RIGID LIFELINES®

Installation, Operation & Maintenance Manual for Rigid Lifelines 8-4015, 8-4020, 8-4030, and 8-4031 Series Self-Retracting Lanyards

RIGID LIFELINES SELF-RETRACTING LANYARDS

4000 Series Rigid Lifelines Self-Retracting Lanyards comply with current ANSI Z359.1-2007 and all applicable OSHA regulations and requirements.

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RIGID LIFELINES SELF-RETRACTING LANYARDS

USER INSTRUCTION MANUAL - SELF-RETRACTING LANYARDS

This manual is intended to meet the Manufacturer's Instructions as required by the current ANSI Z359.1 (2007), and should be used as part of an employee training program as required by OSHA.

⚠WARNING

This product is one part of a personal fall arrest, restraint, personnel riding, climbing, or rescue system. Without the other necessary components in such sub-systems the self-retracting lanyard itself serves no useful purpose. The user must follow the manufacturer's instructions for each component of the system. These instructions must be provided to the user before using this product and retained for ready reference by the user. The user must read, understand (or have explained), and heed all instructions, labels, markings and warnings supplied with this product and with those products intended for use in association with it before using this equipment. Manufacturer's instructions must be followed for proper use and maintenance of this equipment. National standards and state, provincial and federal laws require the user to be trained before using this product. This manual can be used as part of such a user safety-training program that is appropriate for the user's occupation.

IMPORTANT:

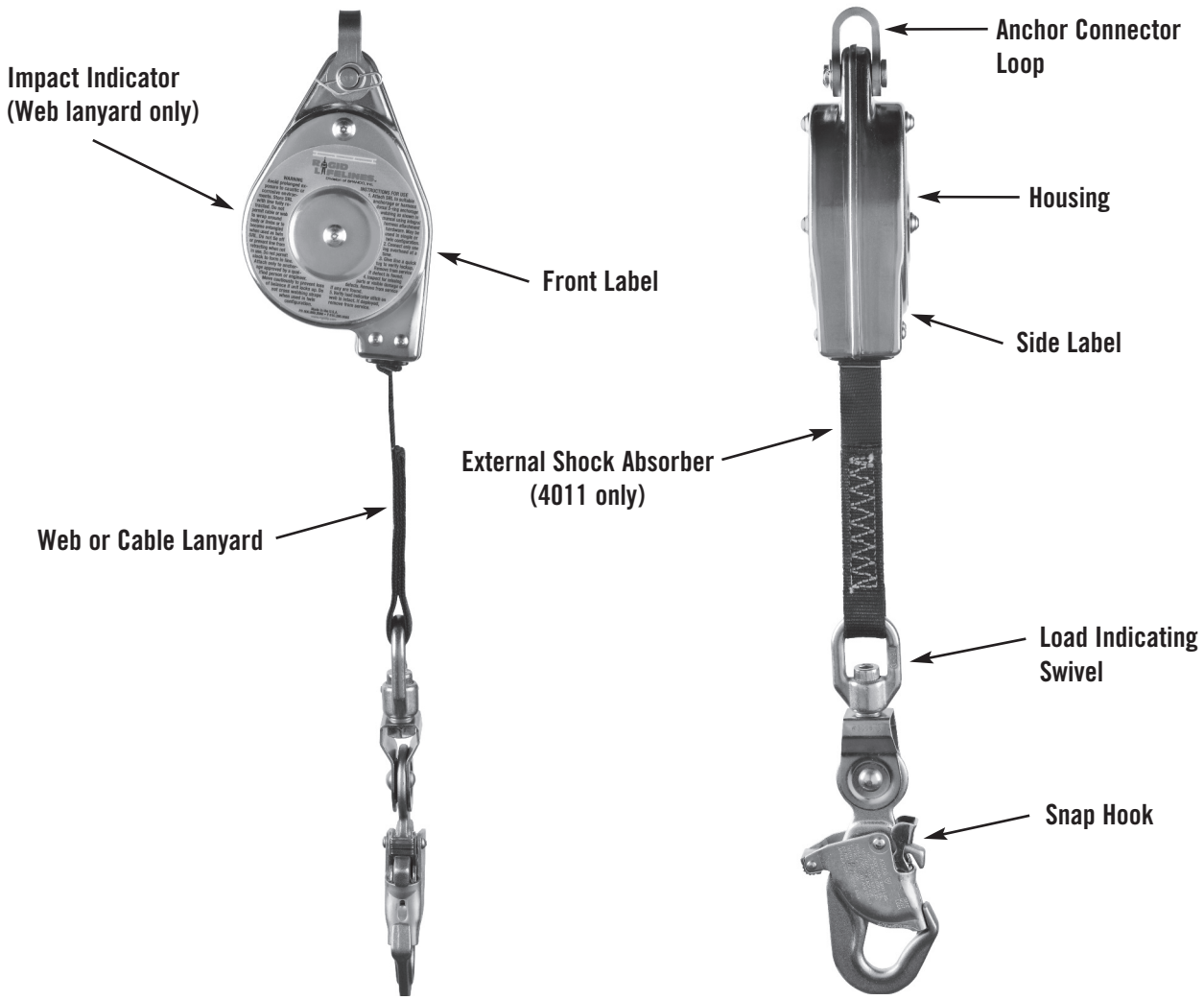
Alterations or misuse of this product or failure to follow instructions may result in serious injury or death. If you have questions on the use, care, or suitability of this equipment for your application, contact Rigid Lifelines at (800) 869-2080 for more information.

DESCRIPTION

The Rigid Lifelines Self-Retracting Lanyard (SRL) is designed to be a component in a personal fall arrest system (PFAS). It may be used in most situations where a combination of worker mobility and fall protection is required (i.e. inspection work, general construction, maintenance work, oil production, confined space work, etc.). The Rigid Lifelines SRL is designed for use by a single person weighing no more than 310 lbs. [140.6 kg] (body weight plus tools). The Rigid Lifelines Self-Retracting Lanyard features a cam-action pawl system ensuring positive lock-up even in the most demanding environments. Available standard cable/web strap lengths allow the Rigid Lifelines SRL to be mounted overhead in areas where there are no other convenient anchor points for personal fall arrest means. The snaphook's unique hook body design prevents the accidental "false engagement" to the harness dorsal D-ring, while the case swivel or anchor connector (depending on model) provides an easy to see load indicator showing whether the Rigid Lifelines SRL has been exposed to a fall arrest load and needs to be serviced.

