



Fall Protection

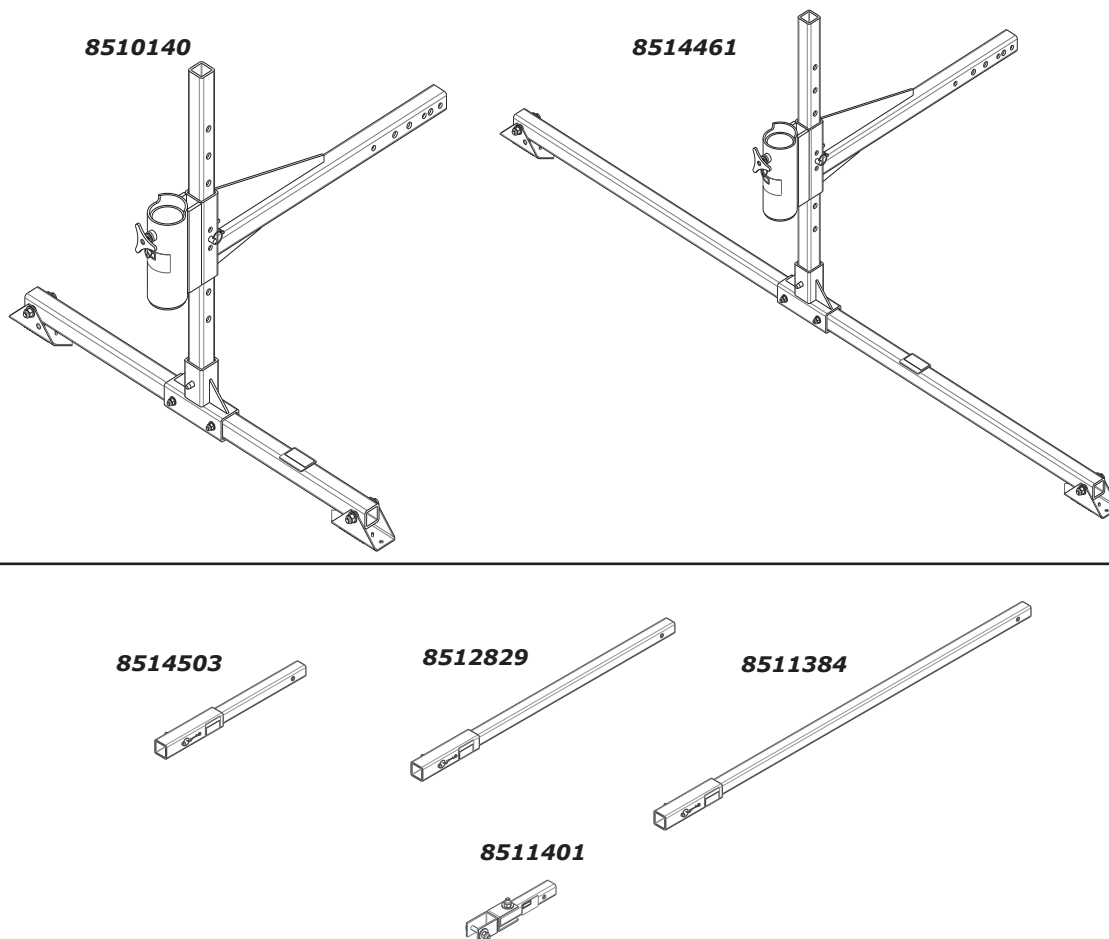
CONFINED SPACE RESCUE

USER INSTRUCTION MANUAL

**TRUCK HITCH MOUNT (MODEL NUMBERS: 8510140, 8514461)
& ACCESSORIES (MODEL NUMBERS: 8511384, 8511401,
8512829, 8514503)**

This manual is intended to meet industry standards and should be used as part of an employee training program as required by OSHA.

