



SAFETY ALERT

DATE: 6/4/01

SUBJECT: Maintenance of Fall Arresting Devices

SERIAL NUMBERS: All

DISCUSSION: Canrig supplied either the North Life Line or the DBI Sala L3501 Self Retracting Lifeline on new equipment purchased between 1992 and March 2001. The devices were installed on the top of the ladder on section #1 of the torque guide systems.

CAUTION: When regularly maintained and operated in accordance to the original manufacture's specifications, the fall arresting devices do not pose a threat to the safety of personnel. **When not properly maintained, these devices will become a hazard to personnel.**

RECOMMENDATION: If proper maintenance practices, as outlined in the attached specifications, have not been followed by the systems owner/operator, Canrig recommends that these devices be removed from service immediately and returned to the original manufacturer for inspection and repair. Please refer to the attached maintenance specifications for the North Life Line and The DBI Sala L3501 Self Retracting Lifeline.

INFORMATION:

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User Instruction Manual Sealed Self Retracting Lifelines

This manual is intended to meet the Manufacturer's Instructions as required by ANSI Z359.1-1992, ANSI A10.14-1991, and the Canadian Standards Association, and should be used as part of an employee training program as required by OSHA.



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

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

IMPORTANT: *Before using this equipment record the product identification information from the ID label in the inspection and maintenance log in section 9.0 of this manual.*



Figure 1

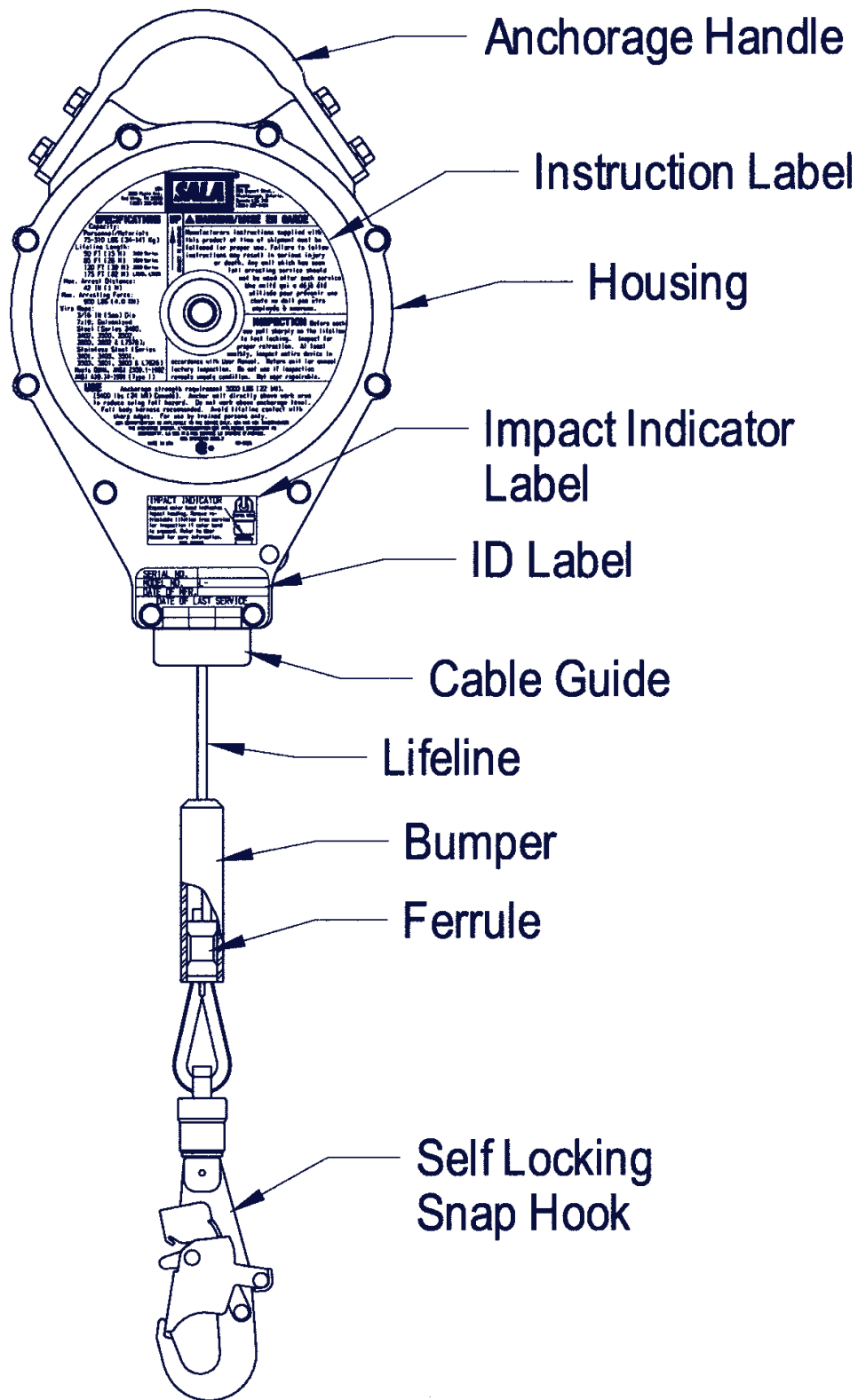
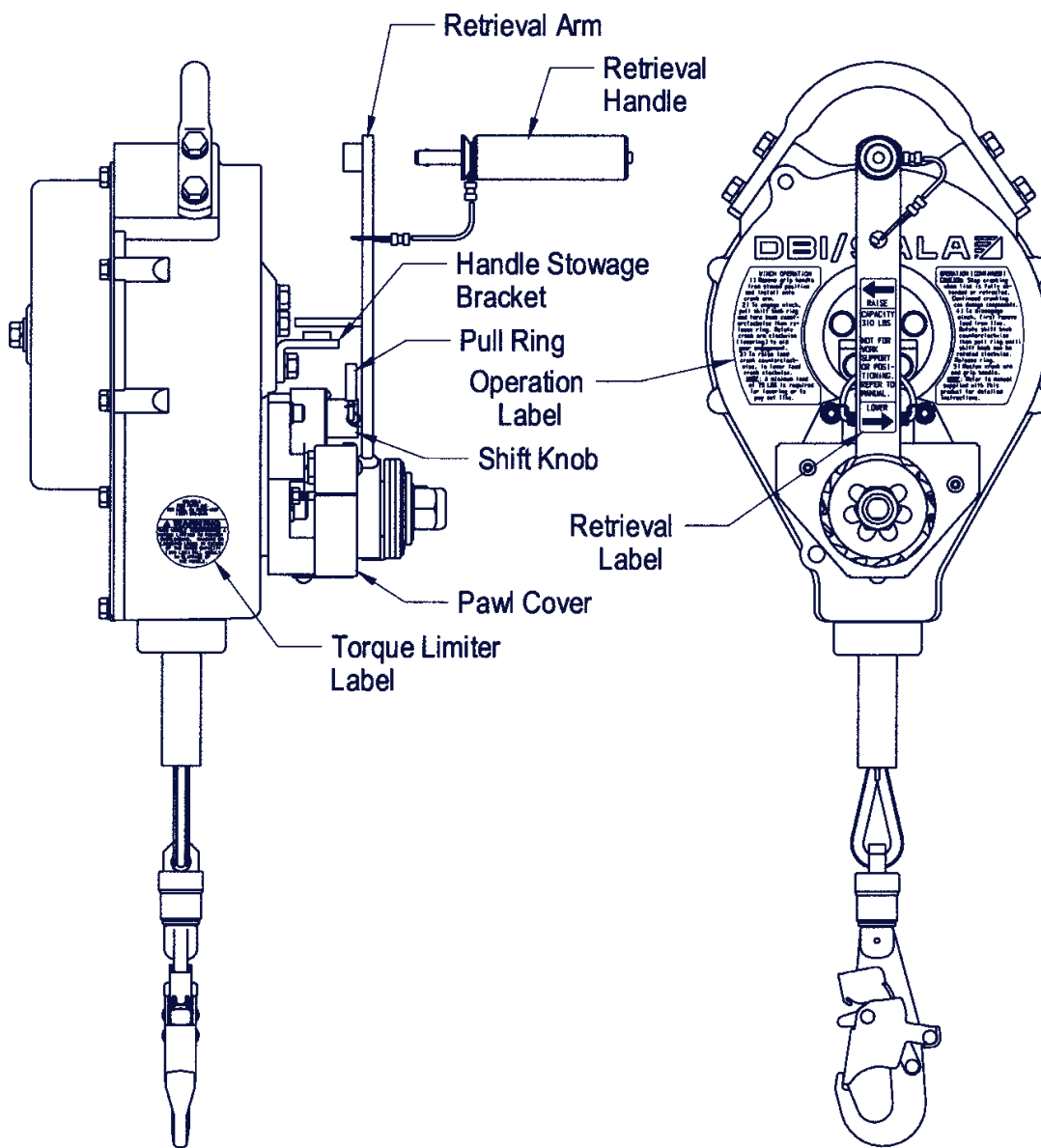


