D-Ring Extender Instruction Manual

D-ring Extender Manual







Part Number	Description	ANSI Standard	OSHA Regulation	Weight Capacity
019-2008	18" D-ring Extender: Soft Loop, 2 D-rings	Z359.11-2021	1926.502 1910.140	ANSI 130-310 lbs., OSHA up to 420 lbs.
019-2022	12" D-Ring Extender w/ Soft Loop	Z359.11-2021	1926.502 1910.140	ANSI 130-310 lbs., OSHA up to 420 lbs.
020-2051	18" D-Ring Extender, Orange	Z359.11-2021	1926.502 1910.140	ANSI 130-310 lbs., OSHA up to 420 lbs.
020-2052	18" Dual D-Ring Extender, D-RING & 2 Snap Hooks	Z359.11-2021	1926.502 1910.140	ANSI 130-310 lbs., OSHA up to 420 lbs.
020-2053	18" D-Ring Extender, Loop, Aluminum D-ring	Z359.11-2021	1926.502 1910.140	ANSI 130-310 lbs., OSHA up to 420 lbs.
021-2074	18" D-ring Extender: Alu Rebar Hook, D-ring	Z359.11-2021	1926.502 1910.140	ANSI 130-310 lbs., OSHA up to 420 lbs.
022-2080	12" Arc Flash D-Ring Extender w/ Soft Loop	Z359.11-2021	1926.502 1910.140	ANSI 130-310 lbs., OSHA up to 420 lbs.
022-2081	18" Arc Flash D-Ring Extender: Soft Loop, D-ring	Z359.11-2021	1926.502 1910.140	ANSI 130-310 lbs., OSHA up to 420 lbs.
FS813	18" D-Ring Extender: Snap Hook, D-ring	Z359.11-2021	1926.502 1910.140	ANSI 130-310 lbs., OSHA up to 420 lbs.
FS813-24	24" D-Ring Extender, Snap Hook	Z359.11-2021	1926.502 1910.140	ANSI 130-310 lbs., OSHA up to 420 lbs.
FS813-2D	18" D-Ring Extender: Snap Hook, 2 D-rings	Z359.11-2021	1926.502 1910.140	ANSI 130-310 lbs., OSHA up to 420 lbs.
FS813-LOOP	18" D-Ring Extender: Soft Loop, D-ring	Z359.11-2021	1926.502 1910.140	ANSI 130-310 lbs., OSHA up to 420 lbs.
FS814	18" D-ring Extender: Rebar Hook, D-ring	Z359.11-2021	1926.502 1910.140	ANSI 130-310 lbs., OSHA up to 420 lbs.

WARNING

This product is part of a personal fall arrest, work positioning, or rescue system. The manufacturer's instructions must be provided to users of this equipment. The user must follow the manufacturer's instructions for each component of the system. The user must read and understand these instructions before using this equipment. Manufacturer's instructions must be followed for proper use and maintenance of this equipment. Alterations to this product, misuse of this product, or failure to follow instructions may result in serious injury or death.

IMPORTANT

Questions regarding the use, care, or suitability of this equipment for your application? Contact Safewaze.

IMPORTANT

Record identification information before using this product. Identification information may be found on the equipment label (See Figure 10). This information should be recorded in the "Inspection Form" located at the back of this manual (p 14).

ANSI Z359.11-2021
OSHA 1910.66, OSHA 1926.502
This manual is intended to meet the manufacturer's instructions as required by ANSI Z359.11 and should be used as part of an employee training program as required by OSHA.

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User Information

Date of First Use:_____

Serial#:_____

Trainer:_____

User:_____

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WARNING

These instructions must be provided to any person utilizing this equipment. The worker must read and understand the manufacturer's instructions for this, and all other components of the complete Fall Protection System. It is expected that all personnel be fully trained in the safe installation and use of this equipment. These instructions must be followed for the proper use, maintenance, and inspection of this equipment. These instructions must be kept and made available to worker's at all times. Any alteration, misuse, or use of this equipment outside the scope of the manufacturer's instructions, may result in serious injury or death. A comprehensive Fall Protection Plan must be kept on file and available to all employees at all times.

Inspect all components of this system prior to each use and at least annually. Inspect in accordance with the user instructions. If this equipment is exposed to the forces of a Fall Arrest or Impact Force, the equipment must be removed from service and inspected by a Competent Person prior to being used again.

This product is part of a complete fall protection system. A PFAS is typically composed of a Full Body Harness, Anchorage, and a Connecting Device. Connecting Devices used with Safewaze Full Body Harnesses are Energy Absorbing Lanyards (EAL's) or a Self Retracting Lifeline (SRL). The connection point to the FBH for use of a Vertical Lifeline (VLL) is the Sternal (Front) D-ring.

Personnel must always maintain 3 points of contact during climbing operations. If utilizing components from different manufacturers, ensure that all components are compatible and meet all applicable standards, codes, and requirements. Before using this equipment, consult with a Competent and/or Qualified Person.

Consult your doctor if there is reason to doubt your fitness to safely absorb the shock from a fall arrest. Age and fitness seriously affect a worker's ability to withstand falls. Pregnant women or minors must not use this equipment. Failure to heed this warning may result in serious injury or death.

Never exceed the maximum allowable capacity of your fall protection equipment. Never exceed the maximum free fall distance of your fall protection equipment.

Do not use this system or any other part of a PFAS that fails pre-use or other scheduled inspections. For any questions or concerns regarding the use of this equipment for an application not specified in this manual, contact Safewaze technical support.

Additional precautions should be used when working in environments of high heat, electrical hazards, chemical hazards, explosive or combustible chemicals, toxic materials, or sharp edges. Ensure that equipment in use on the next higher level cannot fall and possibly strike a user below, or make contact with a piece of the user's PFAS

Use of a body belt for fall protection applications is not permitted. Only use an approved Full Body Harness.

Make considerations for eliminating or minimizing all swing fall hazards. Swing falls occur when the anchor is not directly above the location where a fall occurs. Always work as close to in line with the anchor point as possible. Swing falls significantly increase the likelihood of serious injury or death in the event of a fall.

