

Sellstrom/RTC[®] CableGrab[™] for Vertical Lifelines

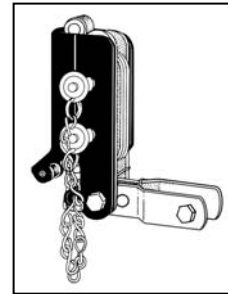
Installation Operation and Maintenance Instructions

Instruction: INST-2001VL

Effective: 6/2002

Expiration: 6/2012

- For vertical fall arrest protection on steel cable
- For use with 3/8 inch galvanized or stainless steel (7 x 19) cable
- Automatically travels with user
- Quick release pins allow easy attachment to safety cable
- Conforms to OSHA and ANSI standards



WARNINGS

Under Penalty of Law:

These instructions are not to be removed except by the user of this equipment. Current instructions must always be available to any potential user. Note: Because of continuous developments in the application and use of SM/RTC equipment and our desire to serve your best interests, these instructions are invalid 10 years after the effective date on these instructions. If you purchase a product, and these instructions are out of date, call SM/RTC Customer Service and request current instructions. Dial toll free (800) 323-7402 (U.S. and Canada) or (847) 358-2000.

If you have difficulty or experience any problem with SM/RTC equipment or the instructions, call the above toll-free number or (847) 358-2000 immediately and ask the Customer Service department for assistance.

Use this equipment as a part of a complete fall protection system. Inspect and maintain regularly.

You must read and fully understand or have the following instructions explained to you before using this equipment. Failure to do so could result in serious or fatal injury.

Atencion: Si usted no puede leer el ingles o si usted no comprende estas instrucciones, favor de consultar su director de seguridad o su supervisor.

Attention: Si vous ne pouvez pas lire l'anglais ou si vous ne comprenez pas les instructions, consultez votre directeur de securite ou votre superviseur.

Achtung: Wenn Sie nicht Englisch lesen können und diese Anweisungen nicht verstehen, dann fragen Sie bitte Ihren Sicherheitsdirektor oder Ihren Aufselher.

Attenzione: Se non leggiere l'inglese o non capite queste istruzioni, per favore rivolgete Vi al Vostro Direttore, responsabile della "Sicurezza sul Lavoro" o al Vostro diretto superiore.

You assume complete liability if you fail to follow these instructions and are injured. Use this equipment only as instructed.

Warning: All SM/RTC equipment should be as part of a complete SM/RTC fall protection or emergency rescue system. If the buyer or user chooses to disregard this warning, he is solely responsible for the safety of the entire system and all users.

Before replacing or adding components to a fall protection or emergency escape system, consult the original manufacturer. Federal OSHA states that any unauthorized substitution or change to a system by the buyer should be fully evaluated or tested by a qualified person before the new system is put into use (see OSHA 1926.500).

All potential users of this equipment and user's management must read and understand all instructions fully; failure to do so could result in serious or fatal injury.

No fall arrest system can guarantee that you will not sustain injuries if a fall occurs. The most you can expect is that injuries will be substantially reduced. Improper use of this equipment will vastly increase your chances of serious injury or death because misuse builds false security. To achieve the maximum level of safety that this equipment is capable of providing, all instructions must be followed diligently. This means careful planning of your application and work method.

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Complete System Components

A complete fall protection system consists of the following components that are arranged to fit the specific work task and control the elevated fall hazard(s):

- Anchorage

An anchorage is a secure means of attachment to which the personal fall arrest system is connected. (ANSI Z359.1)

- Body Support

A body support is the component of a personal fall protection system that is worn on or around the body. Full body harnesses must be used for all fall arrest systems.

- Connecting Means

A connecting means is the link between the body support and anchorage. It can be a shock-absorbing lanyard, rope grab, self-retracting lanyard or retrieval system. Connecting means will vary depending on the application.

The user must also have a rescue plan and the means at hand to implement it in the event of a fall.

Note: For continuous protection, more than one system may be needed.

Warning! No other applications or methods of use are allowed without prior written approval. Failure to comply with these guidelines may result in serious injury or death.

1.0 Application

The SM/RTC 2001-OP3E3 is designed for climbing protection with SM/RTC vertical lifelines. The SM/RTC 2001 series CableGrab[™] device can be used for protected access on a structure where fall hazards occur. This system is designed for climbing protection on vertical fixed ladders that meet OSHA and ANSI A14.3 standards. It can be used above or below ground, on interior or exterior surfaces. The SM/RTC CableGrab is for fall arrest use only. This should not be used for work positioning. Hands and feet must be in firm contact with railing and rungs at all times with full balance applied through the feet and one limb moved at a time.