Figure 2



DESCRIPTIONS

- L3400 Sealed Self Retracting Lifeline:** 50 ft. of 3/16 inch galvanized wire rope, self locking swiveling snap hook with indicator.
- L3401 Sealed Self Retracting Lifeline:** 50 ft. of 3/16 inch stainless steel wire rope, self locking swiveling snap hook with indicator.
- L3402 Sealed Self Retracting Lifeline with Retrieval:** 50 ft. of 3/16 inch galvanized wire rope, self locking swiveling snap hook with indicator.
- L3403 Sealed Self Retracting Lifeline with Retrieval:** 50 ft. of 3/16 inch stainless steel wire rope, self locking swiveling snap hook with indicator.
- L3500 Sealed Self Retracting Lifeline:** 85 ft. of 3/16 inch galvanized wire rope, self locking swiveling snap hook with indicator.
- L3501 Sealed Self Retracting Lifeline:** 85 ft. of 3/16 inch stainless steel wire rope, self locking swiveling snap hook with indicator.
- L3502 Sealed Self Retracting Lifeline with Retrieval:** 85 ft. of 3/16 inch galvanized wire rope, self locking swiveling snap hook with indicator.
- L3503 Sealed Self Retracting Lifeline with Retrieval:** 85 ft. of 3/16 inch stainless steel wire rope, self locking swiveling snap hook with indicator.
- L3600 Sealed Self Retracting Lifeline:** 130 ft. of 3/16 inch galvanized wire rope, self locking swiveling snap hook with indicator.
- L3601 Sealed Self Retracting Lifeline:** 130 ft. of 3/16 inch stainless steel wire rope, self locking swiveling snap hook with indicator.
- L3602 Sealed Self Retracting Lifeline with Retrieval:** 130 ft. of 3/16 inch galvanized wire rope, self locking swiveling snap hook with indicator.
- L3603 Sealed Self Retracting Lifeline with Retrieval:** 130 ft. of 3/16 inch stainless steel wire rope, self locking swiveling snap hook with indicator.
- L7576 Sealed Self Retracting Lifeline:** 175 ft. of 3/16 inch galvanized wire rope, self locking swiveling snap hook with indicator.
- L7626 Sealed Self Retracting Lifeline:** 175 ft. of 3/16 inch stainless steel wire rope, self locking swiveling snap hook with indicator.
- L3404 Sealed Self Retracting Lifeline with Retrieval:** 30 ft. of 1/4 inch Spectra synthetic rope, self locking swiveling snap hook with indicator.
- L3405 Sealed Self Retracting Lifeline:** 30 ft. of 1/4 inch Spectra synthetic rope, self locking swiveling snap hook with indicator.
- L3504 Sealed Self Retracting Lifeline with Retrieval:** 55 ft. of 1/4 inch Spectra synthetic rope, self locking swiveling snap hook with indicator.
- L3505 Sealed Self Retracting Lifeline:** 55 ft. of 1/4 inch Spectra synthetic rope, self locking swiveling snap hook with indicator.
- L3604 Sealed Self Retracting Lifeline with Retrieval:** 80 ft. of 1/4 inch Spectra synthetic rope, self locking swiveling snap hook with indicator.
- 08731 Sealed Self Retracting Lifeline with Retrieval:** 30 ft. of 1/4 inch Technora synthetic rope, self locking swiveling snap hook with indicator. Mounting bracket included.

- Model numbers with a "Z" prefix (instead of "L") have the same descriptions as above. CSA certified.
- Model numbers with a "-1" suffix (i.e. L3404-1) include a mounting bracket.

1.0 APPLICATIONS

- 1.1 PURPOSE:** DBI/SALA self retracting lifelines (SRL) are designed to be components in personal fall arrest systems (PFAS). They may be used in most situations where a combination of worker mobility and fall protection is required (i.e. inspection work, general

construction, maintenance work, oil production, confined space work, etc.). Some SRL models incorporate a built-in retrieval feature. These models have the same fall arrest capabilities as those described above when used in their non-retrieval mode. In the retrieval mode these models may be used for emergency rescue (raising or lowering) of personnel within the capacity range stated below. It is also permissible to use retrieval models for raising and lowering of materials within the stated capacity range.

IMPORTANT: *This equipment may not be suitable for applications requiring frequent or continual use as a material hoist. Consult DBI/SALA before using this product for such applications. The retrieval models listed above are not designed to be used for general purpose work positioning or man-riding applications.*

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

- A. CORROSION:** Do not leave this equipment for long periods in environments where corrosion of metal parts could occur as a result of vapors from organic materials. Use caution when working around sewage or fertilizer because of their high concentration of ammonia, which is very corrosive. Use near seawater or other corrosive environments may require more frequent inspections or servicing to assure corrosion damage is not affecting the performance of the product.
- B. CHEMICAL HAZARDS:** Solutions containing acids, alkali or other caustic chemicals, particularly at elevated temperatures, may damage DBI/SALA SRL's. When working with such chemicals, frequent inspection of the entire SRL must be completed. Chemical damage to the lifeline is difficult to detect and it is recommended that the lifeline be replaced periodically to ensure safety. The lifeline may only be replaced by an authorized service center). Consult DBI/SALA if in doubt about using this equipment around chemical hazards.
- C. HEAT:** This equipment is not designed for use in high temperature environments. Provide protection for this equipment when using near welding, metal cutting, or similar activities. Hot sparks may burn or damage this equipment. Consult DBI/SALA for details on use in high temperature environments.

NOTE: *SRL's using Spectra synthetic rope are not flame or heat resistant. Do not use in environments exceeding 140°F (60°C). Do not allow Spectra rope to contact materials exceeding 140°F (60°C). SRL's using Technora synthetic rope are heat resistant up to 900°F (480°C).*

- D. ELECTRICAL HAZARDS:** Due to the possibility of electric current flowing through the wire rope lifeline, use extreme caution when working near high voltage power lines.
- E. CAPACITY:** These SRL's are designed for use by persons with a combined weight (person, clothing, tools, etc.) of 75 lbs. to 310 lbs. At no time shall more than one person connect to a single SRL for fall arrest applications.
- F. LOCKING SPEED:** Situations which do not allow for an unobstructed fall path should be avoided. Working in confined or cramped spaces may not allow the body to reach sufficient speed to cause the SRL to lock if a fall occurs. Working on slowly shifting material, such as sand or grain, may not allow enough speed

build-up to cause the SRL to lock. A clear path is required to assure positive locking of the SRL.

G. NORMAL OPERATIONS: Normal operations will allow the lifeline to extend and retract. If a fall occurs a speed sensing brake system will activate, stopping the fall and absorbing much of the energy created. For falls which occur near the end of the lifeline travel a reserve lifeline system has been incorporated to assure a reduced impact fall arrest. If a fall has been arrested, the SRL must be taken out of service and inspected. See section 5.0. Sudden or quick movements should be avoided during the normal work operation, this may cause the SRL to lockup.

H. TRAINING: This equipment is intended to be installed and used by persons who have been trained in its correct application and use.

1.3 Refer to national standards, including; ANSI Z359.1-1992, ANSI A10.14-1991, and local, state, and federal (OSHA) requirements for more information on anchorage connectors and associated components.

2.0 SYSTEM REQUIREMENTS

2.1 COMPATIBILITY OF COMPONENTS AND SUBSYSTEMS: DBI/SALA self retracting lifelines are designed for use with DBI/SALA approved components. Substitutions or replacements made with non-approved components may jeopardize compatibility of the equipment, and may affect the reliability and safety of the complete system. Contact DBI/SALA if you have questions about compatibility of components.

