PROTECTA

A Capital Safety Brand

KNOCK-DOWN DISPOSABLE ROOF ANCHOR

This manual is intended to meet the Manufacturer's Instructions as required by the following standards and should be used as part of an employee training program as required by OSHA:

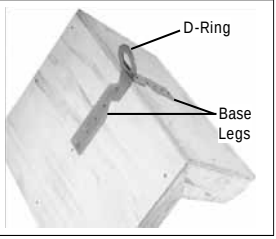
WARNING: *This product is part of a fall arrest system. The users must read and understand manufacturer's instructions for each component or part of the complete system. These instructions must be provided to the user of this equipment. The users must read and understand these instructions or have them explained to them before using this equipment. Manufacturer's instructions must be followed for proper use, care and maintenance of this product. Alterations or misuse of this product or failure to follow instructions, may result in serious injury or death.*

IMPORTANT: *If you have questions on the use, care, or suitability for use of this equipment, contact Capital Safety immediately.*

DESCRIPTION

The Knock-Down Disposable Roof Anchor (Figure 1) consists of a stamped zinc-plated sheet metal D-ring and Base. The sheet metal Base is nailed to the roof structure per these instructions. The D-ring is used for connection of the fall arrest system.

Figure 1 - Knock-Down Roof Anchor



APPLICATION

The Roof Anchor is designed to be used as a single installation, temporary use anchorage connector on wood frame structures. This anchorage connector may be used as part of a personal fall arrest system. Do not attach a lifeline between two or more roof anchors (i.e. horizontal lifeline system). Do not hang, lift or support tools or equipment from this roof anchor or attach guylines for antennas, phone lines, etc.

IMPORTANT: *The Knockdown Roof Anchor is a single use anchor. It is intended to be installed and used, then removed or destroyed (knocked down) - not reinstalled.*

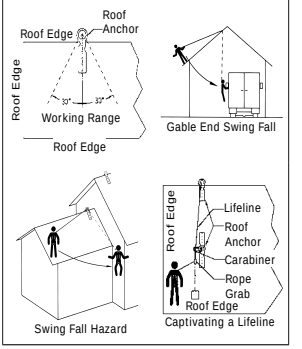
Fall Arrest Application: In a fall arrest application, the Roof Anchor is used as part of a complete fall arrest system. Such systems typically include a Full Body Harness and some form of connecting subsystem, such as an Energy Absorbing Lanyard. Maximum permissible free fall is 6 feet (1.8 m). This type of system is used where a free fall is possible before the fall is arrested.

REQUIREMENTS

The following requirements must be recognized and considered before using this product:

- **Roof Structure:** The Knock-Down Roof Anchor is intended to be installed on wood framed structures capable of meeting the anchorage strength requirements defined in *Anchorage Strength*. Consult Capital Safety before using these roof anchors on any other roof material.
- **Anchorage Strength:** Per OSHA 1926.500 and OSHA 1910.66: "Anchorages used for attachment of a personal fall arrest system shall be independent of any anchorage being used to support or suspend platforms, and must support at least 5,000 lbs (22 kN) per user attached; or be designed, installed, and used as part of a complete personal fall arrest system which maintains a safety factor of at least two, and is supervised by a qualified person."
- **Capacity:** The Roof Anchor is designed for use by persons with a combined weight (person, clothing, tools, etc.) of no more than 310 lbs. Only one personal protective system may be connected to the roof anchor at any time.
- **Personal Fall Arrest System (PFAS):** PFASs used with the Roof Anchor must meet applicable OSHA, state, federal, and ANSI requirements. PFASs incorporating a Full Body Harness must be capable of arresting a workers fall with maximum arresting force of no greater than 900 lbs (4 kN). and limit the free fall distance to 6 feet (1.8 m) or less. The deceleration distance for the PFAS must be 42 inches (1.1m) or less. Reference OSHA requirements.
- **Free Fall:** Personal Fall Arrest Systems must be rigged to limit any free fall to a maximum of 6 feet (1.8 m). Avoid working above your anchorage level since an increased free fall distance will result. See associated connecting subsystem manufacturers' instructions for further information.
- **Fall Clearance:** Make certain that enough clearance exists in your fall path to prevent striking an object. The amount of clearance needed is dependent upon the type of connecting subsystem used (energy Absorbing Lanyard, Self Retracting Lifeline, etc.), and the anchorage location. Refer to the manufacturer's instructions for the connecting subsystem or component for additional information on fall clearance.