Contact Safewaze if you have questions regarding compatibility of this equipment that are not covered in this manual. Do not alter or misuse this equipment. Some subsystem components could affect the performance and the operation of this equipment. Do not anchor this product to moving machinery, or hazards that have chemical, electrical or gaseous characteristics. Failure to comply with this warning could result in serious injury or death.

D-Ring Extenders are connected to the Dorsal D-ring of a Full Body Harness (FBH). The D-ring Extender provides additional spacing between the user's Dorsal D-ring and their fall protection device. When attached to the Dorsal D-ring of a FBH, the D-ring Extender becomes a component of the FBH as part of the complete Personal Fall Protection System (PFAS).

Working at heights involves inherent risks. Leading Edge environments add additional risks to any Fall Protection or Rescue Plan. If work involves a Leading Edge environment, the use of a D-ring Extender IS NOT authorized. D-ring extenders can interfere with the proper function and performance of a Leading Edge Rated SRL or Energy Absorbing Lanyard. Use of a Safewaze D-ring Extender in any Leading Edge application may result in serious injury or death!

NEVER attach addtional equipment to the Dorsal D-ring of a Full Body Harness while a D-ring extender remains connected. The D-ring extender must be removed from the Dorsal D-ring prior to connection of a separate piece of fall protection equipment. Two active connections to a single D-ring does not comply with ANSI or OSHA regulations.

Do not throw away these instructions!

Read and understand these instructions before using equipment!

⚠ IMPORTANT

Per ANSI Z359.11-2021:

It is essential that the users of this type of equipment receive proper training and instruction including detailed procedures for the safe use of such equipment in their work application. ANSI/ASSP Z359.2, *Minimum Requirements for a Comprehensive Managed Fall Protection Program,* establishes guidelines and requirements for an employer's managed fall protection program including policies, duties and training; fall protection procedures; eliminating and controlling fall hazards; rescue procedures; incident investigations; and evaluating program effectiveness.

Correct fit of a Full Body Harness (FBH) is essential to proper performance. Users must be trained to select the size and maintain fit of the FBH selected for use with the Safewaze D-ring Extender.

Users must follow manufacturer's instructions for proper fit and sizing, paying particular attention to ensure that buckles are connected and aligned correctly, leg straps and shoulder straps are kept snug at all times, chest straps are located in the middle chest area and leg straps are positioned and snug to avoid contact with the genitalia should a fall occur.

FBHs which meet ANSI/ASSP Z359.11 are intended to be used with other components of a personal fall arrest system that limit maximum arrest forces to 1800 pounds (8kN) or less.

Suspension intolerance, also called suspension trauma or orthostatic intolerance, is a serious condition that can be controlled with good harness design, prompt rescue and post fall suspension relief devices. A conscious user may deploy a suspension relief device allowing the user to remove tension from around the legs, freeing blood flow, which can delay the onset of suspension intolerance. An attachment element extender is not intended to be attached directly to an anchorage or anchorage connector for fall arrest. An energy absorber must be used to limit maximum arrest forces to 1800 pounds (8 kN). The length of the attachment element extender may affect free fall distances and free fall clearance calculations.

FBH stretch / D-ring Extender Length. The amount the FBH component of a personal fall arrest system will stretch and deform during a fall, can contribute to the overall elongation of the system in stopping a fall. It is important to include the increase in fall distance created by FBH stretch, as well as the FBH connector length, the settling of the user's body in the FBH and all other contributing factors when calculating total clearance required for a particular fall arrest system. The length of the D-ring Extender must also be factored into overall fall clearance calculations.

When not in use, unused lanyard legs that are still attached to a FBH D-ring should not be attached to a work positioning element or any other structural element on the FBH unless deemed acceptable by the competent person and manufacturer of the lanyard. This is especially important when using some types of "Y" style lanyards, as some load may be transmitted to the user through the unused lanyard leg if it is not able to release from the harness. The lanyard parking attachment is generally located in the sternal area to help reduce tripping and entanglement hazards.

Loose ends of straps can get caught in machinery or cause accidental disengagement of an adjuster. All FBHs shall include keepers or other components which serve to control the loose ends of straps.

Due to the nature of soft loop connections, it is recommended that soft loop attachments only be used to connect with other soft loops or carabiners. Snaphooks should not be used unless approved for the application by the manufacturer.

The following is additional information concerning the location and use of various attachments that may be provided on a FBH:

Dorsal - The dorsal attachment element shall be used as the primary fall arrest attachment unless the application allows the use of an alternate attachment. The dorsal attachment may also be used for travel restraint or rescue. When supported by the dorsal attachment during a fall, the design of the FBH shall direct load through the shoulder straps supporting the user and around the thighs. Supporting the user, post fall, by the dorsal attachment will result in an upright body position with a slight lean to the front with some slight pressure to the lower chest. Considerations should be made when choosing a sliding versus fixed dorsal attachment element. Sliding dorsal attachments are generally easier to adjust to user sizes, and allow a more vertical rest position post fall, but can increase FBH stretch.

Sternal - The sternal attachment may be used as an alternative fall arrest attachment in applications where the dorsal attachment is determined to be inappropriate by a competent person and where there is no chance to fall in a direction other than feet first. Accepted practical uses for sternal attachment include, but are not limited to, ladder climbing with a guided type fall arrester, ladder climbing with an overhead self-retracting lifeline for fall arrest, work positioning and rope access. The sternal attachment may also be used for travel restraint or rescue. When supported by the sternal attachment during a fall, the design of the FBH shall direct load through the shoulder straps supporting the user and around the thighs. Supporting the user, post fall, by the sternal attachment will result in roughly a sitting or cradled body position with weight concentrated on the thighs, buttocks, and lower back. Supporting the user during work positioning by this sternal attachment will result in an approximate upright body position.

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If the sternal attachment is used for fall arrest, the competent person evaluating the application should take measures to ensure that a fall can occur feet first. This may include limiting the allowable free fall distance. It may be possible for a sternal attachment incorporated into an adjustable style chest strap to cause the chest strap to slide up and possibly choke the user during a fall, extraction, suspension, etc. The competent person should consider FBH models with a fixed sternal attachment for these applications.

Shoulder - The shoulder attachment elements shall be used as a pair and are an acceptable attachment for rescue and entry/ retrieval. The shoulder attachment elements shall not be used for fall arrest. It is recommended that the shoulder attachment elements be used in conjunction with a yoke which incorporates a spreader element to keep the FBH shoulder straps separate.

