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Sure Lock™ Retractable Web Device

Application, Operation, Maintenance & Inspection Instruction Manual

Please read this manual.
This information is vital to your safety.

Application


(Fig. 1)

The Sure Lock™ Retractable Web Device is used in place of a standard lanyard to restrain a worker from falling or to arrest a fall. The Retractable Web Device will work well in situations where extra mobility is required and when it is important to minimize fall distances or prevent falls.

The device can be used with any approved anchorage. It can also be used in conjunction with a mobile anchorage such as a horizontal lifeline. An integral shock absorber is recommended for most applications although not mandatory.

The Sure Lock™ Retractable Web Device can be used in a wide variety of applications:

1. Fall Arrest
The device is most commonly fixed at the anchorage connector. The worker attachs to the lanyard end and works below the device. A full body harness is recommended for this application. A shock absorber may be used. (Fig. 1)

2. Temporary Fall Arrest/Positioning (not shown)
In this application, the device is connected to a linesman belt with a swivelling bracket. The lanyard end is attached directly to the anchorage support or wrapped around the anchorage support and attached to the opposite positioning Dee ring.

Function

The Retractable Web Device is designed to work in a similar fashion to an inertia locking brake mechanism in an automobile seatbelt restraint system. The worker is free to move unhindered within a 7' radius of the anchor point. The tensioned synthetic webbing in the drum housing will pay out and retract as pressure is applied and released. Quick movement will immediately engage the locking brake mechanism, arresting or preventing a fall. Free falls directly below the device are limited to less than 10 in. eliminating the need for a shock absorber. The locking brake will disengage when tension is removed.

⚠WARNING

THESE INSTRUCTIONS MUST BE PROVIDED TO THE USER. MANAGEMENT AND USER MUST READ AND UNDERSTAND THESE INSTRUCTIONS; FAILURE TO DO SO COULD RESULT IN SERIOUS INJURY OR DEATH.

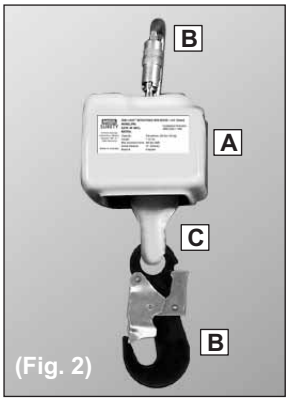
Printed in U.S.A.

Specifications

Sure Lock™ Retractable Web Device

A **SFP6902 Housing**

- steel roller drum w/vinyl protective cover
- 1.75 in (4.5cm) polyester webbing lanyard
- nylon tube wear pad
- inertia acitivated locking brake mechanism
- minimum webbing breaking strength 5000 lbs (2270kg)
- safe working load 300 lbs (136kg)
- arrest distance 10.0 in (25.4cm)
- minimum clearance required without shock absorber, 16 in (40.6cm) see design statements
- compliance CSA Z259.2 M1979, ANSI Z359.1-1992
- total length with standard hardware: extended 82.7 in (210cm) retracted 5.3 in (13cm)
- housing size 4.0 in (10.1cm) x 4.0 in (10.1cm) x 3.0 in (7.6cm)
- total weight 1.51 lb (685g)



(Fig. 2)

* specifications for other connecting hardware available on request

Connecting Hardware*

B **SRCC413, steel carabiner**

- 10mm equal "D"
- carbon steel, zinc plated
- auto-locking gate
- minimum breaking strength 5600 lbs (2540kg)
- dimensions 4.1 in (10.4cm) x 2 in (5.0cm)
- gate opening 0.6 in (14mm)
- jaw width 0.4 in (11mm)
- total weight 0.36 lbs (165g)

C **SHWFL28 swivel**

- 3/4 in. steel chromed swivel
- minimum breaking strength 5980 lbs (2700kg)
- connection opening 0.4 in (1.0cm) x 0.6 in (1.6cm)
- dimensions 2.75 in (7.0cm) x 1.6 in (4.1cm)
- total weight 0.28 lbs (130g)

D **SHWFL29 swivel belt connector**
(see installation instructions on page 4)

