Fall Protection

PROTECTA FIRST
VERTICAL LIFELINE

1390067

USER INSTRUCTION MANUAL

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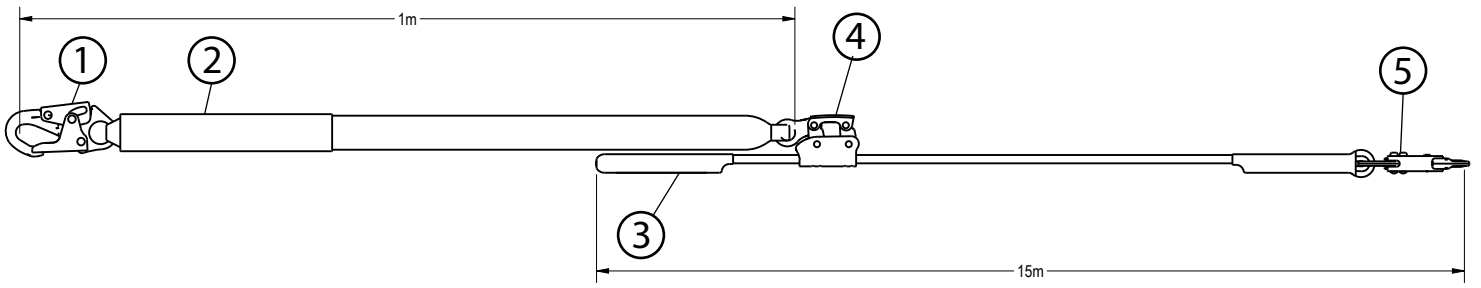

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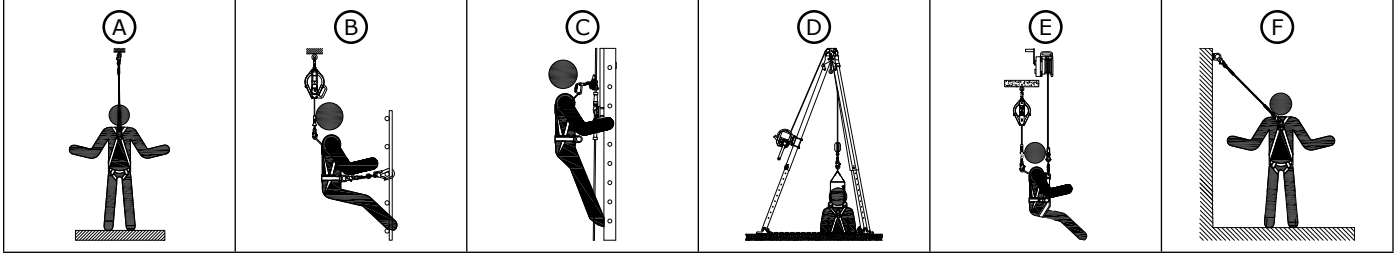
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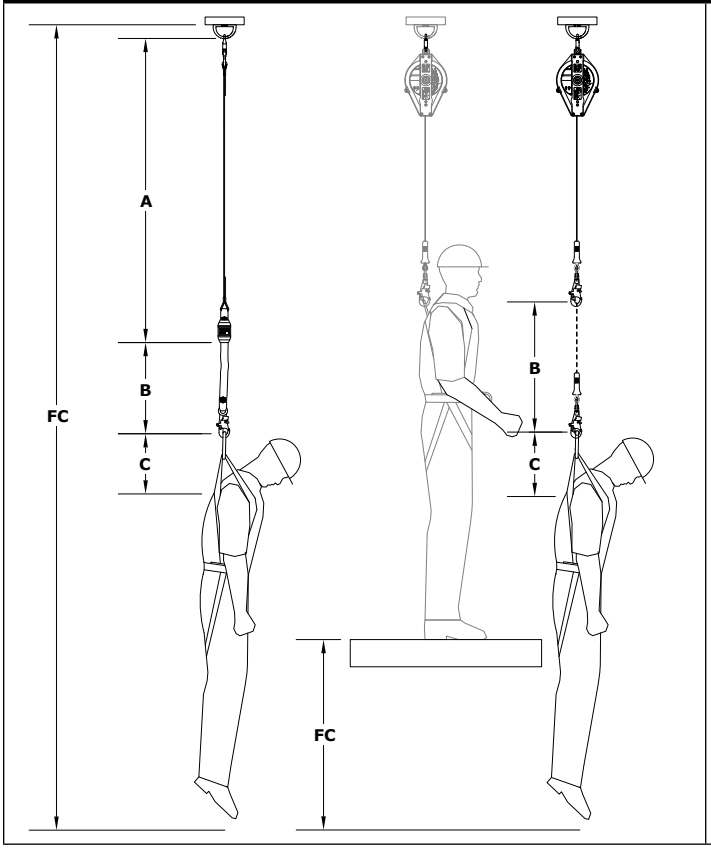
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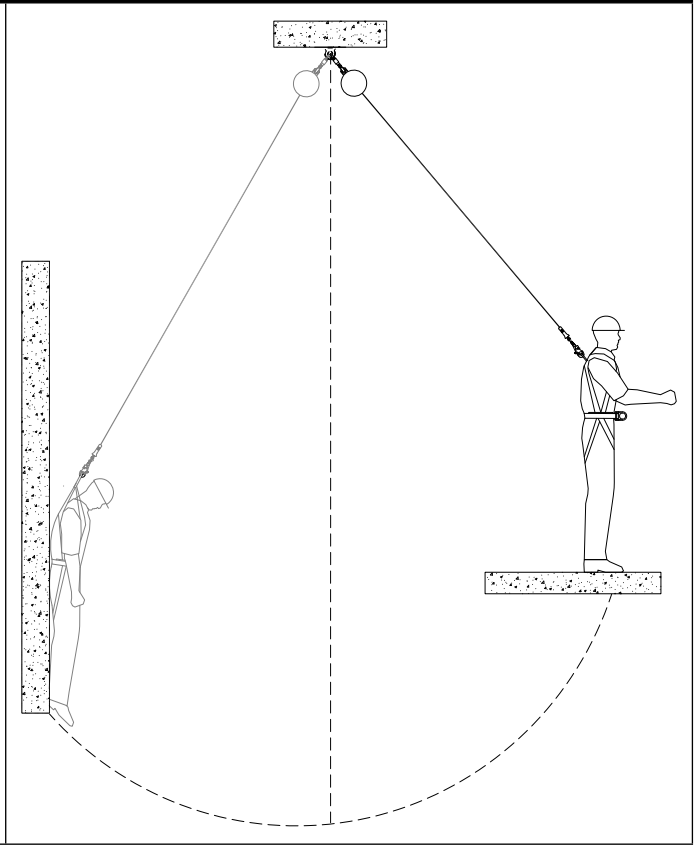

