

ROPE WRENCH & TETHERS

- RP285 APEX Rope Wrench
- RP280/RP283 Rope Wrench
- RT300A2 Squirrel FLEX Tether
- RT300A1 Squirrel Metal Tether
- RT290C2 Standard Textile Twin Tether
- RT290B1 Standard Textile Single Tether

SPECIAL ROPE WRENCH & TETHER WARNINGS

Never use as life support. Failure to use proper life support will lead to serious injury or death.

For use only by Arborists who are experienced in SRT. Using the Rope Wrench without training and experience with SRT can lead to serious injury or death.

Practice using device 'low and slow' before use at heights.

Improper orientation of installation will cause the device not to function.

Read and follow all of these instructions before using the device.

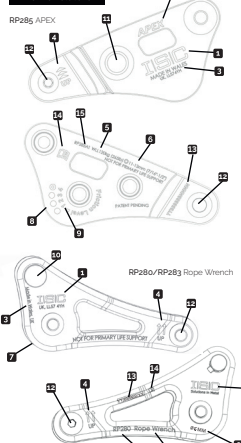
Serial Number:

Date of Manufacture:

Care & Maintenance

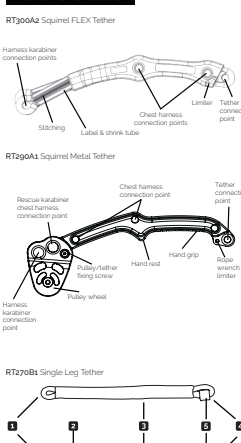


Nomenclature



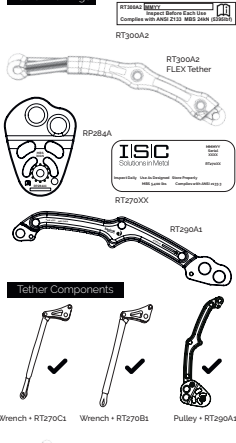
- 1 Manufacturer's Identification
- 2 Product Name
- 3 Location of Manufacture
- 4 Serial Number
- 5 Working Load Limit
- 6 Rope Diameter Range
- 7 Wheel
- 8 Adjustable Cam
- 9 Cam Setting Indicator
- 10 Sic Pin
- 11 Spring-loaded Frame Lock Button
- 12 Tether Attachment Point
- 13 Serrated Ratchet
- 14 Picogram Inflation
- 15 User to Read Instructions
- 16 Part Number
- 17 RP285 13mm (1/2")
- 18 RP285 13mm (1/2")
- 19 RP285 Optimised for Firm (1/2") only
- 20 RP285 AP2CV Adjustable for 11-13mm (7/16" - 1/2")

Tether Nomenclature



- 1 Karabiner attachment eye
- 2 Sitching
- 3 Stronch tube
- 4 Rubber Gormmet
- 5 Limiter

Tether Markings



- Wrench Part Codes: RP285 11-13mm, RP280 11-13mm, RP283 13mm only
- Wrench + RT290C1
- Wrench + RT290B1
- Pully + RT290A4

Intent and Purpose

The Rope Wrench is meant to be used by Arborists servicing, accessing, or maintaining trees in conjunction with a Single Rope Technique (SRT) configuration. The Rope Wrench is a friction control device that allows a climber to ascend and descend a single rope without changing equipment. When used as part of a secure hitch based climbing system, it allows the climber to smoothly control the rate of descent by adding friction to the climbing system.

The Rope Wrench is NOT:

- a life support device. It is, however, a load-bearing device that may bear more than 50% of the climber's weight during the climb.
- for use without a life supporting friction hitch or similar device that will immediately stop descent in an emergency situation.
- for use by persons novice to SRT techniques.
- an SRT training device.

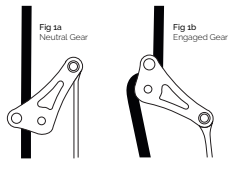
Basic Operation

Applies to RP280, RP283 and RP285 models.

