# 3M™ Delta® Full Body Harness

## User Instructions

Form Number: 9598801, Revision: E

This product is certified to or conforms with the following standards and regulations. Certification and conformance may be restricted to individual product models or applications. For more information, see *Certifications*.

- AS/NZS 1891.1:2020

⚠WARNING:
For identification of product codes, refer to the product specification tables. See the Product Overview for more product information.

Models manufactured in Mexico will include an “M” after the model number.

Figure 1 - Product Overview

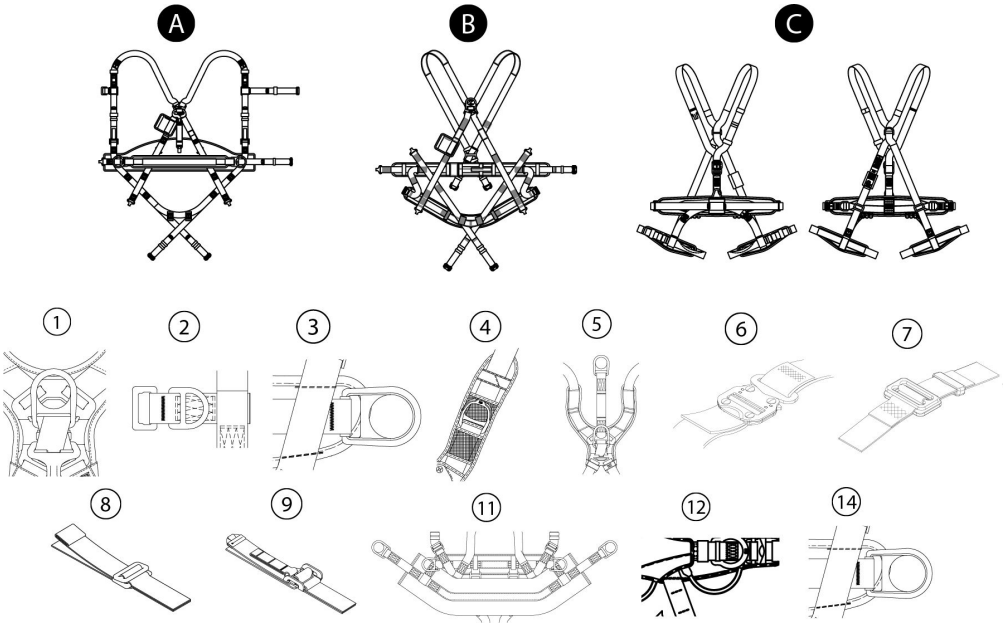
| Harness Style (Figure 1B) | Harness Model | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Dorsal | Sternal | Hip | Shoulder | D-ring Extension | Quick Connect | Pass-Through | Pull-Through | Spring | Trauma Straps | Seat Sling | Gear Loop | Belt |
| | | Attachment Elements | | | | | Buckles and Adjusters | | | | Other Elements | | | |
| C | 1130087<br>1130088<br>1130089<br>1130090 | ✓ | ✓ | ✓ | | | | | ✓ | | | | ✓ | ✓ |
| A | 320S2066NK<br>320M2066NK<br>320L2066NK<br>320XL2066NK<br>320XXL2066NK | ✓ | ✓ | | ✓ | | | ✓ | ✓ | | | | | |
| A | 543S4013<br>543M4013<br>543L4013<br>543XL4013 | ✓ | ✓ | ✓ | | ✓ | ✓ | | | ✓ | | ✓ | | ✓ |
| B | 560S1025<br>560M1025<br>560L1025<br>560XL1025 | ✓ | ✓ | | | | ✓ | | | | | ✓ | | ✓ |
| A | 803S0009 | | ✓ | | ✓ | ✓ | ✓ | | | ✓ | | | | |

Figure 1 - Product Overview

| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Dorsal | Sternal | Hip | Shoulder | D-ring Extension | Quick Connect | Pass-Through | Pull-Through | Spring | Trauma Straps | Seat Sling | Gear Loop | Belt |
| | | Attachment Elements | | | | | Buckles and Adjusters | | | | Other Elements | | | |
| | 803M0009<br>803L0009<br>803XL0009 | | | | | | | | | | | | | |
| | 803XS0018<br>803S0018<br>803M0018<br>803L0018<br>803XL0018<br>803XXL0018 | ✓ | ✓ | | ✓ | | ✓ | | | | | | | |
| | 803S0019<br>803M0019<br>803L0019<br>803XL0019 | ✓ | ✓ | | ✓ | ✓ | ✓ | | | ✓ | | | | |
| | 803S0054<br>803M0054<br>803L0054<br>803XL0054 | ✓ | ✓ | | ✓ | | ✓ | | | ✓ | ✓ | | | |
| | 803S1022<br>803M1022<br>803L1022<br>803XL1022<br>803XXL1022 | ✓ | ✓ | | ✓ | | | ✓ | ✓ | | | | | |
| B | 813XS0016<br>813S0016<br>813M0016<br>813L0016<br>813XL0016<br>813XXL0016 | ✓ | ✓ | | | | ✓ | | | ✓ | | | | |
| | 813S1046<br>813M1046<br>813L1046<br>813XL1046 | ✓ | ✓ | | | ✓ | ✓ | | ✓ | | ✓ | | | |
| A | 823S0018<br>823M0018 | ✓ | ✓ | ✓ | ✓ | | ✓ | | | ✓ | | | | ✓ |

| Figure 1 - Product Overview | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Harness Style (Figure 1B) | Harness Model | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| | | Dorsal | Sternal | Hip | Shoulder | D-ring Extension | Quick Connect | Pass-Through | Pull-Through | Spring | Trauma Straps | Seat Sling | Gear Loop | Belt |
| | | Attachment Elements | | | | | Buckles and Adjusters | | | | Other Elements | | | |
| | 823L0018<br>823XL0018<br>823XXL0018 | | | | | | | | | | | | | |
| | 823S0035<br>823M0035<br>823L0035<br>823XL0035 | ✓ | ✓ | | ✓ | | ✓ | | | ✓ | | | | ✓ |
| | 833S2018<br>833M2018<br>833L2018<br>833XL2018<br>833XXL2018 | ✓ | ✓ | | ✓ | | ✓ | | | ✓ | | | | |
| B | 843S2016<br>843M2016<br>843L2016<br>843XL2016 | ✓ | ✓ | | | | ✓ | | | ✓ | | | | |
| A | 853S0018<br>853M0018<br>853L0018<br>853XL0018<br>853XXL0018 | ✓ | ✓ | | ✓ | | ✓ | | | ✓ | | ✓ | | ✓ |
| | 853S1016X<br>853M1016X<br>853L1016X<br>853XL1016X | ✓ | ✓ | ✓ | | | ✓ | | ✓ | | | ✓ | | ✓ |
| | 863S4019<br>863M4019<br>863L4019<br>863XL4019 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | ✓ | | ✓ |

**Figure 1 - Product Overview**



## 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.

| **Safety Information** | **Form:** 5908245, **Revision:** B |
|---|---|

## Intended Use

This product is used as part of a complete Fall Protection system.

Use in any other application including, but not limited to, non-approved 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 a Full Body Harness 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 Person before using these systems.
  - Ensure the lifeline 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 lifeline or users.
  - Do not twist, tie, knot, or allow slack in the lifeline.
  - Do not twist, tie, or knot the product.
  - Do not exceed the number of allowable users specified in these instructions.
  - Ensure the harness is appropriately sized, adjusted, donned, and worn 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 customer services with any questions.
  - Some subsystem and component combinations may interfere with the operation of this equipment. Only use compatible connections. Contact 3M customer services before 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 customer services for updated instruction manuals.

