertical Lifeline Rope to a position just below the Anchorage Point: Free the trailing end of the Vertical Lifeline Rope of any knots, kinks, or tangles that might impede raising the Telescoping Extension Pole. Position the butt end of the Extension Pole on the ground below the anchorage point. Raise the Extension Pole and attached Anchor Tube to a point just below the desired anchorage by telescoping and locking each extension of the Extension Pole (Figure 7).

> ***WARNING:*** *When extending the Extension Pole, keep fingers clear of the Lock Button Holes to prevent pinching.*

> ***IMPORTANT:*** *To ease raising and lowering of the Telescoping Extension Pole, keep the pole in a vertical position (Figure 7).*

> ***NOTE:*** *Exercise care to protect the Vertical Lifeline Rope from contaminates that will reduce the rope's dielectric properties. Keeping the unused end of the Vertical Lifeline Rope in the provided Carrying Bag will help maintain the rope's dielectric properties.*

Figure 5 – Hanging the Rope

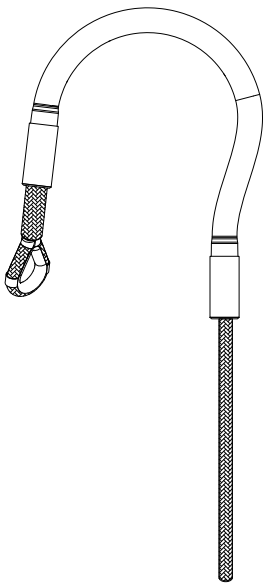


Figure 6 – Hanging the Rope

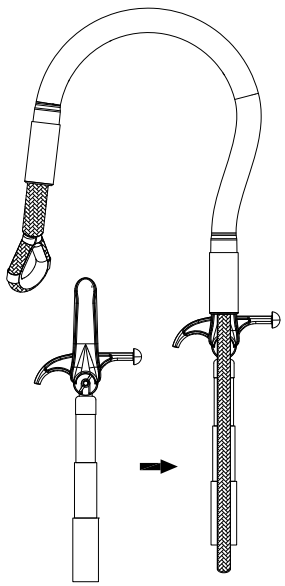


Figure 7 – Hanging the Rope

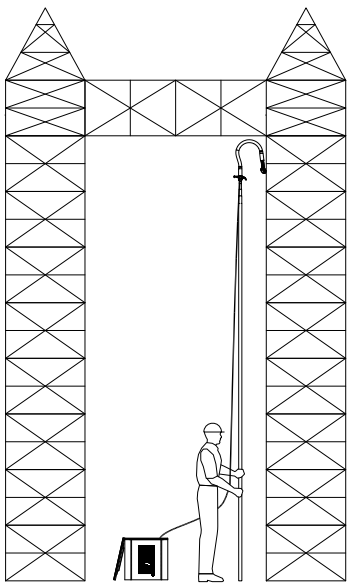


Figure 8 – Hanging the Rope

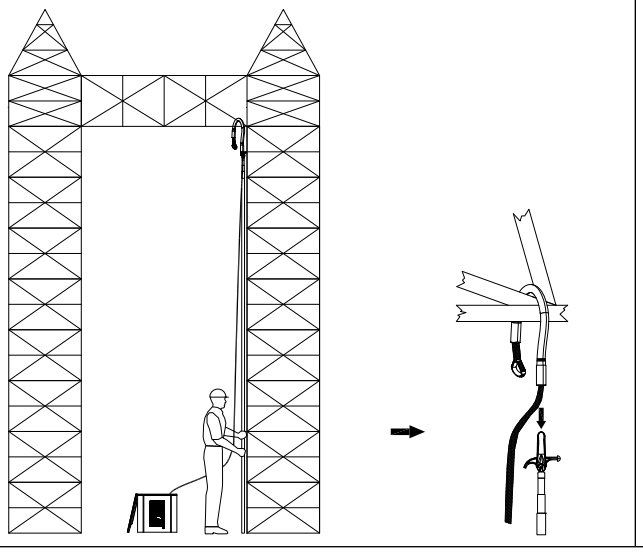
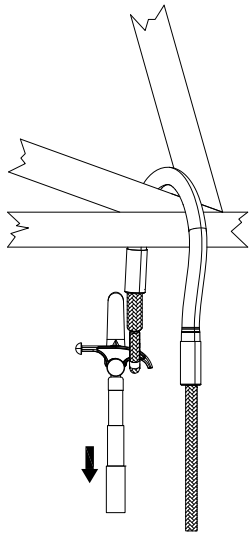


Figure 9 – Hanging the Rope



Step 4. **Hang the Anchor Tube over the Structure at the Anchorage Point**: Lift up on the Extension Pole slightly and then twist the Anchor Tube into position on the desired anchorage point(s). When the Anchor Tube is in position, lower the Extension Pole slightly to Hang the Anchor Tube on the anchorage and remove the Installation/Removal Tool (Figure 8).

Step 5. **Retrieve the Eye Splice end of the Vertical Lifeline Rope for anchorage purposes:** Insert the Rope Hook end of the Installation/Removal Tool through the the Eye Splice and then retract the Telescoping Extension Pole to pull the Vertical Lifeline Rope through the Anchor Tube and retrieve the Eye Splice (Figure 9).

3.4 INSTALLATION - ANCHORING THE VERTICAL LIFELINE ROPE: Once the Anchor Tube is correctly secured on the structure, the Vertical Lifeline Rope should be anchored at the top or bottom of the structure (see Figure 4). The excess unattached rope end can be coiled in the Carrying Bag and used as a counterweight to keep the lifeline taught while climbing:

To anchor the Vertical Lifeline Rope at the top of the structure with the Anchor Tube:

Step 1. Secure the provided Carabiner to the Eye Splice on the Vertical Lifeline Rope.

