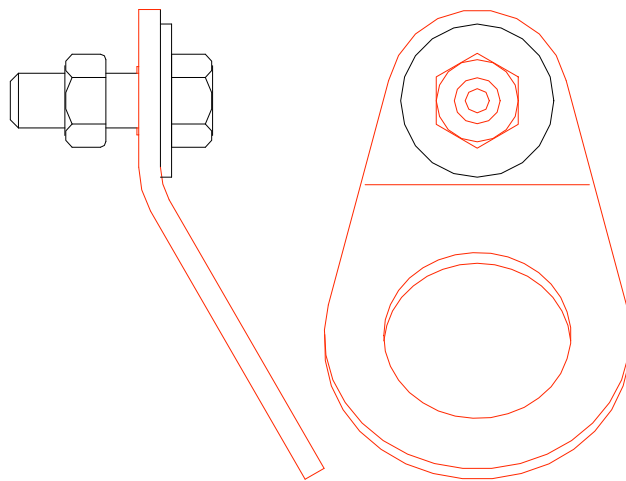




**Reliance Industries, LLC**  
Operating instructions  
for the  
**3071-1 / 3071-2 Bolt-on D-Ring Anchorage**



**Reliance Industries, LLC**  
**PO Box 140008**  
**Denver, CO 80214**  
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**User Instructions**  
**3071 Bolt-on Anchorage Ring**

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**User Instructions**  
**3071 Bolt-on Anchorage Ring**

## Important Instructions!

These instructions must be kept on file and available for the users reference at **all** times. The users must read and full understand these instructions or have the instructions explained in detail before using this equipment. **Failure to observe these instructions could result in serious injury or death.**

Prior to use, all workers must be trained in the proper use of all systems and equipment.

A Training and Instruction review should be repeated at regular intervals.

A rescue plan must be prepared; the workers must be trained in its use, and rescue equipment must be on hand prior to any use of this horizontal lifeline system.

Any questions regarding these instructions should be directed to:

Reliance Industries, LLC  
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Denver, CO 80214  
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**User Instructions**  
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## Important OSHA Regulations Covering the Use of Personal Fall Arrest Anchorages

OSHA 1926.502 (d)(15):

Anchorage used for attachment of personal fall arrest equipment shall be independent of any anchorage being used to support or suspend platforms and capable of supporting at least 5,000-lb (22 kN) per employee attached, or shall be designed, installed, and used as follows:

(d)(15)(i):

as part of a complete personal fall arrest system which maintains a safety factor of at least two; and

(d)(15)(ii):

under the supervision of a qualified person.

OSHA 1926.502 (d)(16)(iii):

Personal fall arrest systems shall be rigged such that an employee can neither free-fall more than 6-ft. nor contact any lower surface.

OSHA 1926.502 (d)(21):

Personal fall arrest systems shall be inspected prior to each use for wear, damage and other deterioration, and defective components shall be removed from service.

OSHA 1926.502 (d)(19):

Personal fall arrest systems and components subjected to impact loading shall be immediately removed from service and shall not be used again for employee protection until inspected and determined by a competent person to be undamaged and suitable for reuse.



## User Instructions

### 3071 Bolt-on Anchorage Ring

## System Description

The Reliance Industries Bolt-on Anchorage Ring is a personal fall arrest anchorage designed for attachment to vertical structural steel (such as the flange of an I-beam or other structure). It provides a means of attaching a single person personal fall arrest anchorage in locations where other forms of tie-offs may not be possible. It may also be used as a bypass anchorage support for horizontal lifeline systems.

This anchorage is one component of a personal fall arrest system. It is used in conjunction with a full-body harness for the worker, a shock absorbing vertical lifeline or self-retracting lanyard (SRL) with 900-lb. Maximum Arrest Force (MAF) using double-action single-locking snap hooks to attach to the anchorage and the harness. Any attachments to the Anchorage Ring must transfer fall arrest forces to the body through the dorsal d-ring of the full body harness only. Harness side and chest d-rings are not allowable lanyard connection points.