The SM/RTC-2001 CableGrab is approved for use only in combination with an SM/RTC full body harness. Use of lanyards is not permitted which allows a free fall greater than 6 feet. The SM/RTC Ropelok is approved for use only in combination with an SM/RTC full body harness with back D-ring.

Only one user may be attached to a vertical lifeline.

2.0 Anchorage

All anchorage points must be capable of supporting a minimum of 3,600 lb. when certification exists, or 5,000 lb. in the absence of certification. (See ANSI Z359.1 for definition of certification.) When more than one personal fall arrest system is attached to an anchorage, the anchorage's strengths above shall be multiplied by the number of personal fall arrest systems attached to the anchorage. This requirement is consistent with OSHA requirements as follows: 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. per user attached, or be designed, installed and used as part of a complete PFAS which maintains a safety factor of at least two and is supervised by a qualified person.

3.0 Operating Characteristics

This device should be used only with 3/8-inch diameter galvanized or stainless steel cable. If other size or material is used, the unit may not arrest the fall. The SM/RTC-2001 CableGrab is a detachable, sliding device which moves freely up or down on 3/8 inch galvanized or stainless steel cable. When the upward force is removed, the CableGrab device automatically locks at any point on the cable. The instantaneous locking is achieved through a cam-locking system. The SM/RTC CableGrab device has an attached shock-absorbing lanyard, which is used when securing the CableGrab device to the climber's full body harness

4.0 Complete System Components

4.1 A complete SM/RTC 2001 CableGrab Vertical Climbing System must include the following components:

- SM/RTC-2001-OP3E3 CableGrab
- 3/8 inch galvanized or stainless steel (7 x 19) cable assembly
- SM/RTC full body harness
- Appropriate attachment brackets

5.0 Performance Data

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5.1 Working Capacity:

The designed working load is 310 lb., including tools, for individual use.

5.2 Minimum Clearance Required Below the User

10.5 ft. of clearance is required below the user's feet. The clearance includes deceleration distance, free fall distance, and D-ring slide.

6.0 Installation and Attachment

6.1 Installation-cable system:

1. Install the anchorage for the cable system at the top of the ladder. If using an SM/RTC ladder bracket, install according to the instructions provided with the bracket. Be sure to verify that the anchorage and the structure to which it is attached meet the requirements listed in these instructions.
 - 1.1 Your cable system will come with a clamp thimble and U-shackle attached to one end of the cable. This is the upper end of the cable. Use the U-shackle to connect the cable to the anchorage at the top of the ladder. This end must be connected to the top of the system.
 - 1.2 Install the bottom ladder bracket at the bottom of the ladder. If using an SM/RTC ladder bracket, install according to the instructions provided with the bracket.
 - 1.3 The bottom of the cable will be secured using the wire rope thimble and cable clips provided. Place the wire rope thimble through the ladder bracket (or turnbuckle if applicable) and thread the cable around the wire rope thimble. Pull the cable taut. You should have at least 6.5 in. of cable remaining.
 - 1.4 Apply first clip approximately 1 3/4" from "dead" end of wire rope.
 - 1.5 Apply U-bolt over "dead" end of wire rope - live end rests in saddle.
 - 1.6 Tighten nuts evenly, alternate from one nut to the other until reaching 45 ft. lb.
2. Attach cable guides (E6) to ladder along path of cable every 25 ft. Make sure the cable is contained in cable guide eyelet. Ladder cable guides help to eliminate damage from wind caused vibrations.
3. Attach lower end of cable to eyebolt of ladder bracket with the cable clips provided.
4. Apply the second clip as near the loop or thimble as possible.
5. Tighten nuts evenly, alternating until reaching 45 ft. lb.
6. For attachment to angle iron, drill a 3/8 inch hole into the center of each flat rung side of the two upper and two lower rungs. The surface of the holes should be protected with spray galvanizing or a suitable paint. The 3/8-inch bolts supplied with the brackets should be tightened until the fixture is snug. The user is responsible for insuring that the upper rungs are capable of withstanding a 5000 lb. static pull for a secure and proper installation. Note: Use a ladder bracket at bottom and extension bracket at top for climb-thru ladders. Use a ladder bracket at bottom and at top for side step ladders.