1 - Components



WARNING: This product is part of a personal fall arrest system¹. The user or rescuer² must read and follow the manufacturer's instructions for each component or part of the complete system. These instructions must be provided to the user/rescuer utilizing this equipment. The user/rescuer must read and understand these instructions or have them explained to them before using this equipment. Manufacturer's instructions must be followed for proper use and maintenance of this product. Alterations or misuse of this product or failure to follow instructions may result in serious injury or death.

IMPORTANT: If you have questions about the use, care, or suitability of this equipment for your application, contact 3M Fall Protection.

IMPORTANT: Before using this equipment, record the product identification information from the ID label in the Inspection and Maintenance Log in this manual.

1. Fall Arrest System: A system that prevents the worker from colliding with an obstruction or lower level by arresting a fall.

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

PRODUCT DESCRIPTION:

Figure 1 illustrates the Advanced® Truck Hitch Davit Mount & Accessories Fall Arrest Systems.

IMPORTANT: *This system must be used with a vehicle of suitable weight to ensure user safety.*

Table 1 below provides component identification and specifications.

Figures 4, 5 & 6 list system (model) component compatibility.

Table 1 – Specifications		
Component Specifications:		
Figure 6 Reference	Component	Materials
	Hitch Tube Assembly	Steel, ZP per ASTM B633
	Foot Base Assembly (8514755)	Tube Aluminum UNS A96061-T6 ASTM B221
	Height Adjustment Tube	Steel, ZP per ASTM B633
	Hitch Tube Assembly Pin	Steel, ZP per ASTM B633
	Foot Base Pin Assembly	Steel, ZP per ASTM B633
Figures 4 & 5 Reference	Component	Materials
	Sleeve Extensions (8514503,8512829,8511384)	Steel, ZP per ASTM B633
	Joint Adapter (8511401)	Steel, ZP per ASTM B633
System Specifications:		
Capacity:	1 Person per Truck Hitch Davit Mount & Accessories with a combined weight (including clothing, tools, etc.) of no more than 310 lbs (141 kg).	
Anchorage:	Structure supporting the Truck Hitch System must withstand a 1,800 lbs (8 kN) vertical load.	

1.0 APPLICATIONS

1.1 PURPOSE: Personal Protective Equipment against falls from a height

This system is designed to be used with other 3M Fall Protection equipment to form a fall arrest system.

1.2 LIMITATIONS: The following limitations must be considered before using this product. Failure to observe product limitations could result in serious injury or death.

- A. ASSEMBLY:** The anchor must be used in accordance with the requirements stated in Section 4.
- B. PERSONAL FALL ARREST SYSTEMS:** Personal Fall Arrest Systems (PFAS) used with the anchor must meet applicable state and federal regulations, or CE regulations, and the requirements stated in this instruction.
- C. CAPACITY:** This system rating is that of the lowest rated component.
- D. PHYSICAL AND ENVIRONMENTAL HAZARDS:** Use of this equipment in areas with physical or environmental hazards may require that additional precautions be taken to reduce the possibility of damage to this equipment or injury to the user. Hazards may include, but are not limited to: high heat (welding or metal cutting), acid or caustic chemicals, corrosive environments such as exposure to seawater, high voltage power lines, electrical hazards, explosive or toxic gases, moving machinery, abrasive surfaces, or sharp edges. Contact 3M Fall Protection if you have questions about the application of this equipment in areas where physical or environmental hazards are present.
- E. TRAINING:** This equipment is to be assembled, installed, and used by persons who have been trained in its correct application and use.

1.3 STANDARDS: Refer to local standards, national standards, and OSHA requirements, for more information on the application of this and associated equipment.

2.0 SYSTEM REQUIREMENTS

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

2.2 COMPATIBILITY OF CONNECTORS: Connectors are considered to be compatible with connecting elements when they have been designed to work together in such a way that their sizes and shapes do not cause their gate mechanisms to inadvertently open regardless of how they become oriented. Contact 3M Fall Protection if you have any questions about compatibility. Connectors (hooks, carabiners, and D-rings) must be capable of supporting at least 5,000 lbs (22.2kN). Connectors must be compatible with the anchorage or other system components.

