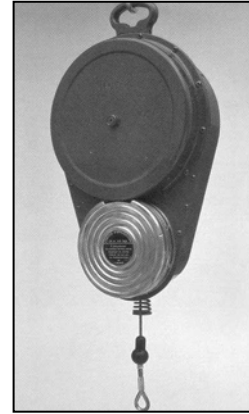


# Sellstrom/RTC<sup>®</sup> 1500 Series RetractaScape<sup>™</sup>

## Installation Operation and Maintenance Instructions

Instruction: INST-594  
Effective: 4/2004  
Expiration: 4/2014  
Replaces: 11/1/1983

The SM/RTC 2050 RetractaScape is a self-rewinding emergency escape device **designed for vertical fall arrest where fall hazards exist**. The cable extends as a worker moves vertically down from the RetractaScape and retracts automatically when the worker moves back up toward the RetractaScape. The retracting feature helps minimize tripping hazards and long falls often associated with lanyards and other lifelines. The RetractaScape automatically lowers the user to safety after a fall is arrested.



### 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 If you purchase a product, and these instructions are out of date, call SM/RTC Customer Service and request current instructions.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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## Installation Operation and Maintenance Instructions

### 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

- 1.1 The SM/RTC 2050 RetractaScape is a self-rewinding emergency escape device designed for vertical **fall arrest** where fall hazards exist. The lanyard is designed to extend as a worker moves vertically down from the RetractaScape and retracts automatically when the worker moves back up toward the RetractaScape. The RetractaScape automatically lowers the user to safety after a fall is arrested.

### Warning!

Never use the SM/RTC RetractaScape for fall protection when working on surfaces that can collapse such as grain, cement, and powders in tanks and silos. The RetractaScape may not sense that you are "falling" and you could sink in and suffocate. A working surface that is stable must be provided for such applications.

Do not use with a body belt or chest harness. The RetractaScape must be used with an SM/RTC Full Body Harness.

- 1.2 Other Applications: There may be other applications that are inappropriate for this unit. In case of doubt, call SM/RTC.

## 2.0 Performance Data and Material Specification

- 2.1 Designed Working Load: 75-310 lb. or one person. Do not use for material handling.
- 2.2 Line Constituent: Model number specifies line constituent and length:  
1500(4)-ABB  
A: G = 7x19 Galvanized Aircraft Cable 3/16" Diameter, S = 7x19 Stainless Aircraft Cable 3/16" Diameter.

## 3.0 Installation

- 3.1 Anchor Point Strength: 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 which read, "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 lb. 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."
- 3.2 Connection: A locking SM/RTC installation carabiner such as the SM/RTC 9111 or 9108 can be used to attach the SM/RTC RetractaScape to a suitable, overhead anchorage point. Make sure the carabiner is secure and closed completely.
- 3.3 Location: The RetractaScape cable must always be taut to prevent free fall. Select an anchor point that is at least 7 feet above the walking working surface so that there is no slack in the cable when connected to the user's full body harness. Make sure that the cable does not rub against anything as it is being used, or as the user is lowered.
- 3.4 Clearance: For rigid anchorages, allow a minimum of 4 1/2 feet of clearance below the walking or working surface to the first obstruction. Additional clearance is necessary for use with a horizontal lifeline system. If work is not done directly under the anchor point, additional clearance must be available for additional free fall due to a swing fall.

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## Installation Operation and Maintenance Instructions

### 4.0 Operation Instructions

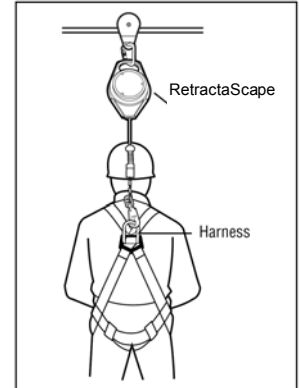
You must follow these instructions carefully to allow this system to provide you with needed fall protection during the job. If you have any concerns regarding the condition of the system or experience any problems, notify your supervisor or the safety department immediately. Never take any chances.

#### **Warning!**

Do not use if device does not retract.

Do not use if device does not brake.