Frontal - The frontal attachment serves as a ladder climbing connection for guided type fall arresters where there is no chance to fall in a direction other than feet first or may be used for work positioning. Supporting the user, post fall or during work positioning, by the frontal attachment will result in a sitting body position with the upper torso upright with weight concentrated on the thighs and buttocks. When supported by the frontal attachment the design of the FBH shall direct load directly around the thighs and under the buttocks by means of the sub-pelvic strap.

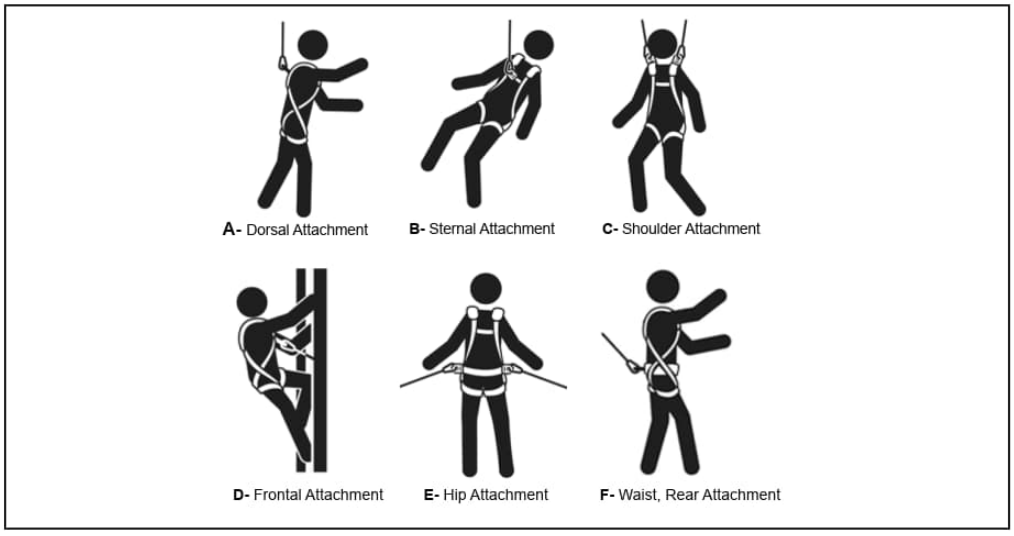
If the frontal attachment is used for fall arrest, the competent person evaluating the application should take measures to ensure that a fall can only occur feet first. This may include limiting the allowable free fall distance.

Hip - The hip attachment elements shall be used as a pair and shall be used solely for work positioning. The hip attachment elements shall not be used for fall arrest. Hip attachments are often used for work positioning by arborists, utility workers climbing poles and construction workers tying rebar and climbing on form walls. Users are cautioned against using the hip attachment elements (or any other rigid point on the FBH) to store the unused end of a fall arrest lanyard as this may cause a tripping hazard or, in the case of multiple leg lanyards, could cause adverse loading to the FBH and the wearer through the unused portion of the lanyard.

Waist, Rear - The waist, rear attachment shall be used solely for travel restraint. The waist, rear attachment element shall not be used for fall arrest. Under no circumstances is it acceptable to use the waist, rear attachment for purposes other than travel restraint. The waist, rear attachment shall only be subjected to minimal loading through the waist of the user and shall never be used to support the full weight of the user.

Suspension Seat - The suspension seat attachment elements shall be used as a pair and shall be used solely for work positioning. The suspension seat attachment elements shall not be used for fall arrest. Suspension seat attachments are often used for prolonged work activities where the user is suspended allowing the user to sit on the suspension seat formed between the two attachment elements. An example of this use would be window washers on large buildings.

FIGURE 1 - APPROVED D-RING APPLICATIONS



Application	Harness Attachment Location
Fall Arrest	Dorsal, Sternal, Frontal
Restraint	Dorsal, Sternal, Frontal, Hip, Rear
Work Positioning	Frontal, Hip
Rescue	Dorsal, Sternal, Frontal, Shoulder
Controlled Descent	Dorsal, Sternal, Frontal
Climbing	Dorsal, Sternal

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USER INSPECTION, MAINTENANCE AND STORAGE OF EQUIPMENT

Users of personal fall arrest systems shall at a minimum, comply with all manufacturer instructions regarding the inspection, maintenance and storage of the equipment. The user's organization shall retain the manufacturer's instructions and make them readily available to all users. See ANSI Z359.2, *Minimum Requirements for a Comprehensive Managed Fall Protection Program,* regarding user inspection, maintenance and storage of equipment.

1. In addition to the inspection requirements set forth in the manufacturer's instructions, the equipment shall be inspected by the user before each use and additionally by a competent person, other than the user, at interval of no more than one year for:

    - Absence or illegibility of markings.
    - Absence of any elements affecting the equipment form, fit or function.
    - Evidence of defects in, or damage to, hardware elements including cracks, sharp edges, deformation, corrosion, chemical attack, excessive soiling, abrasion, alteration, needed or excessive lubrication, excessive aging and excessive wear.

2. Inspection criteria for the equipment shall be set by the user's organization. Such criteria for the equipment shall equal or exceed the criteria established by this standard or the manufacturer's instructions, whichever is greater.

3. When inspection reveals defects in, damage to, or inadequate maintenance of equipment, the equipment shall be permanently removed from service or undergo adequate corrective maintenance by the original equipment manufacturer or their designate before return to service.

MAINTENANCE AND STORAGE

1. Maintenance and storage of equipment shall be conducted by the user's organization in accordance with the manufacturer's instructions. Unique issues, which may arise due to conditions of use, shall be addressed with the manufacturer.

2. Equipment which is in need of, or scheduled for, maintenance shall be tagged as unusable and removed from service.

3. Equipment shall be stored in a manner as to preclude damage from environmental factors such as temperature, light, UV, excessive moisture, oil, chemicals and their vapors or other degrading elements.

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1.0 INTRODUCTION

Thank you for purchasing a Safewaze D-ring Extender. This manual must be read and understood in its entirety, and used as part of an employee training program as required by OSHA or any applicable state agency. This manual and any other instructional material must be available to the user of the equipment. The user must understand how to safely and effectively use their D-ring Extender, and all fall protection equipment used in conjunction with the extender.

