

RTC 3350 Series Ropelok™

Installation, Operation & Maintenance Instructions

Instruction #INST-3350
Effective: 01/2006
Expires: 01/2016

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 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 If you purchase a product, and these instructions are out of date, call RTC Customer Service and request current instructions.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 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 leggere 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 RTC equipment should be used as part of a complete 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.

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.



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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 Anchorage

- 1.1 All anchorage points must be capable of supporting a minimum of 3,600 lb. when certification exist, 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 must 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.

2.0 Available Models

- 2.1 3350-9111
 2.1.1 Ropelok™ with carabiner attached for use as a ladder safety device.
 2.2 3350-OP3E3
 2.2.1 Ropelok™ with 3ft. Expander Lanyard for use on a vertical lifeline.
 2.3 3350-RPLKL
 2.3.1 Ropelok™ with large attachment ring. No carabiner or lanyard attached. Can be used as a ladder safety device or on a vertical lifeline.

3.0 Approved Applications

WARNING!

- **No other applications or methods of use are allowed without prior written approval from RTC.**
- **These instructions are for both the equipment user and the user's management. Each should read and understand these instructions fully before using this equipment. Failure to do so could result in serious injury or death.**
- **Use only with RTC 5/8" Lifelines.**

- 3.1 Ladder Climbing Ropelok with Carabiner 3350-9111
 3.1.1 The RTC 3350-9111 Ropelok device is designed for climbing protection on vertical fixed ladders that meet OSHA and ANSI A10.14 standards. It can be used above or below ground, on interior or exterior surfaces. The RTC Ropelok is for fall arrest only. This should not be used for accessing, and for work positioning (leaning off balance) purposes. Hands and feet must be in firm contact with rungs at all times with full balance applied though the feet and one limb moved at a time.
 3.1.2 The RTC 3350-9111 Ropelok is approved for use only in combination with an RTC full body harness with a side and/or front D-ring. **Use of lanyards that allow a free fall greater than 18 inches do not meet ANSI A14.3-1992 and applicable OSHA standards.**
 3.2 Vertical Lifeline Ropelok with Shock Absorbing Lanyard 3350-OP3E3
 3.2.1 The RTC 3350-OP3E3 Ropelok is designed for climbing protection with RTC vertical lifelines. The RTC Ropelok is for fall arrest only. Do not use for work positioning.
 3.2.2 The RTC 3350-OP3E3 Ropelok is approved for use only in combination with an RTC full body harness with a back D-ring. **Only one user may be attached to a vertical lifeline.**
 3.3 Ropelok for use as Ladder Safety Device or Vertical Lifeline Fall Arrestor 3350-RPLKL
 3.3.1 The RTC 3350-RPLKL Ropelok is designed for climbing protection on vertical fixed ladders that meet OSHA and ANSI A10.14 OR climbing protection with RTC vertical lifelines.
 3.3.2 The RTC 3350-RPLKL Ropelok, when used for climbing protection on vertical fixed ladders, must be used in conjunction with a RTC carabiner. Free fall must be limited to 18 inches or less. See section 3.1
 3.3.3 The RTC 3350-RPLKL Ropelok, when used for climbing protection with RTC vertical lifelines, must be used in conjunction with a shock absorbing lanyard. Free fall must be limited to 6 feet or less. See section 3.2

4.0 Performance Data

- 4.1 3350-9111
 4.1.1 The designed working load is 310 lbs., including tools, for individual use.
 4.2 3350-OP3E3
 4.2.1 The designed working load is 310 lbs., including tools, for individual use. The Ropelok meets ANSI Z359.1, and OSHA 1910.66, and 1926.500. Each user must be connected to a separate lifeline.
 4.2.2 The chart below list the minimum clearance required below the user to arrest a fall, when using RTC 5/8" Polyester Rope Vertical Lifeline. Contact RTC for clearance information when using Permacable. The clearance values include deceleration distance, free fall distance, D-ring slide, and rope elongation.

