

# Ladder Mount and Climb Face with Round Members Cable Safe Climb System

## CONFORMS TO THE FOLLOWING SPECIFICATIONS & RECOMMENDATIONS:

- ANSI Z359.16
- OSHA 1910/1926
- TIA-222

- 3/8" dia. cable system, up to 4-person safe operation
- Removable dual cam Wire Grab (optional)
- Automatic hands free climbing
- Fixed ladder standard shown, custom systems available
- Proudly Made in the USA

- Sealed anchor head
- Top Cap Retention Tether
- Permanently secured forged eyebolt
- Permanently swaged cable sleeves
- Red over tension / internal componentry failure indicator
- Adjustable clamp brackets
- Steel square tubing supports
- 3 Point of Connection
- HT U-Bolts
- Removable wire rope grab (Optional)
- Cable stand-off (every 25 ft.)
- 3/8" dia. wire rope
- Removable cable clamps & thimble
- Steel anchor brackets
- Adjustable anchor eyebolt

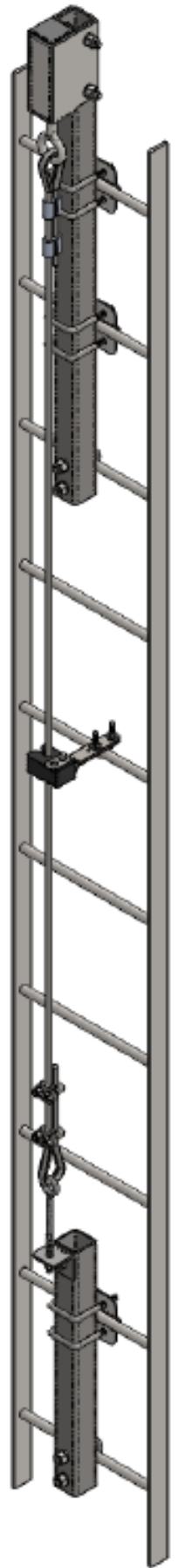


**TTWG-500-BSEN** Patented



**RED INDICATOR**

- Visual Indicator for the following conditions:
  - Over tensioned
  - Internal Component failure of the Head Assembly



When your life depends on it... choose double strength, American made Tuf-Tug Safety Products

**TUF-TUG PRODUCTS**  
3434 Encrete Lane, Moraine, Ohio

LSCB-INST REVISION 4

**WWW.TUF-TUG.COM**  
(Phone) 937-299-1213



**TTCSCS TUF-TUG CABLE SAFETY CLIMB SYSTEM**  
**LADDER MOUNT INSTRUCTIONS**

**WARNING!** YOU MUST READ AND FULLY UNDERSTAND OR HAVE THESE INSTRUCTIONS EXPLAINED TO YOU BEFORE USING THIS EQUIPMENT. FAILURE TO OBSERVE THE LIMITATIONS, CAUTIONS AND WARNINGS IN THESE INSTRUCTIONS COULD RESULT IN SEVERE PERSONAL INJURY OR DEATH.

Equipment users must be fully trained as a competent climber and conversant with all regulatory requirements applicable to the workplace in which the fall protection equipment is to be used. If in doubt, contact your local OSHA office for clarification. These instructions are not a substitute for a formal climbing and Fall Protection Training program. Such training should include information about local circumstances, rules and regulations applicable to the work situation, a hands-on opportunity to learn how to wear and attach equipment properly, instructions about adequate anchor points and proper techniques for securing and connecting lanyards, drop lines or lifelines, and guidance and demonstration on how to inspect and maintain the equipment.

**SYSTEM REQUIREMENTS:** Tuf-Tug Safety Climb Cable and Head Assembly Kit are designed to meet the performance requirements of OSHA/ANSI for personal fall arrest on permanent climb facilities. It utilizes a 3/8" 7x19 wire rope with factory swaged sleeves to provide an anchorage capable of maintaining a min. 5,000 lb. tensile load. An impact attenuator is incorporated in the head anchor to help dampen any extreme shock loads that may occur as a result of a fall. Cable stand offs are provided for every 25 ft. with Tuf-Tug kits to stabilize and maintain the cable in a good operable condition. Base anchor attachment is required to maintain system tension load from 220 lbf. – 420 lbf.