- stainless steel 1 3/4 in belt attachment
- belt opening, 1.7 in (44mm) x 0.3 in (8mm)
- attachment to drum housing with 1/2 in (1.3cm) bolt and oilite bushing
- dimensions, 2.0 in (51mm) x 1.6 in (42mm) x 2.7 in (70mm)
- total weight 0.40 lb (180g)

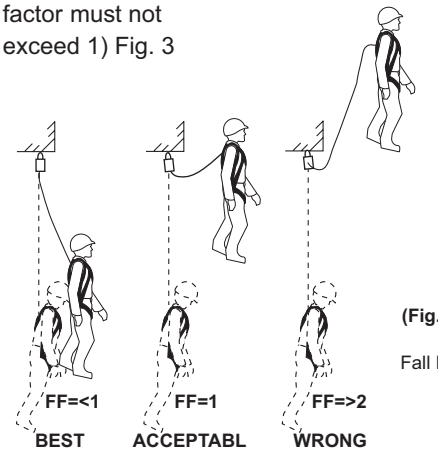
Operating Instructions

⚠ **WARNING:** ALTHOUGH FALL PROTECTION DEVICES, WHEN USED CORRECTLY WILL ARREST FALLS, NO DEVICE CAN ELIMINATE THE RISK OF INJURY. IF THE RETRACTABLE WEB DEVICE IS USED INCORRECTLY THERE IS A RISK OF SERIOUS INJURY OR DEATH. READ THE FOLLOWING INFORMATION CAREFULLY. DO NOT USE RETRACTABLE WEB DEVICE UNLESS INSTRUCTIONS HAVE BEEN READ AND UNDERSTOOD BY THE USER AND THE USER'S MANAGEMENT.

Anchorage

Each work area requiring fall protection must have a designated approved anchorage point that must meet the following requirements.

- must comply with applicable regulations and standards for fall arrest anchorages
- must be compatible with device hardware or anchorage connector
- must be installed in location to afford maximum protection and minimize the possibility of a swing fall
- must be above connection point of users belt/harness (fall factor must not exceed 1) Fig. 3



(Fig. 3)

Fall Factor (FF) = $\frac{\text{Fall Distance}}{\text{Length of Lanyard}}$

Anchorage Connectors

It is recommended that the support structure and permanent anchorage connectors are engineered to ensure proper orientation in relation to expected forces, sufficient strength and fall clearance. All anchorage connectors must meet or exceed applicable regulations and standards.

Examples of permanent anchorage connectors:

- eye bolts
- permanent horizontal lifeline systems
- davit arms
- tripods

Temporary anchorage connectors are installed by the user. To provide the best protection, anchorage connectors should be installed in a predetermined location. The location should be marked to ensure consistent use of the same anchorage supports.

Examples of temporary anchorage connectors:

- steel cable slings
- web slings
- temporary horizontal lifeline systems
  Note: Horizontal lifeline systems will allow unrestricted lateral movement.

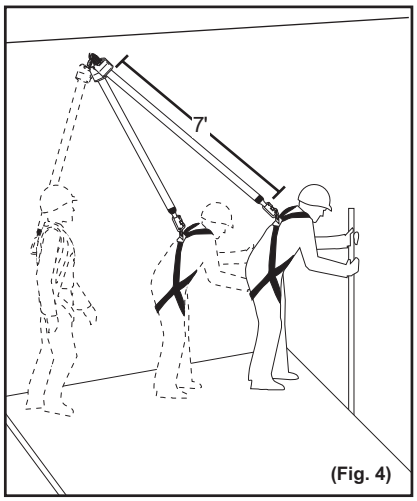
Anchor Selection

- consult engineer to determine appropriate anchorage support.
- anticipate the direction of the force applied during fall arrest
- do not choose structural supports that have welds, sharp or abrasive edges, corrosion or deformation
- avoid areas close to heat sources, chemicals and excessive grease or oil

WARNING: POOR ANCHORAGE SELECTION MAY RESULT IN ANCHOR FAILURE OR DAMAGE TO ANCHORAGE CONNECTOR WHICH MAY RESULT IN FAILURE OF FALL ARREST SYSTEM.

