USER INSTRUCTION MANUAL: SWIVEL ANCHOR

5K Swivel Anchor: N-8232050
10K Swivel Anchor: N-8232100
Accessories: Puck, Bolt, Back Plate

WARNING: *This product is part of a personal fall arrest, restraint, work positioning, personnel riding, or rescue system. The user must follow the manufacturer's instructions for each component of the system. These instructions must be provided to the user of this equipment. Serious injury during fall arrest can be prevented by using compliant fall protection and emergency rescue systems. Users must understand the manufacturer's instructions and be trained in the proper use of this product per OSHA 29 CFR 1910.66 and 1926.503 or applicable local standards. Manufacturer's instructions must be followed for proper installation, use, care, and maintenance of this product. These instructions must always be available for reference. Alterations or misuse of this product or failure to follow instructions may result in serious injury or death.*

IMPORTANT: *This manual is intended to meet the manufacturer's instructions as required by the American National Standard Institute Z359.18. This manual must always be available to the user and is only permitted to be removed by the user of this equipment. For proper use refer to supervisor, user instructions, or contact the manufacturer. Do not alter or intentionally misuse this equipment.*

1.0 WARNINGS REGARDING THE SWIVEL ANCHOR:

- To safely use this equipment, the user must have a sound mind and body. The user should also consult a physician to ensure they are clear of any medical conditions that may influence their ability to safely use this equipment in normal and emergency situations.
- Users must be trained in accordance with OSHA 29 CFR 1910.66 requirements regarding the safe use of the system and its components before using a personal fall arrest system.
- Use only with ANSI/OSHA compliant personal fall arrest or restraint systems. The anchorage must have the strength capable of supporting a static load, applied in the directions permitted by the system, of at least 5,000 lbf (22kN) in the absence of certification.
- Users must be equipped with the means to limit the maximum dynamic forces exerted on them during fall arrest to a maximum of 1,800 lbf (8kN).
- Before use, a competent engineer or other qualified person must verify that this anchorage connector is compatible with the structural and operational characteristics of both the installation location and the system that it will be connected to.
- Before use, the anchorage connector must be inspected for a variety of factors, including wear, damage, and other deterioration. Components that do not pass this inspection must be immediately removed from service in accordance with the requirements of OSHA 29 CFR 1910.66 and 1926.502.
- Immediately after a fall, the anchorage connector must be removed from service and destroyed.
- Before use, the complete fall protection system (including all components, calculating fall clearance, and swing fall) should be planned. Ensure the anchorage connector is positioned to minimize the potential for falls and the potential distance during use.
- Users must have a rescue plan, and the means on hand to implement it, that either: ensures the prompt rescue of users in the event of a fall or assures that users are able to rescue themselves.

2.0 WARNINGS REGARDING WORKING AT HEIGHT:

- Before use, consult your doctor to ensure that your physical condition allows you to safely withstand the impact of all forces involved with working at height.
- Do not use any fall protection equipment that has failed inspection.
- Ensure all connections are compatible, and that all subsystem combinations do not interfere with the function of this fall arrest system.
- Ensure that a written rescue plan, and the means to implement it, are always available when using this equipment.
- Immediately seek medical attention for the affected party if a fall event occurs.
- When inspecting, installing, or using the device / system, always ensure that you wear appropriate Personal Protective Equipment.
- Never expose workers to fall hazards during training.

IMPORTANT: *Immediately remove equipment from service if it has been subject to a fall arrest forces OR has failed inspection (see Section 8 for inspection procedures).*

3.0 LIMITATIONS:

Do not use the Swivel Anchor outside its limitations, or for any purpose other than that for which it is intended.

3.1 WEIGHT CAPACITY: As per ANSI, the anchorage connector is designed for single user, with a capacity up to 310 lbs (140 kgs), including clothing, tools, equipment, etc.

3.2 PERMISSABLE DIRECTIONS OF LOADING: The anchorage connector may not be subject to forces outside of allowable range shown in Figure 1.

