ANSI Z359.13-2013	OSHA 1910.140
	OSHA 1926.502

3M™ DBI-SALA® Energy-Absorbing Lanyards

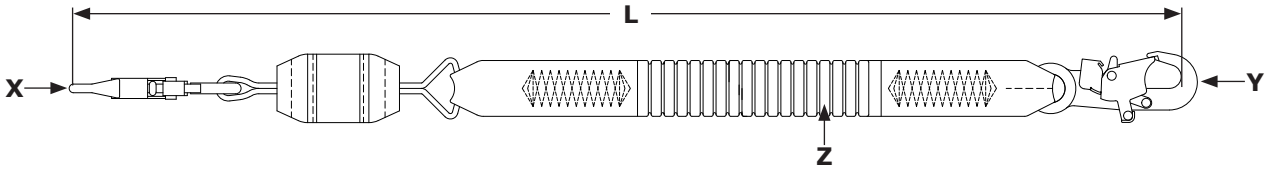
USER INSTRUCTIONS

5908119 Rev. A

Fall Protection

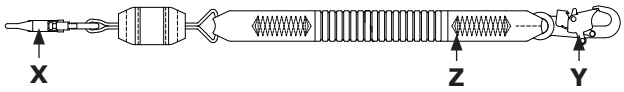
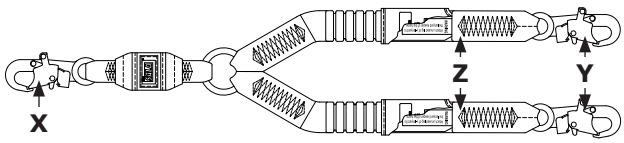
☑ *For identification of product codes, refer to Table 1. See "Table 1 - Product Specifications" for more product information.*

Figure 1 - Product Overview



Lanyard Style (Figure 2)	Model	ANSI	OSHA	Length (L)	Lanyard Leg Material (Z)	Connectors	
						X	Y
A	1246518	✓	✓	6.0 ft. (1.83 m)	KW1	C1	C1
	1246519	✓	✓	6.0 ft. (1.83 m)	KW1	CL	C1
	1246524	✓	✓	6.0 ft. (1.83 m)	KW1	C1	C4
B	1246525	✓	✓	6.0 ft. (1.83 m)	KW1	C5	C3
	1246526	✓	✓	6.0 ft. (1.83 m)	KW1	C5	C6
	1246527	✓	✓	6.0 ft. (1.83 m)	KW1	C5	C2
	1246529	✓	✓	6.0 ft. (1.83 m)	KW1	CL	C6
	1246530	✓	✓	6.0 ft. (1.83 m)	KW1	CL	C3
	1246532	✓	✓	6.0 ft. (1.83 m)	KW1	CL	C2

Figure 2 - Lanyard Styles

Figure 1 Reference	Lanyard Style (see Figure 1 for callouts)	Capacity	Energy Absorber	Maximum Free Fall	Average Arrest Force
A		130 lb. - 310 lb. (59 kg - 140 kg)	Tear Web	6 ft. (1.83 m)	900 lbf (4 kN)
B		130 lb. - 310 lb. (59 kg - 140 kg)	Tear Web	6 ft. (1.83 m)	900 lbf (4 kN)

☑ *Refer to the product label for capacity information and performance data specific to your lanyard model.*

EN

SAFETY INFORMATION

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

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

Intended Use:

This product is used as part of a complete 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 these instructions, is not approved by 3M and could result in serious injury or death.

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

⚠ WARNING

This product is used as part of a complete Fall Protection system. All users must be fully trained in the safe installation and operation of their complete Fall Protection system. **Misuse of this product could result in serious injury or death.** For proper selection, operation, installation, maintenance, and service, refer to all instruction manuals and manufacturer recommendations. For more information, see your supervisor or contact 3M Technical Services.

- **To reduce the risks associated with using an Energy-Absorbing Lanyard which, if not avoided, could result in serious injury or death:**
  - Inspect the product before each use and after any fall event, in accordance with the procedures specified in these instructions.
  - If inspection reveals an unsafe or defective condition, remove the product from service immediately and clearly tag it "DO NOT USE". Destroy or repair the product as required by these instructions.
  - Any product that has been subject to fall arrest or impact force must be immediately removed from service. Destroy or repair the product as required by these instructions.
  - Ensure that Fall Protection systems assembled from components made by different manufacturers are compatible and meet all applicable Fall Protection regulations, standards, or requirements. Always consult a Competent or Qualified Person before using these systems.
  - Ensure the product is kept free from all hazards including, but not limited to: entanglement with users, other workers, moving machinery, other surrounding objects, or impact from overhead objects that could fall onto the product or users.
  - Use appropriate edge protection when the product may contact sharp edges or abrasive surfaces.
  - Do not twist, tie, or knot the product.
  - Avoid trip hazards with lanyard legs. Attach any unused lanyard legs to the lanyard parking elements on your full body harness, if present.
  - Do not exceed the number of allowable users as described in these instructions.
  - Ensure the product is configured and installed properly for safe operation as described in these instructions.
  - Use caution when installing, using, or moving the product as moving parts may create pinch points.
- **To reduce the risks associated with working at height which, if not avoided, could result in serious injury or death:**
  - Your health and physical condition must allow you to safely work at height and to withstand all forces associated with a fall arrest event. Consult your doctor if you have questions regarding your ability to use this equipment.
  - Never exceed allowable capacity of your Fall Protection equipment.
  - Never exceed the maximum free fall distance specified for your Fall Protection equipment.
  - Do not use any Fall Protection equipment that fails inspection, or if you have concerns about the use or suitability of the equipment. Contact 3M Technical Services with any questions.
  - Some subsystem and component combinations may interfere with the operation of this equipment. Only use compatible connections. Contact 3M Technical Services prior to using this equipment in combination with components or subsystems other than those described in these instructions.
  - Use extra precautions when working around moving machinery, electrical hazards, extreme temperatures, chemical hazards, explosive or toxic gases, sharp edges, abrasive surfaces, or below overhead materials that could fall onto you or your Fall Protection equipment.
  - Ensure use of your product is rated for the hazards present in your work environment.
  - Ensure there is sufficient fall clearance when working at height.
  - Never modify or alter your Fall Protection equipment. Only 3M, or persons authorized in writing by 3M, may make repairs to 3M equipment.
  - Before using Fall Protection equipment, ensure a written rescue plan is in place to provide prompt rescue if a fall incident occurs.
  - If a fall incident occurs, immediately seek medical attention for the fallen worker.
  - Only use a full body harness for Fall Arrest applications. Do not use a body belt.
  - Minimize swing falls by working as directly below the anchorage point as possible.
  - A secondary Fall Protection system must be used when training with this product. Trainees must not be exposed to an unintended fall hazard.
  - Always wear appropriate Personal Protective Equipment when installing, using, or inspecting the product.
  - Never work below a suspended load or worker.
  - Always maintain 100% tie-off.

☑ *Always ensure you are using the latest revision of your 3M instruction manual. Visit www.3m.com/userinstructions or contact 3M Technical Services for updated instruction manuals.*

PRODUCT OVERVIEW:

Figure 1 lists the 3M™ DBI-SALA® Energy-Absorbing Lanyard models covered by this instruction. Energy-absorbing lanyards are lanyard models that include an energy-absorbing component to help manage fall arrest forces. This lanyard type may be used for Fall Arrest, Restraint, and Work Positioning applications.