Figure 2 - Swing Fall



- **Swing Falls:** Swing falls occur when the anchor is not directly above the point where a fall occurs. The force of striking an object while swinging can be great and cause serious injury. Minimize swing falls by working as directly below the anchorage as possible. The worker must be positioned within 30 degrees of the Roof Anchor (see Figure 2).
- **Sharp Edges:** Avoid working where the connecting subsystem (i.e. shock absorbing lanyard, self retracting lifeline, full body harness, etc.) or other components will be in contact with, or abrade against, unprotected sharp edges. Do not loop lanyard around small diameter structural members. If working with equipment near sharp edges is unavoidable, protection against cutting must be provided by using a heavy pad or other means over the exposed sharp edge.
- **Corrosion:** Use near sea water or other corrosive environments may require more frequent inspections or servicing (replacement) to assure corrosion damage does not compromise the performance of the product.
- **Chemical Hazards:** Solutions containing acids, alkali, or other caustic chemicals, especially at elevated temperatures, may cause damage to this equipment. Consult Capital Safety if doubt exists concerning installing this equipment where chemical hazards are present.
- **Electrical Hazards:** Do not install roof anchors where the anchor or the user may come into contact with electrical power lines.

- **Training:** It is the responsibility of users of this equipment to understand these instructions and be trained in correct installation, use, and maintenance of this equipment. Users must be aware of consequences of improper use or installation of this equipment. This instruction manual is not a substitute for a training program. Training must be provided on a periodic basis to ensure user proficiency.

  IMPORTANT: *Training must be conducted without exposing the trainee to a fall hazard. Training should be repeated periodically.*

- **Rescue:** Should a fall occur, the user/employer must have a rescue plan and the means at hand to implement the rescue plan.
- **After a Fall:** Any Roof Anchor subjected to the force of arresting a fall must be removed from service immediately and destroyed.

COMPATIBILITY

System Compatibility: Protecta equipment is designed for use with Protecta approved components and subsystems only. Substitutions or replacements made with non-approved components or subsystems may jeopardize compatibility of equipment and may effect the safety and reliability of the complete system.

Connector Compatibility: Connectors are considered to be 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. Contact Capital Safety if you have any questions about compatibility.

Connectors (hooks, carabiners, and D-rings) must be capable of supporting at least 5,000 lbs. (22.2kN). 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 (see Figure 3). Connectors must be compatible in size, shape, and strength. Self locking snap hooks and carabiners are required by OSHA.

Connections: Only use self-locking snap hooks and carabiners with this equipment. Only use connectors that are suitable to each application. 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. Protecta connectors (snap hooks and carabiners) are designed to be used only as specified in each product's user' instructions. Figure 4 illustrates inappropriate connections. DBI-SALA snap hooks and carabiners should not be connected:

Figure 3 - Unintentional Disengagement (Rolllout)

If the connecting element that a snaphook (shown) or carabiner attaches to is undersized or irregular in shape, a situation could occur where the connecting element applies a force to the gate of the snaphook or carabiner. This force may cause the gate (of either a self-locking or a non-locking snaphook) to open, allowing the snaphook or carabiner to disengage from the connecting point.

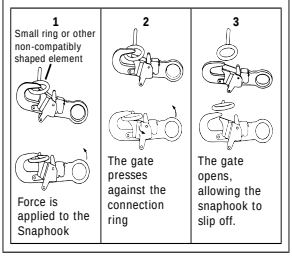
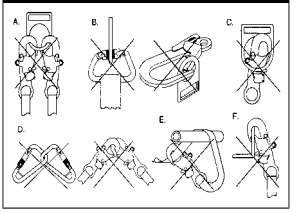


Figure 4 - Inappropriate Connections



A. To a D-ring to which another connector is attached.

B. In a manner that would result in a load on the gate.

C. 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.

D. To each other.

E. Directly to webbing or rope lanyard or tie-back (unless the manufacturer's instructions for both the lanyard and connector specifically allows such a connection).

F. To any object which is shaped or dimensioned such that the snap hook or carabiner will not close and lock, or that roll-out could occur.

INSTALLATION AND USE

WARNING: *Do not alter or intentionally misuse this equipment. Consult with Capital Safety if using this equipment with components or subsystems other than those described in this manual. Some subsystem and component combinations may interfere with the operation of this equipment. Use caution when using this equipment around moving machinery, electrical hazards, chemical hazards, and sharp edges.*

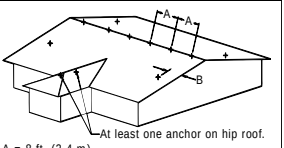
WARNING: *Do not use this system if you are unable to tolerate the impact of a fall arrest. Age and fitness can seriously affect your ability to withstand a fall. Pregnant women and minors must not use this equipment.*

Prior to Insatallation: Carefully inspect the Roof Anchor per the procedures defined in the *Inspection* section.