3.3 TEMPERATURE: The anchorage connector is designed for use in temperatures ranging from -30ºF to +130ºF (-34°C to +54°C).

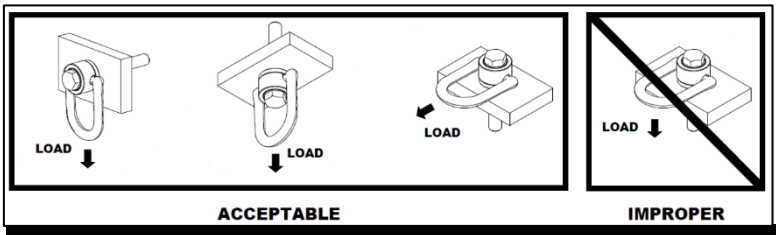


Figure 1: Proper Loading Diagram

3.4 COMPATIBILITY:

The Swivel Anchor should only be coupled to compatible connectors. According to OSHA 29 CFR 1926.50 requirements, snaphooks are prohibited from being engaged to objects unless two requirements are met: it must be a locking type snaphook, and it must be "designed for" making such a connection. When a snaphook is "designed for" a connection, it means the manufacturer specifically designed said snaphook to connect to the equipment listed.

According to ANSI Z359.0-2007, rollout describes a process by which a snaphook or carabiner unintentionally disengages from another connector or the objects to which it is coupled. The following connections must be avoided, since they can result in rollout if a non-locking snaphook is used:

- Direct connection of a snaphook to horizontal lifeline.
- Two (or more) snaphooks connected to one D-ring.
- Two snaphooks connected to each other.
- A snaphook connected back on its integral lanyard.
- A snaphook connected to a webbing loop or webbing lanyard.
- Improper dimensions of the D-ring, rebar, or other connection point in relation to the snaphook dimensions that would allow the snaphook keeper to be depressed by a turning motion of the snaphook.

3.5 MAKING CONNECTIONS: This equipment should only be used with self-locking connectors (ie: snap hooks, rebar hooks, and carabiners) that are suitable for each application. All connectors should be compatible in size, shape, and strength; do not use equipment that is not compatible. Before use, ensure all connectors are fully closed and locked. Connectors are designed for use only as specified in this manual.

3.6 PERSONAL FALL ARREST SYSTEMS (PFAS): Typical components of a PFAS include a properly fitted and adjusted Full Body Harness (FBH); an energy absorbing connecting device, such as an Energy Absorbing Lanyard (EAL) or SRD, or a fall arrester connecting subsystem that is attached to the dorsal D-ring of an FBH; and an anchorage. Ensure all PFAS used with this equipment meet OSHA requirements. As required by OSHA, the PFAS must be able to arrest the user's fall with a maximum arresting force (MAF) of 1,800 lbs (8 kN) and limit free fall to 6 ft (1.8 m).

3.7 PFAS ANCHORAGE STRENGTH: Anchorages selected for use in a PFAS must be able to sustain a static load applied in the direction permitted by the PFAS of at least:

- Two times the maximum arrest force permitted (when certification exists), or
- 5,000 lbs. (22.2 kN) in the absence of certification.

When selecting an anchorage location, users must consider a variety of factors including structural strength, obstructions in the fall path, and swing fall hazards. In certain situations, a qualified person can determine that a given structure is able to withstand the applied MAF of the PFAS with a safety factor of at least two.

3.8 FREE FALL: As specified by ANSI Z329.1., the free fall of any PFAS system used with this equipment must be limited to 6 feet. For more information, refer to the PFAS manufacturer's instructions. Restraint systems, personnel riding systems, and rescue systems used with this equipment must not allow any vertical free fall. Work positioning systems must limit free fall to 2 feet or less.

3.9 FALL CLEARANCE: The user should always assess their working environment to ensure there is sufficient clearance below them to arrest a fall before they strike the ground or other obstruction. The clearance required is dependent on the following factors:

- Deceleration distance
- Free fall distance
- Worker height
- Movement of harness attachment element
- Elevation of d-ring anchorage connector
- Connecting Subsystem Length

For more information, refer to the PFAS system manufacturer's instructions.