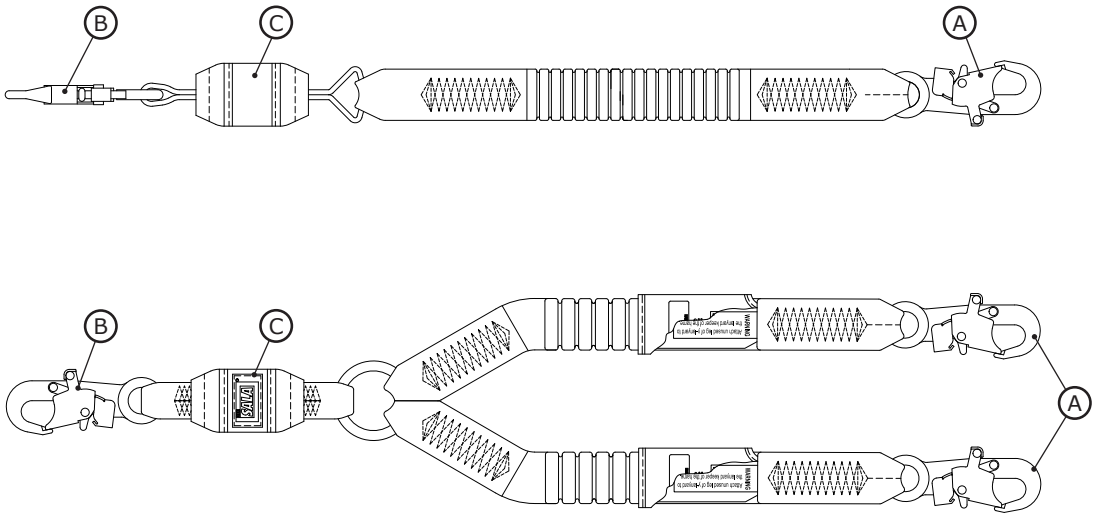
Lanyard models are defined by their general construction and available features. Within Figure 1, lanyards are grouped first by their "Lanyard Style" then by their model number in numerical order. Figure 2 identifies the available lanyard styles covered by this instruction.

Figure 3 identifies key components of the available lanyard models. A typical lanyard includes connectors at both ends of the lanyard leg. Anchoring Connectors (A) secure the lanyard to its anchorage connection point. The Harness Connector (B) secures the lanyard to the user's full body harness. Energy-absorbing lanyards include an Energy Absorber (C), which dissipates kinetic energy and limits deceleration distance during fall arrest.

Energy-absorbing lanyards are available in single- and twin-lanyard models. Twin-lanyard models include two lanyard legs and two Anchoring Connectors (A) between them. This design enables users to maintain 100-percent tie-off when transferring between anchorage points.

Each product model has its own particular size and its own combination of components as listed in Figure 1. See Table 1 for more information on Component Specifications.

Figure 3 - Components



☑ *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.*

Table 1 – Product Specifications

System Specifications:

Anchorage:

Anchorage structure requirements vary with the system application and whether it is a certified anchorage or non-certified anchorage. The anchorage structure must sustain static loads applied in the directions permitted by the anchorage connector.

System Application	Certified Anchorage	Non-Certified Anchorage	Defined by
Fall Arrest	2 times maximum arresting force	5,000 lbf (22.2 kN)	OSHA, ANSI
Restraint	2 times foreseeable force	1,000 lbf (4.4 kN) per ANSI 5,000 lbf (22.2 kN) per OSHA	OSHA, ANSI
Work Positioning	2 times foreseeable force	3,000 lbf (13.3 kN)	OSHA, ANSI
Rescue	5 times applied load	3,000 lbf (13.3 kN)	ANSI

When more than one system is attached to an anchorage, the strengths stated above must be multiplied by the number of systems attached to the anchorage. See ANSI Z359.2 for more information.

☑ *Anchorage must be approved by a Qualified Person.*

Standards:

Each product model is certified to, or conforms with, the applicable standards and regulations listed within Figure 1. If none are specified, then all standards and regulations listed on the cover apply.

Component Specifications:

Figure 3 Reference	Component	Materials
Ⓐ	Anchoring Connector	(see Connector Specifications)
Ⓑ	Harness Connector	(see Connector Specifications)
Ⓒ	Energy Absorber	Tear Web: Vectran polyester

Connector Specifications:

Figure 1 Reference	Model Number	Description	Material	Gate Opening	Gate Strength
C1	9502116	Snap hook	Zinc-plated steel alloy	3/4 in. (19 mm)	3,600 lbf (16 kN)
C2	2000210	Rebar hook	Zinc-plated steel alloy	2.5 in. (63.5 mm)	3,600 lbf (16 kN)
C3	2000209	Rebar hook	Aluminum alloy and zinc-plated steel alloy	2.5 in. (63.5 mm)	3,600 lbf (16 kN)
C4	2000125	Rebar hook	Zinc-plated steel alloy	3.0 in. (76.2 mm)	3,600 lbf (16 kN)
C5	9505254	Snap hook	Aluminum alloy and zinc-plated steel alloy	3/4 in. (19 mm)	3,600 lbf (16 kN)
C6	2000194	Rebar hook	Zinc-plated steel alloy	4.3 in. (109 mm)	3,600 lbf (16 kN)
CL	9501538	Choker loop	Kevlar nomex webbing	---	---

☑ ***Tensile Strength:*** *The tensile strength of each of the connectors listed above is 22.2 kN (5,000 lbf).*

C1	C2	C3	C4	C5	C6
					

Table 1 – Product Specifications

Lanyard Leg Material:		
Figure 1 Reference	**Description**	**Minimum Tensile Strength**
KW1	2.0-in. (5.08 cm) Kevlar nomex tube over 1.0-in. (2.54 cm) elastic webbing	5000 lbf (22.2 kN)

Performance Specifications	
Maximum Arresting Force:	All energy-absorbing lanyards covered in this instruction are below 1800 lbf (8 kN) Maximum Arresting Force.

1.0 PRODUCT APPLICATION

1.1 PURPOSE: Energy-absorbing lanyards are designed for use as a connecting subsystem in a Fall Protection system. Once anchored, energy-absorbing lanyards limit the movement range of the user, either to prevent the user from reaching a fall hazard or to arrest the user in the event of a fall. For more information on system applications, refer to the "Product Overview" and Table 1.

1.2 SUPERVISION: Use of this equipment must be supervised by a Competent Person.

1.3 STANDARDS: Your product conforms to the national or regional standards identified on the front cover of these instructions. If this product is resold outside the original country of destination, the re-seller must provide these instructions in the language of the country in which the product will be used.

> ☑ *For more information on certification or conformance requirements, refer to the applicable standards and regulations listed for your product (e.g. the ANSI/ASSP Z359 Fall Protection codes).*

1.4 TRAINING: This equipment must be installed and used by persons trained in its correct application. These instructions are to be used as part of an employee training program as required by national, regional, or local standards. It is the responsibility of the users and installers of this equipment to ensure they are familiar with these instructions, trained in the correct care and use of this equipment, and are aware of the operating characteristics, application limitations, and consequences of improper use of this equipment.

1.5 RESCUE PLAN: When using this equipment and connecting subsystems, the employer must have a written rescue plan and the means to implement and communicate that plan to users, authorized persons, and rescuers. A trained, on-site rescue team is recommended. Team members should be provided with the equipment and techniques necessary to perform a successful rescue. Training should be provided on a periodic basis to ensure rescuer proficiency. Rescuers should be provided with these instructions. There should be visual contact or means of communication with the person being rescued at all times during the rescue process.

2.0 SYSTEM REQUIREMENTS

2.1 ANCHORAGE: Anchorage requirements vary with the Fall Protection application. The mounting structure on which the equipment is placed must meet the Anchorage specifications defined in Table 1.