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

Figure 1 illustrates available harness models. Harness models are defined by their general construction and available features.

The Product Overview lists all of the features available with harness models covered by this instruction. "Attachment Elements" serve as connection points for securing a connecting subsystem. "Buckles and Adjusters" enable the harness to be secured and adjusted for proper fit. "Other Elements" includes miscellaneous features that serve a variety of purposes.

See the product specification tables for more information on Component Specifications.

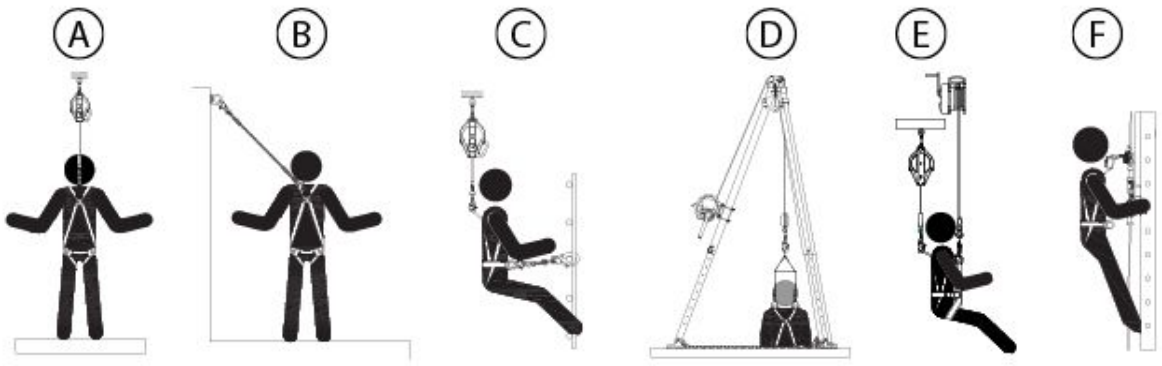
| Harness Styles | | |
|---|---|---|
| **Figure 1B Reference** | **Harness Donning Style** | Within Figure 1, "Harness Style" groups models by general construction, while "Harness Model" sorts models by available features. The "style" of your harness is important for determining how to wear it. The "model" is important for determining which features come with your harness. |
| A | Vest-Style | |
| B | Crossover-Style | |
| C | Suspension-Style | |

## System Applications

Full body harnesses may be used for a variety of system applications. Figure 2 illustrates the applications available to harnesses covered by these instructions. The availability of a specific application is determined by the attachment elements present on your harness, as outlined below. If your harness has one of the attachment elements specified for an application, then it may use that element for that application.

| Figure 2 Reference | Application Type | Attachment Elements |
|---|---|---|
| A | Fall Arrest | Dorsal, sternal, frontal |
| B | Restraint | Dorsal, sternal |
| C | Work Positioning | Frontal, hip |
| D | Rescue | Dorsal, sternal, frontal, shoulder |
| E | Controlled Descent | Dorsal, sternal, frontal |
| F | Climbing | Sternal |

**Figure 2 - System Applications**



# Available Harness Sizes

Figure 1 organizes harness models into groups based on features. All harness models within the same group will include the same features but will vary in sizing options. To determine the size of your harness, refer to its product labels. An example label (A) is shown below. Size codes are identified in the “Product Size Codes” legend.


## Harness Size Codes

| Size Code | Description |
|---|---|
| **XS** | Extra Small |
| **SM** | Small |
| **MED** | Medium |
| **LG** | Large |
| **XL** | Extra Large |
| **XXL** | Extra Large (x2) |
| **3XL** | Extra Large (x3) |

# Harness Capacity

The user of this full body harness must have a combined weight (including clothing, tools, etc.) meeting the requirements set by the applicable standard or regulation. Always ensure the full body harness is adjusted to fit the user properly.

| | |
|---|---|
| **AS/NZS 1891.1:2020** | See the instruction manual of your connecting subsystem for more information. |

## System Specifications

| D-ring extension lengths | Models |
|---|---|
| 11.81 in. (300 mm) | 803S0009, 803M0009, 803L0009, 803XL0009 803S0019, 803M0019, 803L0019, 803XL0019 813S1046, 813M1046, 813L1046, 813XL1046 863S4019, 863M4019, 863L4019, 863XL4019 |
| 15.75 in. (400 mm) | 543S4013, 543M4013, 543L4013, 543XL4013 |

## Component Specifications

| Figure 1 Category | Figure 1 Reference | Description | Materials |
|---|---|---|---|
| Attachment Elements | 1 | Dorsal D-ring | Stainless steel, alloy steel - 22.2 kN (5,000 lbf) Tensile Strength |
| | 2 | Sternal D-ring | Stainless steel, alloy steel - 22.2 kN (5,000 lbf) Tensile Strength |
| | 3 | Hip D-rings | Stainless steel, alloy steel - 22.2 kN (5,000 lbf) Tensile Strength |
| | 4 | Shoulder D-rings | Stainless steel, alloy steel - 22.2 kN (5,000 lbf) Tensile Strength |
| | 5 | D-ring Extension (Dorsal) | D-ring Style: Stainless steel, alloy steel D-ring; polyester webbing with polyester thread - 22.2 kN (5,000 lbf) Tensile Strength.<br><br>Loop Style: Polyester webbing with polyester thread - 22.2 kN (5,000 lbf) Tensile Strength |
| Buckles and Adjusters | 6 | Quick Connect Buckles | Steel, stainless steel, and alloy steel - 18 kN (4,000 lbf) Tensile Strength |
| | 7 | Pass-Through Buckles | Stainless steel, alloy steel - 18 kN (4,000 lbf) Tensile Strength |
| | 8 | Pull-Through Adjusters | Stainless steel, alloy steel - 18 kN (4,000 lbf) Tensile Strength |
| | 9 | Spring Adjusters | Alloy steel - 18 kN (4,000 lbf) Tensile Strength |
| Other Elements | 10 | Trauma Straps | Nylon strap and steel hook |
| | 11 | Seat Sling | Blend of nylon and polyester |
| | 12 | Gear Loop | PVC and polyester |
| | 13 | Belt | Polyester |

## Additional Materials

| Description | Materials |
|---|---|
| Webbing | Polyester - 27 kN (6,000 lbf) Tensile Strength; Nomex-covered Kevlar |
| Stitching | Polyester Thread on polyester webbing; Kevlar thread on Nomex-covered Kevlar webbing |
| Label Covers | Blend of nylon and polyester; Nomex-covered Kevlar |
| Harness Pads | Blend of nylon and polyester |

## Performance Specifications

| Specification | AS/NZS 1891.1:2020 |
| --- | --- |
| Maximum Free Fall Distance: | See the instruction manual of your connecting subsystem for more information on Maximum Free Fall Distance requirements. Always ensure that free fall distance is kept to a minimum.[1] |
| Maximum Arresting Force: | See the instruction manual of your connecting subsystem for more information on Maximum Arresting Force requirements. |
| Maximum Harness Stretch: | 1 ft. (30 cm) |

[1] **AS/NZS:** Free fall should always be limited to 6.56 ft. (2.0 m) or less.

# 1.0 Product Application

**1.1 Purpose:** Full body harnesses provide users with the means to connect to Fall Protection systems. The attachment elements of the full body harness serve as connection points for the connecting subsystem, which secures the user to an anchorage point. Full body harnesses may be used for a variety of Fall Protection systems. System application is determined by the make of your full body harness and the attachment elements present on your harness. See the “Product Overview” for a full list of Fall Protection applications available for your full body harness model.

