



SAFEWAZE

Vertical Lifeline Instruction Manual

5/8" 100% Polyester Rope / Steel Hardware



Elongation: 8% at 1,800 lbs.

No.	Z359.13-2013	Z359.15-2014	Z359.15* ONLY IF USED IN A FULL ASSEMBLY	1926.502	1910.66	1910.140
FS700-581200						
FS700-58600						
FS700-100GA				✓	✓	✓
FS700-25GA				✓	✓	✓
FS700-50GA				✓	✓	✓
FS700-75GA				✓	✓	✓
FS700-100			✓	✓	✓	✓
FS700-100-HH			✓	✓	✓	✓
FS700-100-TT			✓	✓	✓	✓
FS700-150			✓	✓	✓	✓
FS700-150-HH			✓	✓	✓	✓
FS700-200			✓	✓	✓	✓
FS700-200-HH			✓	✓	✓	✓
FS700-25			✓	✓	✓	✓
FS700-250			✓	✓	✓	✓
FS700-25-HH			✓	✓	✓	✓
FS700-25-TT			✓	✓	✓	✓
FS700-30			✓	✓	✓	✓
FS700-300			✓	✓	✓	✓
FS700-30-HH			✓	✓	✓	✓
FS700-30-TT			✓	✓	✓	✓
FS700-350-HH			✓	✓	✓	✓
FS700-400			✓	✓	✓	✓
FS700-50			✓	✓	✓	✓
FS700-50-HH			✓	✓	✓	✓
FS700-50-NB			✓	✓	✓	✓
FS700-60-TT			✓	✓	✓	✓
FS700-75			✓	✓	✓	✓
FS700-75-HH			✓	✓	✓	✓
FS700-100GA-3E	✓			✓	✓	✓
FS700-150GA-3E	✓			✓	✓	✓
FS700-25GA-3E	✓			✓	✓	✓
FS700-50GA-3E	✓			✓	✓	✓
FS700-75GA-3E	✓			✓	✓	✓

5/8" Copolymer Rope / Steel Hardware



Elongation: 5% at 1,800 lbs.

No.	Z359.13-2013	Z359.15-2014	Z359.15* ONLY IF USED IN A FULL ASSEMBLY	1926.502	1910.66	1910.140
018-7003				✓	✓	✓
018-7004				✓	✓	✓
FS-RTZ700-100			✓	✓	✓	✓
FS-RTZ700-150			✓	✓	✓	✓
FS-RTZ700-200			✓	✓	✓	✓
FS-RTZ700-25			✓	✓	✓	✓
FS-RTZ700-300			✓	✓	✓	✓
FS-RTZ700-50			✓	✓	✓	✓
FS-RTZ700-75			✓	✓	✓	✓
018-7005	✓			✓	✓	✓

5/8" Kernmantle Rope / Steel Hardware						
No.	Z359.13-2013	Z359.15-2014	Z359.15* ONLY IF USED IN A FULL ASSEMBLY	1926.502	1910.66	1910.140
019-7007	✓	✓		✓	✓	✓
019-7008	✓	✓		✓	✓	✓
021-7015	✓	✓		✓	✓	✓

Elongation: 7% at 1,800 lbs.

7/16" Kernmantle Rope / Steel Hardware						
No.	Z359.13-2013	Z359.15-2014	Z359.15* ONLY IF USED IN A FULL ASSEMBLY	1926.502	1910.66	1910.140
SW716-716600						
019-7010			✓	✓	✓	✓
021-7012			✓	✓	✓	✓
021-7013			✓	✓	✓	✓
022-7023			✓	✓	✓	✓
FS715-100			✓	✓	✓	✓
FS715-30			✓	✓	✓	✓
FS715-50			✓	✓	✓	✓
SW716-100			✓	✓	✓	✓
SW716-200			✓	✓	✓	✓
SW716-300			✓	✓	✓	✓

Elongation: 12.5% at 1,800 lbs.

7/16" Kernmantle Rope / Steel Hardware / 420 lbs. Capacity						
No.	Z359.13	Z359.15	Z359.15* ONLY IF USED IN A FULL ASSEMBLY	1926.502	1910.66	1910.140*
021-7019			✓	✓	✓	✓
021-7020			✓	✓	✓	✓
021-7021			✓	✓	✓	✓
021-7022		✓		✓	✓	✓
FS8800SP-D	✓			✓	✓	✓

Elongation: 6% at 1,800 lbs.

Associated VLL Components						
No.	Z359.13-2013	Z359.15-2015	Z359.15* ONLY IF USED IN A FULL ASSEMBLY	1926.502	1910.66	1910.140
021-7014						
022-7025			✓	✓	✓	✓
FS1117				✓	✓	✓
FS1118-DC				✓	✓	✓
FS1118				✓	✓	✓
FS1120				✓	✓	✓
SW-EX8000K			✓	✓	✓	✓
FS00SP/FS1117-3	✓			✓	✓	✓
FS00SP/FS1118-DC	✓			✓	✓	✓
FS00SP/FS1118-DC-3	✓			✓	✓	✓
FS00SP/FS1118-3	✓		✓	✓	✓	✓
FS875				✓	✓	✓

This manual is intended to meet the manufacturer's instructions as required by ANSI Z359.15-2014 and should be used as part of an employee training program as required by OSHA.

WARNINGS AND IMPORTANT PRECAUTIONS

User must read, understand, and follow all safety and usage information contained within this manual prior to use of this equipment. Failure to follow all safety and usage information can result in serious injury or death.

These instructions shall be provided to the user. User must read, understand, and follow all safety and usage information contained within this manual prior to use of this equipment. Failure to follow these instructions or improper use can result in serious injury or death.

Equipment subjected to forces of fall arrest must immediately be removed from use.

Workplace conditions, including, but not limited to, flame, corrosive chemicals, electrical shock, sharp objects, machinery, abrasive substances, weather conditions, and uneven surfaces, must be assessed by a Competent Person before fall protection equipment is selected. The inspection of the workplace must anticipate where workers will be performing their duties, the routes they will take to reach their work, and the potential and existing fall hazards they may be exposed to. Fall protection equipment must be chosen by a Competent Person. Selections must account for all potential hazardous workplace conditions. All fall protection equipment should be purchased in new and unused condition.

Intended Use:

The equipment covered in this manual is intended for use as part of a complete Personal Fall Arrest System (PFAS). Use of this equipment for any other purpose, such as material handling, sports activities, or other action not described in these User Instructions is not approved by Safewaze. Use of this equipment in a manner outside the scope of those covered within this manual can result in serious injury or death. The equipment covered in this manual is only to be used by trained personnel in workplace applications.



WARNING

This equipment is part of a complete PFAS. Every user must be trained in the inspection, installation, operation, and proper usage of their complete PFAS. Unapproved or inappropriate use of Safewaze equipment could result in serious injury or death. Refer to these instructions for the proper selection, installation, maintenance, and service of this equipment. For questions regarding use of this equipment beyond the scope of this manual, contact Safewaze.

The warnings below are designed to reduce the risks associated with the use of a Safewaze Vertical Rope Lifeline System:

- DO NOT alter this equipment.
- DO NOT attempt to modify this equipment.
- DO NOT use this equipment in any way not described in this manual.
- Exposure of this equipment to chemicals, high heat, severe cold, or other harsh environments may produce a harmful effect. If in doubt of suitable conditions contact Safewaze.
- Avoid use of this equipment around moving machinery and electrical hazards.
- Avoid use of this equipment near sharp and abrasive surfaces.
- Improper use of this equipment, not following instructions or markings, may cause serious injury or death.
- Frequency of periodic inspection by a Competent Person other than the user should be established by the user's organization based upon careful consideration of relevant factors. Such factors include the nature and severity of workplace conditions affecting the equipment and the modes of use and exposure time of the equipment.
- Inspect all equipment prior to each use.
- The equipment must be inspected annually by Competent Person other than the user. These results must be documented.
- If the users fall arrest subsystem is comprised of components from different manufacturers, the competent person must determine that all components are compatible. Ensure that components meet all applicable standards and/or regulations for the work being performed.
- This equipment is designed for Fall Protection/Fall Arrest applications only.
- Unless explicitly stated otherwise, the maximum allowable free fall distance for lanyards must not exceed 6'.
- NEVER use fall protection equipment of any kind to hang, lift, support, or hoist tools or equipment, unless explicitly certified for such use.
- Physical harm may still occur even if fall safety equipment functions correctly. Sustained post-fall suspension may result in serious injury or death. Use trauma relief straps to reduce the effects of suspension trauma.



IMPORTANT

Users should enact the precautionary measures listed below to reduce the inherent risks of working at height:

- Fall protection equipment that fails inspection must be removed from service and tagged "Unusable." The equipment should then be returned to Safewaze for repair / service (if applicable) or destroyed. For questions regarding service/repair of components, contact Safewaze.
- Never exceed the maximum allowable weight capacity of your fall protection equipment.
- Never exceed the maximum free fall distance of your fall protection equipment.
- Only Safewaze, or entities authorized in writing by Safewaze, may make repairs to Safewaze fall protection equipment.
- User(s) of Safewaze fall protection equipment must ensure that their health and physical condition allows them to withstand all forces and potential risks associated with working at heights. ANSI limits the weight capacity of fall protection equipment to a maximum of 310 lbs. Some equipment covered in this manual may indicate a weight capacity in excess of 310 lbs. Heavier users are at an increased risk of serious injury or death due to increased forces on the body during a fall and the risk for accelerated onset of suspension trauma. Pregnant women and minors must not use this equipment.
- Use of a body belt is NOT authorized for fall arrest applications. Use only a Full Body Harness (FBH).
- Always wear proper Personal Protective Equipment (PPE) when installing, using, or inspecting this equipment.
- If conducting training operations with this equipment, ensure that a secondary fall protection system is installed and utilized in a manner that does not expose the trainee to unintended fall hazards.
- Immediately seek medical attention in the event a worker suffers a fall arrest incident.
- Avoid objects, equipment, or surfaces that could harm the user or equipment.
- User must ensure that there is adequate fall clearance when working at height.
- Extra precautions must be taken if working in the vicinity of moving machinery, electrical hazards, chemical hazards, sharp edges, explosive or toxic gases, extreme temperatures, or below overhead equipment or materials that could impact the user and their fall protection equipment.
- If work is conducted in a high heat environment, ensure that Arc Flash or other suitable fall protection equipment is utilized.
- Safewaze equipment is designed for, and tested with, Safewaze components. If substitutions or replacements are made to the system, ensure all components meet the applicable ANSI requirements.

Do not throw away these instructions!

Read and understand these instructions before using equipment!