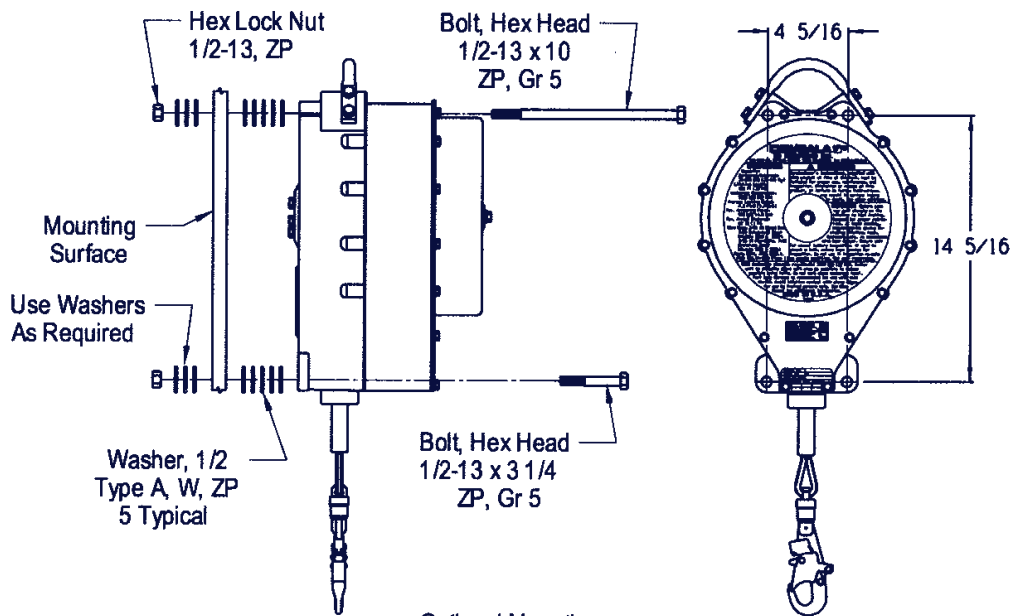
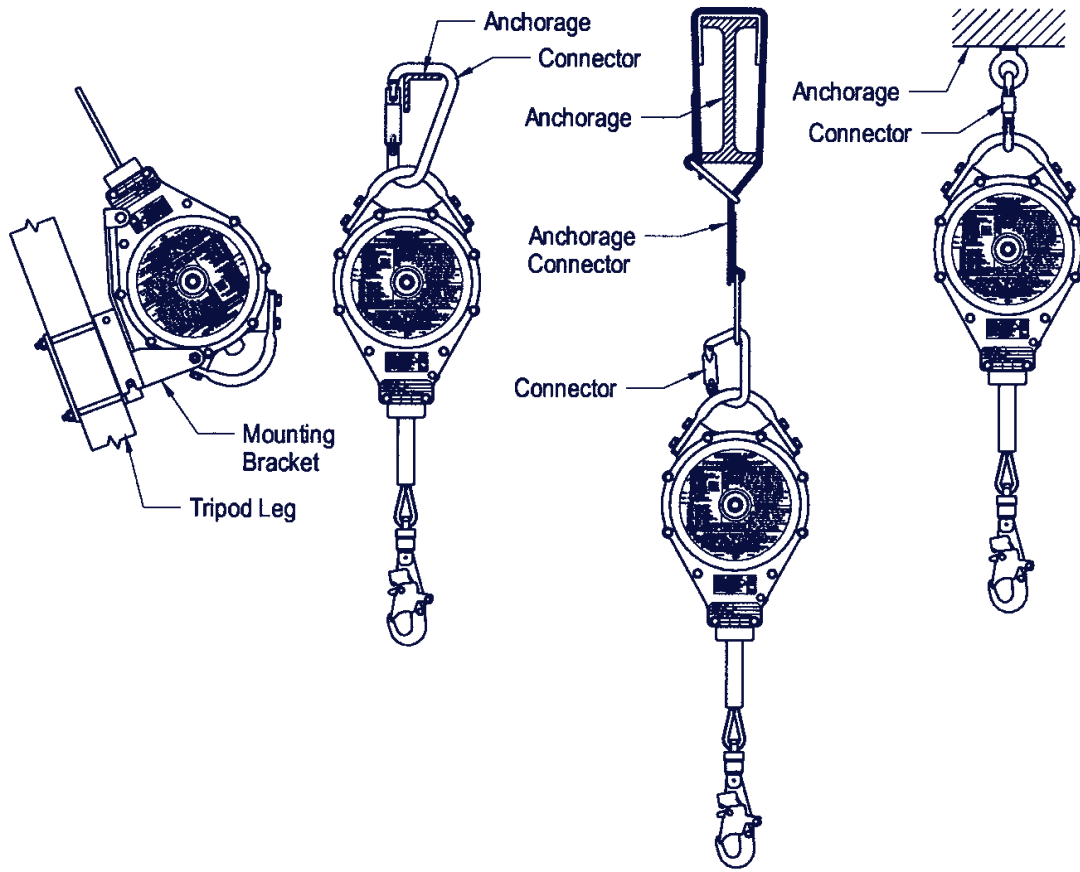
2.2 COMPATIBILITY OF CONNECTORS: Connectors (hooks, carabiners, D-rings) must be capable of supporting 5,000 lbs. (22kN) minimum. Connecting hooks and the connection point must be compatible. Non-compatible connectors may disengage (roll-out). Connectors must be compatible in size, shape, and strength. Per OSHA 1926.500: As of January 1, 1998 the use of a non-locking snap hook as part of a personal fall arrest system and positioning device is prohibited.

2.3 ANCHORAGE STRENGTH: Anchorages used for personal fall arrest systems must sustain static loads applied in the directions permitted by the PFAS of at least 3,600 lbs. (16kN) with certification of a qualified person, or 5,000 lbs. (22kN) without certification. When more than one PFAS is attached to an anchorage the anchorage strengths stated above must be multiplied by the number of personal fall arrest systems attached to the anchorage.

2.4 In applications where an SRL is used in conjunction with a horizontal system (i.e. horizontal I-beams and trolleys), the SRL and horizontal system components must be compatible.

2.5 When using DBI/SALA SRL's with optional retrieval system, ensure the support structure (i.e. tripod, davit arm) is compatible with connection of the SRL, and compatible with the operation, stability, and strength of the SRL. See Figure 3.

Figure 3



Optional Mounting
 L3600, L3601, L3602, L3603, L3604
 L7576, L7626 SRL's

3.0 OPERATION AND USE

WARNING: Do not alter or intentionally misuse this equipment, your safety may depend on it. Consult DBI/SALA when using this equipment 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 sharp edges and chemical hazards.

WARNING: Consult with your doctor if there is any reason to doubt your fitness to safely absorb the shock from a fall arrest. Age and fitness seriously affect a workers ability to withstand falls. Pregnant women or minors must not use DBI/SALA SRL's.

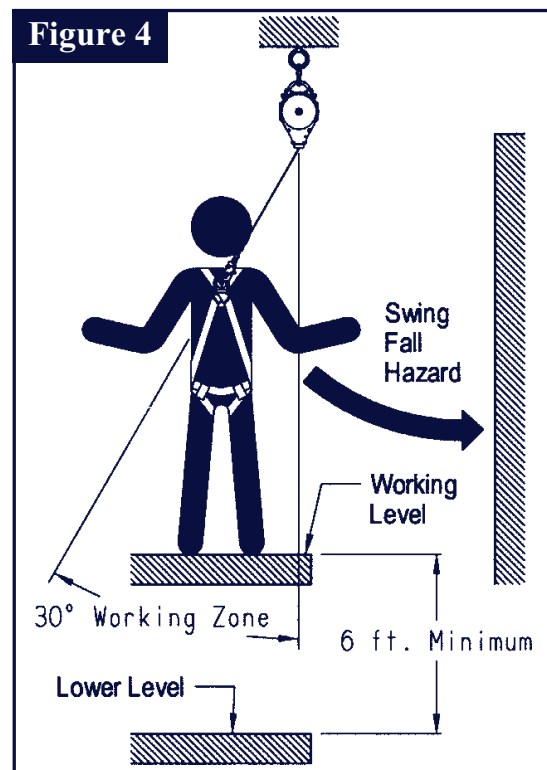
3.1 BEFORE EACH USE: Before each use of this fall protection equipment carefully inspect it to assure it is in good working condition. Check for worn or damaged parts. Ensure all bolts are present and secure. Check that the lifeline is retracting properly by pulling out the line and allowing it to slowly retract. Inspect the lifeline for cuts, frays, burns, etc. Check locking action by pulling sharply on the line. See section 5.0 for inspection details. Do not use if inspection reveals an unsafe condition.

3.2 PLANNING: Plan your fall protection system before starting your work. Consider all factors that may affect your safety before, during, and after a fall. The following list gives some important points to consider when planning your system:

A. ANCHORAGE: Select a rigid anchorage point that capable of supporting 5,000 lbs. (22kN). See Figure 3 and section 2.3. Carefully select the anchorage location to reduce free fall and swing fall hazards.