**NOTE:** Substandard or non-approved components could compromise the reliability of the system and jeopardize the safety of the user. This cable safety climb system is intended to be used as part of a complete personal fall protection system. All components, subsystems and connectors should be compatible and meet the appropriate ANSI/OSHA requirements for the intended application. **USE ONLY TUF-TUG SUPPLIED OEM COMPONENTS TO ASSEMBLE THE COMPLETE CABLE SAFE CLIMB SYSTEM. DO NOT ATTACH TO OTHER MANUFACTURER'S, NON-APPROVED SAFE CLIMB MOUNT BRACKETS TO TUF-TUG CABLE AND HEAD ASSEMBLY. ALTERING SYSTEM DESIGN WILL VOID ALL CLAIMS AND WARRANTY.** The Tuf-Tug wire rope grab (TTWG-500) and climbers/positioning full body harness (TTFBH-C/P), should be used in conjunction with the cable safety climb system to assure maximum reliability.

**SAFE CLIMB SYSTEM LOADING:** Factored Live Loads +75 lb. average Tuf-Tug system weight = minimum top anchorage load calculations. For 2- 4 climbers per OSHA/ANSI/TIA are as follows:

- (2) Person factored live loads = 3,240 lbs.
- (3) Person factored live loads = 3,705 lbs.
- (4) Person factored live loads = 4,170 lbs.

**KNOW YOUR WORKPLACE:** Assess the workplace for hazards such as heat, flames, chemical, electrical, environmental, sharp objects, moving equipment, unstable/uneven or slippery surfaces. Identify the potential hazards and plan for the installation to avoid dangerous paths, obstructions and zones.

Have an emergency rescue/contingency plan in place if an accident may occur per rescue/retrieval section.

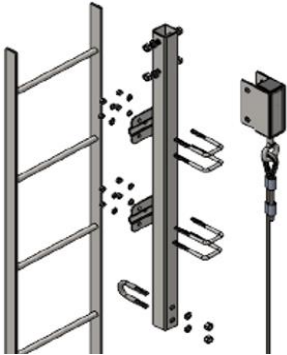
# TUF-TUG<sup>®</sup>

## P R O D U C T S

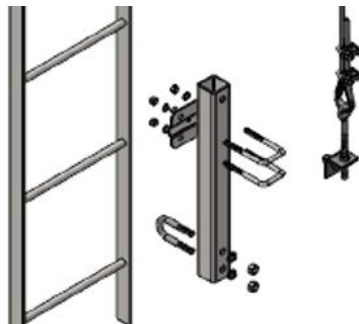
### LADDER MOUNT INSTALLATION:

#### START AT THE TOP AND WORK YOUR WAY DOWN

- A. Before the last ladder or tower section of the installation is set, Attach upright mast to the top/center of ladder rungs with the supplied U-Bolts and clamp plates as shown. Secure nuts on bolts per the following guidelines for maximum security  $\phi 3/8-16 = 25$  ft. lbs. and  $\phi 1/2-13 = 40$  ft. lbs. Make sure the mast is square and centered to the ladder.
- B. Attach head assembly with cable to the upright mast with the supplied  $\phi 1/2''$  bolts. **Note: Secure Cap Retention Tether by attaching to the  $1/2''$  mounting bolt (See below)** Torque  $\phi 1/2''$  diameter fasteners to approximately 40 ft. lb.



- C. Climbing down ladder attach a cable stand-off every 25 ft. with the supplied U-bolt and insert cable into slot. Alternate slot openings left and right to cable center as the run is installed. Torque  $3/8''$  fasteners to approximately 25 ft. lb.
- D. Secure the base anchor bracket in line with cable to the lowest rungs on the ladder with the eyebolt facing up and tighten  $\phi 3/8''$  U-bolts to 25 ft. lb.