Minimum Clearance Below User	
Length of Vertical Lifeline	3350-OP3E3 (3 ft. Lanyard)
25 ft.	12.5 ft.
50 ft.	14.5 ft.
75 ft.	16.5 ft.
100 ft.	18.5 ft.
125 ft.	20.5 ft.
150 ft.	22.5 ft.
175 ft.	24.5 ft.
200 ft.	26.5 ft.

Warning!

- **Use only RTC 5/8" vertical lifelines.**



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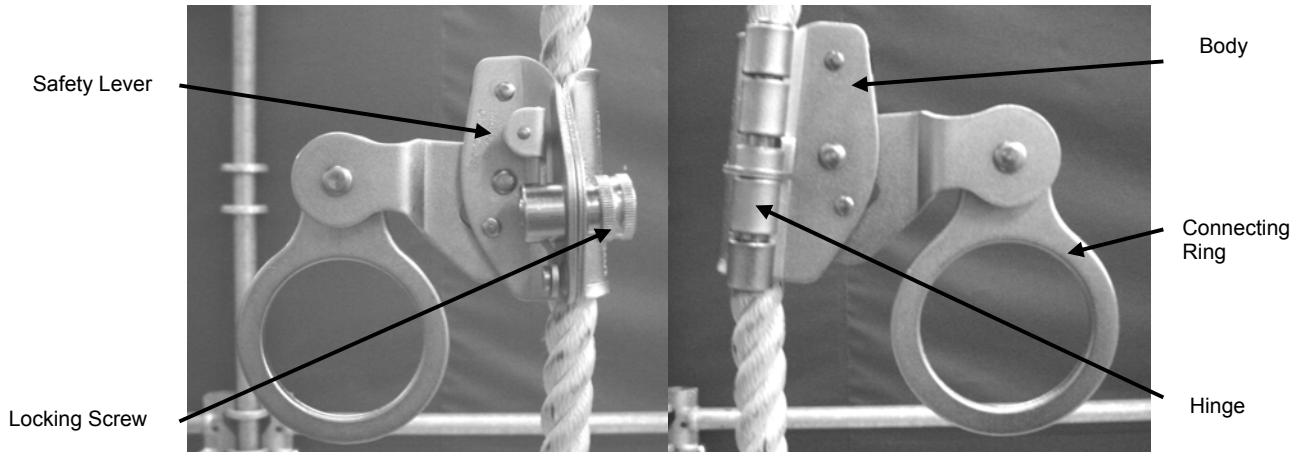
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5.0 Operating Characteristics

- 5.1 The 3350 series Ropelok is a detachable sliding device, which moves freely up or down a 5/8" vertical lifeline (an approved polyester rope or RTC Permacable.) When a fall occurs, the Ropelok automatically locks at any point on the lifeline. The instantaneous locking is achieved through a cam-locking system.
- 5.1.1 The RTC 3350-9111 Ropelok device has an attached RTC carabiner that is to be used when securing the Ropelok device to the front D-ring of the climbers full body harness.
- 5.1.2 The RTC 3350-OP3E3 Ropelok device has a shock-absorbing lanyard.
- 5.1.3 The RTC 3350-RPLKL Ropelok device has neither a carabiner nor shock-absorbing lanyard. This Ropelok has a large connecting ring to connect either a carabiner or a shock-absorbing lanyard.



6.0 Operating Instructions

Warning!

- You must follow these instructions carefully to allow this equipment to provide you with the needed fall protection during the job. If you have any concerns about the condition of the equipment or experience and problems, notify your supervisor or the safety department immediately. Never take any chances.
- 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 permanently.
- All harnesses must fit snugly and be positioned properly on the body whenever in use.
- Never use the Ropelok device upside down. Serious injury or death may result if a fall occurs.