B. FREE FALL: Personal fall arrest systems must be rigged so the potential free fall is never greater than six feet (five feet per ANSI A10.14-1991). Do not work above your anchorage level to avoid an increased free fall distance. Avoid working where your lifeline may cross or tangle with that of another worker. Do not allow the lifeline to pass under arms or between legs. Never clamp, knot, or prevent the lifeline from retracting or being taut. Avoid slack line. **Do not lengthen SRL by connecting a lanyard or similar component without consulting DBI/SALA.**

C. SWING FALLS: Swing falls occur when the anchorage point is not directly above the point where a fall occurs. The force of striking an object in a swing fall may cause serious injury. In a swing fall the total vertical fall distance will be much greater than if the user had fallen directly below the anchorage point, thus increasing the total free fall distance and the area required to



safely arrest the user. The SRL will activate regardless of its orientation relative to the user. As a commonly followed guideline, do not extend your work zone more than 30 degrees from the anchorage point. Minimize swing falls by working as directly below the anchorage point as possible. Never permit a swing fall if injury could occur. If a swing fall situation exists in your application contact DBI/SALA before proceeding. See Figure 4.

- D. FALL CLEARANCE:** Ensure adequate clearance exists in your fall path to prevent striking an object. A minimum of six feet (2m) from the working level to the lower level nearest obstruction is recommended. See Figure 4.
- E. SHARP EDGES:** Avoid working where the lifeline will be in contact with or abrade against unprotected sharp edges. Provide protection for the lifeline when possible. An energy absorbing component can sometimes be added in-line to further protect the worker. Compatibility and total fall distance must be considered if this is done. Contact DBI/SALA before using an in-line energy absorbing component or lanyard with an SRL.
- F. RESCUE:** If a fall occurs the user (employer) must have a rescue plan and the ability to implement it.
- G. AFTER A FALL:** Equipment which has been subjected to fall arrest forces must be removed from service for inspection. See section 5.0.

WARNING: *Read and follow manufacturer's instructions for associated equipment (i.e. full body harness) used in your personal fall arrest system.*

IMPORTANT: *For special (custom) versions of this product, follow the instructions herein. See attached supplement, if included, for additional instructions when using a customized product.*

3.3 BODY SUPPORT: When using DBI/SALA SRL's a full body harness must be worn. For general fall protection use connect to the back D-ring. For situations such as ladder climbing, it may be useful to attach to the front of the harness. This is acceptable provided potential free fall is very short and footing can be easily regained.

For retrieval operations it is recommended that a full body harness be used to retrieve the victim, assuming their medical condition allows for such retrieval. Models are available with retrieval connections (shoulder D-rings) on top of the shoulders to aid in rescue operations.

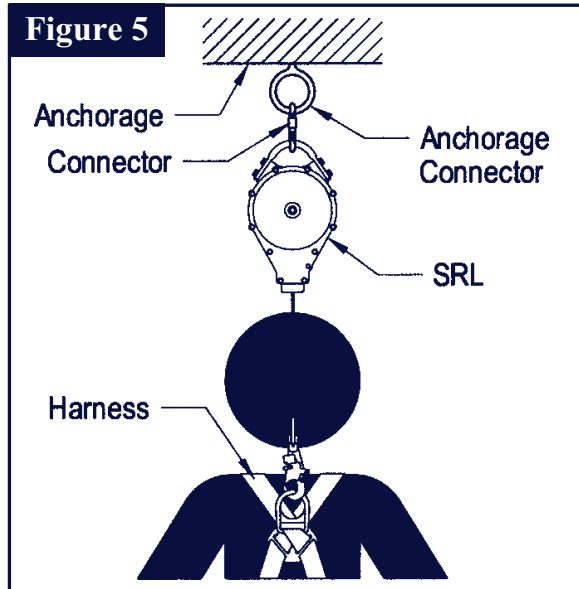
IMPORTANT: *Do not use a body belt for free fall applications. See OSHA 1926.502 for guidelines.*

3.4 MAKING CONNECTIONS: When using a hook to make a connection, ensure roll-out cannot occur. Roll-out occurs when interference between a hook and the mating connector causes the hook's gate or keeper to unintentionally open and release. Self locking snap hooks or self locking/self closing carabiners must be used to reduce the possibility of roll-out when making connections. Do not use hooks or connectors that will not completely close over the attachment object. Do not use non-locking snap hooks. It is recommended that the L7576 and L7626 be attached to a structure in a

fixed position (vs. hanging) with the hardware supplied. The mounting surface should meet the anchorage strength requirements stated in section 2.3. Follow the manufacturer's instructions supplied with each system component. See Figure 3.

IMPORTANT: *If longer bolts are needed to mount the SRL to a structure, use 1/2 inch diameter, grade 5 (minimum) bolts.*

3.5 OPERATION: Inspect the SRL as described in section 3.1. Connect the SRL to a suitable anchorage or anchorage connector as described above. Connect self locking snap hook on end of lifeline to the fall arrest or ladder climbing attachment on the body support (full body harness). Ensure connections are compatible in size, shape, and strength. Ensure hook is fully closed and locked. See Figure 5. Once attached, the worker is free to move about within the recommended working area at normal speeds. If a fall occurs the SRL will lock and arrest the fall. Upon rescue remove SRL from use. Inspect as described in section 5.0. When working with an SRL, always allow the lifeline to recoil back into the device under control. A short tag line may be required to extend or retract the lifeline during connection and disconnection operations. Allowing the lifeline to be fully extended for long periods of time may cause premature weakening of the retraction spring.



3.6 RETRIEVAL SYSTEM OPERATION:
To activate retrieval mode, remove the retrieval handle on back side of the SRL by pushing the release button on top of handle and pulling upward. Install pin into hole on end of retrieval arm. Rotate arm assembly to the side to access shift knob. Lift pull ring on shift knob, rotate counter-clockwise 1/8 turn and release. Rotate retrieval arm clockwise to aid engagement. **The shift knob should move inward and rotate to a locked position when drive is fully engaged.** See Figure 6.

- A. **TO RAISE:** Rotate retrieval arm counter-clockwise.
- B. **TO LOWER:** Rotate retrieval arm clockwise. Keep tension on lifeline at all times (75 lbs. minimum).



IMPORTANT: *If a fall occurs in the fall arrest mode and the worker must be lowered to safety, raise the worker slightly to release the locking pawls and lower the worker.*

IMPORTANT: *Do not continue to rotate the retrieval arm in the lowering direction after the cable is fully extended. Spring damage may occur.*

- C. DISENGAGEMENT OF RETRIEVAL MODE:** Remove load from the life-line. Rotate the shift knob counter-clockwise 1/8 turn, pull pull ring out, rotate shift knob clockwise 1/8 turn. Release pull ring. Remove retrieval handle from retrieval arm and stow in stowage bracket. Insert retrieval handle pin through handle and into stowage bracket.

- 3.7 RETRIEVAL OVERLOAD FEATURE:** SRL's which incorporate the retrieval feature are provided with an overload clutch which protects the drive components and the person being raised from excessive force. This same feature provides shock absorption for the user if a fall occurs when the retrieval mode is engaged. The overload clutch is set to slip at approximately 500 lbs. to allow for emergency rescue applications where additional lifting capacity is required.

IMPORTANT: *Operating the retrieval system at loads greater than the rated capacity reduces the overall safety factor. Any unit which has been used above the rated capacity must be removed from service and returned to DBI/SALA for inspection.*

- 3.8 MOUNTING RETRIEVAL MODELS:** The SRL retrieval models may be used with optional brackets for mounting to the DBI/SALA tripod, davit arm, or ladder mast. Follow the steps below for mounting and use of these brackets:

Figure 7



IMPORTANT: *If mating bracket for tripod leg is not attached position clamp plate assembly in desired location on leg and tighten bolts to 15 ft.-lbs. Do not overtighten.*

NOTE: For retrieval models operated from a free hanging position a hand stabilizing bracket (3402-218) is available to steady the SRL. Attach bracket to the SRL housing using bolt, spacer, and washer furnished, which are inserted through the hole in the housing on the bottom half. See Figure 7.

Step 1. Attach the bracket to the SRL by inserting the two furnished bolts through the holes in the SRL housing. Attach nuts and secure.

- Step 2.** After the bracket is secured to the SRL, position the SRL bracket assembly onto mating bracket of tripod, davit arm, or ladder mast. The slot in the end of SRL bracket slides onto pin extending out each side of mating ladder mast, davit arm, or tripod leg bracket.

Figure 8



Reposition tripod leg bracket as required for proper operating height. See Figure 8.

- Step 3.** With assembly resting on pin, pivot top of SRL inward to align holes. Press in button on end of detent pin and slide pin in fully to secure SRL assembly to tripod, davit arm, or ladder mast. See Figure 9.



- Step 4.** Extend cable up support structure and over pulleys. Reinstall detent pins near pulley to prevent cable from sliding off pulleys. See Figure 10. Figures 11 and 12 show a completed attachment.