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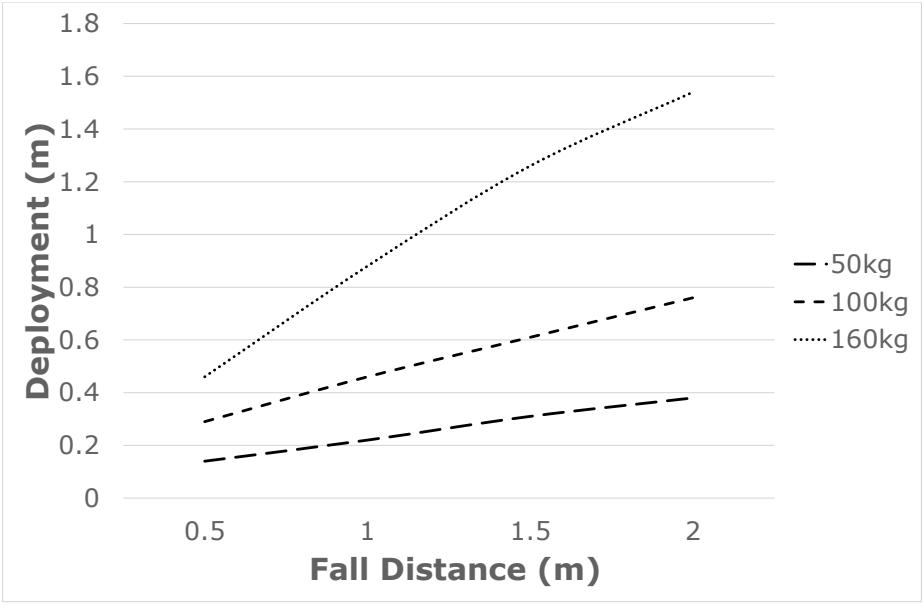
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1.4
1.2
1
0.8
0.6
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0
Deployment (m)
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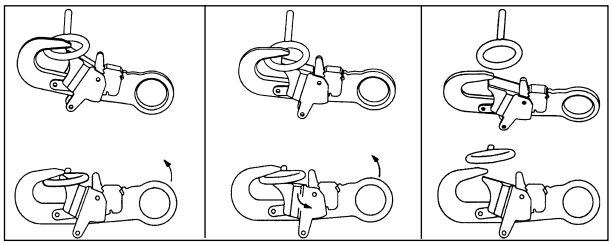
1
1.5
2
Fall Distance (m)
50kg
100kg
160kg

