

# INSTRUCTION, CARE & MAINTENANCE GUIDE ENERGY ABSORBING LANYARDS

Applicable Models/Series (see label on back cover for specific model #)						
Soft-Pack BT-1 C6367 GM-Series SP1L SP3L SPCL SP1LY SPX4A SP1EL6 SP202L SP1101L SP202LY SP2215L SPX11L6	SP1101L3 SP1101L4 SP1101L6 SP1101LA SP1101LD SP1101LX SP1101LY SP1101LZ SP1L26CQ SP2215L6 SP2215L6 SP2215LX SP2215LZ SPX11LA4 SPX11LY6 SPX202L6	SP1101EL6 SP1101L10 SP1101LA4 SP1101LA5 SP1101LA6 SP1101LX6 SP1101LY6 SP1101LYX SP1101LYZ SP1101UA5 SP1101WZ6 SP2215LY6 SPXELYZD6 SP1101ELY6 SP1101ELYZ	SP1101ELZ6 SP1101LYA5 SP1101LYA6 SP1101LYZ6 SP1101UAY5 SPX11LYTA6 VP Series <b>Tubular</b> D11EL6 D11EL6 D1101L4 D1101L6 D1101N6 D11ELY6 D11ELZ6	D11ENY6 D11ENZ6 D11EWT5 D1101L10 D1101LX6 D1101LY4 D1101LY6 D1101LZ6 D11ELTD5 D11ELYD6 D11ELYT6 D11ELYZ6 D11ELYZ6 D11ENYZ6 D1101LYX5 D1101LYX6	D1101LYZ4 D1101LYZ6 D11ELYXD6 D11ELYZD6 VP Series <b>Tie-Back</b> TB1101L4 TB1101L6 TB1101L10 TB1101LY4 TB1101LY6 TB1101LY10	

# **A** Warning

You must read and fully understand all instructions, or have all instructions explained to you, before attempting to use this equipment. Equipment must not be installed, operated or inspected by anyone who does not understand this Guide. Failure to observe these instructions could result in serious injury or death. Careless or improper use of this equipment can result in serious injury or death. Training and instruction review should be repeated at regular intervals. If you have any questions regarding these instructions or need additional copies, call Gemtor, Inc. at 1-800-405-9048.

Use these icons to determine the appropriate use for Gemtor equipment. Equipment must only be used for the purpose for which it is designed. Products with more than one appropriate use will have icons for all accepted uses.





Restraint







Fall Arrest

Positioning

Suspension

Retrieval

## 1. APPLICATION

#### 1.1 ANCHOR SLINGS

Provide an OSHA-compliant anchor point when attached to a structural support capable of supporting at least 5,000 lbs.

#### 1.2 BODY HARNESS ANSI CLASS III, OSHA

Used for positioning, restraint or fall arrest. Body harnesses distribute the fall arresting forces throughout a large area of the body. When used for fall arrest an approved energy absorber should be used whenever possible. If conditions do not allow for the use of an energy absorber, the system must be used so that forces imposed on the body do not exceed OSHA'S limit of 1800 pounds. **Expected harness stretch is 6**", **make sure this distance is taken into account when calculating the clearance required below a worker where there is a possibility of falling.** Some Harnesses may be supplied with a seat sling which is used to suspend a worker in a work area where no other means of support is available. An independent fall arrest system attached to an OSHA compliant anchorage must be used with a suspension system.

#### 1.3 WEB LANYARDS

Used for positioning or restraint. **Not to be used for fall arrest unless an energy absorber is used**. Web lanyards are not used for fall arrest since fall arrest forces will exceed OSHA'S maximum allowable arresting force of 1800 pounds.

#### 1.4 ROPE LANYARDS

Used for positioning or restraint. When rope lanyards are used for fall arrest, care must be taken to ensure that fall arrest forces do not exceed 1800 lbs. A fall of more that 3 feet would generally exceed this limit.

#### 1.5 ENERGY ABSORBERS (DECELERATION DEVICES)

For fall arrest, an energy absorber lanyard is recommended. When used properly, the energy absorber will limit maximum arresting forces to less than 900 lbs.

**IMPORTANT:** Energy absorbers can increase total fall distance by up to 42 inches. It is essential that it be determined before use whether the fall space permits the use of an energy absorber.

The following values are intended for use when designing fall protection systems in accordance with CSA Z259.16 (applies to Gemtor "SP" Series energy absorbers and lanyards):

Maximum elongation: 1350 mm (53.15 in) Average arresting force: 2.91 kN (655 lbs)

## 2. USE REQUIREMENTS

#### 2.1 ANCHORAGE

Secure point of attachment for lifelines, lanyards or deceleration devices. Anchorages used for attachment of personal fall arrest equipment shall be independent of any anchorage being used to support or suspend platforms and capable of supporting at least 5,000 lbs. (22.2 kN) per employee attached. Certified Anchorages must be able to support at least two (2) times the potential (foreseeable) impact load. Positioning devices shall be secured to an anchorage capable of supporting at least twice the potential impact load of an employee's fall or 3,000 pounds (13.3 kN), whichever is greater.