Do not use equipment that is not compatible. Non-compatible connectors may unintentionally disengage (see Figure 1). Connectors must be compatible in size, shape, and strength. Self-locking snap hooks and carabiners are required by OSHA.

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

3M Fall Protection connectors (snap hooks and carabiners) are designed to be used only as specified in each product's user instructions. See Figure 2 for inappropriate connections. 3M Fall Protection snap hooks and carabiners should not be connected:

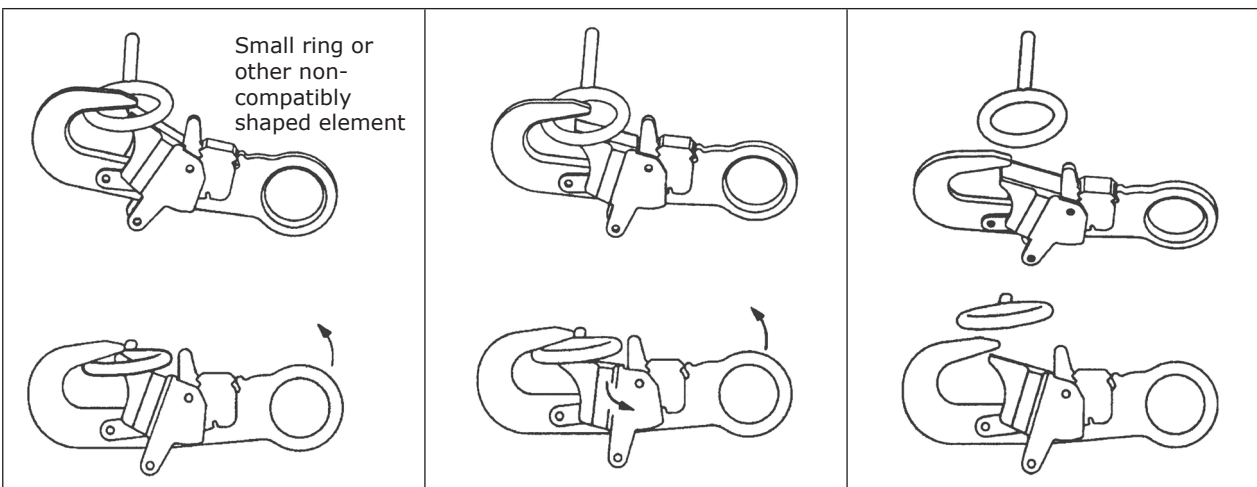
- A. To a D-ring to which another connector is attached.
- B. In a manner that would result in a load on the gate.

NOTE: Large throat snap hooks should not be connected to standard size D-rings or similar objects which will result in a load on the gate if the hook or D-ring twists or rotates. Large throat snap hooks are designed for use on fixed structural elements such as rebar or cross members that are not shaped in a way that can capture the gate of the hook.

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

2 - Unintentional Disengagement (Rollout)

If the connecting element to which a snap hook (shown) or carabiner attaches is undersized or irregular in shape, a situation could occur where the connecting element applies a force to the gate of the snap hook or carabiner. This force may cause the gate (of either a self-locking or a non-locking snap hook) to open, allowing the snap hook or carabiner to disengage from the connecting point.