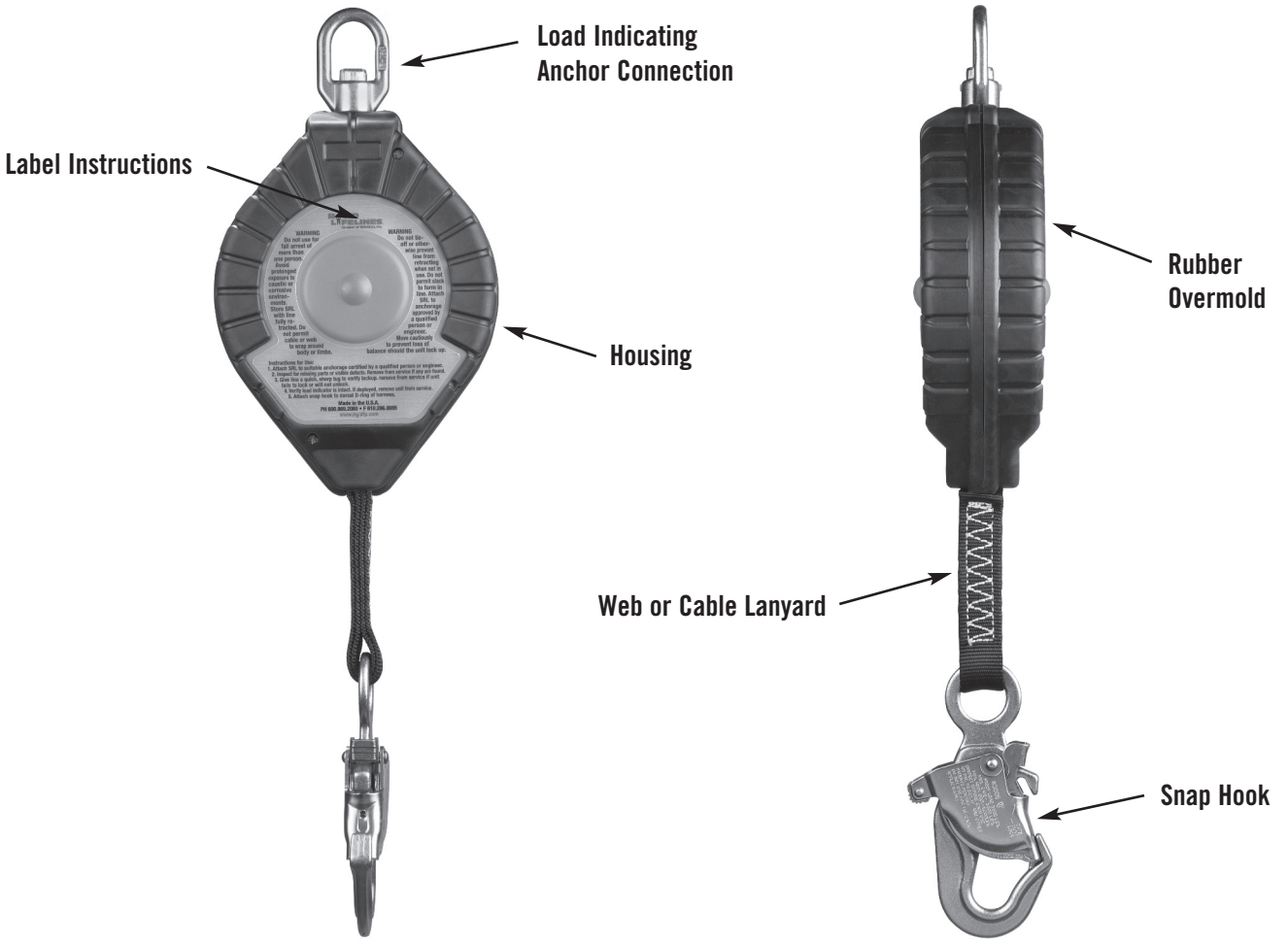
IDENTIFYING COMPONENTS OF RIGID LIFELINES SELF-RETRACTING LANYARDS

Models 8-4007 and 8-4011 (web strap models)



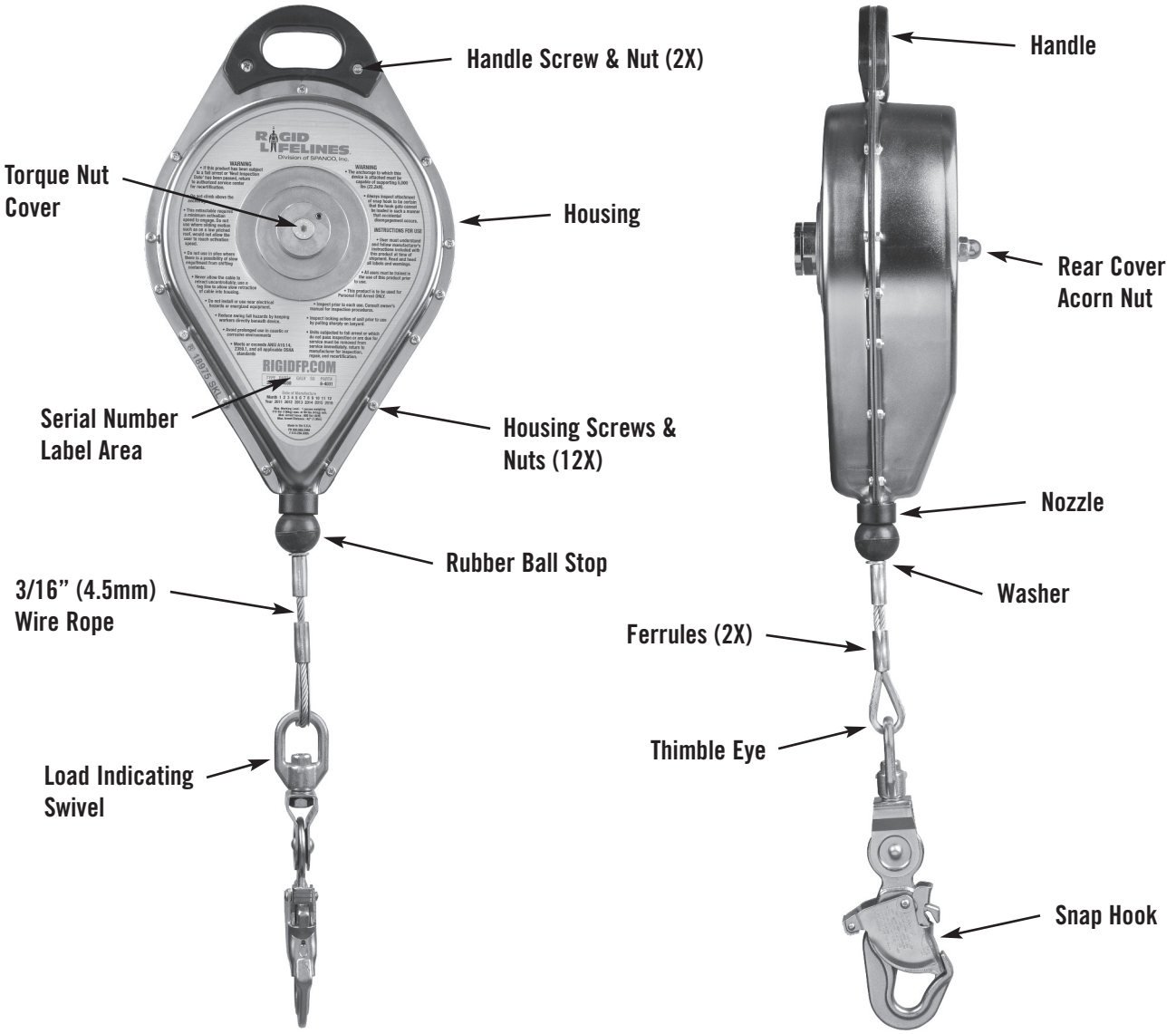
IDENTIFYING COMPONENTS OF RIGID LIFELINES SELF-RETRACTING LANYARDS

Models 8-4015 (cable model) **and 8-4020** (web strap models)



IDENTIFYING COMPONENTS OF RIGID LIFELINES SELF-RETRACTING LANYARDS

Models 8-4030 and 8-4031 (cable models)



PRODUCT SPECIFICATIONS

Part #	Working Length	Line Type	Weight	Hook Type	Housing Type	Housing Dimensions
8-4015	18' (5.5m)	3/16" (4.5mm) galvanized	7 lbs. (3.1 kg)	3006 Pelican Zn Plate	LDPE overmolded ABS Plastic	11"L X 6"W X 3"H (28cm X 15cm X 8cm)
8-4020	20' (6.1m)	1" (25mm) polyester web	8 lbs. (3.6 kg)	3006 Pelican Zn Plate	LDPE overmolded ABS Plastic	11"L X 6"W X 3"H (28cm X 15cm X 8cm)
8-4030	30' (9.1m	3/16" (4.5mm) galvanized	25 lbs. (11.3 kg)	3007 Swivel Zn Plate	Carbon Steel	15"L X 9"W X 4"H (38cm X 23cm X 10cm)
8-4031	30' (9.1m	3/16" (4.5mm) stainless steel	25 lbs. (11.3 kg)	3007 Swivel stainless steel	Stainless Steel	15"L X 9"W X 4"H (38cm X 23cm X 10cm)

The following specifications apply to all Rigid Lifelines Self-Retracting Lanyards:

- Maximum Arrest Force (MAF): 900 lbs. (4kN)
- Maximum Arrest Distance: 42" (1.07m)
- Maximum Capacity: 1 worker, with a maximum combined tool and body weight of no more than 310 lbs. (140.6 kg). Certain models have capacity up to 400 lbs. (182 kg). Contact Rigid Lifelines if higher capacity models are needed.

SELF-RETRACTING LANYARD APPLICATION

A. PURPOSE

Rigid Lifelines Self-Retracting Lanyards (SRL's) are used as one component in a multi-component personal fall arrest system (PFAS). The SRL's described in this manual meet ANSI Z359.1 and OSHA requirements (except where noted). These instructions, and markings borne by the SRL's, fulfill the instruction and marking requirements of those standards and regulations. This equipment is specifically designed to dissipate fall energy and limit the fall arrest forces that are transferred to the body.

1) PERSONAL FALL ARREST

The Self-Retracting Lanyard is one component of a personal fall arrest system. Personal fall arrest systems typically include a full body harness, a connecting subsystem (energy absorbing device such as a shock absorbing lanyard or self-retracting lanyard) and an anchorage connector. The entire fall arrest system is then attached by the anchorage connector to a permanent anchorage structure that also must meet all national and OSHA standards and requirements for weight bearing and fall arrest force resistance. Maximum arresting force must not exceed 900 lbs. (4kN) for ANSI Z359.1-(07) and 1,800 lbs. (8kN) for OSHA.