## Anchorage Point Considerations

The strength of the steel surface to which the anchorage is attached must be at least 3,600-lb. with certification, or 5,000-lb. in the absence of certification for each Bolt-on Anchorage Ring. These minimum load capacities must be multiplied by the number of Bolt-on Anchorage Rings that will be attached to a structure at any one time. Only one person may be attached to each anchorage at any one time. This strength must be certified by a qualified person and must be verifiable by either calculation or testing. In some applications, with proper design, testing, and certification by a qualified person or Professional Engineer, an anchorage may be designed with a 2 to 1 safety factor over the anticipated loads per OSHA 1926.502 (d)(15)(i-ii).

Anchorage locations must be selected carefully. Considerations must be made of the potential for swing falls. Anchorages should be placed to minimize the exposure to swing falls, or additional anchorages should be installed to offer a greater number of attachment options to help reduce the exposure to a swing fall.

Care must also be taken to ensure that the Bolt-on Anchorage Ring is installed at the proper height above the walking/working surface. The anchorage ring must be installed a minimum of 5-ft. above the walking/working surface. By installing the ring at this height (or greater) you eliminate the possibility of a free-fall greater than 6-ft. when using a fixed length shock-absorbing lanyard. All Anchorage Rings must be installed so that the worker cannot free-fall more than 6-ft. as required by OSHA regulations.

If in question, consult Reliance Industries engineering staff for proper design requirements.



## User Instructions

### 3071 Bolt-on Anchorage Ring

## Bolt-on Anchorage Ring Components

The Bolt-on Anchorage Ring consists of the following standard approved and compatible components:

- 1 ea. Anchorage Ring, zinc plated (carbon steel)
- 1 ea. Anchorage Ring spacer (stainless steel)
- 1 ea. 5/8-in.-11 x 2 -in. bolt (stainless steel)
- 1 ea. 5/8-in. – 11 locking nut (stainless steel)
- 2 ea. 5/8-in. heavy duty flat washer (stainless steel)

The Reliance Industries Bolt-on Anchorage Ring is designed for use with the approved, above listed components only. Substitutions or replacements with non-approved components will endanger the system integrity and may affect the safety and reliability of the total system.

## Personal Fall Arrest Equipment for Use with the Bolt-on Anchorage Ring

It is of utmost importance in the design of personal fall arrest systems to understand the nature and type of work being performed in an area prior to the installation of fall protection equipment. Anchorages should be located such that they are directly overhead (or as much so as possible) to help reduce or eliminate the possibility of a swing fall. Separate anchorages must be provided for each individual worker in an area, and only one worker should be attached to an anchorage at any one time. If several workers are to be in an area at a given time, the anchorages should be placed so that the potential for entangling the vertical lifelines is minimal.

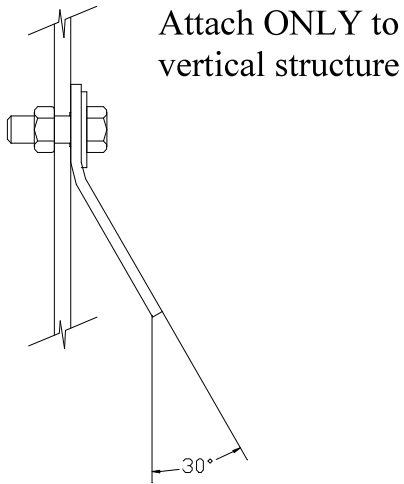
Care should also be used in selecting a harness. Harnesses with sewn down back pads can limit as much as 1 ft. of back pad slippage during fall arrest, giving additional safety. If the system will be used where a worker could encounter a head first free-fall, a non-secured back pad can slide down the webbing to the small of the back, allowing the worker to fall out of the harness through the top by allowing the harness straps to slip over the shoulders. For this reason, we recommend the use of full body, crossover or pullover type harness with sewn down back pads for all installations. The use of body belts as fall arrest anchorages is not allowed under OSHA guidelines.