NOTE: THE RETRACTABLE WEB DEVICE WILL ALLOW YOUR BODY HOLDING DEVICE CONNECTION POINT 7 FT OF MOVEMENT FROM THE ANCHOR POINT NOT INCLUDING THE LENGTH OF A SHOCK ABSORBER AND CONNECTING HARDWARE. IF PRACTICAL, THE ANCHORAGE SHOULD BE PLACED TO RESTRICT MOVEMENT OVER THE EXPOSED EDGE. (Fig. 4)

WARNING: THE ANCHOR MUST BE POSITIONED DIRECTLY OVER THE WORK AREA. FALLS ORIGINATING FROM OTHER POSITIONS WILL CAUSE A PENDULUM TYPE FALL. ALTHOUGH THE DEVICE WILL ARREST EFFECTIVELY, INJURY RESULTING FROM CONTACT WITH A STRUCTURE MAY BE FATAL



(Fig. 4)

WARNING

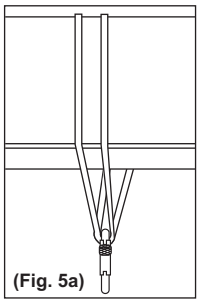
A FALL OVER AN EDGE MAY RESULT IN DAMAGE TO THE WEBBING IN THE RE-TRACTABLE DEVICE AND SUBSEQUENT FAILURE OF THE FALL ARREST SYSTEM. PLACE THE ANCHO-RAGE POINT IN A POSITION TO MINI-MIZE CONTACT WITH EDGES DURING A FALL.

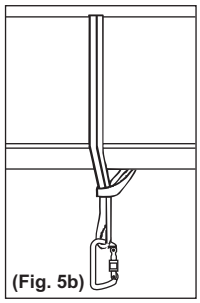
Anchor Sling Installation

NOTE: THE RISK OF A FALL COULD BE INCREASED DURING INSTALLATION OF ANCHOR SLINGS OR ANCHOR BRACKETS. REDUCE THE RISK BY USING ANOTHER FALL PROTECTION SYSTEM WHILE INSTALLING THE RETRACTABLE WEB DEVICE.

- consult engineer to locate the designated structural support that will anchor the retractable web device.
- ensure anchor support is oriented perpendicular to the anticipated load.
- wrap sling around structural member in a basket configuration. (Fig. 5a)

NOTE: A BASKET CONFIGURATION (Fig. 5a) WILL RESULT IN AN ANCHOR WHICH IS TWICE THE STRENGTH OF THE ANCHORING MATERIAL. CHOKERED SLINGS (Fig. 5b) WILL REDUCE THE STRENGTH OF THE ANCHORING SYSTEM BELOW THE STRENGTH OF THE ANCHORING MATERIAL.


(Fig. 5a)


(Fig. 5b)

WARNING

DO NOT USE SYNTHETIC WEBBING ANCHOR SLINGS IF THERE IS A RISK OF DAMAGE FROM SHARP OR ABRASIVE EDGES.

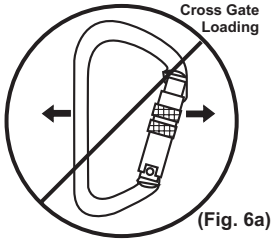
- connect drum housing hardware on retractable web device to anchor sling eyes
- check operation and condition of retractable web device (ie expose webbing, inspect for damage, wear or twisting in roller drum and ensure roller drum will retract and lock properly).

WARNING: IF RETRACTABLE WEB DEVICE LOCKING MECHANISM OPERATES POORLY OR DEVICE DOES NOT FULLY RETRACT, DO NOT USE DEVICE. RETURN TO SUPERVISOR AND TAG “DO NOT USE”. CONTACT MANUFACTURER OR APPROVED SERVICE AGENT FOR ADVICE.