B. USE LIMITATIONS

Consider the following application limitations before using this equipment:

1) CAPACITY

Rigid Lifelines SRL's are designed for use by persons with a combined weight (clothing, tools, etc.) of no more than 310 lbs. (140 kg). Persons with muscular, skeletal, or other physical disorders should consult a physician before using any fall arrest equipment. Pregnant women and minors must never use this equipment. Increasing age and diminished physical fitness may reduce a person's ability to withstand shock loads during fall arrest or prolonged suspension. Consult a physician if there is ANY question about a user's physical ability to safely use this product to arrest a fall or remain suspended.

2) FREE FALL

Personal fall arrest systems used with this equipment should be mounted overhead in such a way as to eliminate the possibility of a free fall.

3) FALL CLEARANCE

There must be sufficient clearance below the user to arrest a fall before the user strikes the ground or other obstruction. The clearance required is dependent on the following factors (**Fig. 1 - Pg 9**):

- Elevation of anchorage
- Connecting subsystem length
- Deceleration distance
- Free fall distance
- Worker height
- Movement of harness attachment element

CALCULATE THE FALL CLEARANCE

1. Determine distance beneath the walking/working surface to nearest lower level or obstruction: Minimum Required Clearance - MRC
2. Add the Activation Distance - Distance required for lanyard to activate - Activation Distance - AD = 12 inches (.3m)
3. Add the Deceleration Distance - DD. No more than 30* inches (.76m)
4. Add the Safety Factor: Safety Factor - SF. 1.5 ft. to 3 ft. (.45 to .9m)

AD + DD + SF < or = MRC

*Deceleration Distance of 30" is a conservative estimate and excludes swing fall distance. If clearances are questionable consult a Qualified Person (as defined by OSHA) for more detailed clearance calculations.

4) CHEMICAL HAZARDS

Acidic, alkaline, or other environments with harsh substances may damage webbing (if equipped) and hardware elements of this SRL. Polyester webbing is more resistant to attack by acids, but is subject to degradation by alkaline or neutral pH environments as well. Also, if working in a chemically aggressive

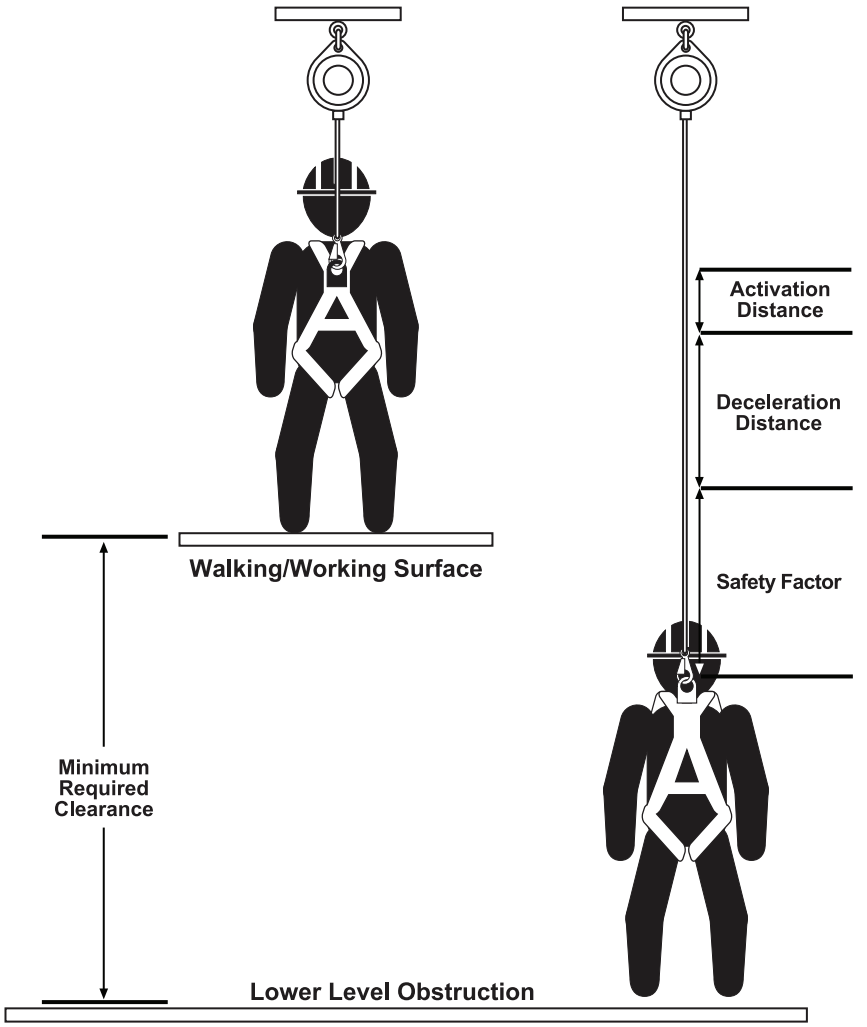


Figure 1. Calculating Fall Clearance with a Self-Retracting Lanyard

environment, an SRL that uses a cable is generally recommended. When working in the presence of chemicals, more frequent inspection of the SRL is required. Increased frequency is to be determined by the designated competent person.

5) HEAT

Do not use SRL's that utilize a web strap in environments with temperatures greater than 185°F (85°C). Protect the lanyard when used near welding, metal cutting, or other heat producing activities. Sparks may damage the lanyard webbing and reduce its strength.

IMPORTANT: *When working with tools, materials, or in high temperature environments, ensure that associated fall protection equipment can withstand high temperatures, or provide protection for those items.*

6) CORROSION

Do not expose the device to corrosive environments for prolonged periods. Organic substances and salt water are particularly corrosive to metal parts. When

working in a corrosive environment, more frequent inspection, cleaning, and drying of the SRL is required. Increased frequency is to be determined by the designated competent person. See *Care and Inspection (Pages 17-18)* sections for cleaning and inspection details.

7) ELECTRICAL HAZARDS

Use extreme caution when working near energized electrical sources. Metal hardware on the SRL, the cable itself, and on other components connected to it will conduct electric current. Maintain a safe working distance [preferably at least 10 ft. (3m)] from electrical hazards.

8) SWING PENDULUM FALLS

Swing falls occur when the anchorage point is not DIRECTLY above the point where a fall occurs. If the worker falls in such a situation, there is the possibility of a swing fall that may bring the worker into contact with objects either below or to their side, possibly causing serious injury or death. These objects must be removed or the SRL and/or anchorage point be repositioned directly over the worker to help reduce the risk of a swing fall. A Competent Person or Qualified Engineer should always be consulted if there exists a possibility of a swing fall occurring. The worker must be trained to understand that the width of the allowable work area can never exceed the anchorage height that exists between the SRL and his walking/working surface.

For example, if a worker in a building with 10 ft. (3m) floors walks 20 ft. (6m) away from his anchorage they could fall and strike the floor below before their fall would extract any cable from the SRL. If an object is in their swing path (or that of the cable) a hazardous situation exists. Two factors become evident in this situation.

First, due to the swing fall, the horizontal speed of the worker may be high enough to cause injury if an obstacle in the swing fall path is struck by either the user or the cable (web strap). The hazard increases as the initial (before fall) length of extended cable is increased and as the initial angle which the cable makes with the vertical is increased. In the extreme case where a user has extended 90 ft. (27.4m) of cable at an angle of 30 degrees with the vertical, the user can theoretically develop a horizontal speed of about 19mph (30.5km/h). By comparison, if the user has extended 50 ft. (15.2m) of cable at an angle of 15 degrees with the vertical, the user may develop a horizontal speed of about 7mph (11km/h). This situation is clearly more tolerable but it may still be dangerous if hazards such as rigid or sharp objects, electrical conductors, or powered equipment are in the swing fall path.