**1.2 Resale and Distribution:** 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.

**1.3 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.

**1.4 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 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.

**2.2 Connecting Subsystems:** Connecting subsystems (self-retracting devices, energy-absorbing lanyards, lifeline subsystems, etc.) must be suitable for your application. Refer to the subsystem manufacturer instructions for additional information.

**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, strong winds, 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 customer services for further clarification.

**2.4 Extended Suspension:** A full body harness should not be used in extended suspension applications. Extended suspension can cause suspension trauma. 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 Technical Services for more information.

**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 noncompatible. Use of non-compatible components may cause the connector to unintentionally disengage. See figure for reference. 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 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 D-Rings or other connecting elements, unless the snap hook has a gate strength of 3,600 lbf (16 kN)) 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 harness webbing, lanyard leg material, or tie-back material unless such a connection is explicitly allowed for by the manufacturer instructions.
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 3 - Connector Compatibility**

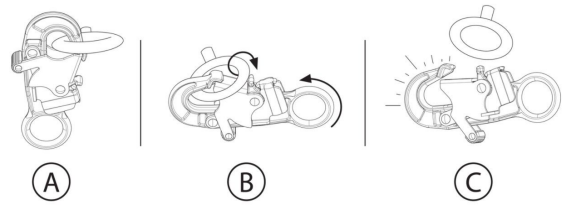
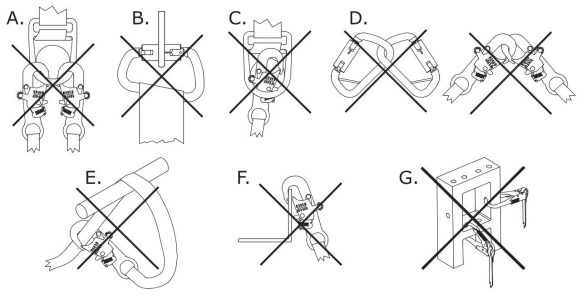



**Figure 4 - Making Connections**



# 3.0 Installation

**3.1 Overview:** Full body harnesses are to be used as part of a Fall Protection system. Ensure each component of your Fall Protection system is installed per the manufacturer instructions.

**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. **Anchorage:** Select an anchorage capable of sustaining the static load requirements of the intended Fall Protection application. See the manufacturer instructions for each component of your Fall Protection system for more information. The anchorage location should address all requirements specified in these instructions.
B. **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.
C. **Connecting Subsystems:** Connecting subsystems used with the harness must be suitable for your system application. See the Product Overview and Figure 2 for more information, as well as the manufacturer instructions for your connecting subsystem.

> ⚠WARNING:
> When using a Work Positioning system, a backup Fall Arrest system is recommended and may be required by applicable standards.

D. **Harness Stretch:** Some amount of harness stretch should be expected when using this product as part of a Fall Arrest system during fall arrest. See “Table 1 – Product Specifications” for how much harness stretch should be expected when using this product. Harness stretch should be added to all fall clearance requirements for your system, unless it is already accounted for by the connecting subsystem or another component. See the manufacturer instructions of your connecting subsystem for more information on fall clearance requirements.

> Maximum harness stretch is determined by the applicable standard or regulation.

E. **D-ring Extensions:** When used, D-ring extensions increase fall clearance requirements by increasing the amount of free fall present in the Fall Arrest system. The length of the D-ring extension must be added to all fall clearance requirements as part of the system’s free fall value. If there is an upper limit for free fall within the system, then system use must be adjusted to remain below that limit. See Table 1 for the length of your D-ring extension. See the manufacturer instructions of your connecting subsystem for more information on free fall and fall clearance requirements.

> Never use D-ring extensions in leading edge applications.

**3.3 Before Install:** Before donning your harness, you should do the following.

- Inspect the harness per the “Inspection and Maintenance Log”.
- Disconnect all buckles.
- Straighten all harness straps so that none are twisted.
- Empty your pockets. Items left in pockets may prevent your harness from properly securing or cause injury in the event of a fall.

**3.4 Donning the Harness:** Donning a full body harness is a procedure with multiple steps. Each step should be followed carefully. Different styles of harnesses may include different sets of features, resulting in different steps for donning. See Figure 5 for reference. See Figure 1 to identify your harness style.

A. **Vest-Style Harnesses:** “Vest style” harnesses include two torso straps and a chest buckle. See Figure 5A for reference.

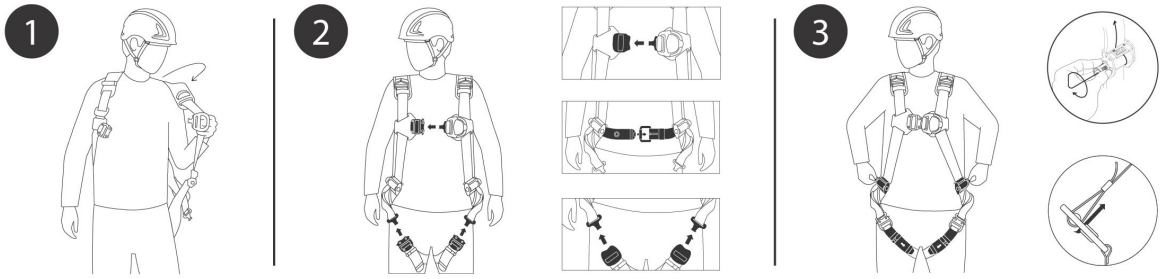
    1. **Put on the harness.** Lift the harness by its dorsal D-ring. Slip on the torso straps, then let the harness hang loosely from your shoulders. Position the chest buckle on your chest as shown. Verify no straps are twisted.
    2. **Connect the harness buckles.** Secure the leg straps first, then secure the chest buckle. If present, secure the waist belt buckle.

> See Section 3.6 for buckle instructions. See Figure 1 for which buckles are on your harness.

3. **Adjust the harness for proper fit.** Check all adjustable features on your harness, including buckles and adjusters. Position the sub-pelvic strap and adjust your leg straps, then adjust your torso straps. All harness straps should have a snug, comfortable fit.

> See Section 3.7 for adjuster instructions. See Figure 1 for which adjusters are on your harness.

**Figure 5A - Donning the Vest-Style Harness**




B. **Crossover-Style Harnesses:** "Crossover style" harnesses include crisscrossing torso straps. See Figure 5B for reference.

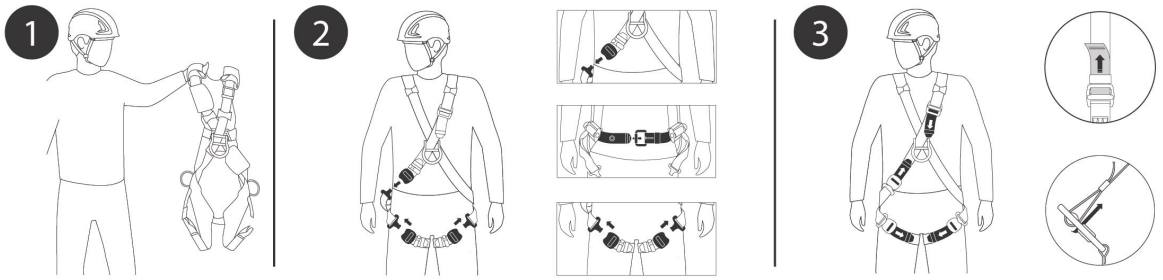
1. **Put on the harness.** Lift the harness by its dorsal D-ring. Slip the harness over your head to put on the torso straps, then let the harness hang loosely from your shoulders. Position the sternal D-ring on your chest as shown. Verify no straps are twisted.
2. **Connect the harness buckles.** Secure the leg straps first, then secure the chest buckle. If present, secure the waist belt buckle.