2.2 CAPACITY: The user capacity of a complete Fall Protection system is limited by its lowest rated maximum capacity component. For example, if your connecting subsystem has a capacity that is less than your harness, you must comply with the capacity requirements of your connecting subsystem. See the manufacturer instructions for each component of your system for capacity requirements.

2.3 ENVIRONMENTAL HAZARDS: Use of this equipment in areas with environmental hazards may require additional precautions to prevent injury to the user or damage to the equipment. Hazards may include, but are not limited to: high heat, chemicals, corrosive environments, high voltage power lines, explosive or toxic gases, moving machinery, sharp edges, or overhead materials that may fall and contact the user or equipment. Contact 3M Technical Services for further clarification.

2.4 LANYARD HAZARDS: Ensure the lanyard is kept free from all hazards including, but not limited to: entanglement with users, other workers, moving machinery, other surrounding objects, or impact from overhead objects that could fall onto the lanyard or users.

2.5 COMPONENT COMPATIBILITY: 3M equipment is designed for use with 3M equipment. Use with non-3M equipment must be approved by a Competent Person. Substitutions made with non-approved equipment may jeopardize equipment compatibility and may affect the safety and reliability of your Fall Protection system. Read and follow all instructions and warnings for all equipment prior to use.

2.6 CONNECTOR COMPATIBILITY: Connectors are compatible with connecting elements when the size and shape of either component does not cause the connector to inadvertently open, regardless of orientation. Connectors must comply with applicable standards. Connectors must be fully closed and locked during use.

3M Connectors (snap hooks and carabiners) are designed to be used only as specified in each instruction manual. Ensure connectors are compatible with the system components to which they are connected. Do not use equipment that is non-compatible. Use of non-compatible components may cause the connector to unintentionally disengage (see Figure 4). If the connecting element to which a connector attaches is undersized or irregular in shape, a situation could occur where the connecting element applies a force to the gate of the connector (A). This force could then cause the gate to open (B), disengaging the connector from the connecting element (C).

2.7 MAKING CONNECTIONS: All connections must be compatible in size, shape, and strength. See Figure 5 for examples of inappropriate connections. Do not attach snap hooks and carabiners:

A. To a D-ring to which another connector is attached.

B. In a manner that would result in a load on the gate. Large-throat snap hooks should not be connected to standard-size D-Rings or other connecting elements, unless the snap hook has a gate strength of 16 kN (3,600 lbf) or greater.

C. In a false engagement, where size or shape of the connector or connecting element is not compatible and, without visual confirmation, would seem to be fully engaged.

D. To each other.

E. Directly to webbing or rope lanyard or tie-back material, unless the instruction manuals for both the lanyard and connector specifically allow such a connection.

F. To any object whose size or shape does not allow the connector to fully close and lock, or that could cause connector roll-out.

G. In a manner that does not allow the connector to align properly while under load.

Figure 4 - Connector Compatibility

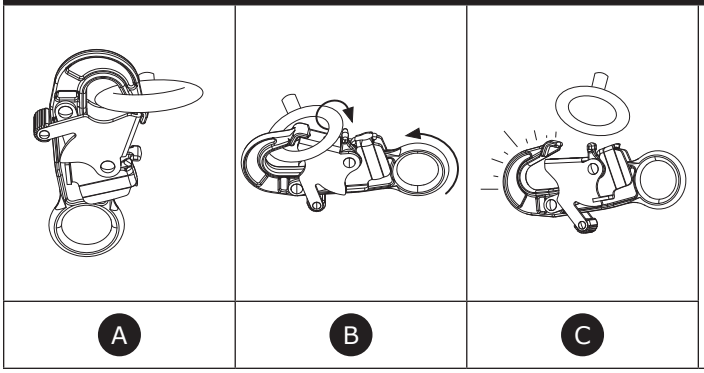
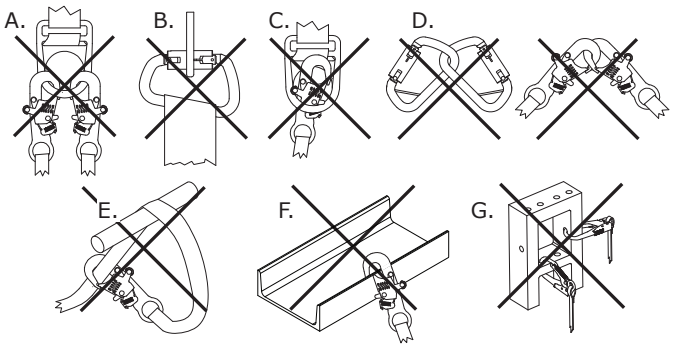


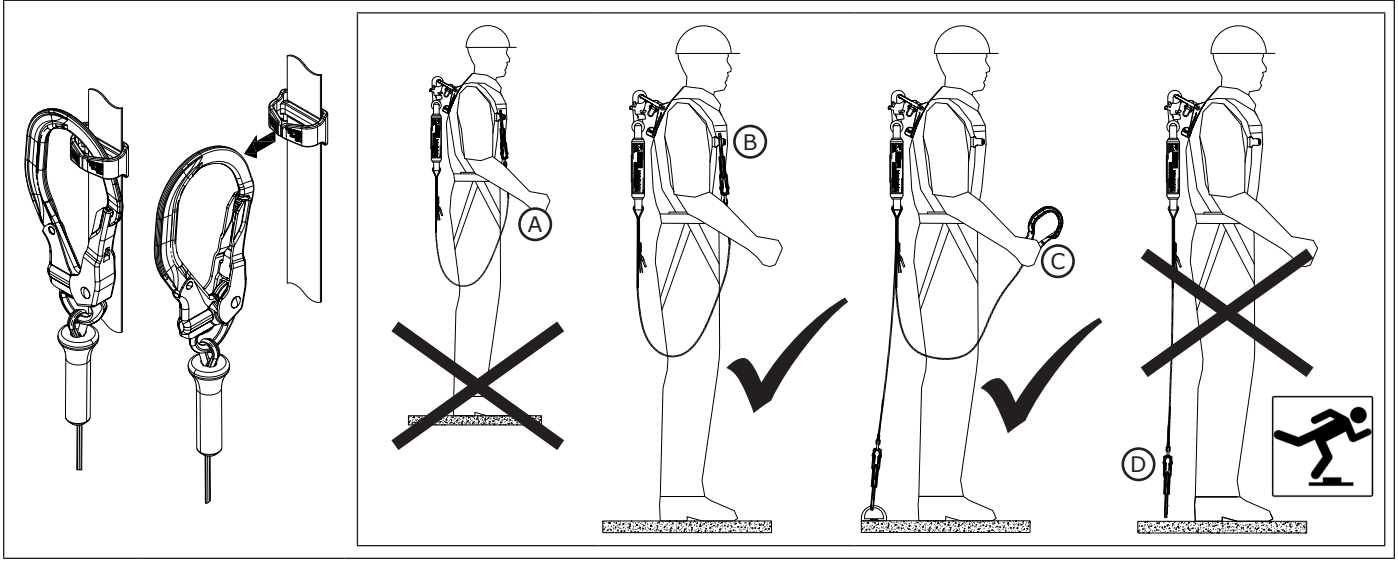
Figure 5 - Making Connections



2.8 LANYARD PARKING ATTACHMENT: Figure 6 illustrates lanyard parking. The lanyard parking attachment is for attaching the free end of a lanyard or harness-mounted Self-Retracting Device when not connected to an anchorage connection point for purposes of Fall Protection. Lanyard parking attachments must never be used as a Fall Protection attachment element on the harness for connecting a lanyard or Self-Retracting Device (A).

When not connected to an anchorage connection point, an unconnected lanyard leg must be properly parked on the Harness (B) or secured in the user's hands as in 100-percent tie-off applications (C). Free-hanging Lanyard Legs (D) can trip the user or catch on surrounding objects resulting in a fall.