2.0 APPLICATION

The Safewaze D-ring Extender is a bodywear component of the user's Personal Fall Arrest System (PFAS). Safewaze D-ring Extenders are offered in a variety of configurations to ensure that the user can work safely and comfortably in any work environment. These instructions will cover the proper installation and use of an extender. The extender is part of a complete PFAS that requires a properly rated anchorage and connector, that in conjunction with an appropriate connecting device, meets the fall protection requirement.

3.0 APPLICABLE SAFETY STANDARDS

When used according to instructions, extenders included in this manual meet ANSI Z359.11-2021 and OSHA regulations for fall protection. Applicable standards and regulations depend on the type of work being done, and may include state-specific regulations. Refer to local, state, and federal (OSHA) requirements for additional information concerning the governing of occupational safety regarding Personal Fall Arrest Systems (PFAS).

4.0 WORKER CLASSIFICATIONS

Understand the definitions of those who work in proximity of or may be exposed to fall hazards.

Qualified Person: "Qualified Person" means one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his ability to solve or resolve problems relating to the subject matter, the work, or the project.

Competent Person: "Competent Person" means 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.

Authorized Person: "Authorized Person" means a person approved or assigned by the employer to perform a specific type of duty or duties or to be at a specific location or locations at the job site.

It is the responsibility of a Qualified or Competent person to supervise the job site and ensure safety regulations are complied with.

5.0 PURPOSE

Purpose: The Safewaze series of D-ring Extenders are designed to be used as part of a Personal Fall Arrest System (PFAS).

- A competent person shall train users on this equipment in accordance with OSHA and ANSI.
- Never exceed a free fall distance of 6 ft. A free fall of more than 6 ft could cause excessive arrest forces that could result in serious injury or death.
- Safewaze D-ring Extenders have a maximum capacity of:
  ANSI 310 lbs (140.6 kg) including tools, clothing, etc..., **OSHA** up to 420 lbs. (190.51 kg) including tools, clothing, etc...
- Anchorages for attachment of a Personal Fall Arrest System shall support a minimum of 5,000 lbs or be designed with a safety factor of two by a Qualified Person.
- All Safewaze D-ring Extenders must IMMEDIATELY be removed from service if subjected to fall arrest forces.
- Safewaze D-ring Extenders shall be inspected by the end user prior to each usage and by a Competent Person other than the user at least annually. These annual inspections shall be documented.

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6.0 LIMITATIONS & REQUIREMENTS

When installing or using this equipment always refer to the following requirements and limitations:

6.1 CAPACITY

Safewaze D-ring Extenders are designed for the following weight capacities
(Maximum capacities include clothing, tools, and equipment):

ANSI Z359: 130-310 lbs max
OSHA: Up to 420 lbs max

6.2 ANCHORAGE

Anchorages selected for fall arrest systems shall have a strength capable of sustaining static loads applied in the directions permitted by the system of at least:

1. 5,000 lbs. (22.2 kN) for non-certified anchorages, or
2. Two times the maximum arresting force for certified anchorages.

When more than one fall arrest system is attached to an anchorage, the strengths set forth in (1) and (2) above shall be multiplied by the number of systems attached to the anchorage.

From OSHA 1926.502 and 1910.66

Anchorages used for attachment of personal fall arrest systems shall be independent of any anchorage being used to support or suspend platforms, and capable of supporting at least 5,000 lbs (22.2 kN) per user attached, or be designed, installed, and used as part of a complete personal fall arrest systems which maintains a safety factor of at least two, and is under the supervision of a qualified person.

6.3 INSPECTION FREQUENCY

Either the Authorized Person (User), or the Rescuer must inspect this equipment before each use. Annual inspections must be completed by a Competent Person other than the user. Results must be documented.

6.4 RESCUE PLAN

When using this equipment, employers must create a rescue plan, and provide the means to implement the plan. This plan must be communicated to equipment users, authorized persons, and rescuers. Rescue operations require specialized equipment beyond the scope of this manual. See ANSI Z359.4-2013 for specific rescue information.

NOTE: Special rescue measures may be required for a fall over an edge.

6.5 FREE FALL

In order to ensure reduced fall distances, always attempt to anchor the connecting device directly overhead. Overhead anchoring will limit free fall distance to a minimum. Be aware of workers sharing the workspace to avoid becoming tangled with another worker. Steer clear of objects that could fall and impact a lifeline. The lifeline should never pass under the user's arms or legs. A lifeline should never be knotted, clamped, or be otherwise modified.

6.6 BODY SUPPORT

A Personal Fall Arrest System (PFAS) must utilize a Full Body Harness. Refer to Figure 1 of this manual for specific FBH D-ring approved applications.

6.7 FALL CLEARANCE

It is important to make sure that adequate clearance is available. Free Fall, Maximum Arrest Distance, Height of Worker, and current clearance above the next fall hazard must all be considered in the Fall Clearance calculation.

6.8 DETERMINE MINIMUM REQUIRED FALL CLEARANCE

Fall Clearance: There must be sufficient clearance below the anchorage connector to arrest a fall before the user strikes the ground or an obstruction. When calculating fall clearance, account for a MINIMUM 2' safety factor, deceleration distance, user height, length of lanyard/SRL, and all other applicable factors. Figure 2 illustrates an "example" of a typical fall clearance calculation.