> See Section 3.6 for buckle instructions. See Figure 1 for which buckles are on your harness.

3. **Adjust the harness for proper fit.** Check all adjustable features on your harness, including buckles and adjusters. Position the sub-pelvic strap and adjust your leg straps, then adjust your torso straps. All harness straps should have a snug, comfortable fit.

> See Section 3.7 for adjuster instructions. See Figure 1 for which adjusters are on your harness.

**Figure 5B - Donning the Crossover-Style Harness**




C. **Suspension-Style Harnesses:** "Suspension style" harnesses include two torso straps that join in the middle. See Figure 5C for reference.

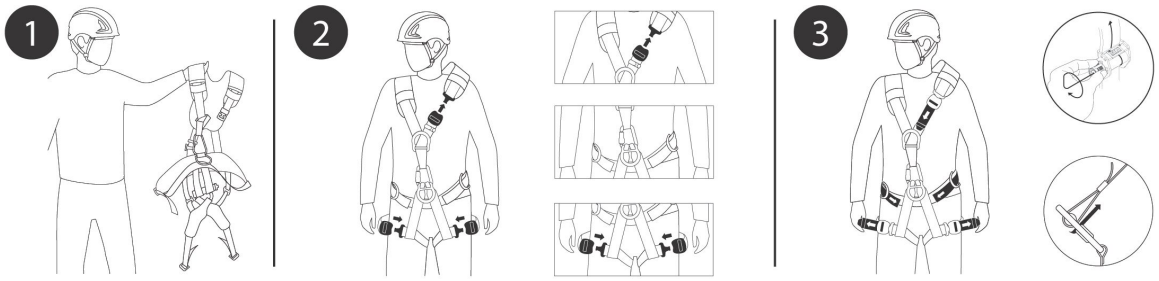
1. **Put on the harness.** Lift the harness by its dorsal D-ring, then step into the harness. Position the waist belt against your waist, tightening the waist belt just enough so that it stays in place. Verify no straps are twisted.
2. **Connect the harness buckles.** Secure the leg straps first, then slip the rest of the harness onto your torso to secure the chest buckle. Secure the frontal carabiner, if necessary.

> See Section 3.6 for buckle instructions. See Figure 1 for which buckles are on your harness.

3. **Adjust the harness for proper fit.** Check all adjustable features on your harness, including buckles and adjusters. Position the sub-pelvic strap and adjust your leg straps, then adjust your torso straps. Adjust the waist belt again as necessary. All harness straps should have a snug, comfortable fit.

> See Section 3.7 for adjuster instructions. See Figure 1 for which adjusters are on your harness.

**Figure 5C - Donning the Suspension-Style Harness**




**3.5 Equipment Check:** Use these equipment checks to verify that your harness is properly installed. See Figure 6 for reference.

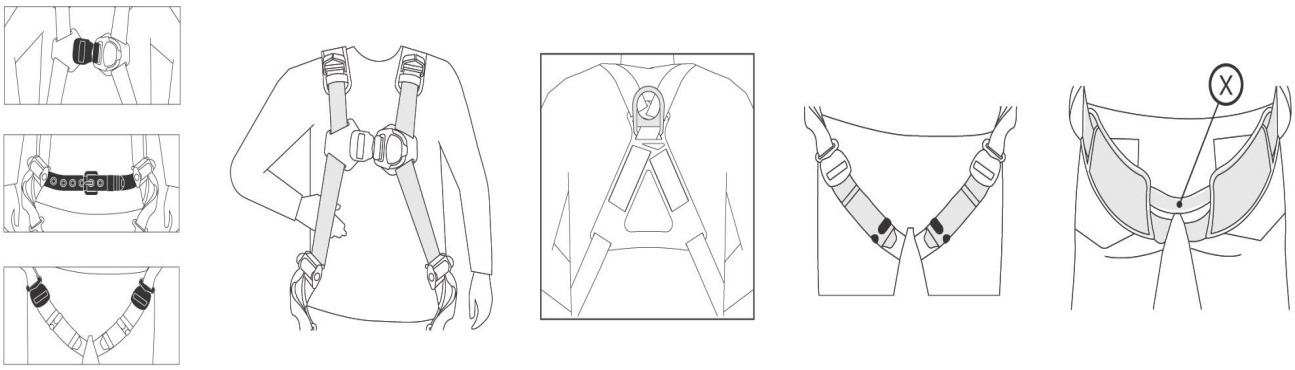
> The user should verify with a second trained user that their harness has been properly installed.

1. **All buckles and adjusters are secure.** Check each harness strap to verify that all buckles are connected, and that each adjuster is locked in place.

   > All buckles and adjusters should be regularly checked during use.

2. **All harness straps are comfortably snug.** Check the fit of your harness straps. Ensure no harness straps are twisted. Verify that the sub-pelvic strap (X) is positioned just beneath the buttocks.
3. **All D-rings and other attachment elements are properly positioned.** Verify that the dorsal D-ring, if present, is positioned between your shoulder blades.
4. **All harness straps are properly stored.** Secure adjustment straps with strap keepers, where present. Move all keepers to strap end.
5. **All harness pads are comfortable, if present.** Shoulder pads are along upper back and leg pads are against buttocks. Pads should remain largely in place and resist sliding.

**Figure 6 - Equipment Check**

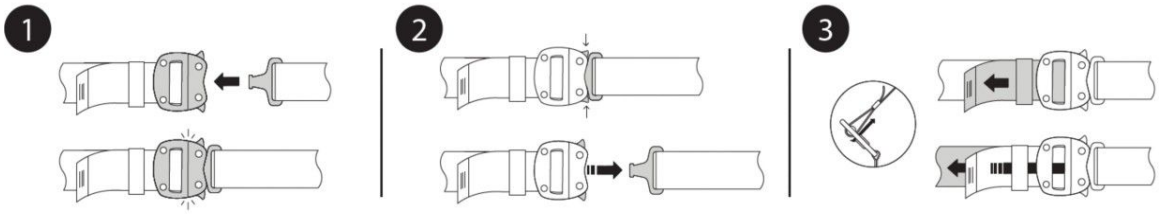



**3.6 Connecting the Buckles:** 3M Harnesses are equipped with a variety of buckles for fastening and adjusting harness straps. See Figure 7 for reference. See Figure 1 for which buckle types are on your harness.

A. **Quick Connect Buckles (Figure 7A)**

   1. **Engage:** Insert the tab into the receptor. You should hear a click when the buckle is secured.
   2. **Disengage:** Squeeze the lock levers on either side of the receptor. Pull the tab out of the receptor.
   3. **Adjust:** Turn and hold the buckle 90 degrees from the harness strap. To shorten webbing, pull down on the adjustment strap. To lengthen webbing, pull upwards on the buckle.

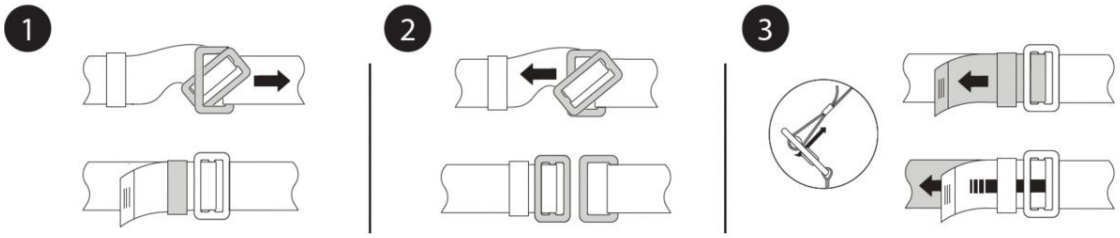
**Figure 7A - Quick Connect Buckles**




B. **Pass-Through Buckles (Figure 7B)**

1. **Engage:** Insert the male buckle through the slot in the female buckle. Tighten the harness strap so that the male buckle is flush against the female buckle.
2. **Disengage:** Loosen the harness strap so that the male buckle separates from the female buckle. Once separated, pull the male buckle out through the female buckle.
3. **Adjust:** Turn and hold the buckle 90 degrees from the harness strap. To shorten webbing, pull down on the adjustment strap. To lengthen webbing, pull upwards on the buckle.