Figure 6 – Lanyard Parking Attachment



3.0 INSTALLATION

3.1 OVERVIEW: Installing this product requires effective planning and knowledge of fall clearance requirements. In the event of a fall, there must be enough fall clearance present to safely arrest the user.

3.2 PLANNING: Plan your Fall Protection system before starting your work. Account for all factors that may affect your safety before, during, and after a fall. Consider all requirements and limitations specified in these instructions.

A. SHARP EDGES: Avoid working where system components may be in contact with, or scrape against, unprotected sharp edges and abrasive surfaces. All sharp edges and abrasive surfaces should be covered with protective material.

3.3 FALL CLEARANCE: It is critical that the user is aware of fall clearance and its requirements before using this product.

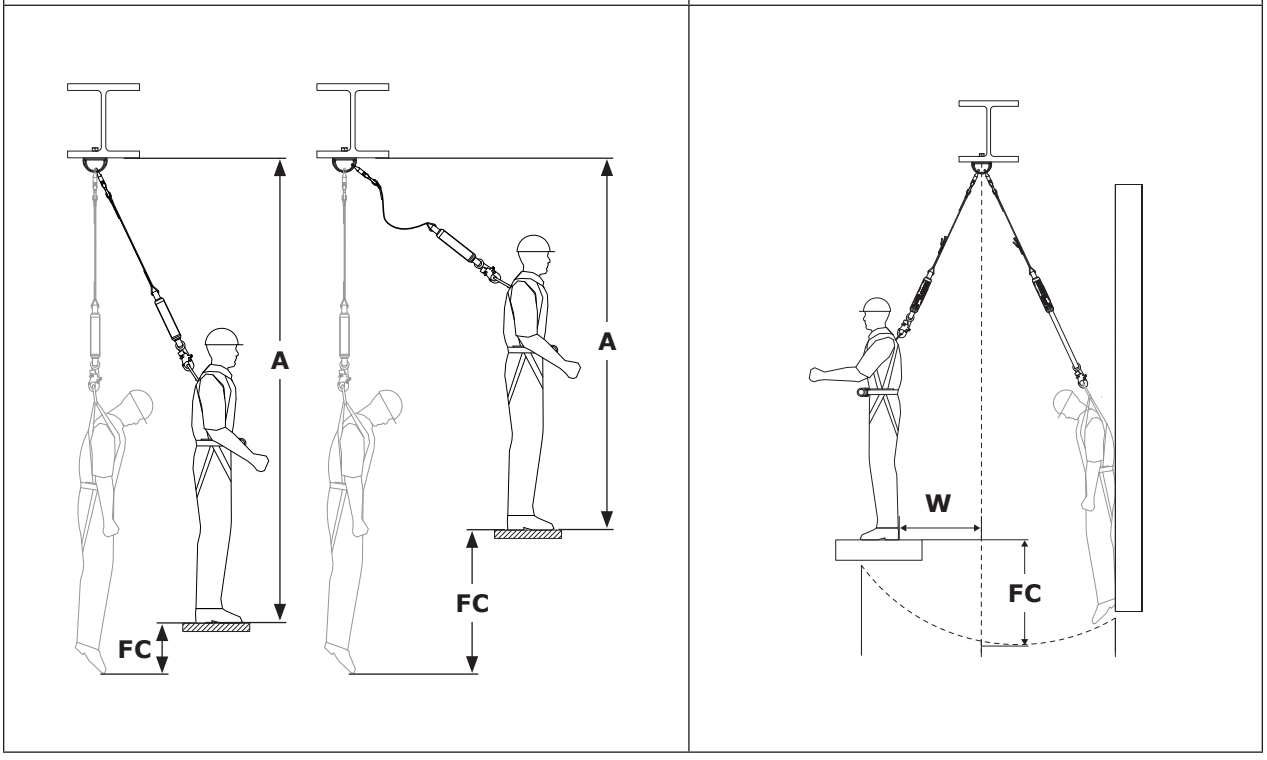
A. DEFINITION: Fall clearance is the measure of distance between a user and the next obstruction below them. Before use of this product, the user should determine how much fall clearance is required to prevent them from striking an obstruction should they fall.

There may be additional factors affecting fall clearance within your Fall Arrest system, such as D-ring extension length and anchorage deflection. For coverage of these factors, and others not outlined in these instructions, refer to the manufacturer instructions for each component of your Fall Arrest system. Additional factors, when provided, should be added to the fall clearance values in this instruction.

B. MINIMIZING REQUIREMENTS: The user should always position their Fall Arrest system to minimize fall potential and potential fall distance. To keep fall clearance requirements to a minimum, it is recommended that the user work as directly below their anchorage point as possible.

- **ANCHORAGE HEIGHT:** The Required Fall Clearance (FC) for a user increases as Anchorage Height (A) decreases. The user experiences a greater amount of free fall when connected to an anchorage point below them, since the user will have to travel that much farther should they fall. See Figure 7.2 for reference.
- **SWING FALLS:** The Required Fall Clearance (FC) for a user increases as User Work Radius (W) increases. Swing falls occur when the anchorage point is not directly above the user when a fall occurs. See Figure 7.3 for reference. The force of striking an object during a swing fall could cause serious injury or death. Do not permit a swing fall if injury could occur.

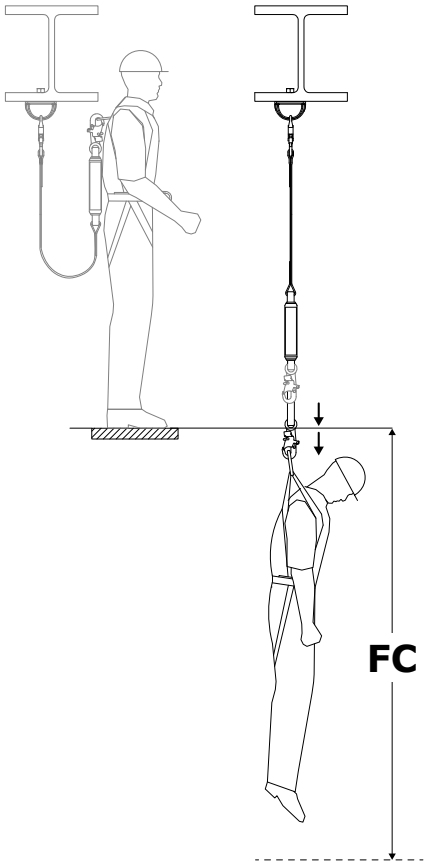
Figure 7 - Minimizing Fall Clearance Requirements



FALL CLEARANCE CHARTS (MAXIMUM VALUES)

Find your Required Fall Clearance (FC) by using the following charts. These charts give the most fall clearance needed for your lanyard within a specified anchorage configuration. Charts are separated by the type of lanyard you are using (see "Lanyard Style" within Figures 1 and 2). These charts give the maximum amount of fall clearance needed for each lanyard. For a more precise requirement, please see "Calculating Clearance (Exact Values)".

☑ ***Fall clearance is measured from the working surface for these charts.*** *If you would like to measure fall clearance from your anchorage point, please see the conversion option or "Calculating Clearance (Exact Values)".*



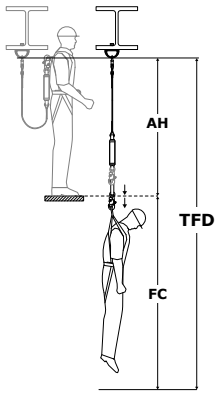
Anchorage Height: D-ring level or above

Lanyard Styles: A, B *(Figure 2)*	
Lanyard Length	**Required Fall Clearance (FC)**
6 ft. (1.83 m)	12.79 ft. (3.90 m)

Need clearance below your anchorage point?