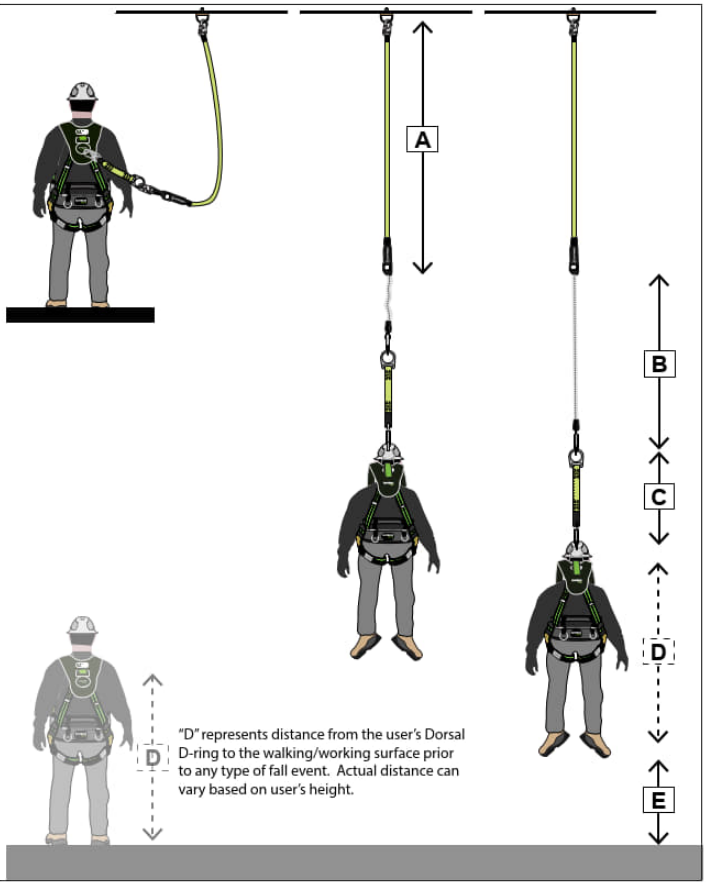
FIGURE 2

For all applications: worker weight capacity range (including all clothing, tools, and equipment) is ANSI 130-310 lbs., OSHA 420 lbs.

Fall Clearance Diagram

***Diagram shown is an EXAMPLE fall clearance calculation.
Actual fall clearance calculations are dependent upon the Energy Absorbing Lanyard (EAL) or Self-Retracting Lifeline (SRL) used as part of the complete Personal Fall Arrest System (PFAS).

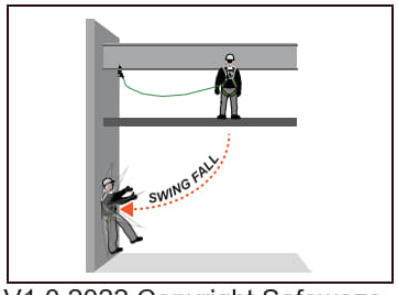
A	6 ft	Length of Shock Absorbing Lanyard (Original working length)
B	4 ft	**Elongation / Deceleration Distance** (Maximum Allowed Deployment of Energy Absorber)
C	1-1/2 ft	**Length of D-ring Extender**
D	5 ft	**Dorsal D-ring Height**
E	2 ft	**Safety Factor** (Includes allowance for FBH Stretch/Dorsal D-ring Shift)
F	18-1/2 ft	**Total** (Minimum Required Fall Clearance)



6.9 SWING FALLS

An anchorage point located in a position that is not directly over the user's fall location results in a swing fall (See Figure 3). Swing falls may result in the user striking an object with enough force to cause serious injury. Greater clearance is needed to ensure safety during a swing fall as vertical fall distance will be greater than a fall originating directly below the anchorage point.

FIGURE 3 - SWING FALLS



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7.0 COMPATIBILITY OF COMPONENTS

Unless otherwise noted, Safewaze equipment is designed for use with Safewaze approved components and subsystems only. Substitutions or replacements made with non approved components or subsystems may jeopardize compatibility of equipment and may affect safety and reliability of the complete system.

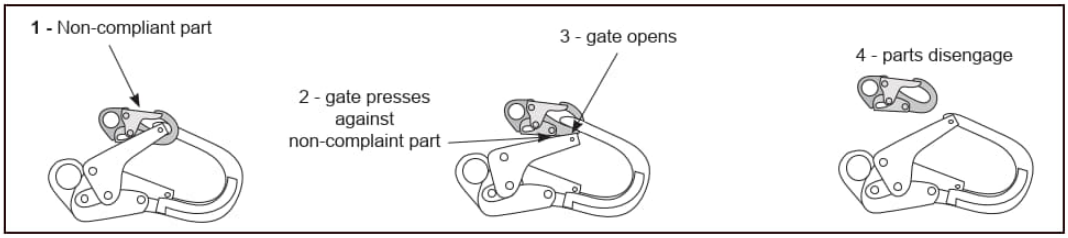
IMPORTANT: Read and follow manufacturer's instructions for associated components and subsystems in your personal fall arrest system.

8.0 COMPATIBILITY OF CONNECTORS

Connectors are compatible with connecting elements when they have been designed to work together in such a way that their sizes and shapes do not cause their gate mechanisms to inadvertently open regardless of how they become oriented. Connectors (hooks, carabiners, and D-rings) must be capable of supporting at least 5,000 lbs. (22.2 kN). Do not use equipment that is not compatible. Non-compatible connectors may unintentionally disengage (See Figure 4). Connectors must be compatible with the anchorage or other system components (See Figure 5). Connectors must be compatible in size, shape, and strength. Self-locking snap hooks and carabiners are required by ANSI Z359 and OSHA guidelines. Contact Safewaze if you have any questions about compatibility.

NOTE: SOME SPECIALTY CONNECTORS HAVE ADDITIONAL REQUIREMENTS. CONTACT SAFEWAZE WITH QUESTIONS.

FIGURE 4 - UNINTENTIONAL DISENGAGEMENT



Using a connector that is undersized or irregular in shape (1) to connect a snap hook or carabiner could allow the connector to force open the gate of the snap hook or carabiner. When force is applied, the gate of the hook or carabiner presses against the non-compliant part (2) and forces open the gate (3). This allows the snap hook or carabiner to disengage (4) from the connection point.

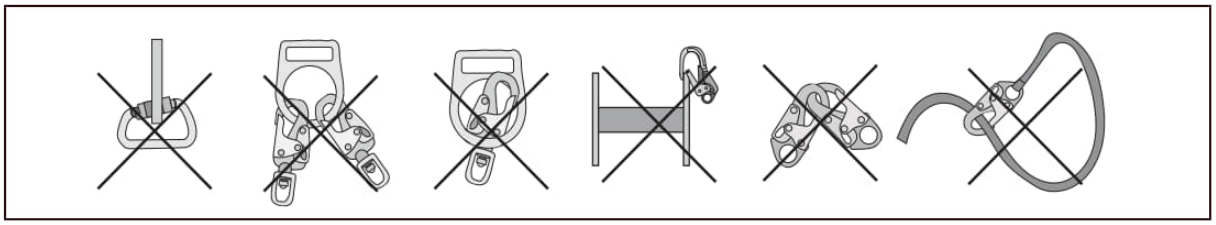
9.0 MAKING CONNECTIONS

Snap hooks and carabiners used with this equipment must be double locking and/or twist lock. 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.