The second factor that comes into effect in a swing fall is the total vertical fall distance of the user may be much greater than if the user had fallen entirely vertically without a swing fall path. This hazard also increases as the initial (before fall) length of extended cable is increased and as the initial angle which

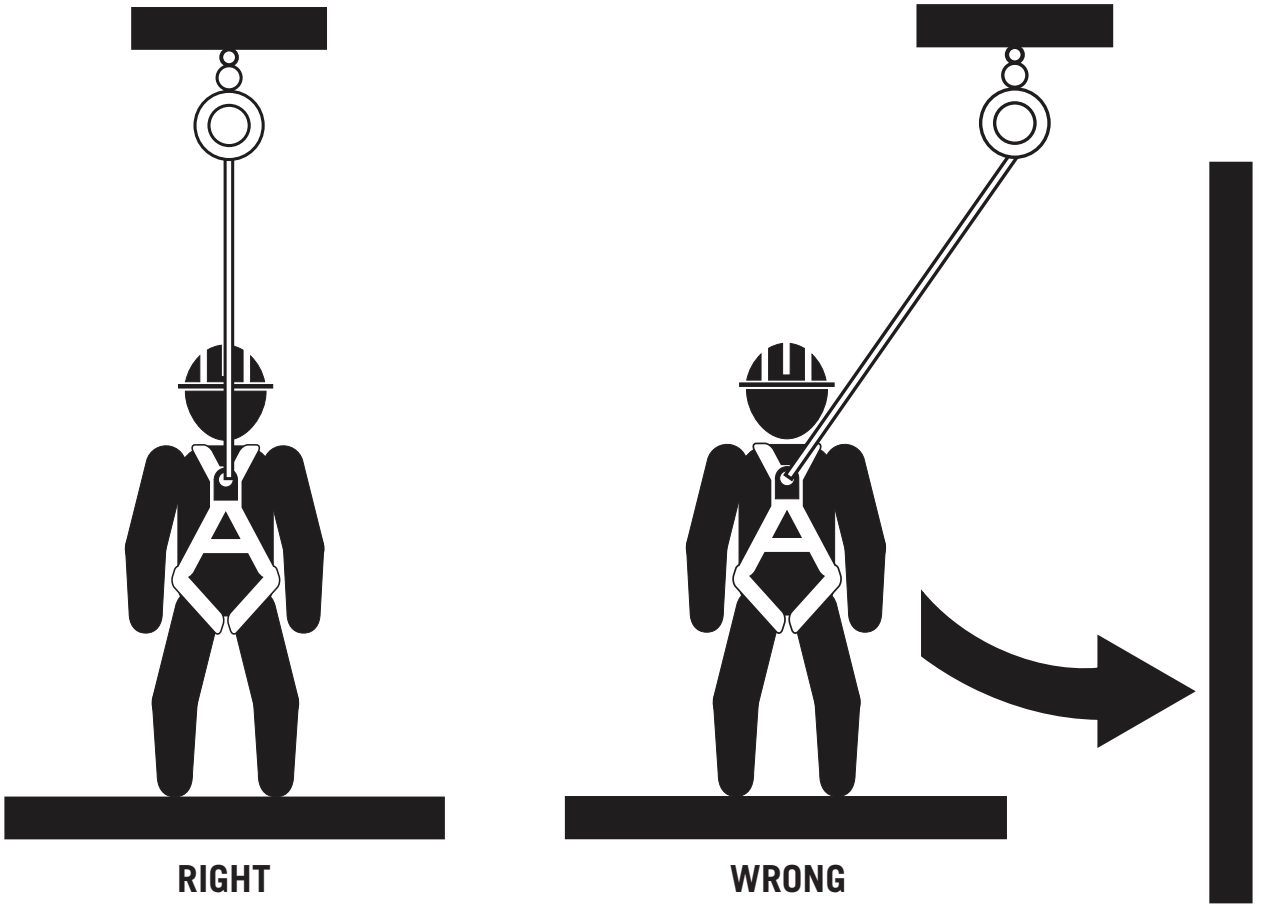


Figure 2.

the cable makes with the vertical is increased. For example, if the initial extended cable length is 10 ft. (3m), the drop at the bottom of the pendulum swing would be 1.3 ft. (.4m). This is in addition to the cable extension due to the devices internal shock absorption which may be as much as 3.3 ft. (1m). The total vertical fall distance would then be as much as 4.6 ft. (1.4m). If, however, 50 ft. (15.2m) of cable is initially extended at a 30 degree angle with the vertical, then a drop at the pendulum bottom of 6.7 ft. (2m) would result. In this example, adding the 3.3 ft. (1m) of cable extension due to internal shock absorption of the device, the total vertical fall distance could be as much as 10 ft. (3m).

Minimize swing falls by working as close to directly underneath the anchorage point as possible (**Fig. 2**). Do not permit a swing fall if injury could occur. Swing falls will significantly increase the clearance required when a Self-Retracting Lanyard or other variable length connecting subsystem is used.

SELF-RETRACTING LANYARD APPLICATION...continued

9) MOVING MACHINERY

When working near moving machinery parts (e.g. conveyors, rotating shafts, presses, etc.), make sure that loose equipment is secured. Maintain a safe working distance from machinery that could entangle clothing, the SRL cable or web strap, the harness, or other components connected to it.

10) SHARP EDGES AND ABRASIVE SURFACES

Do not expose web strap to sharp edges or abrasive surfaces that could cut, tear or abrade and weaken the fibers. If working around sharp edges and abrasive surfaces is unavoidable, use heavy padding or other protective barriers to prevent direct contact.

11) WEAR AND DETERIORATION

Any SRL which shows signs of excessive wear, deterioration or aging, must be removed from use and marked "UNUSABLE" until destroyed (**See detailed inspection procedures on Pgs 14-16**).

12) IMPACT FORCES

Any SRL that has been subjected to the forces of arresting a fall must be immediately removed from service and marked as "UNUSABLE" until recertified or replaced. Rigid Lifelines SRL's have impact load indicators built into either the hooks or the anchorage component on top of the SRL that facilitate inspection for fall loading.

Note: Production Exceptions 4011 Rigid Life lines Self-Retracting Lanyard: The 4011 SRL utilizes an external energy absorber intergrated into the lifeline itself. This does not change fall clearance calculations for this unit.

Using the 4007 or 4011 with a Man-Lift:

1. If the unit **DOES NOT** employ an external shock absorber, then the user must connect the SRL directly to the harness (see "Installation Procedures") To provide shock absorption in the event that the user falls over the hand rail.

2. If the unit **DOES** employ an external shock absorber, then the shock absorber end must be attached to the users back to provide shock absorption in the event that the user falls over the handrail.

Based on testin results, if a user does not have a shock absorbing device on their back (whether it be a unit with internal brakes or an external shock absorber), the arrest load is isolated at the hand rail and the end user could be over loaded with no shock absorption.

3. Do not extract an amount of lifeline from theSRL and "clip it off" to prevent it from retracting back into the unit. Doing so will ensure that a free-fall occurs of the user falls out of the basket and over the handrail, and will prevent the SRL from functioning properly.

SYSTEM REQUIREMENTS

A. COMPATIBILITY OF SYSTEM PARTS

1) COMPATIBILITY OF COMPONENTS AND SUBSYSTEMS

Rigid Lifelines SRL's are designed to be used with Rigid Lifelines approved components and connecting subsystems. Use of the SRL with products made by others should be evaluated by a competent person with technical knowledge and training in the use of fall arrest systems to ensure compatibility of components and hardware. Connecting subsystems must be suitable for use in the application (e.g. fall arrest or restraint). Rigid Lifelines manufactures a line of connecting subsystems for most applications. Contact Rigid Lifelines for further information. Refer to the manufacturer's instructions supplied with the component or connecting subsystem to determine suitability. Contact Rigid Lifelines with any questions regarding compatibility of equipment used with the SRL.

2) COMPATIBILITY OF CONNECTORS

Connectors, such as D-rings, snap hooks, and carabiners, must be rated at 5,000 lbs. (22kN) minimum breaking strength and comply with ANSI Z359.1-2007. Rigid Lifelines connectors meet these requirements. Connecting hardware must be compatible in size, shape, and strength. Non- compatible connectors may accidentally disengage ("rollout") or falsely engage. Always verify that the connecting snap hook or carabiner and the D-ring on the harness or anchorage connector are compatible. Some harness models have web loop connection points. Do not use snap hooks to connect to web loop unless the snap hook complies with ANSI Z359.1-2007. A self-locking carabiner may also be used to connect to a web loop. Ensure the carabiner cannot cross-gate load (load against the gate rather than along the backbone of the carabiner). Connecting subsystems (Self-Retracting Lanyard, lanyard, rope grab and lifelines, cable grab, etc.) must be suitable for your application.

B. **EXAMPLES OF INAPPROPRIATE CONNECTIONS:**

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 seem to be fully engaged to the anchor point. (the width of the head and gates of the snap hooks have been designed to prevent this issue in most D-rings.)
D. To each other.
E. Directly to webbing or rope lanyard or tie-back.
F. To any object shaped such that the snap hook or carabiner will not close and lock, or that could cause rollout should a fall occur.

3) ANCHORAGES AND ANCHORAGE CONNECTORS

Anchorages for personal fall arrest systems must have a strength capable of supporting a static load, applied in directions permitted by the system, of at least: (a) 3,600 lbs. (16kN) when certification exists, or (b) 5,000 lbs. (22.2kN) in the absence of certification. When more than one personal fall arrest system is attached to an achorage, the anchorage strengths set forth in (a) and (b) must be multiplied by the number of systems attached to the achorage. This requirement is consistent with OSHA requirements under 29 CFR 1910 & 1926.