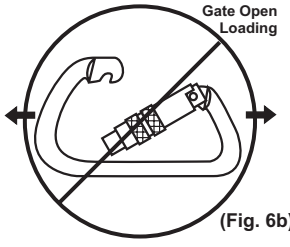
- ensure that all connections are orientated to safely accept a load (no cross-gate loading) (Fig. 6a)
- confirm connectors are properly closed and locked. (Fig. 6b)

WARNING

STRENGTH OF CARABINER IS SIGNIFICANTLY REDUCED WHEN LOADED IN EITHER OF THESE CONFIGURATIONS (Fig. 6a and 6b).



(Fig. 6a)



(Fig. 6b)

Use of Shock Absorbers

Sure Lock™ Retractable Web Devices are designed to limit fall distance and therefore minimize impact forces. It is not necessary to use a shock absorber with a retractable web device, however, a shock absorber will minimize impact force on all system components and protect the webbing from edge damage during a fall.

⚠WARNING

USE OF A SHOCK ABSORBER WILL INCREASE THE POTENTIAL FALLING DISTANCE OF A WORKER. ENSURE MINIMUM CLEARANCES ARE OBSERVED.

Use of CSA Approved Body Belt

Although use of a full body harness is recommended for all fall arrest applications, retractable web devices will limit impact forces sufficiently to justify the use of a body belt. If practical, position the retractable web device to restrict the movement of the worker to the work platform. The lanyard hardware must be connected to a Dee ring designed for fall arrest attachment and positioned correctly.

⚠WARNING

MSA RECOMMENDS THE USE OF A FULL BODY HARNESS. SUSPENSION FROM A BODY BELT EVEN IN THE ABSENCE OF A FALL CAN CAUSE SEVERE INJURY TO THE WORKER. RESCUE OF A WORKER SUSPENDED FROM A BODY BELT MUST BE IMMEDIATE.

General Use

- connect lanyard hardware to Dorsal Dee ring on CSA approved full body harness before exposure to fall hazard
- move within working area and allow retractable web device to pay in and out.

⚠ WARNING

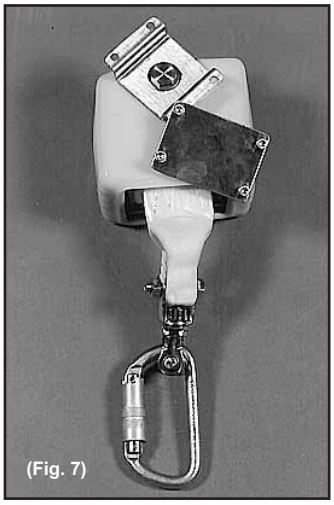
REPEATED TURNING IN ONE DIRECTION WHILE WORKING, WILL TWIST THE WEBBING. THE WEBBING WILL NOT FULLY RETRACT WHICH MAY RESULT IN EXCESSIVE SHOCK LOADING. PERIODICALLY REMOVE TWISTS BY TURNING WEBBING AT SWIVEL OR TURNING BODY IN DIRECTION REQUIRED TO REMOVE TWISTING.

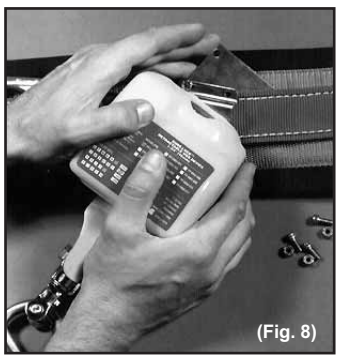
⚠ WARNING

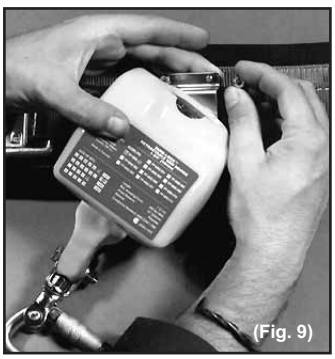
RESTRICT WORK AREA TO MINIMIZE THE POSSIBILITY OF A SWING FALL. A SWING FALL COULD RESULT IN CONTACT WITH STRUCTURE WHICH MAY CAUSE SERIOUS INJURY OR DEATH. WEBBING THAT COMES IN CONTACT WITH STRUCTURES DURING A FALL MAY BE SEVERED WHICH WILL RESULT IN FAILURE OF THE FALL ARREST SYSTEM.