- 6.1 Attach the RTC Ropelok device onto RTC lifeline with the arrow pointing upwards.
- 6.2 Test the RTC Ropelok 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.
- 6.3 If being used as a climbing device on fixed ladders, attach the RTC Ropelok device carabiner hook to the front D-ring on your full body harness and climb ladder in a normal fashion with torso close to the mechanism. If being used as climbing device with RTC vertical lifelines, attach the RTC Ropelok device with a shock-absorbing lanyard to the back D-ring of the full body harness. Ropelok device will follow user, under a steady pull.
- 6.4 If lifeline system has cable guides, then remove the lifeline from the guide to pass over guide and reinsert after passing. Do not remove Ropelok Device from the safety cable.
- 6.5 To descend, again climb down the 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 allowing the Ropelok to freely lead the climber.
- 6.6 If the lever is pulled back past center by leaning back, the clamp bar will engage the cable and the Ropelok will lock up. To unlock the mechanism, simple move upward to pivot the lever over the center. This will allow the Ropelok to operate freely.
- 6.7 Make sure harness is positioned correctly and that it fits snugly. For proper use of the full-body Harness, see RTC instructions for harnesses.
- 6.8 Important: If you fall, immediately report what happened to your supervisor or the safety department. Remove the item from service, replace it, and call RTC Customer Service.



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7.0 Installation and Attachment

7.1 Permacable system for fixed vertical ladders.

- 7.1.1 Thread combination clamp thimble (E2) on the cable (E3) and the U-shackle at ground level as follows:
 - 7.1.1.1 Insert Permacable lifeline through both halves of the combination clamp/thimble leaving approximately three inches of lifeline, insert bolts and hand tighten nuts.
 - 7.1.1.2 With a socket wrench, tighten nuts equally to a snug fit.
 - 7.1.1.3 Using the torque wrench tighten one bolt to 130 ft-lbs. and then tighten the other bolt to the same torque.
 - 7.1.1.4 There should not be any gap between the two clamps when tightened to correct torque. Be sure that the clamp thimble is completely closed so that the lifeline cannot come into contact with the installation eyebolt. **Do Not Over-Tighten.** This will cause distortion of the clamp thimble and result in cracking and unnecessary cable distortion.
 - 7.1.1.5 Now feed the U-shackle through the eye of the Permacable Clamp thimble termination.
 - 7.1.1.6 Attach the turnbuckle to one end of the cable using the U-shackle.
- 7.1.2 Raise and attach ladder brackets (E21) at top and bottom of the ladder. The left side of the ladder is recommended to provide adequate foot space and dismounting room.
 - 7.1.2.1 The Extension Bracket (E22) for climb-through ladders is fitted to the top two rungs of the ladder.
 - 7.1.2.2 The Ladder Bracket (E21) for side-step ladders is fitted four feet above the landing platform level. For bottom attachment use the lowest two rungs. Attach the bracket to the ladder with the rung clamps provided. **Do not over tighten rung clamps.**
- 7.1.3 Attach cable guides (E6) to ladder along path of lifeline every 25 ft. Make sure life line is contained in cable guide eyelet. Ladder cable guides help to eliminate damage from wind caused vibrations.
- 7.1.4 Attach lower end of cable to eyebolt of ladder bracket with a combination clamp thimble. Tighten cable to approximately 500 lbs. tension using a fully extended turnbuckle (E4). Cable is sufficiently tightened if deflection is not more than 2" at midpoint between cable guides when 20 lbs. tension is applied [using a spring balance (0-50 lbs.)].
- 7.1.5 For attachment to angle iron, drill a 3/8" 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" 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.