Always verify the latest revision of the Safewaze Manual is being utilized. Visit the Safewaze website, or contact Customer Service, for updated manuals.

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User Information

Date of First Use: _____

Serial#: _____

Trainer: _____

User: _____

Do not throw away these instructions!

Read and understand these instructions before using equipment!

1.0 INTRODUCTION

Thank you for purchasing a Safewaze Vertical Rope Lifeline (VLL). 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 use the VLL safely and effectively, as well as any related Personal Fall Arrest System (PFAS) components.

2.0 APPLICATION

Safewaze VLLs are designed for use as part of a complete personal fall protection and/or restraint system. This product is designed for a **single user** whose weight (including clothing, tools, and equipment) is:

ANSI 130-310 lbs. (59-141 kg)

OSHA Up to 420 lbs. (191 kg) / for 021-7019, 021-7020, 021-7021, 021-7022

3.0 APPLICABLE SAFETY STANDARDS

When used according to instructions, this product meets OSHA 1926.502, 1910.140 and ANSI Z359.15-14, Z359.13-2013.

Safewaze VLLs are ANSI Z359.15-2014 compliant when used with an appropriate energy absorber and lanyard. Applicable standards and regulations depend on the type of work being done, and also might 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 or rescues.

Qualified Engineer: "Qualified Engineer" means a person with a bachelor of science degree in engineering from an accredited college or university. They are able to assume personal responsibility for the development and application of engineering science and knowledge in the design, construction, use, and maintenance of their projects.

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 their 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 jobsite.

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

5.0 PURPOSE

Vertical Rope Lifelines are used as part of a PFAS. VLLs are NOT authorized for use as a lifeline constituent of any Horizontal Lifeline System (HLL). They can be used in conjunction with an HLL system where the VLL is connected to the Horizontal Lifeline and used in a vertical orientation as authorized. Roof structures must have a minimum 2/12 pitch for use of a Safewaze Vertical Rope Lifeline. Do not use on a flat roof unless use is for Fall Restraint purposes only.

6.0 SPECIFICATIONS

Anchorage:

The structure to which the system is attached must be capable of withstanding force in all directions permitted by the system.

ANSI	5,000 lbs. (22.2 kN)
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To attach more than 1 system to a single anchorage, the 5,000 lbs. requirement must be multiplied by the number of systems attached to the anchorage.

Rope Lifeline:

5/8" 100% Polyester Rope

Min. Breaking Strength	5,000 lbs. (22.2 kN)
Stretch/Elongation	8.5% at 1,800 lbs.
Rope Melting Point	500°F (260°C)
Rope Tensile Strength	7,500 lbs.

5/8" Copolymer Rope

Min. Breaking Strength	5,000 lbs. (22.2 kN)
Stretch/Elongation	7% at 1,800 lbs.
Rope Melting Point	275°F (135°C)
Rope Tensile Strength	7,500 lbs.

5/8" Kernmantle Rope

Min. Breaking Strength	5,000 lbs. (22.2 kN)
Stretch/Elongation	7% at 1,000 lbs.
Rope Melting Point	450°F (232°C)
Rope Tensile Strength	11,000 lbs.

7/16" Kernmantle Rope

Min. Breaking Strength	5,000 lbs. (22.2 kN)
Stretch/Elongation	12.5% at 1,800 lbs.
Rope Melting Point	450°F (232°C)
Rope Tensile Strength	11,000 lbs.

7/16" Kernmantle Rope / Pro Series

Min. Breaking Strength	5,000 lbs. (22.2 kN)
Stretch/Elongation	6% at 1,800 lbs.
Rope Melting Point	450°F (232°C)
Rope Tensile Strength	8,200 lbs.

Anchorage Connector:

Minimum Breaking Strength	5,000 lbs. (22.2kN)
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Working Temperature Range:

Working Temperature Range	-35°F (-37°C) to 130°F (54°C)
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7.0 PRODUCT SPECIFIC APPLICATIONS

Personal Fall Arrest: Safewaze Vertical Lifelines can be used as part of a complete Personal Fall Arrest System (PFAS) for a maximum of one user. Only one user may be connected to a VLL. Only one fall arrester is to be attached to the VLL at any given time. Avoid sharp and/or abrasive edges. If contact with an abrasive surface is unavoidable, proper rope protection must be used. The structure utilized for attachment must be capable of withstanding a load of 5,000 lbs. in all directions permitted by the system. The maximum allowable free fall is 6 ft., with the maximum combined length of the fall arrester, lanyard extension, and D-ring being 36 inches.

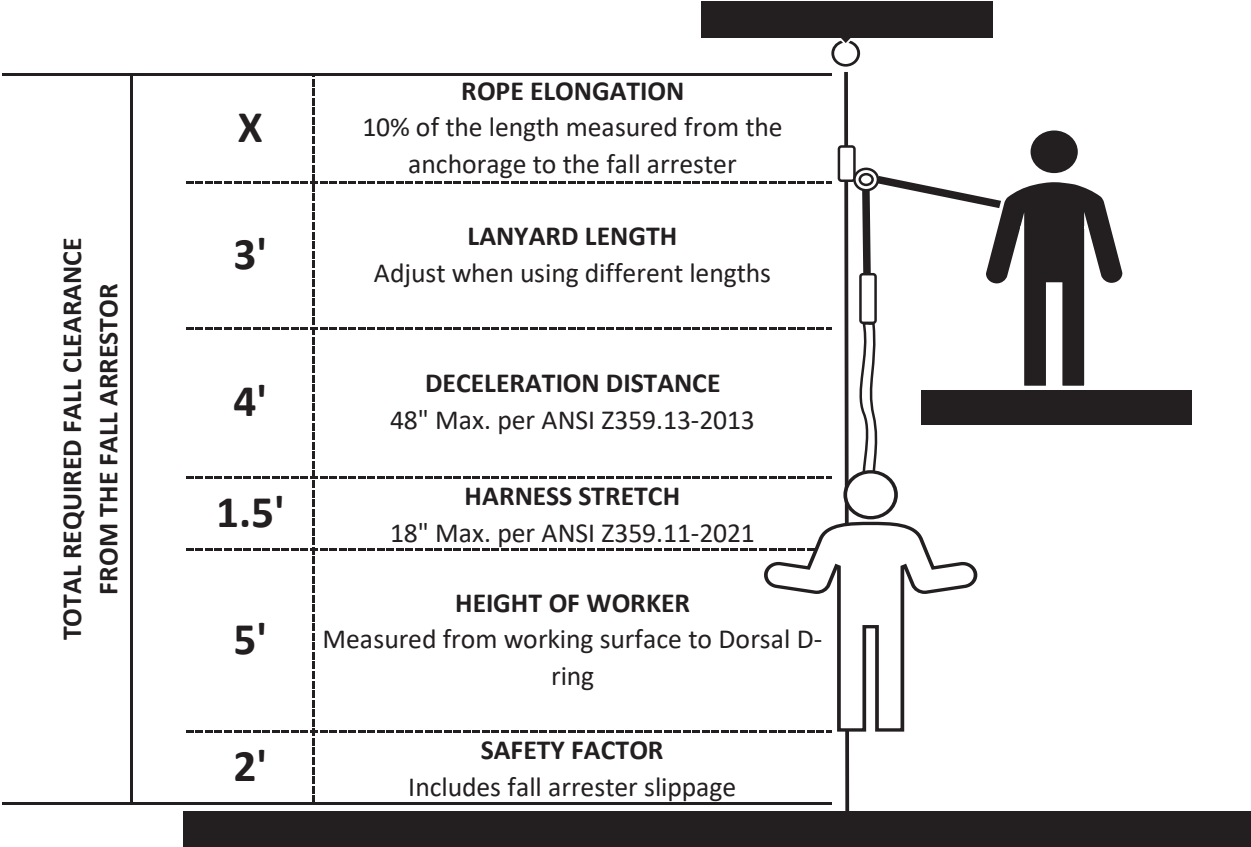
8.0 LIMITATIONS

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 1). Lanyards used with Safewaze rope grabs must be shock absorbing and no more than 36" in length.

FIGURE 1- FALL CLEARANCE

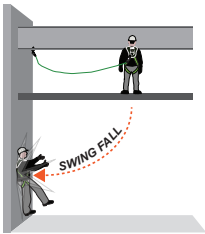
For all applications: Worker weight capacity range is 130-310 lbs (including all clothing, tools, and equipment)

Calculate Minimum Required Fall Clearance



Swing Falls: Prior to installation or use, 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 the anchor point as possible. Swing falls significantly increase the likelihood of serious injury or death in the event of a fall (Figure 2).

FIGURE 2 - SWING FALL

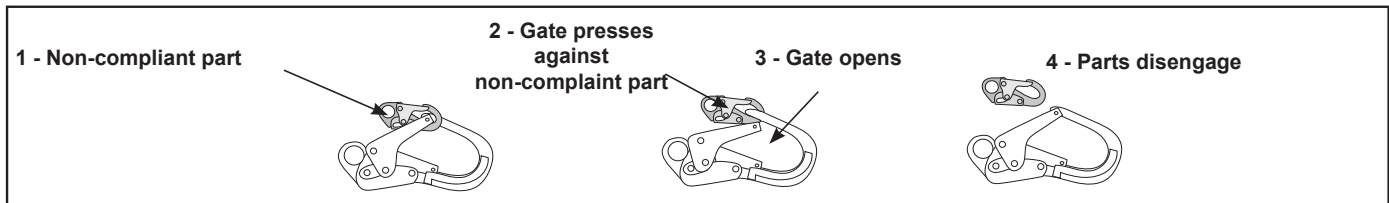


WARNING: AVOID SWING FALL HAZARDS ENCOUNTERED WHEN ANCHORAGE IS NOT DIRECTLY OVERHEAD.

9.0 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). Connectors must be compatible with the anchorage or other system components (Figure 3). Do not use equipment that is not compatible. Non-compatible connectors may unintentionally disengage (Figure 3). 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.

FIGURE 3 - 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.