6



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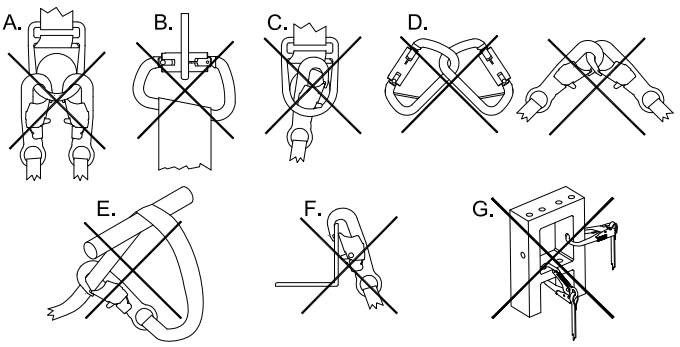

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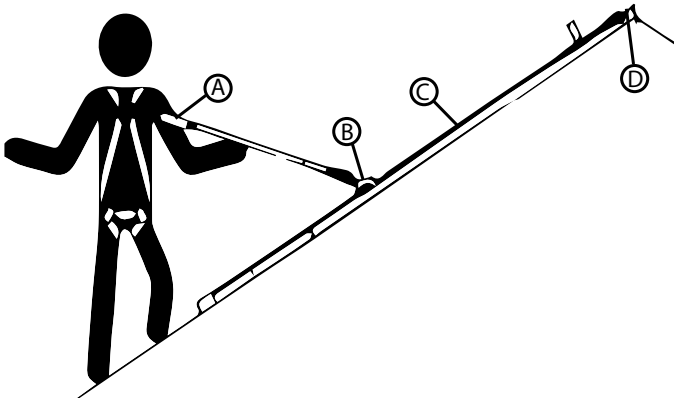

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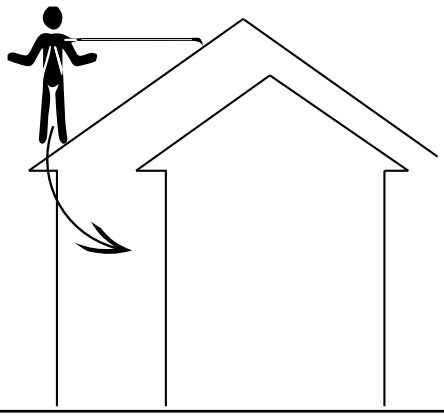

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3M PROTECTA Fall Protection

3M Australia Pty Limited
Part No.:13900367

3M.com.au/FallProtection
ID : AT010621632

S/A, ROPE LINE, 15M, PROTECTA FIRST

S/N0.: xxxxxxxxxx-xx

Fall not to exceed 2m
Only competent users should use this equipment
Manufacturers instructions must be followed

F/Order No.: xxxxxxxxxx
D.O.M.: dd/mm/yy
Destroy Before: dd/mm/yy

EN

SAFETY INFORMATION

Please read, understand, and follow all safety information contained in these instructions prior to the use of this Vertical Lifeline. FAILURE TO DO SO COULD RESULT IN SERIOUS INJURY OR DEATH.

These instructions must be provided to the user of this equipment. Retain these instructions for future reference

Intended Use:

This Vertical Lifeline is intended for use as part of a complete personal fall protection system.

Use in any other application including, but not limited to, material handling, recreational or sports related activities, or other activities not described in the User Instructions, is not approved by 3M and could result in serious injury or death.

This device is only to be used by trained users in workplace applications.