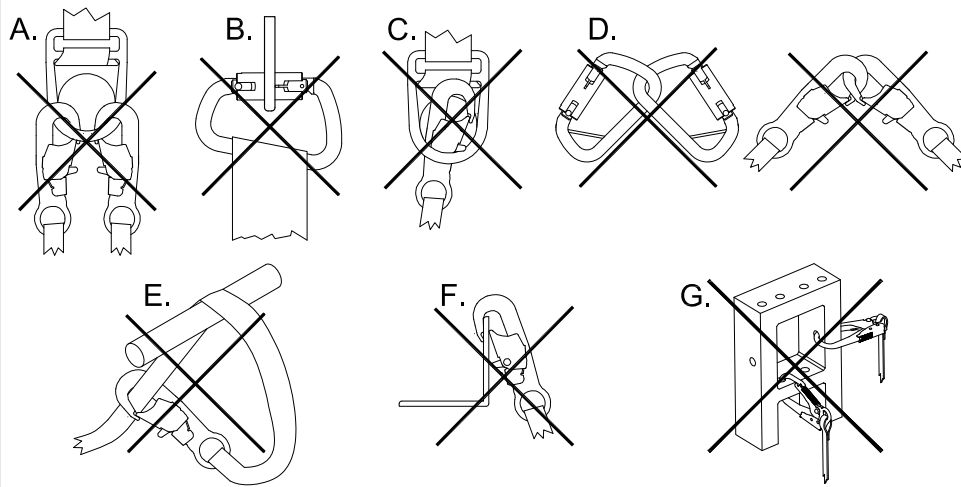


1. Force is applied to the snap hook.

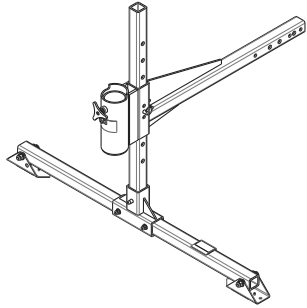
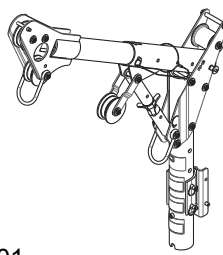
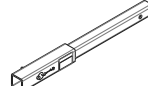
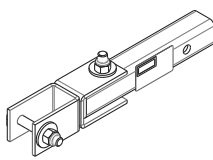
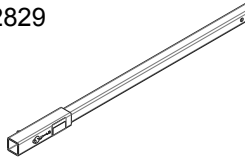
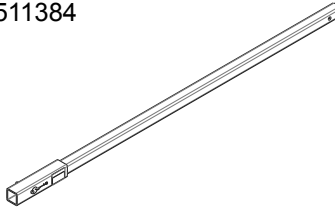
2. The gate presses against the connecting ring

3. The gate opens allowing the snap hook to slip off

3 - Inappropriate Connections



3.0 ASSEMBLY AND SET UP

4 - 8510140 Assembly			
8510140	Davit / Mast Ext.	Sleeve Extension (Max 1)	8511401 (Max 1)
	 8518001	8514503 	
		8512829 	
	 8518509 (X1) 8518002 8518003 8518004	8511384 	

- Step 1.** Verify the vehicle has a Class 3 or higher trailer hitch rating that can with stand a minimum of 1800 lbs. (8 kN) and vehicle must weigh a minimum of 2,000 lbs. (907kg). Vehicle must also have a 2" (51mm) square vehicle hitch receiver.
- Step 2.** Insert the hitch tube assembly into the vehicle receiver tube or a maximum of one hitch mount sleeve extension, and secure with bolt or Class 3 vehicle hitch pin.
- Step 2a.** Insert the joint adapter (8511401) into the vehicle's hitch receiver. Fasten the adapter joint to the the hitch tube assembly or sleeve extension. Torque 5/8" hardware to 30 ft*lbs. (41 N*m).

IMPORTANT: This system can be used with a maximum of one sleeve extension, one joint adapter (8511401). See above Figure 4.

- Step 3.** Insert the height adjustment tube into the hitch tube assembly and secure with pin. See Figure 6.
- Step 4.** Install foot assembly on to the height adjustment tube and secure with pin. See Figure 6.
- Step 5.** Level the assembly by removing the height adjustment tube pin and selecting higher or lower hole as per required. The height adjustment tube must be perpendicular to the ground so the davit and/or mast extension is vertical when inserted.
- Step 6.** Insert davit and/or mast extensions. This system is designed to be used with a davit having a maximum reach of 30" (762 mm). This model can be used with a maximum of one davit mast extension measuring up to a maximum of 21" (533mm).