Site Planning: Prior to installation and use of the Knock-Down Disposable Roof Anchor, evaluate the site to determine optimal location(s) for the Roof Anchor(s) and when they may be used during the construction process. Figure 5 illustrates typical Roof Anchor locations for various roof configurations. In addition to the criteria defined in the *Requirements* section, guidelines for locating the Roof Anchors are as follows:

- The roof anchor should be located at the roof peak when possible.
- Do not install roof anchors on unsupported roof structures, such as eaves or gable overhangs. Do not install roof anchors on facia boards.
- Roof anchors should be installed at 8 foot spacings along roof ridge. Hip roofs require a roof anchor on each hip face.
- On long low pitched roofs, multiple roof anchors should be installed along gable ends, 6 feet (1.8 m) from the edge, to reduce swing fall hazards.

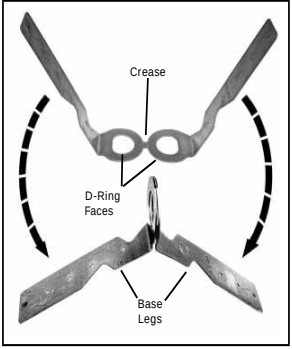
Figure 5 - Anchor Locations



A = 8 ft. (2.4 m)
B = 6 ft. (1.8 m)

Roof Anchor Preparation: Push the base legs of the Roof Anchor downward so that the anchor bends at the crease between the D-ring faces (see Figure 6). Bend the anchor until the two D-ring faces meet. During installation the legs may be formed to match the surface of the roof, but the D-ring faces must remain in contact with each other.

Figure 6 - Anchor Preperation



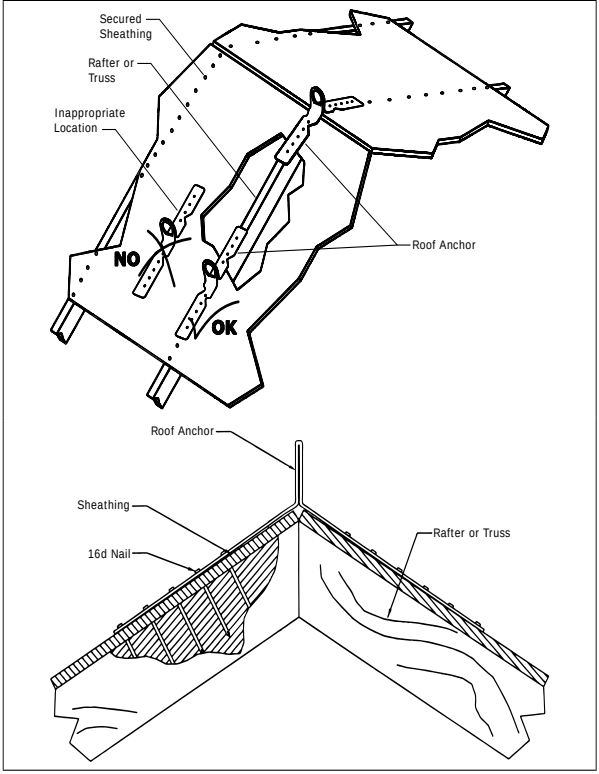
Roof Anchor Installation: Roof anchors must be installed in accordance with the previously discussed *Site Planning*. Site work rules, regarding when an installed Roof Anchor is ready for use (i.e. after sheathing is in place), must be followed. Figure 7 illustrates proper installation of the Roof Anchor. Install each Roof Anchor as follows:

1. Position the anchor on the roof so the nail holes running down the center of each leg are centered over a framing member.
2. Push down on the Roof Anchor to minimize any gap between the anchor and the sheathing.
3. Nail the Roof Anchor to the roof with ten 16d nails (one for each mounting hole in the anchor legs).