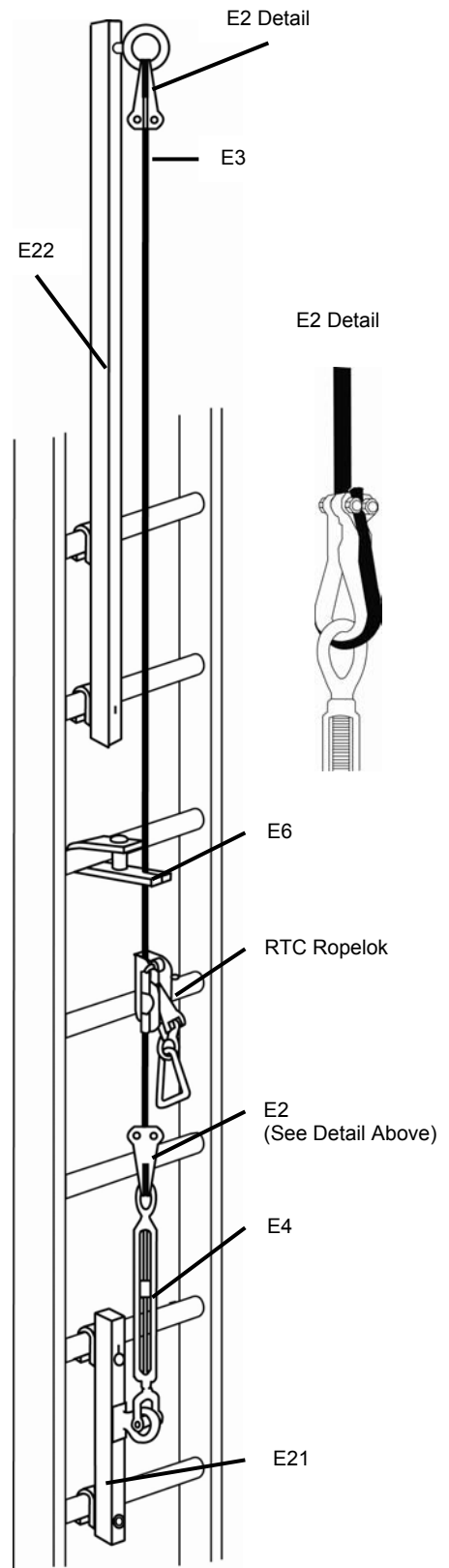
Note: For climb-thru ladders you need ladder bracket at bottom and extension bracket at top. For side-step ladders you need ladder bracket at bottom and at top.

7.2 Installation of vertical lifelines.

- 7.2.1 Verify that the anchorage meets the requirements listed in section 1.0
- 7.2.2 Connect the spliced eye on the rope lifeline to the anchorage using a double locking snaphook.
- 7.2.3 Attach a RTC rope weight, or secure by other means, to keep the lifeline taut while climbing.

7.3 Ropelok Device.

- 7.3.1 Apply pressure on the safety lever.
- 7.3.2 Turn loose the locking screw, until the body opens to two parts.
- 7.3.3 Place the lifeline on the groove of device, make sure to install in the correct direction. Arrow should always point upwards.
- 7.3.4 Close the body, and apply pressure on the safety lever.
- 7.3.5 Turn the locking screw until tight.
- 7.3.6 Make sure the Ropelok will lock in place when left alone.
- 7.3.7 Make sure the Ropelok will trail the user easily when pressure is applied on the cam.



8.0 Training Guidelines

- 8.1 All training must be conducted under careful and competent supervision. Hands-on training for all users is essential to teach the abilities and limitations of their personal protective equipment. Training also promotes confidence and should be conducted both as an introduction, and then periodically for review and practice. Also, this instruction booklet should be stored where users can review it easily whenever necessary.