Step 2. Pass the Plain End of the Vertical Lifeline Rope through the Carabiner.

Step 3. Grasp the Plain End of the Lifeline and pull the Vertical Lifeline Rope through the Anchor Tube until the Eye Splice and Carabiner are snug against the Anchor Tube and structure (Figure 4).

> ***WARNING:*** *If the Carabiner is not snug against the Anchor Tube and structure, slack in the system can create additional free fall which may result in serious injury or death.*

To anchor the Vertical Lifeline Rope at the bottom of the structure with a Tie-Off Adapter:

Step 1. Position the Tie-Off Adapter (purchased separately) over proper anchorage near the base of the structure (see Figure 4). Wrap the small D-Ring end of the Tie-Off Adapter around the anchorage and then pass the small D-Ring through the large D-Ring on the opposite end of the Tie-Off Adapter. Pull the the small D-Ring end until the Tie-Off Adapter is tight around the anchorage.

Step 2. Insert the Web Strap midway through the Eye Splice on the Vertical Lifeline Rope so a loop protrudes from each side of the Eye Splice (Figure 4).

Step 3. Insert the Carabiner through the small D-Ring on the Tie-Off Adapter and then lock the Carabiner to secure the Vertical Lifeline Rope to the Tie-Off Adapter. (Figure 4).

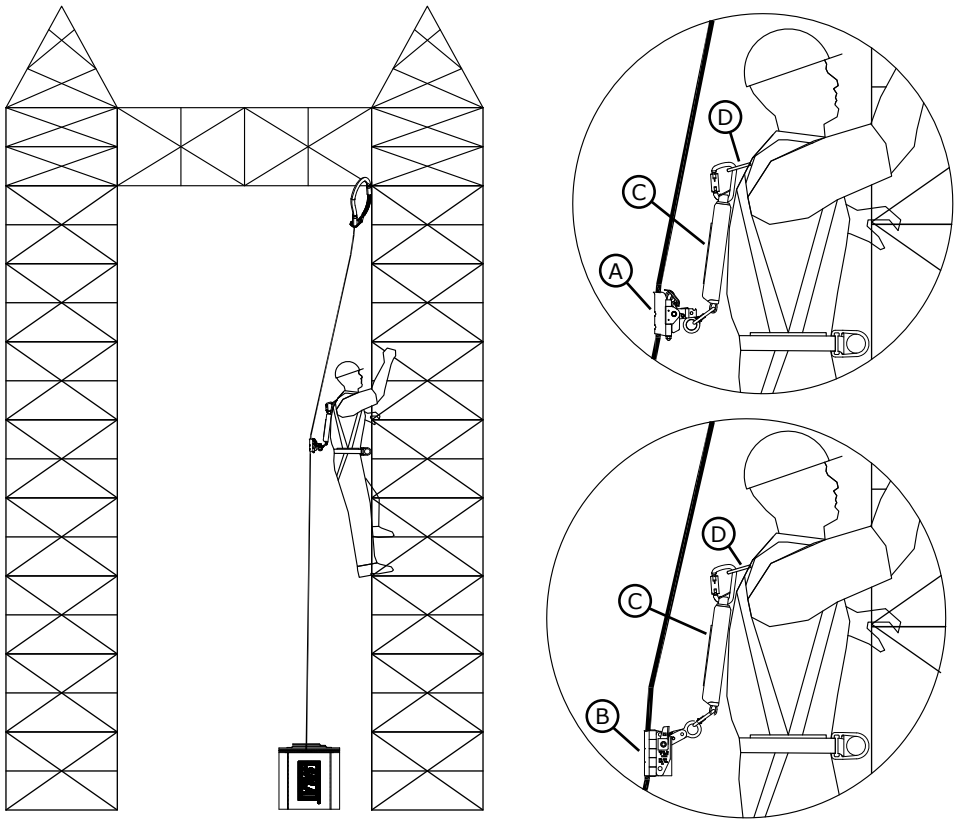
4.0 SYSTEM OPERATION

The Saflok Steel Structure System is designed for use with a Rope Grab in a single-person fall arrest system (see Figure 10).

> ***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 or minors must not use DBI-SALA Vertical Lifelines or subsystems.*

Figure 10 – Saflok Steel Structure System Use



A - Fujii Denko Rope Grab **B** - Protecta Cobra Rope Grab **C** - Shock Absorber **D** - Dorsal D-Ring

4.1 BEFORE EACH USE: Inspect the components of the Steel Structure System according to the Inspection Guidelines (Section 5.2). Inspect the Full Body Harness according to the manufacturer's instructions.

4.2 USE: Figure 10 illustrates use of the Saflok Steel Structure System. Operating procedures are as follows:

> ***WARNING:*** *If the Saflok Steel Structure Fall Arrest System is subjected to fall arrest forces, it should be removed from service and destroyed.*

Step 1. Don a Full Body Harness: A Full Body Harness equipped with a back Dorsal D-ring should always be used with the Steel Structure System. Don the harness per the manufacturer's instructions.

Step 2. Attach the the Rope Grab Shock Absorber to the Full Body Harness: The Rope Grab (A or B) is equipped with an attached Shock Absorber (C). Secure the Carabiner on the end of the Shock Absorber to the Dorsal D-ring on the Full Body Harness (D).

Step 3. Attach the Rope Grab to the Vertical Lifeline Rope: ANSI systems are equipped with a Fujii Denko Rope Grab (see Figure 11). CSA systems are equipped with a Protecta Cobra Rope Grab (see Figure 12).