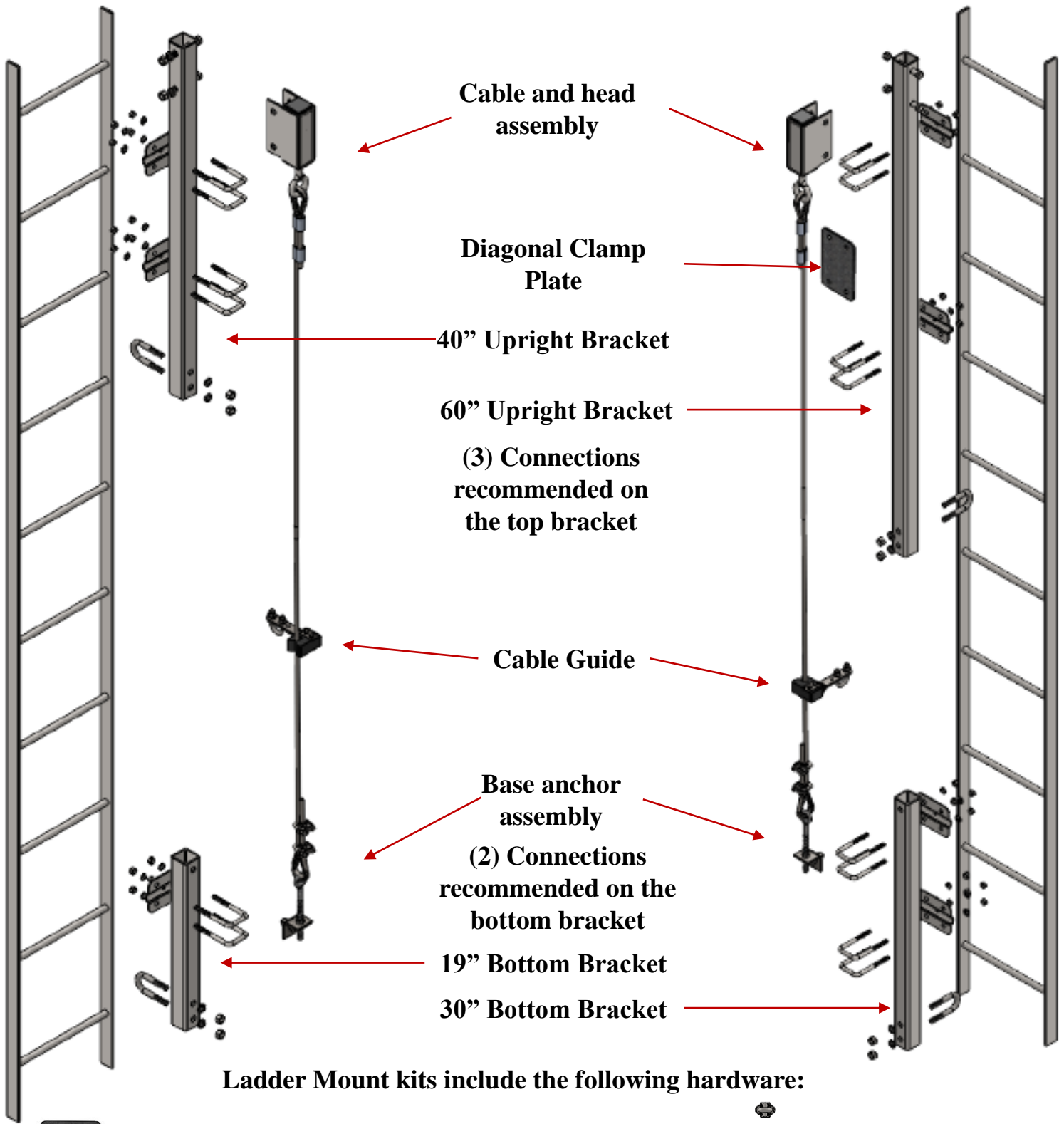
- E. With Anchor Eyebolt fully extended up, thread cable through thimble and loosely attach cable clamps. Pull on free end of cable to take slack out of line and secure nuts on cable clamps to approximately 40 ft. lb. torque.
- F. Tension cable lifeline by tightening nut on anchor eyebolt until 220 lb. tension is achieved
- G. Check security of installation by pulling down on cable to assure the Safe Climb System has been tensioned. **Note: If product is over tensioned, the red indicator on the eyebolt will be visible and tension shall be released. Repeat steps E & F.**
- H. Attach I.D. Plate at base of ladder and fill out installation date and number of allowable users.