The Rope Wrench has two gears, neutral and engaged, as shown below.

Neutral Gear (Fig 1a) The climbing rope can pass freely through the Rope Wrench.

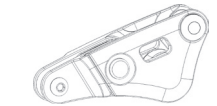
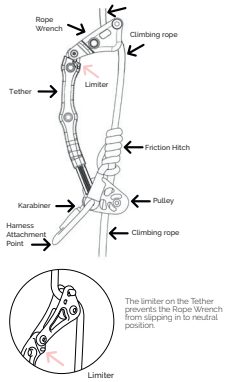
Engaged Gear (Fig 1b) Due to downward loading on the tether attachment point, the climbing rope is bent into an S-shape by the Wheel and the Sic Pin. (RP280/RP283 models) or between the adjustable cam and the top ballast of the (RP285 model). The friction between these two components will slow the passing of rope through the device.



Equipment Checklist

- Equipment needed to safely climb using the Rope Wrench system)**
- Rope Wrench
 - Climbing Rope
 - Friction Hitch
 - Tether
 - Karabiner
 - Harness
 - Helmet, Boots and Safety Glasses
 - Back-up descent device such as a karabiner for a munter hitch
- Optional Equipment**
- Slack-tensioning Pulley
 - Other Personal Protective Equipment (PPE)
 - Ascender(s)

Fully Assembled Rope Wrench System



Rope Wrench & Tether
(Not for Primary Life Support)

climb. work. rescue.

International Safety Components Ltd.
Unit 1, Plot 2
Llandygal Industrial Estate
Bangor Gwynedd
LL57 4YH
United Kingdom

*44 (0) 1248 363 125
sales@iscwales.com
www.iscwales.com



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Equipment Requirements

Rope Wrench
Always use the original Rope Wrench manufactured by ISIC. Do not attempt to use a 'home-made' Rope Wrench.

Climbing Rope
It is recommended that 16 or 21 strand rope, made of Nylon, Polyester, Polypropylene or Kevlar/Kevlar, is used. Ropes should be of a type that is approved for use in Arboriculture. Assistive climbing ropes as NOT recommended. Rope should have just enough 'give' or 'bounce' to be comfortable. Always use the correct diameter rope: RP280, RP283 11-13mm (7/16 - 1/2") (RP283 13mm (1/2") rope only).

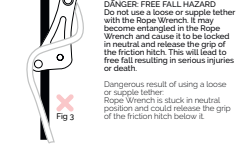
Friction Hitch
It is advised that a heat resistant rope of a different material than of the climbing rope be used for the friction hitch.

Note 1) The above recommendations for the selection of ropes are general guidelines only. There are many factors that go into selecting suitable ropes for climbing. A professional Arborist should carefully consider all the factors present before making a decision regarding the ropes to be used.

Note 2) It is recommended that each rope used in the Rope Wrench system be a different colour or pattern for clarity of distinction.

Tether
The Rope Wrench must be used in conjunction with a stiff tether, which is specifically designed for use with the Rope Wrench. Do not use tethers which were made from brittle materials, such as Acrylic or wood. Do not use home-made tethers. We recommend the use of ISIC Square FLEX Squirrel Aluminium or ISIC standard textile tethers.

A suitable tether allows 30cm (12") of room between the hitch and the Rope Wrench in an engaged and fully equalised set up.



Karabiner

The karabiner selected must be designed for use in Arboriculture.

- be self-closing
- be lock-loading
- take three consecutive and deliberate motions to unlock (lock-loading)
- be large enough to ensure that when configured, no loading or interference with the gate occurs.
- be secured such that no loading or interference with the gate will occur.

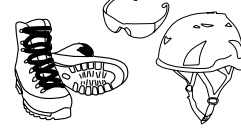
(The ISIC KH30425 HMS Karabiner is an example of an acceptable Karabiner.)