- 4.1 Before each use, test the braking mechanism of the RetractaScape by pulling sharply on the cable. The RetractaScape should brake and drag. Do not use the RetractaScape if it does not brake when pulled sharply.
- 4.2 Visually inspect the RetractaScape, cable, hooks, and the anchor point (refer to the inspection section of this instruction for details). Check the inspection log before each use. If the log does not show that a formal inspection has been performed within the last month, remove the RetractaScape from use and mark it "DO NOT USE" until a formal inspection is done by a qualified person.
- 4.3 Adjust your harness to fit very snugly (refer to SM/RTC instruction #569 for details). A proper, snug and secure fit can help reduce the chances of falling out of your harness. If only used for escape, a chest belt may be provided. Simply pull the belt over the head and shoulders and pull tight under armpits using the metal band on the belt.
- 4.4 Attach the RetractaScape to your back harness D-ring using the SM/RTC locking snap hook at the end of the cable. The snap hook must be attached to the back D-ring that is located between the shoulder blades. Do not use any other D-ring. Attach while at ground or grade level before you are exposed to a fall hazard. Make sure the snap hook closes and brakes completely. Any harness used must be in good condition and meet federal OSHA requirements. Check with your supervisor or the safety department if you are not sure. D-rings must have a minimum internal diameter of two inches (2"). No other linkage or method of attachment is allowed. Never connect the RetractaScape to more than one person. The RetractaScape is a one-person device.
- 4.5 After you are connected, work normally with smooth movements. Do not jump across floor openings or fall hazards. If you move too quickly, the RetractaScape will brake. If this happens, move toward the RetractaScape to release the brake and then continue to work. The RetractaScape should be anchored or attached so that it is overhead when you are working. You must not work in a position where a swing fall could lead to an injury.
- 4.6 Reserve Lifeline: Never use the RetractaScape where the cable is pulled all the way out. For falls that occur near the end of the lanyard travel, a reserve cable system has been incorporated into some of the RetractaScares. A warning section of cable is painted red near the point of full extraction. The RetractaScape should not be used while the red cable is exposed. Use only the length that is unpainted.
- 4.7 For emergency descent simply put weight onto the cable to feel restraint, and then drop vertically below the installation point and you will be lowered gently. Use hands and feet to avoid structural obstacles during the descent.
- 4.8 Important: If you fall, immediately report what happened to your supervisor or the safety department. Remove the item from service, replace it and call SM/RTC Customer Service for recertification or repair. A qualified person must check the entire system to make sure it will provide the proper protection for the next person who might fall. Do not delay; it could be you.
- 4.9 Never interfere with the automatic retraction of the RetractaScape; do not use the RetractaScape if the cable has been knotted, badly kinked, or if wire rope clips have been used. Slack cable could result in a long, dangerous free fall.
- 4.10 Cable must always be taut to prevent free fall.



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## Installation Operation and Maintenance Instructions

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### 5.0 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 month for self-retracting lanyards, once a year for all other equipment.
- *OSHA 1910.66 and 1926.500* requires no formal inspection period; only inspection by the user before each use.

Because ANSI A10.14 and Z359.1 are national consensus standards, and compliance is not required by law, your company has the discretion to determine if the standards are applicable to your workplace. Equipment used in harsh environments requires more frequent formal inspection. 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.

- 5.1 Corrective Action: If damage is found as described below, remove the item from service immediately and replace it. If any damage or questionable conditions are apparent that are not described below, remove the item from service, mark "DO NOT USE", replace it and call SM/RTC Customer Service for advice.
- 5.2 Failure to remove equipment that has been damaged or where its condition is questionable could lead to serious or fatal injury. A detailed record of inspection dates must be maintained. An inspection chart is provided at the end of these instructions for your convenience.
- 5.3 Braking Mechanism: Test the braking mechanism of the RetractaScape by pulling sharply on the cable. The RetractaScape should brake quickly and drag slowly. The cable should retract smoothly back into the RetractaScape.
- 5.4 Anchor Point and Attachment: Make sure the attachment to the anchor point is secure. The structure to which the RetractaScape is attached must be checked. Make sure it is secure and free from distortion, cracks or other visible signs of damage. Painting approved anchor points with a bright color can help workers to easily identify where to connect the RetractaScape.
- 5.5 Housing and Handle: The housing on either side of the RetractaScape should be examined for cracks, dents, distortion, corrosion, abrasion or other visible signs of damage. Fasteners should be secure.
- 5.6 Cable: The entire length of cable should be inspected for kinks, broken strands, corrosion, abrasion, or other signs of wear and damage. Swaged terminations should be secure with the thimble tight and not visibly damaged.
- 5.7 Snap Hooks and Carabiners:
  - 5.7.1 Snap hook and Carabiner Body: All snap hooks and carabiners must operate smoothly and open and close completely. Check snap hook or carabiner body for sharp edges, burrs, distortion, cracks, and corroded or pitted surfaces.
  - 5.7.2 Snap-hook Rivets: Should be checked for cracks and broken, loose, or bent conditions.
  - 5.7.3 Snap-hook and Carabiner Gates: Should be free from distortion and binding, and seat properly against the snap hook or carabiner nose and body when released. Check that gate does not open without depressing the gatekeeper toward the back of the snap hook or carabiner body. The gate and gatekeeper spring should be sufficient to completely and firmly close. Carabiners should freely rotate into the locking position when released.
- 5.8 Labels: Labels must be secure and legible.
- 5.9 Additional Equipment: Inspect all fall protection equipment used with the system as directed in the instructions for each piece of equipment.