Installation of HWFL29 Swivel Belt Connector on CSA Approved Waistbelt

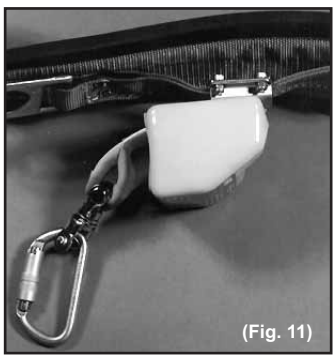
1. The SHWFL29 is supplied with the back plate bolted to the Sure Lock™ Retractable Web Device housing. The matching front plate is bolted to the back plate with one bolt. The other three socket head bolts and Nyloc nuts are loosely bolted on the plate as shown in Fig. 7.
2. Remove bolts at three corners. Place device and connector over 1 3/4" portion of belt at hip area (Fig. 8) and pivot plate to align bolt holes (Fig. 9).
3. Tighten each bolt 1/4 turn past snug using 5/16" wrench and hex key (Fig. 10). Do not over-tighten.
4. Before use the installation must be checked by a supervisor. (Fig. 11).


(Fig. 7)


(Fig. 8)


(Fig. 9)


(Fig. 10)


(Fig. 11)

Inspection

1. The MSA Sure Lock™ Retractable Web Device shall be inspected by the user before each use, and additionally by a competent person other than the user at intervals of no more than one year. All inspections must be recorded.
2. When inspection reveals defects, damage, misuse or inadequate maintenance of any component of the system, the component affected shall be removed from service to undergo adequate corrective maintenance before return to service. Removal from service may imply that defects or damage will result in retiring and replacing some components.
3. Remove a system component from service if:
   • it has been subjected to the force of arresting a fall.
   • markings (labels) are illegible or absent.
   • there is evidence of defects or damage to hardware elements including cracks, sharp edges, deformation, corrosion, chemical attack, excessive heating, alteration, excessive aging or excessive wear.
   • there is evidence of improper function, improper fit or alteration of any mechanical component.
   • there is evidence of any damage, discoloration or excessive wear to any synthetic component including stitching. Damage is indicated in the presence of cuts, tears, abrasions and kinks. Damaged synthetic components can fail at much lower forces than expected.
   • there is evidence of any stiffness, paint splashes, staining or fading to any synthetic component. Deterioration and weakening of webbing can be suspected if component is exposed to chemicals, acids, petroleum-based products, excessive sunlight, excessive heat or repeated dampness. Webbing and rope will gradually stiffen and fade with age.
4. Webbing must be free of knots and inspected for twists in the roller drum. Do not use the device until twists or knots are removed.
5. Roller drum must retract webbing quickly and smoothly. Periodically compare operation with newer unit.
6. MSA or persons or entities authorized in writing by the manufacturer, shall make repairs to equipment. No unauthorized repairs and/or modifications are allowed.

Maintenance and Storage

1. Maintenance and storage of equipment shall be conducted by the user's organization in accordance with MSA instructions. Unique issues, which may arise due to conditions of use, shall be addressed with MSA.
2. Equipment which is in need of or scheduled for maintenance shall be tagged "do not use" and removed from service.
3. To clean synthetic components, wipe with a wet sponge. For more difficult stains, use mild soap. DO NOT USE CHEMICALS OR DETERGENTS. Rinse off soap with clear water and hang to dry. DO NOT DRY WITH HEAT.
4. Hardware should be wiped with rag to remove dirt and grease. Clean and lubricate with a light oil to ensure good working order and protect them against rust and corrosion. Wipe off excessive amounts of oil to avoid the accumulation of dirt.
5. Store in a clean dry area free from excessive heat, steam, sunlight, harmful fumes, corrosive agents and rodents.