**NOTE:** For climb face installations: A diagonal clamp plate may be substituted for the horizontal rung clamp plate  
**(Reference Illustration for Parts Listing and Installation)**



Red Visual Indicator

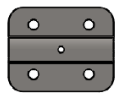
# Ladder Mount Installation



**Ladder Mount kits include the following hardware:**



x1 Diagonal Clamp Plate



x4 Ladder Rung Clamp Plates



x8 Square U-Bolts & Fasteners



x1 Head Assembly Fasteners



x1 Base Anchor Attachment Kit



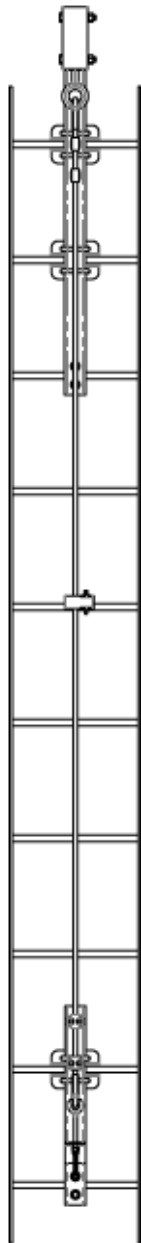
x2 Round U-Bolts & Fasteners

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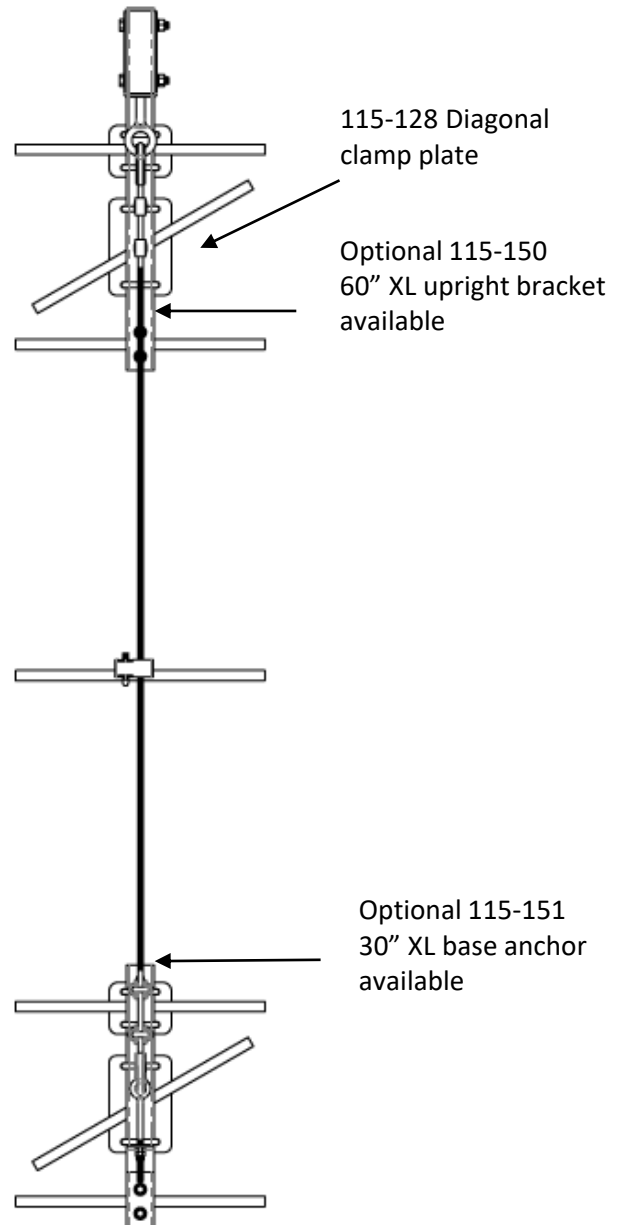
P R O D U C T S

Round member installations shown. Angle member installations also available upon request.

## Ladder Mount Installation



## Climb Face Installation



**TUF-TUG safe climb options include but are not limited to**

- LADDER MOUNT (GALVANIZED)
- LADDER MOUNT WITH STAINLESS STEEL WIRE ROPE
- LADDER MOUNT WITH STAINLESS STEEL COMPONENTS AND WIRE ROPE
- EXTRA LONG LADDER MOUNT (GALVANIZED)
- EXTRA LONG LADDER MOUNT WITH STAINLESS STEEL WIRE ROPE
- EXTRA LONG LADDER MOUNT WITH STAINLESS STEEL COMPONENTS AND WIRE ROPE

