

ARB CLIMBER

AERIAL ARBORICULTURE • TECHNIQUES • CLIMBING & CUTTING EQUIPMENT



ISSUE

25

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ePPE CENTRE



ePPEcentre Application: Make PPE Management Easier!

By simply scanning the product datamatrix, all related information will automatically show up on a dedicated dashboard:

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ARB CLIMBER issue 25

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AC25 Digital Version

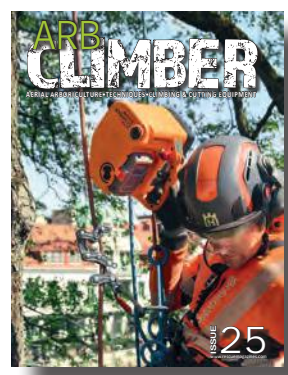
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FRONT COVER:
Issue 25's cover, features the Skylotec/Actsafe ICX powered Ascender or powered winch if you want to use it that way. This is Skylotec/Husqvarna joint enterprise with an Actsafe ascender using a Husqvarna battery which you may already have for your chainsaws/blowers etc. See page 3 for more info.



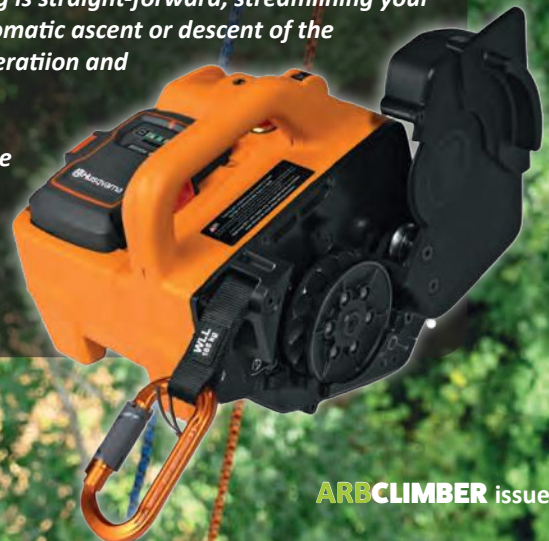


HUSQVARNA x SKYLOTEC

ACTSAFE ICX

Husqvarna x Skylotec's Actsafe ICX power ascender is the most compact model yet and benefits from 'off-the-shelf' batteries rather than the usual bespoke batteries that are often used in these high-end power ascenders. Here's what Husqvarna and Skylotec has to say....With the power ascender powered by Husqvarna's BLi-X 36V battery system, tree climbers can effortlessly ascend into the canopy to reach their work area quickly and with ease. It is designed to provide a compact, intuitive, and lightweight solution that saves energy for the work in the tree canopy. Getting started is a breeze – simply attach the power ascender anywhere on the rope and experience a faster, easier climb. With a capacity of 185 kg, it can lift both you and your gear. The included remote control allows the ground crew to send additional tools your way, making your job even smoother. Its intuitive operation is effortlessly managed with a thumb wheel, enabling precise work. Equipped with a high-performance Husqvarna BLi200 battery, the hoist achieves an ascent speed of 24 m/min with a maximum battery range of 230m/754ft with a 100kg/220lb load and at a temperature of 20°C/68°F. Thanks to its IP55 rating, the Husqvarna x Skylotec ActSafe ICX can be used in all weather conditions. Rope loading is straight-forward, streamlining your workflow and saving valuable time. A remote control allows for the automatic ascent or descent of the individual on the device, in case they are unable to do so themselves. Operation and utilization are quickly and easily learned through user training.

- Fast and secure rope loading - mid-line attachable
- Ultralight, compact personal power ascender with LED battery charge status
- Easy control with an intuitively operated thumb wheel or remote control
- WLL 185kg or max. 1 person - not rated for two-person rescue but can use remote control to retrieve climber



CROSS-PLATFORM BATTERIES IS THE KEY

The Husqvarna x Skylotec Actsafe ICX power ascender has tapped into a much needed money-saving alternative for arborists looking to get into powered ascending. They have taken one of the most expensive elements out of the equation and created a 'shell' that accepts premium batteries that you may already be using for your chainsaws. Battery cost is a key consideration for any of the main platforms - any pro series lithium ion battery from the premium companies will set you back upwards of £€200. Surprisingly perhaps, Husqvarna batteries stack up very well at between £€100 and £€400 for their three pro-series ranges of batteries - compare the 5/6Ah DeWalt Flex Volt which would be one of three or four top trade batteries available at DIY stores for between around £€100 £€300 and you can see that Husqvarna batteries are very reasonable.



With your Husqvarna batteries you can power all these products and the list will grow:

- Powered Ascender
- Top Handle Chainsaw
- Rear Handle Chainsaw
- Pole Saw
- Brushcutter & Strimmer
- Hedge Trimmer
- Leaf Blower
- Lawn Mower
- Scarifyer
- Circular Saw/Disc Cutter
- Concrete Chainsaw
- Pressure Washer
- Area Lighting

SPECIFICATIONS

COST exc battery:	£5000 \$8850 €6000
WEIGHT inc B220X battery:	7.5 kg / 16.4lb
BATTERY WEIGHT:	1.42kg / 3lb
BATTERY TYPE:	HUSQVARNA 36V LITHIUM ION
BATTERY POWER	Optimum=5.2 to 9Ah B220X=6Ah
BATTERY RECHARGE:	80/90min
BATTERY DIMENSIONS:	11.6 x 13.2 x 9.8cm 4.6 x 5.2 x 3.8"
ICX DIMENSIONS:	25.5 x 24.9 x 21.7cm 10 x 9.8 x 8.5"
WORKING LOAD LIMIT:	185kg / 407lb
OPERATING ROPE Ø:	11mm / 7/16"
RANGE on 1x BLi200:	230m / 754ft @ 100kg / 220lb @ 20°C
ASCENT SPEED:	0-24m/min 0-78ft/min
DESCENT SPEED:	0-24m/min 3.3-78ft/min
OPERATING TEMP:	-10to40°C / 14to104°F
IP RATING:	55
WARRANTY:	12 months (but varies by market & country)
WEBSITE:	www.husqvarna.com www.skylotec.com



ABOVE, the ICX works on all Husqvarna professional batteries including the B220X (pic above) and B330X. It will work on lower Amp-hour batteries like the B140X but with reduced endurance. It also operates on the 9Ah and on the three new Husqvarna BLiX batteries.

Oops, we did it again.

We pioneered another game-changing chainsaw innovation.

Introducing the world's first battery chainsaw with a clutch. Stay in the cut longer – with added torque and exceptional cutting performance. Just like the inertia chain brake, Air Injection™, and AutoTune™, we expect the others to follow us soon. But they'll never beat the original.

Feels like gas, performs like gas, but with all the benefits of battery. **How's that for coming in clutch.**



Use rain or shine
IPX4 rating for most weather conditions



Easy to use & maintain
Instant on/off with less parts to maintain



Performance equivalent to gas
Power on par with 40cc engines



Active cooling technology
For consistent power and longer battery life



NEW

T542i XP®



NEW

542i XP®

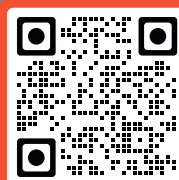


“Wow, so much power – instantly.”

Krista Strating

Arborist | Ontario, Canada

SCAN FOR
EXCLUSIVE
UPDATES



A Quintet of Turquoise from Notch

[ED: VSG's cloning of so many once excellent stockists and companies like our old mates *Sterling Rope* doesn't make them top of our list of favourites but their brand *Notch* is certainly prolific and our job is to inform and be impartial, although...not sure about the claim for the *Catalyst* harness to be the most comfortable in the world? Anything not

detailed in this release will soon be in the relevant equipment categories in our **ARBORIST BUYERS GUIDE**. Actually, there's no turquoise on the steel carabiner - you'll have to get the nail varnish out].

ERGO CLIMBERS

Ergo climbers are thoughtfully designed and 100% focused on comfort. An ergonomic lightweight shank provides a more natural foot angle to prevent pressure points and fatigue so your feet don't hurt at the end of the day. The adjustable cuff allows you to fit the comfortable foam pad on the correct spot on your leg to help disperse pressure and prevent pain in your shins. The new dual buckle system offers improved stability and allows you to use them with a wider variety of climbing boots. Now you can climb all day in comfort.

Features:

- Adjustable cuff for improved comfort
- Ergonomic shank for a more natural foot angle
- Stirrup grip pad for increased grip and stability
- Scannable enabled for track and trace capability
- Dual Foot Strap Assembly: makes it easy to fit to your boots
- The rear strap can be set and left for comfort and convenience
- Redesigned cuff better disperses pressure, won't slip out of place, and reduces discomfort on the shins
- MSRP \$359.99

CATALYST HARNESS

The Catalyst is the most comfortable harness on the market and packed with features. The custom EVA molded back and leg panels feature integrated ventilation channels for comfort and breathability. Multiple adjustment points in the

waist, rise and leg loops and allow you to get the perfect fit. The custom flared side D's are easy and intuitive to clip into while the rope bridge has a patented Wear Safe ring for clipping into your climbing system.

Features:

- Custom EVA-molded back and leg panels with integrated ventilation channels
- Custom flared side D rings
- Multiple rise adjustment points
- Wear Safe™ ring on Sterling rope bridge
- Multiple connection points for accessories and molded gear loops
- Scannable enabled for track and traceability
- Complies with CE, ASTM and ANSI standards
- MSRP \$449.99

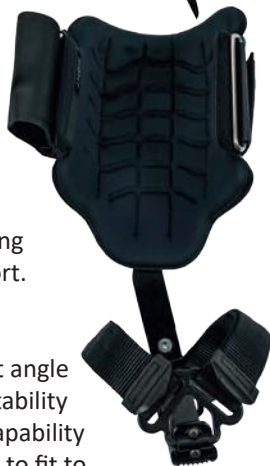
CHESTER DLX CHEST HARNESS

An upgrade to the Chester SRS Chest harness that features additional storage space, hydration pack integration, and daisy chain loops for customizing to your climbing system. The Chester DLX has storage

pockets to carry things like a hydration pack or ice pack, med pack, knee ascender, comms device, phone, snacks, wedge, and more.

Features:

- Hydration reservoir not included
- 7 center daisy chain loops for attachment to your climbing system
- Compatible with most 1.5L hydration reservoirs
- Left and right shoulder tunnel for hydration hose or knee ascender
- Shoulder daisy chain webbing for more attachment options
- Suspender straps for harness connection are included
- MSRP \$99.99



PRODUCTS- ROPE STUFF

HAULER 70L BAG

A free-standing backpack with thoughtfully designed compartments to help get all your gear from the truck to the job site. It offers 70L of storage space in a square shape to fit in the truck. With a stand-up and stay-open design, the Hauler features convenient pockets, including an integrated helmet pocket that fits a Protos helmet with a shield. It also keeps your line setting equipment easily accessible with an external dedicated Pop Box Pocket. Carry the Hauler to and from the job site with comfort and ease with the sculpted shoulder straps and padded back panel, with 4 handles for easy carrying. Made from 1680 denier weather-resistant shell fabric, the durable material protects your gear from the elements.

Features

- External Pop Box pocket
- Front external pocket with daisy chain webbing and mesh pocket
- Integrated helmet compartment
- Side slim storage pocket for personal items
- Sculpted shoulder straps and back panel
- 4 gear handles and an ID tag
- MSRP \$239.99



MODIFIED D STEEL CARABINER

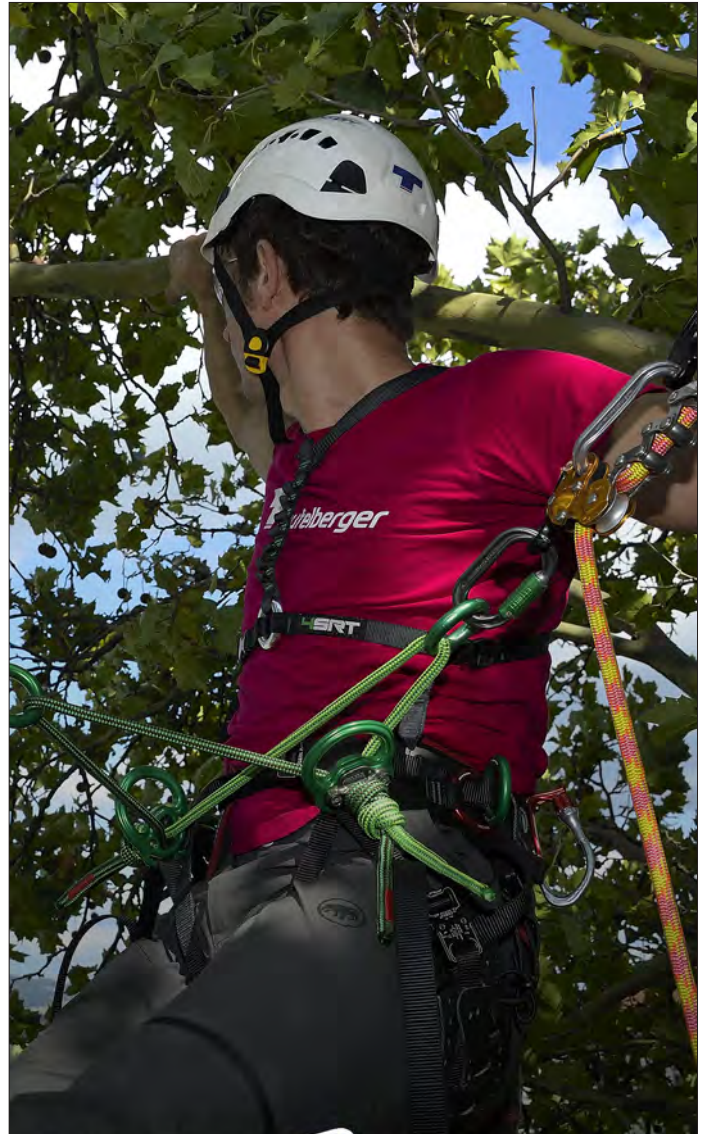
When an oval carabiner won't cut it, this D-shaped carabiner offers a larger gate opening to accommodate a wider variety of applications. This carabiner stands up to the job with its 23mm gate opening for larger equipment compatibility and a 3600lb gate strength for safety and reliability. Certified to CSA, Z359.12, EN362-2004/B.

Features:

- Double-action twist lock (2-stage)
- 23mm gate opening
- 3600 lb gate strength
- Steel construction
- Weight: 330 gm / 11.67 oz
- Certified to CSA, Z359.12, EN362-2004/B
- MSRP \$20.99



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ZAMBERLAN TREELOGY

GORETEX
CLIMBING
BOOT

[ED: if Zamberlan is not a name you're familiar with, fear not because these folks are boot-masters extraordinaire, trusted in the most extreme mountain and expedition conditions. I remember having to save up for my first pair of ice climbing boots that were, at that time, the most expensive product I had ever bought. After nearly 100 years of production they know about boots!]

Treelogy is a flexible shoe for treeclimbing work, with an abrasion-resistant leather upper worked with Hydrobloc® technology and rubber front protection to protect against abrasion and scratches. It has a sock-shaped stretch gaiter which ensures freedom of movement and prevents sawdust from entering the shoes. Treelogy features a patented PULL UP SYSTEM, with a tensile strength of up to 120kg/264lb, for hooking into a snap-hook while ascending. A TPU shell protects the foot-hugging interior during rope ascents and when using spikes. The insole (pic below) is very flexible in the front section and is reinforced under the arch for comfort when on branches or spikes. The midsole too has differential density giving torsional structure to the shoe while the sole, with Megagrip compound, has excellent grip. Made in Italy

- UPPER: Hydrobloc® Suede
- THICKNESS 1.6 - 1.8mm
- LINING GORE-TEX Extended Comfort
- INSOLE Nylon 1,5 mm+PE
- MIDSOLE Double density molded EVA
- OUTSOLE Vibram® Pepe-MEGAGRIP
- SIZE RANGE 38-48 half sizes
- WEIGHT 490g/per#42/8 shoe
- LAST Zamberlan® Regular
- COST: £270 / \$330 / €299

web: eu.zamberlan.com



TEUFELBERGER glideHITCH

The Teufelberger glideHITCH pulley is designed specifically for lanyards. This versatile pulley is compatible with ropes and lanyards up to a maximum diameter of 13mm, offering unparalleled flexibility in use.

glideHITCH is rigorously certified to meet industry standards, including ensuring reliability and safety during every operation. With a safe working load of 7 kN and a maximum breaking strength of 35 kN in its weakest configuration, glideHITCH delivers exceptional performance for all your tree care needs. What makes the glideHITCH special you may ask? Well, firstly there is the lightweight and very compact design and secondly, the two angled holes that make this pulley stand out. This configuration, initially created by our Ambassador Tanguy Bonniord, makes this pulley a breeze to use.

It is not only integrated in our hipSTAR Glide and miniGLIDE lanyards but also available as a standalone part.

- MBS: 35kN
- WLL: 7kN
- Max. rope diam: 13mm/ ½"
- Standards: EN 12278:2007, CE 0408
UIAA 130, UK CA
- COST: £42/\$61/€47

web: teufelberger.com



PRECISION CONTROL

In complex rigging situations, safety and adaptability are critical. The TopCrank rigging winch allows multiple rigging options to suit different environments. The dual-speed design enables precision maneuverability. The self-tailing Lokhead braking system reduces the risk of freefall of materials and accidental release. Take your rigging to the next level with the TopCrank winch from Harken.