Safewaze connectors (snap hooks and carabiners) are designed to be used only as specified in each product's user instructions. See Figure 5 for examples of inappropriate connections. Do not connect snap hooks and carabiners:

- To a D-ring to which another connector is attached.
- In a manner that would result in a load on the gate (with the exception of tie-back hooks). NOTE: Large snap hooks must not be connected to objects which will result in a load on the gate if the hook twists or rotates, unless the snap hook complies with ANSI Z359.12 and is equipped with a 3,600 lb (16 kN) gate. Check the marking on your snap hook to verify its compatibility.

FIGURE 5 - INAPPROPRIATE CONNECTIONS



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FIGURE 6 - TYPICAL CONNECTION AS PART OF A COMPLETE PFAS

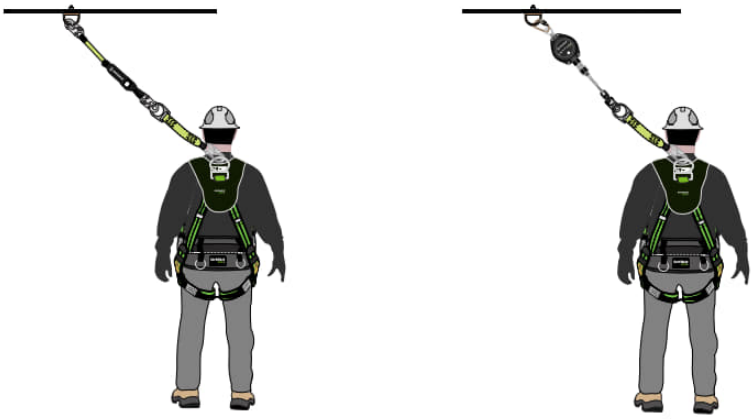


FIGURE 7 - CONNECTION TO FBH



10.0 APPLICATION LIMITS

Precautions should be taken in the design and installation of a PFAS in order to avoid hazards such as thermal, chemical, or electrical hazards. Avoid moving machinery, sharp and/or abrasive edges, and any other hazard that could damage or degrade components of the PFAS.

11.0 RESTRICTIONS

Safewaze D-ring Extenders are offered in a variety of configurations to suit a multitude of work environments. The unique features of a specific extender may not be suited for all applications. The following are some restrictions that should be considered prior to use of your Safewaze D-ring Extender:

Extended Free Falls: All Safewaze D-ring Extenders are designed and rated for 6' (1.83 m) and 12' (3.66 m) FF applications. For 12' FF applications, the user must use a Personal Energy Absorber (PEA) rated for for this level of free fall.

Harsh Chemical Environments: Work operations in a caustic or acidic chemical hazard environment may cause damage to your Safewaze D-ring Extender. Damage to the extender due to chemical exposure can, in some instances, be difficult to detect. In any environment, the extender must be inspected prior to each use, however, a harsh chemical environment can necessitate more frequent inspections. Care should be taken to inspect the extender before, during, and after each use. A harsh chemical environment may also cause a need for more frequent replacement of the extender.

Welding, Arc Flash, High Heat Environments: If work operations are conducted in an environment where the D-ring Extender may be exposed to extremely high temperatures, the user should choose an extender specifically designed for these environments. Specific extenders are available for welding, fire resistance, and ARC Flash environments.

Heavyweight: Although ANSI Z359.11 specifies a weight capacity range of 130 to 310 lbs. (59 to 140 kg), most Safewaze D-ring Extenders have a maximum weight capacity of up to 420 lbs. (191 kg). If the user has a weight that exceeds the ANSI max weight of 310 lbs. (140 kg), it should be ensured that other components of the PFAS are rated for a heavyweight user.

IMPORTANT: The components of a PFAS used in conjunction with the Safewaze D-ring Extender should meet the requirements of the ANSI Z359 Fall Protection Code.

WARNING: Contact Safewaze if you have questions, regarding compatibility of this equipment. Do not alter or misuse this equipment. Some subsystem components could affect the performance and the operation of this equipment. Do not connect this product to moving machinery, or hazards that include chemical, electrical or gaseous characteristics. Failure to comply with this warning could result in serious injury or death.

12.0 PRE-USE INSPECTION

Upon receiving your Safewaze D-ring Extender, remove the product from the packaging and fully inspect extender for possible damage that may have occurred during shipping.

Prior to each use, inspect for the following conditions:

- Inspect the webbing of the extender for cuts, frays, broken stitching, damage from heat or chemical exposure, or other defects related to excessive wear or abrasion.
- Inspect the extender for indications that it has been exposed to fall arrest forces.
- Inspect extender labeling to ensure that they are legible and present on the harness. If any labeling is illegible, or missing, remove the extender from service.

13.0 INSTALLATION AND USE

Installation of any Safewaze D-ring Extender must be performed under the supervision of a Competent Person trained in their use and design.

Ensure selected anchor location meets the strength requirements as indicated in Section 6 of this manual.

Do not allow free-fall to exceed 6 ft.

Any equipment exposed to Fall Arrest forces must be removed from service immediately.

See section 13.3 for specific installation details.

13.1 OPERATION

Inspect the extender, as described in Section 15 prior to use. Refer to Figure 6 for the most common extender connections. Ensure connections are compatible in size, shape, and strength. Ensure hooks are fully closed and locked.

13.2 AFTER A FALL

Should the Safewaze D-ring Extender be exposed to an the force of a fall, or shows damage consistent with the effects of a fall, it must be IMMEDIATELY removed from service. Equipment must then be disposed of (See Section 15.5).