To find the amount of clearance needed below your anchorage point, add your Anchorage Height (AH) to the Required Fall Clearance (FC) for your lanyard. This is your Total Fall Distance (TFD).

AH		
FC		+
TFD		=



CALCULATING CLEARANCE (EXACT VALUES)

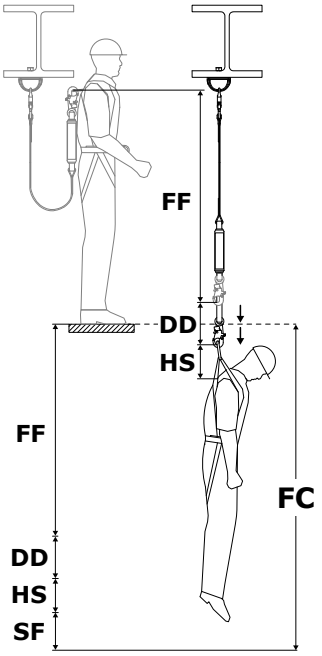
There are two common methods for calculating clearance requirements. The "Working Surface Method" finds Required Fall Clearance (FC), which is measured from your working platform to the next obstruction below. The "Anchorage Method" finds Total Fall Distance (TFD), which is measured from one's anchorage point down. Both methods are acceptable for finding your clearance requirement. Select whichever method you are more comfortable with.

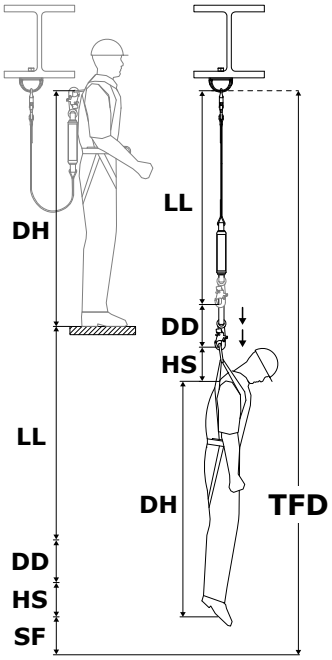
WORKING SURFACE METHOD

1. **Find your Free Fall (FF).** See "Measuring Free Fall".
2. **Find your Deceleration Distance (DD).** See "Energy Absorber Tables".
3. **Add it up to get Required Fall Clearance (FC):**
   - Free Fall (FF)
   - Deceleration Distance (DD)
   - Harness Stretch (HS): 1.5 ft. (0.45 m)
   - **Safety Factor (SF):** Minimum of 1.5 ft. (0.45 m).
   - **If you did not measure Free Fall while standing:** If crouching, add 3 ft. (0.91 m). If lying prone, add 6 ft. (1.52 m) instead.

ANCHORAGE METHOD

1. **Find your Lanyard Length (LL).** See Figure 1.
2. **Find your D-ring Height (DH).** This is the height of your D-ring above the working surface. This is typically 5 ft. (1.52 m) for a user who is 6 ft. (1.83 m) tall.
3. **Find your Deceleration Distance (DD).** See "Energy Absorber Tables".
4. **Add it up to get Total Fall Distance (TFD):**
   - Lanyard Length (LL)
   - D-ring Height (DH)
   - Deceleration Distance (DD)
   - Harness Stretch (HS): 1.5 ft. (0.45 m)
   - **Safety Factor (SF):** Minimum of 1.5 ft. (0.45 m).
5. **Confirm your Free Fall (FF) does not exceed the limit for your lanyard.** See "Measuring Free Fall".





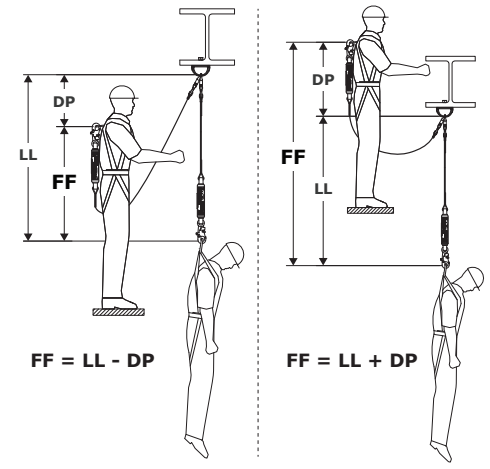
MEASURING FREE FALL

You must never exceed the Maximum Free Fall for your lanyard. See Figure 2 for the Maximum Free Fall for your lanyard. To ensure you are not exceeding this limit, you must determine the amount of Free Fall (FF) in your system.

☑ *Free Fall (FF) must be measured from a standing position. Crouching or lying prone reduces effective user height.*

1. **Find Free Fall (FF).** Free Fall (FF) varies with where your anchorage point is located. Select the option that applies to your situation.

Anchorage Point Location	How to Find Free Fall	Legend:
Above D-ring	Subtract DP from LL	**DP** = Distance to Anchorage Point **LL** = Lanyard Length
Below D-ring	Add DP to LL	



ENERGY ABSORBER TABLES

Use the below tables to find the Deceleration Distance (DD) for your lanyard.

1. Select the chart containing information for your Lanyard Style (see Figures 1 and 2).
2. Find your user weight (including tools, clothing, etc.).
3. Find your corresponding Deceleration Distance (DD).

☑ *If your weight is between listed values, round up to the next highest value.*

User Weight	**Deceleration Distance (DD)**
	Lanyard Styles: A, B *(Figure 2)*
130 lb. (59.0 kg)	1.59 ft. (0.48 m)
148 lb. (67.1 kg)	1.81 ft. (0.55 m)
166 lb. (75.3 kg)	2.03 ft. (0.62 m)
184 lb. (83.5 kg)	2.25 ft. (0.69 m)
202 lb. (91.6 kg)	2.47 ft. (0.75 m)
220 lb. (99.8 kg)	2.69 ft. (0.82 m)
238 lb. (108.0 kg)	2.91 ft. (0.89 m)
256 lb. (116.1 kg)	3.13 ft. (0.95 m)
274 lb. (124.3 kg)	3.35 ft. (1.02 m)
292 lb. (132.4 kg)	3.57 ft. (1.09 m)
310 lb. (140.6 kg)	3.79 ft. (1.16 m)

3.4 CONNECTING TO ANCHORAGE: Figure 8 illustrates typical lanyard anchorage connections. The Anchorage (A) should be directly overhead to minimize free fall and swing fall hazards (see Section 3.3.B). Select an anchorage capable of sustaining the static loads defined in Table 1. Depending on system and product configuration, the user may secure the Anchoring Connector (B) of the lanyard directly to the anchorage structure or to an anchorage connector or anchorage connection point between.

3.5 CONNECTING TO A HARNESS: Connection of the lanyard to a harness will vary per the harness and which attachment element is used. See Figure 9 for reference. To secure, connect the Harness Connector (A) of the lanyard to the Attachment Element (B) of the full body harness. For more information as to which attachment elements may be used, see the manufacturer instructions of your harness.