**TUF-TUG PRODUCTS**

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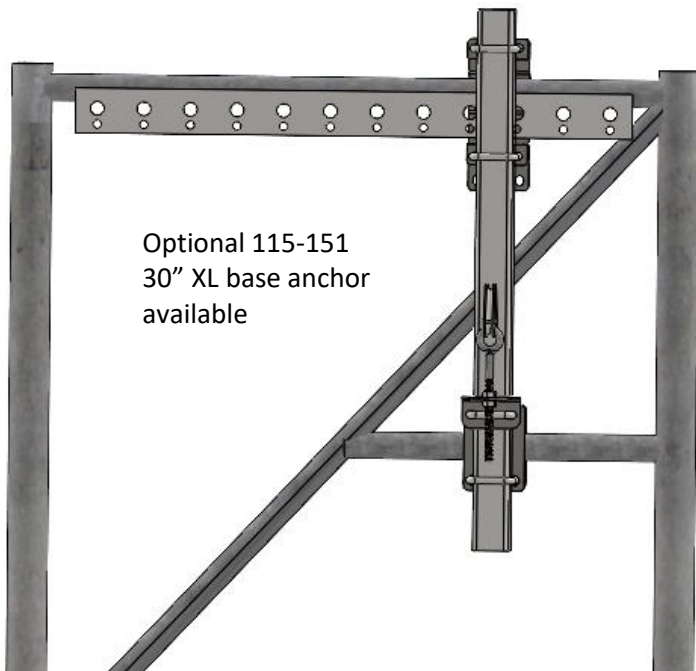
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P R O D U C T S

Round member installations shown. Angle member  
Installations also available upon request.

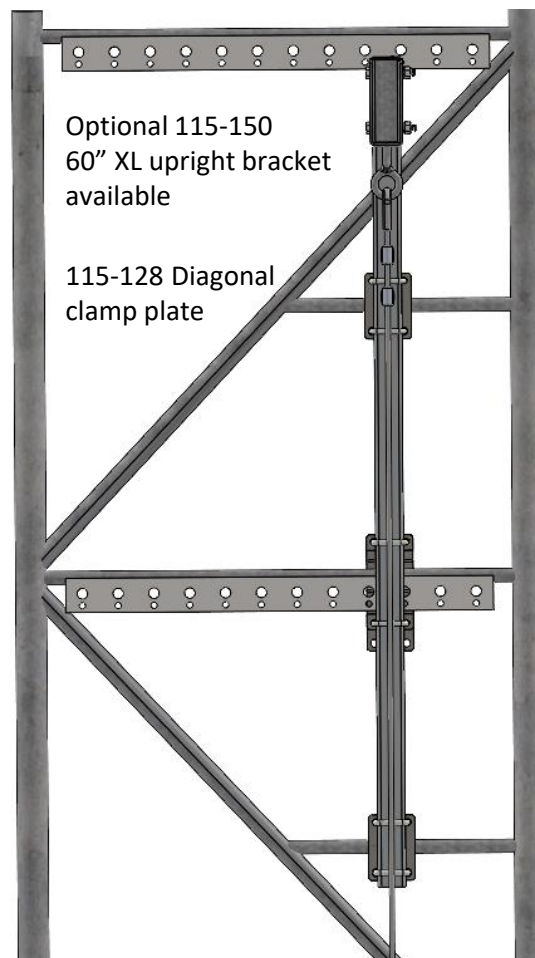
## Bottom Climb Face Installation



**Note:**

- \*System is installed centered to the climbing face
- \*Min (2) attachment points at the bottom

## Top Climb Face Installation



**Note:**

- \*System is installed centered to the climbing face
- \*Min (3) attachment points at the top



- **BEFORE EACH USE:** Reference specific installation application for the climb facility in question. Inspect installation for obvious miscues from the ground. Points of caution may include one or more of the following: excessive corrosion, loose cable, loose brackets, over tensioned system/deployed eyebolt, etc. If any of these items are encountered and cannot be remedied, climb with extreme caution. A secondary fall protection system may be warranted until the issue can be identified, classified and/or corrected. Also, be aware of the current environmental hazards that these elements represent and plan for a safe climb accordingly with approved JHA/JSA documentation.

### **USE:**

- Cable safety climb system should be used in accordance with the inspection outlined with the TTWG-500-BSEN Wire Rope Grab instructions that are supplied with specific bracket pack installation information. A climb log of the system's use should be kept per the specific climb facility's installation.
- If the system arrests a fall, it should be removed from service and replaced to assure maximum reliability. If this is not immediately feasible, a qualified person/climber can make an assessment to the damage and provide short term recommendations/remediation.