LEARN MORE ABOUT
LOKHEAD WINCH KITS

INTCLHRW500KIT
TopCrank Lokhead Rigging
Winch 500 Kit

EN13157:2009 certified.

Kit comes with the winch mounted
on the plate. Also includes
254 mm aluminum SpeedGrip
lock-n winch handle B10ASG



harken.com

HUSQVARNA ADD 9AH BATTERY TO THEIR 36V RANGE

Husqvarna 40-B330X is a powerful 36V battery with a 9 Ah capacity, designed for demanding professional battery applications. Like all Husqvarna BLi-X batteries, it's built with state-of-the-art cell technology offering an excellent weight-to-capacity ratio. The robust design fulfils IPX4 for all-weather use with all professional Husqvarna 36V equipment. The ActiveCool system cools down the battery during both operation and charging. Ready to connect with Husqvarna Fleet Services via bluetooth together with the other two 40-series batteries. [ED: It can be difficult to discern which batteries fit to which tools, for instance some websites don't list chainsaws as an option for this 9Ah 40-X battery but it does fit the Skylotec iCX powered ascender featured on this issue's front cover. We have a comprehensive Guide to Pro Batteries in our **BUYERSGUIDES**]



40-B330X BATTERY Bluetooth (ROW)

Cost:	£420 \$560 €520
Art no:	970 60 77-01
Battery voltage	36 V
Weight	1.929 kg
Battery capacity	9 Ah
Battery type	Lithium Ion
Battery energy	324 Wh
DIMENSIONS height	153.3 x 130.5 x 92.7mm / 6.1 x 5.1 x 3.6"



Fits to model
Brushcutters 520iRX, 535iRX, 535iFR, 535iRXT, 535iFR. **Pole Saws:** 530iPT5, 530iP4
Leaf Blowers: 525iB Mark II. **Lawn Mowers:** LB 442i, LB 448i, LB 553iV, LB 448iV. **Hedge Trimmers & Hedge Cutters:** 520iHE3, 520iHT4, 522iHD60, 522iHD75, 522iHDR60, 525iHE4, 525iHF3. **Grass Strimmers:** 520iLX, 525iLK, 525iLXT.
 Arborist Equipment
 Husqvarna x Skylotec Power Ascender

www.husqvarna.com

ECHO 56v BATTERY BLOWER



[ED: ECHO launched the DPB-2500 power blower a while back but it replaced the previous 58v model we had in our original Market Guide to Battery-powered blowers. Echo's pro battery

range has now been simplified into just the 56v E-Force providing 24 different tools and 3 batteries - 2[2.3-EU] the only one to fit the 2500 top-handle, 5[4-EU] & 8Ah NB: not all are available in all countries. The DPD 2500 is one of two E-Force series blowers, the other being a long-duration back-pack blower.]

This hand-held is perfect for medium duty use by professional gardeners, the blower is packed with features that make it effective and comfortable to use in a wide range of different applications. It has a blowing force of 16N at an impressive 65.9m/s. All this from a machine that weighs just 2.6kg 5.7lb (+ 1.8kg/4lb 5Ah battery). For larger clearing jobs, there is a throttle-lock 'cruise control' setting, which reduces operator hand fatigue during longer working sessions. When precision is required, the highly tactile, variable speed throttle allows for refined, feathered control of the air flow – giving you the ability to accurately steer leaves and debris wherever you want. A 'boost' function helps things a long when blowing clumped leaves or heavier material. Rubber, over-molded handle grips provide the user with comfortable control – with or without gloves; and dual-sided air intakes eliminate blockages caused by trouser fabric getting sucked against the inlets. Being an ECHO tool, there is near perfect weight distribution, making the DPB-2500 comfortable to operate over long periods of time.

Cost inc.2.5Ah batt,inc VAT/Tax: £340/\$350/€356 5Ah battery=£280/\$250/€300 WEB: echo-usa.com echotools.com & echo-tools.co.uk



Could self-drive access platforms transform the tree care industry?

There is more than one way to take down a tree. In many scenarios, self-driving access platforms can provide significant advantages. They increase efficiency on the jobsite, and they are safer and more sustainable than other types of equipment. For companies that prioritize sustainability, electric capabilities can reduce fuel, emissions and time spent maneuvering the work truck.

Safety at the forefront....

In the USA, OSHA has been in the process of crafting updated safety guidelines for the tree care industry since 2016 and moved to its rulemaking phase in 2023. It's a long process and not yet complete, but it is clear the industry will be compelled to move to a higher standard of safety. Furthermore, rising insurance rates for traditional climbing methods may push tree care companies toward safer alternatives that rely on lifting machines. Self-drive access platforms offer a practical solution for arborists. The **Niftylift SD50** and **SD64** provide stable and secure access to high and hard-to-reach areas, significantly reducing the risks associated with manual climbing. The **SD50** has a platform height of 49 ft 6 in and a working outreach of 28 ft 6 in, making it ideal for a variety of tree care applications. The **SD64** has more reach, with a platform height of 63 ft 6 in and a working outreach of 42 ft. Advanced safety features include hydraulic outriggers with safety interlocks for quick and easy stabilization on uneven terrain. Workers can bring all of their tools with them on the platform, reducing back-and-forth climbing and the fatigue that goes with it, and they can securely strap in with safety harnesses. Robust platform design ensures stability even in challenging conditions, providing a superior choice to man baskets and scaffolds. The **SD50** allows a user to maneuver, set up and operate without leaving the platform — an especially useful feature on uneven surfaces. Rough terrain tires and 4WD increase maneuverability on the job site. The excellent gradeability and good travel speed of the **SD64** enable it to be positioned and set up quickly, allowing users to spend more of their time working.

www.niftylift.com



SD50 Specifications

- Working Height: 56ft /17m
- Working Outreach: 28ft 6"/8.7m
- Platform Height: 49ft 6"/15m
- Machine Width: 5ft 3"/1.6m
- Machine Height: 7ft 3"/2.2m
- Machine Length: 18ft 4"/ 4.06m
- Minimum Weight: 600lbs/272kg
- Safe Working Load: 500lbs/226kg
- Power Options: Diesel only, Bi-Energy (Engine & Battery)

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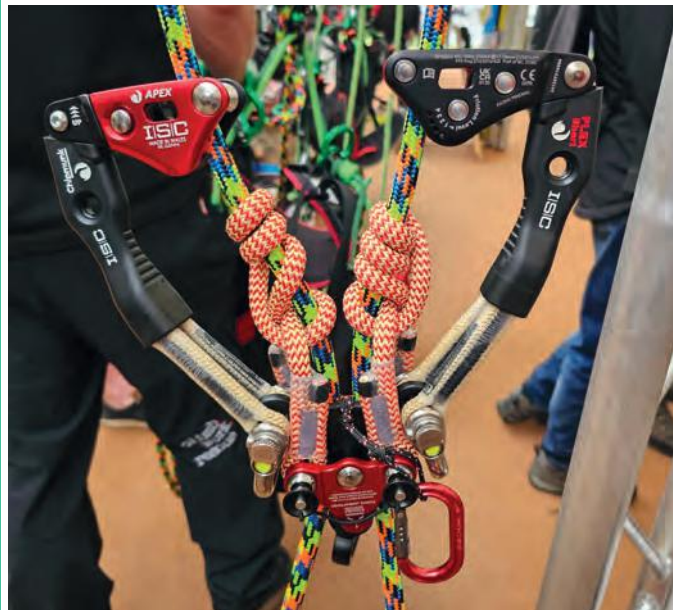
Sorbus International Ltd, L1-L3 Marshall Way,
Commerce Park, Frome, Somerset, BA11 2FB

ISC Wales showcase the **TREE FROG** at APF '24

IN DEVELOPMENT



Our man Adam and his crew perused the recent APF International Forest Machinery Exhibition which was again held on the Ragley Estate in Warwickshire central UK. Not much that was new but there was this fine piece of shiny being developed





in partnership with metal wizards *ISC Wales*. It will allow simultaneous use of two Wrench tether systems such that you can undertake SRT/SRS, DRT/SRS or even DdRT/MRS. It's quite a substantial item and will be sold as a bare unit or a complete system in whatever configuration you prefer. ISC has pretty

much cornered the market in *Wrench* and tether models so there's plenty to choose from. Don't rush out to your stockist yet, this won't be around until next year when we'll hopefully have a full review. In the meantime, you can buy this *Nessie* from *ISC*.....

ISC NESSIE LATCHES ON

Something ISC already has out is the *NESSIE*, an innovative solution to lanyard management challenges. Featuring four flexible fins designed to effortlessly clip loops of climbing line (max. \varnothing 13mm/ 1/2" rope). This durable *NESSIE* allows for convenient partial or complete rope storage at all times.






The *NESSIE* is crafted with intentional features throughout its design. At the base, you will find an attachment aperture that ensures the secure fastening of your lanyard tail and spare gear. Additionally, the head of the *NESSIE* serves a dual purpose- it can hold your lanyard connector when not in use and neatly tuck a climbing line out of your workspace.

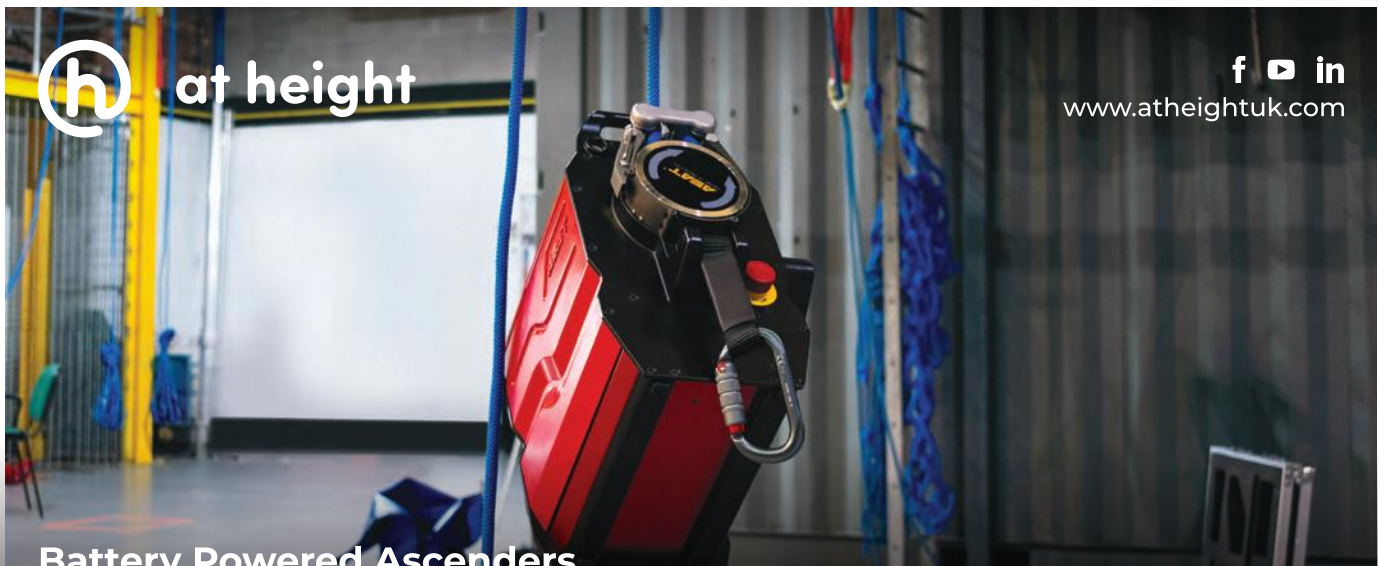
The construction has passed through extensive durability testing, including temperature testing, confirming its suitability for use at temperatures ranging from -20°C to 45°C. Years of field-based development have led to the optimization of the *NESSIE*. The *NESSIE* offers an intuitive alternative to other lanyard management devices, which rely on traditional daisy-chains. Max load 10kg/22lb and cost is around £23/\$30/€28

www.iscswales.com



 at height

  
www.atheightuk.com



Battery Powered Ascenders

ASAT powered ascenders are cost-effective devices for where battery capacity is important but at an affordable price point. A key safety feature is that they are bi-directional so the rope can be fitted in any direction.

ACE 22 Personal Device

ACE22 is a compact lightweight 'personal' device, weighing 11kg. It has an expected battery life of 350m general use @ 140kg load and a maximum rated load of 180kg. It features a remote control function including two-way communication.



ACE 24 Rescue / Rigging Device

ACE24 is a heavy duty 'rescue / rigging' device, weighing 18kg. It has an expected battery life of 700m general use @ 140kg load and a maximum rated load of 260kg. It features a remote control function.



KONG RISE

THE CONVENIENCE OF A DOUBLE LOCK WITH THE SAFETY OF A TRIPLE LOCK

New RISE Lock™ automatic sleeve

Kong has a long history of innovations and patents, especially in the field of connectors, which have been our strength since 1830. We firmly believe that improvement is a continuous process, even when it seems that everything has already



been invented. With RISE™, we have introduced a small but significant innovation to increase the safety of those who choose to use our products. RISE™ (Right Sequence) is an innovative automatic locking system patented by Kong that provides the convenience of a

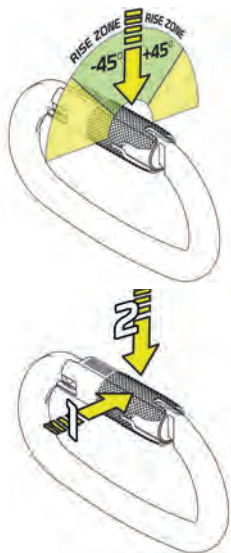
2-movement opening and closure, while significantly reducing the risk of accidental opening.

When does the RISE™ system engage?

Its operation is as simple as it is effective: to open it, you need to perform the two movements of rotating the sleeve and opening the gate in that "right sequence". This means that if you press the gate first, the sleeve will not rotate and therefore the carabiner remains locked. This protects the carabiner from accidental opening caused by rope entanglement or from the carabiner gate pressing against an edge – a concern with other 2-movement closure carabiners. In these examples, this new locking system intervenes, preventing accidental opening.

- Keylock system
- High quality product entirely developed and manufactured in Italy
- Tested piece by piece
- New LUNAR WHITE finish with Zinc-Nickel treatment, offers double the corrosion resistance, longer life and reduced friction on ropes and textile devices compared to normal black galvanizing.
- Steel and Aluminium models

www.kong.it



The Protos Felling Wedge is a groundbreaking product crafted from recycled Protos helmet shells, and a testament to our commitment

to sustainability and environmental responsibility. When transitioning from old shells to new wedges, we breathe new life into discarded materials. Aligning accordingly with our dedication to durable, long-life products that also champion environmental protection. In the process, Protos Integral shells embark on a transformative journey and find a second life as felling wedges. Through meticulous recycling, shells that fall short of quality standards and ventilation sliders are shredded. This yields high-quality ABS/Polyamid granulate. This granulate possesses remarkable characteristics, including impact resistance and a wide temperature range (-30 to +50°C). This specifically making our wedges ideal for diverse conditions.

Protos Wedge Product Features

- Available in 5 vivid colours: red, neon, orange, yellow, pink
- Made from 75% recycled PROTOS outer shells and PROTOS ventilation slides
- Toothed on one side (75 teeth in honeycomb structure) for optimal bite
- Coarse structure on one side for easy insertion of an additional wedge
- Broad rounded striking surface
- Material: 75% recycled ABS, 25% ABS
- Size: 237 × 80 × 32mm / 9.3 × 3.1 × 1.26"
- Weight: 350g / 12.35oz
- Cost: £15 \$32 €24

Web: www.protos.at & protos-integral.co.uk

FÖRST™

LITTLE CHIPPER. BIG JOB

**HIGH PERFORMANCE,
AGGRESSIVE, COMPACT
BRUSH CHIPPERS**

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Tree climbing is a technical activity that requires personal protective equipment that can guarantee maximum versatility and freedom of movement. Working on trees is difficult, especially due to the extreme variability of their foliage which makes it challenging to operate in full safety. In fact, it is very different from being on a pylon, on scaffoldings or on a roof. In addition to the working line and to an optional second safety line (which is mandatory only in some countries), the climber relies on the positioning lanyard: a fundamental tool, connected to the harness, which is fixed by doubling it around a trunk or a branch depending on the situation. Our new Gyro Lanyards answer these needs in a unique way, providing arborists and tree-climbers with three different innovative positioning lanyards - the Gyro Lanyard Single, Twin and Double - which, thanks to the Gyro swivel devices and the CRT terminations, make the difference in terms of functionality, by simplifying every single operation.

GYRO: AN INNOVATIVE CONCEPT

Originally conceived to prevent the twisting of the 2 arms of a via ferrata set (a device used for climbing), the triple swivelling Gyro device was reinvented for work at height. Today the range includes the Gyro1, Gyro3 and Gyro4: three swivelling anchor devices which quickly became a hit for tree climbers who can use them to set up multiple connections independent from one another. The Gyro is already used on products such as the Retexo shock-absorbing lanyards and the bridge of the Tree Access harnesses. However, we further evolved it to be used effectively on the new Gyro Lanyards: the Gyro1 was integrated into the Gyro Lanyard Single and the Gyro Lanyard Twin ; the new Gyro X3 (not currently available as a separate product) is a new concept specifically designed for the Gyro Lanyard Double.