⚠ WARNING

This Vertical Lifeline is part of a personal fall protection system. It is expected that all users be fully trained in the safe installation and operation of their personal fall protection system. **Misuse of this device could result in serious injury or death.** For proper selection, operation, installation, maintenance, and service, refer to these User Instructions and all manufacturer recommendations, see your supervisor, or contact 3M Technical Services

- **To reduce the risks associated with working with an Vertical Lifeline which, if not avoided, could result in serious injury or death:**
  - Inspect the device before each use, at least every six months, and after any fall event. Inspect in accordance with the User Instructions.
  - If inspection reveals an unsafe or defective condition, remove the device from service and destroy it.
  - Any device that has been subject to fall arrest or impact force must be immediately removed from service. Refer to the User Instructions or contact 3M Fall Protection.
  - Ensure all connecting subsystems (e.g. lanyards) are kept free from all hazards including, but not limited to, entanglement with other workers, yourself, moving machinery, or other surrounding objects.
  - Ensure proper edge protection is used when the device may come into contact with sharp edges or corners.
  - Do not tie or knot any part of this assembly.
  - Do not exceed the number of allowable users.
  - Ensure that fall protection systems/subsystems assembled from components made by different manufacturers are compatible and meet the requirements of applicable standards, including the AS/NZS 1891 or other applicable fall protection codes, standards, or requirements. Always consult a Competent or Qualified Person before using these systems.
- **To reduce the risks associated with working at height which, if not avoided, could result in serious injury or death:**
  - Ensure your health and physical condition allow you to safely withstand all of the forces associated with working at height. Consult with your doctor if you have any questions regarding your ability to use this equipment.
  - Never exceed allowable capacity of your fall protection equipment.
  - Never exceed maximum free fall distance of your fall protection equipment.
  - Do not use any fall protection equipment that fails pre-use or other scheduled inspections, or if you have concerns about the use or suitability of the equipment for your application. Contact 3M Technical Services with any questions.
  - Some subsystem and component combinations may interfere with the operation of this equipment. Only use compatible connections. Consult 3M prior to using this equipment in combination with components or subsystems other than those described in the User Instructions.
  - Use extra precautions when working around moving machinery (e.g. top drive of oil rigs), electrical hazards, extreme temperatures, chemical hazards, explosive or toxic gases, sharp edges, or below overhead materials that could fall onto you or the fall protection equipment.
  - Use Arc Flash or Hot Works devices when working in high heat environments.
  - Avoid surfaces and objects that can damage the user or equipment.
  - Ensure there is adequate fall clearance when working at height.
  - Never modify or alter your fall protection equipment. Only 3M or parties authorized in writing by 3M may make repairs to the equipment.
  - Prior to use of fall protection equipment, ensure a rescue plan is in place which allows for prompt rescue if a fall incident occurs.
  - If a fall incident occurs, immediately seek medical attention for the worker who has fallen.
  - Do not use a body belt for fall arrest applications. Use only a Full Body Harness.
  - Minimize swing falls by working as directly below the anchorage point as possible.
  - If training with this device, a secondary fall protection system must be utilized in a manner that does not expose the trainee to an unintended fall hazard.
  - Always wear appropriate personal protective equipment when installing, using, or inspecting the device/system.

☑ *Before using this equipment, record the product identification information from the ID label in the "Inspection and Maintenance Log" at the back of this manual.*

DESCRIPTION

Figure 1 defines the available Protecta First Vertical Lifeline model.

Figure 1 Reference:	**Description:**
①	Snap Hook
②	Energy absorbing lanyard
③	Terminated rope end (DO NOT ATTACH THIS END)
④	Rope Grab
⑤	Anchorage connector or Anchorage attachment

SPECIFICATIONS

Performance:	
Maximum Free Fall Distance	2 m (6.6 ft)
Maximum Arresting Force	6 kN (1,349 lb)
Capacity	160 kg (352 lb)

Materials:	
Webbing	Polyester - 27 kN (6,000 lb) Tensile Strength
Thread	Polyester Thread
Rope	11mm Kernmantle 27 kN (6000 lb)
Snap Hook	Alloy Steel - 22.2 kN (5,000 lb) Body, 16 kN (3600 lb) Gate, 20 mm Gate Opening