### **INSPECTION:**

- Inspect system before each use for corrosion, wear, damage and/or defects during each climb. Record findings per the climb log. If system shows signs of any hazards, contact owners for corrective action immediately. It is recommended an annual or regular scheduled inspection should be made of the Cable Safety Climb System along with the supporting structure to assure its functionality.

### **RESCUE/RETRIEVAL:**

- For a safety climb that is subjected to a fall, and rescue is required, the competent rescuer executing the rescue shall be required to assess the means available to efficiently and safely rescue the climber to avoid suspension trauma. If the best means is to use the existing wire rope safety climb that has been exposed to a fall, then the competent rescuer shall be required to, at a minimum:
  - A) Verify that the equipment utilized, including but not limited to the safety climb, meets the intended requirements for rescue as outlined by the manufacture(s).
  - B) Visually inspect the safety climb for changed conditions from the last written PPE inspection.
  - C) Communicate the plan to use the safety climb system with others involved with rescue procedures.
  - D) The competent rescuer shall ensure that use of the system will not create a greater hazard than other means.
  - E) Once the rescue is complete, the wire rope safety climb is to be reported and tagged out until corrective action has been taken.

- **\*Always keep these instructions and records with the system in a place that is easily accessible to all users\***

*"Quality is long remembered after the price has been forgotten"*





**WARNING:** All users of fall protection equipment must be in good health, must not have a medical history of conditions that could be aggravated by a fall, must be mentally fit and must not be under the influence of alcohol or drugs. Inattention to these factors could cause falls, serious injury or death.

**WARNING:** Any component which has arrested a fall should be removed from service and replaced.

**WARNING:** Never alter or use a Safety Climb System that has been altered – the potential malfunctions could result in serious injury.

**WARNING:** Do not attempt to repair damaged equipment. Remove from service and replace.

**WARNING:** Discard equipment if there is any evidence of excessive wear, damage or malfunction.

**ALWAYS BE CAREFUL!** Your Safety is important to us. If a situation is questionable, consult a qualified professional for proper procedures or reference appropriate specification.

**WARRANTY:**

“Limited 1 Year Warranty to Original Using Buyer” - TUF-TUG Cable Safe Climb Systems are warranted for 1 year against defects when operated under normal conditions, within their rated capacities and in accordance with the operating instructions and use considerations.

Any part or mechanism that is recognized as defective by TUF-TUG Products will be replaced or repaired Free of Charge during the warranted period if it is returned, prepaid, to the factory with a return authorization. Claims for labor, delays, or damages are not covered by this warranty. This warranty does not apply if the unit has been altered, modified, or repaired by any source other than TUF-TUG Products.

**Environmental / Corrosion considerations**

A) Macro-environmental: Installation exposure warranty for normal macroscopic rural, suburban, and temperate marine environments with moderate chemical, salinity, sulfur dioxide, and relative humidity, equals 10 years.

B) Micro-environmental: Tuf-Tug safety climbs with increased exposure to near coastal (within 25 miles), tropical marine environments, high winds, chemical exposure, salinity exposure, sulfur dioxide exposure, and high humidity locations, anticipated time to first maintenance is 5 years.

C) Extreme Micro-environmental: Direct exposure within 5 miles of the corrosive catalyst, to the aforementioned microscopic extreme environments, including, but not limited to; direct coastal exposure, continuous exposure to tropical marine environments, high winds, caustic chemicals, high salinity, streaming sulfur dioxide, and extreme high humidity could reduce the first time to maintenance warranty period to TIA inspection requirements. These sites shall be identified and targeted for additional TIA maintenance and condition assessment to assure the validity of the safe climb system installation on the structure that has extreme environment exposure. Recommended first to maintenance inspection cycle should not exceed 2-year maximum timeline.