A PROBLEM AND OUR SOLUTION

When working at height, the positioning lanyards can be attached both to the ventral attachment point and to the lateral attachment points of the harness. The choice depends on the activity and on the different situations. As for tree climbing, the preferred option is the second one: passing the lanyard around the branch and then adjusting it using a self-locking pulley. In many situations, however, this positioning is uncomfortable, and the arborist prefers to use the ventral attachment point, on which he connects the lanyard in doubled mode. Even with this configuration there are some limitations: every rotation

is precluded, thus limiting freedom of movement. This also happens even after inserting a swivel. **So herewas our idea:** combine in a single attachment point the Gyro1 device, the retrieving pulley (which is also tilting) and a cord set up as a self-locking hitch. The pulley features a built-in secondary attachment point, created inside the pulley, to obtain a minimal and compact design. With this construction, once the doubled lanyard is connected to the secondary attachment point, the possibility of rotation and tilting will not be compromised, leaving a maximum freedom of movement to the user. It should be emphasized that the secondary attachment point is certified as an anchor point, thus it can accommodate a second positioning lanyard, offering the arborist great versatility.

THE INNOVATIVE CRT TERMINATIONS

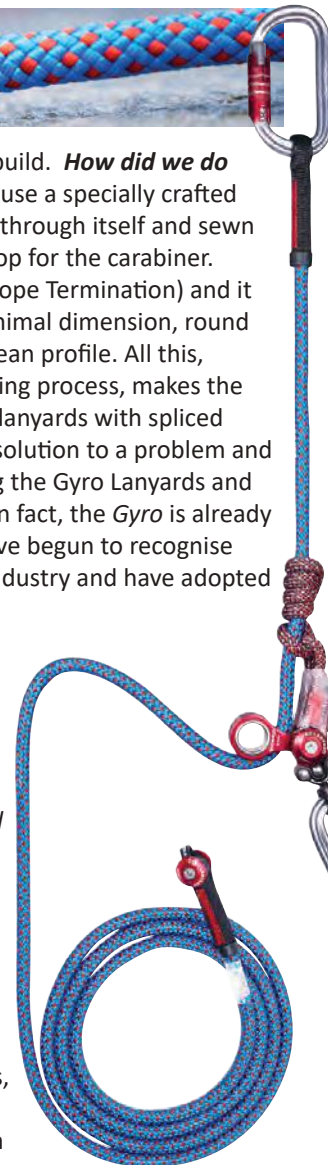
Besides the Gyro, there is one more innovative technical feature that makes the Gyro Lanyards unique on the market. We turned our attention to the terminations, thinking about how to replace sewn or spliced end loops, which are surely



functional but complex and costly to build. **How did we do it?** The idea of our technicians was to use a specially crafted tubular webbing which, when passed through itself and sewn onto the end of the rope, creates a loop for the carabiner. This solution is called CRT (Compact Rope Termination) and it delivers the following advantages: minimal dimension, round section for best functionality, and a clean profile. All this, together with an efficient manufacturing process, makes the Gyro Lanyard as effective as standard lanyards with spliced terminations. Innovation is often the solution to a problem and that's what we achieved in developing the Gyro Lanyards and the Gyro family of swiveling devices. In fact, the Gyro is already very popular among arborists who have begun to recognise CAMP as an innovative brand in the industry and have adopted the Gyro in their standard kit.

TWO PRODUCTS IN ONE: THE GYRO LANYARD TWIN AND THE GYRO LANYARD DOUBLE

In addition to the Gyro Lanyard Single, we now have the Gyro Lanyard Twin and the Gyro Lanyard Double. These two new lanyards allow in the simplest way, to connect to two different points, increasing safety in the absence of other certified fall protection devices. The Gyro Lanyard Twin, extremely versatile, is equipped with two separate adjustment devices, assembled on one continuous rope, which allow the user to get in position on both the front and the side attachment



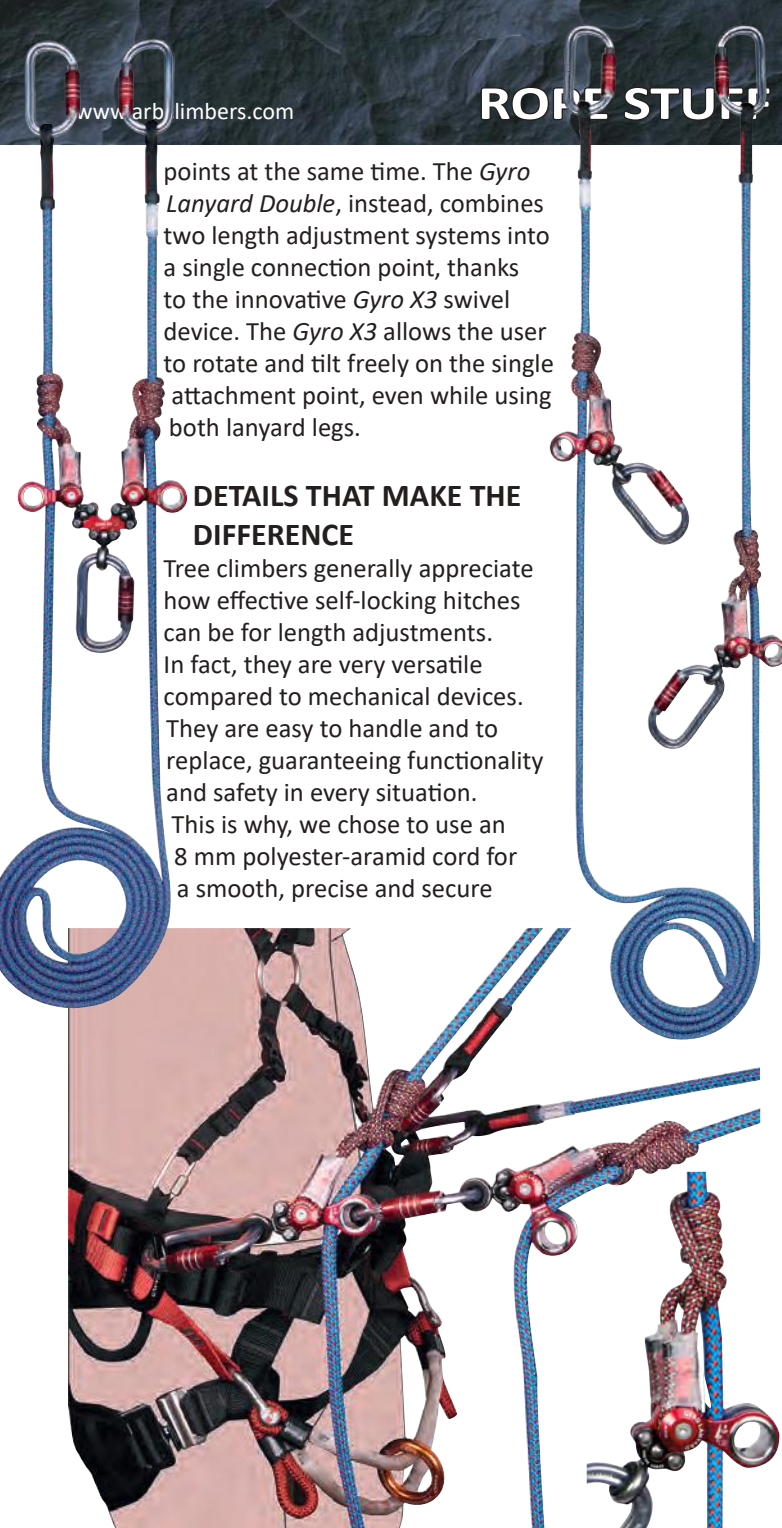
points at the same time. The *Gyro Lanyard Double*, instead, combines two length adjustment systems into a single connection point, thanks to the innovative *Gyro X3* swivel device. The *Gyro X3* allows the user to rotate and tilt freely on the single attachment point, even while using both lanyard legs.

DETAILS THAT MAKE THE DIFFERENCE

Tree climbers generally appreciate how effective self-locking hitches can be for length adjustments. In fact, they are very versatile compared to mechanical devices. They are easy to handle and to replace, guaranteeing functionality and safety in every situation. This is why, we chose to use an 8 mm polyester-aramid cord for a smooth, precise and secure

length adjustment. *Gyro Lanyards* come pre-assembled with a Michoacan hitch, but they are also certified with the *Catalyst* and *Distel* hitches for the best possibility of customization. The *Iridium* 11 mm polyamide rope, with exclusive CRT loops, is manufactured with *Heatcore* technology that joins sheath and core. Thanks to this technology, the rope can deliver long-lasting ease of handling, durability and overall robustness. The adjustment system can be disassembled by the user (Torx T20 Allen wrench included) to replace the rope and/or the cord.

For more info and discussion of the *GYRO* in other anchor roles go to www.camp.it



Tree care harness for professionals

ARBO MASTER



SAFETY FIRST!

www.singingrock.com

Choosing the correct chainsaw trouser

Selecting the appropriate chainsaw trousers is critical based on the specific task, as leg injuries are the most prevalent type of chainsaw-related harm. At Arbortec we offer a range of chainsaw trousers tailored to various arboricultural industries and beyond.

The primary consideration when purchasing arborist trousers is the required level of protection during chainsaw operation. Arbortec chainsaw trousers are available in Design A, Design A Plus, and Design C, each offering different protection levels:

Design A (Type A): Provides frontal protection with coverage extending 5 cm to the back. Suitable for professional loggers engaged in standard forest harvesting, who are well-trained and follow strict safety protocols.

Design A Plus: Enhances the standard Design A by adding calf protection to the back half of the leg, offering 180° protection.

Design C (Type C): Offers full leg protection, ensuring comprehensive safety for more demanding forestry and arborist tasks.

All of our chainsaw protective trousers conform to the minimum Class 1 (20m/s) protection Arbortec also offer a Class 2 (24m/s) and a Class 3 (28m/s) trouser for faster than standard chainsaw speeds.

By understanding the distinct protection levels and applications of each design, arborists can make an informed decision to ensure optimal safety in their specific work environment. See right for our trousers styles, for the full colour range and spec in each style please visit arbortec.com.

Arbortec - innovative options for all applications

BREATHEFLEX



Design A Design C

An affordable option for any arborist/groundie seeking a trouser to cover all eventualities. The original limes are available to Class 3!!

CLASS: 1, 2, 3
DESIGN/TYPE: A, A+, C
FIT: STRAIGHT
FLEXIBILITY: ★★★
DURABILITY: ★★★★★
COLOURS: 8
RAIL APPROVED OPTION: YES
SIZES:* XS-5XL, Short, Regular, Tall, Extra Tall



BREATHEFLEXPRO



Design A Design C

The most popular trouser in the industry. Designed for professionals with a wealth of benefits & features

CLASS: 1, 2
DESIGN/TYPE: A, C
FIT: SLIM
FLEXIBILITY: ★★★★★
DURABILITY: ★★★★★
COLOURS: 13
RAIL APPROVED OPTION: YES
SIZES:* XS-3XL, Short, Regular, Tall, Extra Tall



PROFREESTYLE



Design A Design C

A super flexible chainsaw trouser with a tailored fit. The perfect trouser for treework but equally great whatever your day entails.

CLASS: 1
DESIGN/TYPE: A, C
FIT: ATHLETIC
FLEXIBILITY: ★★★★★
DURABILITY: ★★★★★
COLOURS: 4
RAIL APPROVED OPTION: NO
SIZES:* XS-3XL, Short, Regular, Tall



DEEPFOREST



Design A Design C

A heavy duty chainsaw trouser using the latest technology & superior fabrics, delivering the ultimate in comfort with maximum safety.

CLASS: 1
DESIGN/TYPE: A, C
FIT: ATHLETIC
FLEXIBILITY: ★★★★★
DURABILITY: ★★★★★
COLOURS: 3
RAIL APPROVED OPTION: Coming Soon!
SIZES:* XS-3XL, Short, Regular, Tall



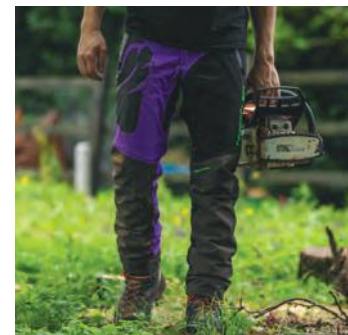
ARBORFLEX



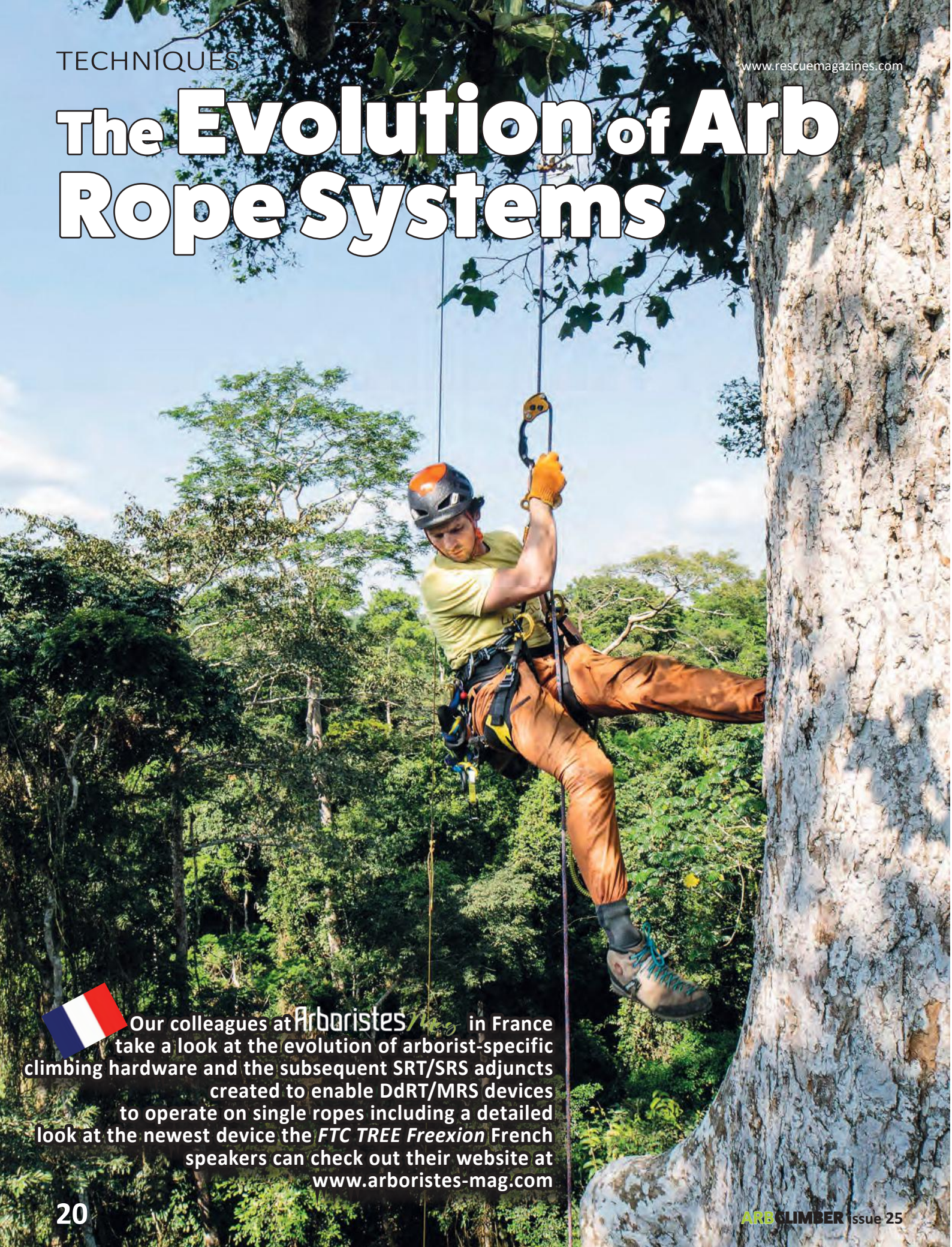
Skins Waterproof Design A Design C

'SKINS' can be worn alone or with a chainsaw protective 'Base'. This guide is based upon to our mid range with base layer.

