

# **Standing Seam Swivel Anchors Manual**





023-4095	Standing Seam SRL Swivel Anchor
023-4096	Standing Seam Swivel Anchor

# Read and understand instructions before using equipment! Do not throw away instructions!

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

# **MIMPORTANT:**

- Please refer to this manual for essential instructions on the use, care, or suitability
  of this equipment for your application. Contact Safewaze for any additional
  questions.
- Record all important product information prior to use. Documentation of all Competent Person annual inspections is required in the Inspection Log.

LISER INFORMATION

0021	CINI ORMATION
Date of First Use:	
Serial Number:	
Trainer:	
User:	

# ► SAFETY INFORMATION AND PRECAUTIONS

- The manufacturer's instructions must be provided to users of this equipment.
- The user must read, understand, and follow all safety and usage information contained within this manual.
- The user must safely and effectively use the Standing Seam Anchor and all equipment used in conjunction with the anchor.
- Failure to follow all safety and usage information can result in serious injury or death.



# **△Warnings**:

Regulations included herein are not all-inclusive, are for reference only, and are not intended to replace a Competent Person's judgment or knowledge of federal or state standards.

# The warnings indicated below are designed to minimize risk associated with the use of the Standing Seam Anchor.

- Users should consult with their doctor to verify ability to safely absorb the forces of a fall arrest event. Fitness level, age, and other health conditions can greatly affect an individual's ability to withstand fall arrest forces. Women who are pregnant and individuals considered minors must not use any Safewaze equipment.
- Do not alter or misuse equipment. Only Safewaze, or entities authorized in writing by Safewaze, may make repairs to Safewaze fall protection equipment.
- A Competent Person must conduct an analysis of the workplace and anticipate
  where workers will be conducting their duties, the route they will take to reach their
  work, and any existing and potential fall hazards. The Competent Person must
  choose the fall protection equipment to be utilized. Selections must account for all
  potential hazardous workplace conditions. All fall protection equipment should be
  purchased in new and unused condition.
- If work is conducted in a high heat environment, ensure that Arc Flash or other suitable fall protection equipment is utilized.
- Use of a body belt is not authorized for fall arrest applications.
- Work directly under the anchor point as much as possible to minimize swing fall hazards
- The user must ensure that there is adequate fall clearance when working at height.
- Anchors that are exposed to fall arrest forces must be immediately removed from service and destroyed.
- Training of Authorized Persons to correctly install, inspect, disassemble, maintain, store, and use equipment must be provided by a Competent Person. Training must include the ability to recognize fall hazards, minimize the likelihood of fall hazards, and the correct use of personal fall arrest systems.
- Equipment designated for fall protection must never be used to lift, hang, support, or hoist tools or equipment unless specifically certified for such use.
- · Avoid using the anchor in applications where engulfment hazards exist.
- Avoid moving machinery, sharp and/or abrasive edges, and any other hazard that could damage or degrade the component.
- Utilize extra caution to keep lifeline free from any obstructions including, but not limited to, surrounding objects, tools, equipment, moving machinery, co-workers, yourself, or possible impact from overhead objects.
- Ensure the roof sheathing is secured to a structural member that is capable of sustaining static loads required by this device prior to attachment.
- Only use fasteners approved by Safewaze for use with this device.
- · Always verify the device seam clamps are compatible with the roof seam.



# **TABLE OF CONTENTS**

1.0 ▶ Introduction	5
2.0 ▶ Intended Use	5
3.0 ▶ Applicable Safety Standards	5
4.0 ▶ Worker Classifications	5
5.0 ▶ Rescue Plan	6
6.0 ▶ Product Limitations	6
7.0 ► Allowed Anchorage Applications	7
8.0 ▶ Product Specifications	8
9.0 ▶ Fall Clearance	8
10.0 ▶ Compatibility of Connectors	11
11.0 ► Making Connections	12
12.0 ▶ Installation of Standing Seam Anchor	12
13.0 ▶ Inspection	16
14.0 ▶ Maintenance	18
15.0 ▶ Labels	19
16.0 ▶ Annual Inspection Form	20



#### ► 1.0 INTRODUCTION

Thank you for purchasing a Safewaze Standing Seam Swivel Roof Anchor. 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.