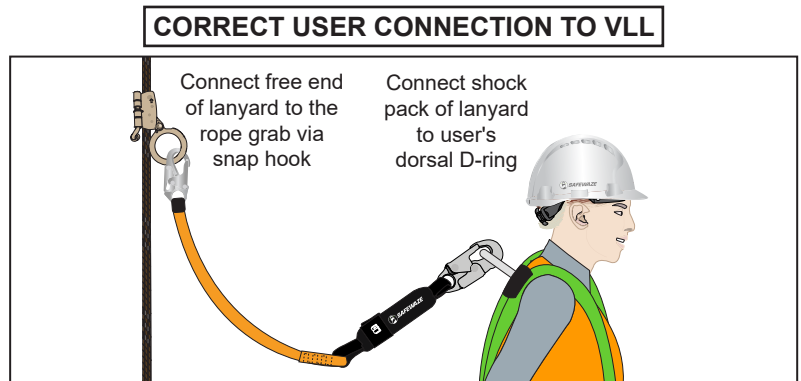
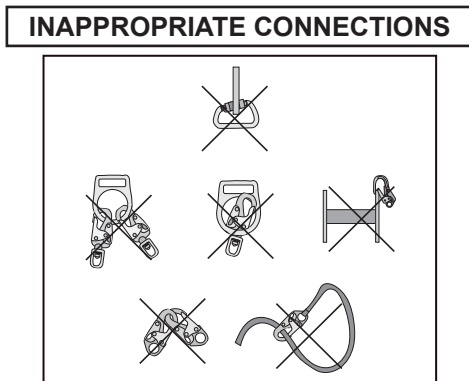
10.0 MAKING CONNECTIONS

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's instructions. See Figure 4 for examples of inappropriate connections as well as the correct connection of a user to the VLL. **NOTE:** ALWAYS connect shock pack of lanyard to the user's dorsal D-ring! DO NOT connect shock pack to the rope grab!

Do not connect snap hooks and carabiners:

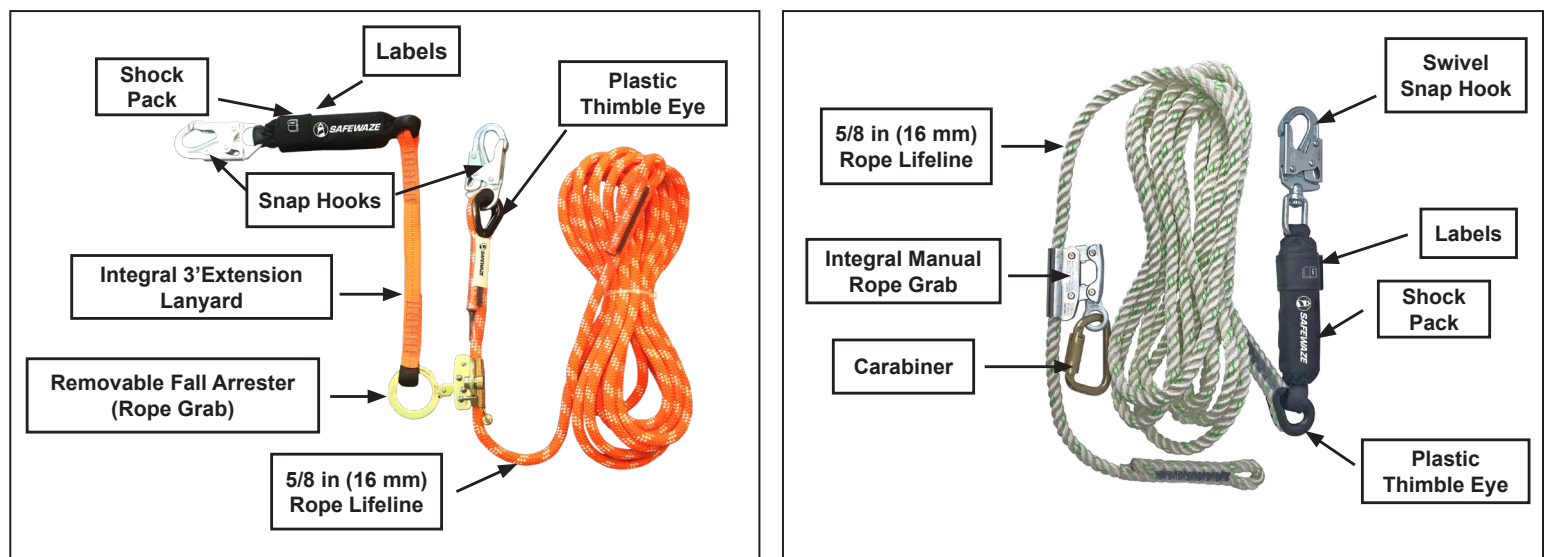
- To a D-ring to which another connector is attached.
- In a manner that would result in a load on the gate (with the exception of tie back hooks).
- NOTE: Large snap hooks must not be connected to objects which will result in a load on the gate if the hook twists or rotates. Hooks supplied with Safewaze VLLs comply with ANSI Z359.12 and are equipped with a 3,600 lbs. (16 kN) gate. Check the marking on your snap hook to verify its compatibility.
- Without visual confirmation that the connection is secure and not a false engagement.
- To each other.
- By wrapping the web lifeline around an anchor and securing to lifeline except as allowed for tie back models.
- To any object which is shaped or sized in a way that the snap hook or carabiner will not close and lock, or that roll-out could occur.
- In a manner that does not allow the connector to align properly while under load.

FIGURE 4 - MAKING CONNECTIONS



11.0 COMPONENTS

FIGURE 5 - COMPONENTS



12.0 ROPE GRABS

Safewaze rope grabs are designed to work with specific rope sizes and types. All grabs are equipped with an “UP” Arrow, which indicates the proper orientation of the grab to the Vertical Rope Lifeline (Figure 7). Some models are also equipped with an anti-inversion feature which prevents the grab from being installed upside down. Table 1 indicates the available rope grabs, suitable rope, and appropriate shock absorbing lanyard.

TABLE 1- ROPE GRABS

Rope Grab	Rope Sizing and Type	Shock Absorber / Lanyard
FS1117 (Manual Rope Grab)	5/8" Polyester or Copolymer Rope	ANSI compliant 3' shock absorbing lanyard
FS1118 (Trailing SS Rope Grab)	5/8" Polyester, Copolymer or Low Stretch Kernmantle Rope	ANSI compliant 3' shock absorbing lanyard
FS1118-DC (Self-Tracking Rope Grab)	5/8" Copolymer or Low Stretch Kernmantle	ANSI compliant 3' shock absorbing lanyard
FS1120 (Trailing Rope Grab)	5/8" Polyester, Copolymer or Kernmantle Rope	ANSI compliant 3' shock absorbing lanyard
SW-EX8000 (Trailing Rope Grab)	7/16" Low Stretch Kernmantle Rope	ANSI compliant 3' shock absorbing lanyard
021-7022 (Trailing Rope Grab)	7/16" Low Stretch Kernmantle Rope	ANSI compliant 3' shock absorbing lanyard
022-7025 (Drift Rope Grab)	7/16" Low Stretch Kernmantle Rope	ANSI compliant 3' shock absorbing lanyard



USER MUST ENSURE THE ROPE GRAB IS INSTALLED IN THE CORRECT ORIENTATION TO THE VERTICAL LIFELINE. INCORRECT INSTALLATION CAN RESULT IN SERIOUS INJURY OR DEATH!

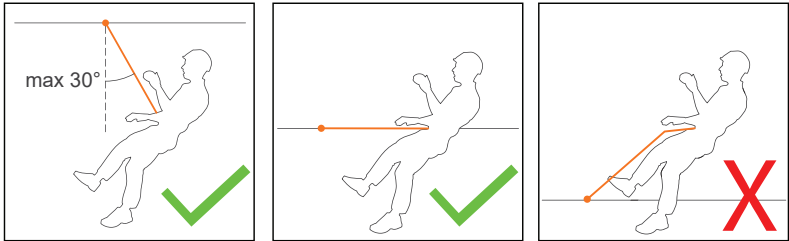
DO NOT USE THIS EQUIPMENT WHEN THE USER IS ON AN UNSTABLE SURFACE, FINE GRAIN MATERIAL, OR PARTICULATE SOLIDS SUCH AS SAND OR COAL!

AVOID USE OF THIS EQUIPMENT IN PROXIMITY TO MOVING EQUIPMENT AND ELECTRICAL HAZARDS!

DO NOT USE COMBINATIONS OF FALL ARRESTERS, LANYARDS, AND LIFELINES WHICH MAY AFFECT OR INTERFERE WITH THE SAFE FUNCTION OF EACH OTHER!

ONLY ONE USER CAN BE ATTACHED TO THE SINGLE ANCHOR LIFELINE!

FIGURE 6 - ROPE GRAB ALLOWED ANGLE OF USE



Maximum working angle between user and device must not exceed 30°.

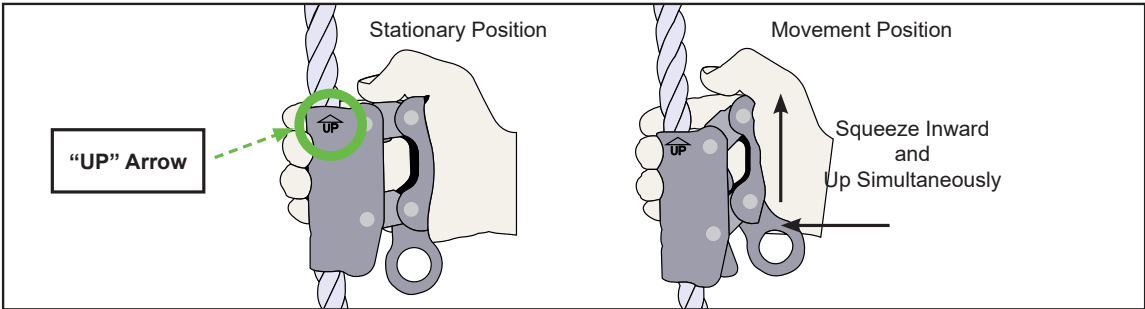
NEVER work above the device!

12.1 MANUAL ROPE GRAB OPERATION

FS1117

1. User must inspect the FS1117 for any obvious signs of damage or defects prior to each use.
2. User must be aware of, and seek to minimize, any swing fall hazards that may exist.
3. Ensure adequate fall clearance exists for the equipment being used and associated work operations
4. When used with an ANSI compliant Energy Absorbing Lanyard (EAL), the energy absorber attaches directly to the users appropriate D-ring, with the opposite end of the lanyard attaching to the grab.
5. The FS1117 rope grab is a non-removable manual rope grab for VLL operations. The FS1117 is typically pre-installed onto the VLL system prior to shipping.
6. If the user desires to move along the lifeline they must ensure that they move the fall arrester along the rope lifeline in conjunction with their movements (Figure 7). User should not move the lifeline while leaving the fall arrester stationary on the rope as this could result in unsafe slack forming along the lifeline component. This slack can result in creating an unnecessary trip hazard, as well as possibly creating conditions where free fall levels permitted by the systems are exceeded.
7. NEVER grab the Fall Arrester during a fall! Doing so may allow the unit to disengage and the Fall Arrester to slip along the Vertical Lifeline!