CLASS: 1
BASE LAYER DESIGN/TYPE: A, A+,C
FIT: STRAIGHT
FLEXIBILITY: ★★★★★
DURABILITY: ★★★★★
COLOURS: 11, **TOTAL TROUSER OPTIONS:** 44
RAIL APPROVED OPTION: YES
SIZES:* XS-3XL, Short, Regular, Tall



The Evolution of Arb Rope Systems



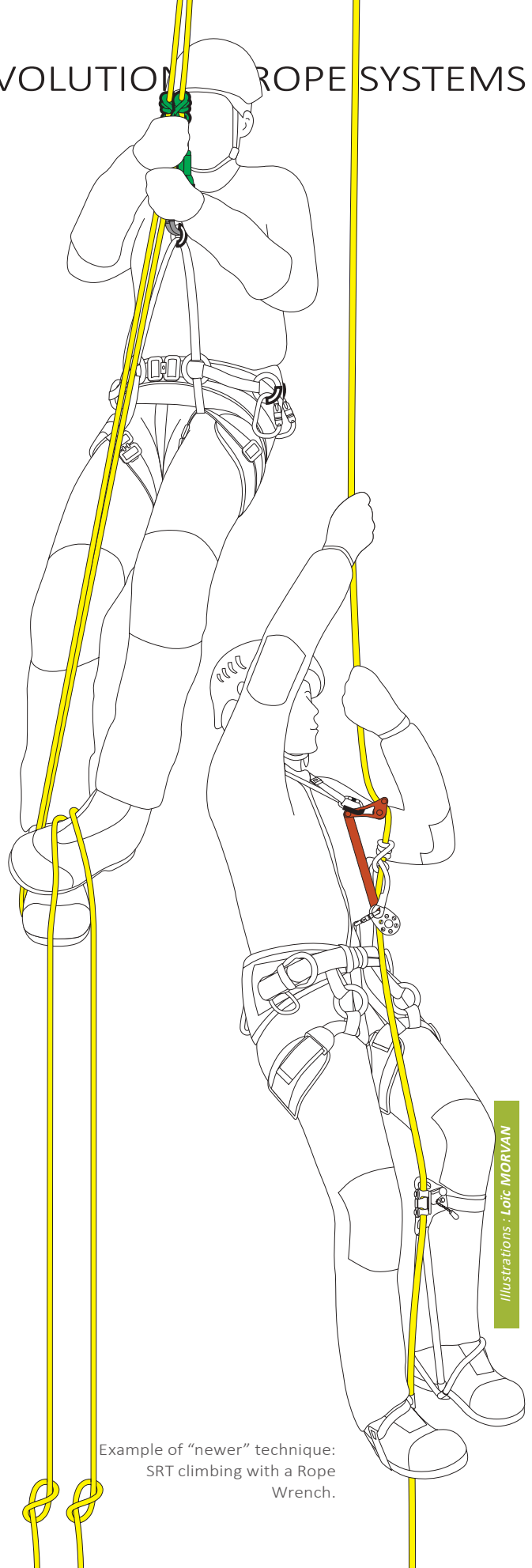
Our colleagues at *Arboristes Mag* in France take a look at the evolution of arborist-specific climbing hardware and the subsequent SRT/SRS adjuncts created to enable DdRT/MRS devices to operate on single ropes including a detailed look at the newest device the *FTC TREE Freexion* French speakers can check out their website at www.arboristes-mag.com

Rope climbing systems play a crucial role in safety while optimizing work efficiency. They are used to carry out climbs, control descents and to facilitate movement in the crown. There are several models on the market, each with its own characteristics and advantages.

It was in 1988 that the first mechanical rope evolution system appeared with the ART LockJack, designed by the German Hubert Kowalewski. In fact, up until then, only friction hitches allowed this type of movement. It was therefore a small revolution in the world of arborists, because this mechanical system allowed the climber to go down and up with a simple action and much less effort. Furthermore, it was less bulky and more reliable than textile knots. Over the years, this concept has been taken up by many manufacturers and, with the evolution of technologies, these devices have become more and more sophisticated and secure.

Lightweight materials, such as aluminum and special alloys, are now used to ensure both strength and lightness. They are generally equipped with an automatic "brake" which reduces the descent speed if there is a sudden or unexpected release, ensuring immediate responsiveness in the event of an emergency. In addition to access and descent, some also act as a "friction diffuser", allowing adaptation to different situations when moving and offering the possibility of working in various arboreal environments. Ergonomics is an essential criterion, so current systems are designed to be easy to handle, even in difficult conditions.

EVOLUTION OF ROPE SYSTEMS



Illustrations : Loïc MORVAN

Example of "newer" technique:
SRT climbing with a Rope
Wrench.



ART's LockJack

Rope climbing systems must meet strict safety standards. CE certification, for example, guarantees that the equipment meets high performance and safety criteria. Europeans must ensure that their equipment complies with these standards. Training is essential to ensure correct use, as each model requires learning time. You must also be familiar with descent techniques, safety protocols, and regular maintenance of your equipment.

Examples of assemblies with mechanical evolution systems



SPIDERJACK 3



SPIDERJACK 2.1



ROPE WRENCH - Crédit photos : Laurent PIERRON



SpiderJack 3



LockJack 3



Rope Wrench



Apex Rope Wrench





MOVE QUICKLY. PLAN CAREFULLY. RIG UNIDEXTEROUSLY.

You have worked hard to get here...to a situation where you have one hand available to begin getting someone out. So get started. Pivot then press Apex's thumb lock. In the same motion and without looking, swing the side-plate open. Swing back and, "click" it relocks – anywhere in your rigged system. It's a solution so well devised just one question remains: What can you take on with the other hand?



For ropes 11-13mm

APEX Swivel: NFPA CE UKCA

APEX Direct: CE UKCA

Made In USA



WATCH THE APEX
IN ACTION NOW.



ZigZag

ZigZag Plus + Chicane



Freexion

Ideally, the friction should be variable and adjustable. It should cater to different diameters of ropes, a range of climber weights, be durable on the contact surfaces and allow for changes in weather/environment. In addition to SRT or DRT access, these systems must also be practical for lateral movement and allow rope slack to be taken up easily. Installation of the system is often done on the ground, but some manufacturers offer models that can be installed without removing the rope or dismantling your equipment. However, you must still remove your system in order to adjust the friction following use. Only the *Freexion* from *FTC TREE* offers a setting change while directly attached to the rope, without dismantling your entire system. Finally, certain models are approved for rescue, with attachment points and resistance that can support the weight of two people.

When making your choice, it is very important to first consider rope compatibility - does it need to operate on ropes you already use or will you need to change ropes to suit the device? You will also consider ease of use (although they will all require getting use to), versatility and sturdiness. Some devices allow the replacement of worn parts. It is therefore essential to try different models in order to find your balance between safety and performance. Training and practice are also essential to ensure safe and effective use of this equipment.



MODEL	LOCKJACK 2	SPIDERJACK 2.1 BASIC VELCRO	SPIDERJACK 3
COMPANY	ART	ART	ART
COST <small>inc VAT/local tax</small>	£244 \$415 €286	£230 \$350 €280	£406 \$518 €417
TECHNICAL CHARACTERISTICS			
ROPE DIAMETER Ø	11-13mm 7/16-1/2"	11-13mm 7/16-1/2"	11-12mm/7/16" or 12-14mm/1/2"
RESCUE-CAPABLE	✗	✗	✗
WEIGHT	310g / 11oz	241g / 8.5oz	511g / 1lb 1oz
MATERIALS	Machined and hardened Aluminum, wood, cord	Aluminium, wood, Velcro	High quality & hardened steel, anodized aluminum
STANDARDS	CE	CE	CE
CLIMB DRT (MRS)	✓	✓	✓
CLIMB SRT (SRS)	✗	✗	✗
AJUSTABLE	✗	✗	✗
ADJUST TENSION/ Ø	✗	✗	✗
OPENING Mid-rope installation	✓	✓	✗



The **LOCKJACK** allows you to take up slack in the rope with one hand, by pulling the rope above the device. The rope passes very easily and it locks automatically with each load. Lockjack Sport has a fixed eye, Lockjack 2 is equipped with an ART swivel, it compensates for body movements and considerably improves climbing comfort. Note that this is a device that requires a little maintenance (the cam must be changed regularly and, once a year, the cam follower).



The **SPIDERJACK** is smoother than the LockJack. The dynamic braking cam eliminates jerks when descending. Faster handling for lateral movements and descents. The speed of progression is modulated by the pressure exerted on the "moving cam" with the thumb. To recover the slack, simply push the rope from above into the device or pull the rope underneath the device. Available as a "Dyneema Kit" which makes it much easier to change climbing systems than before, when you climb with several ropes and anchor points. **NB It does not have an anti-panic system.**



SPIDERJACK 3 is the improved version of Spiderjack 2.1. In the secure position, the device can be unlocked very easily and the manual brake can also be used without any difficulty. The speed of the descent is thus perfectly controllable, without much effort.



ROPE WRENCH	ROPE WRENCH + SQUIRREL TETHER	APEX ROPE WRENCH	APEX ROPE WRENCH + SQUIRREL FLEX TETHER
ISC	ISC	ISC	ISC
£173 \$230 €205	£220 \$290 €261	£145 \$190 €170	£211 \$280 €250
TECHNICAL CHARACTERISTICS			
11-13mm 7/16-1/2"	11-13mm 7/16-1/2"	11-13mm 7/16-1/2"	11-12mm/7/16" or 12-14mm/1/2"
✗	✗	✗	✗
204g /7.2oz	204g /7.2oz	220g/7.8oz	511g /18oz
Alu/Stainless Steel/ thermo-plastic sheath rope	Aluminium/Stainless Steel	Aluminium/Stainless Steel	Aluminium/Stainless Steel/ polymer sheath rope
STANDARDS	CE	CE	CE
✗	✗	✗	✗
✓	✓	✓	✓
✗	✗	✓	✓
✗	✗	✓ with tools, must remove rope	✓ with tools, must remove rope
✓	✓	✓	✓



The **ROPE WRENCH** allows you to work with a Distel hitch on a single rope when descending or ascending. It sits easily on the rope above the hitch and adds friction to absorb some of the climber's weight. It allows the hitch not to disengage enough for a smooth and pleasant descent. The rigid connecting strap holds the system in proper upward position above the knot while the pulley pushes the knot upward during ascent. Available with single buckle strap. Please note that this system is only valid with the kit defined by ISC.



The **SQUIRREL TETHER** is a metal tether, designed to be used in conjunction with the *Rope Wrench*. It provides rigidity to eliminate the most friction on the *Rope Wrench* when climbing. Please note that this system is only valid with the kit defined by ISC.

The **APEX** enhances the initial features of the *Rope Wrench* with additional functions and increased ease of handling. It is equipped with an adjustable cam, allowing the user to choose from several clearly identifiable friction settings, depending on the type and diameter of the rope. The side plate unlocks with a simple press of a push button. It can be assembled or disassembled without any tools, and no parts can be lost. It is equipped with a side frame with pivoting opening which allows for quick and easy medial attachment, even with gloves. Double-lock closure system for added security with audible "click" to confirm closure. Please note that this system is only valid with the kit defined by ISC.



The **SQUIRREL FLEX TETHER** was designed to provide a blend of flexibility, strength and rigidity for SRT climbing with the *Rope Wrench*. It is made from high quality rope that has been coated with polymer to create a rigid connecting element that offers just the right amount of flexibility. Stitched terminations provide a solid attachment and unwanted play in the climbing system is minimized. The auxiliary carabiner allows the connection between the torso and the *Rope Wrench* system. Please note that this system is only valid with the kit defined by ISC.

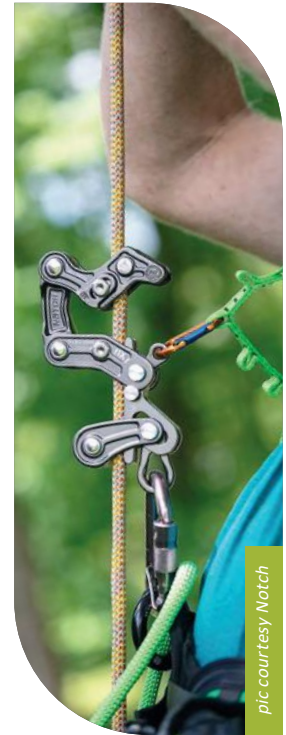
MODEL VARIANT	ZIGZAG ZIGZAG PLUS	ZIGZAG + CHICANE ZIGZAG PLUS + CHICANE	ROPE RUNNER PRO
COMPANY	PETZL	PETZL	NOTCH
APPROX COST inc VAT/local tax	£228/270 \$310/370 €240/286	£396/438 \$503/563 €385/431	£368 \$420 €390 ^{HT}
TECHNICAL CHARACTERISTICS			
ROPE DIAMETER Ø	11.5 to 13mm 7/16-1/2"	11.5to 13mm 7/16-1/2"	11 to 12mm 7/16-1/2"
RESCUE-CAPABLE	✔ see website	✔ see website	✘
WEIGHT	365g /12.9oz 425g/15oz	365g/12.9oz + 255g/9oz 425g/15oz + 255g/9oz	425g /15oz (same wt as Petzl ZZ+)
MATERIALS	Aluminium/Steel/Nylon	Aluminium/Steel/Nylon	Aluminium/Stainless Steel/ Nylon
STANDARDS	CE	CE	CE
CLIMB DRT (MRS)	✔	✔	✔
CLIMB SRT (SRS)	✘	✔	✔
ROPE AJUSTABLE	✘	✘	✔
ADJUST TENSION/ Ø	✘	✘	✔ with tools, must remove rope
OPENING Mid-rope installation	✘	✘	✔

The **ZIGZAG** 'friction' chain provides precision and fluidity in movement. The pulley, mounted on a sealed ball bearing, allows the slack to be taken up easily. The lower connection hole is fixed to guarantee alignment of the device in the worker's axis and optimize handling. The slack take-up is fluid and precise, thanks to the release lever offering very high precision and efficiency when moving. The **ZIGZAG PLUS** benefits from an additional lower connection with a high-performance swivel, ensuring that the system is permanently maintained in the correct position and optimal guidance of the rope in the device.



The **CHICANE** additional brake allows the use of **ZIGZAG** and **ZIGZAG PLUS** mechanical Prusiks on single ropes. It provides additional permanent braking when descending. The assembly ensures smooth sliding of the rope in the brake when climbing. The ergonomic handle provides excellent grip and facilitates movement when returning branches. Thanks to the openable flanges, installation is quick and simple.

The steel bollards of the **ROPE RUNNER PRO**, and concave shape, allows a smooth descent, reducing the "break-in" period. The rounded top allows for comfortable one-handed descent. Improved ergonomics and smooth edges well adapted to the rope.



pic courtesy Notch

TECHNIQUES

FREEXION	AKIMBO RG80
FTC TREE	ROCK EXOTICA
£192 \$285 €255	£410 \$400 €420
TECHNICAL CHARACTERISTICS	
11.5 to 12.5mm 7/16-1/2"	11 to 13mm 7/16-1/2"
✓	✗
310g /11oz	204g /7.1oz
Aluminum, Stainless steel, Polyester, Dyneema, Technora, Nylon	Aluminium, Stainless Steel
CE	CE
✓	✓
✓	✓
✓	✓
✓ Without tools. Can be adjusted on roOe	✓ Without tools. must be adjusted off rope
✓	✓

The **FREEXION** is the first system of its type to modify friction without removing the rope or dismantling any part of the equipment. It is thus possible to change the friction or modulate the load on the friction node without tools, a simultaneous press of a double button is enough. The *Freexion TETHER* was designed with a small additional loop to connect a carabiner and add friction for rescue. It easily allows the transition of work from SRT to DRT, the device then becomes your push node without disconnecting your system.



The friction of the **AKIMBO** is easily adjusted without tools. The contact pins are adjustable to increase or decrease friction, this allows you to adjust the different diameters of ropes used, the weight of the climber, the wear of the contact surfaces and changes in the environment. See the article "Focus Tech" in Arboristes Mag' N° 1 (winter 2021).



rock

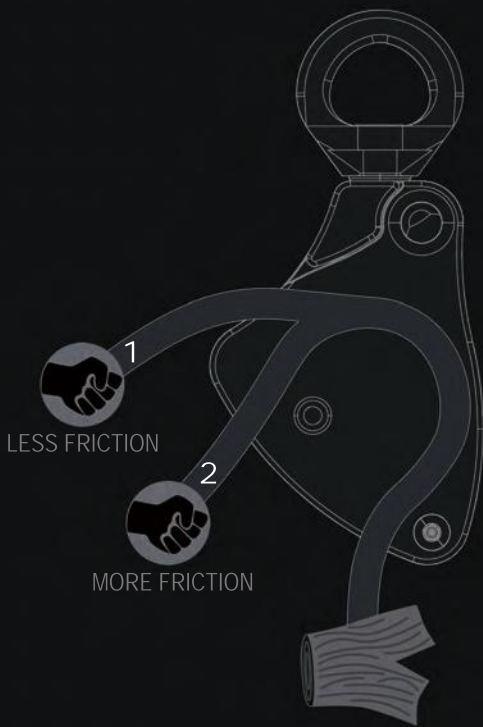
*Cut
it*

exotica

The **DownRigger** is an aerial friction device used for lowering limbs quickly and efficiently. With its light weight and compact size, it can be connected and operated overhead, or at the base of the rigging system. Features two rope paths to adjust friction.

& Run it

DownRigger



EQUIPMENT FOR THE WORKING PROFESSIONAL
made in usa - www.rockexotica.com



DESIGNED & MANUFACTURED



GEAR SPOTLIGHT

FTC TREE

FTC TREE FREEXION

USE OF FREEXION IN AN EMERGENCY

The use of Freeexion for emergency purposes is not certified, but FTC TREE has developed and tested its product with this scenario in mind. It therefore proposes a strict technical procedure to be used if necessary (evacuating an injured person for example).

WARNING

Only the procedure and materials described in the FTC TREE document accessible via this link are validated by the FTC TREE company itself. You are responsible for all other assembly, installation and techniques.