Both anchors are designed for installation on a sloped or flat standing seam roof with seam spacing from 24 to 40 inches (101.6 cm). The 023-4095 Standing Seam SRL Swivel Anchor acts as an anchorage connector for fall protection equipment and can be used with energy absorbing lanyards, Self-Retracting Lifelines (SRLs), Vertical Lifelines (VLLs), and Horizontal Lifelines (HLLs). The 023-4095 also boasts a mounting device for Leading Edge Self-Retracting Lifelines (Class 2 SRLs).

The 023-4096 Standing Seam Swivel Anchor acts as a single anchorage connector for fall protection equipment and can be used with energy absorbing lanyards, VLLs, and Personal Self-Retracting Lifelines (SRL-Ps).

#### ► 2.0 INTENDED USE

The equipment covered in this manual is intended for use as part of a complete personal fall protection system. Use of this equipment for any other purpose including, but not limited to, sports or recreational activities, non-approved material handling applications, or other action not described in these 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 must only be used by trained personnel in workplace applications. If the anchor is used for training, a secondary fall protection system must be used so the trainee is not exposed to accidental fall hazards.

# **▶ 3.0 APPLICABLE SAFETY STANDARDS**

When used according to instructions, this product meets **OSHA 1926.502**, **1910.140**, **and 1910.66** regulations. Applicable standards and regulations depend on the type of work being done and may include state-specific regulations. Refer to local, state, and federal requirements for additional information on the governing of occupational safety regarding Personal Fall Arrest Systems (PFAS).

#### ► 4.0 WORKER CLASSIFICATIONS

Read and understand the definitions of those who work in proximity of, or may be exposed to, fall hazards:

**Qualified Engineer:** A person with a Bachelor of Science in Engineering degree 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:** 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:** 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:** 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 Person or Engineer to supervise the jobsite and ensure safety regulations are met.

# ► 5.0 RESCUE PLAN

Prior to the use of this equipment, employers must create a rescue plan in the event of a fall and provide the means to implement the plan through training. The rescue plan must be specific to the project. The rescue plan must allow for employees to rescue themselves or be promptly rescued by alternative means.

This plan must be communicated to/understood by all equipment users, authorized persons, and rescuers. Rescue operations may require specialized equipment beyond the scope of this manual. Every user must be trained in the inspection, installation, operation, and proper usage of their Rescue Equipment and Rescue Plan. See ANSI Z359.4-2013 for specific rescue information. Immediately seek medical attention in the event a worker suffers a fall arrest incident.

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

#### ► 6.0 PRODUCT LIMITATIONS

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

- Capacity Range: ANSI 130-310 lbs. (59-141 kg), OSHA up to 420 lbs.
- 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. (2267.9 kg) 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 one of the 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. (2267.9 kg) per user attached. Or, anchorages for attachment should be designed, installed, and used as part of a complete PFAS which maintains a safety factor of at least two and is under the supervision of a Qualified Person.



- Locking Speed: The nature of this equipment requires a clear fall path to ensure
  the SRL will lock in the event of a fall. Working in obstructed fall paths, cramped
  areas, or on moving materials like sand and grain, may not allow the user's body
  to gain enough speed buildup to cause the SRL to engage and lock in the event of
  a fall.
- Free Fall: The maximum allowable free fall is 6 feet. Limit free fall distance by keeping anchorage in-line with work area.
- Swing Falls: As the user moves laterally away from an overhead anchor point, the
  risks related to swing falls increase. The force of striking an object involving swing
  fall can in some instances generate more forces than a fall with the user wearing
  no fall protection equipment. Minimize swing falls by working as directly below the
  anchorage point as possible.
- Fall Clearance: Fall Clearance (FC) is the total combined values of the Rope Elongation, Lanyard Length, Deceleration Distance, Harness Stretch, Height of Worker, and Safety Factor. Safewaze uses a 2 ft. Safety Factor. The Safety Factor includes fall arrester slippage. Refer to the chosen PFAS system product manual when calculating fall clearance.

Additional Fall Clearance is required for falls from a kneeling or crouched position. If a Swing Fall hazard exists, the total vertical fall distance will be greater than if the user had fallen directly under the anchor point. This manual provides information regarding Swing Fall hazards and additional Fall Clearance Requirements in Section 9.