## Installation

Installation of personal fall arrest anchorages should be done under the supervision of a Qualified Person trained in their design and use. Use only connections and equipment that have been qualified as compatible components by Reliance Industries. Ensure that the minimum anchorage strength is at least 5000-lb. Have the anchorage locations certified by a qualified person and keep documentation on hand.

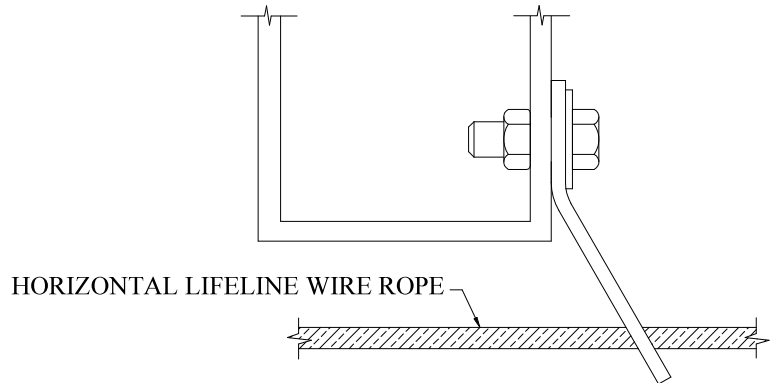
**User Instructions**  
**3071 Bolt-on Anchorage Ring**

**Possible Methods of Installation**

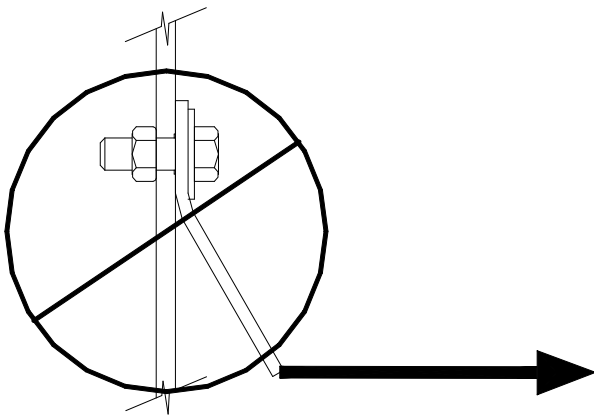


Permissible loading directions

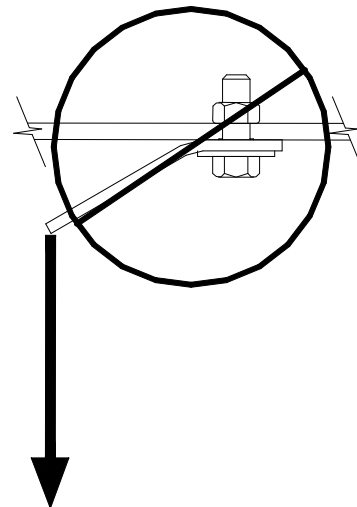
Used as bypass support for horizontal lifelines



**DO NOT side load!**



**DO NOT side load or mount to horizontal overhead surface**





## User Instructions

### 3071 Bolt-on Anchorage Ring

# Bolt-on Anchorage Ring Installation Procedures

NOTE: Approved fall protection must be worn during Bolt-on Anchorage Ring installation at all times. Do not use the anchorage until the system has been completely installed, inspected, and approved for use by a Qualified Person.

1. Determine the best location to mount the Bolt-on Anchorage Ring.
2. Drill through the structural steel wall with a 21/32-in. or 11/16-in. drill. Due to the size of this hole, a pilot hole of a smaller diameter may be drilled first.
3. Deburr the edges of the hole.
4. Place the flat washer onto the bolt. Slide the stainless steel Ring spacer on the bolt. Slide the Anchorage Ring onto the spacer. The Anchorage Ring should be placed onto the bolt such that the bend of the ring will be out from the mounting surface (see Figure 1 below).
5. Pass the bolt through the hole and secure with the nut.
6. Tighten lock nut fully.
7. Anchorage ring should swivel around the bolt. If ring does not swivel, remove assembly and check the placement of the Ring spacer and re-install.