Crédit photo : Nicolas ANSOURIAN

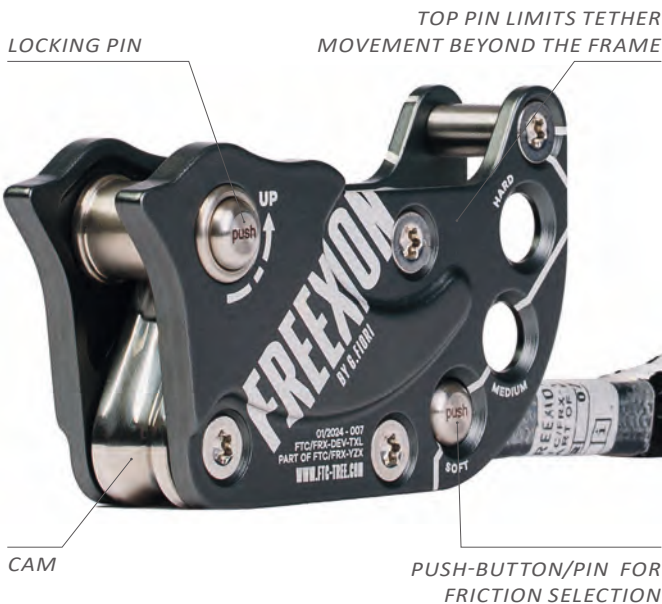
As you can see in our previous article, rope climbing systems have become more and more sophisticated and secure. The most advanced have adjustable friction, and some models can be installed without removing the rope or disassembling your equipment. However, the system must be removed in order to **adjust** the friction before use. *FTC TREE's Freexion* is something of a revelation as the only rope friction system on the market that can be adjusted and installed directly in the middle of the rope, without dismantling your system. In addition, it is one of the only models that can be used for rescue!

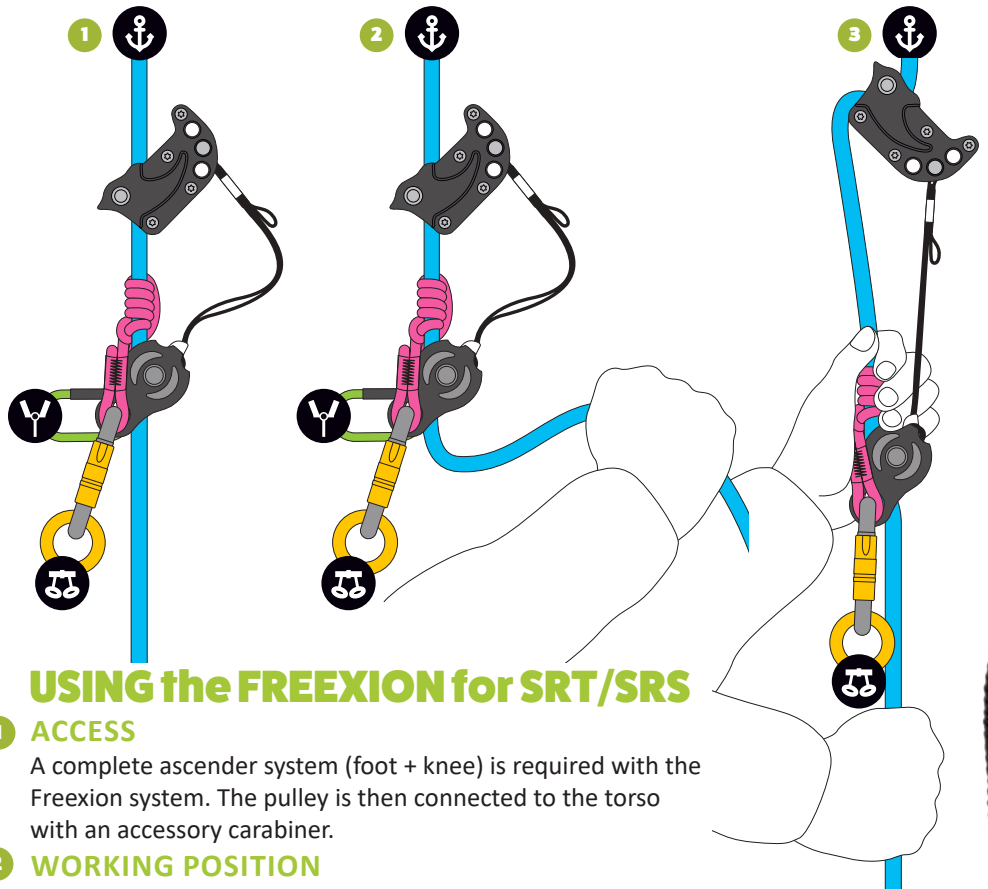
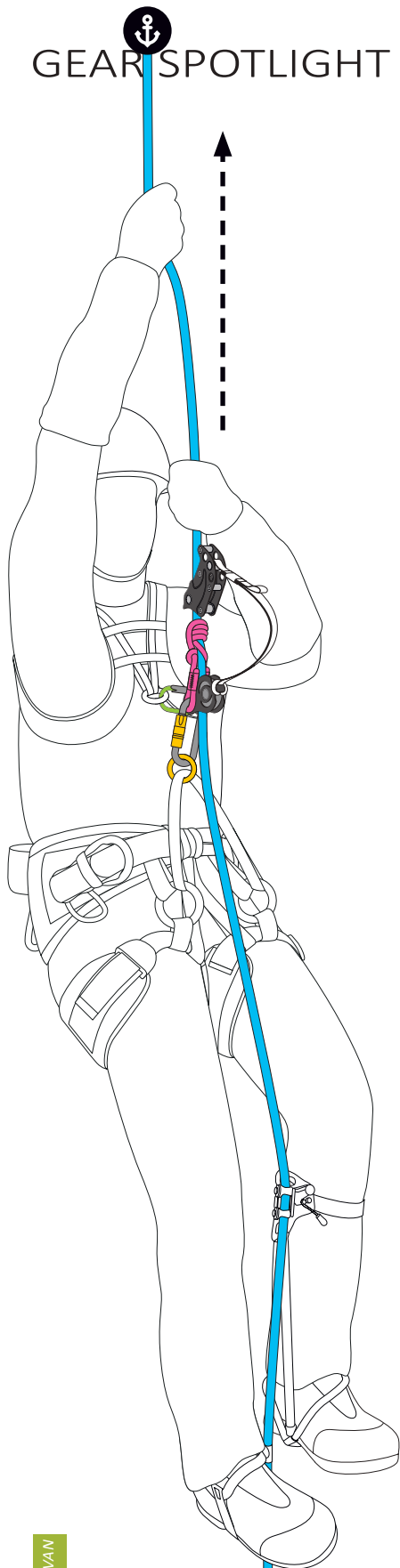
Following the creation of ART's LockJack, one of the very first mechanical systems intended for arborists, climbing and moving techniques have evolved along with the equipment. Italian climber, Giorgio Fiori, widely recognized among arborists, participated in this evolution and notably used the ISC Rope Wrench extensively. He returned to his idea of developing this system and the result was the *Freexion* from *FTC TREE*:

"The first Rope Wrench, created and invented by Kevin Bingham, did not have a Tether (a kind of strap that keeps the system in the right position) and it therefore rested on the friction knot. So I thought about making a cam with a spring inside the system to prevent it from sliding along the rope and coming to rest on the knot. In addition, to have the right diffusion, I thought of adding different levels of friction, to choose according to need. When I realized it worked, I contacted Kevin Bingham about the idea, but he already had commitments and couldn't make the change. In 2015, I therefore contacted the manufacturer FTC TREE, with whom I had already collaborated and who has always been keen to create innovative equipment that meets the climber's expectations as closely as possible. Being interested in this project, here is how in 2012, the *Freexion* (known then as *Friction Fiori*) was born. "

GEAR SPOTLIGHT

ROPE semi static
Ø 11.5 to 12.5 mm
(EN 1891:1998 type A)





USING the FREEXION for SRT/SRS

1 ACCESS

A complete ascender system (foot + knee) is required with the Freexion system. The pulley is then connected to the torso with an accessory carabiner.

2 WORKING POSITION

To move to the working position, simply unload the device.

3 DESCENT

To descend, simply raise the system as high as possible to tension yourself, then gradually release the tension in the knot by sliding it downward. The device will then tilt and brake to relieve the knot (60 to 80% of the climber's weight depending on the adjustment conditions chosen).

SPECIFICATION & USES

- Complete system composed of: Freexion + Tether + Freexion Hitch + pulley*
- Weight of the complete system: 350 g (*single pulley) / 405 g (*triple pulley).
- Weight of Freexion + Tether: 248 g.
- Rope diameter: 11.5 mm ≤ Ø ≤ 12.5 mm.
- 3 friction positions: Hard / Medium / Soft.
- Adjustable friction without tools and without removing the rope.
- Installation without dismantling the device.
- Suitable for SRT and DRT.
- Usable for rescue of two people (see p30).

MATERIALS:

Frame:	Aluminum
Cam, axles, links and springs	Stainless steel
Freexion tether	Dyneema / Polyester
Freexion hitch	Technora® / Polyester / Nylon



Introducing the new BlueWater Ropes

11mm Tech-G

CUT/ABRASION RESISTANT

The newest addition to BlueWater' ArmorTech rope series! Tech-G features a Technora® Aramid sheath with a core rope of polyester and nylon for the ultimate ease and predictability of handling. Tech-G remains round in mechanical devices even under extreme circumstances.



Dual Sheath for the ultimate in safety

UL Classified Life Safety Rope, NFPA 2500 (1983) - General Use

Minimum Breaking Strength:	8,992 lbf. (40.0 kN)
Certified Diameter:	11.0mm
Elongation @ 300 lbf.	4.3%
Elongation @ 600 lbf.	7.1%
Elongation @ 1000 lbf.	9.3%

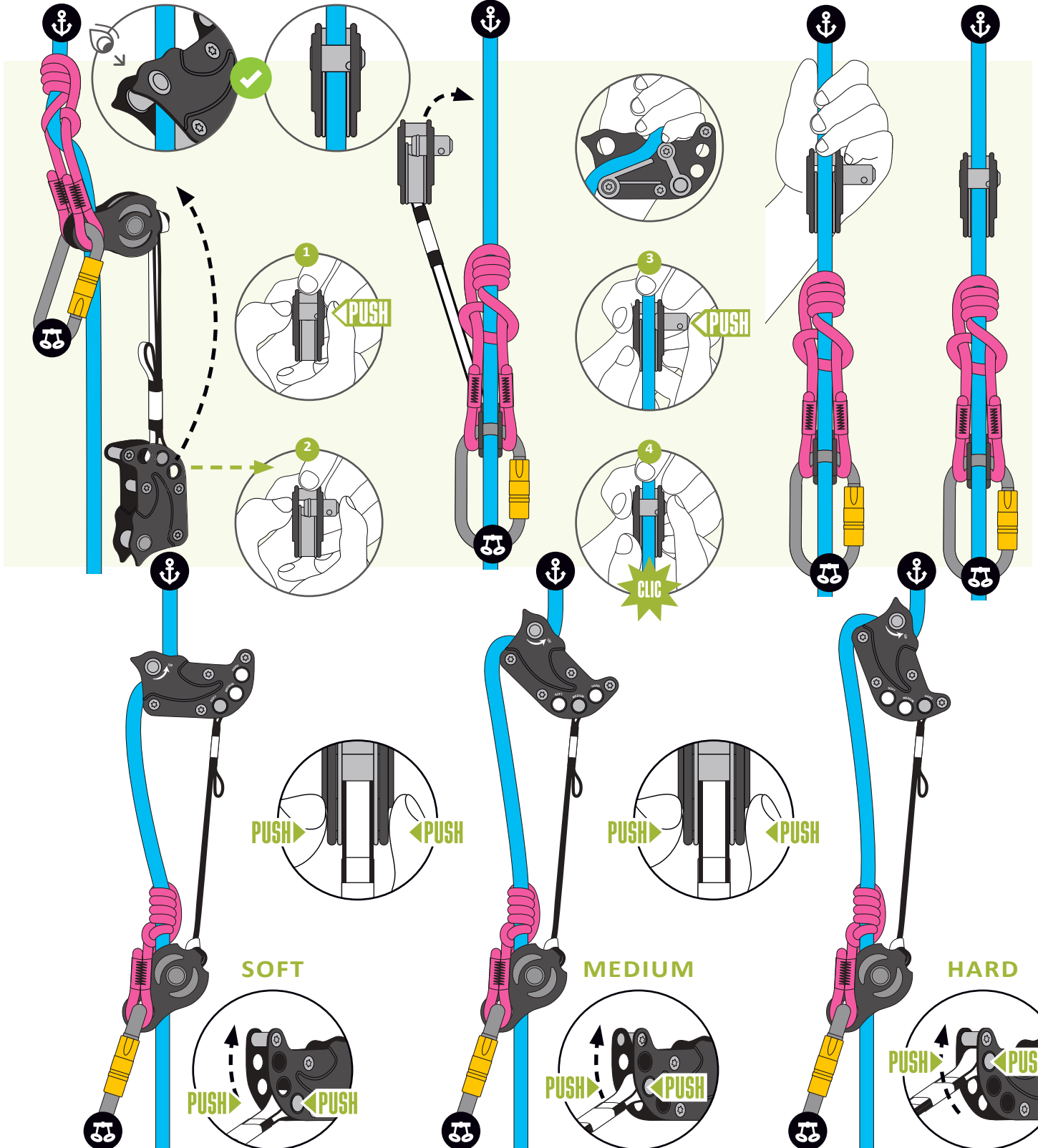
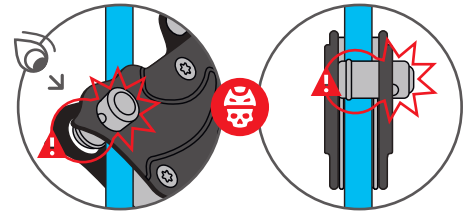


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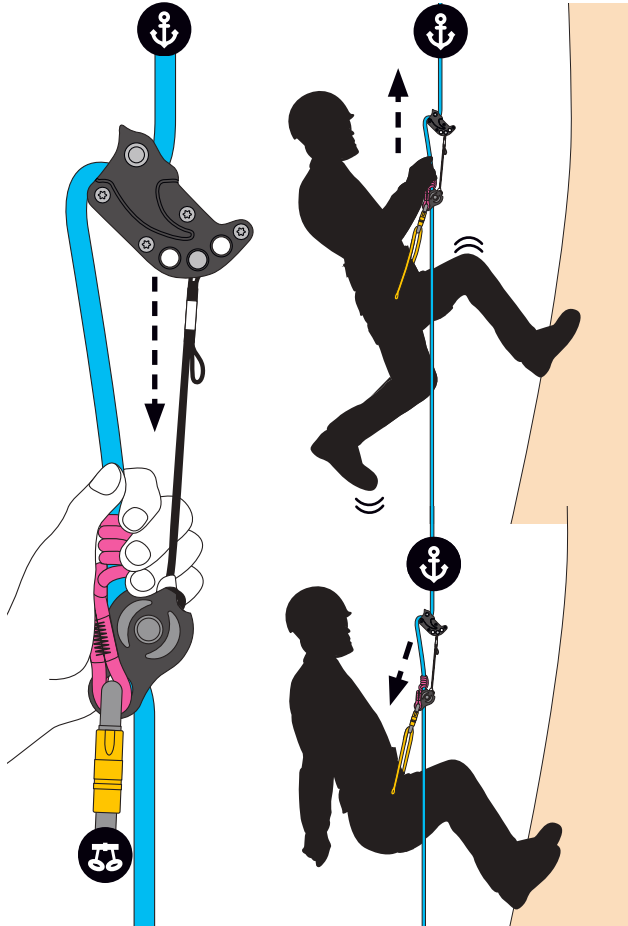
SETTING UP the FREEXION

INSTALLING THE FREEXION:

Once the friction hitch is made and the Tether is in place, simply position the device facing the rope, above the knot. To open it, simply press on the cam to keep it pressed and release the locking pin. Finally, all that remains is to insert the rope and retract the locking pin until it "clicks".



Illustrations : Lotic MORVAN



PRE-USE GROUND TEST:

Compatibility and operation tests must be carried out on the ground with the complete "Freexion Hitch + pulley + Freexion device" system in place. Tension the system, loosen, then gently slide the friction hitch downwards without touching the device. This tilts into the working position: the friction hitch is partially relieved of its load and handling is progressive and fluid.

Check that the friction hitch allows easy control of the descent and ascent speed, it should lock and release effortlessly. Slide the system up the rope as high as possible then place weight on the friction hitch so that it locks on. If necessary, reassemble the system along the rope and start again. Raise your legs and apply force (forceful step action) until you've taken out the rope stretch to check that the friction hitch is properly locked.

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by Michael 'Ox' Oxman

ELECTRICAL SAFETY



Electrical current is not just dangerous on contact with electrified cables, it can jump across gaps ...especially in the wet



MAIN PIC: Ox jnr - Robert Oxman dismantling around power cables.
INSET: OX (snr) dismantling a different tree around power cables.

Photo by Roger Barnett

Even Arbclimber readers outside of the US will appreciate the proximity of tree limbs abutting multiple energized conductors and wires. I've been zapped a handful of times, and each incident was caused by nothing other than my own lack of observational power; tunnel vision where the job in hand may mean you barely even notice the wires are even there. In one instance I was blithely unaware of those electric wires that blended into the background, even though it was in broad daylight. They say that self-preservation is an instinct, but hurrying can make us stupid enough to endanger valuable property, our tools, our co-workers, or ourselves.