13.3 HARNESS CONNECTIONS

Figure 6 illustrates typical D-ring Extender connections when working at heights. When using a snap hook to make a connection, ensure roll-out cannot occur (See Figure 4). Do not use snap hooks or carabiners that will not completely close over the anchor point. This includes traditional overhead anchor point tie off, SRL housing attachment to dorsal D-ring, and 100% tie off. Follow the manufacturer's instructions supplied with each system component. Figure 7 indicates examples of inappropriate and appropriate connection to the Dorsal D-ring of a Full Body Harness, as well as the appropriate installation of a Soft Loop D-ring Extender.

14.0 MAINTENANCE, CLEANING, & STORAGE

14.1 MAINTENANCE

Remove the Safewaze D-ring Extender from use if the extender has been subjected to fall arrest forces or inspection reveals an unsafe or defective condition. If unsafe or defective condition is found, dispose of the extender as recommended in section 15.5.

14.2 CLEANING

Cleaning procedures for Safewaze D-ring Extenders are as follows:

If webbing becomes soiled or requires cleaning, use water and a mild soap solution.
Clean labels to maintain legibility.
Hang the extender and allow to fully dry before using. Do not dry the extender in a commercial type dryer, or use heated air to dry.

14.3 STORAGE

Store Safewaze D-ring Extenders in a cool, dry, clean environment out of direct sunlight. Avoid areas where chemical vapors may exist. Thoroughly inspect extender after any period of extended storage.

15.0 INSPECTION

15.1 BEFORE EACH USE

Inspect the webbing of the extender for cuts, frays, broken stitching, damage from heat or chemical exposure, or other defects related to excessive wear or abrasion.

Inspect the D-ring Extender for indications that it has been exposed to fall arrest forces.

Inspect extender labeling to ensure that they are legible and present. If any labeling is illegible or missing, remove the extender from service.

Inspect the D-ring Extender to include stitching and hardware. Ensure no stitches are broken, frayed, or cut. Inspect that hardware functions properly and does not display any excessive corrosion. Inspect all extender webbing and stitching for possible damage or defects.

15.2 INSPECTION FREQUENCY

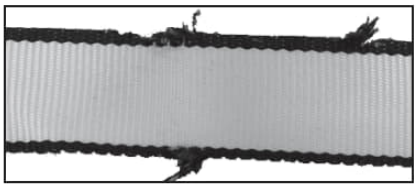
In addition to inspection prior to each use, the extender must be inspected annually by a competent person other than the user. Severe or harsh environments may require more frequent inspections.

15.3 UNSAFE OR DEFECTIVE CONDITIONS

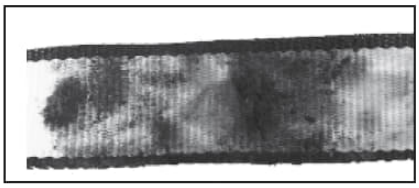
Figure 8 shows examples of equipment damage. Equipment inspectors must be trained to look for damage to components of the D-ring Extender as illustrated in Figure 8, as well as other damage that may occur. If inspection reveals an unsafe or defective condition remove the extender from service.

FIGURE 8 - EXAMPLES OF EQUIPMENT DAMAGE

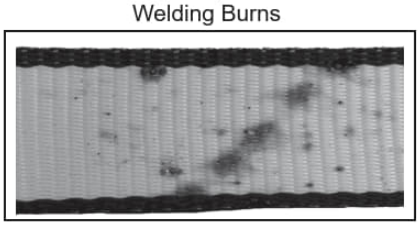
Frayed



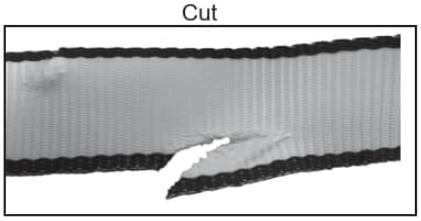
Heavily Soiled



Welding Burns



Cut



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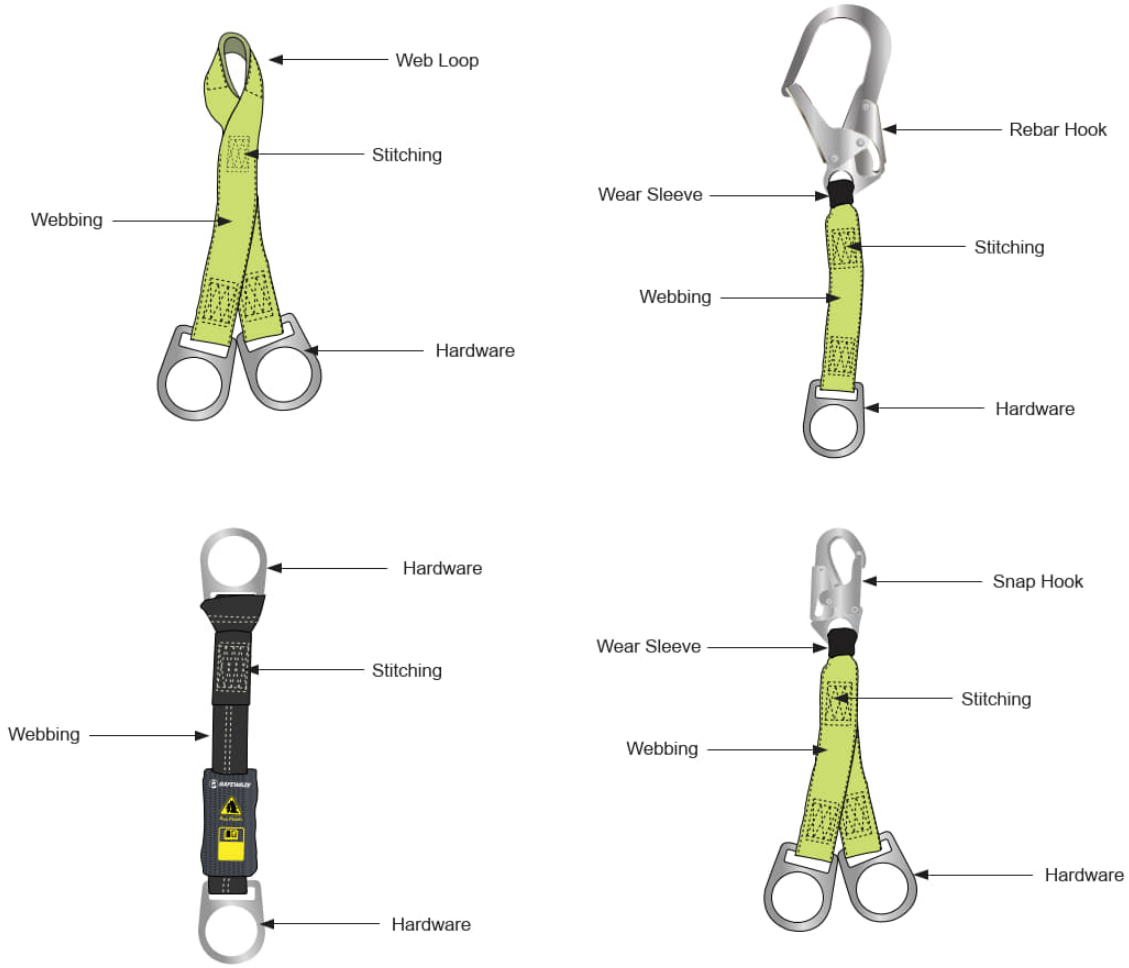
15.4 PRODUCT LIFE