☑ *The "Product Overview" specifies for which Fall Protection applications your lanyard model may be used. Ensure use of your harness complies with these requirements. A full body harness is required for Fall Arrest applications.*

Figure 8 - Connecting to Anchorage

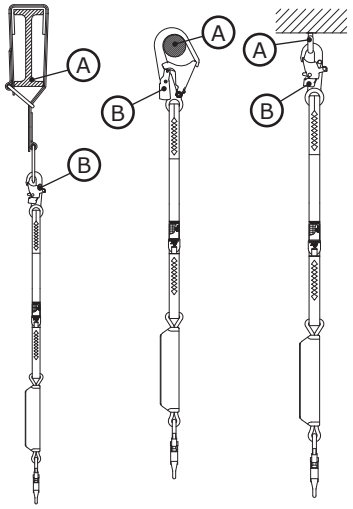
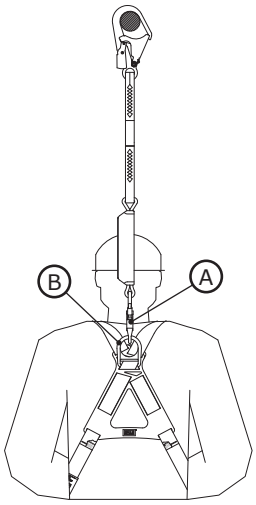


Figure 9 - Connecting to a Harness



3.6 ANCHORAGE HEIGHT RESTRICTIONS: When installing an energy-absorbing lanyard, it is important to consider the length of your lanyard and its Maximum Free Fall requirement. These values determine anchorage height restrictions for your lanyard. The "Anchorage Height Restrictions" table shows requirements for common lanyard specifications.

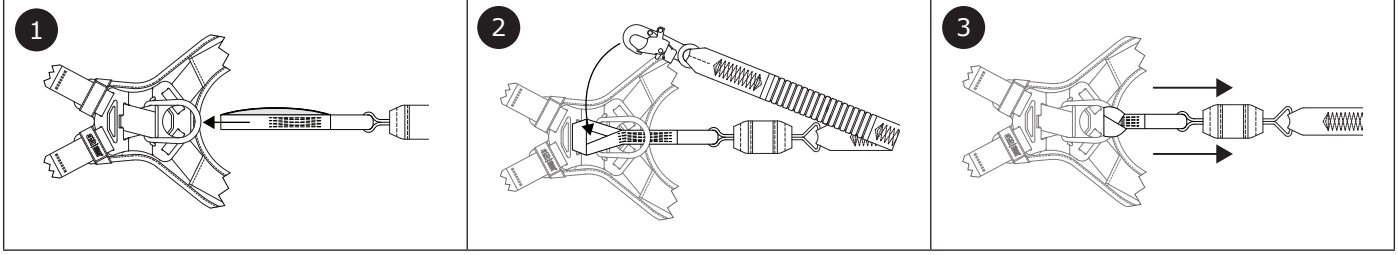
☑ *Your lanyard must be anchored at a height that will not result in free fall greater than the Maximum Free Fall value stated in these instructions or on the product label.*

Anchorage Height Restrictions		
Lanyard Length	**Maximum Free Fall**	**Required Anchorage Height**
6 ft. (1.83 m)	6 ft. (1.83 m)	D-ring height or above
4 ft. (1.22 m)	6 ft. (1.83 m)	2 ft. (0.61 m) below D-ring height or above
6 ft. (1.83 m)	12 ft. (3.66 m)	Working surface or above
☑ *D-ring height varies per user, but is typically 5 ft. (1.52 m) for a user that is 6 ft. (1.83 m) tall.*		

3.7 SECURING LANYARDS WITH CHOKER LOOPS: Some lanyard models include choker loops for connecting to harnesses. Choker loops are web loops that are designed to choke the lanyard onto a harness before securing to an anchorage point. See Figure 10 for reference. To secure a lanyard with a choker loop:

1. Insert the lanyard choker loop through the dorsal attachment element on the harness. This may be a D-ring or another web loop that is part of the harness.
2. Insert the anchoring end of the lanyard through the choker loop so that the lanyard encloses the harness attachment element.
3. Pull the lanyard through until its choker loop tightly cinches the harness attachment element.

Figure 10 - Securing Lanyards with Choker Loops



3.8 INSTALLING LIFELINE SUBSYSTEMS: Lanyards with lifeline subsystems (e.g. rope grabs and cable grabs) as their anchoring connector will require special procedures for securing the lanyard to anchorage. Anchorage for lifeline subsystems should exclusively be vertical or horizontal lifelines. For more information on how to secure your lifeline subsystem, refer to the manufacturer instructions for your lifeline subsystem and lifeline.

4.0 USE

4.1 BEFORE EACH USE: Verify that your work area and Fall Protection system meet all criteria defined in these instructions. Verify that a formal Rescue Plan is in place. Inspect the product per the 'User' inspection points defined in the "Inspection and Maintenance Log". If inspection reveals an unsafe or defective condition, or if there is any doubt about its condition for safe use, remove the product from service immediately. Clearly tag the product "DO NOT USE". See Section 5 for more information.

4.2 AFTER A FALL: If this equipment is subjected to fall arrest or impact force, remove it from service immediately. Clearly tag it "DO NOT USE". See Section 5 for more information.

4.3 OPERATION: Before using a lanyard, the user will need to secure the lanyard to an anchorage connection point and an attachment element on their full body harness. For energy-absorbing lanyards, the end of the lanyard with the energy absorber should always be connected to the user's harness.

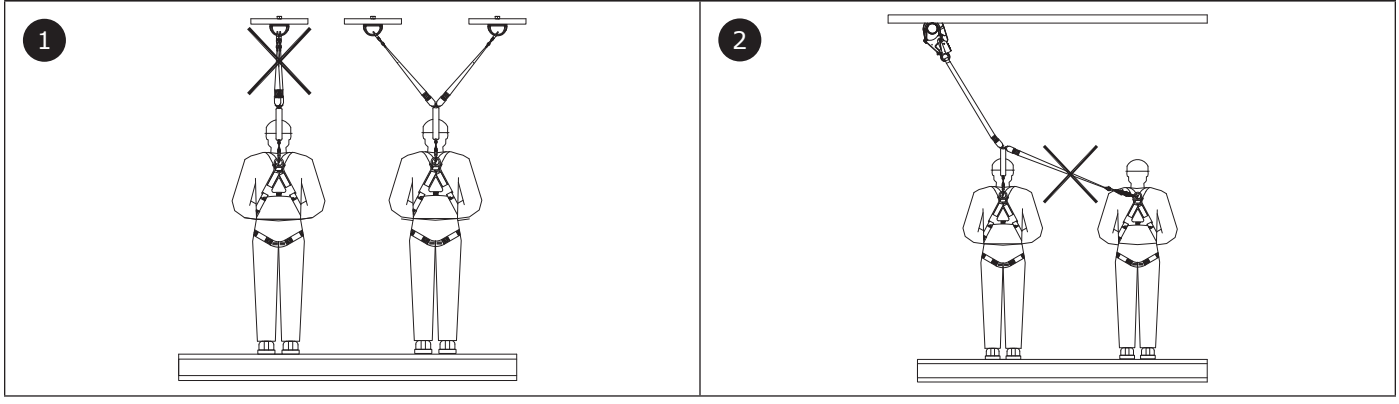
4.4 USE WITH HORIZONTAL SYSTEMS: The lanyards covered in this instruction are compatible for use with horizontal systems, such as Horizontal Lifeline (HLL) systems and horizontal rail systems. See the manufacturer instructions of your horizontal system for more information on its compatibility with lanyards. Lanyards may be used with a horizontal system only if both products allow for such use.

4.5 USING TWIN-LANYARD MODELS: Twin-lanyard models may be used for Fall Arrest or Restraint applications. Additionally, twin-lanyards may be used for climbing applications, such as ascending or descending a rebar structure. Twin-lanyards enable the user to maintain 100-percent tie-off when moving between anchorage points. As long as one lanyard leg is secured to an anchorage point, the user may disconnect the other lanyard leg and move it to a different anchorage point. By disconnecting and reconnecting each lanyard leg in turn, the user may travel along a surface and still maintain tie-off during movement.