1.0 APPLICATIONS

1.1 PURPOSE: Vertical Lifelines are to be used as components in Personal Fall Protection System designed to prevent a fall or safely arrest a fall (see Figure 2). Vertical Lifelines are used in the Fall Arrest and Restraint applications:

Ⓐ	**Fall Arrest (AS/NZS1891.4):** Personal fall arrest systems typically include a Full Body Harness and a connecting subsystem (Energy Absorbing Lanyard, Self-Retracting Device, etc.). Maximum arresting force must not exceed 6 kN (1,349 lb). *Attachment Elements:* Dorsal (feet first with a 0.6 m maximum free fall when using a Self-Retracting Device or 2 m maximum free fall when using an Energy Absorbing Lanyard), Sternal (feet first with a 0.6 m maximum free fall), Frontal (feet first with a 0.6 m maximum free fall). *Anchorage Strength:* Selected anchorage must sustain loads of 15 kN (3,372 lb) or greater.
Ⓑ	**Work Positioning (AS/NZS1891.4):** Work positioning systems typically include a Full Body Harness, positioning lanyard, and a back-up personal fall arrest system. For work positioning applications, connect the work positioning subsystem (example: lanyard, Y-lanyard, etc.) to the lower (hip level) side or belt mounted work positioning attachment anchorage elements (D-Rings). Never use these connection points for fall arrest. Maximum free fall distance 0.6m (2 ft)Anchorage Strength: Selected anchorage must sustain loads of 12 kN (2698 lb) for single person use or 18kN (4047 lb) or greater for 2 person use.
Ⓒ	**Climbing (AS/NZS1891.3):** The Full Body Harness is used as a component of a climbing system to prevent the user from falling when climbing a ladder or other climbing structure. Climbing systems typically include a Full Body Harness, vertical cable or rail attached to the structure, and climbing sleeve. For ladder climbing applications, harnesses equipped with a frontal D-Ring in the sternal location may be used for fall arrest on fixed ladder climbing systems. *Attachment Elements:* Sternal. *Anchorage Strength:* Structure to which the climbing system is attached must sustain the loads required by the climbing system manufacturer's documentation.
Ⓓ	**Rescue:** The Full Body Harness is used as a component of a rescue system. Rescue systems are configured depending on the type of rescue. For limited access (confined space) applications, harnesses equipped with D-Rings on the shoulders may be used for entry and egress into confined spaces where worker profile is an issue.
Ⓔ	**Controlled Descent:** For controlled descent applications, harnesses equipped with a single sternal level D-Ring, one or two frontal mounted D-Rings, or a pair of connectors originating below the waist (such as a seat sling) may be used for connection to a descent or evacuation system.
Ⓕ	**Restraint (AS/NZS1891.4)**: The Full Body Harness is used as a component of a restraint system to prevent the user from reaching a fall hazard. Restraint systems typically include a Full Body Harness and a lanyard or restraint line.

1.2 TRAINING: It is the responsibility of the user and the purchaser of this equipment to assure that 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.

1.3 LIMITATIONS: Always consider the following application limitations before using this equipment:

- **CAPACITY:** The Vertical Lifeline is designed for use by persons with a combined weight (clothing, tools, etc.) of no more than 160 kg (352 lb) and no less than 50 kg (110 lb). Make sure all of the components in your system are rated to a capacity appropriate to your application.
- **FREE FALL:** Personal fall arrest systems used with this equipment must be rigged to limit the free fall to 2 m (6.6 ft)[1]. Restraint systems must be rigged so that no vertical free fall is possible. Work positioning systems must be rigged so that free fall is limited to 0.6 m (2 ft) or less. Personnel riding systems must be rigged so that no vertical free fall is possible. Climbing systems must be rigged so that free fall is limited to 0.46 cm (18 in) or less. Rescue systems must be rigged so that no vertical free fall is possible.
- **FALL CLEARANCE:** Figure 3 and 5 illustrates the components of a Fall Arrest. There must be sufficient Fall Clearance (FC) to arrest a fall before the user strikes the ground or other obstruction. Clearance is affected by a number of factors including: (A) Lanyard Length, (B) Lanyard Deceleration Distance or SRL Maximum Arrest Distance, (C) Harness Stretch and D-Ring/Connector Length and Settling (typically a Safety Factor of 1 m). Refer to the instructions included with your Fall Arrest subsystem for specifics regarding Fall Clearance calculation.
- **SWING FALLS:** Swing Falls occur when the anchorage point is not directly above the point where a fall occurs (see Figure 4 and 9). The force of striking an object in a swing fall may cause serious injury or death. Minimize swing falls by working as directly below the anchorage point as possible. Do not permit a swing fall if injury could occur. Swing falls will significantly increase the clearance required when a Self-Retracting Device or other variable length connecting subsystem is used.
- **EXTENDED SUSPENSION:** A Full Body Harness is not intended for use in extended suspension applications. If the user is going to be suspended for an extended length of time it is recommended that some form of seat support be used. 3M recommends a seat board, suspension work seat, seat sling, or a boatswain chair. Contact 3M for more information on these items.