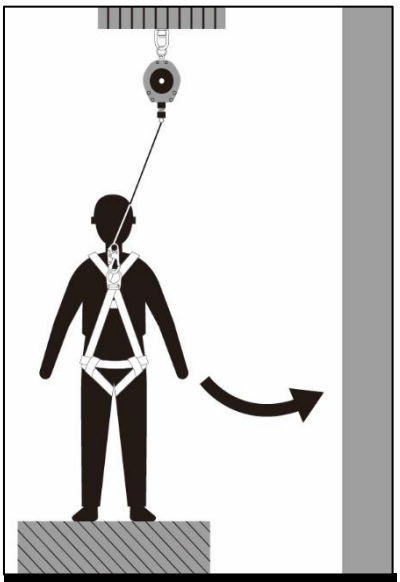


Figure 2: Swing fall.

3.10 SWING FALLS: As shown in Figure 2, swing falls happen when the anchorage point is not directly above the point at which a fall occurs. The resultant force of striking an object in a swing fall may cause serious injury or death. If injury could occur, swing falls are not permitted. To minimize swing falls, the user should work as close to the anchorage point as possible. If the PFAS system involves an SRD or other variable length connecting subsystem, swing falls will significantly increase the clearance required.

3.11 USE LIMITATIONS:

- Do not expose the anchorage connector to chemicals or harsh solutions that may have a harmful effect.
- Do not alter or modify this anchorage connector.
- Contact between any component of a fall protection, work positioning, rope access, or rescue system and nearby moving machinery, electrical hazards, sharp edges, or abrasive surfaces may cause equipment failure, personal injury, or death.
- Users must be trained by a "competent person" as defined by OSHA 29 CFR 1926.32(f) before installing / using this equipment.
- Do not remove the labeling from this product. (see Appendix A for images of labels)
- Before installation, all placements must be approved by a competent engineer or other qualified person. Additional considerations may apply depending on anchorage type and fastening option utilized for installation.
- This anchorage connector should not be used as part of a horizontal lifeline system that is not compatible with / has not been designed for 5,000-lbf anchorage connectors.
- This anchorage connector is only for personal fall protection, not for lifting equipment.

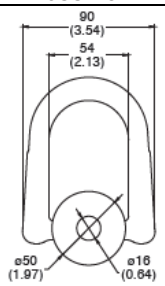
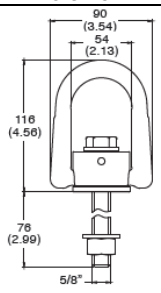
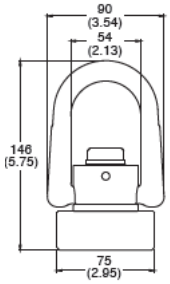
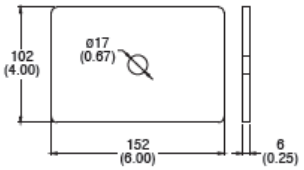
4.0 TRAINING

Installation of this equipment must be performed by persons with training in its correct application and use. The user bears full responsibility for understanding the contents of these instructions and assuring they are trained in the correct care and use of this equipment, such as the operating characteristics, application limits, and consequences of improper use. During training, the user must not be subjected to a fall hazard.

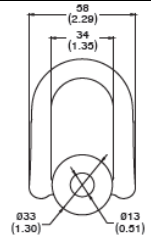
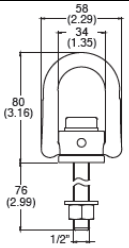
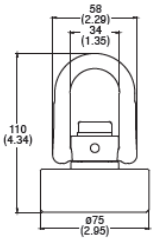
5.0 SPECIFICATIONS:

5.1 PART NUMBERS, DIMENSIONS:

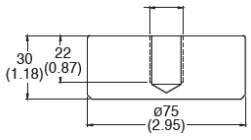
5.1.1 10K Version:

Part Number	N-8232100B	N-8232100A	N-8232100W	N-8232100TB
Description	Steel Swivel Anchor Base 10K	Steel Swivel Anchor W/ Bolt 10K	Steel Swivel Anchor & Puck Assembly 10K	Back Plate
Dimensions (mm)				

5.1.2 5K Version:

Part Number	N-8232050B	N-8232050A	N-8232050W
Description	Steel Swivel Anchor Base 5K	Steel Swivel Anchor W/ Bolt 5K	Steel Swivel Anchor & Puck Assembly 5K
Dimensions (mm)			

5.1.3 Puck & Bolt:

Part Number	N-8232100WA	N-8232050WA	
Hole Diameter (A)	1/2"	5/8"	

5.2 SPECIFICATIONS:

Version	Minimum Breaking Strength (MBS)	Working Load	Regulatory Compliance	Material
10K	10,000-lbf (44.5 kN)	2,000-lbf (907 kg)	Meets or exceeds ANSI Z359.18 Type A, ANSI Z359.7-2011 OSHA 1926.502	Zinc Plated Steel
5K	5,000-lbf (22.3 kN)	1,000-lbf (454 kg)		

6.0 APPLICATIONS:

WARNING: *Swing fall may occur when the worker is not directly under anchor point.*

6.1 PURPOSE: The Swivel Anchor is designed to be used as part of a Personal Fall Arrest System (PFAS). The structure to which the Swivel Anchor is attached must be capable of supporting loads as detailed in Section 3.2. This anchor may be installed overhead, vertically, or horizontally. If the anchor is installed below the FBH dorsal d-ring, a PFAS designed for extended free fall scenarios must also be used. When properly installed, the anchors may be used as part of a PFAS, restraint or work positioning system.

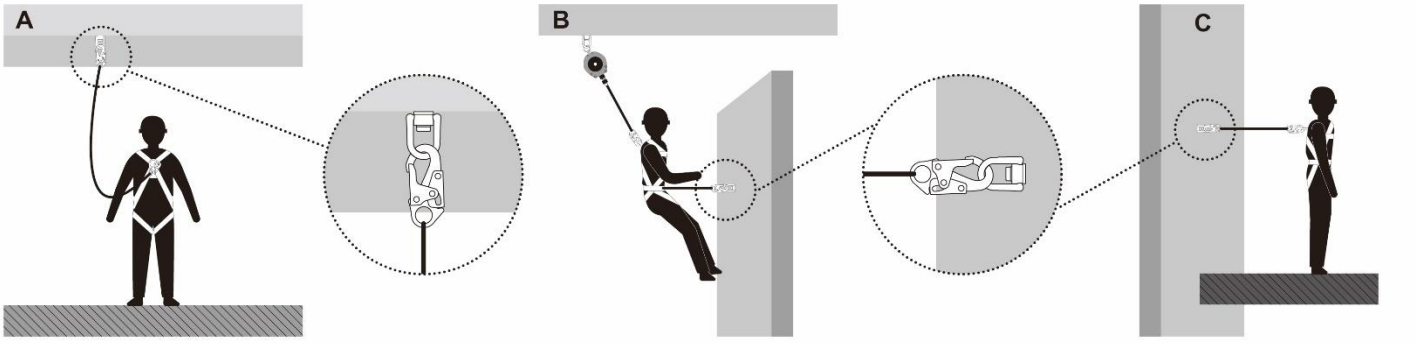
6.2 APPLICATION LIMITS: It is imperative that the Swivel Anchor is installed to specifications detailed in this manual – specifically to ensure the correct tools are used for installation, that the hole depth and diameter conform are within requirements, and that the substrate is strong enough to support the intended loads. Additionally, care should be taken when reusing the anchor in a previously drilled hole and/or if the anchor is difficult to remove due to being 'lodged' within the hole. Regardless, A COMPETENT PERSON MUST INSPECT FOR PROPER INSTALLATION AND REMOVAL OF THIS SWIVEL ANCHOR.