Step 4. Climb up and down the structure with the Rope Grab sliding up or down the Vertical Lifeline as you ascend or descend:

A. Using the Shock Absorber connected to the Rope Grab, pull up slightly on the Rope Grab's Locking Cam to release it from the locked position. Always keep a minimum of 12 feet (3.7 m) of rope below the Rope Grab to accommodate locking distance and fall clearance.

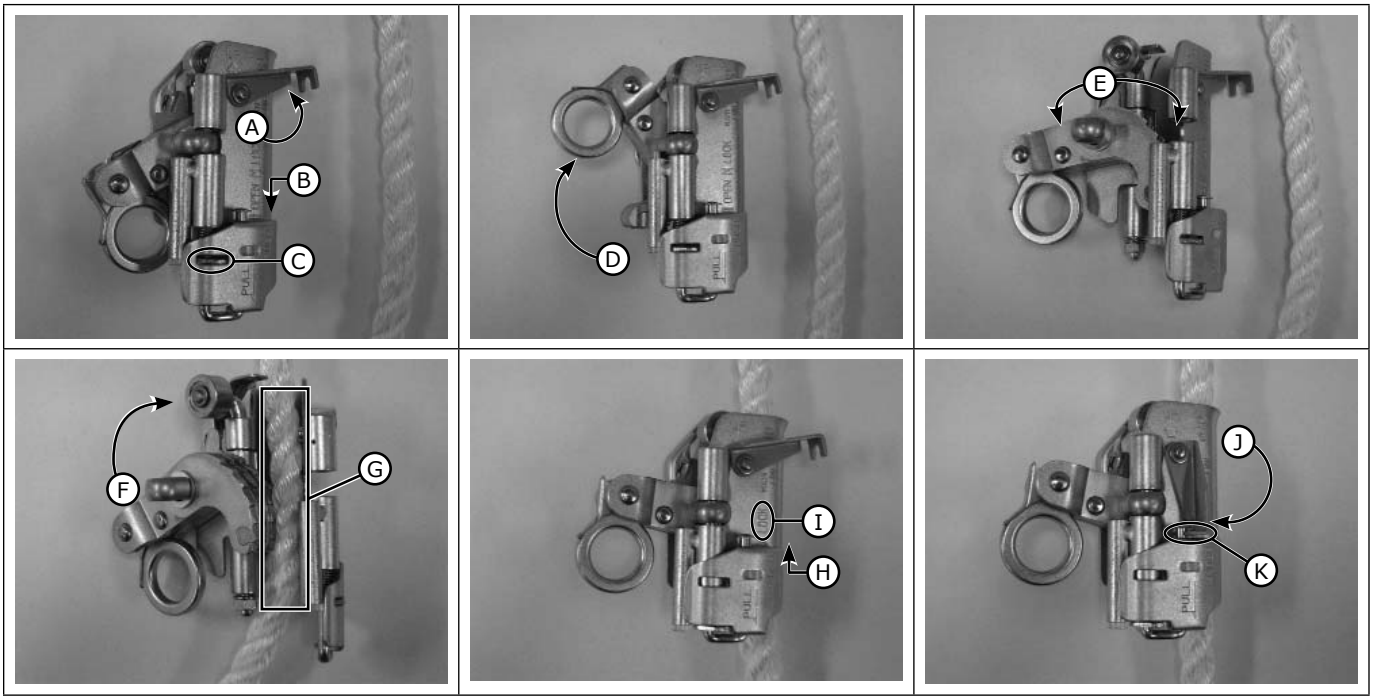
B. Maintain upward pressure on the Rope Grab's Locking Cam as you climb to allow the Rope Grab to travel on the Vertical Lifeline Rope without locking. To assure smooth travel of the Rope Grab on the lifeline, apply tension to the Vertical Lifeline Rope. Lifeline tension can be achieved by adding a weight on the unanchored end of the Vertical Lifeline Rope or using the excess unanchored rope end coiled in the Carrying Bag as a counterweight.

C. When stationary, position the Rope Grab as high as possible on the Vertical Lifeline Rope to reduce possible free fall. Lock the Rope Grab at the desired position by pulling the Locking Cam all the way down or enabling the Parking Feature (Section 4.3). The Locking Cam must be released before attempting to reposition the Rope Grab.

IMPORTANT: *To ensure optimal safety when using the Rope Grab and Vertical Lifeline Rope:*

- *Always protect the lifeline if passing over or around sharp edges. Sharp edges can reduce rope strength by 70% or more.*
- *Keep lifelines clean.*
- *Avoid twisting or kinking lifelines when coiling or uncoiling.*
- *Avoid using lifelines near acids or alkalies. If the lifeline is used around chemicals or compounds, watch for signs of deterioration.*
- *Never use a knotted lifeline, knots can reduce rope strength by 50%.*
- *Store lifelines properly (see Section 6.2).*

Figure 11 – Fuji-Denko Rope Grab (9502781)



Attaching the Rope Grab to the Vertical Lifeline Rope:

1. Ensure the Rope Grab is upright with the 'UP' arrow on the the Rope Grab pointing toward the top of the structure. The Rope Grab incorporates a Gravity-Lock Pin which slides out and prevents the Lifeline Sleeve from mating with the Rope Grab Cam if the Rope Grab is not held upright.
2. Rotate the red Latch Lever (A) counterclockwise.
3. Push in on the Safety Latch (B) where indicated and slide the Safety Latch down. When the *"OPEN"* marking on the Rope Grab Body is revealed, hook the Slot on the Safety Latch over the Tab on the Rope Grab Shell (C).
4. Push the Locking Cam to the *"UP"* position (D) and open the Rope Grab Shell (E).
5. To install the Rope Grab on the Vertical Lifeline Rope, raise the Locking Cam to the 'UP' position, align the rope inside the Lifeline Channel (G) and close the hinged Rope Grab halves.
6. Push down on the Safety Latch where indicated to release the Safety Latch from the Tab (H). The Safety Latch will slide back up to the "LOCK" position (I).
7. Rotate the red Latch Lever clockwise (J) so the fork in the end of the lever slides over the peg on the top of the Safety Latch (K).
8. Test the Rope Grab for proper operation by pulling down on the Locking Cam. The Rope Grab should lock onto the Vertical Lifeline Rope and prevent descent down the lifeline once the Cam is engaged.