The user must always consider the following before using a twin-lanyard:

- When in the vicinity of a fall hazard, the user must always have at least one lanyard leg connected to an anchorage point. Never connect both lanyard legs to the same anchorage point. See Figure 11.1 for reference.
- Each individual anchorage point must be strong enough to meet the anchorage requirements listed in Table 1.
- The individual lanyard legs must only be used to secure to anchorage points. Never secure two workers via the same system. See Figure 11.2 for reference.
- Each lanyard leg must always be kept free from obstructions and entanglement. Do not pass either lanyard leg under arms or between legs during use.

Figure 11 - Using Twin-Lanyard Models



5.0 INSPECTION

☑ *After equipment has been removed from service, it may not be returned to service until a Competent Person confirms in writing that it is acceptable to do so.*

5.1 INSPECTION FREQUENCY: The product shall be inspected before each use by a user and, additionally, by a Competent Person other than the user at intervals of no longer than one year. A higher frequency of equipment use and harsher conditions may require increasing the frequency of Competent Person inspections. The frequency of these inspections should be determined by the Competent Person per the specific conditions of the worksite.

5.2 INSPECTION PROCEDURES: Inspect this product per the procedures listed in the "Inspection and Maintenance Log". Documentation of each inspection should be maintained by the owner of this equipment. An inspection and maintenance log should be placed near the product or be otherwise easily accessible to users. It is recommended that the product is marked with the date of next or last inspection.

5.3 DEFECTS: If the product cannot be returned to service because of an existing defect or unsafe condition, or because the product has been exposed to fall arrest or impact force, then the product must be destroyed.

5.4 **PRODUCT LIFE:** The functional life of the product is determined by work conditions and maintenance. As long as the product passes inspection criteria, it may remain in service.

6.0 MAINTENANCE, SERVICE, AND STORAGE

☑ *Equipment that is in need of maintenance or scheduled for maintenance should be tagged "DO NOT USE". These equipment tags should not be removed until maintenance is performed.*

6.1 **CLEANING:** 3M product must be cleaned in accordance with 3M instructions. To clean the product, wash in a mild, bleach-free detergent and rinse with clean water. The product should afterwards be hung to air-dry. Water used for cleaning and temperatures used to air-dry must never exceed 130°F (54.4°C). For more information, please refer to the technical bulletin on our website: *http://www.3M.com/FallProtection/WebCleaning*

☑ *For any questions about cleaning procedures, please contact 3M Technical Services.*

6.2 **SERVICE:** This product is not repairable. Do not attempt to repair this product.

6.3 **DISPOSAL:** Dispose of the lanyard if it cannot be returned to service. Before disposing of the lanyard, cut the lanyard in half or otherwise disable the lanyard to prevent accidental reuse.

6.4 **STORAGE AND TRANSPORT:** Store and transport the product in a cool, dry, clean environment out of direct sunlight. Avoid areas where chemical vapors may exist. Thoroughly inspect components after extended storage.

☑ *It is recommended that the user limit exposure of the product to UV light. Prolonged exposure to UV light could cause webbing material to degrade at a faster rate.*

7.0 LABELS and MARKINGS

7.1 LABELS: Figure 13 illustrates labels present on the product. Labels must be replaced if they are not present or are not fully legible. Information provided on each label is as follows:

☑ *Label images are intended to be representative. Please refer to your product labels for specific information.*

A	1) Maximum Free Fall 2) Average Arrest Force 3) Maximum Deployment Distance
B	1) Read all instructions.
C	1) Inspection Log 2) Read all instructions. 3) Applicable Standards 4) Manufactured (Year, Month) 5) Model Number 6) Length (ft.) 7) Lot Number 8) Materials
D	1) Only compatible connections may be made with web loops. 2) Illustration of web loop connection
E	1) Attach unused lanyard legs to the lanyard keepers on your harness.
F	1) Always attach energy absorber portion of lanyard to harness dorsal D-ring. 2) Illustration of proper connections
G	1) Read all instructions. 2) Illustration of inappropriate connections

8.0 RFID Tag

8.1 LOCATION: 3M product covered in these user instructions is equipped with a Radio Frequency Identification (RFID) Tag. RFID Tags may be used in coordination with an RFID Tag Scanner for recording product inspection results. See Figure 12 for where your RFID Tag is located.

8.2 DISPOSAL: Prior to disposing of this product, remove the RFID Tag and dispose/recycle in accordance with local regulations. For more information, please visit our website: *http://www.3M.com/FallProtection/RFID*

9.0 GLOSSARY OF TERMS

9.1 DEFINITIONS: The following terms and definitions are used in these instructions.

☑ *For a comprehensive list of terms and definitions, please visit our website: www.3m.com/FallProtection/ifu-glossary*

- **AUTHORIZED PERSON:** A person assigned by the employer to perform duties at a location where the person will be exposed to a fall hazard.
- **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.
- **FALL ARREST SYSTEM:** A collection of Fall Protection equipment configured to protect the user in the event of a fall.
- **QUALIFIED PERSON:** A person with a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience has successfully demonstrated their ability to solve or resolve problems relating to Fall Protection and Rescue systems to the extent required by applicable national, regional, and local regulations.
- **RESCUER:** A person using the Rescue system to perform an assisted rescue.
- **RESTRAINT SYSTEM:** A collection of Fall Protection equipment configured to prevent the user from reaching a fall hazard. No free fall is permitted.
- **USER:** A person who performs activities while protected by a Fall Protection system.
- **WORK POSITIONING SYSTEM:** A collection of Fall Protection equipment configured to support a user at a work position.

Figure 12 - RFID Tag Location

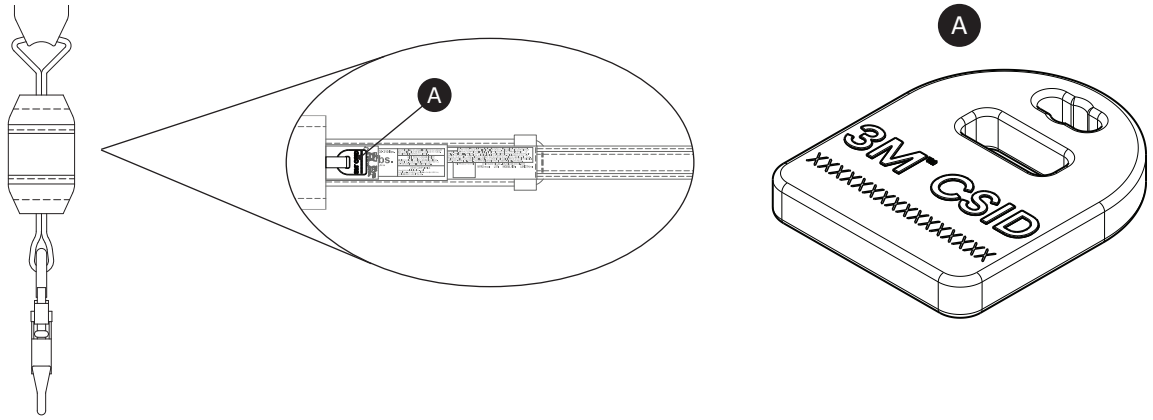
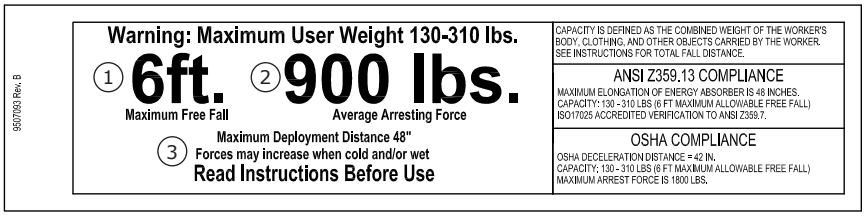
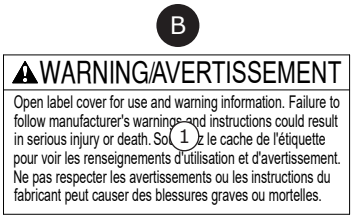