6.3 APPROVED APPLICATIONS: The Swivel Anchor may be used for the following applications, as detailed in the below figures. Note that this list is intended to anticipate the most common applications of this anchor and is not exhaustive.

A. Personal fall arrest – the Swivel Anchor is designed to be used as single person anchor point for a personal fall arrest system, including horizontal lifelines. Use for the purpose of suspension is prohibited.

B. Work positioning – the Swivel Anchor may be used as a component of a work positioning system to support the user at a work position. Work positioning systems typically include an FBH with integrated side D-ring, a body belt, and a positioning lanyard. A back up PFAS is required when the user is exposed to a free fall of 2 ft (1.8 m) or more.

C. Restraint - the Swivel Anchor may be used as a component of a restraint system to prevent the user from reaching a fall hazard. Restraint systems typically include a full body harness containing a body belt and a lanyard or restraint line.



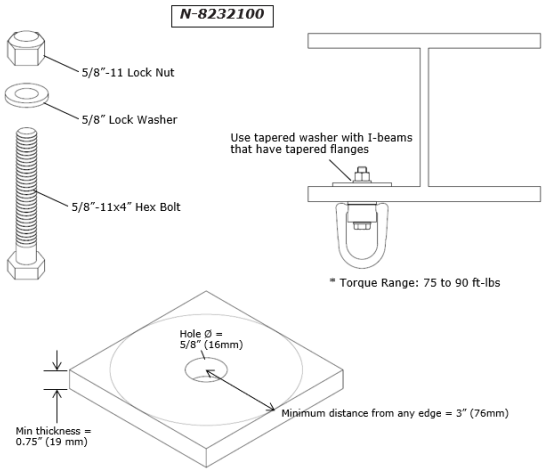
7.0 INSTALLATION:

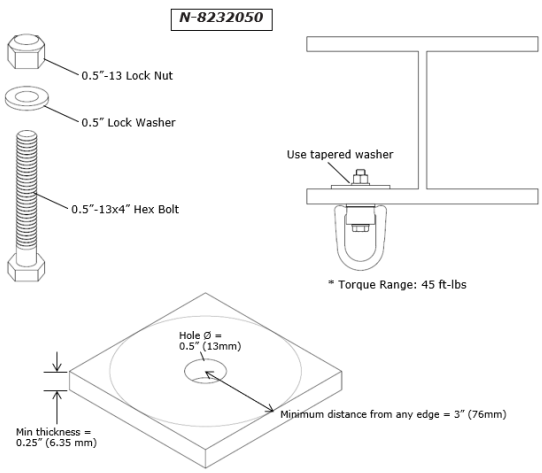
7.1 STEEL MOUNTING:

- Using a proper drill and bit for steel, drill a Ø hole no less than **D** deep and **L** away from any edge.

	Ø	D	L
N-8232100	5/8" (16 mm)	3/4" (19 mm)	3" (76 mm)
N-8232050	1/2" (13mm)	1/4" (6.35 mm)	3" (76 mm)

- The hole must be straight and perpendicular to surface and be free of debris.