Anchorage connectors must be selected carefully. Eyebolts should not be used if they will be loaded at an angle to their axis, unless the loads fall within design parameters for such use. Weld-on lugs should not be less than 1/2 inch (12.7mm) in width and should not be made of steel with less than 50,000-PSI yield strength. The proper stress areas and weld areas must be calculated to assure proper safety. If in question, consult Rigid Lifelines Engineering at (800) 869-2080 for proper design requirements.

INSTALLATION PROCEDURE

A. CONNECTING THE SRL TO AN ANCHOR POINT

Note: An approved fall protection device must be worn during the Rigid Lifelines Self-Retracting Lanyard installation at all times. Do not use the SRL as a method of personal fall protection until the system has been completely installed, inspected, and approved for use by a Qualified Person.

1) Installation of the Rigid Lifelines Self-Retracting Lanyard begins with the indentification of a suitable anchor point. The anchor point must be capable of supporting a 3,600 lb. (16kN) load where certification of load carrying ability exists, or 5,000 lb. (22.2kN) where certification does not exists. **Note:** These strengths must be multiplied by the number of persons that will be connecting to the anchorage point at any one time.

2) Pass an ANSI Z359 rated large carabiner (or other Rigid Lifelines approved connecting means) through the swivel eye or handle at the top of the SRL. This carabiner must be rated with a minimum breaking strength of at least 5,000 lbs. (22.2kN) and must be used for connecting to only 1 SRL at a time.

3) Secure the carabiner to the anchor point. When using a carabiner make sure that the gate has fully closed and rotated into a locked position.

B. PREPARATION FOR USE

1) Once the Rigid Lifelines SRL has been secured into position, extract a few feet of cable/web strap slowly to verify that there is tension on the line and the retraction spring is functioning correctly.

⚠WARNING

The cable/web strap must always be released slowly and in a controlled manner when rewinding the cable/web strap back into the unit; it should never be fully released in an uncontrolled manner. Allowing the cable/web strap to retract in an uncontrolled fashion could cause damage to the SRL, the workplace, or other users in the area. Always use a tagline attached to the snaphook to help guide the cable/web strap back into the unit when it is installed too far overhead to reach directly; this will also help in pulling the snaphook down to the user for connection to their harness.

2) Give the cable a quick, sharp tug causing the unit to lock-up, proving that the braking mechanism is operating correctly. Slowly allow the cable to be retracted back into the unit under the power of the retraction spring.

Removal is the opposite of installation.

Installation methods are not limited to carabiners. Custom brackets are available for permanent or specialized installations. Contact Rigid Lifelines to help identify specific installation methods for your situation.

C. INSPECT PRIOR TO USE

Before each use of this SRL, inspect the SRL and all components of the PFAS.

1) Inspect the SRL to verify that it is in servicable condition. Examine every inch of the lanyard or cable for severe wear, cuts, burns, frayed edges, abrasion, or other damage. Examine the stitching for any pulled, loose, or torn stitches. See Inspection (Pages 17-18) section for details. **Do not use if inspection reveals an unsafe condition. Always err on the side of safety.**

D. PLAN SCOPE OF WORK TO BE PERFORMED (JOB SAFETY TASK ANALYSIS)

Plan procedures to safely perform tasks when using any components of a personal fall arrest system. Some considerations are listed below (see APPLICATIONS, item B., USE LIMITATIONS section for additional details):

1) Anchorage selection. In addition to strength considerations, the anchorage should be rigged to prevent a fall onto the structure when considering 2) and 4) below.
2) Swing pendulum fall.
3) Rough surfaces or unprotected sharp edges that could cut or abrade the equipment if unprotected.
4) Workplace geometry:
   a) Free fall distance - Personal fall arrest systems used with this equipment should be mounted overhead in such a way as to eliminate the possibility of a free fall.
   b) Deceleration distance - Maximum 30 inches (.76m)
   c) Total fall distance - The sum of the activation distance and deceleration distance plus a safety margin.
   d) A careful examination must be made of the workplace by a Competent Person before the selection or installation of Rigid Lifelines SRL anchorage points. Consideration must be given both to the movement of materials and workers around the workplace to ensure that potentially hazardous situations are avoided.
   e) Areas where overhead cranes or gantries are used must be examined to verify that neither the moving loads nor lifting wires can interfere or snag the extended cable/web strap of a Rigid Lifelines SRL, causing a worker to be dislodged from their working surface.

f) Overhead lighting and electrical cables must also be identified to insure that installation of the SRL is sufficiently far enough away so that the cable can never contact the wire. Contact with any electric wiring, electrical cables and overhead lighting can create a dangerous electrocution hazard.

g) Consideration of obstacles present in the work area must include ALL locations that COULD be reached if the entire length of cable/web strap were extracted from the SRL. For example, there may be obstacles that pose no threat when a worker is on a platform, but these obstacles may pose a danger to the worker should they climb downward or move laterally towards another work surface.

h) The cable/web strap used in the SRL should be protected from damage when passing over sharp edges or near objects where the cable/web strap could become lodged or pinched. To avoid damage from sharp edges and to avoid lodged or pinched cable/web strap use edge protectors that are not abrasive to the lifeline. When significant changes in angle are encountered, directional sheaves should be used or the SRL anchorage point should be relocated to a location that prevents contact with the sharp edge.

i) Avoid installations where debris, contaminants, and other objects falling from above could damage the Rigid Lifelines SRL or its cable/web strap.

j) Extreme caution must also be exercised when considering the use of the Rigid Lifelines SRL as a means of fall protection in areas where a user is working on a sloped surface such as a pitched roof or tank bottom, or on piles of loose material (such as grain or sand) that may shift or slide. If the user falls or begins to slide on a surface, the Rigid Lifelines SRL may not be extracted fast enough for the device to lock-up (typically, lanyard must be extracted around 5-6 ft/sec. for the unit to lock-up) and arrest the sliding fall. The user might continue to slide over a roof edge, or into some other hazardous zone causing injury or death. The use of a travel restriction system or a work-positioning system may be more appropriate for such locations and should be considered first. Contact Rigid Lifelines Engineering for help in selecting equipment for these applications.

5) Rescue and evacuation: The user and employer must have a rescue plan in place, training in its use, and the means to implement it are readily available at the work site. The employer must have the ability to perform a rescue quickly and safely. Do not plan to rely on others for rescue because prolonged suspension can cause bodily injury or death.

CARE OF THE RIGID LIFELINES SRL

A. Clean exterior by wiping away excess dirt, grease, or other materials that might interfere with operation of the unit. Dry hardware with a clean, dry cloth, and hang to air dry. Do not attempt to disassemble the unit. A buildup of dirt, solvents, paint, etc. on the cable/web strap may prevent the SRL from working properly, and in severe cases degrade the webbing to a point where it weakens and should be removed from service. More information on cleaning is available from Rigid Lifelines. If you have questions concerning the condition of your SRL, or have any doubt about putting it into service, contact Rigid Lifelines.

B. Store SRLs in a cool, dry, clean environment. Avoid areas where heat, oil, chemicals or their vapors may exist. Thoroughly inspect after extended storage. Good safety practice requires separate storage of unusable product from usable product.

INSPECTIONS

A. INSPECTION FREQUENCY

1) The SRL must be fully inspected by the user prior to each use.
2) A competent person, other than the user, must inspect the SRL thoroughly at least annually.

   Note: *Extreme working conditions (harsh environments that might degrade the webbing or corrode the hardware, prolonged use, etc.) may require increasing the frequency of inspections.*

   Record the results of each formal inspection in the inspection and maintenance log, as described below.

B. INSPECTION PROCEDURE

1) Prior to each use, the worker must inspect the Rigid Lifelines Self-Retracting Lanyard for any physical damage, wear, corrosion, or malfunctioning parts. Verify that the load indicator is not visible by looking to see if the red slide bearing under the swivel eye on the anchor point or snaphook is exposed (**Fig. 3 & 5**). Once the load indicator has been deployed, the SRL must be returned to a Rigid Lifelines approved repair facility for evaluation and recertification. Prior to each use, the worker must inspect the load indicator webbing on SRL's with web strapping. Remove from service if stitching is broken and/or the "Remove From Service" label is visible (**Fig. 4**).

2) The worker should also verify that conditions around the SRL location have not changed that may affect its' ability to arrest a fall, such as obstacles or equipment directly below the anchorage point which might create a swing fall.