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*1 **Fall Arrest Free Falls:** Free falls greater than 2 m (6.6 ft) may be permitted when users are secured to the anchorage with a connecting subsystem which limits maximum arresting force to 6 kN (1,349 lbs) and is authorized for such use (i.e., 3M Force 2™ Lanyards).*

2.0 SYSTEM USE

2.1 RESCUE PLAN: When using this equipment and connecting subsystem(s), the employer must have a rescue plan and the means at hand to implement and communicate that plan to users[2], authorized persons[3], and rescuers[4].

2.2 INSPECTION FREQUENCY: The Vertical Lifeline shall be inspected by the user before each use and by a competent person[5] other than the user at intervals of no more than six months[6]. Inspection procedures are described in the *User Instruction Manual's "Inspection and Maintenance Log"*. Results of each Competent Person inspection should be recorded on copies of the *"Inspection and Maintenance Log"*.

> ☑ *Where required by 3M, due to complexity or innovation of the equipment; or where critical knowledge is needed in dismantling, reassembly, or assessment of the equipment, periodic examinations shall only be conducted by 3M or persons or organizations authorised by 3M.*

2.3 COMPATIBILITY OF COMPONENTS: 3M equipment is designed for use with 3M approved components and subsystems only. Substitutions or replacements made with non-approved components or subsystems may jeopardize compatibility of equipment and may effect the safety and reliability of the complete system.

2.4 COMPATIBILITY OF CONNECTORS: Connectors are compatible with connecting elements when they have been designed to work together in such a way that their sizes and shapes do not cause their gate mechanisms to inadvertently open regardless of how they become oriented. Contact 3M if you have any questions about compatibility. Connectors (hooks, carabiners, and D-Rings) must be capable of supporting at least 22.2 kN (5,000 lbs). Connectors must be compatible with the anchorage or other system components. Do not use equipment that is not compatible. Non-compatible connectors may unintentionally disengage (See Figure 6). Connectors must be compatible in size, shape, and strength. If the connecting element to which a snap hook (shown) or carabiner attaches is undersized or irregular in shape, a situation could occur where the connecting element applies a force to the gate of the snap hook or carabiner. This force may cause the gate to open, allowing the snap hook or carabiner to disengage from the connecting point. Self-locking snap hooks and carabiners are required.

2.5 MAKING CONNECTIONS: Use only self-locking snap hooks and carabiners with this equipment. Use only connectors that are suitable for each application. Ensure all connections are compatible in size, shape and strength. Do not use equipment that is not compatible. Ensure all connectors are fully closed and locked.

3M connectors (snap hooks and carabiners) are designed to be used only as specified in each product's user's instructions. See Figure 7 for inappropriate connections. 3M snap hooks and carabiners should not be connected:

- **A.** To a D-Ring to which another connector is attached.
- **B.** In a manner that would result in a load on the gate.
- **C.** In a false engagement, where features that protrude from the snap hook or carabiner catch on the anchor, and without visual confirmation seems to be fully engaged to the anchor point.
- **D.** To each other.
- **E.** Directly to webbing or rope lanyard or tie-back (unless the manufacturer's instructions for both the lanyard and connector specifically allows such a connection).
- **F.** To any object which is shaped or dimensioned such that the snap hook or carabiner will not close and lock, or that roll-out could occur.
- **G.** In a manner that does not allow the connector to align properly while under load.