- Hazards: Extra precautions should be taken if this equipment is used in an
  environment where hazards exist. Hazards can include, but are not limited to,
  moving machinery, high voltage equipment or power lines, caustic chemicals,
  corrosive environments, toxic or explosive gases, or high heat. Avoid working in an
  area where overhead equipment or personnel could fall and contact the user, fall
  protection equipment, or the lifeline. Areas where the user's lifeline may cross or
  tangle with the lifeline of another user should be avoided. Do not allow the lifeline
  to pass under arms or between the legs.
- Sharp Edges: Safewaze Class 2 SRLs are designed for use in both Overhead and Leading Edge Environments. Should a specific work area have extremely sharp edge(s) that may come into contact with the lifeline constituent of the SRL, a Class 2 SRL is required.

#### > 7.0 ALLOWED ANCHORAGE APPLICATIONS

Personal Fall Arrest: Safewaze Anchors are designed as an anchor point to support a maximum of 1 PFAS when utilized for fall protection applications. The structure to which the anchor is attached must withstand loads applied in the directions permitted by the system of at least 5,000 lbs. (22 kN) or be designed with a safety factor of two to one. Maximum allowable free fall is based on the connector used.



**Restraint:** Safewaze Anchors are authorized for use in Restraint applications. The structure to which the anchor is attached must withstand loads applied in the directions permitted by the system of at least 1,000 lbs. NO free fall is permitted. Restraint systems may only be used on surfaces with slopes up to 4/12 (vertical/horizontal). For Restraint applications, the allowable attachment points to the harness are Dorsal, Front/Sternal, Side, and Shoulder D-rings.



**Work Positioning:** Safewaze Anchors are authorized for use in Work Positioning applications. Work Positioning allows a worker to be supported during suspension while freeing both hands to conduct work operations. The structure to which the Anchor is attached must withstand loads applied in the directions permitted by the system of at least 3,000 lbs. Maximum allowable free fall is 2 ft. For positioning applications, the allowable attachment points to the harness are the Side D-rings.



Rescue/Confined Space: Safewaze Anchors are authorized for use in Rescue/Confined Space applications. Rescue systems are utilized to safely recover a worker from a confined location or after exposure to a fall. Composition of rescue systems can vary based upon the type of rescue involved. The structure to which the anchor is attached must withstand loads applied in the directions permitted by the system of at least 3,100 lbs. NO free fall is permitted for rescue scenarios. For confined space scenarios, maximum allowable free fall is based on the PFAS used. For these applications, the allowable attachment points to the harness are Dorsal, Front/Sternal, and Shoulder D-rings.



023-4095 is suitable for use with SRL-Ps and Horizontal Lifelines. 023-4096 is NOT suitable for use with Horizontal Lifelines.

## ► 8.0 PRODUCT SPECIFICATIONS

- Single Point Anchorage Connector with 360° Swivel.
- 023-4095 can be used with Horizontal Lifelines.
- Minimum Breaking Strength (MBS): 3,600 lbs.
- The anchors adjust from 24" to 40" across roof panels.
- Roof Gauge: Minimum 26 roof gauge required for installation of anchors.

TABLE 1: MATERIALS		
Crossarm	Powder Coated Steel	
Adjustable Legs	Powder Coated Steel	
S-5-U Clamps	Aluminum	
Detent Pins	Stainless Steel	
SRL Cradle (023-4095)	Powder Coated Steel	
Yellow D-Ring (023-4096)	Powder Coated Steel	

### ▶ 9.0 FALL CLEARANCE

Always select an SRL/lanyard and anchor point location that limits free fall and swing fall as much as possible. Refer to the chosen PFAS system manuals for information on fall clearance. A free fall of more than 6 ft. could cause excessive arrest forces that could result in serious injury or death.

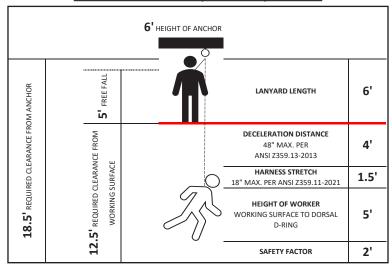
 Fall Clearance: There must be sufficient clearance below the anchorage connector to arrest a fall before the user strikes the ground or an obstruction.
 When calculating fall clearance, account for all applicable factors. A Competent Person must reference the entire system's components to calculate Fall Clearance.