Parking Feature: The Rope Grab's Parking Feature prevents the Rope Grab from traveling down the Vertical Lifeline Rope; allowing the user to remain on the lifeline for extended periods without the threat of the Rope Grab slipping down the lifeline when the user is inactive. The Rope Grab operates in manual mode while the Parking Feature is engaged. To activate the Parking Feature, release the Auto-Locking Lever (A) from the tab (B) on the side of the Rope Grab Shell so it rotates from vertical to horizontal. To deactivate the Parking feature, return the Auto-Locking Lever to an upright position so the hole in the lever (C) catches on the tab (B) on the side of the Rope Grab. While in Park, lift up on the Locking Cam to unlock the Rope Grab, and allow travel up and down the Vertical Lifeline Rope.

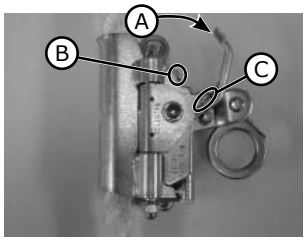
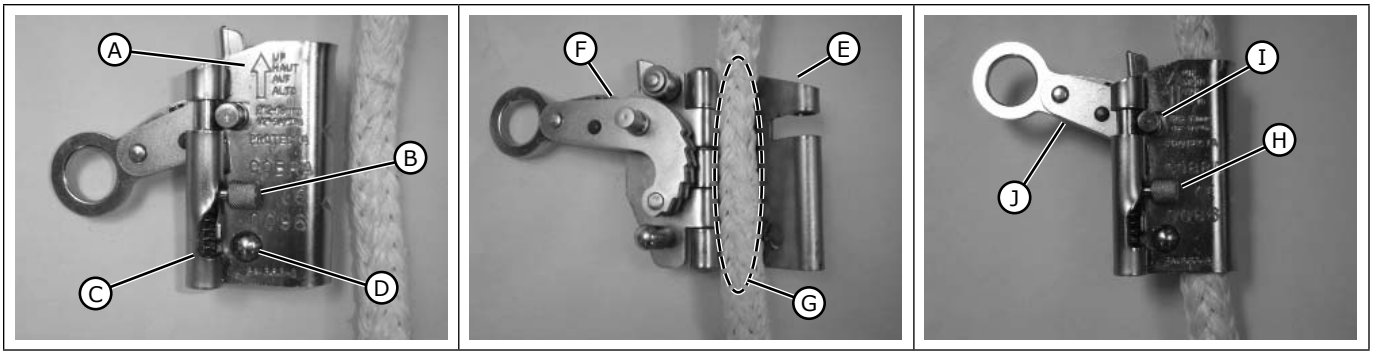


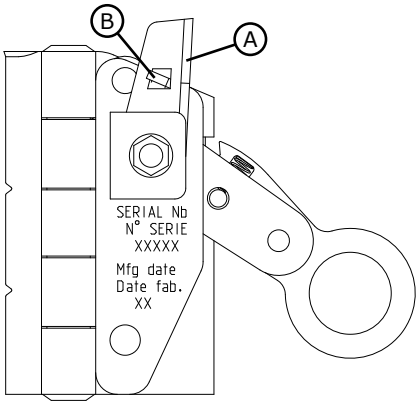
Figure 12 – Protecta Cobra Rope Grab (9505119)



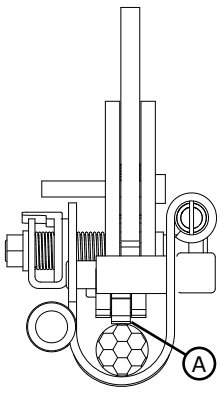
Attaching the Rope Grab to the Vertical Lifeline Rope:

1. Ensure the Rope Grab is in the 'UP' position with the arrow (A) on the the Rope Grab pointing toward the top of the structure. The Rope Grab incorporates a Gravity-Lock Pin which slides out and prevents the Lifeline Sleeve from mating with the Rope Grab Cam if the Rope Grab is not held upright.
2. Push the Opening Lever (B) down until it reaches the bottom of the groove (C) and then slide it inward until the Release Button (D) is completely pressed and covered by the Opening Lever.
3. Pull the Lifeline Sleeve (E) and Locking Cam (F) halves apart until the Rope Grab is fully opened.
4. To install the Rope Grab on the Vertical Lifeline Rope, raise the Locking Cam (F) to the 'UP' position, align the rope inside the Lifeline Channel (G) and close the hinged Rope Grab halves.
5. Closing the Rope Grab halves releases the Opening Lever (H) from the open position and slides the Lock Pin (I) into the Lock Ring at the top of the Lifeline Sleeve. The Opening Lever should be resting at the top of the groove against the Lifeline Sleeve.
6. Test the Rope Grab for proper operation by pulling down on the Locking Cam (J). The Rope Grab should lock onto the Vertical Lifeline Rope and prevent descent down the lifeline once the Cam is engaged.

Parking Feature: The Rope Grab's Parking Feature prevents the Rope Grab from traveling down the Vertical Lifeline Rope; allowing the user to remain on the lifeline for extended periods without the threat of the Rope Grab slipping down the lifeline when the user is inactive. The Rope Grab operates in manual mode while the Parking Feature is engaged. To activate the Parking Feature, release the Auto-Locking Lever (A) from the tab (B) on the side of the Rope Grab so it rotates from vertical to horizontal. To deactivate the Parking feature, return the Auto-Locking Lever to an upright position so the hole in the lever catches on the tab on the side of the Rope Grab. While in Park, lift up on the Locking Cam to unlock the Rope Grab and allow travel up and down the Vertical Lifeline Rope.