Harness

The harness selected for use with the Rope Wrench system must be adjusted to best fit the climber's body. Suspended work positioning harnesses are recommended for use with the Rope Wrench system. Harnesses with a chest attachment point may be used with the Rope Wrench and should be attached to the Tether Attachment Point or to the tether itself. A chest attachment point should not be load bearing and is only meant to keep the system upright and to keep the slack out of the system. (See section titled Setting Up the Rope Wrench System).

Helmet, Boots and Glasses

It is the responsibility of the climber to select a suitable tether. It is strongly recommended that the climber wear a helmet, boots, and safety glasses all have been commercially manufactured for arboriculture.



Optional Equipment Recommendations

Other PPE
Each climb will have its own unique set of obstacles and hazards that should be well understood before climbing begins. The use of other PPE such as ear, face, hand, leg and respiratory protection will depend on the level of exposure of the climber to these hazards.

Slack-Tending Pully
When using Twine-based Tethers (such as RT300A1, RT290B1 Single, or RT290C2 Twin-leg Tether), a pulley is not essential, but is recommended in order to assist in keeping slack out of the system and for moving (re-feeding) the friction hitch up the rope, during ascent. For this purpose, use a pulley which is specifically designed for climbing systems such as the RP292 PHLETICH Pulley.)

The Squirrel Tether should always be used with the Squirrel Pulley which is supplied as part of the Squirrel Tether kit.

Ascenders
Mechanical ascent devices such as foot or hand ascenders are compatible with the Rope Wrench. Any time more gear is added to any rope system it increases the complexity and likelihood of disorder and entanglement. Extra care must be taken to maintain a clean and tidy system and using ascenders as becoming entangled in gear can lead to catastrophe especially when panicked.

Back-up Descent Device
During a particularly long descent, the life of the friction hitch can be prolonged by incorporating the use of a back-up descent device. A munter hitch or a figure eight may be used above or below the friction hitch (slack of it) in conjunction with the Rope Wrench. A back-up descent device can also be used if the Rope Wrench becomes incapacitated during the course of the climb (e.g., if the climber loses the Sic Pin).

WARNING: USE OF A FRICTION HITCH
Always remember that the Rope Wrench is not a life support device and experience with tying secure anchors and so that the Rope Wrench requires a properly tied and functioning friction hitch. Failure to do so can result in serious injury or death.

Standard Set-up Instructions

NOTICE REGARDING SUBSTITUTIONS
The following set-up instructions are based on the equipment recommended in the previous section. Substitutions to the equipment or methods described herein are made at the sole risk of the climber. Make sure the function and limitations of any substitutions are well understood before deviating from these instructions.

Step 1: Choosing a Time And Place
Every climbing location has an unlimited number of potential obstacles and hazards. Even with a perfectly rigid system and all the proper PPE, some conditions can still pose a threat to a climber's safety. Consider the following when choosing a time and location for climbing:

- Rain or moisture can lead to slipping
- Wind can affect stability and send debris toward the climber
- Lightning can often strike trees
- Humidity can affect the function of equipment, particularly the friction hitch
- Temperature can affect the function of equipment, and affect the performance of the climber

Tree-Specific Hazards
Insect and animal habitats that can become agitated

- Dead, rotten, or weakened branches can break especially when used for anchoring
- Nearby power lines
- Anything sharp, such as nearby fences or encroaching structures

Step 2: Anchoring

- 1 Tie a weighted object to one end of the climbing rope
- 2 Throw the weighted object over a limb or crotch that will support above or below the weight of the climber.
- 3 Tie the climbing rope to the tree using a trunk-buried basket approach or a limb-secured canopy approach.

The climber is responsible for having sufficient knowledge as to experience with tying secure anchors so that the climber is uncertain in tying an anchor. consult with a professional Arborist.

DANGER: FREE FALL HAZARD
Failure to properly anchor any rope climbing system will lead to free fall resulting in serious injury or death.