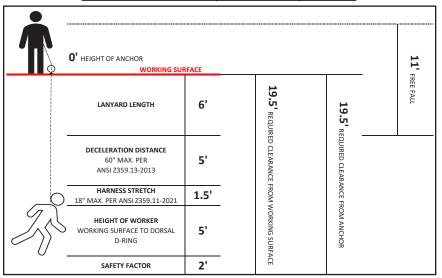
#### THE BELOW DIAGRAMS ARE ONLY EXAMPLES.

Note: Numbers used in these examples are based on ZERO offset and setback with the anchor directly overhead or below, to represent an in-line Fall Clearance calculation. Consult with a Competent Person when working in different scenarios and when using non-Safewaze equipment.

#### 6' FREE FALL LANYARD (OVERHEAD) EXAMPLE

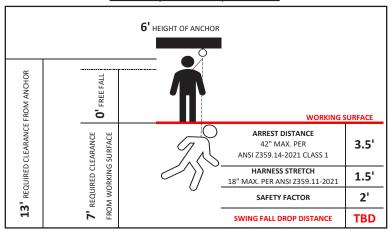


#### 12' FREE FALL LANYARD (BELOW D-RING) EXAMPLE





# **CLASS 1 (OVERHEAD) EXAMPLE**



# **CLASS 2 (BELOW D-RING) EXAMPLE**

O¹ HEIGHT OF ANCHOR	SURFACE		5' FREE FALL	
ARREST DISTANCE REFER TO MANUAL FOR PUBLISHED ARREST DISTANCES PER ANSI Z359.14-2021 CLASS 2	8'		16.5' REQUIRED CLE	16.5' REQUIRE
HARNESS STRETCH 18" MAX. PER ANSI Z359.11-2021	1.5'	-	ARANCI	O CLEAF
HEIGHT OF WORKER WORKING SURFACE TO DORSAL D-RING	5'	-	REQUIRED CLEARANCE FROM WORKING SURFACE	REQUIRED CLEARANCE FROM ANCHOR
SAFETY FACTOR	2'	-	NG SUF	NCHOR
SWING FALL DROP DISTANCE	TBD	-	₹FACE	



 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, or 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 (Figure 1). Ensure a Competent Person includes swing fall in calculations if the hazard exists.

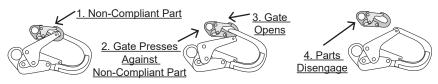
FIGURE 1: SWING FALL



# ► 10.0 COMPATIBILITY OF CONNECTORS

- Safewaze equipment is designed for, and tested with, associated Safewaze
  components or systems. If substitutions or replacements are made, ensure
  all components meet the applicable ANSI requirements. Read and follow
  manufacturer's instructions for all components and subsystems in your PFAS. Not
  following this guidance may jeopardize compatibility of equipment and possibly
  affect the safety and reliability of the system.
- 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 kN).
- Connectors must be compatible with the anchorage or other system components.
- Do not use equipment that is not compatible. Non-compatible connectors may unintentionally disengage (Figure 2).
- · Connectors must be compatible in size, shape, and strength.
- · Self-locking snap hooks and carabiners are required by OSHA guidelines.
- Some specialty connectors have additional requirements. Contact Safewaze if you have any questions about compatibility.

#### FIGURE 2: 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.

### ► 11.0 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 (hooks, carabiners, and D-rings) are designed to be used only as specified in each product's manual. See Figure 3 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).
- In a false engagement, where features that protrude from the snap hook or carabiner catch on the anchor, and without visual confirmation seems to be fully engaged to the anchor point.
- · 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 3: INAPPROPRIATE CONNECTIONS**