Anti-Panic Grip Feature: Rope Grabs with the Anti-Panic Grip feature are equipped with an additional Center Cam (A) between the two sides of the Locking Cam. In the event of a fall, the user may grasp the Rope Grab in a manner that forces the Locking Cam into the open position. When the Locking Cam is forced beyond the open position, the additional Center Cam pushes out and into the lifeline; stopping the fall even though the Locking Cam is in the open position.



5.0 INSPECTION

5.1 FREQUENCY:

- **Before Each Use:** Visually inspect all components of the Saflok Steel Structure Fall Arrest System per the guidelines defined in Section 5.2. Check the labels on theShock Absorber and Vertical Lifeline Rope (see Section 8) to verify that annual inspection is current. If the condition of any component in the system is in doubt, do not use.
- **Annual Inspection:** A formal inspection of all components comprising the Saflok Steel Structure Fall Arrest System must be performed at least annually by a competent person[1] other than the user.
- **After a Fall:** If a fall occurs while using the Saflok Steel Structure Fall Arrest System, a formal inspection of the entire system must be performed by a competent person other than the user.

5.2 INSPECTION GUIDELINES: To ensure safe efficient operation, components of the Saflok Steel Structure Fall Arrest System should be inspected per the following guidelines:

Full Body Harness:	**Before Each Use**	**Every Year**	**After a Fall**
Inspect the Full Body Harness per the manufacturer's instructions.	**X**	**X**	**X**

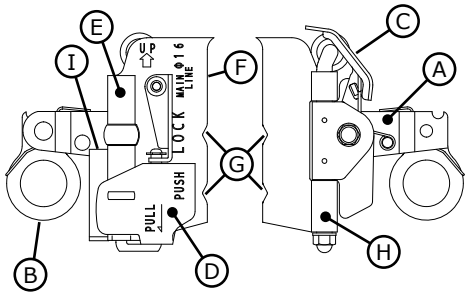
Vertical Lifeline Rope:	**Before Each Use**	**Every Year**	**After a Fall**
Lifeline hardware must not be damaged, broken, distorted, or have any sharp edges, burrs, cracks, worn parts, or corrosion. Ensure included Carabiners work properly. Carabiner gates must move freely and lock upon closing.	X	X	X
Inspect the Vertical Lifeline Rope for concentrated wear. The material must be free of frayed strands, broken yarns, 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 full tucks, and thimbles must be held by the splice. Cracked or distorted rope thimbles may indicate that the lifeline has been impact loaded. 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 rope strength. Damaged or questionable ropes must be replaced.	**X**	**X**	Remove from Service
Inspect labels (identified in Section 8). All labels must be present and fully legible. Replace labels if illegible or missing.	**X**	**X**	**X**

Fujii-Denko Rope Grab: Reference Figure 13.	**Before Each Use**	**Every Year**	**After a Fall**
Inspect the Attachment Eye (B) and Locking Cam (A) to ensure that the cam moves freely without hesitation, binding, or sticking.	**X**	**X**	**X**
Inspect the Locking Cam (A) and ensure that the teeth are not rounded or worn.	**X**	**X**	**X**
Inspect the Locking Cam (A) and Auto-Locking Lever (C) springs. Ensure they are in the proper location and undamaged.	**X**	**X**	**X**
Inspect the spring for the Safety Latch (D) and ensure it is in the proper location and undamaged.	**X**	**X**	**X**
Slide the Safety Latch (D) down and then release it to ensure that the Locking Pin travels freely in the Locking Sleeve (E) .		**X**	**X**
The halves of the Rope Grab must close and open freely on the hinge. Inspect the Lifeline Channel (F) and ensure that there are no dips or depressions worn into the channel and the Dimples (G) are without damage. Ensure all markings are legible.		**X**	**X**
Inspect the Hinge (H), Attachment Eye (B), and the rest of the Rope Grab for signs of corrosion, wear, cracks, distortion or other damage.		**X**	**X**
With the Rope Grab open and upside-down, the Gravity-Lock Pin (I) should drop down and prevent the Rope Grab from closing		**X**	**X**
Activate the Parking Feature (Figure 11) and verify that there is resistance against the Locking Cam (A) when attempting to raise the Attachment Eye (B). With the parking feature deactivated, there should be no resistance on the Locking Cam.		**X**	**X**

*1 **Competent Person:** An individual knowledgeable of a manufacturer's recommendations, instructions, and manufactured components who is capable of identifying existing and predictable hazards in the proper selection, use, and maintenance of fall protection equipment.*