Design Statements

1. The MSA Sure Lock™ Retractable Web Device shall comply to and be used with consideration to all government or other applicable regulations and standards.
2. MSA Sure Lock™ Retractable Web Device cannot be used for applications other than described in these instructions. If the buyer chooses to disregard this warning, the buyer assumes responsibility for the integrity of the system.
3. Any component that has sustained the force of arresting a fall shall be removed from service. A qualified person shall inspect and recertify the system prior to returning it to active service.
4. Do not use equipment adjacent to moving machinery or electric hazards.
5. Do not use synthetic components in the presence of excessive heat, open flame or molten metal. System should not be used in an environment with temperatures exceeding 194^{O} F (90^{O} C).
6. Connection hardware should always be visually checked by another worker. Do not rely on the feel and / or sound of an engaging connector.
7. Connect device directly to anchor connector and fall arrest attachment on harness. Do not add non-approved connecting hardware.
8. Do not allow webbing to become knotted or twisted. Any obstruction that interferes with retraction may result in a longer free fall and unacceptable impact forces experienced by the worker and the anchor.
9. Do not allow synthetic components to come in contact with sharp or abrasive edges or surfaces especially when under tension. Contact with sharp edges or corners during a fall may result in a partial or complete loss of strength that may lead to serious injury or death to the user.
10. Always check for obstructions below the work area to ensure the potential fall path is clear. Work directly under the device. Lateral movement might result in a dangerous or fatal swing fall.
11. If device is used in accordance with instructions (without a shock absorber) total possible fall distance will equal the device actuation /arrest distance plus harness extension. Ensure that minimum clearances are observed.

    a = device actuation = 10 in (25.4cm)
    b = harness extension = 6 in (14.4cm)
    c = safety factor = 20 in (50.8cm)
    a + b + c = 3 ft (91.4cm)

    NOTE:These figures apply ONLY when worker is standing or climbing in an erect position and is directly under the anchor. If the worker is not erect when the fall occurs the height of Dee-ring above working surface must be considered.
12. For compliance to ANSI standards, anchorages selected for the Sure Lock™ Retractable Web Device must have a strength capable of sustaining static loads applied in the directions permitted by the device of at least 3600 lbs (16kN) when certification exists or 5000 lbs (22.2 kN) in the absence of certification.
13. When more than one Sure Lock™ Retractable Web Device is attached to an anchorage connector or anchorage support, the required anchorage strength must be multiplied by the number of devices attached to the anchorage.
14. Whenever a fall occurs on a personal fall arrest system, there is risk that the user will be injured or left stranded hanging from a harness. When the Sure Lock™ Retractable Web Device is in use, the user's employer must have a rescue plan and the means at hand to implement it.