**Figure 7B - Pass-Through Buckles**

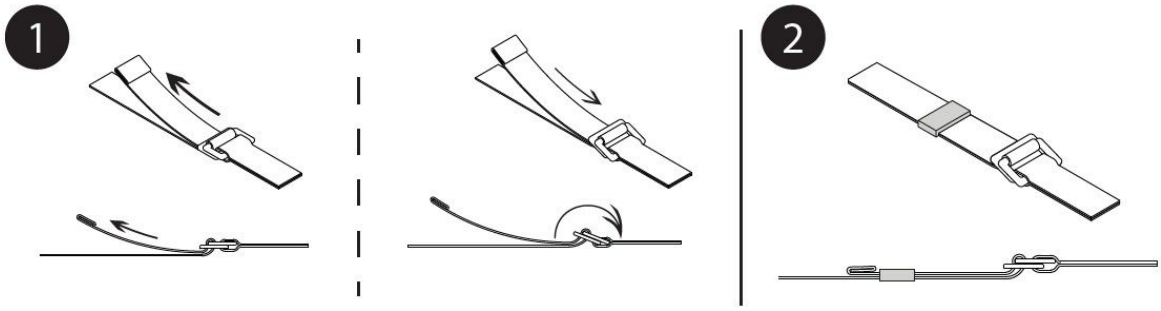



**3.7 Using the Adjusters:** 3M Harnesses are equipped with a pair of adjusters for modifying the shoulder straps. See Figure 8 for reference. See Figure 1 for which adjuster types are on your harness.

1. **Pull-Through Adjusters Adjusters (Figure 8A)**

1. **Adjust:** Turn and hold the adjuster 90 degrees from the harness strap. To tighten, pull the adjustment strap. To loosen, pull upwards on the adjuster.
2. **Store:** Place the strap keeper at the end of the adjustment strap to secure.

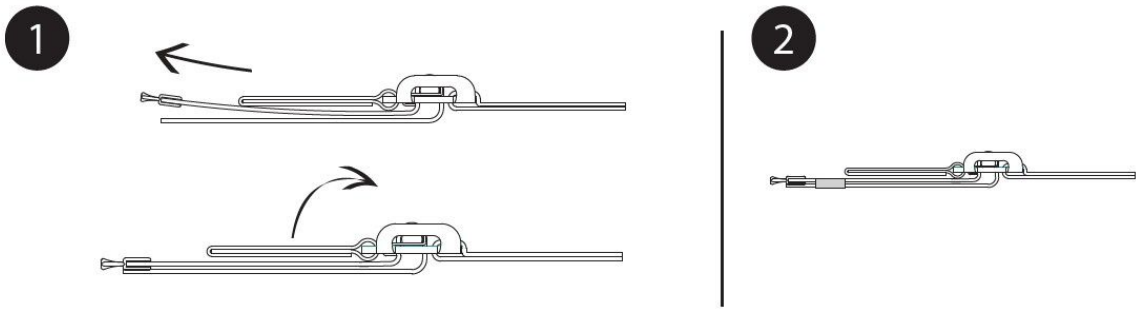
**Figure 8A- Pull-Through Adjusters**




2. **Spring Adjusters (Figure 8B)**

1. **Adjust:** To tighten, pull the adjustment strap. To loosen, pull the adjuster tab and guide the webbing through the adjuster.
2. **Store:** Place the strap keeper at the end of the adjustment strap to secure.

**Figure 8B - Spring Adjusters**




**3.8 Installing a Harness-Mounted SRD:** Harness-mounted SRDs are secured directly to harnesses by means of a harness interface. Harness interfaces are a type of connector specially designed for this purpose. In general, there are two types of harness interface: straight-pin and carabiner. Instructions for each style are provided below.

> Instructions may vary per harness interface model. For more information on how to use your harness interface, see the manufacturer instructions for the harness interface or for the product it was provided with.

> Do not remove the backplate from the harness when installing a harness-mounted SRD.

A. **Straight-Pin Interface:** Straight-pin harness interfaces include a locking pin for securing to the harness. Straight-pin interfaces may be used with Single-SRD or Twin-SRD formats, depending on the harness interface used. See Figure 9A for reference.

    1. Press both Locking Buttons (A) on the front of your harness interface to open. With the Locking Buttons held down, remove the Locking Pin (B) from the harness interface.
    2. Thread the Locking Pin (B) behind both Harness Straps (C), capturing the straps as you reinsert the pin into the harness interface. An audible click should be heard when the Locking Pins are reengaged.
    3. Verify that the harness interface is secure and that both Harness Straps (C) are captured by the harness interface.

B. **Carabiner Interface:** Carabiner interfaces are carabiners that function as harness interfaces. Carabiner interfaces may be used with Single-SRD or Twin-SRD formats, although methods will vary slightly. See Figure 9B for reference, which shows how to install the carabiner interface using a Twin-SRD format.

    1. Open the Gate (A) of the carabiner interface. Slide the SRD (C) over the open Arm (B) of the carabiner. Then, slide the SRD to the opposite side of the carabiner.
    2. Hold the Gate (A) of the carabiner interface open, then slide the open Arm (B) behind and around both Harness Straps (D), capturing the straps within the carabiner interface.
    3. Thread the second SRD (E) onto the open Arm (B) of the carabiner interface. Then, release the Gate to close and secure the carabiner interface.
    4. Verify that the carabiner interface is secure and that both Harness Straps (D) are captured by the interface.

    > For Single-SRD formats, only one SRD should be attached to the carabiner interface. In this format, the carabiner interface may be secured as outlined above, or directly to your Dorsal D-ring instead. If securing to your Dorsal D-ring, do not capture the harness straps.