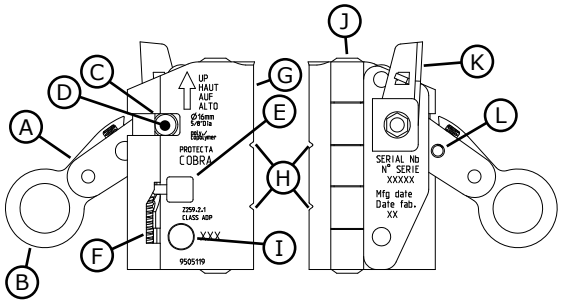
Protecta Cobra Rope Grab: Reference Figure 14.	**Before Each Use**	**Every Year**	**After a Fall**
Inspect the Attachment Eye (B) and Locking Cam (A) to ensure that the cam moves freely without hesitation, binding, or sticking.	**X**	**X**	**X**
Inspect the Locking Cam (A) and ensure that the teeth are not rounded or worn.	**X**	**X**	**X**
Inspect the Locking Cam (A) Lever Spring and Auto-Locking Lever Springs. Ensure they are in the proper location and undamaged.	**X**	**X**	**X**
Inspect the spring for the Lock Pin (D) spring (located in the Groove [F]) and ensure it is in the proper location and undamaged.		**X**	**X**
Use the Opening Lever (E) to ensure that the Locking Pin (D) travels freely up and down the Locking Sleeve .		**X**	**X**
Test repeatedly that the Rope Grab opens when the Release Button (I) is depressed with the Opening Lever (E). The Release Button must be fully extended after the Rope Grab is closed.		**X**	**X**
The two halves of the Rope Grab must close and open freely on the hinge. Inspect the Lifeline Channel (G) and ensure that there are no dips or depressions worn into the channel and that the Dimples (H) are without damage. Ensure all the labels and engravings are legible.		**X**	**X**
Inspect the Hinge (J), Attachment Eye (B), and the rest of the Rope Grab for signs of corrosion, wear, cracks, distortion or other damage.		**X**	**X**
With the Rope Grab open and upside-down, the Gravity-Lock Pin should drop down and prevent the Rope Grab from closing		**X**	**X**
Activate the Parking Feature (Figure 12) and verify that there is resistance against the Locking Cam (A) when attempting to raise the Attachment Eye (B). With the parking feature deactivated, there should be no resistance on the Locking Cam.		**X**	**X**
To test models equipped with the Anti-Panic Grip Feature: Install the Rope Grab on the Vertical Lifeline Rope. Pass the thumb on one hand through the Attachment Eye (B) and grasp the Rope Grab body with the rest of the hand. Force the Attachment Eye to open the Locking Lever until it stops. Run the Rope Grab down the lifeline and ensure that it locks onto the lifeline.		**X**	**X**

Figure 13 – Inspection, Fujii-Denko Rope Grab



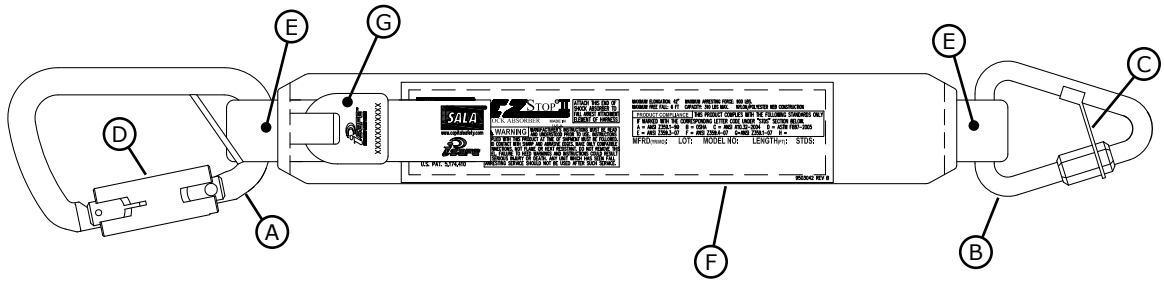
A - Locking Cam **B** - Attachment Eye **C** - Auto-Locking Lever **D** - Safety Latch **E** - Locking Sleeve **F** - Lifeline Channel **G** - Dimple **H** - Hinge **I** - Gravity-Lock Pin

Figure 14 – Inspection, Protecta Cobra Rope Grab



A - Locking Cab **B** - Attachment Eye **C** - Lock Ring **D** - Lock Pin **E** - Opening Lever **F** - Groove **G** - Lifeline Channel **H** - Dimple **I** - Release Button **J** - Hinge **K** - Auto-Locking Lever **L** - Locking Arm Spring

Figure 15 – Inspection, Shock Absorber



A - Carabiner **B** - Delta Link **C** - Delta Link Lock **D -** Gate **E -** Webbing **F -** Shock Absorber **G -** i-Safe™ RFID Tag

Shock Absorber: Reference Figure 15.	**Before Each Use**	**Every Year**	**After a Fall**
Inspect the condition of the Carabiner (A) and Delta Link (B). They must not be damaged or broken. They should be free of any sharp edges, burrs, cracks, worn parts, or corrosion. The Gate (C) on the Carabiner should move freely and lock upon closing. The Lock (D) on the Delta Link should be securely in place and undamaged.	**X**	**X**	**X**
Inspect the Webbing (E). All Webbing should be free of frayed, cut or broken fibers. Check for tears, abrasions, mold, burns, discoloration, etc. 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 the above factors are known to reduce webbing strength. Damaged or questionable webbing should be replaced. Inspect stitching for pulled or cut stitches. Broken stitches may indicate the Energy Absorber (F) has been impact loaded and must be removed from service.	**X**	**X**	**X**
Inspect the Energy Absorber to determine if it has been activated. There should be no evidence of elongation. Ensure the cover on the Energy Absorber is secure and not torn or damaged.	**X**	**X**	Remove from Service

Anchor Tube:	**Before Each Use**	**Every Year**	**After a Fall**
The Anchor Tube must not be damaged or broken. It should be free of any sharp edges, burrs, cracks, worn areas, or abrasions.	**X**	**X**	**X**

5.3 INSPECTION RECORDS: After each inspection, record the inspection date and results in the Inspection & Maintenance Log at the back of this instruction manual.

5.4 I-Safe™ RFID TAG: The Shock Absorber is equipped with an i-Safe™ Radio Frequency Identification (RFID) tag (Figure 16). The RFID tag can be used in conjunction with the i-Safe handheld reading device and web based portal to simplify inspection and inventory control and provide records for your fall protection equipment. If you are a first-time user, contact a Capital Safety Customer Service representative (see back cover); or if you have already registered, access the i-Safe portal on www.capitalsafety.com. Follow the instructions provided with your i-Safe handheld reader or on the web portal to transfer your data to your web log.