2.6 CONNECTING SUBSYSTEMS: Connecting subsystems (self-retracting lifeline, lanyard, rope grab and lifeline, cable sleeve, etc.) must be suitable for your application (See section 1.1). Some harness models have web loop connection points. Do not use snap hooks to connect to web loops. Use a self-locking carabiner to connect to a web loop. Ensure the carabiner cannot cross-gate load (load against the gate rather than along the major axis of the carabiner).

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2 ***User:*** *A person who performs activities at heights while protected by a personal fall protection system.*

3 ***Authorized Person:*** *A person assigned by the employer to perform duties at a location where the person will be exposed to a fall hazard.*

4 ***Rescuer:*** *Person or persons other than the rescue subject acting to perform an assisted rescue by operation of a rescue system.*

5 ***Competent Person:*** *One who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.*

6 ***Inspection Frequency:*** *Extreme working conditions (harsh environments, prolonged use, etc.)may require increasing the frequency of competent person inspections.*

3.0 VERTICAL LIFELINE USE

3.1 **BEFORE EACH USE** of this equipment inspect it according to the *"Inspection and Maintenance Log" (Table 1)*.

3.2 **PLAN** your system before use. Consider all factors that will affect your safety during use of this equipment. The following list gives important points to consider when planning your system:

- **Anchorage:** Select an anchorage capable of sustaining the Static Load requirements of the intended fall protection application (see Section 1.1). The anchorage location should address Free Fall, Fall Clearance, Swing Fall, and Environmental limitations described in Section 1.3.
- **Sharp Edges:** Avoid working where system components may be in contact with, or abrade against, unprotected sharp edges.
- **After A Fall:** Components which have been subjected to the forces of arresting a fall must be removed from service and destroyed.
- **Rescue:** The employer must have a rescue plan when using this equipment. The employer must have the ability to perform a rescue quickly and safely.
- **Rescue Harness:** Rescue Harnesses are intended to be worn during normal work activities. Before using rescue attachment elements for the first time, the user should carry out a suspension test in safe conditions to ensure the harness is sized and fitted for optimal comfort during suspension.

3.3 **CONNECTING:** To body support. The Energy absorbing lanyard section of the Vertical lifeline should be connected to the body support first before connecting the attachment end to the rest of the system. Always connect the energy absorber end of the lanyard to the D-Ring on the back between the shoulders (dorsal D-Ring) on a full body harness. 3M Fall Protection does not recommend using a body belt for fall arrest applications. If using a body belt, connect the energy absorbing end of the vertical lifeline to the D-Ring and position the belt so the D-Ring is located on the back side of the body. When connecting a system component to the dorsal, or other non visible attachment, the connection should be inspected by another person to ensure a proper connection has been made and the connector's gate has closed correctly. Alternatively, where suitable, the system components may be connected prior to donning the harness.

3.4 **CONNECTING:** To the anchorage or anchorage connector. Some anchorage connector devices may be supplied with a permanently attached energy absorber. Use of an additional energy absorber or energy absorbing lanyard with this lanyard system is not recommended.

4.0 INSPECTION

4.1 **INSPECTION FREQUENCY:** The Protecta First Vertical Lifeline must be inspected at the intervals defined in Section 2.2. Inspection procedures are described on the *"Inspection and Maintenance Log" (Table 1)*.

4.2 **DEFECTS:** If inspection reveals a defective condition, or is deemed unsuitable for use by a competent person, remove unit from service immediately and destroy.

4.3 **PRODUCT LIFE:** The functional life of Protecta First Vertical Lifelines is determined by work conditions and maintenance. As long as the product passes inspection criteria, it may remain in service for up to 10 years from the date of manufacture.

5.0 MAINTENANCE, SERVICING, STORAGE

5.1 **CLEANING INSTRUCTIONS:** Clean the Protecta First Vertical Lifeline as follows:

1. Spot clean the Vertical Lifeline legs with water and a mild soap solution. Do not get the energy absorbing element of the lanyard wet.

   ☑ *Use a bleach-free detergent when washing the Lanyard. Fabric softener SHOULD NOT be used when laundering and drying the lanyard.*

2. Water temperature for wash and rinse must not exceed 70° C (160° F).
3. The Vertical Lifeline must be air dried, do not tumble dry.

   ☑ *More information on cleaning is available from 3M. If you have questions concerning the condition of your Lanyard, or have any doubt about putting it into service, contact 3M.*

5.2 **AUTHORIZED SERVICE:** Additional maintenance and servicing procedures must be completed by a factory authorized service center. Authorization must be in writing. Do not attempt to alter the unit in any way.