**Figure 9A - Straight-Pin Interface**

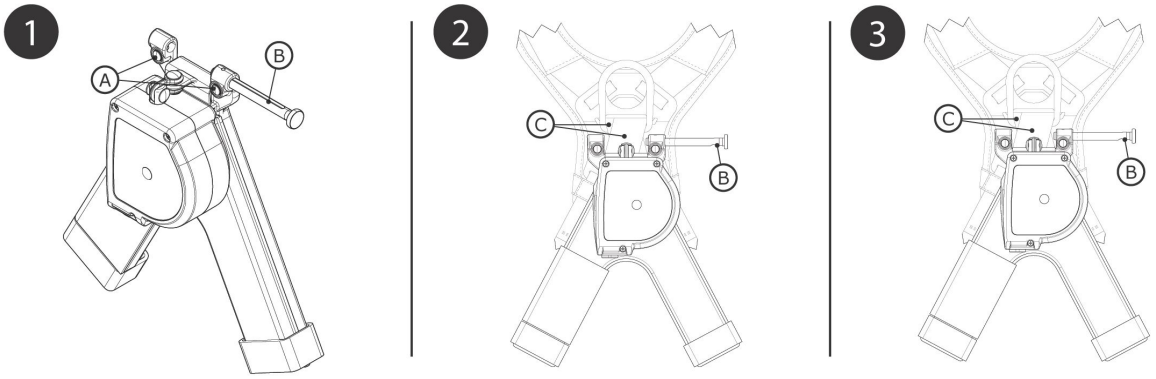
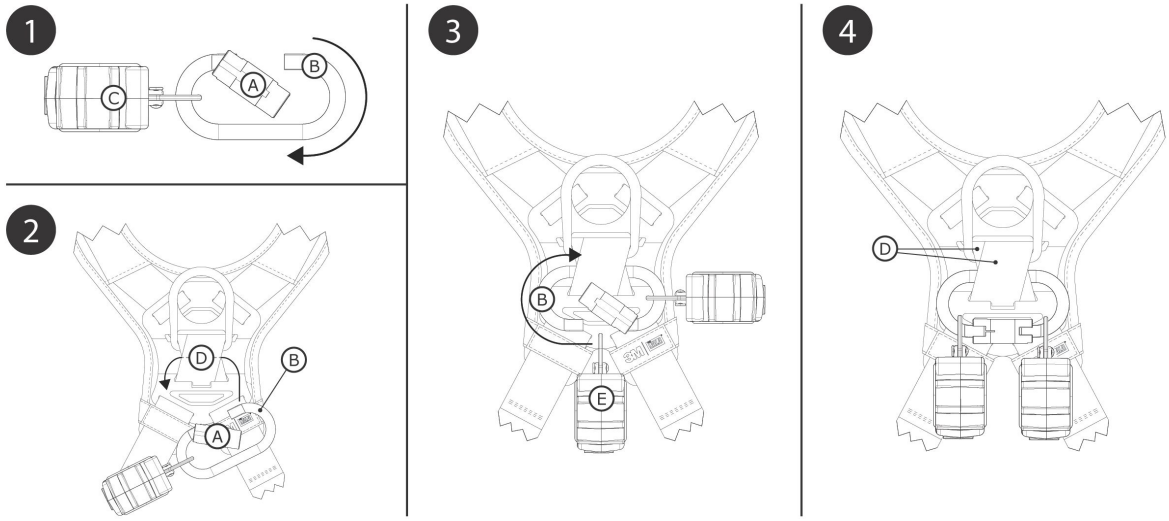



**Figure 9B - Carabiner Interface**




**3.9 Connecting the Belt:** When included, belts should be threaded through the waist section of the harness. The belt should be threaded through the connecting flaps of the waist pad and secured in the front using the provided buckle.

> See Section 3.6 for buckle instructions. See Figure 1 for which buckles are on your product.

> ⚠WARNING:
> Replacement belts and belts supplied with harnesses must always be used with a compatible harness.

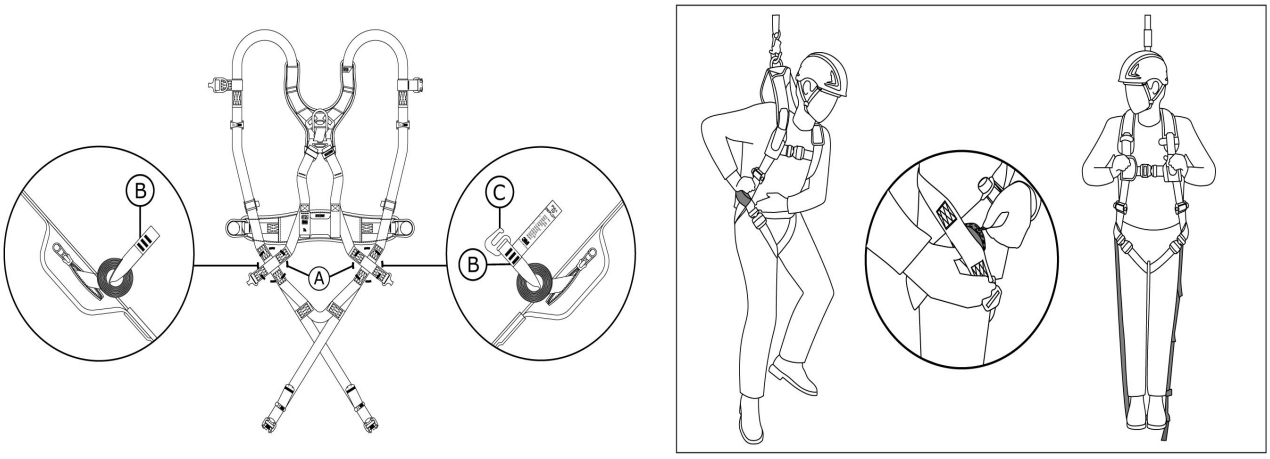
**3.10 Deploying the Suspension Trauma Straps:** If present, Suspension Trauma Straps should be used by the fallen worker to alleviate suspension trauma in the event of a fall. To deploy the Suspension Trauma Straps on your harness:

1. Locate the Suspension Trauma Straps (A) on your harness. The Suspension Trauma Straps should be located in a zipped container on your front, near the two intersection points of the leg straps.
2. Deploy the Suspension Trauma Straps by opening the zipped compartments located on the containers' sides. Guide the Straps (B) out from within each container to a length long enough for you to stand upon. Bring the two Straps together and secure them to each other by means of the Strap Hook (C).

   > Push the trauma strap container out from the harness strap with your thumb when opening. You may then use your other hand to open the container.

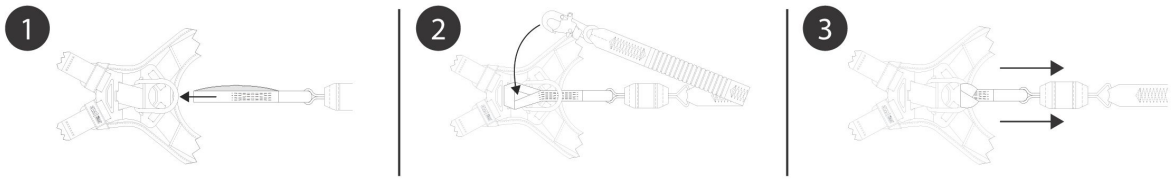
3. Extend the connected Straps as necessary to create a length of webbing for you to stand upon. Press your heels upon either side of the connection point and stand up straight. This should transfer a significant amount of weight to the user's feet, diminishing the likelihood of suspension trauma.

**Figure 10 - Activating the Trauma Straps**




**3.11 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 for reference. To secure a lanyard with a choker loop:

**Figure 11 - Securing Lanyards with Choker Loops**




**3.12 Connecting System Components:** After donning the harness, the user may connect to their Fall Protection System. Observe all requirements as specified in these instructions and any manufacturer's instructions included with the system components. See the Product Overview for more information on System Applications.

> ⚠WARNING:
> The user should verify that any connections to the harness are secure before using them.