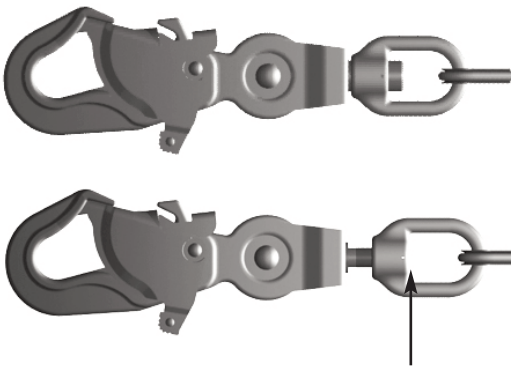


Figure 3. Deployed Load Indicator

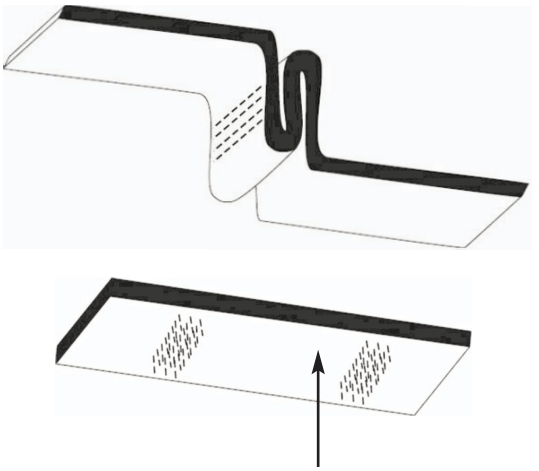


Figure 4. Deployed Load Indicator

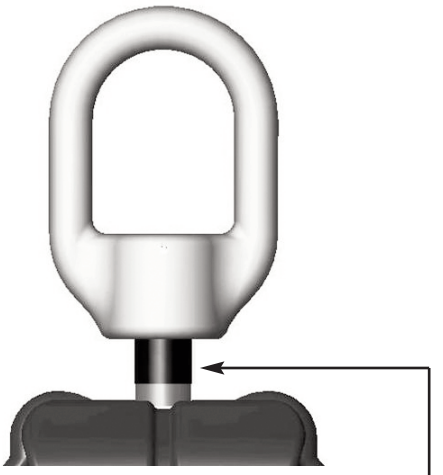


Figure 5. Deployed Load Indicator

3) Before every use, the worker should extract all of the cable/web strap and examine it for defects that would affect its overall strength. These defects would include but are not limited to weld strikes or burns, kinks, bends, "bird-caging", bulge spots, outer diameter thinning, broken or snagged wire strands, broken or burned web or thread, etc. If a wire rope or webbing is showing evidence of any of these defects, the unit should be removed from service immediately until the wire rope or webbing is replaced and re-certified. The ferrules of the wire rope and stitching of the webbing by the snaphook should also be examined for cracks, deformation or broken and damaged stitching.

4) After the cable/web strap has been allowed to retract into the unit, the snaphook should be pulled sharply to verify proper lock-up of the unit. If the unit fails to lock-up when pulled quickly, or if the cable fails to retract properly after lock-up, the unit must be removed from service until repaired.

INSPECTIONS...continued

Your Rigid Lifelines SRL is designed to provide many years of satisfactory performance if used properly. Always hang it freely with a straight line between the top hook and the load hook (do not wedge against a stationary object). And remember, Rigid Lifelines SRLs are intended for arresting falls or restraining workers. They are not to be used for horseplay.

The SRL is extremely easy to care for. Its sealed construction means you don't have to worry about cleaning debris. Strip the cable from the drum and flush the drum with water or steam. A quick check of the SRL takes only seconds. Years of life can be added to the SRL by following these recommendations.

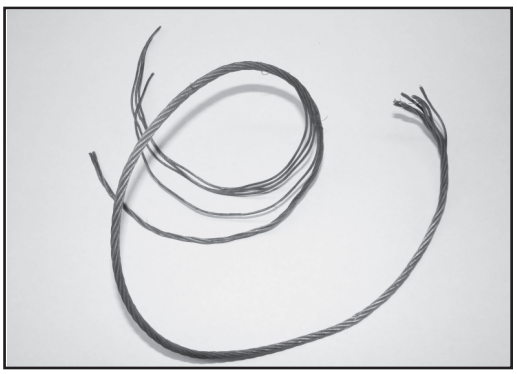
- **Do not snag or pull the cable over sharp or rough edges as this will wear and fray the cable. SRLs are equipped with high quality cable, and with reasonable care will give satisfactory service.**
- **When rewinding the cable on the drum, apply light (10 lbs) tension. This assures even wrapping and will prevent the cable from edging" the next time it is used under heavy load.**
- **Stop pulling when the cable clamp reaches the cable guide or pulley wheel, or the pulley wheel reaches the cable guide (depending on rig used), as continued pulling will damage parts.**
- **Use a steady, straight pull to operate the SRL.**

- **When operating the SRL under load, do not allow the handle to "fly" as this can cause damage to the U-frame.**

DAILY CABLE INSPECTIONS

⚠WARNING

The pictures below illustrate the more obvious types of severely damaged cables. Cables exhibiting damage of this sort to any degree must be replaced immediately.



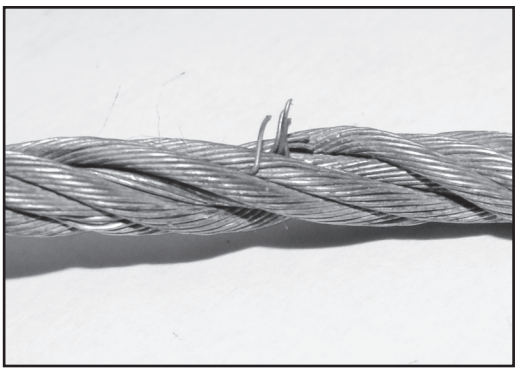
Drum Crushing and Spiraling

The badly deteriorated condition of this cable clearly indicates that it is unsafe for operation. Cable damage of this type is usually caused by cable abuse and by repeatedly overloading the cable beyond its rated capacity. An SRL with this cable condition should not be used under any circumstances. The SRL must be returned for service and recertification.

Cut Cable

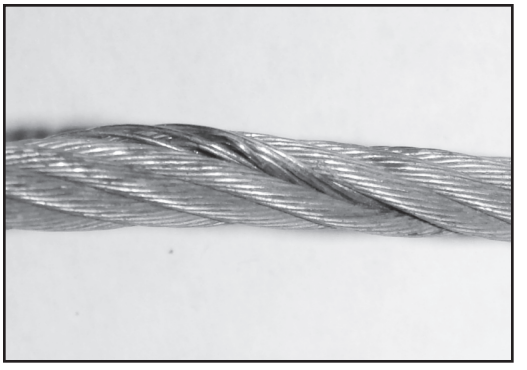
The condition of this cable indicates that it has been cut by a sharp object. This is apparent to the eye because several of the strands appear to be of equal length. The SRL must be returned for service and recertification.

⚠WARNING



Broken Wires

The frayed condition of this cable indicates broken wires and an unsafe condition. Cable deficiencies of this type are usually caused by abrasion. This can easily happen in an SRL operation if the operator allows the cable to come in contact with any other surface. This cable is considerably weakened and must be replaced and the SRL must be recertified.



Kinks

Kinks can result from improper uncoiling and unspooling, or they can be formed in a fall event. Cable loops can occur in a slack line, or in a line under tension. Kinks in a cable are always dangerous as they create unequal tension in the rope and in the strands. A cable with kinks must be replaced and the SRL must be recertified.

TROUBLESHOOTING

If your SRL will not lower or back off automatically, the following tests can be made:

1) **Inspect cable on drum to see that it is not "wedged" or "jammed". Test by operating free release. The cable should pull out freely.**

2) **Examine U-frame pawl spring. With the reverse lever in the lifting position, the spring should hold the pawl against ratchet teeth. In the lowering position, the spring should hold the pawl away from the ratchet teeth.**

3) **Check the button on the side of the U-frame pawl for excessive wear. Its width should be approximately 1 1/2 times the diameter of the main frame pawl spring. Place the reverse lever in the lowering position, move the U-frame until the pawl button comes in contact with the spring. If the button is not worn excessively and slips past the spring, then the U-frame is twisted and the SRL should be repaired.**

4) **If the pawl button contacted the main frame pawl spring and guided the U-frame pawl into the ratchet wheel, then test the main frame pawl spring for fatigue. With the reverse lever in the lowering position and the SRL under light tension, place the handle in the full lowering position so that the U-frame pawl engages the ratchet wheel. If the main frame pawl does not release, continue to press on the handle and at the same time press the "trigger". If the "trigger" pressure releases the main frame pawl, but spring pressure does not, it indicates the spring is fatigued and should be replaced.**