#### 2.2 LANYARDS

Lanyards shall be kept as short as possible to minimize free fall distance. Free fall distance shall not exceed 6 feet. **DO NOT ALTER THE LANYARD.** 

#### 2.3 ENERGY ABSORBERS

It is **HIGHLY RECOMMENDED** that an energy absorber be part of a fall arrest system whenever possible. Energy absorbing lanyards shall be kept as short as possible to minimize free fall distance. Free fall distance shall not exceed 6 feet.

#### 2.4 HARDWARE

Belts, harnesses, lanyards, lifelines and accessory equipment are supplied with snaphooks, D-rings and other hardware designed specifically as matched elements. Use of incompatible hardware can be unsafe! Use of mismatched hardware can result in the inadvertent release of the snaphook (roll-out) caused by external pressure on the snaphook gate. In all cases the user must check any attachment method to make sure it cannot bring pressure on the snaphook gate in a manner to permit accidental opening. Snaphooks should not be snapped to other snaphooks. Snaphooks shall not be snapped to a D-ring if the snaphook gate opening is larger than  $\frac{1}{34}$  of an inch. Snaphooks shall have a 5000 lbs. minimum tensile strength rating. ANSI Z359 and A10.32 require that connector gates have a minimum gate strength of 3600 lbs. Visually examine the connection for positive snaphook engagement. Use locking snaphooks for all connections.

## **3. SPECIFICATIONS**

- Max Arresting Force (when tested in accordance with ANSI Z359.13):
  - $\circ$  6 ft. free fall energy absorbing lanyard less than 900 lbs. (4kN)
  - 12 ft. free fall energy absorbing lanyard less than 1800 lbs. (8kN)
- Average arresting force (when tested in accordance with ANSI Z359.13):
  - Less than 900 lbs. 6 ft. energy absorbing lanyards
  - 12 ft. free fall energy absorbing lanyard less than 1350 lbs. (6kN)
- Maximum Elongation (Deployment Distance) when tested in accordance with ANSI Z359.13 is 42" (1.07m). ANSI Z359.13 allows 48" (1.2 m)
- As per OSHA Regulations and ANSI Standards, Max free fall distance shall not exceed 6 ft. (12 ft. free falls are permitted in some circumstances, specially designed energy absorbing lanyards must be used)
- Energy Absorber webbing is made of polyester
- All connectors meet ANSI Z359.12 5000 lbs. MBS, 3600 lbs. gate strength

## 4. CAUTIONS

Items subjected to <u>FALL ARREST</u> or <u>IMPACT FORCES</u> must be immediately removed from service and destroyed. Any item showing **EXCESSIVE WEAR OR DETERIORATION** shall be destroyed. Inspect all equipment before each use. Failure to observe proper inspection and usage procedures could result in **INJURY** or **DEATH.** 

**ENVIRONMENTAL HAZARDS** must be considered in selecting the appropriate equipment. Recommendations where chemicals, high temperature or other unusual conditions exist may be addressed to Gemtor, Inc.

## **5. EMPLOYEE TRAINING CONSIDERATIONS**

Thorough employee training in the selection and use of personal fall arrest systems is imperative. Employees must be trained in the safe use of the system. This should include the following: application limits; proper anchoring and tie-off techniques; estimation of free fall distance, including determination of deceleration distance, and total fall distance to prevent striking a lower level; methods of use; and inspection and storage of the system. Careless or improper use of the equipment can result in serious injury or death. Employers and employees should become familiar with the material in related OSHA regulations, as well as manufacturer's recommendations, before a system is used. Of uppermost importance is the reduction in strength caused by certain tie-offs (such as using knots, tying around sharp edges, etc.) and maximum permitted free fall distance. Also, to be stressed are the importance of inspections prior to use, the limitations of the equipment, and unique conditions at the worksite which may be important in determining the type of system to use. Any questions may be addressed to Gemtor, Inc.



## **Exemplar Product Labels**



THIS LANYARD HAS BEEN IMPACT LOADED REMOVE FROM SERVICE AND DESTROY

## 7. STANDARDS COMPLIANCE

All Gemtor Energy Absorbing Lanyards meet all applicable OSHA Standards including 1910.66 and 1926 Subpart M. as well as ANSI Z359.1-07, ANSI Z359.13-13, ANSI A10.32-12.