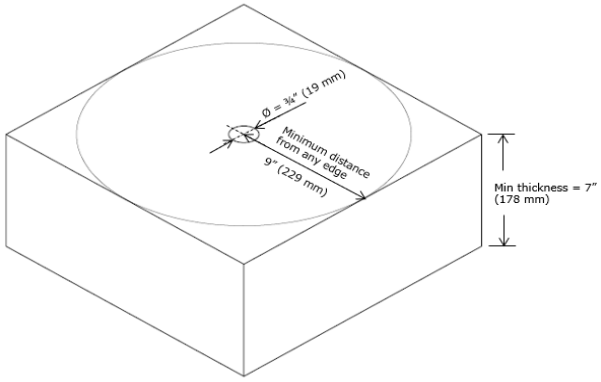


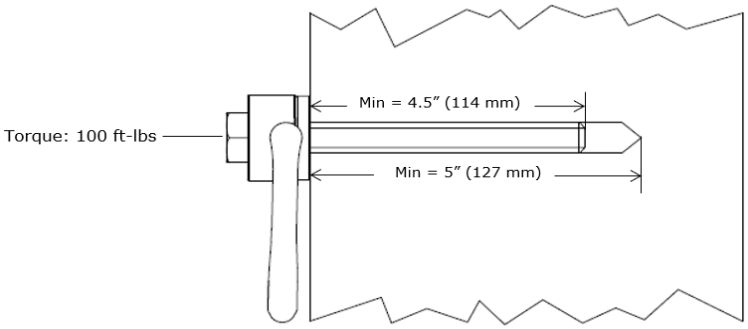
IMPORTANT: *Use a grade 10.9, grade 12.9 (or equivalent) bolt no shorter than 4" (100mm) with a locking nut and washer in steel applications. When installed, the swivel anchor must be flush with the steel surface.*

7.2 CONCRETE MOUNTING:

7.2.1 10K Version:

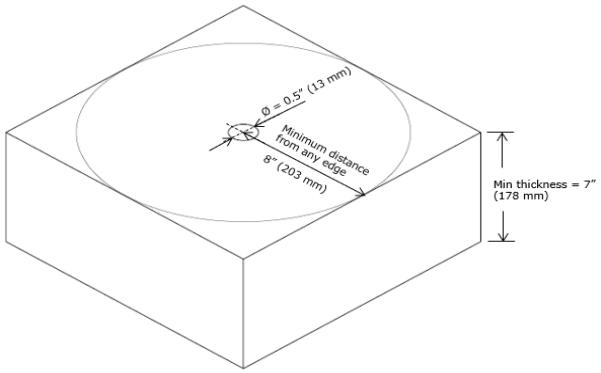
- Using a proper drill and bit for concrete (SDS drill bit), drill a .75" (19 mm) hole no less than 5" (127 mm) deep 9" (229 mm) away from any edge.
- The hole must be straight & perpendicular to surface, and free of debris.
- Concrete strength must be at least 3000 psi (20.7 MPa) and no less than 7" (178 mm) thick.

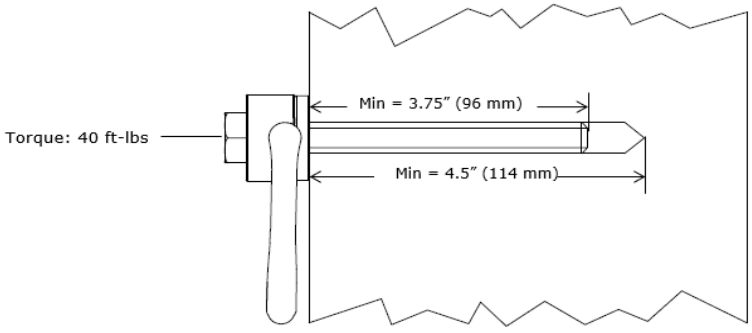




7.2.2 5K Version:

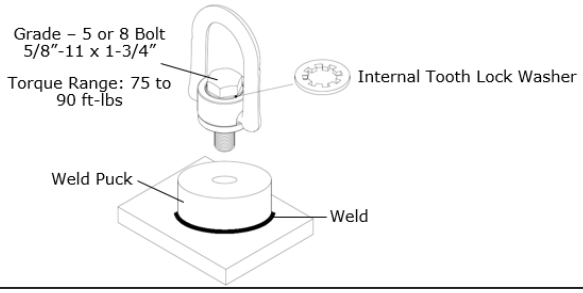
- Using a proper drill and bit for concrete (SDS drill bit), drill a .5" (13 mm) hole no less than 4.5" (114 mm) deep 8" (203 mm) away from any edge.
- The hole must be straight & perpendicular to surface, and free of debris.
- Concrete strength must be at least 3000 psi (20.7 MPa) and no less than 7" (178 mm) thick.