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9.0 Inspection

- 9.1 The user must inspect all equipment before each use. A qualified person, other than the user, must also inspect the equipment at least every six months. If damage is found or if you have questions about the equipment's condition, remove the item from service immediately. Tag the item for non-use, and replace it. If you find any defective conditions, remove the item from service immediately, replace it, and contact RTC for advice. Failure to remove damaged or questionable equipment could lead to serious or fatal injury.
- 9.1.1 Inspection for climbing protection equipment on vertical fixed ladders.
- 9.1.1.1 Carabiners: All carabiners must close and lock every time; be sure they do not stick open because of damage or dirt. Ensure that the hook opens properly when you rotate the gate 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.
- 9.1.1.2 Lifeline: Check for excessive cuts, fraying, corrosion or other visible damage. The entire length of the rope should be of uniform diameter, areas where there is noticeable change from the original diameter might have been weakened from a fall.
- 9.1.1.3 Check the ladder and/or extension brackets and cable guides are fitted exactly as indicated in the installation instructions.
- 9.1.1.4 Check that the cable tension is maintained at regular intervals to the level explained in the installation instructions.
- 9.1.1.5 Make sure that the cable guides are spaced every 25 ft. (if the system is longer than 40 ft) and that the lifeline passes through the cable guides.
- 9.1.1.6 Check that the clamp thimble is totally closed so that the cable cannot come into contact with the installation eyebolt.
- 9.1.1.7 Inspect the Ropelok device for wear and damage. If you see any excessive wear or damage to the device, remove from service and call RTC.
- 9.1.1.8 Markings: All markings should be clear and easy to read.
- 9.1.2 Inspection for climbing protection equipment with RTC vertical lifelines
- 9.1.2.1 Shock-Absorbing Lanyard: 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 inches) into a U-shape between your hands. Check the entire length of both sides. Detailed examples of visual signs of harmful exposure are summarized in Table 1. Inspect the shock absorber to determine if the 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.
- 9.1.2.2 Labels: Check to see that labels are intact and legible. If the system passes inspection mark the inspection date on the inspection grid.
- 9.1.2.3 Additional Equipment: Inspect all fall protection equipment used with the system as directed in the instructions for each piece of equipment.

Table 1

Type of Exposure Chart					
Type of Webbing	Heat	Chemicals	Flame or Molten Metal	Paint or Solvents	Dirt or Grime
Polyester & Nylon	Fibers become brittle, will shrivel, turn brown in color and break when flexed. Should not be used above 180° F.	Fibers will change color and texture, similar to a brownish smudge or smear; will become less elastic with transverse cracks resulting from bending.	Fiber strands will fuse together and become hard, brittle and shiny in appearance.	Particles work into the weave and can cut and fray fibers.	Particles work into the weave and can cut and fray fibers.

10.0 Maintenance

- 10.1 Personal protection equipment should 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.
- 10.2 All equipment should be a part of a periodic maintenance program that includes detailed records of inspection and maintenance. An inspection every month or more frequent at a minimum is suggested if the equipment is heavily used.
- 10.3 Never make any adjustments, repairs, or substitute and part off the RTC system. Call RTC customer service for advice.
- 10.4 Ropelok: Remove the device from the lifeline. It can be rinsed in soapy water to remove grit and dirt. After drying, reattach the Ropelok to the lifelines as indicated in the installation instructions. Do not subject the lifeline to any chemicals or industrial solvents. The lever arm may be lubricated with low temperature silicone or mineral oil. The device must lock immediately when it is dropped on the lifeline.
- 10.5 Lifeline: Wash lifelines with water only. Do not use any type of commercial solvents.



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11.0 Warnings

Warning!

- Failure to observe the warnings below, follow all instructions, or seek qualified assistance when needed can lead to serious or fatal injury.
- 11.1 Do not exceed maximum weight capacity of 310 lbs., including tools.
- 11.2 Never use a RTC 3350 series Ropelok 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 RTC Ropelok system.
- 11.4 Do not use this equipment in violation of any applicable company, state, or federal standard or requirement.
- 11.5 Remove from service immediately after a fall.
- 11.6 Never rely on the sound of a snap hook closing on a D-ring. Check it visually for proper attachment.
- 11.7 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 woman and minors should not use this equipment.
- 11.8 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.



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