FIGURE 7- MANUAL ROPE GRAB MOVEMENT



1. User must inspect the FS1118 and FS1120 for any obvious signs of damage or defects prior to each use.
2. User must be aware of, and seek to minimize, any swing fall hazards that may exist.
3. Ensure adequate fall clearance exists for the equipment being used and associated work operations.
4. When used with an ANSI compliant Energy Absorbing Lanyard (EAL), the energy absorber attaches directly to the users appropriate D-ring, with the opposite end of the lanyard attaching to the grab.
5. The FS1118 and FS1120 are equipped with an anti-inversion cam in the hinge. This prevents the grab from opening or closing if in the wrong orientation relative to the rope. When installing, ensure that the etched arrow is pointing up (Figure 8). NEVER grab the Fall Arrester during a fall! However, the FS1118 and FS1120 are equipped with an Anti-Panic feature. This allows the grab to function normally if inadvertently grabbed during a fall.
6. Figure 9 details how to properly connect and operate the FS1118 and FS1120 grabs on the Vertical Rope Lifeline.
7. NEVER grab the Fall Arrester during a fall! Doing so may allow the unit to disengage and the Fall Arrester to slip along the Vertical Lifeline!

FIGURE 8 - ROPE GRAB ORIENTATION FOR INSTALL

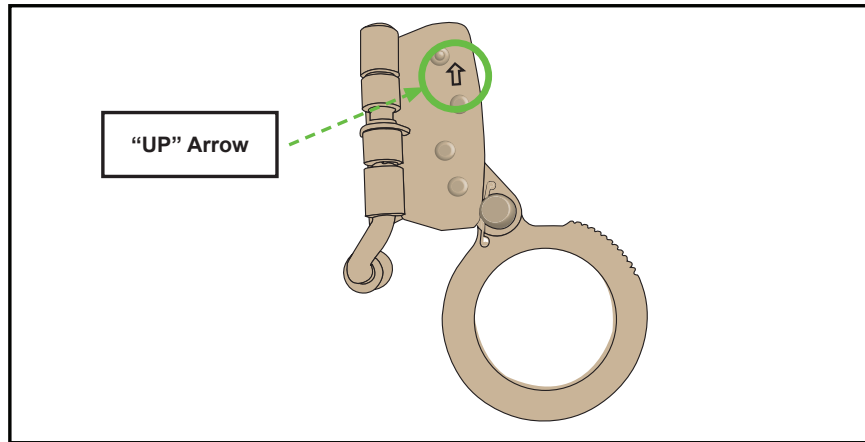
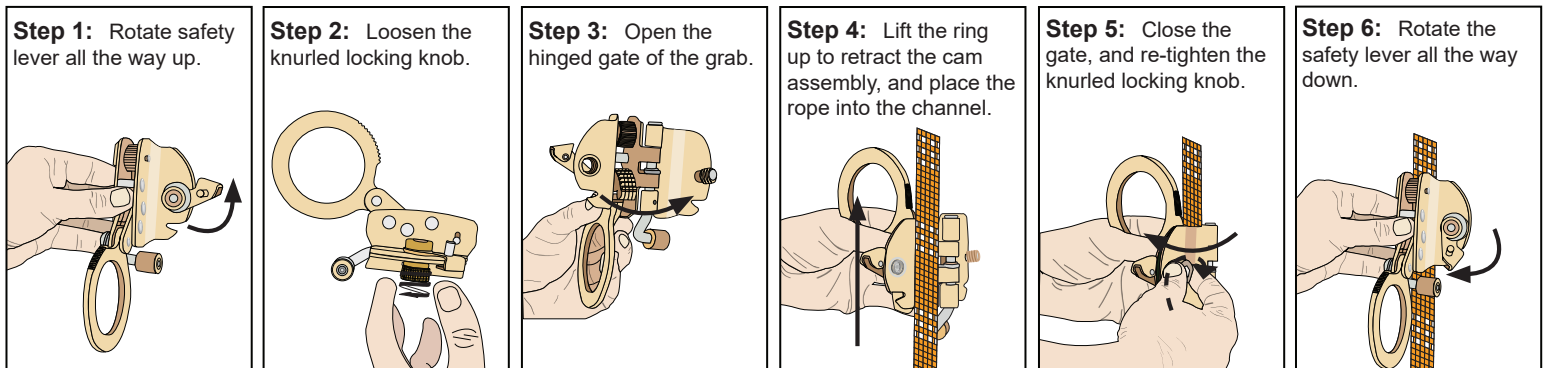
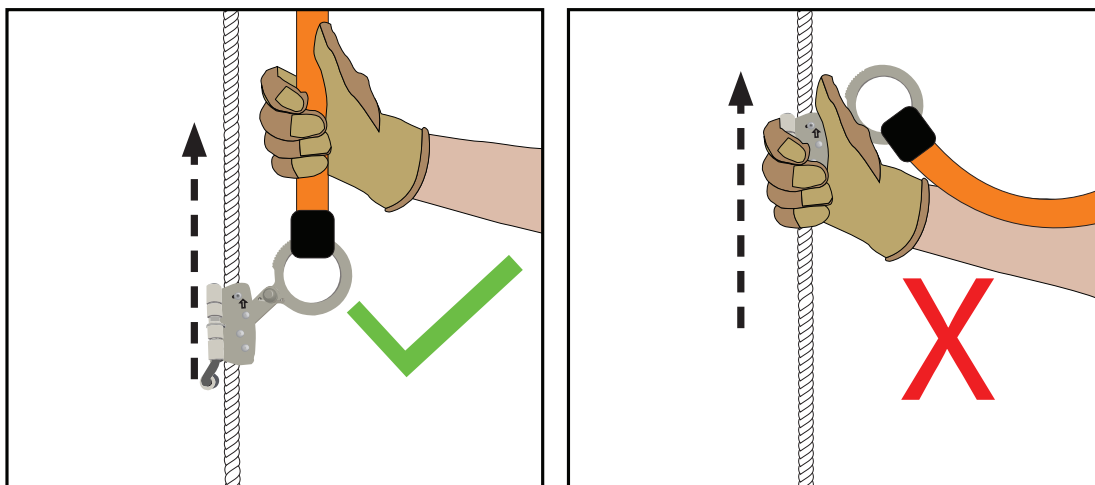


FIGURE 9- TRAILING ROPE GRAB INSTALLATION AND OPERATION

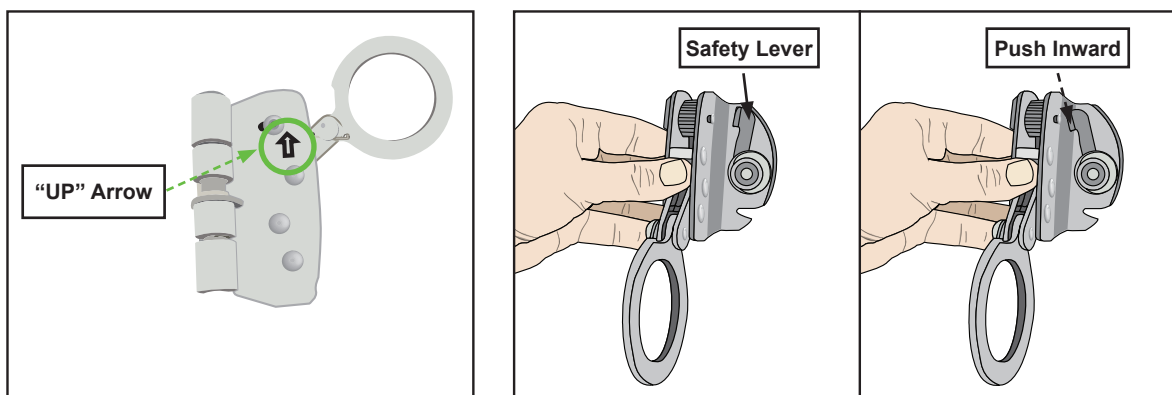


OPERATION



1. User must inspect the FS1118-DC and FS1120 for any obvious signs of damage or defects prior to each use.
2. User must be aware of, and seek to minimize, any swing fall hazards that may exist.
3. Ensure adequate fall clearance exists for the equipment being used and associated work operations
4. When used with an ANSI compliant Energy Absorbing Lanyard (EAL), the energy absorber attaches directly to the users appropriate D-ring, with the opposite end of the lanyard attaching to the grab.
5. The FS1118-DC is a removable self-tracking rope grab for VLL operations. The FS1118-DC installs in virtually the same manner as the FS1118 and FS1120. The only difference being the first step in the process. Rather than rotating the safety lever all the way up as done with the FS1118 and FS1120, simply push in on the safety lever to begin loosening the knurled locking knob (Figure 10).
6. The FS1118-DC is also equipped with an anti-inversion cam in the hinge. This prevents the grab from opening or closing if in the wrong orientation relative to the rope. When installing, ensure that the arrow is pointing up (Figure 10).
7. NEVER grab the Fall Arrester during a fall! Doing so may allow the unit to disengage and the Fall Arrester to slip along the Vertical Lifeline!