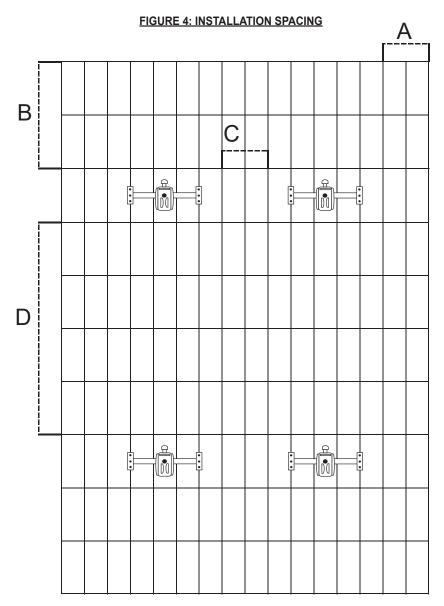


Large throat snap hooks must not be connected to standard size D-rings or similar objects which will result in a load on the gate if the hook or D-ring twists or rotates, unless the snap hook complies with ANSI Z359.1-2007 or ANSI Z359.12 and is equipped with a 3,600 lb. (16 kN) gate.

# ► 12.0 INSTALLATION OF STANDING SEAM ANCHOR

Prior to the installation of the anchor, a Competent Person must determine that the installation location is capable of supporting intended loads on the anchor. Additionally, reference Figure 4 for spacing requirements when installing the anchor.





A: The anchor must be installed at least two panel section widths away from any roof edge.

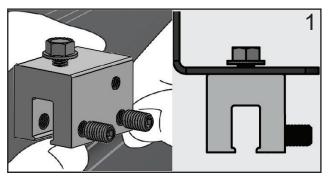
**B:** The anchor must be installed at least two panel section lengths away from any roof edge.

**C:** If installing more than one anchor, the anchor must be installed at least two panel section widths away from any other installed anchor.

**D:** If installing more than one anchor, the anchor must be installed at least four panel section lengths away from any other installed anchor.

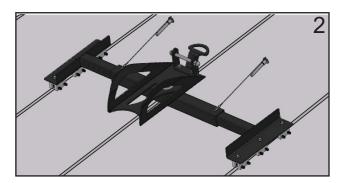
# Installation Steps:

- Partially loosen the S-5-U clamp sets crews in order to slide each clamp down onto the desired standing seams.
- 2. Align the anchor between the chosen roof seams with the swivel cradle of 023-4095 or captive eye of 023-4096 centered between them.
- Adjust the width of the anchor by removing the detent pins from the crossarm and sliding the adjustable legs in or out of the crossarm to achieve the proper size. Replace the detent pins.
- 4./5. Properly torque the S-5-U clamps. Inspect the torque of the clamps prior to each use. Do not overtighten. The hex bolts should be torqued to 160 in-lb. See Table 2 for torque settings of sets crews.



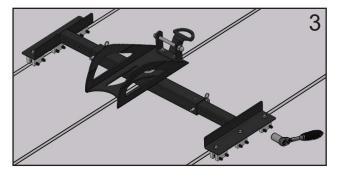
**Note:** Both setscrews must be installed in a clamp and all clamps must be utilized.

The setscrews are designed to engage the seam as shown. The setscrews are to be opposite the seam's fold but can be moved from one side of the clamp to the other if needed.

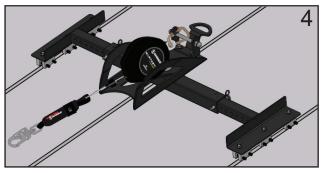


The adjustable legs can slide between 24" to 40". Center the middle of the anchor between the chosen seams.



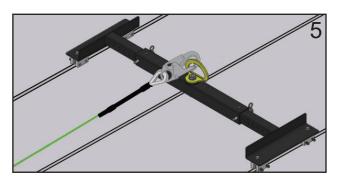


After replacing the detent pins, torque the clamps to the recommended settings (Table 2).



**Note**: To use with a VLL, lanyard, or SRL-P, the connection point of the chosen fall protection device attaches to the captive eye of the anchor, with the energy absorbing end connected to the dorsal D-ring of the user's PFAS harness.

023-4095:
To use with an SRL, install the SRL with an ANSI carabiner to the anchor bolt. The energy absorbing end of the SRL attaches to the dorsal D-ring of the user's PFAS harness.



023-4096 To use with a lanyard, VLL, or SRL-P, the connection point of the chosen fall protection device attaches to the yellow D-ring of the anchor. The energy absorbing side of the device attaches to the dorsal D-ring of the user's PFAS harness.