5 - 8514461 Assembly

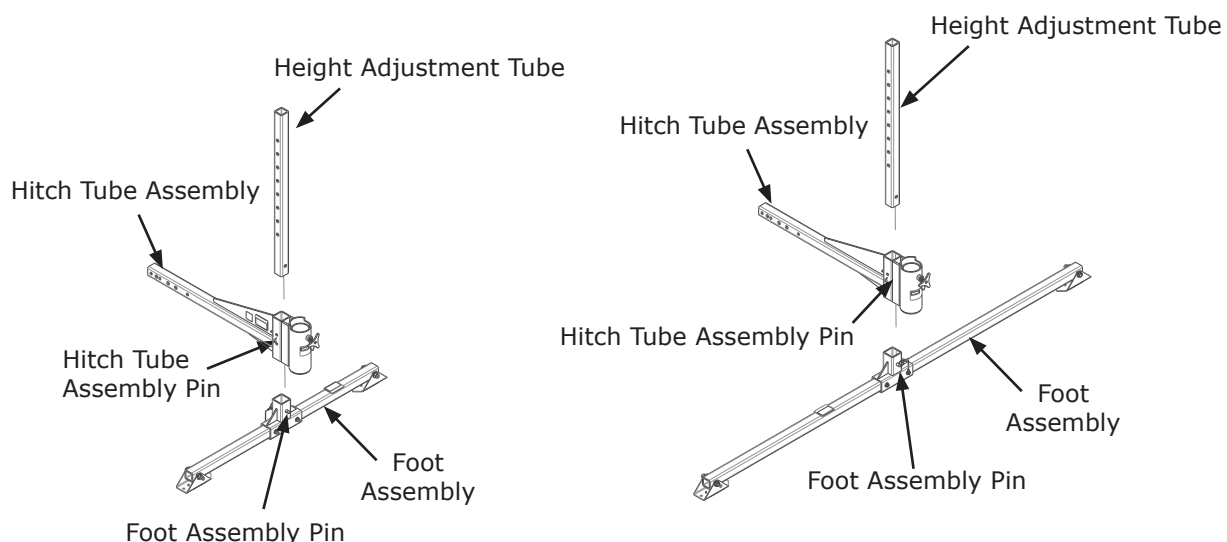
8514461	Davit / Mast Ext.	Sleeve Extension (Max 1)	8511401 (Max 1)
		8514503 	DO NOT USE
	8518006 	8512829 	
	8518509 (X1) 8518002 8518003 8518004 	8511384 	

- Step 1.** Verify the vehicle has a Class 3 or higher trailer hitch rating that can with stand a minimum of 1800 lbs. (8 kN) , and vehicle must weigh a minimum of 2,800 lbs. (1270kg). Vehicle must have a 2" (51mm) square vehicle hitch receiver. See Figure 4 for examples.
- Step 2.** Insert the hitch tube assembly into the vehicle receiver tube or a maximum of one hitch mount sleeve extension, and secure with bolt or Class 3 vehicle hitch pin.
- Step 3.** Insert the height adjustment tube into the hitch tube assembly and secure with pin. See Figure 6.

IMPORTANT: This system can be used with a maximum of one sleeve extension, and one hitch adapter accessory. See above Fig. 5.

- Step 4.** Install foot assembly on to the height adjustment tube and secure with pin. See Figure 6.
- Step 5.** Level the assembly by removing the height adjustment tube pin and selecting higher or lower hole as per required. The height adjustment tube must be perpendicular to the ground so the davit and/or mast extension is vertical when inserted.
- Step 6.** Insert davit and/or mast extensions. This system is designed to be used with a davit having a maximum reach of 43.5" (1105 mm). This model can be used with a maximum of one davit mast extension measuring up to a maximum of 21" (533mm).

6 - Installing the System



4.0 OPERATION AND USE

WARNING: Do not alter or intentionally misuse this equipment.

WARNING: Consult 3M Fall Protection when using this equipment in combination with components or subsystems other than those described in this manual. Some subsystem and component combinations may interfere with the operation of this equipment. Use caution when using this equipment around moving machinery, electrical hazards, chemical hazards, and sharp edges.