7.3 WELD-ON MOUNTING:

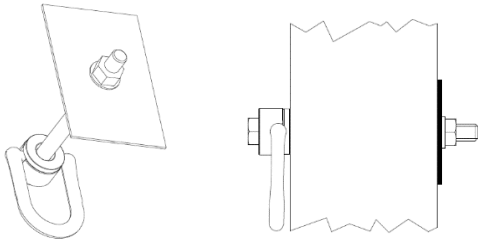
- The Swivel Anchor can be installed both horizontally and vertically. The installation process is the same for both methods.
- The work location should be free of debris, and other materials or equipment that could interfere with the proper operation of this equipment.
- Inspect the steel to which the anchor will be attached. User should inspect for the following hazards. These hazards include, but are not limited to, excessive corrosion, cracks, severe rust, excessive paint, spray applied fireproofing, electrical hazards, etc…
- Installation requires 1/2" thick or greater plate steel. Installation location must be a minimum of 3" from any edge. Determine installation location for the anchor and place the Weld-on Puck on the steel substrate, with the threaded hole facing up.
- Installation requires a 1/4" fillet weld performed by an ANSI/AWS D1.1 certified welder. For stainless steel components, the weld must be performed by an ANSI/AWS D1.6 certified welder. DO NOT WELD WITH SWIVEL AND BOLT INSTALLED.
- Install the internal tooth washer onto the swivel anchor bolt and thread into the top of the Weld-on Puck. Torque to 75 – 90 ft. lbs.
- PFAS connecting device can now be connected to the anchorage system.



IMPORTANT: *Before installation and use, the welding procedure must be approved by a competent engineer or other qualified person. Specifically, that the welding procedure is compatible with any and all structural & operational characteristic of the selected installation location.*

7.4 BACK PLATE MOUNTING:

- Back plate to be used with 5/8" (16 mm) bolts or all thread.
- Drill hole perpendicular into surface so bolt can pass freely through the substrate.
- Nuts must be fully threaded on the bolt to insure maximum strength ratings and integrity of anchor.



NOTE: *Bolt or All-thread and nut are not included with Back Plate.*

8.0 INSPECTION

8.1 INSPECTION FREQUENCY

- **Before each use** the Swivel Anchor should be visually inspected as per instructions detailed in Sections 8.2 and 8.3.
- **Annually:** A competent person other than the user must formally inspect the Swivel Anchor and its connection to its respective structure at least annually. The actual frequency of inspections should consider the conditions of use or exposure. Refer to Table 1 for inspection frequency and Sections 8.2 and 8.3 for inspection steps. Record the inspection results in the inspection and maintenance log in Appendix B.

IMPORTANT: *Anchors subjected to extreme working conditions (harsh environment, prolonged use, etc.) may require more frequent inspection.*

Table 1 – Inspection Frequency			
Type of Use	**Application Examples**	**Conditions of Use**	**Inspection Frequency (*by a Competent Person*)**
Infrequent to Light	Rescue and confined space, factory maintenance	Good storage conditions, indoor or infrequent outdoor use, room temperature, clean environments	**Annually**
Moderate to Heavy	Transportation, Residential Construction, Utilities, Warehouse	Fair storage conditions, indoor and extended outdoor use, all temperatures, clean or dusty environment	**Semi-annually to Annually**
Severe to Continuous	Commercial Construction, Oil and Gas, Mining, Foundry	Harsh storage conditions, prolonged or continuous outdoor use, all temperatures, dirty environment	**Quarterly to Semi-annually**

8.2 Inspection guidelines: The Swivel Anchor should be inspected as illustrated below, as per the frequency detailed in Section 8.1.

- Ensure all labeling is present and affixed to the unit. (see Appendix A for images of labels)
- Inspect anchoring system for signs of damage or wear.
- Ensure the unit can rotate 360° and the D-ring can flip from side to side.
- If are reusing a previously drilled hole, inspect it for debris or wallowing.
- Ensure the unit is flush with mounting surface.
- Record final inspection results in the Inspection Record in Appendix B.