## 8. FALL DISTANCES & SWING FALL HAZZARDS

8.1 FREE FALL CONSIDERATIONS

Free fall distance should be kept to a minimum, and as required by OSHA, in no case shall exceed 6 feet. The tie-off attachment point to the lifeline or anchor should be located at or above the connection point of the fall arrest equipment on harness.

8.2 Use the diagram below to calculate required clearance. The numbers are representative examples, substitute the actual distances associated with your jobsite and the equipment being used. In the example below, Minimum Required Fall Space is 11 ft.

**Minimum Required Fall Space** = Free Fall + Deceleration Distance + Length of Body + Elongation



8.3 Swing Fall Hazard - Work directly under your anchorage whenever possible. If a swing fall can occur, ensure that there are no hazards in the swing fall path. Total fall distance is greater in a swing fall than in a vertical fall. Ensure that you account for the added distance when calculating Minimum Required Fall Space.



## 9. 100% TIE-OFF & TIE-BACK LANYARDS

#### 9.1 100% Tie-off

Extra care must be taken when using a 100% tie-off ("Y") Lanyard. While they allow for continuous connection, precautions must be taken to provide the highest level of safety. These include;

- 1. The energy absorber must be attached to the Dorsal D-ring only.
- 2. Do not connect the energy absorber to the anchorage.
- 3. Connect the unused leg to special snaphook retainer on harness only.
- 4. For use by one person at a time only.
- 5. Do not allow lanyard to pass arms or legs during use.
- 6. Distance between connection anchor points shall never exceed the stated length of the lanyard.







#### 9.2 Tie-Back Lanyards

Model #TB1101L & TB1101LY are the only lanyards that may be used for tie back. Tie back using the attached carabiner only. The snaphook must be attached to user's harness never tie back using snaphook.

## **10. INSPECTION**

10.1 Users shall establish their own formal routine inspection according to prevailing conditions and applicable standards and regulations. ANSI Z359 requires inspection by a competent person other than the user at intervals of no more than one year. Use the inspection grid to record your results. A minimum of two formal inspections per year is recommended. Visual inspection is required before each use, for mildew, wear, damage and other deterioration. Defective components shall be removed from service and destroyed.

10.2 Buckles, D-rings, snaphooks and thimbles shall not be distorted, or have any sharp edges, burrs, cracks, worn parts or corrosion. Make sure buckles work freely. The snaphook gate spring shall provide tension to keep the snaphook gate closed in a locked position; it shall close flat against the snaphook and exhibit no sideways movement or play. Rivets and grommets shall be tightly set in the material with no distortion.

10.3 All webbing shall be free of frayed or broken fiber, pulled stitches, tears, abrasions, mold, burns or discoloration. Rope splices shall be tight with five tucks. Thimbles shall be held by the splice. Inspect rope by twisting. Inspect webbing by bending and/or pressing over a  $1\frac{1}{2}$  inch diameter object.

10.4 Extension-type shock absorbing devices shall show no evidence of elongation.

10.5 Inspect Stress Indicator (if equipped):
Location: Tubular Lanyard – near bunched webbing
Decelerator II Lanyard – near snaphook on anchorage end of lanyard
Purpose: This indicator is designed to deploy if the equipment has been subjected to fall arrest forces.
DO NOT USE if any Stress indicator has deployed.

10.6 All Labels should be present and legible

NOTE: THE PRECEDING INSPECTION PROCEDURES ARE A MINIMAL METHOD OF INSPECTION. THE INSPECTION PROCEDURE MUST REFLECT THE USE APPLICATION.

AN INTACT STRESS INDICATOR DOES NOT INDICATE THAT THE EQUIPMENT IS FIT FOR USE.

DO NOT attempt to repair or modify any Gemtor Fall Protection equipment. Repairs and/or modifications shall only be performed by the manufacturer or persons or entities authorized in writing.

## **11. HOW TO CLEAN EQUIPMENT**

11.1 Proper cleaning and storage of Gemtor equipment will pay dividends in the form of added safety and longer product life. Take care that your storage area is clean and dry, and not exposed to damaging chemicals, fumes, or sunlight.

11.2 ROPE & WEBBING

- 1. Dampen sponge in plain water and wipe off all surface dirt.
- 2. Squeeze sponge dry.
- 3. Dip sponge in solution of water and mild detergent.
- 4. Rub down rope/webbing vigorously, working up a thick lather.
- 5. Wipe dry with clean cloth.
- 6. Hang away from heat to dry.

## **12. Inspection Grid**

#### Assigned to:

Model #		Date of Manufactu	re	
Serial#		Date of first use		
Inspection Date	Condition & Comments	Action Taken	Inspector's Initials	

## This instruction guide applies to:



## Gemtor, Inc.

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