FIGURE 10 - NON-TRAILING ROPE GRAB INSTALL

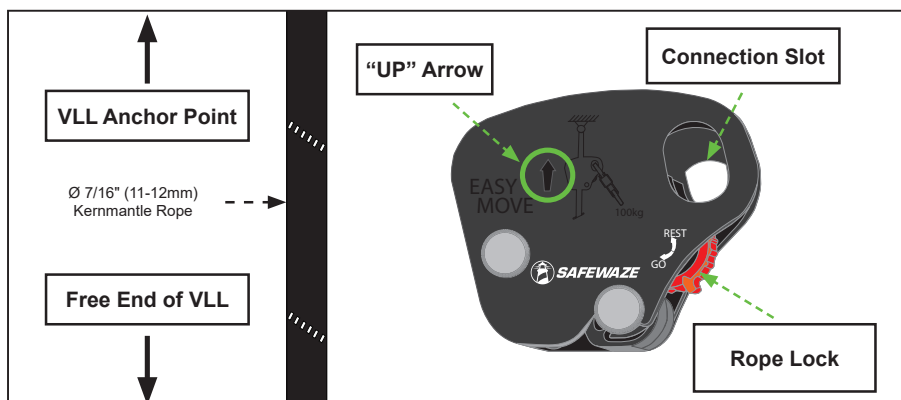


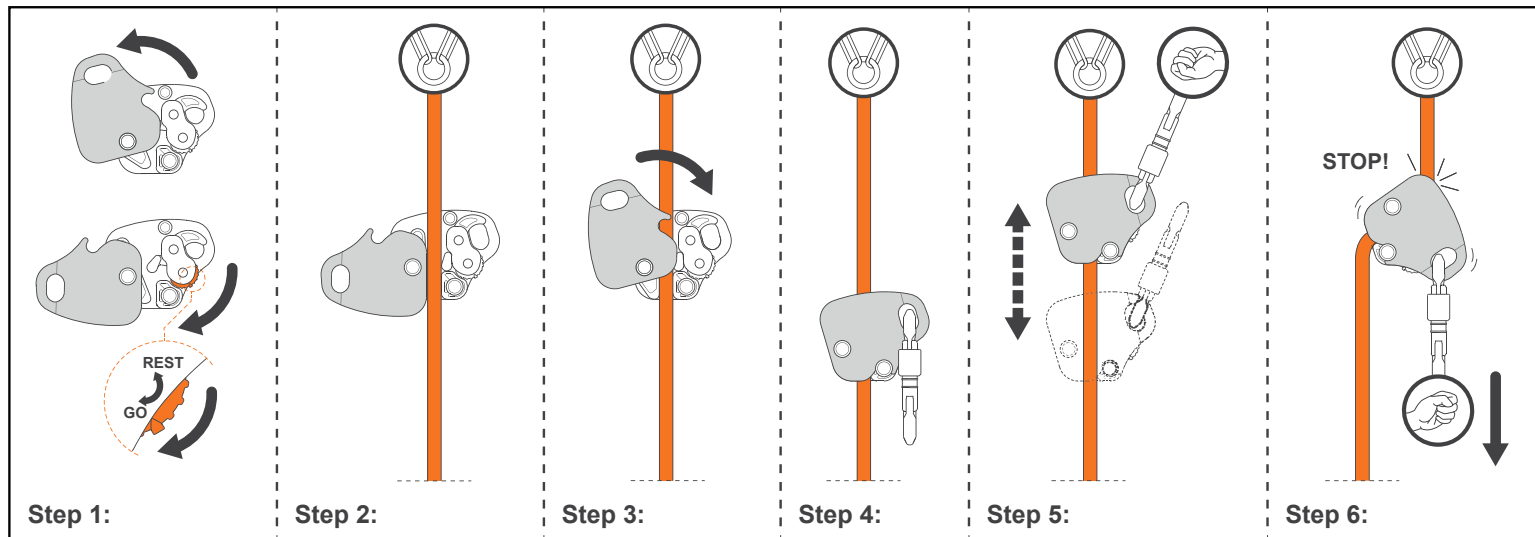
12.4 TRAILING ROPE GRAB INSTALLATION AND OPERATION

SW-EX8000

1. User must inspect the SW-EX8000 for any obvious signs of damage or defects prior to each use.
2. User must be aware of, and seek to minimize, any swing fall hazards that may exist.
3. Ensure adequate fall clearance exists for the equipment being used and associated work operations
4. When used with an ANSI compliant Energy Absorbing Lanyard (EAL), the energy absorber attaches directly to the users appropriate D-ring, with the opposite end of the lanyard attaching to the grab.
5. Ensure the SW-EX8000 is in correct orientation to the VLL with the indicator arrow pointing up (Figure 11). Rotate the sliding plate open and verify the locking wheel is in the GO position (Step 1).
6. Insert the rope ensuring the device remains the correct vertical orientation (Step 2).
7. Rotate the sliding plate closed (Step 3).
8. Install an ANSI Z359.12 compliant connector through the connection slot (Step 4).
9. Pull upward on the connector to verify that the rope grab moves freely along the lifeline (Step 5).
10. Proper function of the SW-EX8000 can be tested by again pulling up on the connector, and then rapidly pulling downward to ensure the grab locks onto the rope and stops (Step 6). Figure 11 illustrates proper installation of the SW-EX8000.

FIGURE 11 - INSTALLATION





The SW-EX8000 allows for safe and hands free climbing on vertical structures. In the event of an accident, any fall will be immediately arrested. It is necessary to use this device in combination with a shock absorber to be ANSI Z359.15-2014 compliant. The user must always ensure they are at a lower level than the SW-EX8000. Maximum working angle between user and device must not exceed 30°.

User must ensure the VLL does not come into contact with any sharp or abrasive surfaces. The SW-EX8000 will automatically trail the user as they move up and down the VLL. To stop the trailing function of the SW-EX8000 rotate the locking wheel to REST position. As the user needs to move up or down the VLL, they must rotate the locking wheel back to the GO position.

To remove the SW-EX8000 from the VLL, disconnect the carabiner from the connection slot of the grab and rotate the sliding plate open. DO NOT ATTEMPT TO DISCONNECT WHILE IN USE!!



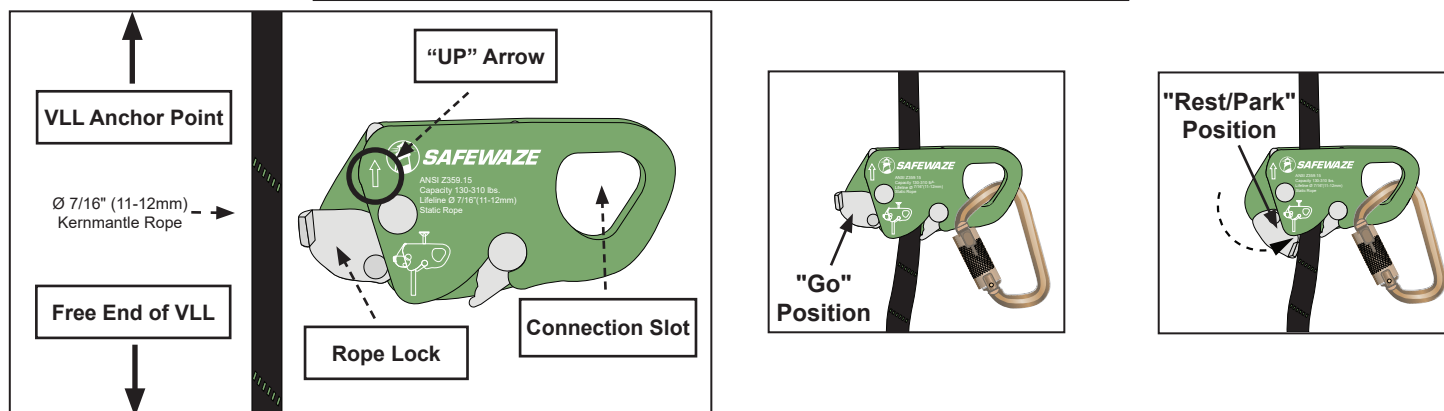
WARNING: AVOID LIFELINE EXPOSURE TO PHYSICAL AND CHEMICAL HAZARDS WHICH THE LIFELINE IS NOT DESIGNED TO WITHSTAND.

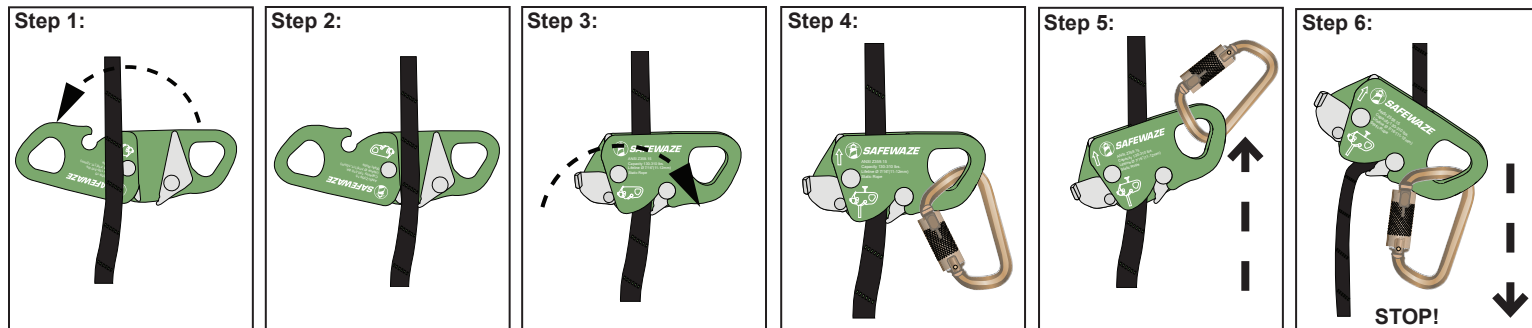
12.5 TRAILING ROPE GRAB INSTALLATION AND OPERATION

021-7022

1. User must inspect the 021-7022 for any obvious signs of damage or defects prior to each use.
2. User must be aware of, and seek to minimize, any swing fall hazards that may exist.
3. Ensure adequate fall clearance exists for the equipment being used and associated work operations
4. When used with an ANSI compliant Energy Absorbing Lanyard (EAL), the energy absorber attaches directly to the users appropriate D-ring, with the opposite end of the lanyard attaching to the grab.
5. Rotate the sliding plate open and verify that the position of the rope lock is in the GO position (Step 1).
6. Insert the rope ensuring the device remains the correct vertical orientation (Step 2).
7. Rotate the sliding plate closed (Step 3).
8. Install an ANSI Z359.12 compliant connector through the connection slot (Step 4).
9. Pull upward on the connector to verify that the rope grab moves freely along the lifeline (Step 5).
10. Proper function of the 021-7022 can be tested by again pulling up on the connector, and then rapidly pulling downward to ensure the grab locks onto the rope and stops (Step 6). Figure 12 illustrates proper installation of the 021-7022.

FIGURE 12 - INSTALLATION





The 021-7022 allows for safe and hands free climbing on vertical structures. In the event of an accident, any fall will be immediately arrested. It is necessary to use this device in combination with a shock absorber to be ANSI Z359.15-2014 compliant. The user must always ensure they are at a lower level than the 021-7022. Maximum working angle between user and device must not exceed 30°. The 021-7022 when used as part of a complete VLL system has a maximum capacity for one user of up to 420 lbs.

User must ensure the VLL does not come into contact with any sharp or abrasive surfaces. The 021-7022 will automatically trail the user as they move up and down the VLL. To stop the trailing function of the 021-7022 rotate the locking lever to PARK/REST position. As the user needs to move up or down the VLL, they must rotate the locking lever back to the GO position.

To remove the 021-7022 from the VLL, disconnect the carabiner from the connection slot of the grab and rotate the front plate open. DO NOT ATTEMPT TO DISCONNECT WHILE IN USE!!