### 6.0 Maintenance

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- 6.1 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.
- 6.2 All equipment should be part of a periodic maintenance program that includes detailed records of inspection and maintenance. An inspection every month is suggested or more frequently if the equipment is heavily used.
- 6.3 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.
- 6.4 Cleaning: Steel components should be wiped down to remove grease, mud, sand, or other potentially harmful debris. Spray sliding bar with a dry lubricant regularly.
- 6.5 Storage: The rescue winch should be stored with the other components of the confined entry system. It should be kept out of the weather and in a manner to prevent damage from bending, crushing or breaking.
- 6.6 Frequency: Personal protective equipment must be maintained regularly to ensure 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.
- 6.7 Cleaning: The RetractaScape can be wiped down with a clean cloth to remove any dust or dirt. The cable can also be wiped to remove hand grease or dirt.
- 6.8 Lubrication: DO NOT LUBRICATE THE RETRACTASCAPE! The snap hook may be lubricated with a suitable lubricant that will not attract dirt and grit. (See SM/RTC Instruction #574.)
- 6.9 Reconditioning and Repair: There are no user serviceable parts in the RetractaScape. All repairs must be made by SM/RTC. The equipment must be returned to SM/RTC regardless of the degree of use after the expiration date on the label or when a fall occurs.
- 6.10 Return immediately if no expiration date is shown on the label. Call SM/RTC Customer Service before returning a RetractaScape to SM/RTC for inspection or repair.

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# Sellstrom/RTC® 1500 Series RetractaScape™

## Installation Operation and Maintenance Instructions

### 7.0 Training Guidelines

All training must be conducted under careful and competent supervision. Live hands-on training for all users is essential to help understand the capabilities and limitations of their personal protective equipment. Training also helps promote confidence and should be conducted as an initial introduction, as well as periodically for review and additional practice. Also, this instruction booklet should be stored where users can easily review it whenever necessary. Training should be site specific.

### 8.0 Trouble Shooting Guide

Concern	Concern or Probable Cause	Field Action: What to Do
Cable will not retract fully, or will pull out.	All retracting lanyards have this intermittent stop-retracting phenomenon due to build up of cable on one side of the cable drum. This usually occurs close to complete retraction. It usually occurs on an occasional basis, but gets more frequent if the cable is allowed to get dirtier and stickier.	Check for kinks in the cable that inhibit retraction, especially toward end of cable, when working around metal structures. Gently smooth kinks out with rubber hammer. For severe kinks or other cable damage, SM/RTC will need to replace cable. For paraffin or dirt, wipe clean with rag and mild solvent frequently. If problem persists, remove unit from service. Mark "DO NOT USE". Call SM/RTC customer service to arrange for repair or replacement.
Cable will pull out partially and stop, but will retract normally.	Cable may have over-wrapped itself on the rewind drum due to an uncontrolled release of cable, preventing further un-reeling at that point.	Remove unit from service. Mark "DO NOT USE". Call SM/RTC customer service to arrange for repair or replacement.
Cable will not pull out further from the unit or retract.	Kinked cable may be jammed against roof of housing.	The cable can sometimes be released by pulling gently, provided that the unit is not locked. Inspect unit for dents or corrosion preventing rotation of parts. If problem persists, remove unit from service. Mark "DO NOT USE". Call SM/RTC customer service to arrange for repair or replacement.
No cable tension. Cable pulls freely out of device.		Remove unit from service. Mark "DO NOT USE". Call SM/RTC customer service to arrange for repair or replacement.
Cable retracts jerkily or in spasms while climbing.	Climbing faster than the machine can retract the cable.	Climb evenly in coordination with device rewind function to avoid this. Rewind springs have a certain coil friction to overcome, which is made more obvious when the climb is off center or hardware has been added to the line to effectively counter weight the retraction. Only use SM/RTC supplied hardware, such as snap hooks and/or other SM/RTC accessories do not exceed retraction speed when climbing if you do not normally climb at this speed. Check if you are climbing directly under unit. If problem persists, remove unit from service. Mark "DO NOT USE". Call SM/RTC customer service to arrange for repair or replacement.
Cable retracts jerkily or in spasms while climbing	Climbing at an angle not directly under the machine may cause the cable to retract in spasms, or jerk. Climbing at an angle produces spasmodic rewind and also the possibility of swing fall that could be dangerous.	Always keep unit overhead. Consider an SM/ RTC horizontal lifeline or rail for this purpose, such as on catwalks or bridges where sideways motion is predictable. If problem persists, remove unit from service. Mark "DO NOT USE". Call SM/RTC customer service to arrange for repair or replacement.
Cable brakes too quickly.	Sometimes this is an impression rather than a fact.	Unit should be above head height at all times to avoid swing falls and pulling off-balance. Move fluidly around on job site without jumping or abrupt movement of any kind to avoid unnecessary braking. If problem persists, remove unit from service. Mark "DO NOT USE". Call SM/RTC customer service to arrange for repair or replacement.
Cable will pull out fully but will not retract.	Spring or spring rivet is broken. Units should brake normally.	Remove unit from service. Mark "DO NOT USE". Call SM/RTC customer service to arrange for repair or replacement.
Unit does not brake.		Remove unit from service. Mark "DO NOT USE". Call SM/RTC customer service to arrange for repair or replacement.