4.0 TRAINING

- 4.1** It is the responsibility of the user and the purchaser of this equipment to assure they are familiar with these instructions, trained in the correct care and use of, and are aware of the operating characteristics, application limits, and the consequences of improper use of this equipment.

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

5.0 INSPECTION

5.1 FREQUENCY:

- **Before Each Use:** Inspect per steps listed in sections 5.2, 5.3, and 5.4.
- **Monthly:** A formal inspection should be done by a competent person other than the user. See sections 5.2, 5.3, and 5.4. Record results in inspection log in section 9.0.
- **Every Two Years:** DBI/SALA SRL's are required to be serviced at least every two years by an authorized service center. Extreme working conditions may require increasing service frequency. Contact DBI/SALA for service frequencies in extreme working conditions. Service shall include, but not be limited to, an intensive inspection and cleaning of all components. Failure to provide required service may shorten the product life and endanger performance.

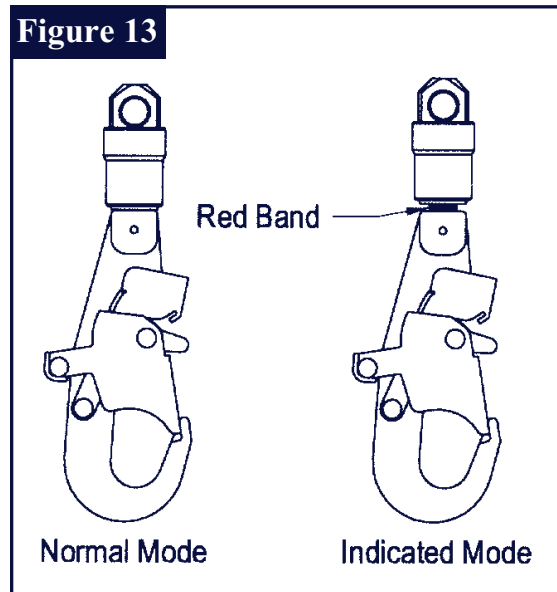
A record of annual service dates can be found on the identification plate of the SRL. See Figure 1 and section 8.0.

- **After Fall Arrest:** Inspect load indicator according to section 5.2, and entire SRL per sections 5.3 and 5.4.
- **After Use Of Retrieval Mode:** After raising or lowering, inspect load indicator according to section 5.2 and entire SRL according to sections 5.3 and 5.4. Applications which require continuous raising and lowering may require increased inspection and servicing frequency. Contact DBI/SALA if you have any questions regarding inspection frequency.

WARNING: *If the self retracting lifeline has been subjected to fall arrest or impact forces, it must be removed from service and inspected according to sections 5.2 and 5.3*

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

5.2 IMPACT INDICATOR: To inspect the impact indicator, look for exposed color band on hook as shown in Figure 13. If the hook is in the "indicated mode", an impact loading has occurred. SRL's which have been subjected to impact loading must be removed from service for inspection. Do not attempt to reset impact indicator. Return to an authorized service center for resetting. NOTE: Swivel will not turn freely in "indicated mode."



5.3 INSPECTION STEPS:

- Step 1.** Inspect for loose bolts and bent or damaged parts.
- Step 2.** Inspect housing for distortion, cracks, or other damage.
- Step 3.** Lifeline should pull out and retract fully.
- Step 4.** Ensure device locks up when lifeline is jerked sharply. Lock-up should be positive with no slipping.
- Step 5.** The labels must be present and fully legible. See section 8.0.
- Step 6.** Look for signs of corrosion on the entire unit.
- Step 7. WIRE ROPE:** Inspect wire rope for cuts, kinks, broken wires, corrosion, chemical contact areas, or severely abraded areas. Slide up cable bumper and inspect ferrules for cracks or damage. NOTE: Replace the wire rope assembly if there are six or more randomly distributed broken wires in one lay, or three or more broken wires in one strand in one lay. A "lay" of wire rope is

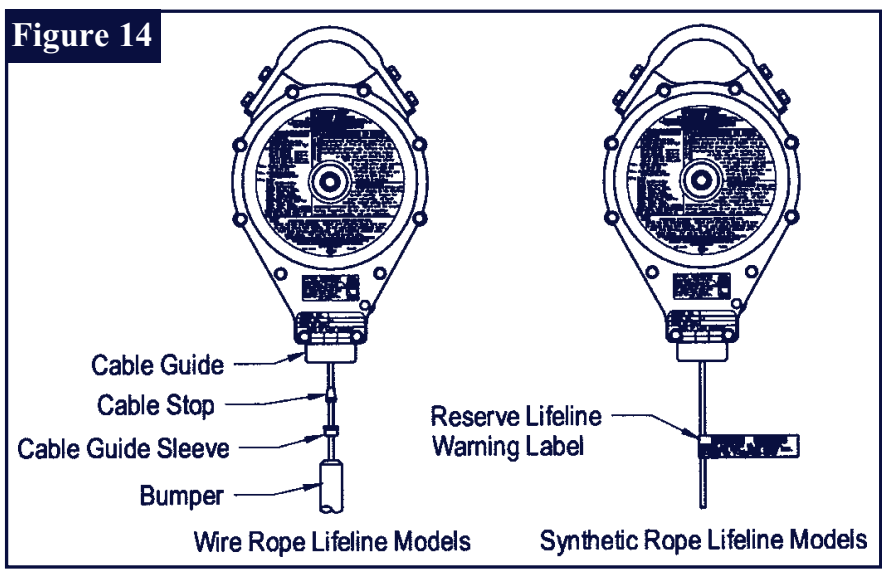
the length of wire rope it takes for a strand (the larger groups of wires) to complete one revolution or twist along the rope. Replace the wire rope assembly if there are any broken wires within one inch (25mm) of the ferrules. **SYNTHETIC ROPE (Spectra and Technora):** Inspect synthetic rope for concentrated wear, frayed strands, broken yarns, cuts, and abrasions. The lifeline must be free of knots throughout its length. Inspect for excessive soiling, paint build-up, and rust staining. Inspect for chemical or heat damage indicated by brown, discolored, or brittle areas. Inspect for ultraviolet damage indicated by discoloration and the presence of splinters and slivers on the rope surface. NOTE: All of the above factors are known to reduce rope strength. Rope strength is reduced proportional to the cross-sectional area of the rope damaged. Damaged or questionable ropes must be replaced.

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

Step 8. Inspect connecting hooks for signs of damage, corrosion, and working condition. Swivel should rotate freely. Inspect impact indicator according to section 5.2.

Step 9. WIRE ROPE MODELS: Inspect reserve lifeline payout. If a fall has been arrested When most of the lifeline was out, it is possible that the reserve lifeline has been deployed. To inspect for reserve lifeline deployment, pull lifeline out of the SRL until it stops. If the reserve lifeline cable stop or cable guide sleeve is visible, the reserve lifeline has been spent and the unit must be serviced by an authorized service center before reuse. See Figure 14. If the reserve lifeline has not been deployed, that portion is acceptable and the inspection can continue.

SYNTHETIC ROPE MODELS (Spectra and Technora): Inspect reserve lifeline payout. If a fall has been arrested, it is possible the reserve lifeline has been deployed. To inspect for reserve lifeline deployment, pull lifeline out of the SRL until it stops. If the reserve lifeline warning label is visible,



the reserve lifeline has been spent and the unit must be serviced by an authorized service center before use. See Figure 14. If the reserve lifeline has not been deployed (the reserve lifeline label is not visible) that portion is acceptable and the inspection can continue.

Step 10. Inspect each system component or subsystem according to manufacturer's instructions.

Step 11. Record inspection results in the inspection log found in section 9.0.

INSPECTION STEPS FOR RETRIEVAL COMPONENTS:

Step 12. Inspect retrieval arm for distortion or other damage. Retrieval handle should engage into retrieval arm with ease and push button should work freely.

Step 13. Shift knob should rotate freely when engaging/disengaging. Pull ring on shift knob should spring back when released.

Step 14. Inspect retrieval mode for operation. To test, raise and lower a test weight (sand bag) of between 75 lbs. and 310 lbs. Retrieval operation should be smooth and even. When the retrieval handle is released, the weight should not move and retrieval handle should stay in position (no movement). A "clicking" sound should be evident when raising load.

Step 15. Retrieval pawl cover must be secure and without deformation. Optional mounting bracket must be securely attached to SRL and free from defects. Detent pin must operate freely.

5.4 If inspection reveals a defective condition, remove the SRL from service immediately and contact an authorized service center for repair.