WARNING: Working at height has inherent risks. Some risks are noted here but are not limited to the following: falling, suspension/prolonged suspension, striking objects, and unconsciousness. In the event of a fall arrest and/or subsequent rescue (emergency) situation, some personal medical conditions may affect your safety. Medical conditions identified as risky for this type of activity include but are not limited to the following: heart disease, high blood pressure, vertigo, epilepsy, drug or alcohol dependence, psychiatric illness, impaired limb function, and balance issues. We recommend that your employer/physician determine if you are fit to handle normal and emergency use of this equipment.

- 4.1 BEFORE EACH USE:** Inspect this equipment carefully to ensure it is in good working condition. Check for worn or damaged parts. Ensure all parts are present and secure. Check the entire system for damage and corrosion. See Section 6 for further inspection details. Do not use if inspection reveals an unsafe condition. If the system fails inspection, immediately remove from service and do not use. Contact 3M Fall Protection for information about how to repair the system.
- 4.2 PLANNING:** Plan your system and how it will function before starting your work. Consider all factors that affect your safety during use. Some important points to consider when planning your system are:
- A. HAZARD EVALUATION:** Evaluate job site hazards prior to starting work. Consult applicable OSHA and industry standards for guidelines and regulatory requirements on equipment such as personal fall arrest systems (PFAS).
 - B. WORK SITE GEOMETRY:** The use of this system and attached PFAS must be consistent with the geometric requirements stated in the manufacturer's instruction manual(s). Check for obstructions or sharp edges in the work path. Avoid working where the user may swing and hit an object, or where lines may cross or tangle with that of another worker.
 - C. FALL CLEARANCE:** There must be sufficient clearance in your fall path to prevent striking an object or lower level in the event of a fall. A minimum of 6 ft. (1.8 m) from the working level to the lower level or nearest obstruction is recommended but may vary with your application and attached PFAS. See the PFAS manufacturers' instructions.
 - D. AFTER A FALL:** Any equipment which has been subjected to the forces of arresting a fall or exhibits damage consistent with the effect of fall arrest forces, must be removed from service immediately and destroyed by the user, the rescuer, or an authorized person.
 - E. SHARP EDGES:** Avoid working where components of this system and attached subsystem(s) will contact with or abrade against unprotected sharp edges.
 - F. RESCUE:** When using this equipment, the employer must have a rescue plan and the means at hand to implement it and communicate that plan to users, authorized persons, and rescuers.
- 4.3 REQUIREMENTS FOR PERSONAL FALL ARREST SYSTEMS (PFAS):** PFAS used with the Anchor must meet applicable OSHA requirements.
- The PFAS should be rigged to minimize any potential free fall and never allow a free fall greater than 6 ft. (1.8 m). The PFAS used with this equipment are required to include a full body harness as the body support component. PFAS that incorporate full body harnesses must maintain fall arrest forces below 900 lbs. (4.0 kN) and arrest the fall within 42 in. (1.1 m), CE models must maintain fall arrest forces below 1350 lbs. (6.0 kN) and arrest the fall within 42 in. (1.1 m). Body belts, unless incorporated into a full body harness, are not allowed for use with this equipment. A typical PFAS includes a full body harness, connecting subsystem or component (self retracting lifeline or shock absorbing lanyard), and the necessary connectors to couple the system together.
 - If the system or any equipment has been subjected to the forces of arresting a fall, they must be removed from service immediately. The Anchor should be inspected for any damage before it is put back into service.

WARNING: Read and follow manufacturer's instructions for the personal fall arrest equipment selected for use with the Anchor.

IMPORTANT: Body belts are not allowed for free fall situations. Body belts increase the risk of injury during fall arrest in comparison to a full body harness. Limited suspension time and the potential for improperly wearing a body belt may result in added danger to the user's health.

5.0 TRAINING

It is the responsibility of the user to assure they are familiar with these instructions, and are trained in the correct care and use of this equipment. Users must also be aware of the operating characteristics, application limits, and the consequences of improper use of this equipment.