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# **Sellstrom/RTC® 1500 Series RetractaScape™**

## **Installation Operation and Maintenance Instructions**

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### **9.0 Warnings**

- 9.1 Failure to follow all instructions in this booklet, or seek qualified assistance when needed can lead to serious or fatal injury.
- 9.2 Do not exceed maximum weight capacity of 310 lb., including tools.
- 9.3 Never substitute parts of the SM/RTC RetractaScape
- 9.4 Do not use this equipment in violation of any applicable company, state, or federal standard or requirement.
- 9.5 All users must be in good mental and physical health and not under the influence of drugs or alcohol.
- 9.6 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.
- 9.7 Never attempt to make any repairs, alterations, or adjustments to SM/RTC equipment. Contact SM/RTC.
- 9.8 Do not interfere with the retraction capability of this RetractaScape in any way. Do not knot, clamp, or tape the cable to keep it from retracting back into the RetractaScape. The cable must be allowed to retract automatically; otherwise dangerous free falls, swing falls, or collisions with an obstruction, can occur.
- 9.9 Never allow the cable to retract uncontrolled back into the RetractaScape. This may cause someone to be hit by the cable or snap hook, or cause damage to other property. This may also internally damage or lock up the RetractaScape, requiring service. (SM/RTC suggests using a tag line to prevent such a rewind.)
- 9.10 Use the RetractaScape only as a passive safety device for fall protection. Never use the SM/RTC RetractaScape as a restraint or positioning tool. For example, do not lock the RetractaScape by hand and lean out holding onto the cable to reach an object.
- 9.11 Use caution when working near electrical hazards.
- 9.12 In salt and other corrosive environments, stainless steel cable models should be used. Consult SM/RTC for advice on exposure to any chemical or environment that may cause corrosion. Galvanized cable may be replaced with stainless steel cable. Contact SM/RTC Customer Service for more information.
- 9.13 Do not use the SM/RTC RetractaScape for load arresting applications.
- 9.14 Never put the line between your legs or under your arms.
- 9.15 Never put the cable through an opening, such as a railing, that may fall with you. This RetractaScape is an independent lanyard device meant solely to arrest an individual's free fall when used correctly.
- 9.16 Never connect the RetractaScape to more than one person. The RetractaScape is a one-person device.
- 9.17 Never use or attach a snap hook to incompatible hardware, to reduce the chance of accidental disengagement (rollout).
- 9.18 Use caution when working around moving machinery.
- 9.19 Do not use near sharp edges or abrasive surfaces.
- 9.20 Swing Fall Hazard: Always check for obstructions below your working area to make sure your potential fall path is clear. Work directly under the anchorage point at all times. Swing falls can be controlled in at least two ways. First, an engineered fall protection system can be used to help maintain the attachment point overhead, thereby allowing the fall arrest to occur in a vertical plane. Possible systems include SM/RTC Permacable Horizontal lifelines, SM/RTC Sky Anchor Systems, or SM/RTC I beam Trolley Systems. Second, the height of the anchor point can be raised, thereby reducing the angle of the arc and force of the swing. Important: Carefully review the mobility needed to complete the required work task, including travel to and from the workstation. For continuous and complete fall protection, more than one SM/RTC system may be required.

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### **10.0 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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# Sellstrom/RTC® 1500 Series RetractaScape™

## Installation Operation and Maintenance Instructions

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Inspection Records:

Model No:													
Serial No:													
Inspection Date:													
Inspector													
Retracts Y/N?													
Brakes Y/N?													
Cable													
Swaged Ferrules													
Snap-hook/Carabiner													
Housing													
Labels													
Disposition													

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