FALL PROTECTION SYSTEMS MUST BE SELECTED AND INSTALLED UNDER THE SUPERVISION OF A COMPETENT PERSON AND USED IN A COMPLIANT MANNER. FALL PROTECTION SYSTEMS MUST BE DESIGNED IN A MANNER COMPLIANT WITH ALL FEDERAL, STATE, AND SAFETY REGULATIONS. FORCES APPLIED TO ANCHORS MUST BE CALCULATED BY A COMPETENT PERSON.

IF EQUIPMENT IS EXPOSED TO CHEMICAL HAZARDS THAT MAY CAUSE ANY DAMAGE OR DEGRADATION, EQUIPMENT MUST BE REMOVED FROM SERVICE. IF IN DOUBT, CONTACT SAFEWAZE.

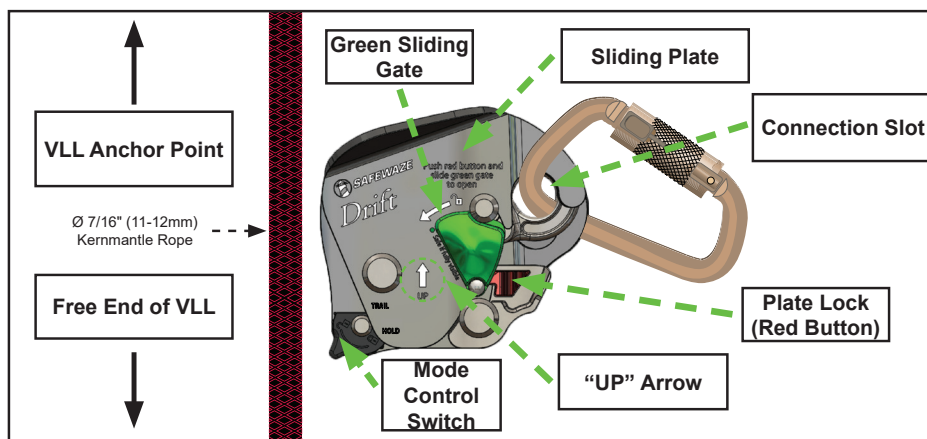
EQUIPMENT SUBJECTED TO FORCES OF A FALL ARREST MUST IMMEDIATELY BE REMOVED FROM USE.

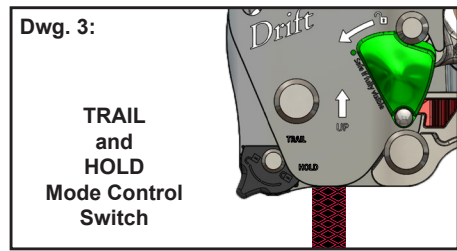
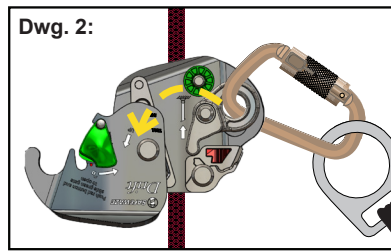
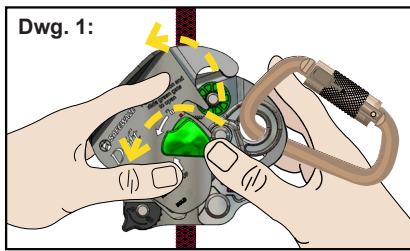
12.6 DRIFT ROPE GRAB INSTALLATION AND OPERATION

022-7025

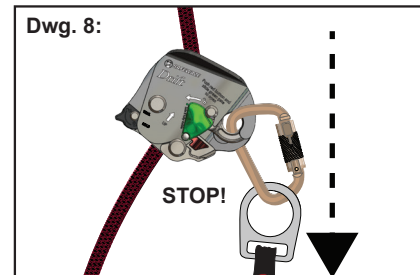
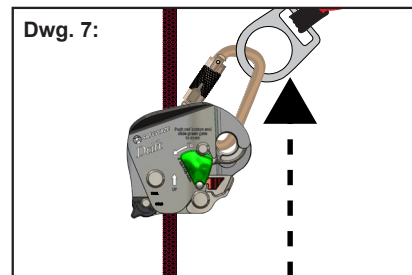
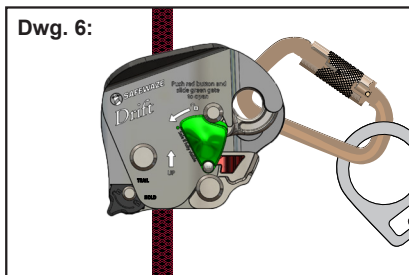
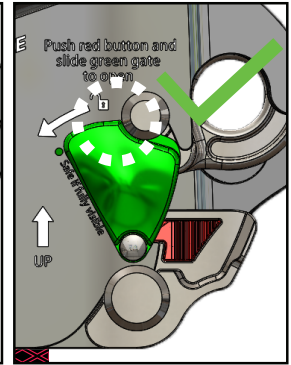
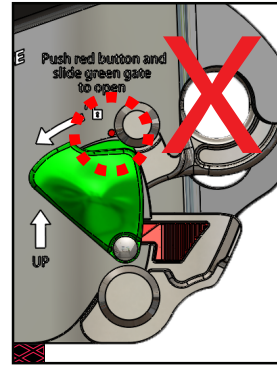
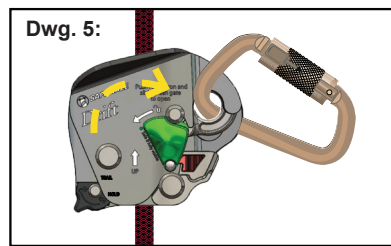
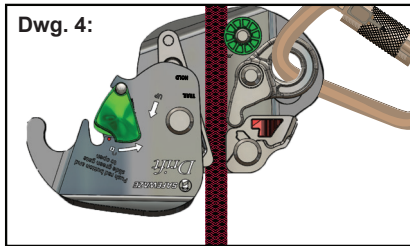
1. User must inspect the 022-7025 for any obvious signs of damage or defects prior to each use. Figure 13 illustrates the components of the 022-7025.
2. User must be aware of, and seek to minimize, any swing fall hazards that may exist.
3. Ensure adequate fall clearance exists for the equipment being used and associated work operations
4. Rotate the sliding plate open by pushing the green plate gate to the left, while simultaneously pressing the red button. (Dwgs. 1 & 2). The 022-7025 was designed for maximum efficiency and allows the sliding plate to open and close without removing the carabiner from the grab.
5. Verify the position of the mode control switch is in the Trail position (Dwg. 3). With the sliding plate open, install the drift grab onto the VLL, ensuring the device remains in the correct vertical orientation designated by an UP arrow (Dwg. 4).
6. Rotate the sliding plate closed over the VLL. Make sure the red dot warning indicator is not visible on the plate gate (Dwg. 5).
7. When used with an ANSI compliant Energy Absorbing Lanyard (EAL), the energy absorber's snap hook attaches directly to the User's Dorsal D-ring, with the D-ring end of the lanyard attaching to the rope grab's carabiner. Connect the EAL to the installed rope grab's carabiner. (Dwg. 6).
8. Pull upward on the connector to verify that the rope grab moves freely along the lifeline (Dwg. 7).
9. Proper function of the 022-7025 can be tested by again pulling up on the connector, and then rapidly pulling downward to ensure the grab locks onto the rope and stops (Dwg. 8).

FIGURE 13 - COMPONENTS





WARNING INDICATOR

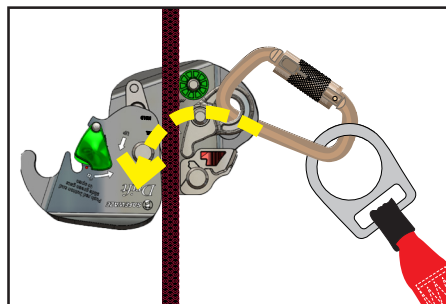
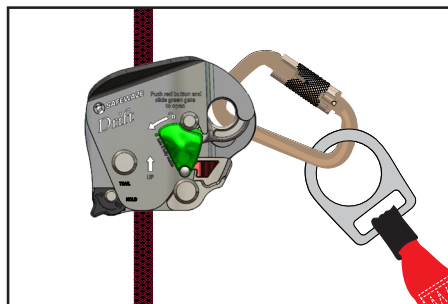


The 022-7025 allows for safe and hands free climbing on vertical structures. In the event of an accident, any fall will be immediately arrested. It is necessary to use this device in combination with a shock absorber to be ANSI Z359.15-2014 compliant. The user must always ensure they are at a lower level than the 022-7025. Maximum working angle between user and device must not exceed 30°. NEVER work above the device!

User must ensure the VLL does not come into contact with any sharp or abrasive surfaces. The Drift Rope Grab will automatically trail the user as they move up and down the VLL. To stop the trailing function of the 022-7025, rotate the mode control switch to the HOLD position. As the user needs to move up or down the VLL, they must rotate the mode control switch back to the TRAIL position (Dwg. 3).

To remove the Drift Rope Grab from the VLL, rotate the sliding plate open (Figure 14). DO NOT ATTEMPT TO DISCONNECT WHILE IN USE!!

FIGURE 14 - DISCONNECTION FROM VLL



12.6 DRIFT ROPE GRAB (USE IN ASSISTED RESCUE)

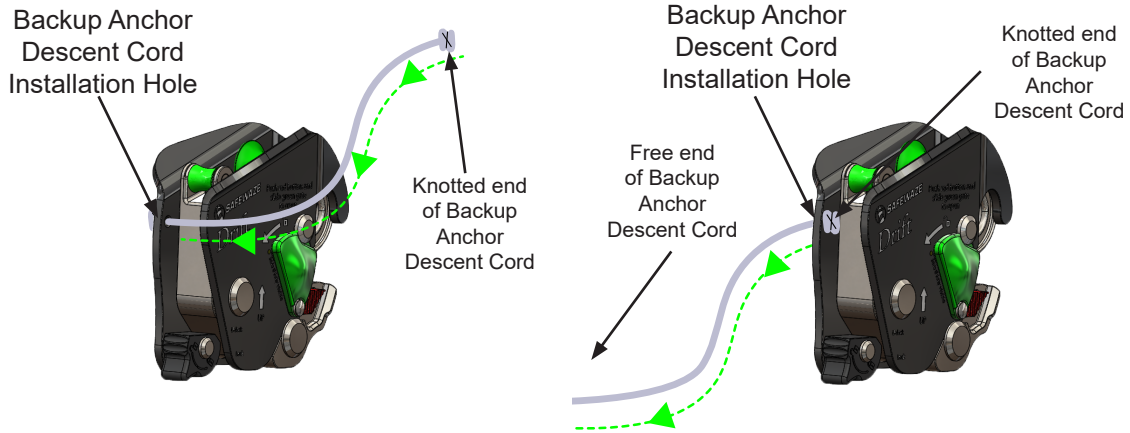
022-7025

The Drift Rope Grab is suitable for use in rescue operations. However, if used to facilitate descent to an injured worker, the Backup Anchor Descent Cord should be utilized. The Backup Anchor Descent Cord is simple to install and is included with the grab at time of shipment.