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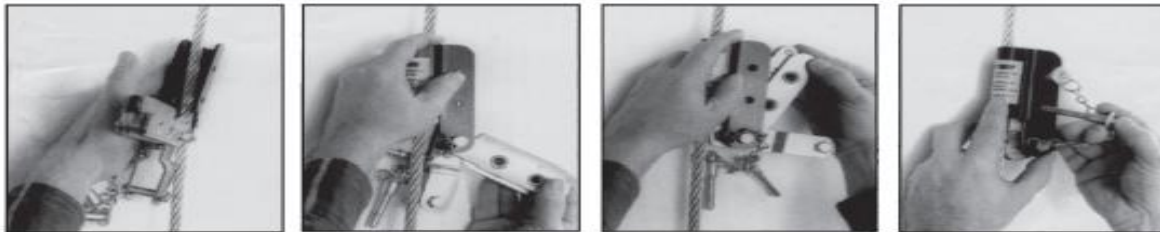
Equipment users must be fully trained in and conversant with all regulatory requirements applicable to the workplace in which the fall protection equipment is to be used. If in doubt, contact your local Safety office for clarification. These instructions are not a substitute for a formal climbing and Fall Protection Training Program. Such training should include information about local circumstances, rules and regulations applicable to the work situation, a hands on opportunity to learn how to wear and attach equipment properly, instructions about adequate anchor points and the proper techniques for securing and connecting lanyards, drop lines or lifelines, and guidance and demonstration on how to inspect and maintain the equipment. End user should have access to these instructions for reference.

**SYSTEM REQUIREMENTS:** TUF-TUG Wire Rope Grabs are designed to meet the performance requirements of ANSI Z359.16, CSA Z259.2.5 & BSEN 353-1:2014+A1:2017 for one personal fall arrest on fixed ladders with combined live loads of 50 kg min to 100 kg max with tools and equipment for EN applications. It is intended for use on  $\phi$  3/8" (9.5 mm) solid core cable system per EN10264-2 with an anchorage capable of maintaining a minimum of 5000 lbs. (22.2 KN) tensile load. The lower end of the lifeline shall have a termination that prevents the fall arrester from passing through that termination. When the line is installed, the bottom end shall have a counterweight (i.e. eye bolt tensioning) to provide stiffness. (NOTE: TTWG-500-BSEN fall arrester can transmit up to 6 KN load per user down on the rigid anchor line during a fall. It is recommended that the TTWG-500-BSEN be attached to a full body harness with a front/sternal "D" ring (TTFBH-C/P) with a 2" Self-Locking Carabiner/Hook that meets the proper safety requirements. The maximum length of the connector to the wire grab from the harness should not exceed 9 inches (228.6 mm). Note: Maximum of 3 users with no less than 3 m between climbers. Important: Every user can be influenced and fall due to the movement of the anchor line initiated by the other users.)

**NOTE:** This Wire Rope Grab is intended to be used as part of an individual's complete personal fall protection system. All components, subsystems, and connectors should be compatible and meet the appropriate OSHA/ANSI/CSA/EN safety requirements for the intended application. Substandard or non-approved components could compromise the reliability of the system and jeopardize the safety of the user. Use of incompatible combinations of equipment may present a danger in which the safe function of any one item is affected by or interferes with the safe function of another. The TUF-TUG TTWG-500-BSEN can only be used with TUF-TUG Cable Safe Climb System.

**BEFORE EACH USE:** Inspect mechanism for proper operation by pivoting cams back and forth. Movement should be free and easy without binding. Check units for deformation, defects, corrosion, or wear that may affect the free movement and/or operation of the mechanism. Check that all markings are legible before use. Units with signs of any of the above check items should be removed from service and disregarded.

**KNOW YOUR WORKPLACE:** Assess the workplace for hazards such as heat, flames, chemical, electrical, environmental, sharp objects, moving equipment, unstable/uneven or slippery surfaces. Identify the potential hazards and plan the installation to avoid dangerous paths, obstructions, and zones. Have an emergency rescue/contingency plan in place in the event that an accident may occur. No limitations for rigid anchor line and guided type fall arrester in rescue situations. Do not use TTWG-500-BSEN below  $-30^{\circ}$  Celsius or above  $50^{\circ}$  Celsius.



- A) Release pull pins by depressing end buttons and remove from unit.
- B) Open unit by pivoting clamp bar assembly away from housing.
- C) Attach to cable as shown in Figures A/B with arrow up.
- D) Close unit by pivoting cams onto rope, making sure that arrow is pointing up as shown in Figures B/C.
- E) Reinsert pins into housing making sure that ball detent passes through assembly (Figure D).
- F) Check security of pins by trying to remove without releasing button.
- G) Work cams back and forth and run fall arrester up and down to assure functionality and freedom of movement.
- H) Test installation by pulling down sharply on the attachment eye to ensure that the mechanism locks onto the cable with full body weight to load system and avoid incorrect use.
- I) Check harness fit to assure a snug fit before and during each use. Harness should not be used if loose.