The procedure for removal is the opposite of installation.

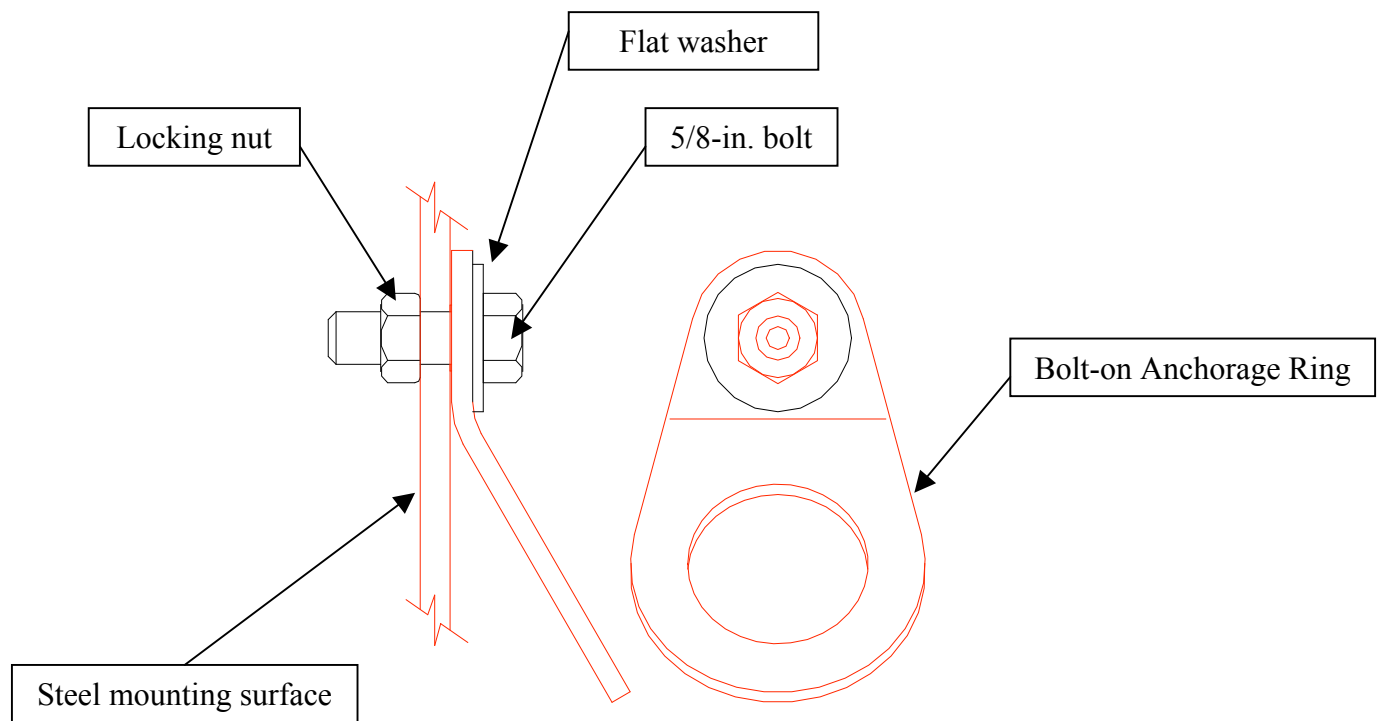


Figure 1



## User Instructions

### 3071 Bolt-on Anchorage Ring

## Training

It is the responsibility of the employer to train all workers prior to using this system (per OSHA 1926.503 (a)(1)). The employer shall provide a training program for each employee who might be exposed to fall hazards. The program shall enable each employee to recognize the hazards of falling and shall train each employee in the procedures to be followed in order to minimize these hazards.