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

6.0 INSPECTION

IMPORTANT: After the system has been fully installed, perform a complete inspection. Make sure all supplied labels are present and legible. Inspect for loose bolts, cracks, corrosion, or any other type of abnormality. Check all nuts and bolts for proper torque and orientation. Inspect tri-screws and ensure they are tight.

FREQUENCY: Before each use, visually inspect per steps listed in this instruction.

INSPECTION STEPS:

- Step 1.** Inspect the system for physical damage. Look carefully for any signs of cracks, dents, or deformities in the metal. Make certain the components are not deformed in any way.
- Step 2.** Inspect the system for signs of excessive corrosion.
- Step 3.** Ensure the vehicle hitch is rated for a Class 3 or higher trailer hitch rating and vehicle must weigh a minimum of 2,000 lbs (907kg) for 8510140, and a minimum of 2,800 lbs (1,270 kg) for the 8514461 system. Vehicle must also have a 2" (51mm) square vehicle hitch receiver.
- Step 4.** Inspect each system component or subsystem (e.g. self-retracting lifeline, full body harness, etc.) per associated manufacturer's instructions.
- Step 5.** Verify there are no loose nuts and bolts on the system and all pins are in place. Tighten all loose bolts to the proper torque specifications.
- Step 6.** Record the inspection date and results in the inspection log.

IMPORTANT: Only 3M Fall Protection or parties authorized in writing may make repairs to this equipment.

IMPORTANT: If the system has been subjected to the forces of arresting a fall, remove it from the field of service. After the system has been removed from service, inspect the system to verify it is in proper working order before using the system.

7.0 MAINTENANCE - SERVICING - STORAGE

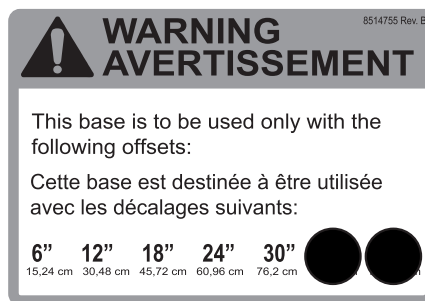
- 7.1 CLEANING:** Clean the system with a mild soap detergent solution. Excessive build-up of dirt, tar, etc. may prevent the system from working properly. If you have any questions concerning the condition of your system or have any doubt about putting it into service, contact 3M Fall Protection.

NOTE: Additional maintenance and servicing procedures (i.e. replacement parts) must be completed by a factory authorized service center. Authorization must be in writing.

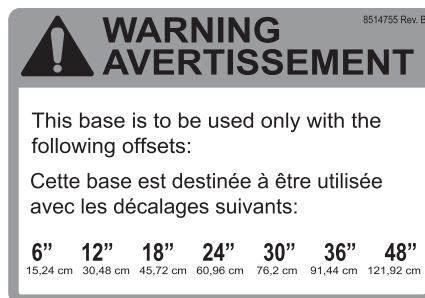
- 7.2 STORAGE:** The system is designed to be stored indoors. Store the Anchor in an area that prevents damage.

8.0 LABELS

The following labels must be present and legible on the Anchor:



8510140



8514461

INSPECTION AND MAINTENANCE LOG

SERIAL NUMBER:			
MODEL NUMBER:			
DATE PURCHASED:		DATE OF FIRST USE:	

[illegible]

INSPECTION AND MAINTENANCE LOG

SERIAL NUMBER:**MODEL NUMBER:****DATE PURCHASED:**

DATE OF FIRST USE:

INSPECTION DATE	INSPECTION ITEMS NOTED	CORRECTIVE ACTION	MAINTENANCE PERFORMED
Approved By:			
Approved By:			
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U.S. 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 applicable law, 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 at 800-328-6146 or via email at 3MFallProtection@mmm.com for assistance.

LIMITATION OF LIABILITY: TO THE EXTENT PERMITTED BY APPLICABLE LAW, 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.



Fall Protection

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