WARNING: *Use only the provided 16d nails which have a full head. Do not use nails from nail guns as smaller diameter nail heads may slip through the mounting holes in the Roof Anchor legs.*

WARNING: *The Roof Anchor must be positioned on top of previously secured roof sheathing (do not attach to rafter or truss member only). 16d nails, nailed through all ten holes in the anchor legs, must pass through the sheathing and into the roof member (see Figure 7). If the roof anchor is not installed properly, it will not hold the rated loads and serious injury or death could occur.*

Figure 7 - Anchor Installation



Roof Anchor Removal: Remove the roof anchor prior to shingling the area with the anchor. To remove the Roof Anchor, pry the anchor from the roof and discard it.

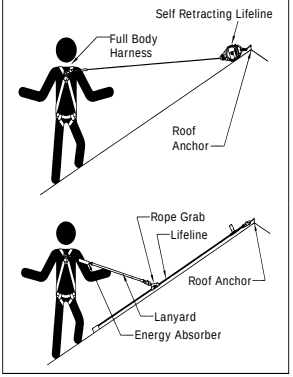
In the event the Roof Anchor can not be pried from the roof, Flatten the D-Ring against either of the anchor's legs and shingle over the Roof Anchor.

IMPORTANT: *The Roof Anchor was designed to mount to a roof only once. Never reuse a Roof Anchor after it has been removed from the roof or the D-Ring has been knocked down or flattened to the roof.*

Connecting to the Roof Anchor: Connection to the installed Roof Anchor may be made with a Self Locking Snap Hook or Self Closing Carabiner only. Do not use a knot to connect a Lifeline to the Roof Anchor. Do not pass a Lanyard or Lifeline through Roof Anchor D-Ring and hook back into the Lanyard or Lifeline. When connecting, make sure connections are fully closed and locked. Figure 8 illustrates proper connection of typical fall arrest equipment to the Roof Anchor. When using an Energy Absorbing Lanyard, connect the Energy Absorber "pack" end to the Harness. When using a Self Retracting Lifeline, make sure the device is properly positioned so retraction is not hindered. Always protect the Lifeline or Lanyard from abrading against sharp or abrasive surfaces. Make sure all connections are compatible in size, shape, and strength. Never connect more than one personal protective system to any single Roof Anchor at a time.

IMPORTANT: *Read and follow the manufacturer's instructions for all equipment (Full Body Harness, Shock Absorbing Lanyard, Self Retracting Lifeline, etc.) comprising your Personal Fall Arrest System.*

Figure 8 - Connecting to the Anchor



INSPECTION

IMPORTANT: *If the equipment has been subjected to forces resulting from arrest of a fall, it must be removed from service immediately and destroyed.*

Before Each Work Shift: Visually inspect the Roof Anchor per the following steps:

1. Inspect the Roof Anchor for physical damage. Look carefully for any signs of cracks, dents, or deformities in the metal. Check for bending, the roof anchor legs should be flat.
2. Inspect the Roof Anchor for signs of excessive corrosion.
3. Ensure the roof structure is in sufficient condition to support the Roof Anchor loads (see *Requirements*). An anchor connected to rotten or deteriorated wood should not be used.
4. Ensure the Roof Anchor is still securely attached. If loose, do not use.
5. Inspect each system component or subsystem per the manufacturer's instructions.

MAINTENANCE & SERVICE

No scheduled maintenance is required. If you have questions concerning the condition of the Roof Anchor, or have any doubt about putting the anchor into service, contact Capital Safety immediately.

MODELS	
2103679	Knock-Down Roof Anchor
2103680	12-Pack of Knock-Down Roof Anchors with 120 16d Nails (10/Anchor)

SPECIFICATIONS	
Material:	14 ga Carbon Steel, Zinc Plated
Minimum Breaking Strength;	1,800 lbs (8 kN) when loaded within the loading direction limitations illustrated in Figure 2
Weight:	1.0 lbs (0.5 kg)
Size:	2 in x 23-3/16 in x 14 ga (5 cm x 59 cm x 14 ga)
Capacity:	1 person x 310 lbs (141 kg)
Compliance:	OSHA 1926.502

MEDICAL WARNING

For user safety, workers with physical disabilities or muscular problems should receive medical advice prior to using fall arrest equipment. UNDER NO CIRCUMSTANCES should pregnant women or minors use Capital Safety fall arrest systems.