TABLE 2: TORQUE SETTINGS			
22 GA Other			
Inch Pounds	160-180	130-150	
Foot Pounds	13-15	11-12.5	
Nm	18-20	15-17	

Note: Replacement clamps are available (023-4101) and sold separately if needed.

## ► 13.0 INSPECTION

The user must keep instructions available for reference and record the date of first use on Page 2.

The user must immediately remove the system from service if defects or damage are found, or if exposed to forces of fall arrest.

#### Work Area:

- Inspect the work area to ensure the location is free of any damage including, but not limited to, debris, cracking, rot, decay, structural deterioration, rust, and any hazardous materials.
- A Competent Person must determine that the installation location to be utilized will support the intended loads.

#### Frequency:

- A Competent Person, other than the user, must inspect the Standing Seam Anchor at least once annually.
- While conducting inspections, the Competent Person must consider all applications and hazards that the equipment may have been subjected to while in use.
- Competent Person inspections must be recorded in the Inspection Log included
  in this manual (Page 20), 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 the equipment will be initialed in the same manner.

#### Directions:

- Prior to each use, inspect the anchor for possible deficiencies including, but not limited to, missing parts, corrosion, deformation, pits, burrs, rough surfaces, sharp edges, cracking, rust, paint buildup, excessive heating, alteration, and missing or illegible labels. Inspect all components of the device including the crossarm, adjustable legs, swivel cradle, captive eye, detent pins, and S-5-U clamps and setscrews
- Prior to each use, the user must inspect and verify that each individual component (Figures 5 and 6) of the anchor is safe for use:
  - 1. Inspect the crossarm for bending or wear.
  - Ensure the S-5-U clamps and setscrews, adjustable leg detent pins, and all hardware are present.
  - 3. Confirm the bolts are tight on the center of the d-ring and swivel cradle (023-4095) freely swivels 360 degrees.
  - 4. Re-torque the S-5-U clamps (Table 2).



FIGURE 5: 023-4095 COMPONENT INSPECTION

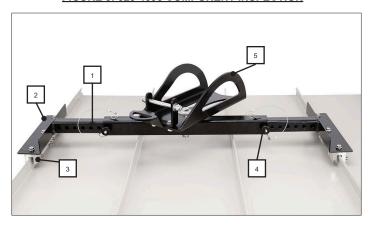
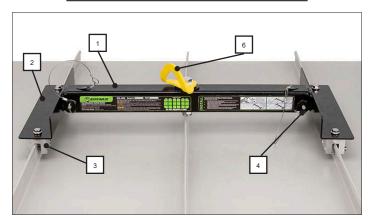


FIGURE 6: 023-4096 COMPONENT INSPECTION



Crossarm	1
Adjustable Legs	2
S-5-U Clamps	3
Detent Pins	4
Swivel Cradle (023-4095)	5
Captive Eye (023-4096)	6

#### ► 14.0 MAINTENANCE

#### Repairs:

Only Safewaze, or entities authorized in writing by Safewaze, may make repairs to Safewaze fall protection equipment.

#### Cleaning:

The anchor can be cleaned with water and mild soap. The user should remove all dirt, possible corrosives, and contaminants from the system prior to, and after, each use. Never use any type of corrosive substance to clean the system.

Excess water should be blown out with compressed air. Hardware can be wiped off with a clean, dry cloth. Do not store system if wet or damp. Allow equipment to fully dry before being stored.

# Storage:

Prior to installation, store the anchor in a cool, dry area where it will not be exposed to extreme light, extreme heat, excessive moisture, or possibly corrosive chemicals or materials.

# Lifespan:

The working life of the anchor is determined by work conditions, care, and inspection provided. So long as the system and all components pass inspection, it may remain in service.

#### Disposal:

Dispose of the anchor if inspection reveals an unsafe or defective condition. If damaged and unserviceable, the system should be destroyed so as not to allow accidental re-use.



# ▶ 15.0 LABELS

# 023-4095:





# 023-4096:





<b>B</b> SAFE	<b>EWAZE</b>		INSPECTION LOG ANNUAL FORM
Inspection Date:	Inspector:	Pass/Fail:	Comments/ Corrective Action:



Address: 225 Wilshire Ave SW, Concord, NC 28025

Phone: (800) 230-0319 Fax: 704-262-9051 Email: info@safewaze.com

Website: safewaze.com