Inspection and Maintenance Log

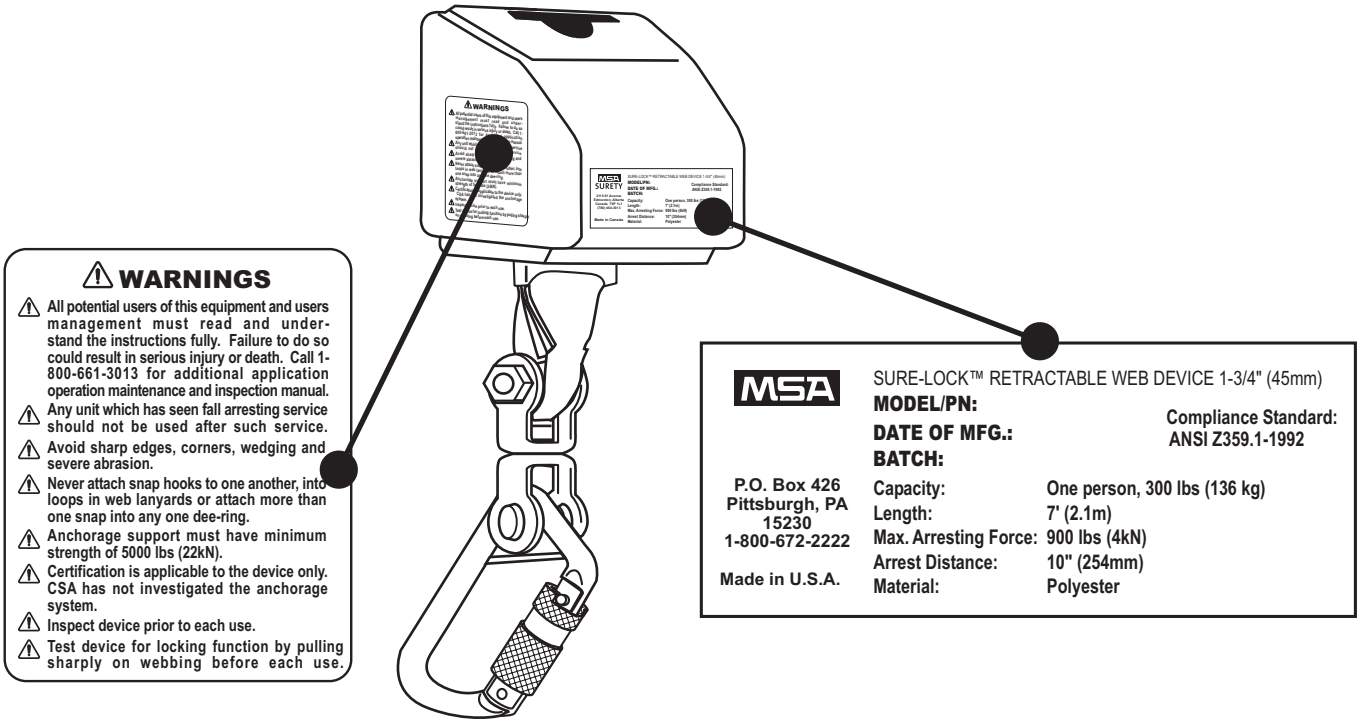
Model No. _____

Date _____

Inspected By _____

Description	Good	Damaged, worn, altered	Missing	Remove from service	Comments
HOUSING					
COMPLIANCE LABELS (2)					
WEBBING					
STITCHED EYE					
RETRACTION SPRING					
CARABINER(S)					
SNAP HOOK(S)					
SWIVEL(S)					
BELT CONNECTOR					

Compliance Labels



WARRANTY

Express Warranty – MSA warrants that the product furnished is free from mechanical defects or faulty workmanship for a period of one (1) year from first use or eighteen (18) months from date of shipment, whichever occurs first, provided it is maintained and used in accordance with MSA's instructions and/or recommendations. Replacement parts and repairs are warranted for ninety (90) days from the date of repair of the product or sale of the replacement part, whichever occurs first. MSA shall be released from all obligations under this warranty in the event repairs or modifications are made by persons other than its own authorized service personnel or if the warranty claim results from misuse of the product. No agent, employee or representative of MSA may bind MSA to any affirmation, representation or modification of the warranty concerning the goods sold under this contract. MSA makes no warranty concerning components or accessories not manufactured by MSA, but will pass on to the Purchaser all warranties of manufacturers of such components. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS, IMPLIED OR STATUTORY, AND IS STRICTLY LIMITED TO THE TERMS HEREOF. MSA SPECIFICALLY DISCLAIMS ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Exclusive Remedy - It is expressly agreed that the Purchaser's sole and exclusive remedy for breach of the above warranty, for any tortious conduct of MSA, or for any other cause of action, shall be the repair and/or replacement, at MSA's option, of any equipment or parts thereof, that after examination by MSA are proven to be defective. Replacement equipment and/or parts will be provided at no cost to the Purchaser, F.O.B. Purchaser's named place of destination. Failure of MSA to successfully repair any nonconforming product shall not cause the remedy established hereby to fail of its essential purpose.

Exclusion of Consequential Damages - Purchaser specifically understands and agrees that under no circumstances will MSA be liable to Purchaser for economic, special, incidental, or consequential damages or losses of any kind whatsoever, including but not limited to, loss of anticipated profits and any other loss caused by reason of the non-operation of the goods. This exclusion is applicable to claims for breach of warranty, tortious conduct or any other cause of action against MSA.

For additional information, please contact the Customer Service Department at 1-800-MSA-2222 (1-800-672-2222).