Figure 13 - Product Labels

A



B



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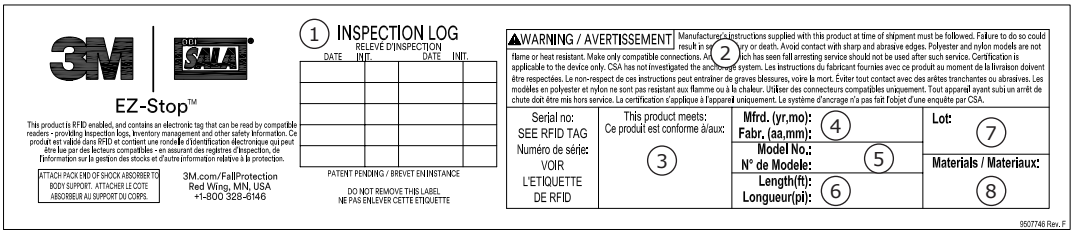
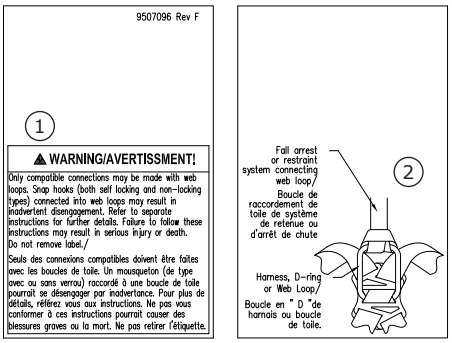


D



E

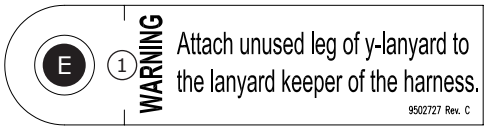
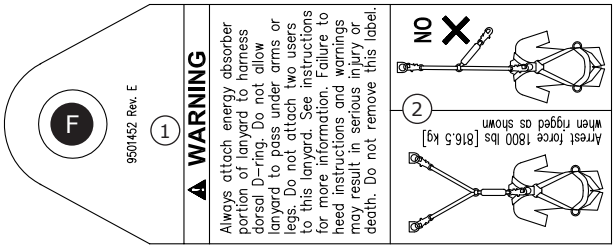
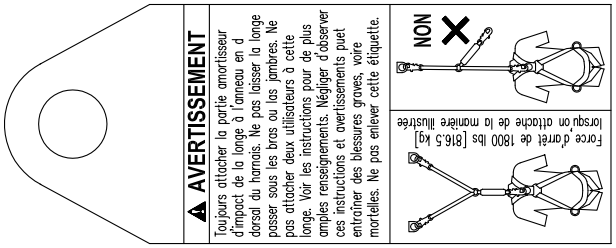


Figure 13 - Product Labels





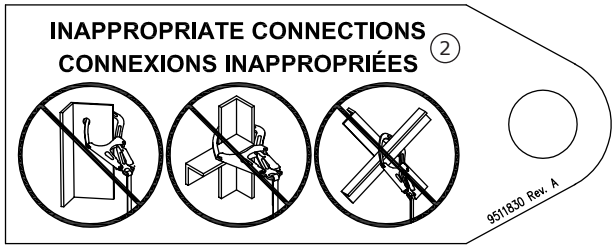


Table 2 – Inspection and Maintenance Log					
Model Number (Serial Number):					
Date Purchased:			**Date of First Use:**		
...					
☑ *This product must be inspected by the user before each use. Additionally, a Competent Person other than the user must inspect this equipment at least once each year.*					
...					
Component	**Inspection Procedure**		**Inspection Result**		
			Pass	**Fail**	
Web Lanyards (Figure 14)	Inspect the webbing for Cuts (A), Frays (B), broken fibers, tears, abrasion, Heavy Soiling (C), mold, Burns (D), and discoloration. Inspect the lanyard stitching for pulled or cut stitches, since broken stitches may indicate that the product has been impact-loaded and must be removed from service.		☐	☐	
Connectors (Figure 15)	Inspect all connectors for signs of damage and corrosion. Verify that all connectors are working properly. Where present: Gates (A) should open, close, lock, and unlock properly; Swivel Eyes (B) should rotate without interference; and locking buttons and pins should function correctly.		☐	☐	
Energy Absorber (Figure 16)	Verify that the integral energy absorber has not been activated. There should be no webbing pulled out of the Cover (A). The cover should be secure and free of Tears (B) or other damage.		☐	☐	
Labels (Figure 13)	All labels are present and fully legible.		☐	☐	
Fall Protection Equipment	Additional Fall Protection equipment that is used with the product is installed and inspected per the manufacturer instructions.		☐	☐	
...					
☑ *If the product fails an inspection procedure, then the product fails overall inspection. If the product fails inspection, remove it from service immediately. Clearly tag the product "DO NOT USE". See Section 5 for more information.*					
...					
Inspection Type:	☐ User	☐ Competent Person	**Overall Inspection Result:**	☐ Pass	☐ Fail
Inspected By:			**Date of Inspection:**		
Signature:			**Next Inspection Due:**		
...					
Additional Notes:					

Figure 14 - Lanyard Inspection

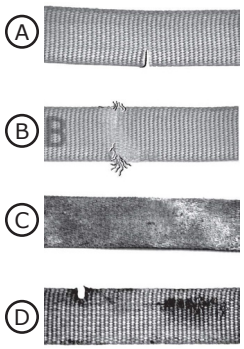


Figure 15 - Connector Inspection

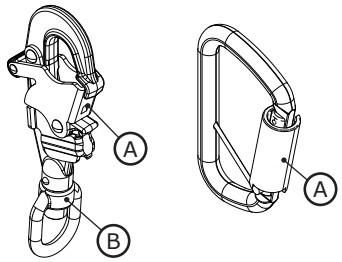
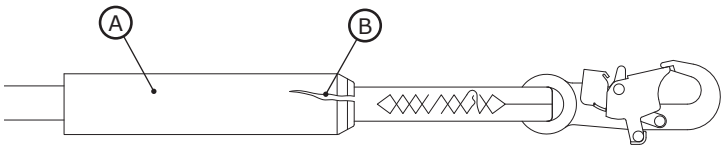


Figure 16 - Energy Absorber Inspection



GLOBAL PRODUCT WARRANTY, LIMITED REMEDY AND LIMITATION OF LIABILITY

WARRANTY: THE FOLLOWING IS MADE IN LIEU OF ALL WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Unless otherwise provided by local laws, 3M fall protection products are warranted against factory defects in workmanship and materials for a period of one year from the date of installation or first use by the original owner.

LIMITED REMEDY: Upon written notice to 3M, 3M will repair or replace any product determined by 3M to have a factory defect in workmanship or materials. 3M reserves the right to require product be returned to its facility for evaluation of warranty claims. This warranty does not cover product damage due to wear, abuse, misuse, damage in transit, failure to maintain the product or other damage beyond 3M's control. 3M will be the sole judge of product condition and warranty options.

This warranty applies only to the original purchaser and is the only warranty applicable to 3M's fall protection products. Please contact 3M's customer service department in your region for assistance.

LIMITATION OF LIABILITY: TO THE EXTENT PERMITTED BY LOCAL LAWS, 3M IS NOT LIABLE FOR ANY INDIRECT, INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES INCLUDING, BUT NOT LIMITED TO LOSS OF PROFITS, IN ANY WAY RELATED TO THE PRODUCTS REGARDLESS OF THE LEGAL THEORY ASSERTED.

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