WARNING: USE EXCESSIVE ROPE
Failure to properly anchor any rope climbing system will lead to free fall resulting in serious injury or death.

WARNING: USE PROPER HITCH

The friction hitch is a climber's ultimate life support and failure to properly tie and operate a friction hitch can lead to serious injury or death.

Step 3: Tie a Friction Hitch
For a secure friction hitch to the climbing rope, examples of appropriate friction hitch styles include Veldslidain, Michaelson, Oidel, Schwablich, Cooper, XT, and Knud. Mechanical friction hitches may also be acceptable (check with the manufacturer that the mechanical device is rated for SRT) The friction hitch chosen must be well understood before use.

Note: It is imperative that the climber knows how to properly tie a friction hitch. There are many variables to be considered when tying a friction hitch, such as temperature, humidity, level of experience, desired ascent and descent speeds, etc. There is no substitute for experience and hands-on training - consult with a professional arborist if you are not properly experienced or trained.

Step 4: Attach Elements to Karabiner
Attach the ends of the lead friction hitch and one end of the tether to the karabiner. If using a pulley, slide it onto the rope and attach it to the karabiner as well. Attach all elements so as to maintain symmetry on the karabiner, e.g. attach the ends of the friction hitch on either side of the tether.

Test
Apply as much downward force on the karabiner as possible to ensure the friction hitch is gripping the rope properly. This should be done multiple times. Ensure that the friction hitch catches when the climbing rope is both weighted and unweighted before the Rope Wrench is installed on the line.

Step 5: Attach System to Harness
Attach the end of the karabiner to your harness at the designated attachment point. If the harness has a chest attachment point, attach it to the Tether Attachment Point or to the tether itself.

Step 6: Bounce Test

- 1 Slide the friction hitch and Rope Wrench up the climbing rope as far as possible.
- 2 Lean back or crouch down so that the friction hitch grips the rope. Proceed to the next step only if this is successful.
- 3 Take a small jump and swing the legs forward, such that the entire body weight is put onto the system and the climber bounces on the rope.
- 4 Look and listen for cracking or creaking from the supporting branches and trunk. Do not climb on the system if cracking or creaking is observed.
- 5 Be sure there is no excessive give in the branches.
- 6 Perform all relevant inspections listed in the section titled "Pre-Climb Inspections".

This test ensures the system will maintain its integrity should a fall occur.

Rope Wrench Set-up Instructions

STEP 1: Attaching a Tether to the Wrench
If using RP285 AP2CV Push the button on the tether and swing open the front plate.

If using RP280/RP283 Release the Sic pin from the front plate of the device (pin remains captive in rear plate).

2 Unravel and remove the Tether Attachment Bolt. If using RP285 AP2CV: Swing the Tether swing-frame to open position.

3 Place the free end of the tether over the tether attachment bolt, ensuring the Tether Limiter is located underneath the Rope Wrench. If using the RP283 Wrench with the RT290 Aluminium Tether, please note that two washers (supplied) should be secured to the tether attachment tube on each side of the tether. **NOTE that washers are only required when fitting the RT290 Squirrel Aluminium Tether to the RP283 13mm Rope Wrench.**

4 Holding the tether in place, close the front frame of the device (RP280/RP283 models) or the Tether swing-frame (RP285 AP2CV device) and screw the Tether Attachment Bolt. It is recommended that a reversible thread-lock be applied to the bolt, in order to prevent loosening. Grease that the bolt is screwed in tightly.

If using RP285 AP2CV: The front plate can now be closed.

5 Fitting RT290 Tether to RP283 13mm Wrench Note use of a washer.

6 Adding a Tether to the RP285 AP2CV

Do not repeatedly remove and attach tethers - force the bolt into the socket. If the bolt will not fully screw in - use the device if the bolt is loose.

CAUTION: TIGHTEN TETHER BOLT
The bolt on the Tether Attachment Point may come unsecured during climbing if not properly tightened. This will cause the tether to detach and the climber to fall. The Rope Wrench users.