## 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.

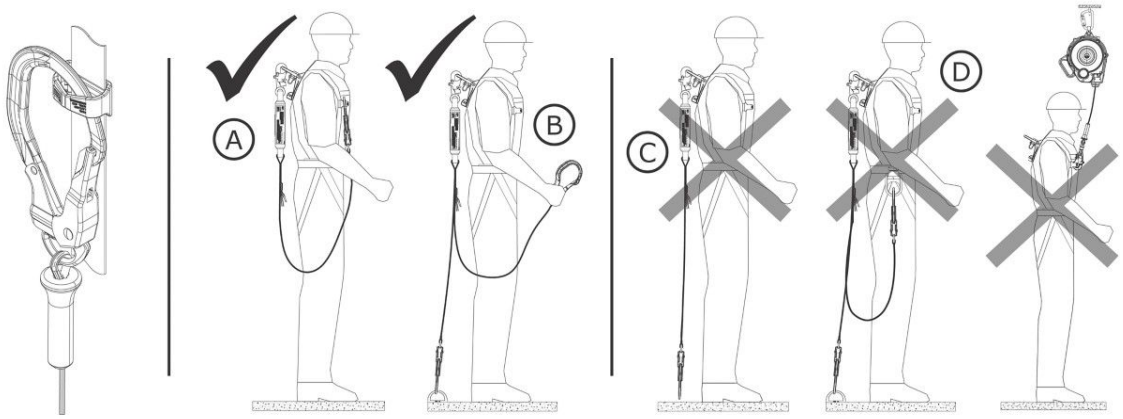
**4.2 After a Fall:** If this equipment is subjected to fall arrest or impact force, remove it from service immediately. Clearly tag it "DO NOT USE". See Section 5 for more information.

**4.3 Lanyard Parking Attachment:** When not in use, the free end of a lanyard or harness-mounted Self-Retracting Device (SRD) must be secured to a designated lanyard parking attachment on the user's harness (A) or be held securely within the user's hand (B).

The free end of a connecting subsystem must always be properly secured. Never allow free ends to hang freely (C) and never secure free ends to an unused attachment element on the user's harness (D). Both of these situations could create a trip hazard or cause the user to become entangled.

> ⚠WARNING:
> Never use lanyard parking attachments as attachment elements for Fall Protection applications.

**Figure 12 - Lanyard Parking Attachment**




## 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 the user and, additionally, by a Competent Person other than the user at the intervals specified below. 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.

| Applicable Standard or Region | Required Frequency of Competent Person Inspections |
|---|---|
| AS/NZS | Once every six months |

**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, then the product must be either destroyed or sent to 3M for replacement.

**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.

> This product may remain in service up to its maximum product life, which should be measured from the date of manufacture. After the maximum product life has been reached, remove the product from service.

| | |
|---|---|
| **Maximum Product Life** | 10 years |

## 6.0 Maintenance, Storage, and Repair

> 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.

> Do not clean or disinfect the product by any method other than described in the following cleaning instructions. Other methods may have adverse effects on the product or user.

**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: https://www.3M.com/FallProtection/WebCleaning

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

**6.2 Disposal:** Cut the harness straps or otherwise render the harness unusable, then dispose of the product appropriately.

**6.3 Repair:** This product is not repairable. Do not attempt to repair this product.

**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

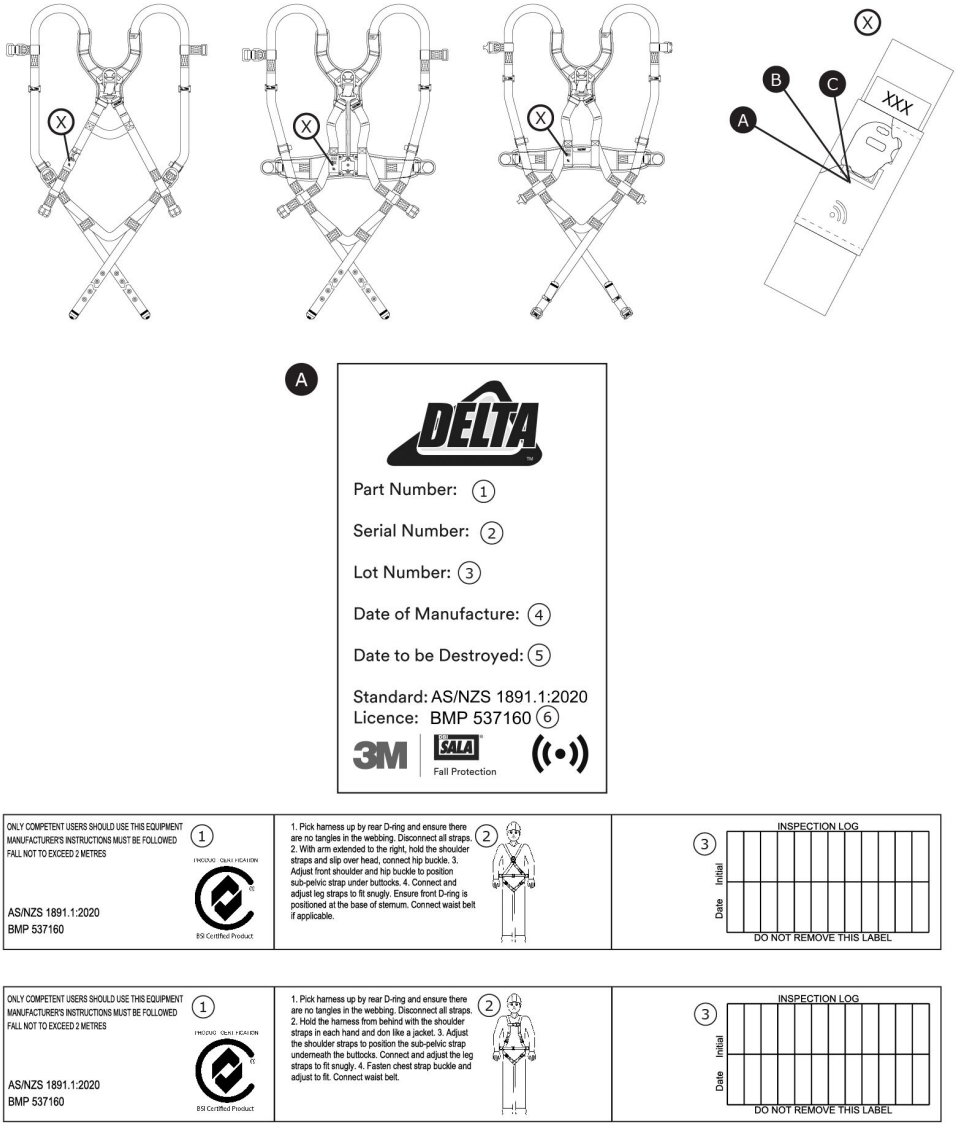
**7.1 Summary:** The "Product Labels" figure illustrates labels and markings present on the product. See below for a summary of information provided with each label and marking.

> NOTICE:
> Label images are intended to be representative. Please refer to your product labels for specific information.

> Missing or damaged labels must be replaced. All labels must be fully legible.

| | |
|---|---|
| A | 1) Part Number<br>2) Serial Number<br>3) Lot Number<br>4) Date of Manufacture<br>5) Date to be Destroyed<br>6) Applicable Standards and License |
| B | 1) Read all instructions.<br>2) Harness Donning Instructions (Vest)<br>3) Inspection Log |
| C | 1) Read all instructions.<br>2) Harness Donning Instructions (Crossover)<br>3) Inspection Log |