There is a certain amount of 'shame' in admitting to such reckless behavior as climbing without a good walkthru inspection. I suppose 'cowboy climbers' never want to expose themselves to criticism, because of their tenuous grip on self esteem. Admitting our failures may allow doubt to creep in, about whether our mothers were lying to us when we were told, "You are so lovable!"

What is an energized conductor? The point of the question is, you don't want your saw, wet rope or steel core flipline to become energized by accidentally touching a wire. You don't want to cut a limb that is touching a wire, because that is a death-defying operation. Do you feel lucky?

Part of the training for arborists involves learning to look at a utility pole near the tree to be climbed, and identify the position and function of any wires. Clues can be gained about how 'hot' a wire is by inspecting its thickness, amount of insulation, color, or shape. A good safety tip is to look at each pole on both sides of a wire span, even though those poles may not be close to the tree. Mounting equipment that wires are attached to on the pole can give a clue to their function.

The definition of 'energized conductor' depends on who you ask. All these wires running from utility poles are separated from each other by their mounting height on the pole. Typically, the highest voltage lines are at the top of the pole. Lower down may be guy wires stabilizing the pole, and relieving the pressure from the weight of the heavy, tightly stretched, and droopy wires. Lower still are the stepped-down voltage of service lines that power street lights or houses. At the bottom of the pole is the communications position for phone or tv cables, which is slightly above the height needed for vehicle clearance.

Some definitions of 'energized conductor' include low-voltage communication lines. Even a phone line carries a few volts. All wires carry the potential of becoming accidentally energized by contact with other lines running thru the same route on the same pole. If lines are shaken or disturbed by tree branches, they may become dislodged, causing an increase in voltage beyond their intended function. This disturbance can cause even a 2 volt cable TV line to become lethal.

Regulations control the 'Approach Distance' of how close workers may operate adjacent to these wires. These rules have been put into place to protect the safety of people & property, because electrical current can jump across gaps between the path the current may take as it seeks a ground. The current will always seek the shortest route to earth, even if a short distance through thin air bridges a slight distance. Higher voltage lines

ELECTRICAL SAFETY

can bridge greater gaps than lower power lines. Know your Approach Distance Limits.

Trees that grow into the lines must be removed safely. Certain utilities only certify people to work in these situations- those who have passed training courses with minimum experience under qualified instructors or on-the-job training. Check with your local utility company to determine if the tree you are going to work on holds hazards that are controlled by these rules. Do not work on any tree with wires that could violate regulations that require crews to perform these tasks. If there is

an accident, tree workers without credentials may be held liable for costs and will certainly negate liability insurances. Only properly credentialed tree crews, trained in electrical safety are allowed to do work around HT wires because of the frequency of safety conflicts. Very heavy tree branches have a lot of leverage. Limbs that are moving from wind or other forces may hold enough inertia to dislodge the wires and cause electrification of lines not intended to carry so much power.

These conditions can seem innocuous, with very dangerous conditions lurking inside. The accident rate among tree climbers is appalling. Every day, some arborist is killed or seriously injured by electricity. Take precautions by being aware of where the hazards are with a good Job Safety Briefing that allows everyone on the crew to look up and identify potential issues that could be life-threatening.

Don't use aluminum pole pruners, ladders, non-insulated lifts or other tools on jobs where they can make contact. Don't take chances when cutting branches that may fall in a path that could cause them to hit the wires. Don't 'bounce' small limbs off wires that seem durable enough to withstand incidental contact.

Acting with caution may mean not acting at all, but deferring to another solution that conserves life and safety.

Robert Oxman carefully removes an apple tree that was initially laying across power cables. Note use of a dielectric (non-vented) helmet and rope rather than wire core flip lines.
pic by Michael Oxman





100th Anniversary of the International Society of Arboriculture ISA

& 50 years a tree surgeon!

Ox is a resident of Washington state, USA, and a career arborist who began climbing on manila rope, right out of high school in 1970. Also a keen recreational climber, he now lectures on tree subjects at conferences, produces videos & is a content creator on social media platforms.

What were arborists concerned with in 1924? My predecessors had encountered obstacles when they decided to band together into the National Shade Tree Conference. Here are some changes caused or witnessed by the non-profit ISA over the last 100 years:

The state of arboriculture I encountered in 1970 as a 17 year old high school graduate was a commercially oriented service industry. The post-World War 2 baby boomer population explosion created dense suburban neighborhoods, with well irrigated, fast growing urban forests. Rather than being trained to understand plant growth characteristics, we concentrated on functional treatments like size reduction of trees. Lightweight chainsaws and the first brush chippers had just become available. Hand labor was the source of much of the income from tree service providers. The ropes were made of weak hemp fiber, subject to decay, and I survived 2 separate falls when my ropes failed.

The ISA needs to address our failures, as well as our accomplishments. We still have a long way to go to recognize each other as human beings rather than solely as arborists. We must be happy as we improve growing conditions in our forests and extend the lifespans of trees.

Dwelling on these failures can allow us to view them as challenges to work on. Our best moments will be when we synergize to come up with solutions to improve our approach. We can assemble a track record of our accomplishments to remind us of how far we have come in achieving our goals. The path forward will show itself as a work plan. Then we can shout out the message to achieve our mission of being allowed to experience the exhilaration of working with magnificent trees.

- 1) Expanded definition of Arboriculture to add Urban Forestry.
- 2) Extended education & outreach to international borders with

improved communication.

- 3) Educated workforce with literature published by industry leaders.
- 4) Diversified workforce to include women & minorities for better equity of disadvantaged communities.
- 5) Mechanized equipment for efficiency as inventors took advantage of new ideas and procedures.
- 6) Consolidated financial markets to allow equipment ownership/leasing.
- 7) Improved safety procedures to protect people and property, and control costs from injuries.
- 8) Published work standards to tighten procedures.
- 9) Researched scientific theory by academics to inform the public and arborists of the need for proven methods of practice.
- 10) Consensus on ethical standards to create common values.
- 11) Tracked tree inventory control & remote sensing to monitor trends & aid maintenance.
- 12) Assembled diverse boundary-spanning disciplines to unite trades & professions in forestry, pest control, research, irrigation system design, and many other trades.
- 13) Codified legal procedures in environmental protection ordinances requiring enforcement by tree wardens & municipal arborists.
- 14) Communicated instantly with technology tools as inventions were popularized and made economical.
- 15) Enhanced altruistic volunteer activities to bridge the gap between unfunded mandates to care for the land.
- 16) Established training industry of private companies to elevate skill levels of arborists.
- 17) Conduct tree climbing competitions as a method of training the workforce in safe climbing practices.
- 18) Consolidated nursery practices improved raw material to plant trees, shrubs and groundcovers to build out quality landscapes.
- 19) Advocacy & lobbying by citizens to encourage government funding & tree protection regulations.



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MILWAUKEE**M18 18v Battery platform****Top Handle Chainsaw****2826-22T**

EU=FTHCHS30/35



You know how we love our battery tools and have been lauding professional systems for nearly 30 years. *Yeah, yeah so you keep saying, anybody'd think you invented them.* All right, bit harsh. Well anyway, part of our justification for this 'obsession' was that battery power is quieter, better for the environment and more convenient than petrol/gas. For a long time we accepted that the downside was that petrol always had more grunt, in a side by side these saws would outperform battery, and that is still the case with a big-rear-handle chainsaw with a 30" bar but not for top handle saws. These have caught up to such an extent that this *Milwaukee 22T* cuts faster than our petrol *Stihl* and our old *Jonsered!* That in itself is enough to make it worth reviewing as a professional saw.

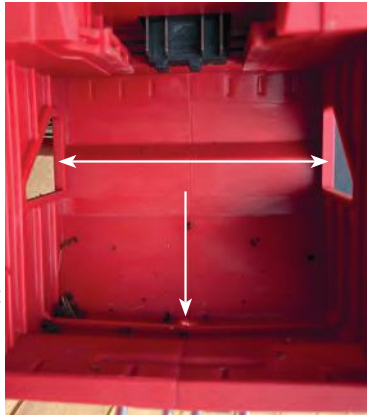
We've so far stuck with the key players in the arb industry for chainsaw reviews - *Stihl Husqvarna* and *Echo* top-handles with one look at a very good 'newcomer' as it was back then, the *EGO*. Not surprisingly the marquee brands are *Stihl* and *Husqvarna* - if you want the best these remain the ones to go for and not just because they have fantastic chainsaws - those incredibly expensive battery systems can also be used for a whole load of associated tree and landscaping equipment so the same batteries will power all of your tools - rear-handle chainsaws, polesaws, blowers, brushcutters and even mowers. Both *Husqvarna* and *Stihl* can now also boast that they each power a battery ascender, *Stihl* with the *PowerClimber* and *Husqvarna* with the *Actsafe ICX* (see this issue's front cover). Now that's versatility.

Or is it? You may get a ton of use out of your pro-battery systems for work but what about when you knock off for the day or if you moonlight as a construction worker? Neither of them can power your drill/drivers, circular saws, sanders, planers, concrete vibrators, pipeline inspection cameras or area lighting. Nor reciprocating saws and this is where *Milwaukee* comes into our own story. It was the *Milwaukee M28*

reciprocating saw that put us on the road to pro-battery tools. Back then we were using them to dismantle entire vehicles for casualty extrication and they are still a key tool for emergency services today. We did also use the *DeWalt* 24v platform but it was the *Milwaukee* that provided the kind of rugged, dependant tool that we needed and we still use some of those original *M28* tools even now, going strong after 20 and 30 years. But to our surprise, *Milwaukee* opted for the M18 as their main professional platform and that's because battery development outstripped our expectations such that the 18v could outperform the original higher voltage platforms. We had an inkling of this when some of the hydraulic cutter manufacturers started using the *M18* instead of the usual 24 and 36v platforms. These are big-ass tools doing very serious work and for years we belittled the idea of 18v being tough enough to cope, ignorant of just how fast batteries would progress in the last 5 years compared to the relative stagnation of the previous 25years.

So, we're very familiar with *Milwaukee* batteries for professional use and the *M18* does not need to prove its credentials. The top handle saw however did raise some eyebrows because this is a very specific market that bears no resemblance to the rest of their market. We gave it a while before putting pen to paper to see if there were any issues found by others who grabbed it as soon as it was released and now, after more than a year of exposure we're pleased to report that, surprisingly perhaps, this saw is not bad at all! That's not to say it will alarm *Husqvarna* and *Stihl* they have had several years to improve the design and marry it with bars and chains that are optimal - the *Milwaukee* uses fairly standard fare straight out of the box but that will improve and you can make your own modifications. Even *Milwaukee* wouldn't

pretend that they've bought out this 22T to compete directly with the Husqy , they're looking to calve off some of the growing battery converts with a model that is powerful enough to compete in a pro market at a price point that says 'workmanlike' rather than luxury although it is noticeably more expensive in mainland Europe than the US and UK.



MILWAUKEE 22T Chainsaw

battery increases weight and bulk, alters the balance and costs a helluva lot more. Nevertheless, if you had only purchased the 12Ah batteries to start with you probably wouldn't have even mentioned it. You may have discerned from the picture opposite that even with the HD12Ah battery, there still appears to be a little gap and you'd be right. That's because there is an even higher power output battery in their range, the Red Lithium FORGE 12Ah which purports to have 50% more power than even this High output 12Ah and is slightly taller at 4.1" versus 3.9" for ours. Unusually, the newer FORGE batteries are roughly the same price as the High Output batteries. And that gap? Well it hasn't been a problem or gathered dust and water quite as we had expected it to because there are two dirty great vent holes on the side and a drain hole in the bottom (arrowed), the battery mount is at the top so water can't sit on it or in it and the batteries themselves are now designed to shed water away from the vita electronics. That's not to say that this is waterproof - it's not, it's water resistant such that you would not need to worry about rain as the M18 rescue tools used by fire and rescue services don't, but it won't take inundation. In the Hydraulic rescue tools, Weber has a bespoke cover for their M18s so we may yet see something similar for this both to improve water resistance and help protect the battery against abuse in the canopy.

AT FIRST GLANCE

The most glaring issue as we put the saw together appeared to be the oversized battery pouch on the rear which had a gaping zawn beneath a 5 or 8Ah battery. This was obviously so that it could accommodate the larger 12Ah battery and indeed it was. The problem here of course is that the 12Ah



FEATURES

Back to the saw itself, and other first impressions were that it didn't look or feel quite as slick as the Stihl and Husqvarna battery top-handles. The plastic casing is matt red and the battery pouch edges very square - the only reason to mention

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8Ah HD battery £160 \$200 €280

12Ah HD battery £240 \$250 €361

WEIGHT (exc batt): 3.6kg/7.9lb

WEIGHT (with 8Ah): 4.7kg/10.3lb

Chain Gauge : 1.1m / 0.043" (4mm File)

Chain Pitch: 8.3 mm / 0.325"

Stated Endurance:	HD 8Ah	HD12Ah
4"Diam Cedar	150 cuts	225 cuts
6"Diam Cedar	75 cuts	115 cuts
8"Diam Cedar	45 cuts	70 cuts

	Milwaukee 22T	Husqvarna 540i
NOISE (LWA) :	104 dB	106 dB
PEAK POWER:	2.7HP	2.4Hp
CHAIN SPEED	15m/s 50 fps	20m/s 65 fps
VIBRATION	2.2m/s ²	2.4m/s ²

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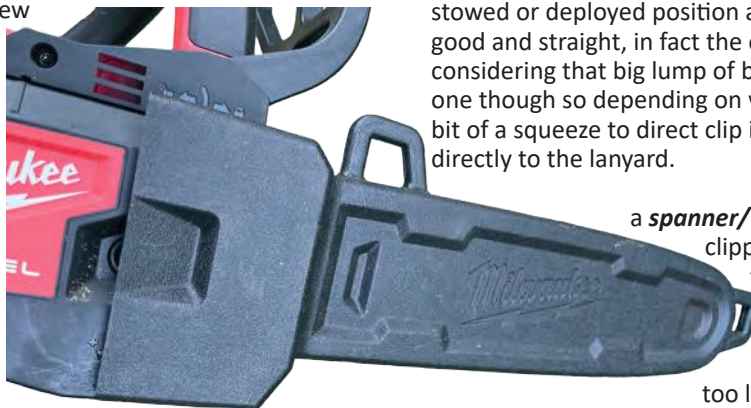
out of the on-off button moulding is Milwaukee's take on a **dead-man safety**-that needs to be flipped down and held down in order for the trigger to initiate drive. That's not a design we've seen before, it felt odd and we initially thought it would last two minutes once dangling from the saw lanyard and dragged though a canopy but no, it's still there - could just be luck but you would think that Milwaukee would have dragged this around their design workshop like a petulant child to make sure it wasn't as vulnerable as it looks? One 'advantage' of saws like this that don't have the additional safety of some saws where an additional electrical cut out kicks in after several seconds or 5mins or whatever of inactivity. We appreciate this is a safety feature but it can be a pain in the ass when you get into full flow. In fact Stihl has the TC-O version of their MSA220 which has an override of this safety which tells you how many arborists have moaned about the inactivity-off feature. Back to this dead-man and it's now second-nature but what we didn't realise for months was that you don't need to keep it pressed down once the chain is running - that makes wrist manipulation of the chainsaw so much easier.

that is if you were to trap your fingers whilst vigorously inserting one of the larger batteries - moral - take it easy and treat your batteries like a new born baby (minus the bit where they hold the kid upside down and smack it into life).

It's not light especially with the 12Ah battery which some would feel is too heavy and bulky to justify the extra duration. It weighs around 4.6-4.7kg. Compare that to the little Echo2500T at 2.9kg (inc 4.5Ah battery) or the Stihl 161T at 3.4kg/7.5lb (inc 2Ah battery) which are much lighter but the Stihl 220 at 4.5kg/10lb with a 3Ah battery is similar.

The **bar scabbard** is enhanced from the usual plastic sleeve - this one has extra mouldings that sit around the bolt-housings and sit behind the bolt so that it has to be physically pulled off - it won't fall off. There are also two attachment eyes, one of top and one on the end so if you were so inclined, you could sheath the bar for climbing and clip the scabbard to your harness during work.

That strange, extraneous tab extending



There's a generous **lanyard eye** on the rear that clicks into a stowed or deployed position and with the 8Ah battery hangs good and straight, in fact the overall balance is pretty good considering that big lump of battery on the back. It is only the one though so depending on what lanyard you use you find it a bit of a squeeze to direct clip it to your harness hook as well as directly to the lanyard.

a **spanner/wrench-screwdriver** in black, clipped into the casing to make sure that you don't lose it and can adjust the chain tension in the canopy. Very handy. These are now called **Scrench's** by those too lazy to use the full nomenclature.

Actually that's usually us too, **scrench** it is.

It has metal **bucking spikes** or dogs which is always better than plastic grips or none at all but some may find them adequate

with 5 teeth at around 13mm/ 1/2" long but generally a decent enough grip on rotational cuts. You can of course, simply retro-fit a preferred larger set of dogs which would not be a good idea on lower powered saw but this saw can take it.