**USE:**

- A. After wire grab has been secured to safety cable, attach TTWG-500-BSEN to safety harness (conforms to EN361) front/sternal “D” Ring with an approved double locking carabiner/hook. (Installation of wire grab to safety line can take place after harness attachment if desired). Always keep wire grab above user’s center of gravity to minimize potential for falls and potential fall distance.
- B. To ascend safety cable, climb ladder in a normal fashion with torso centered and close to the mechanism. Wire grab is designed to rotate freely around cable safe climb system and will operate with the user sideway leaning up to 15° left or right off center. Thereof, the mechanism should self-align and/or follow the user up the safe climb system with a normal steady/even pull. Wire grab should also work freely up and down forward leaning on incline up to 15° off the vertical, up and down.
- C. If cable system has guides/supports, remove cable from stand-offs as they are encountered and reinsert after passing. **DO NOT REMOVE WIRE ROPE GRAB FROM SAFETY CABLE** to pass over guides, supports, or standoffs, etc., unless a secondary OSHA approved attachment is made to the structure (lanyard, rope grab, etc.) prior to doing so.
  - \*Do not handle wire grab or override lever during operation; this may compromise the function of the braking mechanism and should be done from a safe position to reduce the risk of falling.
- A. To descend safety cable, again climb down ladder in a normal fashion with torso centered and close to the mechanism. This will keep the attachment lever up, disengaging the clamping bar, and allow the wire grab to freely lead the climber.
- B. If the lever is pulled back past center by leaning back, the clamp bar will engage the cable and the wire grab will lock up. To unlock the mechanism, simply move upward to pivot the lever over center. This will allow the wire grab to operate freely.
- C. Always keep a safe distance of 10 ft. (3 m) from potential hazards to avoid contact if a fall occurs.
- D. Make sure to check security of harness and adjust for snug fit during ascent and descent from a secured position.
- E. IF THE WIRE GRAB ARRESTS A FALL, REMOVE IT FROM SERVICE AND REPLACE IT.

**CARE:**

- A. After use, always clean mechanism; wipe with a new towel and lubricate pivot points with machine oil. Inspect unit for wear, damage and/or defects. If the mechanism becomes wet, allow to air dry naturally.
- B. If wire grab shows signs of excessive wear or a defective condition, remove it from service and replace it. If in doubt, return it to the factory for evaluation.
- C. You must ensure that the product markings remain legible during the entire lifetime of the product.
- D. Keep your wire grab/fall arrester in a safe/dry storage location to prolong its service life and assure its functionality. To avoid damage during transportation, pack wire grab fall arrester in a rigid waterproof container to protect mechanism against external elements.
- E. Never alter or use a wire rope grab that has been altered; the potential malfunction could result in serious injury or death. Shock pack on wire grab fall arrester has a field service life of 5 years. Per training module, inspect for wear/damage before each use and repair/replace as required.

**WARNING:** All users of fall protection equipment must be in good health, must not have a medical history of conditions that could be aggravated by a fall, must be mentally fit, and must not be under the influence of alcohol or drugs. Inattention to these factors could cause falls, serious injury or death! Engaging the guided type fall arrester’s release function during ascent or descent could hinder the safe operation of the braking mechanism and should be done only from a safe position where there is no risk of a fall.

**WARNING:** Do not use fall arrester for work positioning; if work positioning is required, a secondary separate system shall be used for 100% tie-off.

**WARNING:** Connection and disconnection from a rigid anchor line should be done from a safe place by using a separate personal fall protection system to assure 100% tie-off safety.

**WARNING:** Any component which has arrested a fall must be immediately removed from service.

**WARNING:** Do not attempt to repair damaged equipment. Remove from service immediately.

**WARNING:** Discard equipment if there is any evidence of excessive wear, damage, or malfunction.

**WARNING:** Certification is applicable to the device only. CSA has not investigated the anchorage system.

**ALWAYS BE CAREFUL!** Your safety is important to us. If a situation is questionable, consult a qualified professional for proper procedures or reference appropriate specifications.

NOTE: EC Declaration of Conformity letter can be found at [www.tuf-tug.com](http://www.tuf-tug.com). (Reference EU Regulation 2016/425 PPE)

For other TUF-TUG Safety Hardware: Confined Space Tripods, Man Winches, Rope Grabs and/or Anchor Brackets and/or Full Body Harnesses, contact:

# TRAINING

**TUF-TUG HAS CREATED STATE-OF-THE-ART 3D TRAINING ONLINE.**



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