The working life of Safewaze D-ring Extenders are determined by work conditions, care and inspection provided. As long as the extender passes inspection, it may remain in service.

15.5 DISPOSAL

Dispose of the Safewaze D-ring Extender if it has experienced fall arrest forces or inspection reveals an unsafe or defective condition. Before disposing of the extender, cut into separate sections to prevent future use.

FIGURE 9 - INSPECTION DIAGRAMS

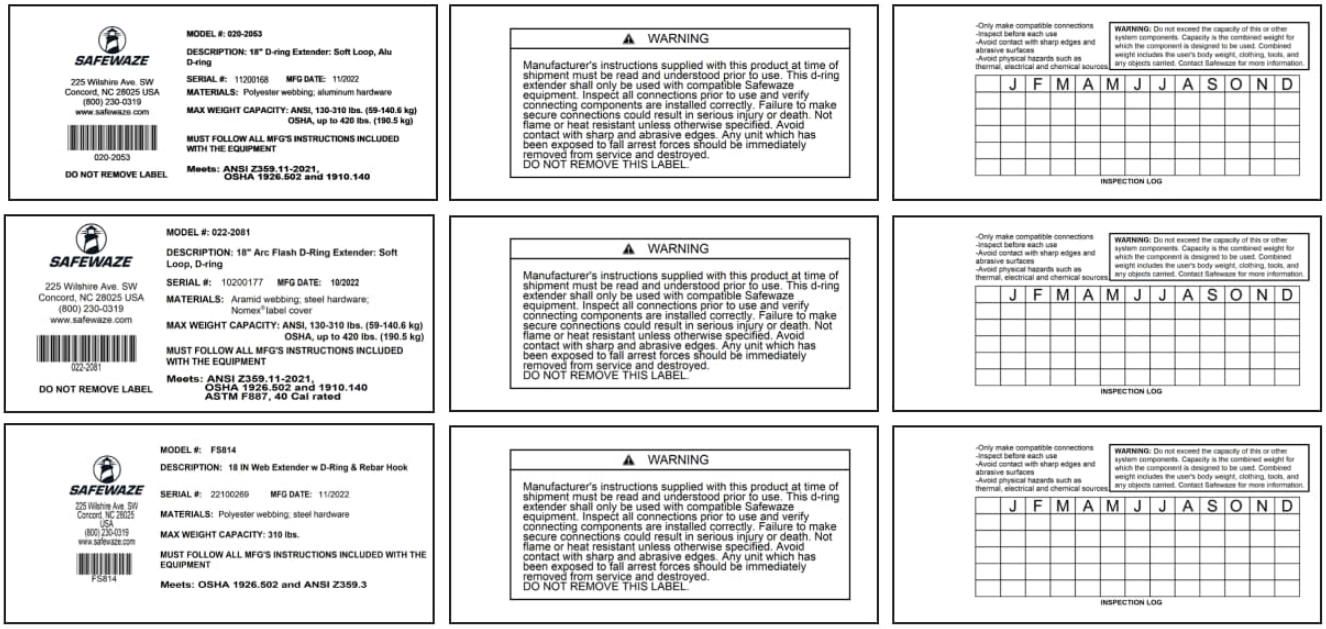


WARNING: Consult your doctor if there is reason to doubt your fitness to safely absorb the shock from a fall arrest. Age and fitness seriously affect a worker's ability to withstand falls. Pregnant women or minors must not use Safewaze D-ring Extenders. Failure to heed this warning may result in serious injury or death.

WARNING: DO NOT use the D-ring Extender to hoist tools or equipment.

16.0 LABELING

FIGURE 10 - LABEL EXAMPLES



17.0 INSPECTION FORM

Product lifetime is indefinite as long as it passes pre-use and Competent Person inspections. User must inspect prior to each use. Competent Person other than the user must complete formal inspection at least annually.

SAFEWAZE

INSPECTION FORM
HARNESSES

Manufacturer: _____ Company: _____

Model Number: _____ Name of Inspector: _____

Description: _____ Signature: _____

Serial Number: _____ Date of Inspection: _____

Lot Number: _____ In-Service Date: _____

Date of Manufacture: _____ Harness Configuration: Chest Strap PT ☐ TB ☐ Leg Straps PT ☐ TB ☐ Waist Belt Yes ☐ No ☐

LABELS & MARKINGS	PASS	FAIL	NOTE
Label (Intact and Legible)			
Appropriate ANSI / OSHA / CSA Markings			
Inspections are Current / Up-to-Date			
Date of First Use			
Impact / Fall Indicators Not Deployed			

HARDWARE (Buckles & D-Rings)	PASS	FAIL	NOTE
Signs of Deformity of Damage			
Proper D-ring attachment and operation			
All Buckles Undamaged and Operational			
Corrosion / Pitting / Nicks			
Ensure Grommets are Secure / Do Not Move			

WEBBING	PASS	FAIL	NOTE
Shoulder / Chest / Leg / Back Straps			
Cuts / Burns / Holes			
Paint Contamination			
Excessive Wear			
Heat / UV Damage			

STITCHING	PASS	FAIL	NOTE
Shoulder / Chest / Leg / Back Straps			



NOTES

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If equipment fails inspection
IMMEDIATELY REMOVE FROM SERVICE

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