The 100ml **oil tank** is opaque but you can easily see the oil level unless you're using a clear oil substitute. Oiling





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GEAR REVIEW

has been an issue with a couple of other battery chainsaws we've used where the oiling function has failed long before the chainsaw motor and even the battery. Of course this is a self fulfilling prophecy of motor failure because without the oil pumping properly you're going to be working harder and achieving less. So far, this *Milwaukee* saw has functioned very well. You get a 75ml bottle of chain oil with your saw.

The single **sprocket-cover nut** is not captive so if it comes loose you're in trouble. Bit surprised that this hasn't been upgraded, it's such a straight-forward fix? and we're now even more likely to lose it as we take the chain off for sharpening since it's so hard to rotate by hand on this saw!

THE COMPETITION

If we weren't already familiar with *Milwaukee* we would be very sceptical that this is a pro saw rather than a high-end farm or smallholding tool. Gotta say though, that scepticism is nowhere near as great as it was with the *Greenworks*, *Ryobi* and *DeWalt* models so this one does at least have a head start. Incidentally, ours came with a 30cm/12" bar but there is a 35cm/14" option.

So if we look at the competition first to see where this one sits we can see that there is a definite price banding which almost certainly reflects that old adage - you get what you pay for. In this respect the Milwaukee is not only cheaper than the two primo brands, it's cheaper than the *Echo* and the *Ego*. In fact it's even cheaper than it's close rival the *DeWalt* Top Handle - at least in the UK & US - Europe has some differential pricing between countries that puts its MSRP quite high in some cases. Which leaves the *Stiga/Mountfield*, *Greenworks* and surprisingly perhaps, the *Makita* as cheaper alternatives. We might have included *Oregon* in this comparison as a brand we already use but that's only as a pole saw and rear handle chainsaw not a top-handle - it's surprising they've never ventured into top-handles. For ease of comparison we've just used £Sterling

BODY ONLY - NO BATTERY or CHARGER

Husq T540iXP14" -	£500-580
EGO Pro X CSX3000 12" -	£500
Stihl MSA 220T -	£670
Stihl MSA 161T -	£400
Echo DCS 2500 TC -	£380
Milwaukee 22T	£325
Stiga PR700e-	£200
Greenworks GD40 TDX	£200
Makita DUC254Z	£200ish

CUTTING (We're comparing this with the Husqy, Stihl, Ego and Echo battery top-handles). Putting aside the generic nature of the bar and chain which you can easily upgrade to your favoured types/brands, this saw has much higher torque than expected although that's countered by the relatively slow chain speed of 15m/s 50fps compared to say the *Stihl* at between 20 & 30m/s /98fps. This means that you don't have to back off the cut because you feel (or sense) it struggling and about to stall as we do with other perhaps 'higher-profile' saws. Not that they won't make the cut but you have to get a feel for how it reacts pre-stall and don't let it get that far. The *Milwaukee* is powerful enough to complete most cuts you are realistically going to tackle. Of course having that extra grunt could well tempt you into bigger stuff but for that to be a good idea you need all your ducks in a row and power is only one of those ducks. Nevertheless, the ability to cut larger wood particularly with the longer 14" bar is going to be a consideration especially as, if only in this one regard, it can give your top-end saws a run for their money.

It feels a bit more 'chunky' in the hand and indeed is noticeably wider at the handle (9.5"/24cm) but this does give plenty of space at a comfortable 40degree (ish) handle as distinct from the more compact and upright handles on *Stihl* and *Husqy*. The top handle is a tactile rubber-like material whereas the handle is a similar tough plastic to the body with knurled areas for improved grip but with wet hands it is nowhere near the grip of the top handle section.

In cutting, straight away, this saw was far more at home cutting larger diameter wood with its extra grunt than it was whizzing around an old apple pruning out small stuff when it feels slightly more cumbersome. Only on bigger hard wood with hard, smooth bark does suffer from having bucking teeth that are 13mm/ ½" long and can skid on rotational cuts rather than biting in and really assisting that extra power to do its job as it generally does. We subsequently found some decent 'dogs' in the US that fit the Milwaukee to address this shortfall but not in time for this review and it was never as big a problem for us as we expected. It's good that we can upgrade but while our sycamore, cedar and oak didn't need it, those working on eucalyptus for instance, will want an upgrade

The vast majority of wood this had to deal with is sycamore from multi-stem stands that had to be cleared so we had to engineer a few other tests from trunk cutting down to ground level (which is often more of a test of the chain coping with soil

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MILWAUKEE 22T Chainsaw

and small stones than it is the chainsaw) to repetitive cuts in sections of Napoleonic 10x10" cedar which was not quite as sacrilegious as it sounds - these are beams that have actually been in the presence of Admiral Lord Nelson in the historic Portsmouth Dockyard in the UK but had long since rotted through about 40% of their width leaving us with around 10" of solid wood - smells fantastic!. 4x4" cedar has become the norm in North America for comparative testing so we have plenty of data which is lucky because we were far too cheap to stump up for more lengths of 4x4. The figures quoted in the table on page 44 are work times in 4, 6 and 8" cedar and our experiences in sycamore were not far off. Meanwhile, with an 8Ah battery we actually ran out of wood before we ran out of 10x10" cedar taking 80 x 3" widths off of our 20' length of beam, that is more than the quoted figures but we think that will be because of areas of rotted wood encroaching into the 10 x 10 area so not as tough as a full diameter of fresh or treated cedar.

We carried out cross-battery no-load tests because that is as level a playing field as you can get but only provides comparison between the batteries - not the work time you can expect since its only driving the oil pump and the sprocket with no bar and chain. You will find that the comparisons between say the High Power 12Ah and the high power 8Ah are not proportional to the no-load times because the 12 can work



cutting thin discs for the hell of it (testing the 12Ah against the 8Ah - no obvious difference in the cuts but the 12 will obviously work for longer.

harder for longer whereas the lower AmpHour batteries will discharge much faster when working hard i.e.. just because the no-load time of an 8Ah is twice that of a 4Ah doesn't mean that the 8Ah would last twice as long as a 4Ah when cutting larger diameter hardwood.

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GEAR REVIEW

We used three battery AmpHours - the 5, 8 and 12Ah and each battery is larger in physical size than the next. 5Ah isn't a recommended size but we have them on one of our rescue tools and it is lighter and cheaper so it was well worth a look. The 8Ah is probably your best bet and if you can afford the higher output models including the new *Forge* - go for those! The 12Ah is bigger, heavier and more expensive and many who were already baulking at the weight may feel that this is a bridge too far especially if you routinely use one hand, which of course, is never done in arborism.



www.rescuemagazines.com

brain that its heavier than it is. The real decider might be the cost because (assuming the Dollar and Euro costs are comparatively the same between the three

AmpHours) the 12Ah is 3 times more expensive than the 5Ah with the 8ah twice the cost of the 5Ah. We think the 8 or the 6Ah, which we don't have in the Milwaukee but do in other brands/tools, makes a better all-rounder

These batteries are IP54 so not waterproof in any way and indeed a diagram on the chainsaw appears to say that it should not be used in rain. We think they mean 'heavy' rain because general drizzle and damp have never caused a problem and their own instructions mention that the batteries are designed to direct water away from the electrical contacts.

NO-LOAD Milwaukee battery Durations

Std 5Ah =	35 mins	weight: 899g /2lb	Cost: £75
High Output 8Ah =	55mins	weight: 1008g / 2.2lb	Cost: £160
High Output 12Ah =	88mins	weight: 1054g/2.32lb	Cost: £240

So each consecutive Ah increase equates to around a third as much again in endurance and that 12v could make the difference between doing the whole job on battery or swapping out one or two times but what about that weight increase? Well, in real terms does 50 or 60g (around 2oz) really make that much difference? The 5Ah is physically smaller and the psychology of the considerably larger 12Ah may convince your

CONCLUSION

We are lucky enough to be awash with specialist equipment from arb and rescue and really don't need any more kit so we only request equipment that we already know is good enough for a review. In general, people seemed to be impressed with the *Milwaukee* with only a few niggles so it seemed like a safe bet. We expected it to be workmanlike and a bit rough around the edges and verging, perhaps too far, towards a top-end homeowner/small holder saw than a pro saw. But that definition is unfair, inaccurate even. As we stated in the



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 To open the sleeve you must respect the correct sequenc

intro, the *Milwaukee 22T* cuts faster than most liquid-fuel top-handle chainsaws and that is effectively a coming of age for battery. We love that extra grunt and the proportional trigger, not that a slow start gets used much but it can be useful for reinsertion into a cut and for positioning cuts on ornamentals. However, we're not so keen on how hard it is to rotate the chain for sharpening, we've actually taken to swapping the chain in from another chainsaw having sharpened it on that instead. If you compare anything with high-end kit that you already use regularly and it will come up short but look beyond that to the fact that this saw can compete with the top saws on cutting big wood - which is not really its job, and that you could buy three of these for the price of 2 *Husqies* and that your battery options are vast so that you can power everything from a home power drill to fire dept hydraulic spreader and perhaps most appropriately a range of rear handle chainsaws and blowers (which we'll come onto next). You can also buy the batteries and spares at any large hardware store - just in terms of convenience we mean not that buying from a DIY store compares to your specialist stockist who are far more deserving of your cash...just convenience if you're on a job and need something sharpish .

The *High Output 8Ah* is the best option if you have to choose - it costs £160 at full retail compared to £240 for the 12Ah But the regular *Red Lithium 5Ah* at only £80 might convince you to opt for lighter and little and often power/usage?

MILWAUKEE 22T Chainsaw

Our man Adam sums up the decision-making process with his recent purchase of another two Echo 56v batteries for his beloved little Echo 2500T. Even though he also uses *Husqy* and *Stihl*, he now has so many batteries for the *Echo* platform which includes rear handle saws and blowers - that they pretty much dictate any future saw he chooses. We're in a similar position with thousands of pounds worth of *Milwaukee* chargers and batteries powering our drills, recip and *Hatchet* saws, chainsaws, blowers and hydraulic cutter that we're virtually looking for the next *Milwaukee* chainsaw before looking at other brands. Not because *Milwaukee* will produce a better chainsaw than *Husqvarna* or *Stihl* but because they are good enough and we can do so much with that *M18* battery platform! That said, we have appreciated the power of the *22T* and it's simple set up and function. The on-board srench is good, the lack of non-captive sprocket cover bolt is poor and sharpening is a pain, the battery and charging options are excellent and something of a deal-breaker especially if you are looking for a back up system for your primo brand. This is not necessarily an either-or thing. You could do much worse than having a primo system like *Husqvarna*, *Echo* or *Stihl* for your main climbing team together with specialist kit like a powered ascender/winch and then augment that with a less expensive auxiliary battery system like the *M18* for additional top and rear handle saws, blowers and any one of over 200 power tools including area lighting which is as useful a tool for work as it is for an evening barbecue.



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MILWAUKEE

M18 18v Battery platform

Twin Battery Blower

2824-20 / F2BL

This was going to be in the next issue but having looked in depth at the 22T chainsaw it seems daft not to mention an associated piece of kit in the same issue, the twin battery 2824-20 (or F2BL in Europe) blower.

While we kinda knew that the chainsaw was worth a look, we were a little more wary of this particular blower because it uses the twin battery format and these run in series not consecutively so you can't use just one battery. We are familiar with this in some US hydraulic rescue tools where we had problems with the shear bulk of having two side-by-side batteries trying to operate in a confined space and indeed these models are now being phased out.

However, there is a world of difference between having to manoeuvre a tool in the confines of a car



footwell and blowing sawdust, leaves and debris in the great outdoors. Our other blowers are either single battery - rear-mounted or petrol back-pack which is an entirely different kettle of fish and Milwaukee do have that covered too with the M18 F2BPB above.

The first thing to note is that, as a common platform with the afore-mentioned chainsaw (and about 200 other products), having two M18 batteries (or 36v) for this blower is not, in itself, a problem, it may even be the

entire reason you choose to invest. In this particular model or in Milwaukee's other three M18 blowers, the Compact which we generally think of as a workshop-blower, the Backpack running twin M18s with 2 more in reserve and the single battery model. We never had the single battery Milwaukee version so can't vouch for that but the figures for the original Gen1 model were poor compared to a number of other 'trade' brands until they got to the current Gen3. So, going up to twin 18v/36v tool seems to back up our surprise in the previous review that they would choose the single 18v platform for virtually everything. This step up does provide an impressive wind speed and air volume at a stated 145mph max and 600 CFM - compare that to Husqvarna's 230iB at 136mph/650cfm or even DeWalt's 54/60v model at 125mph and 600cfm and we can see the Milwaukee is now in the big leagues!

Unlike the 22T chainsaw, we originally requested this blower, simply because we were already using the M18 platform and that is the only thing that makes this economically viable. The price of a blower & twin batteries/charger is £600 pretty much double the cost of the single battery trade competitors but you might consider the higher output forces make that worthwhile. Run-times however, not so much. We tried this with twin 5ah, twin 8Ah and an off the wall mix of a 12 and a 5.5ah which did actually work. In fact, you can mix and match ANY M18 batteries in this thing and it works just fine - the output is roughly the same but the runtime is obviously dictated by the smaller battery of the two.



www.arbclimber.com

Having mentioned that the single battery version of this was originally

pretty average, *Milwaukee* quickly stepped up and although you can still get the *Gen I & II* you will want the *Gen III* and the differences between the single battery version and this twin battery version are not now as stark as they were.

So with the improved *Gen III* makeover, what makes this twin battery version worth roughly £\$€100 more

First off, we don't need to mention brushless motor - these days - if it's not a brushless motor - don't buy it!

- 1) a 17% power increase
- 2) 25mph higher speed
- 3) 200g/8oz heavier*
- 4) In-yr-face LED battery status (4 LEDs with the last one flashing for the last few minutes of max speed running)
- 5) easy to see cruise control on the top handle with 5 speed settings & trigger will temporarily override lower cruise control settings then return to the cruise speed. This is now also on the Gen III Single battery model along with a hanging hook.
- 6) Base manoeuvring handle or stand

*No really! despite having two 1.1kg batteries (8Ah) instead of one, the weight of the components themselves must be lighter in the newer twin model. In fact, when we weighed ours with the nozzle and diffuser it didn't even make 4.5kg! Probably best to stop micro-comparing now because it's clear that *Milwaukee's* own development of their previously very average single battery model has muddied the water a bit and made the choice a little more difficult. On the mid-power setting you can get 40 to 55mins with twin 5 and 8Ah batteries and that extra lateral bulk we mentioned - well it does make storage a little more cumbersome but in use it doesn't really feel much different to the single because the weight difference is actually less than the extra battery weight (lighter inner workings?). Below the batteries is a handle that doubles as a stand and this is more useful than you might think. Welding any of these blowers with one hand for longer than 10mins gets a bit tiresome and fatigue of your poor little arms only increases with frequent lifting and manoeuvring to either direct your debris pile or get at difficult to reach areas. Being able to use two hands is akin to switching from walking to jogging - it may be doing harder work but it's different muscles so it feels like a rest as long as you're only doing it for short periods. That handle is great for rotating the flat head and changing the air flow and point the nozzle at obstinate bits and it really does clear just about anything you point it at. We used the flat diffuser as a scraper but Milwaukee otherwise don't have any reinforcement of the nozzle heads. Talking of which, both the nozzle tube and the heads clip into place with twin buttons that is very secure and quick to change.

The *Twin* version is still one of only a handful of higher speed, higher output force models but don't expect that to last for long as everybody is in an arms race to improve batteries and motors. The one thing we can be sure of is that if you're already running *Milwaukee M18* batteries you will be pleased with this, it is noticeably powerful with decent design features and an excellent battery range. If you're not running *M18* and don't intend to take on *M18s* as your back-up system you're best sticking with whatever blower is produced by your current battery system manufacturer.