6.2 Installation - Device:

1. Release pull pins by depressing end buttons and remove from unit. (Photo A)
2. Open unit by pivoting clamp bar assembly away from housing. (Photo B)
3. Attach to cable as shown in Photo C.
4. Close unit by pivoting cams onto rope, making sure that arrow is pointing up as shown in Photo B and C.
5. Reinsert pins into housing making sure that ball detent passes through assembly (Photo D).
6. Check security of pins by trying to remove without releasing button.
7. Work cams back and forth and run the CableGrab device up and down to assure functionality and freedom of movement.
8. Test installation by pulling down sharply on the attachment eye to ensure that the mechanism locks onto the cable.



Photo A



Photo B



Photo C



Photo D

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7.0 Operating Instructions

You must follow these instructions carefully to allow this equipment to provide you with needed fall protection during the job. If you have any concerns about the condition of the equipment or experience any problems, notify your supervisor or the safety department immediately. Never take any chances. Important: If you fall, remove the equipment from service and immediately report what happened to your supervisor or the safety department. The unit must be removed from use and returned to SM/RTC for inspection and recertification. All harnesses must fit snugly and be positioned properly on the body whenever in use. Never use the Cable Grab device upside down. Do not use in icy conditions, such as freezing rain, or if there is any chance that the ability of the device to lock on the cable will be reduced. Serious injury or death may result if a fall occurs.

7.1 Attach the SM/RTC CableGrab device onto the wire rope with the arrow pointing upwards.

7.2 Test the SM/RTC CableGrab device by sliding it up the cable holding the hook and then dropping the hook. Do not use the device if it does not lock immediately.

7.3 Attach the shock-absorbing lanyard hook to the back D-ring on your full body harness and climb ladder in a normal fashion with torso close to the mechanism.

CableGrab device will follow the user, under a steady pull.

7.4 If cable system has cable guides, then remove the cable from the guide to pass over that guide and reinsert after passing. Do not remove CableGrab Device from the safety cable, to pass over the guides.

7.5 To descend, again climb down in a normal fashion with torso centered and close to the mechanism. This will keep the attachment lever up, disengaging the clamping bar and allowing the CableGrab to freely lead the climber.

7.6 If the lever is pulled back past center by leaning back, the clamp bar will engage the cable and the CableGrab will lock up. To unlock the mechanism, simply move upward to pivot the lever over the center. This will allow the CableGrab to operate freely.

7.7 Make sure harness is positioned correctly and that it fits snugly. For proper use of the full body harness, see SM/RTC instructions #569.

8.0 Training Guidelines

8.1 Hands-on training is imperative to meet the necessary training requirements of OSHA 1926.503 (a) under the construction fall protection regulations that went into effect on February 6, 1995. All training must be conducted under careful supervision of a qualified person. Live, hands-on training for all users is essential to help understand the capabilities and limitations of their personal protective equipment. Training should be site specific.

8.2 Rescue: A piggyback method of descent assisted by another climber from below is feasible provided training has been given.

9.0 Inspection

The user must inspect all equipment visually before each use. We suggest a formal inspection at least every six months by a competent person other than the user. We list this time interval because it is the most stringent of all the national consensus standards for fall protection:

- *ANSI A10.14, American National Standard for Constructions and Demolition Operations - Requirements For Safety Belts, Harnesses, Lanyards and Lifelines for Construction And Demolition Use* requires a formal inspection by a competent person every six months.
- *ANSI Z359.1* requires inspection by a Competent Person once every year.
- *OSHA 1910.66 and 1926.500* requires no formal inspection period, only inspection by the user before each use.

Because ANSI A10.14 is a national consensus standard, and compliance is not required by law, your company has the discretion to determine if the standard is applicable to your workplace. If you find any defective conditions, remove the item from service immediately, replace it, and contact SM/RTC for advice. Failure to remove damaged or questionable equipment could lead to serious or fatal injury.

9.1 Snap hooks: All snap hooks must close and lock every time; be sure they do not stick open because of damage or dirt. Ensure that the hook opens properly and that the gate self-closes and locks fully. Examine all hook parts carefully for cracks, broken or bent conditions, and to ensure that they are free of burrs or other signs of damage.

9.2 Steel Cable: Check for cuts, fraying, corrosion and other visible damage. Splices should be firm and secure.

9.3 Check that the ladder and/or extension brackets and cable guides are fitted exactly as indicated in the installation instructions.