5) **If, when the above test is made, pressure on the "trigger" does not release the main frame pawl, test the U-frame pawl for excessive wear. To test, place an object (knife blade, nail, paper clip, etc.) between the U-frame pawl and the tooth it would normally engage for lowering. If it lowers one notch under this test with the unit under light tension, then the trouble is located. This condition is more likely to develop after an SRL has been repaired and a new main frame pawl installed but not a new U-frame pawl. Under normal conditions the two pawls wear evenly and seldom give any difficulty.**

6) **Check both U-frame and main frame pawls for "snappy"spring action. Sluggish action can result from dirt or corrosion on the shafts and in the shaft holes. Remove shafts and clean with fine steel wool. Clean the shaft holes in the pawls. The U-frame and main frame pivot points are equipped with OILITE bearings. Apply light oil on all bearing surfaces and reassemble.**

7) **Check to see that both pawls engage solidly at the base of the ratchet teeth in both lifting and lowering cycles.**

8) **If main frame pawl on rapid lowering model does not fully engage, check the actuating pin and edge of projection on the rapid lowering assembly that engages the actuating pin to see if it is bent.**

9) **The U-frame pawl should align with the ratchet teeth, if it does not, check to see if the U-frame is twisted from someone having let go of the handle while handling a load.**

TRAINING

It is the responsibility of the employer to train all workers prior to using this system (per OSHA 1926.503 (a)(1)). The employer shall provide a training program for each employee who might be exposed to fall hazards. The program shall enable each employee to recognize the hazards of falling and shall train each employee in the procedures to be followed in order to minimize these hazards. The employer shall assure that, as necessary, each employee has been trained by a competent person qualified in the following areas:

1) OSHA regulations governing the use of horizontal lifelines
2) Ability to recognize potential fall and workplace hazards
3) Method of inspection of safety equipment
4) Rescue procedures
5) Installation and removal techniques

RESCUE PLANNING

Prior to system use, a rescue plan must be prepared, the workers must be trained in its use, and the rescue equipment must be on hand to implement it in case of a fall. Typical rescue plans include (but are not limited to) the following items:

1) List of equipment that must be readily accessible in the event of an emergency and the names of those workers certified to use or operate that equipment.

2) Emergency contact phone numbers (ambulance, hospital, fire department...) and a means to contact them (cell phone, emergency radio).

3) List of employees on the site, and the specific tasks they will perform to effect the rescue.

4) The equipment that will be used to aid in the rescue of any worker should be attached to structural anchorages independent of those used for the personal fall arrest system. During installation of anchorages, tie-off and equipment attachment hard points should be attached, and also clearly marked in such a manner as to provide a means to rescue a worker in any position along the worksite.

SERVICING

A Qualified Person trained in the inspection and servicing of system components must carry out servicing of this system. The company's safety officer should maintain a record log of all servicing and inspection dates. The system and all components must be withdrawn from service if subjected to fall arrest forces. Those components may be returned to service only after being certified by a Qualified Person. Only original Rigid Lifelines equipment and replacement parts are approved for use in this system. Contact Rigid Lifelines Engineering with questions or when in need of assistance.

GUARDING AGAINST APPLICATION FAILURE

To avoid property damage, injury or death, the user must take reasonable steps to prevent "Application Failure." An application failure may be any unacceptable use, misuse, or application error on the part of the user or system designer. Because each end user might use this product in a manner different from the Rigid Lifelines testing platform, and because the user might use this product in combination with other manufacturer's products in a manner not evaluated, contemplated, or tested by Rigid Lifelines, the user or system designer is ultimately responsible for verifying or validating the suitability and compatibility of this product for use in their application or system.

WARNINGS AND LIMITATIONS

1) Proper care should always be taken to visually scan the work area prior to use. Remove any obstruction, debris, and other materials from, and beneath the work area that could cause injuries or interfere with the operation of the system. Be cautious of swing fall hazards if working anywhere but directly below the anchorage point of the SRL. Be aware of the movements of others using SRLs or shock-absorbing lanyards in close proximity, knowing that if the lines become crossed or tangled and a fall occurs, the sudden motion could pull others off balance and make rescue more difficult.

2) Do not release the cable/web strap when extended and allow it to retract back into the unit uncontrollably. Releasing the cable (web strap) and allowing it to reel itself in uncontrollably could cause damage to the SRL. The cable (web strap) should be allowed to retract slowly into the unit under its' own power. If the unit is too far overhead to permit this, then a tagline should be attached to the snaphook to help control the line retraction.

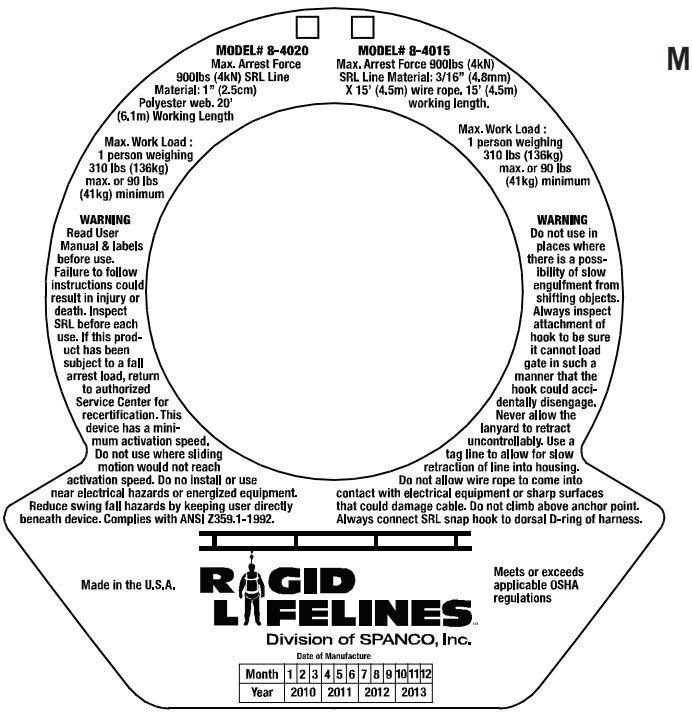
3) In the course of use, do not allow the cable (web) to wrap around arms or legs, or become entangled in clothing or other items. In the event of a fall, this could cause injury, or prevent the SRL from functioning properly. Any Rigid Lifelines SRL that has the load indicator of the swivel snap showing is evidence of a fall arrest having occurred, therefore the SRL must be returned to Rigid Lifelines for evaluation, repair, and recertification. Units must not be reset in the field or allowed to be used until recertification has taken place.

4) Users should be familiar with pertinent regulations governing the use of this personal fall arrest system and its components. Only trained and competent personnel should install and supervise the use of this system.

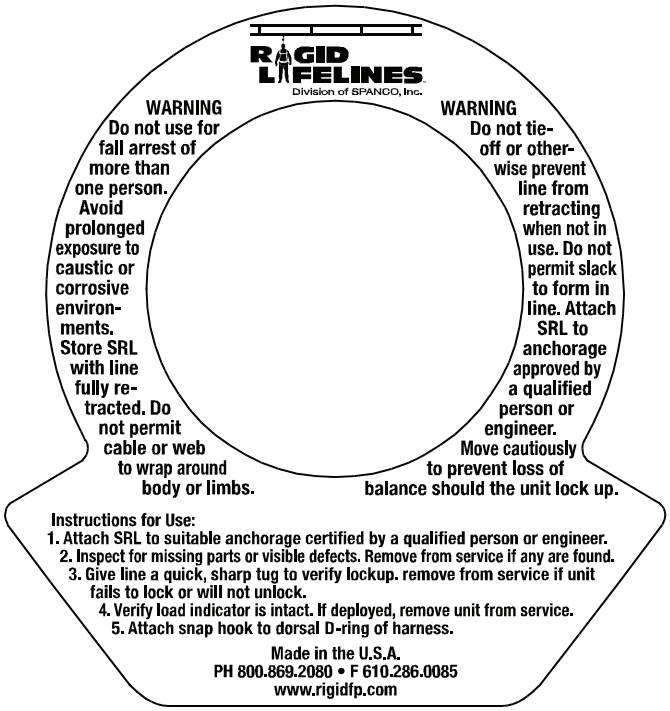
5) Do not tie knots in the cable or webbing of the unit. Tying knots in cable (web strap) reduces the overall strength of the cable. Only connect to the SRL by using the swivel snap to connect to the dorsal (back) D-ring of a full-body harness. Do not cross lines with another worker. Should the lines become entangled, a fall by one worker could dislodge others. Plan and place SRLs to prevent workers from crossing safety lines.