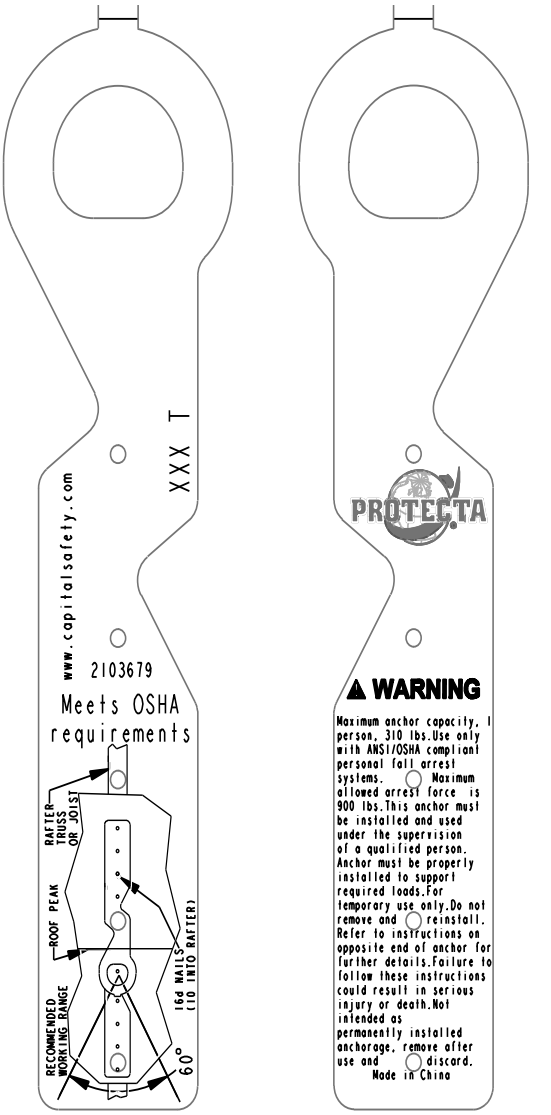
A worker's ability to accommodate arrest forces inflicted on the body in the event of a fall are seriously affected by age and fitness of the user. Only those in good health should work at heights. Please contact your physician should there be reason to doubt your ability to absorb the shock load on your body in the event of a fall.

WARRANTY

Warranty to End User: D B Industries, Inc., dba CAPITAL SAFETY USA ("CAPITAL SAFETY") warrants to the original end user ("End User") that its products are free from defects in materials and workmanship under normal use and service. This warranty extends for the lifetime of the product from the date the product is purchased by the End User, in new and unused condition, from a CAPITAL SAFETY authorized distributor. CAPITAL SAFETY'S entire liability to End User and End User's exclusive remedy under this warranty is limited to the repair or replacement in kind of any defective product within its lifetime (as CAPITAL SAFETY in its sole discretion determines and deems appropriate). No oral or written information or advice given by CAPITAL SAFETY, its distributors, directors, officers, agents or employees shall create any different or additional warranties or in any way increase the scope of this warranty. CAPITAL SAFETY will not accept liability for defects that are the result of product abuse, misuse, alteration or modification, or for defects that are due to a failure to install, maintain, or use the product in accordance with the manufacturer's instructions.

CAPITAL SAFETY'S WARRANTY APPLIES ONLY TO THE END USER. THIS WARRANTY IS THE ONLY WARRANTY APPLICABLE TO OUR PRODUCTS AND IS IN LIEU OF ALL OTHER WARRANTIES AND LIABILITIES, EXPRESSED OR IMPLIED. CAPITAL SAFETY EXPRESSLY EXCLUDES AND DISCLAIMS ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AND SHALL NOT BE LIABLE FOR INCIDENTAL, PUNITIVE OR CONSEQUENTIAL DAMAGES OF ANY NATURE, INCLUDING WITHOUT LIMITATION, LOST PROFITS, REVENUES, OR PRODUCTIVITY, OR FOR BODILY INJURY OR DEATH OR LOSS OR DAMAGE TO PROPERTY, UNDER ANY THEORY OF LIABILITY, INCLUDING WITHOUT LIMITATION, CONTRACT, WARRANTY, STRICT LIABILITY, TORT (INCLUDING NEGLIGENCE) OR OTHER LEGAL OR EQUITABLE THEORY.

MARKINGS:



IMPORTANT: *Markings should be legibly stamped into the Roof Anchor Base Legs.*

CONTACTS

CSG USA & Latin America
3833 SALA Way
Red Wing, MN 55066-5005
Toll Free: 800.328.6146
Phone: 651.388.8282
Fax: 651.388.5065
solutions@capitalsafety.com

CSG Canada
260 Export Boulevard
Mississauga, ON L5S 1Y9
Phone: 905.795.9333
Toll-Free: 800.387.7484
Fax: 888.387.7484
info.ca@capitalsafety.com

www.capitalsafety.com