The employer shall assure that, as necessary, each employee has been trained by a competent person qualified in the following areas:

- a. OSHA regulations governing the use of personal fall arrest systems.
- b. Ability to recognize potential fall and workplace hazards.
- c. Method of inspection of safety equipment.
- d. Rescue procedures.
- e. Installation and removal techniques.

## Planning for Rescue

Prior to system use, a rescue plan must be prepared, the workers must be trained in its use, and the rescue equipment must be on hand to implement it in case of a fall.

Typical rescue plans include (but are not limited to) the following items:

1. List of equipment that must be readily accessible in the event of an emergency and the names of those workers certified to use or operate that equipment.
2. Emergency contact phone numbers (ambulance, hospital, fire department...) and a means to contact them (cell phone, emergency radio).
3. List of employees on the site, and the specific tasks they will perform to effect the rescue.

The equipment that will be used to aid in the rescue of any worker must be attached to structural anchorages independent of those used by the fallen worker. During installation of worker anchorages, rescue anchorages and equipment attachment hardpoints should be installed, and also clearly marked in such a manner as to provide a means to rescue a worker in any position in the work area.



## User Instructions

### 3071 Bolt-on Anchorage Ring

## Inspection

Prior to each use, the worker must inspect the system for any physical damage, wear, corrosion, or missing parts. If the Anchorage Ring has seen a fall arrest load, it must be removed from service until it is inspected by a competent person who either replaces or repairs and re-certifies the components and the structure that it was attached to for use again. If an inspection reveals a problem or unsafe condition, remove the entire system from service until it can be re-certified by a competent person.

## Servicing

A qualified person trained in the inspection and servicing of system components must carry out servicing of this system. The company's safety officer should maintain a record log of all servicing and inspection dates. The system and all components must be withdrawn from service if subjected to fall arrest forces. Those components may be returned to service only after being certified by a qualified person. Only original Reliance Industries equipment replacement parts are approved for use in this system. Contact Reliance Industries Engineering with questions and when in need of assistance.

## Warnings and Limitations

Proper care should always be taken to visually scan the work area prior to use. Remove any obstruction, debris, and other materials from, and beneath the work area that could cause injuries or interfere with the operation of this system. Be cautious of swing fall hazards if working horizontally to the side of the anchorage. Always use the shortest lanyard length possible to connect to the anchorage. Be aware of the movements of others in the work area at the same time to ensure that the vertical lifelines do not become entangled, knowing that if they do and a fall occurs, the sudden motion in the lifelines could pull others off balance.

Users should be familiar with pertinent regulations governing the use of this system and its components. Only trained and competent personnel should install and supervise the use of this system.

Use only Reliance Industries supplied or qualified compatible components.

**If you have any questions regarding the correct installation or use of this product DO NOT USE. Call Reliance Industries Engineering at  
Ph. (303) 456-8418 or  
Fax (303) 456-8471.**



**User Instructions**  
**3071 Bolt-on Anchorage Ring**

## Inspection Log for 3071 Bolt-on Anchorage Ring

Company: \_\_\_\_\_ Location: \_\_\_\_\_ Date: \_\_\_\_\_  
Job Site: \_\_\_\_\_ Anchor No.: \_\_\_\_\_ System No.: \_\_\_\_\_

Describe non-conforming conditions in the boxes below:

Inspection Criteria	Missing Parts	Label Readable	Corrosion	Deformed Parts	Excessive Loading
Anchorage Ring					
Hardware (bolt, nut, washer, and spacer)		N/A			
Fasteners tight?		N/A			
Structure intact?		N/A			

Has a Rescue Plan been prepared? \_\_\_\_\_

Is Rescue Equipment on hand? \_\_\_\_\_

Have workers been trained in the Rescue Procedures and been given a copy of the Rescue Plan? \_\_\_\_\_