To install the Backup Anchor Descent Cord, tie a knot at one end of the cord. Thread the untied end of the cord through the pre-drilled hole on the grab from the inside out. Pull the cord through the hole until the knotted end of the rope cinches against the plate of the grab.

Figure 15 illustrates the proper installation and use of the Backup Anchor Descent Cord.

FIGURE 15 - BACKUP ANCHOR DESCENT CORD INSTALLATION AND USE



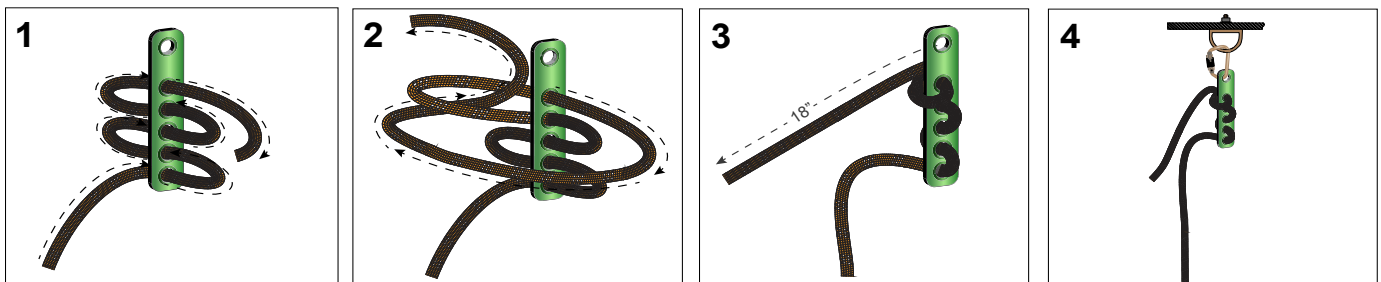
The Drift Rope Grab, when used in rescue operation, will rotate to the HOLD orientation on the rope lifeline simply due to the rescuer's weight. Pull down on Backup Anchor Descent Cord to descend. Placing tension on the Backup Anchor Descent Cord orients the Drift Rope Grab in a more perpendicular position on the rope lifeline. This allows the rope to travel through the grab allowing the user to descend.

13.0 ROPE TERMINATION PLATE INSTALLATION

FS875

If the VLL is unequipped with connecting hardware, the FS875 can be used to provide a safe connection to the anchorage. The FS875 can be used with 5/8" or 3/4" rope. Figure 16 illustrates the installation steps for the FS875.

FIGURE 16 - FS875 ROPE TERMINATION PLATE INSTALLATION



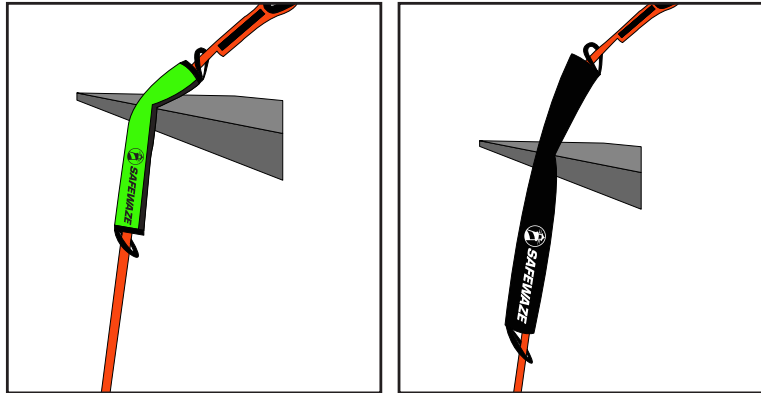
14.0 ROPE PROTECTOR INSTALLATION

018-9000 / 018-9001

Great care should be taken to ensure the lifeline does not come into contact with any type of edge or rough abrasive surfaces. Contact with any edge or rough abrasive surfaces requires abrasion protection (Figure 17).

1. The 018-9000 / 018-9001 rope protectors are suitable for use with any type of rope lifeline.
2. The 018-9000 rope protector is 18" (45.72 cm) long. The 018-9001 rope protector is 36" (91.44 cm) long. Both sizes have sewn in hook and loop fastener material along the entire length of the protector.
3. Place rope into the protector by pulling apart the hook and loop fastener along the length of the protector.
4. After opening up the protector, position the protector on the rope where it will be required, and enclose the rope in the protector by resealing the hook and loop fastener. Each protector has a sewn in web loop at either end for attachment to the rope lifeline. Attachment can be performed with a small bungee style cord, plastic zip tie, or with an alpine butterfly knot and carabiner.
5. Figure 17 indicates the 018-9000 / 018-9001 in typical installation configurations.

FIGURE 17 - EDGE PROTECTOR TYPICAL USE EXAMPLE



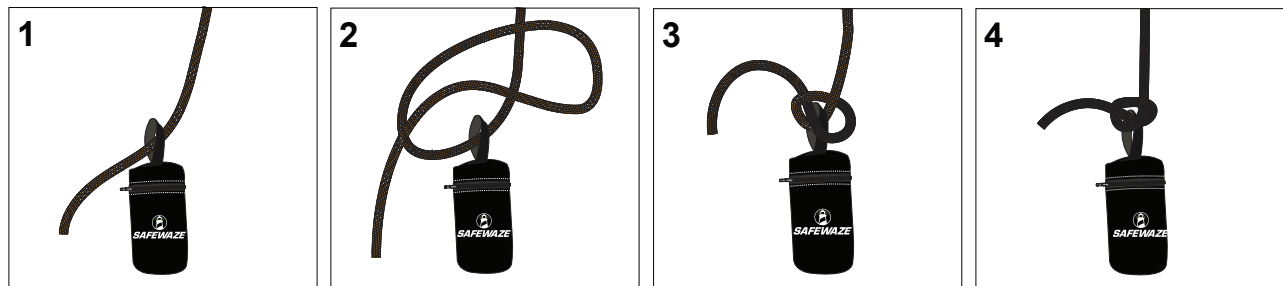
WARNING: AVOID USE OF THIS EQUIPMENT NEAR EDGES OR ABRASIVE SURFACES. IF UNAVOIDABLE, ENSURE PROPER EQUIPMENT IS USED TO PROTECT THE VLL.

15.0 5 LB. ROPE COUNTERWEIGHT INSTALLATION

021-7014

VLLs must remain taut during work operations. Connect the free (non-anchorage) end of the rope lifeline to a minimum 5 lbs. counterweight, such as the 021-7014 (Figure 18). Allow the counterweight to swing freely at the end of the VLL. User must ensure the free end of the VLL is equipped with a stitched termination, appropriate knot, or other method, to prevent the grab from traveling off the end of the VLL.

FIGURE 18 - 021-7014 ROPE COUNTERWEIGHT INSTALLATION



16.0 INSPECTION

USER MUST KEEP INSTRUCTIONS AVAILABLE FOR REFERENCE. Record Date of First Use.

User's inspection must be equal to or greater than those indicated in these instructions.

Rope: Prior to each use, inspect the rope for possible deficiencies/damage including, but not limited to, fraying, cuts, corrosion, chemical exposure, melting or damage due to heat, welding, or flame exposure, unsplicing, unlaying, kinking, knotting, broken or pulled stitches, excessive elongation, excessive soiling, abrasion, alteration, excessive lubrication, excessive aging, excessive wear, and missing or illegible labels.

Hardware: Prior to each use, inspect hardware for possible deficiencies/damage including but not limited to, cracks, sharp edges, deformation, corrosion, chemical exposure, excessive heating, alteration, and excessive wear.

Fall Arrester (Rope Grab): Prior to each use, inspect hardware for possible deficiencies/damage including but not limited to, cracks, sharp edges, deformation, corrosion, chemical exposure, excessive heating, alteration, proper function (no movement in stationary mode, free movement in movement mode), excessive wear, and missing or illegible labels.

Inspect work area to ensure that location is free of any damage including, but not limited to, debris, cracking, rot, decay, structural deterioration, rust, and free from any hazardous materials. Inspect to ensure no elements are missing that may affect the equipment form, fit, or function. User must confirm that work area to be utilized will support the application specific loads as referenced within this instruction manual and as per ANSI and OSHA.

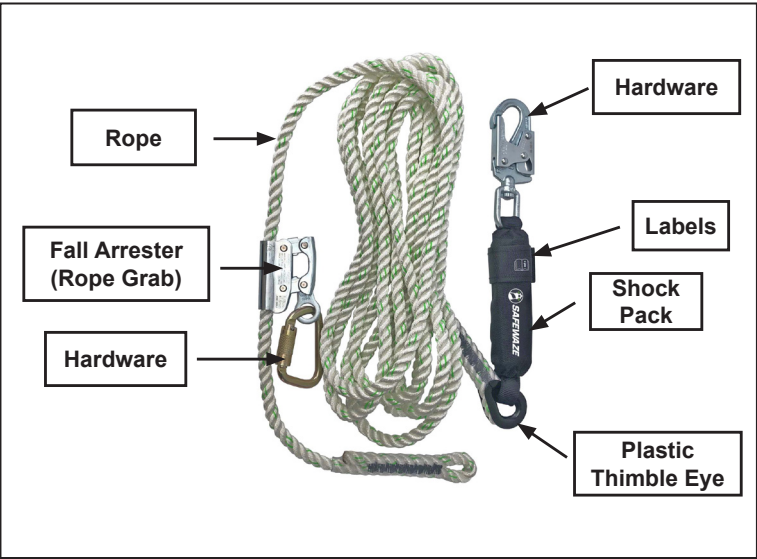
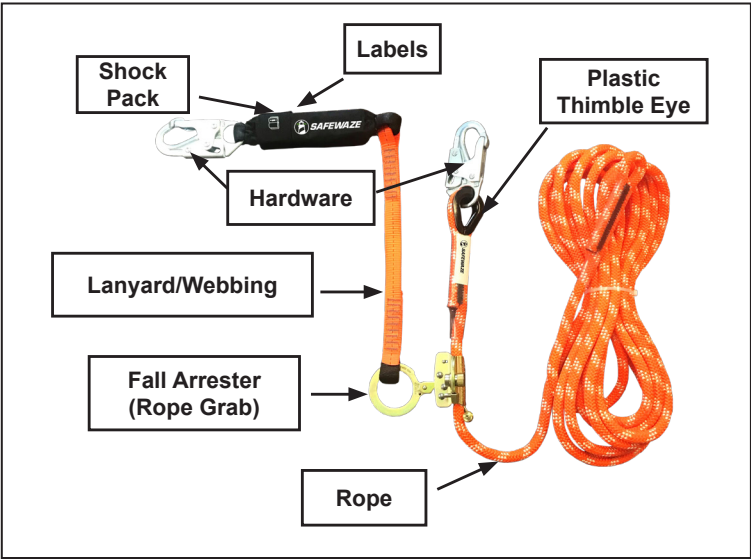
At least annually, a Competent Person other than the user must inspect the Vertical Lifeline and/or Fall Arrester (Rope Grab).