8.3 DEFECTS: Immediately remove the Swivel Anchor from service if inspection reveals a defective condition. The Swivel Anchor must be labeled as 'unusable' and promptly discarded if inspection indicates any damage that could affect the strength or operation of the device, or unsafe conditions.

8.4 PRODUCT LIFE: The functional life of the Swivel Anchor is determined by work conditions and maintenance.

9.0 STORAGE, SERVICE, AND MAINTENANCE

9.1 MAINTENANCE AND CLEANING:

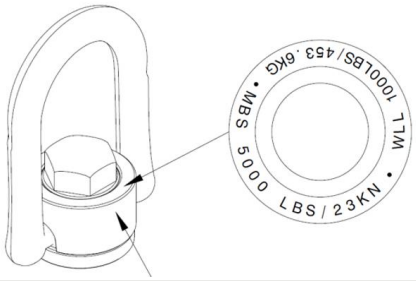
- Periodic cleanings will prolong the life of this product. Cleaning frequency should be determined based on inspection and severity of the environment.
- Clean the device with compressed air and/or a stiff brush using water or a mild soap and water solution.
- Do not clean the Swivel Anchor with corrosive chemicals, as these may damage the product.
- After cleaning, wipe all surfaces with a clean, dry cloth and hang unit to dry or use compressed air.

9.2 STORAGE:

- When not in use, store the device in a clean, dry, and cool environment, out of direct sunlight and free of corrosive or other degrading elements.
- Position the device in such a way that excess water is allowed to drain out.
- Avoid exposing device to chemical or caustic vapors.
- After a prolonged period of storage, thoroughly inspect the device.

9.3 SERVICE: The Swivel Anchor is not user repairable. If the Swivel Anchor does not pass pre-use inspection, tag as "UNUSABLE" and either (a) dispose of it, or (b) contact an authorized service center.

APPENDIX A: LABELS



Model: N-8232050A 5K Swivel Anchor & Bolt	**Material:** Zinc Plated Steel	**Weight Capacity:** ANSI: 130-310lbs (140.6kg) OSHA: 420lbs (190.5kg)	**MBS:** 5,000lbs/22.2kN	**Meets:** ANSI Z359.18-17
Model: N-8232050B 5K Swivel Anchor	**Material:** Zinc Plated Steel	**Weight Capacity:** ANSI: 130-310lbs (140.6kg) OSHA: 420lbs (190.5kg)	**MBS:** 5,000lbs/22.2kN	**Meets:** ANSI Z359.18-17
Model: N-8232050W 5K Swivel Anchor & Puck	**Material:** Zinc Plated Steel	**Weight Capacity:** ANSI: 130-310lbs (140.6kg) OSHA: 420lbs (190.5kg)	**MBS:** 5,000lbs/22.2kN	**Meets:** ANSI Z359.18-17
Model: N-8232100A 5K Swivel Anchor & Bolt	**Material:** Zinc Plated Steel	**Weight Capacity:** ANSI: 130-310lbs (140.6kg) OSHA: 420lbs (190.5kg)	**MBS:** 5,000lbs/22.2kN	**Meets:** ANSI Z359.18-17
Model: N-8232100B 5K Swivel Anchor	**Material:** Zinc Plated Steel	**Weight Capacity:** ANSI: 130-310lbs (140.6kg) OSHA: 420lbs (190.5kg)	**MBS:** 5,000lbs/22.2kN	**Meets:** ANSI Z359.18-17
Model: N-8232100W 5K Swivel Anchor & Puck	**Material:** Zinc Plated Steel	**Weight Capacity:** ANSI: 130-310lbs (140.6kg) OSHA: 420lbs (190.5kg)	**MBS:** 5,000lbs/22.2kN	**Meets:** ANSI Z359.18-17

APPENDIX B: INSPECTION RECORD

Inspection Record

Model #:_____ Serial #:_____ Date of Manufacture:

_____

INSPECTION DATE	INSPECTOR	COMMENTS	PASS/FAIL	CORRECTIVE ACTION NEEDED	APPROVED BY