5.5 UNSAFE OR DEFECTIVE CONDITIONS: If inspection reveals an unsafe or defective condition in a component of the Saflok Steel Structure Fall Arrest System, remove the component from service and destroy it.

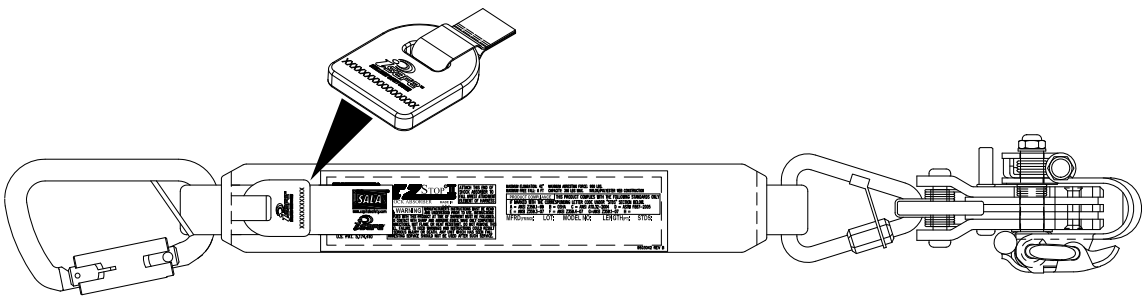
6.0 MAINTENANCE, STORAGE, AND TRANSPORT

6.1 MAINTENANCE: Clean the Rope Grab, Shock Absorber, and Vertical Lifeline Rope with water and a mild soap solution. Wipe off hardware with a clean, dry cloth, and hang to air dry. Do not force dry with heat. An excessive buildup of dirt, paint, etc. may prevent components of the Steel Structure System from working properly, and in severe cases degrade components to a point where they have weakened and should be removed from service. If you have any questions concerning the condition of any component of the Steel Structure System, or have any doubt about putting them into service, contact Capital Safety.

6.2 STORAGE: When not in use, store the Saflok Steel Structure System in a cool, dry, clean environment; out of direct sunlight. Avoid areas where chemical vapors exist. After extended storage, thoroughly inspect all components per the guidelines in Section 5.2.

6.3 TRANSPORT: Transport the Saflok Steel Structure System in the provided Carrying Bag.

Figure 16 – i-Safe™ Radio Frequency Identification (RFID) Tag



7.0 SPECIFICATIONS

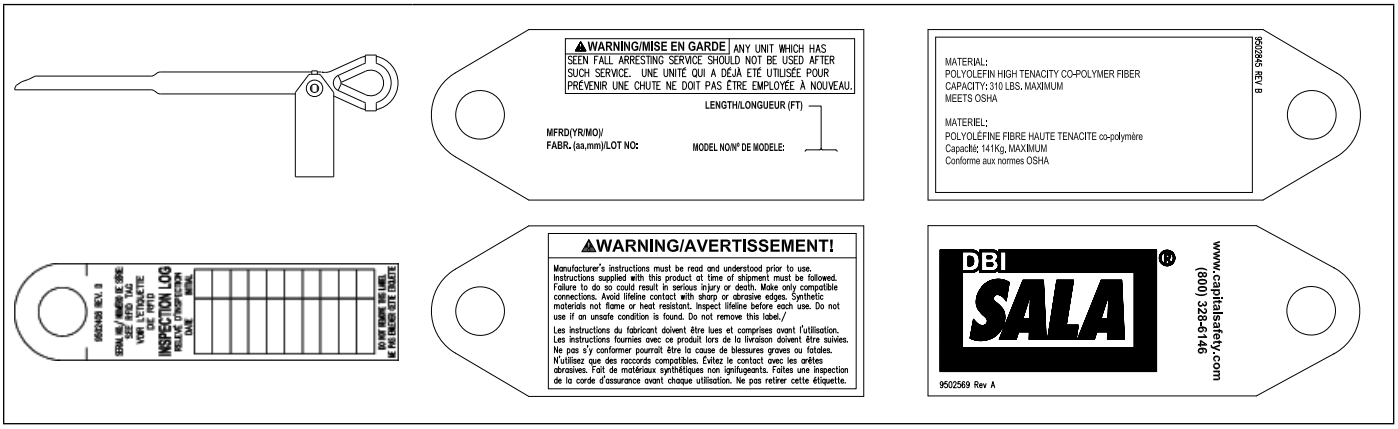
7.1 STANDARDS: When installed and used per the requirements and recommendations in this manual, the Saflok Steel Structure Fall Arrest System meets standards and requirements defined in Section 1.2.