LABELS

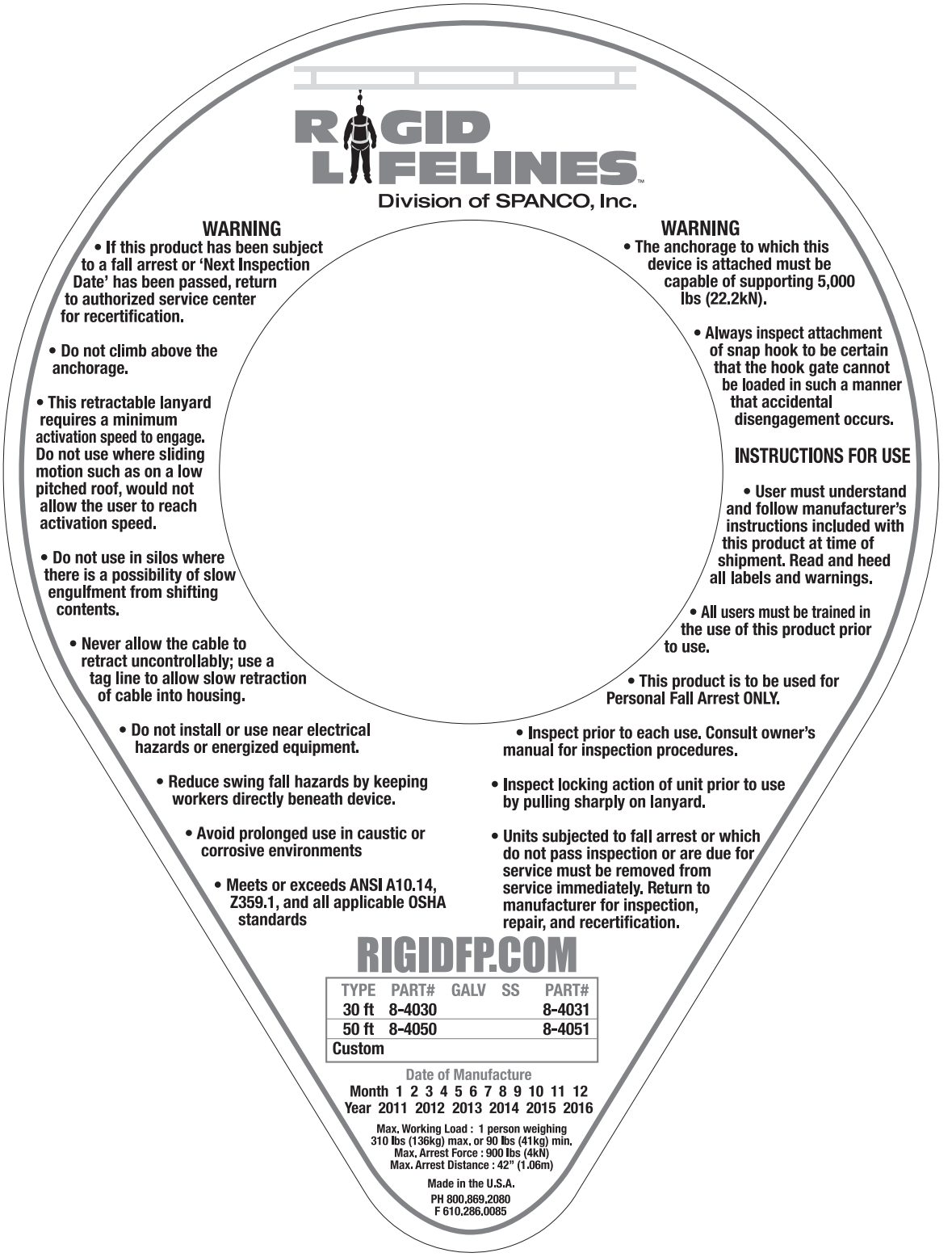
All of the information on the SRL Specifications Label is important for the safe use of this product. The user should ensure that the label has not been removed and that the descriptions it contains match the task and environment in which the product is intended to be used. An inspection log is available on Page 23 of this manual. The unit should be inspected by a Competent Person at periodic intervals and at least monthly. As per these instructions, the unit should be tested for locking before each use.



MODELS: 8-4015 and 8-4020



LABELS...continued



MODELS: 8-4030 and 8-4031

INSPECTION RECORDS

The following Inspection Log can be used for all necessary product inspections. Equipment must be inspected prior to use by each user and if issues are found the product must be removed from service, recertified (if applicable), or destroyed if it does not pass the inspection. A competent person (other than the user) must inspect the equipment at least once a year.

Use a Fall Protection Inspection Checklist every day to monitor the condition of each piece of equipment.

Product Description	Serial #	Date in Service	Inspection Date	Employee Name	Pass	Fail

INSPECTION RECORDS

Product Description	Serial #	Date in Service	Inspection Date	Employee Name	Pass	Fail

Notes:

Rigid Lifelines
604 Hemlock Road
Morgantown, PA, 19543

Toll Free: (800) 869-2080
Local: (610) 286-7200
Fax: (610) 286-0085

RigidLifelines.com

TEN-YEAR EQUIPMENT WARRANTY

Rigid Lifelines warrants the engineered track equipment, wearable end truck wheels, and Anchor Trolley™ wheels and teeth to be free from defects in material and workmanship for a period of ten (10) years commencing on the date of installation.

TWO-YEAR EQUIPMENT WARRANTY

Rigid Lifelines warrants XSPlatforms Fall Protection components to be free from defects in material and workmanship for a period of two (2) years commencing from the date of installation.

ONE-YEAR EQUIPMENT WARRANTY

Rigid Lifelines warrants the motorized products and drive components to be free from defects in material and workmanship for a period of one (1) year, commencing on the date of shipment to the first retail purchaser ("Purchaser").

Rigid Lifelines warrants all Rigid Lifelines fall protection soft goods, devices, connectors, and accessories to be free from defects in material and workmanship for a period of one (1) year, commencing on the date of shipment to the first retail purchaser ("Purchaser").

Rigid Lifelines is dedicated to offering superior service and quality products to all of our customers. If you would like to contact a customer service representative, please call the following number: 1 (800) 869-2080. We will be happy to assist you in any way that we can.

These warranties do not extend to equipment which has been subject to misuse, use in excess of rated capacity, negligent operation, use beyond Rigid Lifelines published service factors, improper installation or maintenance, adverse environments, and does not apply to any equipment which has been repaired or altered without Rigid Lifelines written authorization. This warranty is void for any product that is designed to deform or absorb energy during a fall event and needs to be replaced after a fall event has occurred.

Written notice of any claimed defect must be given to Rigid Lifelines within thirty (30) days after such defect is discovered. Rigid Lifelines obligation, and Purchaser's sole remedy under this warranty is limited to, at Rigid Lifelines discretion, the replacement or repair of the equipment at Rigid Lifelines factory or at a location approved by Rigid Lifelines. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES WHATSOEVER WHETHER EXPRESS, IMPLIED, OR STATUTORY. SELLER MAKES NO WARRANTY AS TO THE MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OF THE EQUIPMENT AND MAKES NO OTHER WARRANTY, EITHER EXPRESS OR IMPLIED.

Rigid Lifelines shall not be liable, under any circumstances, for any indirect, special, or consequential damages including (but not limited to): lost profits, increased operating costs, or loss of production. This warranty shall not extend to damages including (but not limited to): lost profits, increased operating costs, or loss of production. This warranty shall not extend to any components or accessories not manufactured by Rigid Lifelines (example: casters), with the exception of the components, systems, or accessories involved with XSPlatforms, and purchaser's remedy for such components and accessories shall be determined by the terms and conditions of any warranty provided by the manufacturer of such components and accessories.

SERVICE POLICY

1. Obtain as much information as possible concerning the problem through personal observation by yourself or other authorized personnel familiar with the job and equipment: include model, serial and/or part numbers, voltages, speeds and any other special identifying features. Be prepared to discuss the situation in detail.

2. All authorized labor charges will be based on straight time. Hourly rates, estimated man hours, and not to exceed total dollar amount required for corrections are to be agreed upon before authorization is given. There will be no allowances for overtime except in dire emergencies and then only with prior approval.

3. A verbal agreement may be reached immediately on both the method of correction and the approximate cost. A warranty authorization number will be assigned for the specific incident. A confirming written authorization will be forwarded to the distributor.

4. The distributor must send an itemized invoice, showing our release number or invoice number and warranty authorization number after authorized corrections have been made. A credit memo will be issued by accounting after the invoice has been received and approved. Warranty charges ARE NOT to be deducted from outstanding open account invoices under any circumstances.

5. Any field corrections made prior to an authorization by Rigid Lifelines will not be accepted as a warranty charge or the responsibility of Rigid Lifelines. Any modification to the equipment made without the prior approval of the seller will void all warranties. A verbal authorization for modification may be obtained, in which event a warranty authorization number will be assigned for the specific modification. A confirming written authorization will be forwarded to the distributor.