5.3 **STORAGE AND TRANSPORT:** Store and transport the Protecta First Vertical Lifeline in a cool, dry, clean environment out of direct sunlight. Avoid areas where chemical vapors may exist. Thoroughly inspect the harness after extended storage.

6.0 LABELING:

Figure 10 illustrates product labels and their location on the Protecta First Vertical Lifeline. All labeling must be present and fully legible.

Table 1 – Inspection and Maintenance Log

Serial Number(s):	**Date Purchased:**
Model Number:	**Date of First Use:**

Inspection Date:	**Inspected By:**

Component:	**Inspection:** ***(See Section 2.2 for Inspection Frequency)***	**User**	**Competent Person**
Harness Hardware	Inspect vertical lifeline hardware including adjusters, Hooks, D-rings etc. These items must not be damaged, broken, or distorted, and must be free of sharp edges, burrs, cracks, worn parts, or corrosion. Ensure hardware is work smoothly.	☐	☐
Webbing, Rope & Stitching	Inspect webbing; material must be free of frayed, cut, or broken fibers. Check for tears, abrasions, mold, burns, or discoloration. Inspect rope, free of frayed, cut, or broken fibers. Check for tears, abrasions, mold, burns, or discoloration. Inspect the internal fibres of the rope are not visible. Inspect stitching; Check for pulled or cut stitches. Broken stitches may be an indication that the harness has been impact loaded and must be removed from service.	☐	☐
Labels	All labels should be present and fully legible. See Figure 10	☐	☐
Energy Absorber	Inspect the energy absorber has not been deployed. Diagram 2.	☐	☐
System & Subsystem Components	Inspect each system component or subsystem according to the manufacturer's instructions.	☐	☐

Diagram 1 – Damaged Web

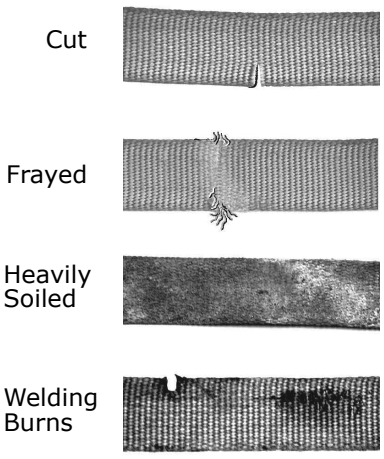
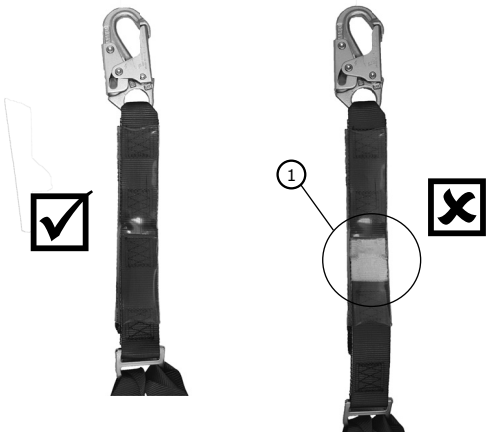


Diagram 2 – Deployed Energy Absorber



Corrective Action/Maintenance:	Approved By:
	Date:
Corrective Action/Maintenance:	Approved By:
	Date:
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	Date:
Corrective Action/Maintenance:	Approved By:
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To the extent permitted by law, 3M's liability and the liability of the person who sold you this product, is limited at 3M's option, to the repair or replacement of the goods or the refund of the purchase price of the goods. 3M will not be liable for any Equipment damage resulting from wear, abuse, damage in transit, failure to maintain the product or other damage beyond the control of 3M.

Except to the extent that such liability is not able to be excluded by law, all other liability of 3M whether arising from negligence or otherwise is expressly excluded. For the avoidance of doubt, except where required by the Australian Consumer Law or any other law that cannot be excluded, 3M will not be liable for any indirect, special, incidental or consequential loss (including, but not limited to, loss of profits, and the costs of inspection, testing, storage or transportation).

3M reserves the right to require that the Equipment be returned to its plant for inspection before determining the appropriate course of action.

3M | DBI SALA® PROTECTA®

Fall Protection

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