<p><i>NOTE: Only DBI/SALA or parties authorized in writing may make repairs to this equipment.</i></p>
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6.0 MAINTENANCE, SERVICING, STORAGE

6.1 Periodically clean the exterior of the SRL using water and a mild soap solution. Position the SRL so excess water can drain out. Clean labels as required.

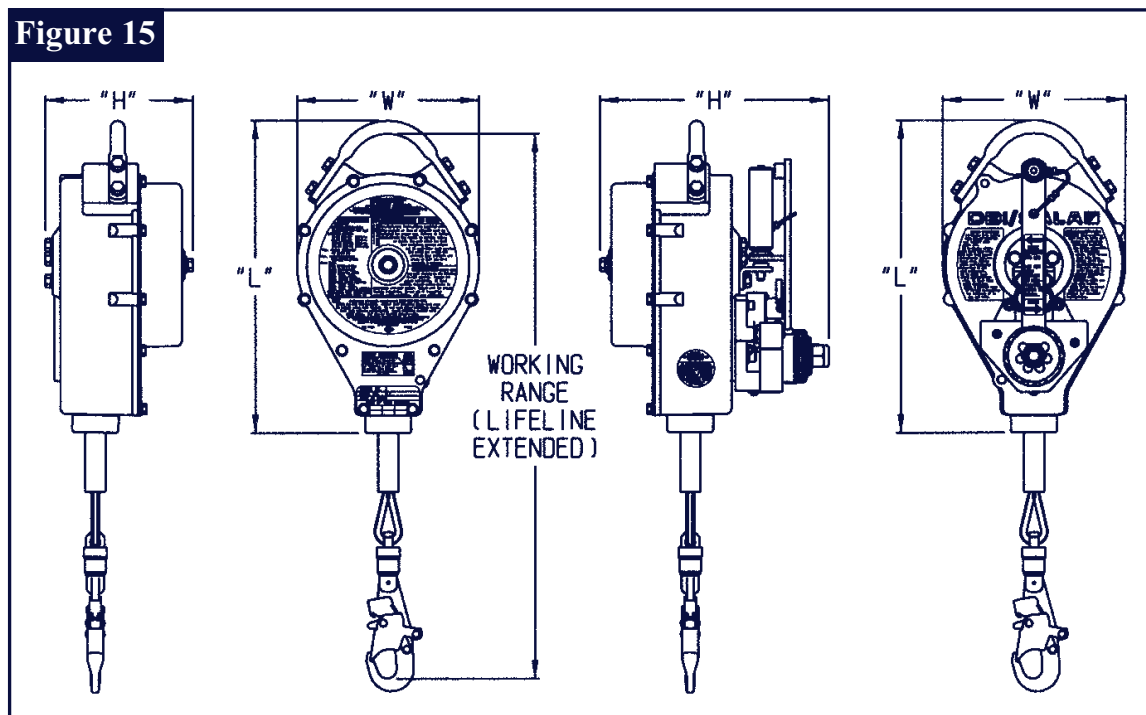
6.2 Clean lifeline with water and mild soap solution. Rinse and thoroughly air dry. Do not force dry with heat. An excessive buildup of dirt, paint, etc. may prevent the lifeline from fully retracting back into the housing causing a potential free fall hazard. Replace lifeline if excessive buildup is present.

6.3 Lifeline replacement, as well as additional maintenance and servicing procedures, must be completed by an authorized service center. An authorization and return number must be issued by DBI/SALA. Do not attempt to disassemble the SRL. See section 5.1 for servicing frequency. NOTE: Do not lubricate any parts.

6.4 Store SRL in a cool, dry, clean environment out of direct sunlight. Avoid areas where chemical vapors may exist. Thoroughly inspect the SRL after any period of extended storage.

7.0 SPECIFICATIONS

Model	Size (LxWxH) / Weight	Lifeline Type / *Working Range
L3400	13.5x7.9x6.4" / 29 lbs.	Galvanized Wire Rope / 50 ft.
L3401	13.5x7.9x6.4" / 29 lbs.	Stainless Steel Wire Rope / 50 ft.
L3402	13.5x7.9x9.9" / 36 lbs.	Galvanized Wire Rope / 50 ft.
L3403	13.5x7.9x9.9" / 36 lbs.	Stainless Steel Wire Rope / 50 ft.
L3500	16.0x9.9x6.7" / 44 lbs.	Galvanized Wire Rope / 85 ft.
L3501	16.0x9.9x6.7" / 44 lbs.	Stainless Steel Wire Rope / 85 ft.
L3502	16.0x9.9x10.2" / 52 lbs.	Galvanized Wire Rope / 85 ft.
L3503	16.0x9.9x10.2" / 52 lbs.	Stainless Steel Wire Rope / 85 ft.
L3600	18.7x11.7x7.2" / 60 lbs.	Galvanized Wire Rope / 130 ft.
L3601	18.7x11.7x7.2" / 60 lbs.	Stainless Steel Wire Rope / 130 ft.
L3602	18.7x11.7x10.7" / 68 lbs.	Galvanized Wire Rope / 130 ft.
L3603	18.7x11.7x10.7" / 68 lbs.	Stainless Steel Wire Rope / 130 ft.
L7576	18.7x11.7x10.9" / 100 lbs.	Galvanized Wire Rope / 175 ft.
L7626	18.7x11.7x10.9" / 100 lbs.	Stainless Steel Wire Rope / 175 ft.
L3404	13.5x7.9x9.9" / 36 lbs.	Spectra Synthetic Rope / 50 ft.
L3405	13.5x7.9x6.4" / 29 lbs.	Spectra Synthetic Rope / 50 ft.
L3504	16.0x9.9x10.2" / 52 lbs.	Spectra Synthetic Rope / 55 ft.
L3505	16.0x9.9x6.7" / 44 lbs.	Spectra Synthetic Rope / 55 ft.
L3604	18.7x11.7x10.7" / 68 lbs.	Spectra Synthetic Rope / 80 ft.
08731	13.5x7.9x9.9" / 36 lbs.	Technora Synthetic Rope / 30 ft.



* Working range includes a 2 ft. Emergency Reserve

- Maximum Arresting Force, All Models: 900 lbs. when tested in accordance with ANSI Z359.1-1992
- Capacity, All Models: 75-310 lbs.
- Average Locking Speed, All Models: 4.5 ft./second
- Safety Factor at Rated Load: 10:1
- Housing Fastener Torques: 1/4-20 bolts: 60 in-lbs. 5/16-18 bolts: 132 in-lbs.
- U.S. Patent Numbers 4,977,647, 5,186,289 and 5,220,977. Canadian Patent Numbers 2,027,784 (hook) and 2,089,514 (indicator), European Patent Number EP0557031B7 (hook)
- SRL meets industry standards including ANSI Z359.1-1992, ANSI A10.14-1991 and OSHA requirements.
- SRL meets CSA (Canadian Standards Association) requirements Z259.2.

7.1 MATERIAL:

Housing: Cast Aluminum

Housing Cover: Stainless Steel

Anchorage Handle: Stainless Steel

Fasteners: Stainless Steel

Main Shaft: Stainless Steel

Locking Pawls: Stainless Steel

Ratchet Center: Carbon Steel

Motor Spring: Carbon Spring Steel

Finish Paint: Polyester baked finish

Connecting Hook: Forged Alloy Steel

Swivel Assembly: Stainless Steel

Cable Guide: Nylon with Stainless Steel Guide

Cable Bumper: Urethane

Lifeline (Galvanized): 3/16" dia., 7x19 aircraft wire rope, 4,200 lbs. minimum tensile strength

Lifeline (Stainless Steel): 3/16" dia., 7x19 aircraft wire rope, 3,600 lbs. minimum tensile strength

Lifeline (Spectra): 1/4" dia., 12 strand synthetic rope, 5,600 lbs. minimum tensile strength

Lifeline (Technora): 1/4" dia., 12 strand synthetic rope, 8,150 lbs. minimum tensile strength