Competent Person inspections must be recorded on the inspection log included in this manual (Page 19) as well as the inspection table labels on each product individually. The Competent Person must place their initials in the block which corresponds with the month and year that the inspection is performed. All individual labels on equipment will be initialed in the same manner.

While conducting inspections, the Competent Person must consider all applications and hazards the equipment may have been exposed to while in use.

User **MUST IMMEDIATELY REMOVE** from service ANY equipment that is found defective, damaged, or exposed to fall arrest forces. Damaged equipment must be destroyed to prevent future use. Cut the VLL into sections and dispose of. Any equipment that is in need of maintenance or repair must be tagged and removed from service. For questions regarding maintenance or repair contact Safewaze.

FIGURE 19 - INSPECTION DIAGRAMS



17.0 MAINTENANCE, CLEANING, & STORAGE

17.1 MAINTENANCE

Remove equipment from use if subjected to fall arrest forces or inspection reveals an unsafe or defective condition. Should an unsafe or defective condition be found, the equipment **MUST** immediately be removed from service. Dispose of damaged equipment per jobsite requirements. For questions regarding damaged equipment, contact Safewaze.

17.2 CLEANING

Use a dry cloth to brush and clean the rope grab. The rope lifeline, lanyard, rope protector can be cleaned with warm water and a mild soap solution. Dry the rope grab with a clean rag. Allow other equipment to air dry. **DO NOT USE HEAT TO DRY EQUIPMENT!**

17.3 STORAGE

Store the Safewaze VLL System in a cool, dry, clean environment out of direct sunlight. Avoid areas where chemical vapors may exist. Thoroughly inspect the system after any period of extended storage.

FIGURE 20 - LABELING

SAFEMAZE
225 Wilshire Ave SW
Concord, NC 28025
(800) 230-0319
www.safemaze.com

MODEL #: 018-7005
DESCRIPTION: V-Line 50' Vertical Lifeline Assembly: Snap Hook, Rope Grab, 3FT Lanyard
SERIAL #: XXXXXXXX
MFG DATE: XXXXXX
LIFELINE DIAMETER: 5/8 in. (15 mm)
COMPONENT(S): Rope Lifeline, Snap Hook, Energy absorbing lanyard
MATERIALS: Copolymer rope, steel hardware, polyester webbing
CAPACITY: ANSI 130-310 lbs. (59-141 kg), OSHA up to 420 lbs. (191 kg)
MAXIMUM DEPLOYMENT DISTANCE: OSHA 42 in. (1067 mm)
MAXIMUM ELONGATION: 7% at 1800 lbs. (8 kN)
AVERAGE ARREST FORCE: 900 lbs. (4 kN)
MINIMUM BREAKING STRENGTH: 5000 lbs. / 2225 kN
Standards: ANSI Z359.15-2014 & Z359.13-2013
OSHA 1926.502 & 1910.66

DO NOT REMOVE LABEL

SAFEMAZE
225 Wilshire Ave SW
Concord, NC 28025
(800) 230-0319
www.safemaze.com

MODEL #: F300SPFS1117-3
DESCRIPTION: Manual Rope Grab Assembly
SERIAL #: XXXXXXXX
MFG DATE: XXXXXX
LANYARD LENGTH: 3 ft. (9 m)
ANCHOR (S): Snap hook, energy absorbing lanyard, fall arrester
COMPONENT(S): Snap hook, energy absorbing lanyard, fall arrester
CAPACITY: ANSI 130-310 lbs. (59-141 kg), OSHA up to 420 lbs. (191 kg)
MAXIMUM DEPLOYMENT DISTANCE: OSHA 48 in. (1219 mm)
AVERAGE ARREST FORCE: 900 lbs. (4 kN)
MINIMUM BREAKING STRENGTH: 5000 lbs. / 2225 kN
Standards: ANSI Z359.15-2014* & Z359.13-2013
OSHA 1926.502 & 1910.66
See manual for specifications

DO NOT REMOVE LABEL

Warning: Maximum User Weight 130-310 lbs.
6ft. 900lbs.
Maximum Free Fall
Average Arresting Force
Forces may increase when cold and/or wet
Read Instructions Before Use

WARNING: This equipment must be inspected prior to each use. Any unit that has been exposed to fall arrest forces must be removed from service. Avoid contact with sharp edges and abrasive surfaces. Only use compatible connections. Do not subject this equipment to physical hazards that include thermal, electrical, and chemical sources. User must read, understand and follow all manufacturer's instructions included with this unit at the time of shipment. Failure to follow these and any of the manufacturer's instructions may result in serious injury or death.

- 1) Number, year and applicable standards
- 2) Logo notifying users to carefully read and understand instructions
- 3) Part number
- 4) Batch number
- 5) Country of origin
- 6) Serial number
- 7) Correct use and maximum capacity
- 8) Product model
- 9) Manufacturer
- 10) Indication for position of the blocking wheel
REST: For use while stationary
GO: For use while moving along VLL / Fall Arrest mode

- 1) Manufacturer
- 2) Logo notifying users to carefully read and understand instructions
- 3) Part number
- 4) Serial Number
- 5) Up Arrow
- 6) Applicable Standards, Capacity, Suitable Rope Data
- 7) Proper Use Diagram
- 8) Warning

- 1) Manufacturer
- 2) Product model
- 3) Green Lock Safety Indicator
- 4) "UP" Arrow
- 5) Blocking Wheel
- 6) Red Button
- 7) Green Lock
- 8) Unlock Direction
- 9) Instructions for Unlocking
- 10) Number, year and applicable standards
- 11) Warnings
- 12) Maximum Weight Capacity
- 13) Batch Number
- 14) Part Number/Date of Manufacture
- 15) Logo notifying users to carefully read and understand instructions
- 16) Overhead anchorage symbol
- 17) "UP" Arrow

**SAFEWAZE**

INSPECTION FORM

VERTICAL LIFELINES

Manufacturer: _____

Model Number: _____

Description: _____

Serial Number: _____

Lot Number: _____

Date of Manufacture: _____

Company: _____

Name of Inspector: _____

Signature: _____

Date of Inspection: _____

In-Service Date: _____

Lifeline ☐ Cable ☐ Kernmantle Rope ☐ Twisted Rope

Material: Length: _____ Diameter: _____

LABELS & MARKINGS

	PASS	FAIL	NOTE
Label (Intact and Legible)			
Appropriate ANSI / OSHA Markings			
Inspections are Current / Up-to-Date			
Date of First Use			

HARDWARE

	PASS	FAIL	NOTE
Connector (Self-Closing and Locking)			
Hook Gate / Rivets			
Corrosion			
Pitting / Nicks			

MATERIAL (ROPE OR CABLE)

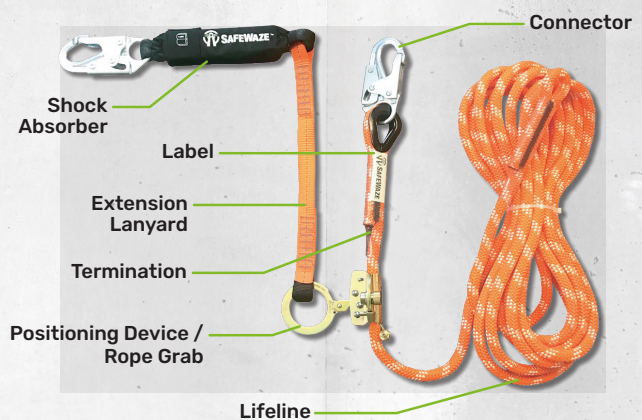
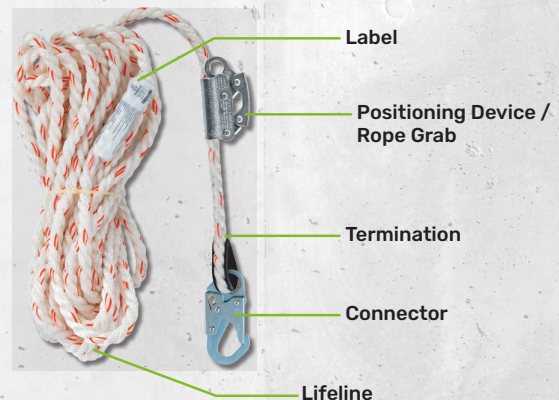
	PASS	FAIL	NOTE
Broken / Missing / Loose Stitching			
Termination (Stitch, Splice or Swage)			
Excessive Wear (Fraying or Broken Strands)			
Cuts / Burns / Holes			
Kinks			
Separation / Bird-Caging			

SHOCK PACK (IF PRESENT)

	PASS	FAIL	NOTE
Cover / Shrink Tube (Don't Cut or Remove)			
Damage / Fraying / Broken Stitching			
Impact Indicator (Signs of Deployment)			

ROPE GRAB (IF PRESENT)

	PASS	FAIL	NOTE
Locks on Lifeline Automatically			
Moves Freely When Disengaged			
No Visible Damage, Rust or Corrosion			

VERTICAL LIFELINE ASSEMBLY**VERTICAL LIFELINE****NOTES**



225 Wilshire Avenue SW, Concord NC 28025

800-230-0319

www.safewaze.com

If equipment fails inspection
IMMEDIATELY REMOVE FROM SERVICE



Inspection Date:	Inspector:	Pass/Fail: ▼▲	Comments/ Corrective Action:



WARNING: FAILURE TO UNDERSTAND AND COMPLY WITH SAFETY REGULATIONS MAY RESULT IN SERIOUS INJURY OR DEATH. REGULATIONS INCLUDED HEREIN ARE NOT ALL-INCLUSIVE, ARE FOR REFERENCE ONLY, AND ARE NOT INTENDED TO REPLACE A COMPETENT PERSON'S JUDGEMENT OR KNOWLEDGE OF FEDERAL OR STATE STANDARDS.



SAFEWAZE

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