9.4 Check that cable tension is maintained.

9.5 Make sure that the cable guides are spaced every 25 ft. (if the system is longer than 40 ft) and that the cable passes through the cable guide.

9.6 Check that the clamp thimble is completely closed so that the cable cannot come into contact with the installation eyebolt.

9.7 Inspect the CableGrab for wear and damage. If you see any excessive wear or damage to the device, remove from service and call SM/RTC for factory service.

9.8 Lanyard:

9.8.1 Webbing: Inspect the entire length of webbing for tears, cuts, fraying or other signs of wear and damage. Sewn terminations should be secure, complete and not visibly damaged. Carefully inspect all points where two or more pieces of webbing are sewn together. Inspect webbing by beginning at one end and bending a portion (6-8 in.) into a U-shape between your hands. Check the entire length of both sides.

9.8.2 Shock Absorber: Inspect shock absorber to determine if lanyard has been stressed. There should be no evidence of elongation. Inspect Expander Lanyard for broken stitching under the clear protective cover. Important: When the "Danger – Do Not Use – Remove From Service" warning label is showing from inside the shock absorber cover, remove the lanyard from service immediately and replace.

9.8.3 Labels: Check to see that labels are intact and legible. If the system passes inspection mark the inspection date on the inspection grid.

9.9 Additional Equipment: Inspect all fall protection equipment used with the system as directed in the instructions for each piece of equipment.

10.0 Maintenance

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Every time you use the CableGrab system, you must first inspect it as instructed in section 9. If you find any defective conditions, remove the item from service immediately, replace it, and contact SM/RTC for advice. Failure to remove damaged or questionable equipment, could lead to serious or fatal injury.

- 10.1 Personal protection equipment should be maintained regularly to help make sure that the equipment will operate properly when needed. Failure to maintain and store equipment carefully can result in poor operation that could lead to serious or fatal injury.
- 10.2 All equipment should be part of a periodic maintenance program that includes detailed records of inspection and maintenance. An inspection every month or more frequently at a minimum is suggested if the equipment is heavily used.
- 10.3 Never make any adjustments or repairs to or substitute any parts of the SM/RTC system. Call SM/RTC Customer Service for advice. You must return the unit for factory inspection and maintenance within two years of manufacture date and every two years thereafter.
- 10.4 Clean SM/RTC 2001 device regularly using a dry cloth or brush and lubricate pivot points to ensure the rollers rotate freely. Lubricant should be silicon based.

11.0 Warnings

Failure to observe the warnings below, follow all instructions in this booklet, or seek qualified assistance when needed can lead to serious or fatal injury.

- 11.1 Do not exceed maximum weight capacity of 310 lb., including tools.
- 11.2 Never attempt to use the CableGrab device upside down because in this mode while descending, no locking is provided and so you may be seriously injured or killed.
- 11.3 Never substitute parts of the SM/RTC 2001 CableGrab system.
- 11.4 Do not use this equipment in violation of any applicable company, state, or federal standard or requirement. This equipment is designed to comply with OSHA 1910.27, OSHA 1926.1053 and ANSI A14.3-1992 requirements for fixed ladders. Fall arrest equipment used to install this equipment meets OSHA 1910.66 Appendix C and OSHA 1910.129/130 and OSHA 1926 subpart M.
- 11.5 Never use a lanyard or other means to provide extra space between device and body support. This will increase the fall distance to more than 6 ft. and you may be seriously or fatally injured.
- 11.6 Remove from service immediately after a fall.
- 11.7 Never rely on the sound of a snap hook closing on a D-ring; check it visually for proper attachment.
- 11.8 All users must be in good mental and physical health and not under the influence of drugs or alcohol.
- 11.9 To achieve the maximum level of safety possible with this system, all instructions must be followed carefully and fully. You must plan the use of safety equipment before the job begins. Regularly inspect and maintain the system.
- 11.10 Anyone who has a history of back or neck problems that could be aggravated or complicated by using fall protection equipment should not do so. Pregnant women and minors should not use this equipment. If there is any reason why you may not be physically able to safely absorb the forces subjected in the event of a fall arrest, consult your doctor.

12.0 Questions

If you have any question or need additional explanation or clarification about the use of any SM/RTC equipment, call SM/RTC customer service toll-free 800-323-7402 (U.S. and Canada) or 847-358-2000 in Illinois or outside the Continental United States.

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