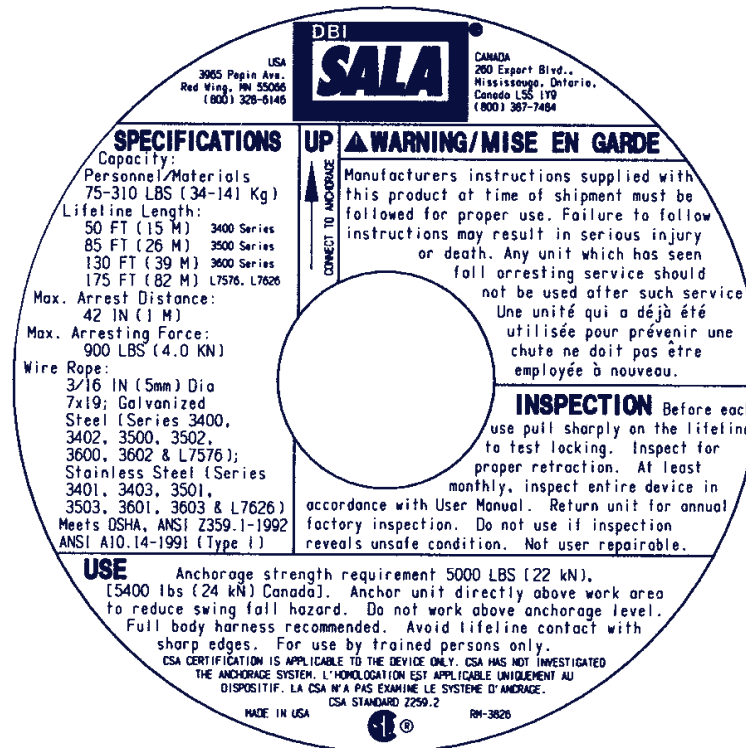
7.2 OPERATING CHARACTERISTICS, RETRIEVAL MODELS:

Model	Gear Ratio	Weight Lifted	Cranking Force
L3402/L3403	6.8:1	200 lbs.	7 lbs. - 12 lbs.
L3402/L3403	6.8:1	310 lbs	11 lbs. - 19 lbs.
L3502/L3503	6.8:1	200 lbs.	8 lbs. - 13 lbs.
L3502/L3503	6.8:1	310 lbs.	12 lbs. - 20 lbs.
L3602/L3603	6.8:1	200 lbs.	9 lbs. - 16 lbs.
L3602/L3603	6.8:1	310 lbs.	12 lbs. - 20 lbs.

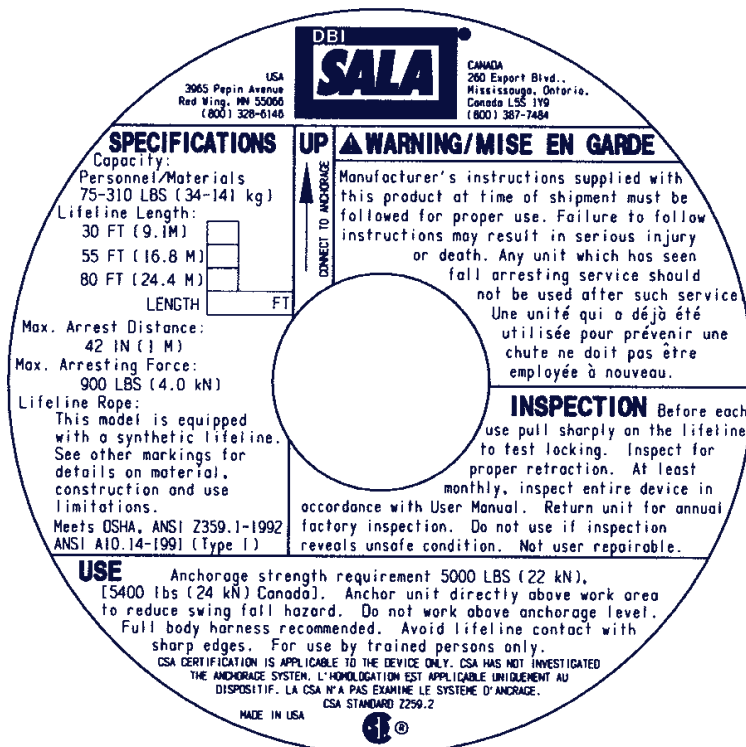
- Average Retrieval Rate at 60 RPM: 12.1 ft./min. (3.7 m/min.)

8.0 LABELING

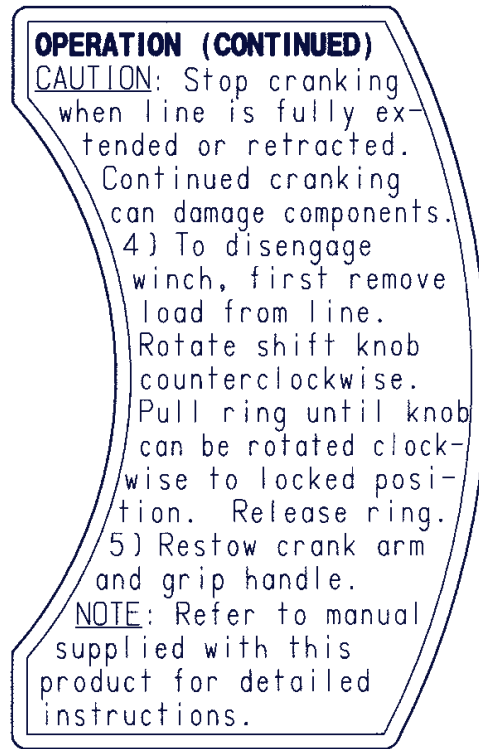
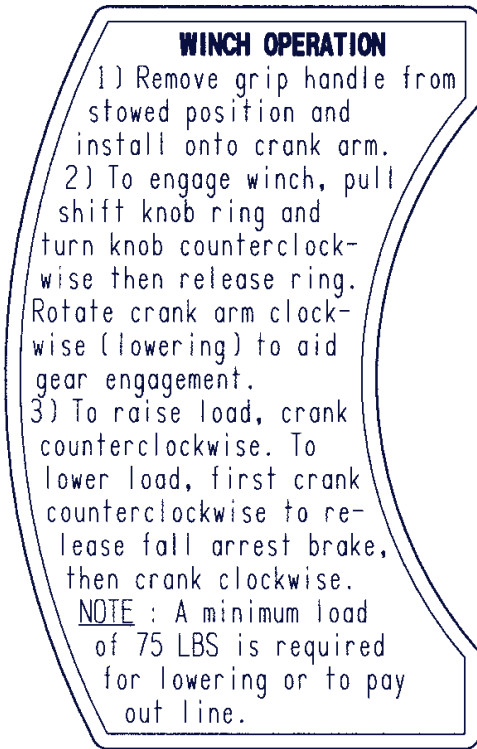
8.1 These labels be securely attached to the self retracting lifeline and fully legible. See Figures 1 and 2.



Instruction Label
Wire Rope Models



Instruction Label
Spectra and Technora Synthetic Rope Models



**Retrieval Operation Labels
All Retrieval Models**



**Torque Limiter Label
All Retrieval Models**



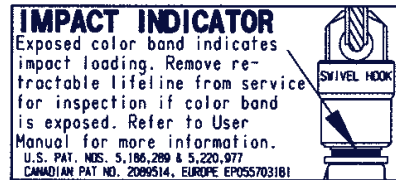
**Shift Knob Label
All Retrieval Models**



**Retrieval Arm Label
All Retrieval Models**

SERIAL NO.	
MODEL NO.	
DATE OF MFR.	
LOT NO.	
DATE OF LAST SERVICE	
○	
○	

Identification Label
All Models



Impact Indicator Label
All Models



Swivel Hook Label
All Models

Lifeline Specifications Material: Spectra Construction: 12 strand Size: 1/4 in. diameter Heat resistant to 140° F (60° C) RM-3625	▲ WARNING
	Do not tie or knot lifeline. Dirt, contaminants, and water can lower dielectric properties of lifeline, use caution near energized lines. Avoid lifeline contact with sharp or abrasive surfaces. Inspect line frequently for cuts, fraying, burns, or signs of chemical damage. See user manual for more information. Failure to heed these warnings may result in injury or death.

Warning Label
Spectra Synthetic Rope Models

Lifeline Specifications Material: Technora Construction: 12 strand Size: 1/4 in. diameter Heat resistant to 900° F (480° C) 08832	▲ WARNING
	Do not tie or knot lifeline. Dirt, contaminants, and water can lower dielectric properties of lifeline, use caution near energized lines. Avoid lifeline contact with sharp or abrasive surfaces. Inspect line frequently for cuts, fraying, burns, or signs of chemical damage. See user manual for more information. Failure to heed these warnings may result in injury or death.

Warning Label
Technora Synthetic Rope Models

WARNING WARNING WARNING WARNING
DISCONTINUE USE IMMEDIATELY! RESERVE LIFELINE IS DEPLOYED, RETURN FOR FACTORY SERVICE. DB INDUSTRIES INC., 3965 PEPIN AVE. RED WING, MN 55066 PHONE 651-388-8282 OR 1-800-328-6146

Reserve Lifeline Warning Label
Spectra and Technora Synthetic Rope Models

9.0 INSPECTION AND MAINTENANCE LOG

SERIAL NUMBER: _____

MODEL NUMBER: _____

DATE PURCHASED: _____

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

9100 Series Self Retracting Lifeline

The 9100 Series Self Retracting Lifeline provides continuous fall protection for workers who work at elevations or wherever there is a potential fall hazard.