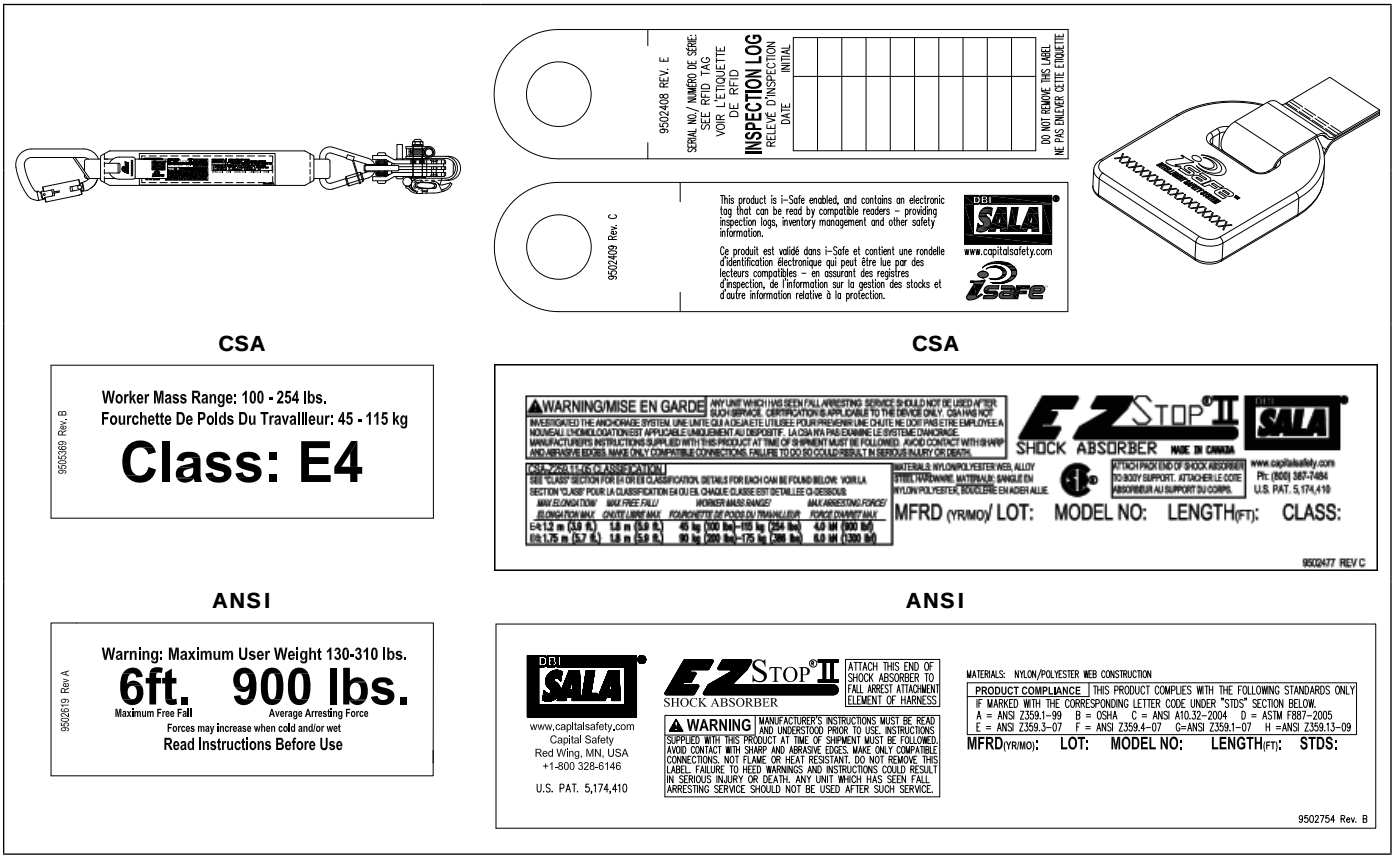
7.2 SYSTEM:

CAPACITY:	◇ One User - 310 lbs (140 kg)
WEIGHT:	◇ Model 2104800 - 12 lbs (5.4 kg)
VERTICAL LIFELINE ROPE:	◇ 5/8" (16 mm) x 80' (24.3 m) Oletec-12-2 ply orange, 100% Polyolefin Lifeline, High Dielectric meets ASTM F1701-05
	◇ 2-1/2" (3.5 mm) I.D. Locked Soft Eye Splice with Plastic Thimble
ANCHOR TUBE:	◇ CPVC 4120 1" (25.4 mm) SCH 40 ASTM F 441, Grey
CARABINER:	◇ Heat Treated, Zinc Plated Steel
	◇ Locking Type: Double-Action Self Closing/Self Locking Gate Face/Side & Minor Axis: 3,600 Lbs. (1633 Kg)
	◇ Minimum Proof Load: 3,600 lbs (1633 kg)
	◇ Tensile Strength: 5,000 lbs, (2268 kg)
INSTALLATION/REMOVAL TOOL:	◇ Aluminum, Alloy Tool 206-T4
	◇ Finish: Sulfuric Anodize Clear per Mil-A-8625, Type 2, Class 1
ROPE GRAB & SHOCK ABSORBER:	◇ Riveted and Welded with Hinged Rope Channel
	◇ Material Type: Body, Hinge, Cam and Attachment Eye – High Impact Resistant Steel, Zinc Plated
	◇ Lifeline Diameter: 5/8" (16 mm)
	◇ Integrated
	◇ Parking Feature: Allows manual operation as required
	◇ Anti-Panic Feature (Protecta Cobra model only): Stops falls even when Locking Cam is open.
ADJUSTABLE ANCHOR TUBE: *(Sold Separately)*	◇ Model 2100427
	◇ Configured for 12" (30 cm), 18" (46 cm), 24" (61 cm), 30 " (76 cm) widths
	◇ CPVC 4120 1" (25.4 mm) SCH 40 ASTM F 441, Grey

8.0 LABELING

The following labels must be securely attached and fully legible:





9.0 INSPECTION AND MAINTENANCE LOG

SERIAL NUMBER:		
MODEL NUMBER:		
DATE PURCHASED:		**DATE OF FIRST USE:**

INSPECTION DATE	**INSPECTION ITEMS NOTED**	**CORRECTIVE ACTION**	**MAINTENANCE PERFORMED**
Approved By:			
Approved By:			
Approved By:			
Approved By:			
Approved By:			
Approved By:			
Approved By:			
Approved By:			
Approved By:			
Approved By:			
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Approved By:			
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Approved By:			

LIMITED LIFETIME WARRANTY

Warranty to End User: D B Industries, Inc., 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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