**Figure 13 - Product Labels**



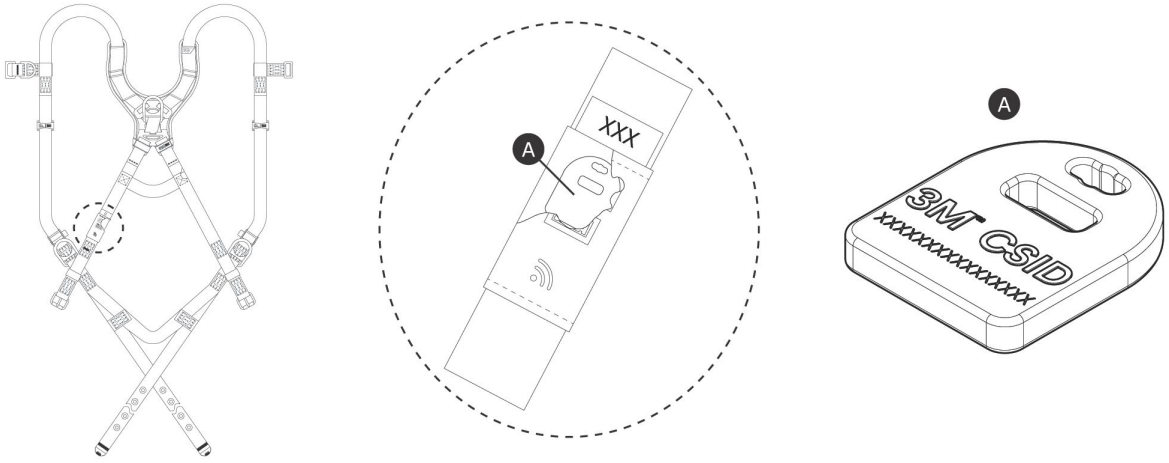

## RFID Tag

**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 "RFID Tag Location" for where your RFID Tag is located.

**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

**Figure 14 - RFID Tag Location**




## Glossary

**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.
- **Rescue System:** A collection of Fall Protection equipment configured to remove a person from hazards to a safe location. No free fall is permitted.
- **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.

# Inspection and Maintenance Log

| A copy of this table should be used for each inspection. Record information below. | | | |
|---|---|---|---|
| **Manufacturer:** 3M Fall Protection | | | |
| **Model Number (Serial Number):** | | | |
| **Date Purchased:** | | **Date of First Use:** | |

This product must be inspected by the user and, additionally, by a Competent Person other than the user at the specified intervals. See Section 5 for more information.

| Component | Inspection Procedure | Inspection Result (Pass or Fail) |
|---|---|---|
| Harness Hardware<br><br>(Product Overview) | Inspect all harness hardware for damage, including all attachment elements, buckles, adjusters, and other elements. Each of these items must not be damaged, broken, or distorted. Each item must also be free of any sharp edges, burrs, cracks, worn parts, or corrosion. PVC-coated hardware must be free of cuts, rips, tears, and holes in the coating to ensure non-conductivity. Ensure all buckles and adjusters operate smoothly. | |
| Webbing and Stitching<br><br>(Figure 15) | Inspect the webbing for Cuts (A), Frays (B), broken fibers, tears, abrasion, Heavy Soiling (C), mold, Burns (D), and discoloration. Inspect the stitching for pulled or cut stitches, since broken stitches may indicate that the product has been impact-loaded and must be removed from service. | |
| Stitched Impact Indicators<br><br>(Figure 16) | Verify all Impact Indicators are intact. Impact Indicators are sections of webbing lapped back on themselves and secured with a specific stitch pattern. This stitch pattern is designed to release when the harness arrests a fall or is exposed to equivalent force. If an Impact Indicator has been activated (indicated), then the harness must be removed from service and destroyed. | |
| Labels | 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. Verify that the strength rating for each of your products is compatible and sufficient for the intended application. | |

| Summary of Product Inspection | | | | |
|---|---|---|---|---|
| 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:** (circle one) | User | Competent Person | **Overall Inspection Result:** | |
| **Inspected By:** | | | **Date of Inspection:** | |
| **Signature:** | | | **Next Inspection Due:** | |
| **Additional Notes:** | | | | |

**Figure 15 - Webbing**

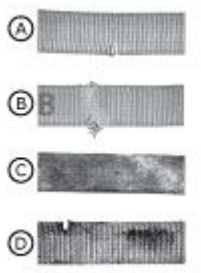
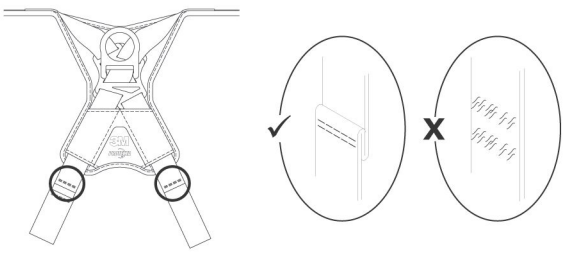



**Figure 16 - Impact Indicators**



# Certifications

Your product conforms to the national or regional standards identified on the front cover of these instructions. Certification and conformance may be restricted to individual product models or applications.

For more information on certification or conformance requirements, refer to the applicable standards and regulations listed for your product.

Users under AS/NZS standards should consult AS/NZS 1891.4 for selection, use, maintenance, and training requirements.

| | | |
|---|---|---|
| BSI Certified Product<br>AS/NZS 1891.1:2020<br>License: BMP 537160 | BSI - Head Office<br>Suite 1, Level 1, 54 Waterloo Road<br>Macquarie Park, NSW 2113<br>Australia |  |

## 3M Australia Pty. Ltd. and 3M New Zealand Ltd. (“3M”) Limitation of Liability

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.

# 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.

3M.com/FallProtection

| Contact Information | | |
|---|---|---|
| **USA**<br>3833 SALA Way<br>Red Wing, MN 55066-5005<br>Toll-Free: 800.328.6146<br>Phone: 651.388.8282<br>3Mfallprotection@mmm.com | **United Kingdom**<br>3M Centre<br>Cain Road<br>Bracknell, RG12 8HT<br>Phone: 0870 60800 60<br>www.3M.co.uk/construction | **Singapore**<br>Yishun Avenue 7<br>Singapore 768923<br>Phone: +65-6450 8888<br>TotalFallProtection@mmm.com |
| **Canada**<br>600 Edwards Blvd, Unit #2<br>Mississauga, ON L5T 2V7<br>Phone: 905.795.9333<br>Toll-Free: 800.387.7484<br>3Mfallprotection-ca@mmm.com | **Slovakia**<br>Capital Safety Group - Banská Bystrica, s.r.o.<br>Jegorovova 35<br>974 01 Banská Bystrica<br>Slovak Republic<br>Phone: + 421 (0)47 00 330<br>informationfallprotection@mmm.com | **China**<br>**Main Office:**<br>38/F, Maxdo Center, 8 Xing Yi Rd<br>Shanghai 200336, P R China<br>Phone: +86 21 62753535<br>3MFallProtecton-CN@mmm.com<br>**Manufacturing:**<br>3M Material Technology Co., Ltd<br>No. 9, 2nd Nan Xiang Road<br>Science City, Guangzhou, 510663<br>Phone: +86 20 32113535 |
| **Brazil**<br>Rodovia Anhanguera, km 110<br>Sumaré – SP<br>CEP: 13181-900<br>Brasil<br>Phone: 0800-013-2333<br>falecoma3m@mmm.com | **Australia and New Zealand**<br>Building A, 1 Rivett Road<br>North Ryde NSW 2113<br>Australia<br>Toll-Free : 1800 245 002 (AUS)<br>Toll-Free : 0800 212 505 (NZ)<br>3msafetyaucs@mmm.com | **Korea**<br>3M Korea Ltd<br>18F, 82 Uisadang-daero,<br>Yeongdeungpo-gu, Seoul<br>Phone: +82-80-033-4114<br>3msupport.kr@mmm.com |
| **Mexico**<br>Av. Santa Fe No. 190<br>Col. Santa Fe, Ciudad de Mexico<br>CP 01219, Mexico<br>Phone: 01 800 120 3636<br>3msaludocupacional@mmm.com | | **Japan**<br>3M Japan Ltd<br>6-7-29, Kitashinagawa, Shinagawa-ku, Tokyo<br>Phone: +81-570-011-321<br>psd.jp@mmm.com |

Declaration of Conformity (European Union and United Kingdom):

3M.com/FallProtection/DOC