Ease of set-up is as simple as:

- 1) Attach the device to an approved anchorage point by means of the supplied 5,000 lb rated locking carabiner
- 2) Attach the locking swivel snap hook on the cable end of the device to the back dee ring on your fall arrest harness. **(Always visually inspect or have inspected the snap hook to dee ring connections; do not rely on hearing an audible snap.)**

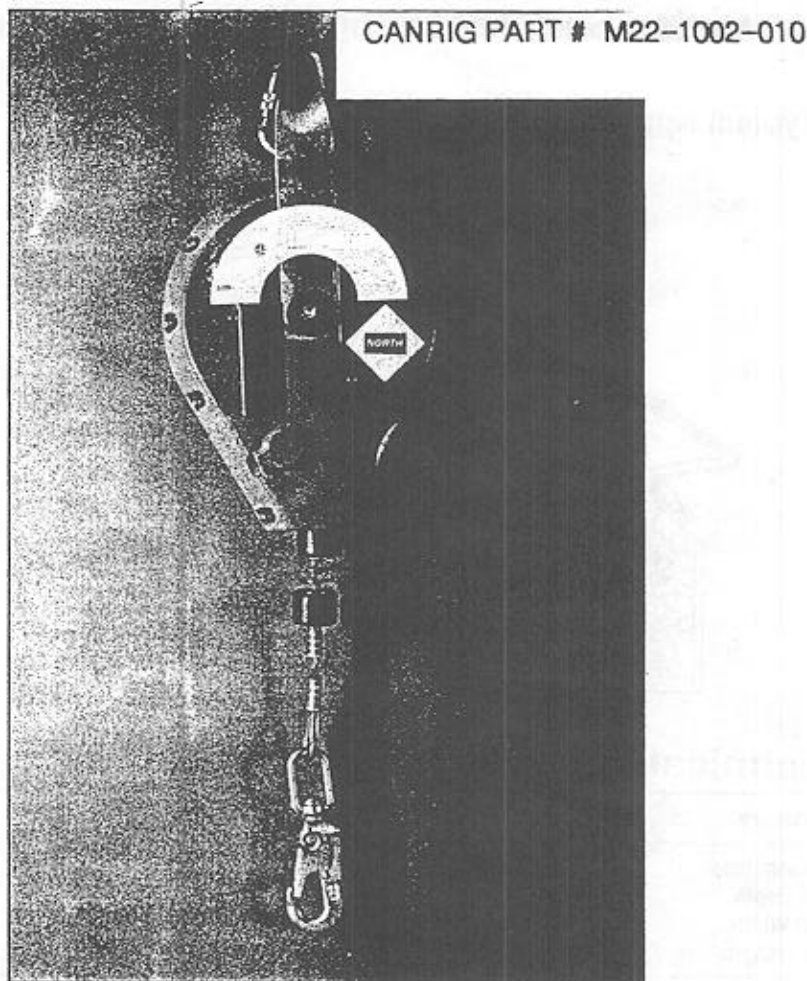
The 5 mm (3/16") galvanized or stainless steel aircraft cable, 1" polyester webbing, or kernmantle rope, automatically extends and retracts as the workers move freely about performing their tasks. A slight, constant tension on the lifeline is applied by an internal coil spring, which eliminates the potential for slack (free fall) to be introduced into the system.

Should a fall or stumble occur, the centrifugal brake system arrests the fall with a cushioning effect. The arrest force levels and cable extension, in a fall situation, meet or exceed the OSHA, ANSI, and CSA requirements. As soon as the tension is removed from the device, the brake is released and normal operation resumes.

The North 9100 Series Self Retracting Lifeline is the answer to a wide range of applications such as: elevated work platforms, rail and tank cars, roofs, rigs and derricks, tanks, silos, transmission tower erection, fixed ladders, etc.

The 9100 is available in a variety of cable lengths from 23' (7.0 M) to 165' (50.3 M) in either plastic or aluminum housings.

OSHA requires the use of back up fall protection such as the 9100 Series Self Retracting Lifeline when raising and lowering personnel with mechanical devices such as our 8100 Series Personnel/Material Winch.



9100 Series Self Retracting Lifeline

Light weight durable components are resistant to damage by chemicals and harsh environments. Quality construction and ease of installation are only two of the standard features that this versatile self retracting lifeline offers the user.

The 9100 Series utilizes the least number of internal components, without compromising its integrity. This offers the user considerable savings on repairs, inspections, and recertifications, compared to competitive devices.

Service and recertification are available at North Safety Products. For further information contact our customer service department at:

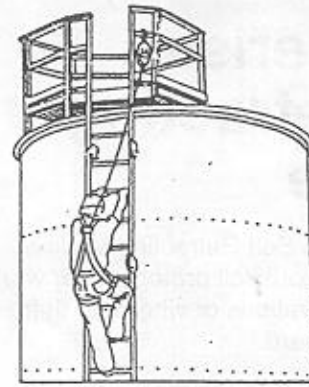
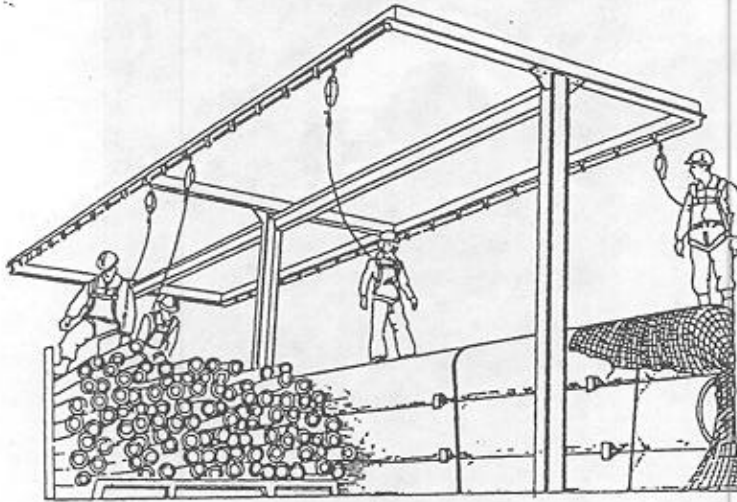
NORTH

Safety Products

 Approved

9100 Series Self Retracting Lifeline

Typical Applications



Technical Information

1,475° 1,720°

Category	P9023	P9125	9125	9139	9150	9165	9180	91110	91140	91165
Dimensions:										
(D) Depth	4"	4"	4"	4"	4"	4"	4.5"	4.5"	4.5"	7"
(W) Width	8"	8"	8"	9"	11"	11"	15"	15"	15"	15"
(L) Length	12"	13.5"	17"	17.5"	20"	20"	24.5"	24.5"	24.5"	25"
Cable Data:										
(L) Length*	23'	25'	25'	39'	50'	65'	80'	110'	140'	165'
Available in:										
(N) 1" Polyester Web	Yes	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
(S) 5mm Stainless Steel Cable	N/A	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
(G) 5mm Galvanized Cable	N/A	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Weight	8 lbs	8 lbs	14 lbs	18 lbs	26 lbs	27 lbs	50 lbs	52 lbs	60 lbs	88 lbs
Housing Materials	Plastic Composite	Plastic Composite	Cast Aluminum Alloy	Cast Aluminum Alloy	Cast Aluminum Alloy	Cast Aluminum Alloy	Cast Aluminum Alloy	Cast Aluminum Alloy	Cast Aluminum Alloy	Cast Aluminum Alloy
Avg. Arresting Force*** 1kn = 224 lbs	5.1 kn	5.1 kn	5.1 kn	5.1 kn	5.1 kn	5.1 kn	5.1 kn	5.1 kn	5.1 kn	5.1 kn
Avg. Cable Pull-out during fall***	29"	29"	29"	29"	29"	29"	29"	29"	29"	29"
Standards Met**	OAC	OAC	OAC	OAC	OAC	OAC	OAC	OAC	OA	OA

* Cable Length (L) is measured from cable opening of housing to tip of snap hook

** O = OSHA 1910.66 appendix C • A = ANSI Z359 • C = CSA Z259.2

*** Average Arresting Force and Average Cable Pull-out based on test results using a 220 lb test weight dropped with a free fall distance of 2 feet (refer to CSA Z259.2 test procedure).

NORTH

North Safety Products

Siebe North Canada Ltd.

26 Dansk Court, Rexdale, Ontario M9W 5V8

416-675-2810 ext 13 Fax: 416-675-6898

CDN Toll Free: 1-800-268-6925

US Toll Free: 1-800-836-8006