MILWAUKEE Twin Blower

SPECIFICATIONS/PERFORMANCE

COST Tool only:	£285 \$300 €350-420
5Ah Battery	£102 \$160 €202
8Ah HD Battery	£160 \$200 €280
12Ah HD Battery	£240 \$250 €361

WEIGHT (with 8Ah):	4.7kg/10.3lb
CFM:	600
Max Air Speed:	145mph
Noise (LWA)	83 dB

Our Endurance @Max speed :

5Ah	9mins @ 100mph*
HD8Ah	17 mins @ 102mph*

Our Endurance @Speed Level 3 (of 5 settings) :

5Ah	38mins @ 65mph*
HD8Ah	55mins @ 68mph*

* mph should be about the same but there were slight differences on our anometer

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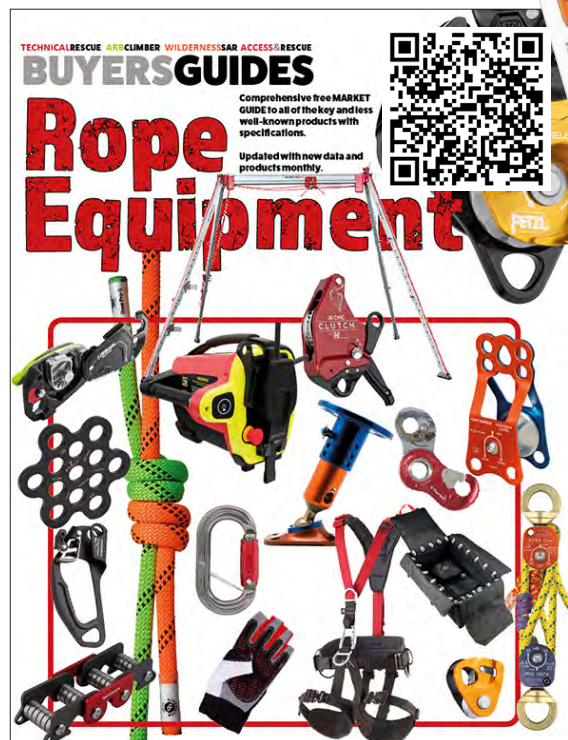
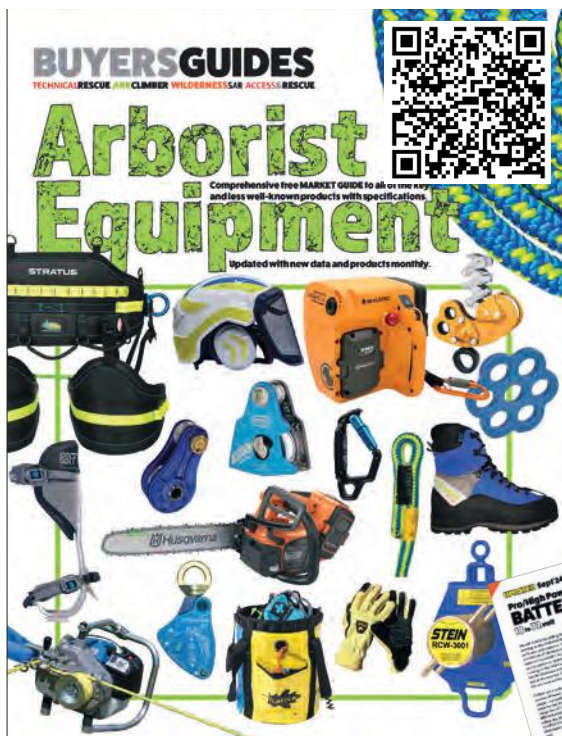
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We have expanded upon an article by our colleagues at **Arboristes Mes** on chainsaw tethers available in France and included the majority of the key models available around the world.

Bungee CHAINSAW Lanyards/ Tethers

The chainsaw holding lanyard (or leash or tether) stands out as an essential accessory for professional arborists. This equipment allows secure and transport the chainsaw optimally when working at height.

The main reason to use a chainsaw holder is security. When a chainsaw is attached to a lanyard, the Risks of accidental falls are considerably reduced. This is particularly important when the pruner is working high up, where a chainsaw falling several meters can cause serious injury or significant property damage. By securing the chainsaw with a lanyard, you protect the tool against falls and shocks, but also the worker and its immediate environment in the event of loss of control.

There are more and more models of lanyards and each has advantages and disadvantages. all bungee lanyards have, by definition, a small degree of shock absorbency but some are equipped with a full-spec shock reduction system that absorbs impact force that would otherwise affect the harness and the user in the event of a fall.

Lengths, widths and attachment system vary from model to model to another, but one of the most important aspects to consider is the lengthening of the strap with stretch, which is closely related to its Maximum Utilization Capacity (CMU). Here are the main criteria to consider when making your selection:



Drayer's Tango Vario Plus allows each tool to have it's own loop and then connect to the lanyard as needed.

LENGTH AND WIDTH OF THE LANYARD

The lanyard must provide adequate length to allow sufficient range of movement without risk of entanglement. A lanyard that is too short can restrict movement of the climber, while a lanyard that is too long can become cumbersome and increase the risk of accidents especially when closer to the ground or to a hazard like cables. The width of the lanyard can influence its ability to support more or less significant loads. A wider or thicker lanyard is generally capable of supporting higher loads, but the only data you can trust is the CMU (in France= Charge Minimale de Rupture) or MBS which is the Minimum Breaking (or Rupture) load.

MAXIMUM USE CAPACITY

The CMU or MBS is essential information and must absolutely support the weight of your chainsaw **as well as the additional forces generated during movements**. However, some also have built-in 'weak' points that will allow the saw to break away under extreme loading such as could occur if the saw or lanyard snag on a large limb or section that then threatens to drag you with it! it's a fine line between safety of the user in this event and ensuring that the chainsaw remains secure during 'robust' work.

THE FIXING SYSTEM

The fixing system must be secure and easy to use. THE carabiners and loops must be able to withstand the weight of the chainsaw without risk of breakage. Make sure that the locking mechanisms are reliable and easy to handle, even with protective gloves. Most chainsaw lanyards have the option of a girth-hitch connection to the handle or attachment ring using the end loop in the webbing which is often sewn inverted to make the girth hitch neater. However, for quicker change-arounds, some simply clip a carabiner from the metal ring a little further back. This metal ring is otherwise intended to be used as the short harness clip-point when climbing and manoeuvring rather than have the saw dangling a metre or so below you. Note that virtually any chainsaw lanyard can be

FOR TOOLS NOT PPE

The lanyards in this guide are not all from the arb industry but can all be used for chainsaws. There are many bungee-lanyards from construction and rope access intended for smaller power tools - perhaps still 5kg limit but that would stretch the limits (so to speak) of a rear-handled chainsaw. We have only included the more arb oriented models but have differentiated the lighter and heavier duty models because a top-handle chainsaw will generally be just under 5kg with the battery or a full tank of fuel while a larger, rear-handle chainsaw may go several kg beyond that. There are also a number of even lighter lanyard variants with bungee attachments for use with handsaws and light tools like this Skylotec Long Leash on the right - these are NOT for use with chainsaws but they will be included in the BUYERS GUIDE version of this article later this year. We have stuck with bungee or elasticated lanyards because why would you use anything else? We all used to use lengths of rope and slings but retracting the working length when you are not using the chainsaw and the extreme-load breakaway facility of some makes working much safer.

None of these lanyard are intended for personal safety in the sense of climbing PPE but there are lanyards that will do both jobs - this tactical lanyard from Warrior using Kong's Frog connector could easily do the job of a chainsaw lanyard BUT.....

- 1) Never mix rigging or tool connector use with climbing or personal protection.
- 2) Personal protection makes this more expensive at around £50 compared to a more usual £20-30
- 3) This is designed specifically to hold your weight no matter what - it will not break away if a trunk or limb tries to snatch your saw away with you attached to it but that is also the case with most chainsaw lanyards.



used the opposite way around to the intended way shown in our tables.

ELONGATION

The elongation of a lanyard refers to the ability of the material to stretch under tension. This property can absorb shock and reduce the forces transmitted to the user in the event of a fall or sudden movement. A well-designed lanyard with an extension adequate acts as a shock absorber, protecting the both the pruner and the equipment.

STANDARDS

The US has ANSI/ISEA 121-2018 referring to drop-prevention but unusually the EU was a bit behind the game on this one.



Images NOT to Scale

●● = OK but not ideal

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BRAND	BUCKINGHAM MFG	CAMP	CAMP
MODEL VARIANT	Tear-Away Snap	Sawer	Sawer Pro
PRODUCT CODE	25G12A 25G13A	2151	2300
ORIGIN			
COST approx retail inc tax	£3234 \$4143 €3841	£21 \$35 €22	£29 \$36 €32
BREAKAWAY	■	■	■
CHAINSAW/HEAVY TOOL	-	■	■
LIGHT CHAINSAW	■	■	■
RETRACTED LENGTH	65cm /25.6"	90cm /35.4"	75cm /29.5"
EXTENDED LENGTH	120cm /48"	135cm /53"	125cm /49.2"
MATERIAL	Nylon	Nylon	Nylon
WEBBING WIDTH / Ø	25mm / 1"	13-20mm / 0.5-0.8"	28mm / 1.1"
WEIGHT	146g / 5.1oz	95g / 3.4oz	130g / 4.6oz
SAFE WORKING LOAD MBS	7kg /15lb 90kg/200lb*	10kg /22lb 200kg	10kg /22lb 200kg
CONNECTER/SHORTEN	Steel ring	Steel ring	Steel ring
HARNESSTERMINATION	Inverted loop	Snap alloy carabiner	Snap alloy carabiner
TOOL-ENDTERMINATION	Sml steel ring	Inverted loop	Inverted loop
STANDARDS	ANSI		
NOTES	<p>* The tear-away element deploys at 90kg of force.</p> <p>Also available without terminal steel ring (as a sewn eye for your own carabiner/connector)</p>	<p>The Sawer lanyard features a metal ring, for quick and easy attachment to a tool-carabiner and a 13 or 28 mm elastic tubular strap. The tools are connected thanks to a lark's foot made with the strap. The connection to the harness safety is by aluminum alloy carabiner. "Sawer" is designed to break at around 200-250 kg, to help avoid risk of injury to the user in the event of a fall or being snagged by falling wood.</p>	<p>As per the Sawer with a more robust webbing but the same breakaway facility via the small integral carabiner.</p>
WEBSITE	buckinghammfg.com	camp.it	camp.it

CHAINSAW LANYARDS/TETHER

			
EDELRID	HARKIE	HUSQVARNA	HUSQVARNA
Dynosaw ABS	Chainsaw	Anti-Shock	Chainsaw Strop
H2345	H2345	534 10 08-01	577 43 80-01
			
£31 \$40 €25	£19 \$26 €23	£67 \$90 €80	£36 \$40 €35
	no		no
		-	
			
90cm /35.4"	90cm /35.4"	73cm /28.7"	50cm /19.7"
140cm/55.1"	130cm /51"	135cm /53"	125cm /49.2"
Polyester & Nylon	Polyester	Polyester & Nylon	Nylon
25mm/1"	25mm/1"	25mm/1"	25mm / 1"
90g / 3.3oz	110g/3.9oz	140g/5oz	140g / 4.9oz
20kg /44lb 240kg	30kg /66lb	20kg /44lb >200kg/440lb	10kg /22lb 200kg
Steel ring	Steel ring	Alloy ring	Alloy ring
Inverted loop	Loop	Shock absorber	Shock absorber
Sewn eye	Inverted loop	Inverted loop + Alloy ring	Inverted loop + Alloy ring
Intergrated shock absorber ruptures at 2.4kN impact (dropped or trapped saw/operator.)		integrated shock absorber. Ruptures at 2 kn	General purpose, relatively short lanyard
edelrid.com	harkie.co.uk	husqvarna.com	husqvarna.com



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BRAND	MILLER	NEVER LET GO	NEVER LET GO
MODEL VARIANT	Longue PT	Chainsaw	HD FIRE RESIST
PRODUCT CODE		101609	101373 101716
ORIGIN			
COST approx retail inc tax	£28 \$40 €35	£14 \$20 €17	£4665 \$6186 €5577
BREAKAWAY	no	no	no
CHAINSAW/HEAVY TOOL	■	■	■
LIGHT CHAINSAW	■	■	■
RETRACTED LENGTH	60cm /23.6"	85cm /33.5"	8090cm /31.535.4"
EXTENDED LENGTH	122cm /48"	130cm /51.2"	130140cm /51.255.1"
MATERIAL	Nylon	Nylon	Nylon/Dyneema/Aramid
WEBBING WIDTH / Ø	17mm / 0.7"	25mm / 1"	1925mm / 0.75 1"
WEIGHT	70g / 2.5oz	105g /3.7oz	175g/6.2oz
SAFE WORKING LOAD MBS	9kg /20lb 90kg	10kg /22lb	20kg /44lb
CONNECTER/SHORTEN	Steel ring	Steel ring	-
HARNESSTERMINATION	Alloy snap carabiner	Inverted loop	Dyneema Loop
TOOL-ENDTERMINATION	Loop	Inverted loop	Alloy carabiner
STANDARDS		ANSI, CE, UKCA	ANSI, CE, UKCA
NOTES	The miller brand polyamide lanyard helps secure the chainsaw and to facilitate its connection to the harness. Its load capacity reaches just under 10kg and once stretched it can measure up to 122 cm.		Auto lock alloy carabiner
WEBSITE	honeywell.com	Neverletgo.Com	Neverletgo.com

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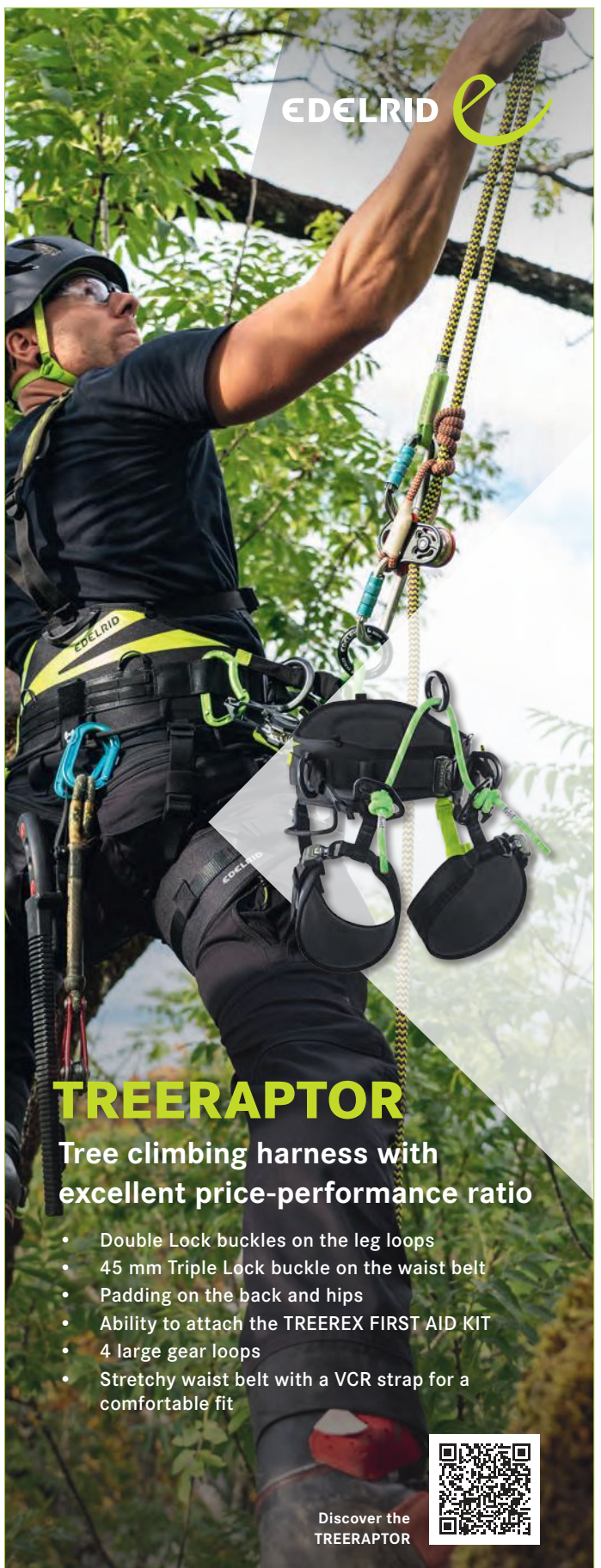
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BRAND	NEVER LET GO	NEVER LET GO	NOTCH
MODEL VARIANT	Super Bungee Chainsaw	Super Bungee Tool	Quick Cinch Sml
PRODUCT CODE	101610 101623	101419	NQCCL-17
ORIGIN			
COST approx retail inc tax	£44 ⁶⁵ \$60 ⁸⁸ €53 ⁷⁸	£77 \$104 €93	£29 \$33 €37
BREAKAWAY	no	no	no
CHAINSAW/HEAVY TOOL	■	■	●
LIGHT CHAINSAW	■	■	■
RETRACTED LENGTH	80cm/31.5"	160cm/63"	80cm/31.5"
EXTENDED LENGTH	200cm/78"	340cm/133"	152cm/60"
MATERIAL	Nylon	Nylon	Nylon
WEBBING WIDTH / Ø	25mm/1"	25mm/1"	17mm/0.8"
WEIGHT	110/3.9oz 210g/7.4oz	345g/12.2oz	230g / 8oz
SAFE WORKING LOAD MBS	10kg / 22lbs	20kg / 44lbs	15kg / 33lbs
CONNECTER/SHORTEN	Sewn eye Steel ring	-	Steel ring
HARNESSTERMINATION	Loop	NOT for HARNESS	Inverted loop
TOOL-END TERMINATION	Inverted Loop	Inverted Loop	Sml steel ring + sewn eye
STANDARDS	ANSI, CE, UKCA	ANSI, CE, UKCA	
NOTES		Very long. Intended for use in an elevated platform/cherry picker NOT for connecting to your harness. Integral captive eye carabiner for cage connection	The quick cinch lanyard solves a common problem faced by climbers attempting to remove a chainsaw that has been choked to the small metal d-shaped fastening buckle. The quick cinch system allows simple attachment, without having to girth hitch your chainsaw to the small metal d-ring.
WEBSITE	Neverletgo.com	Neverletgo.com	notchequipment.com



NOTCH	NOTCH
Quick Cinch Lg	Modular
NQCCL-25	VSG99426
£32 \$37 €39	£40 \$40 €48
no	
80cm/31.5"	99cm /39"
152cm/60"	167.6cm/66"
Nylon	Nylon
25mm/1"	15mm/0.6"
270g / 9.5oz	230g / 8oz
25kg / 55lbs	30kg / 65lb
Steel ring	Steel ring
Inverted loop	Inverted loop
Sml steel ring + sewn eye	Clip-on inverted loop
The quick cinch lanyard solves a common problem faced by climbers attempting to remove a chainsaw that has been choked to the small metal d-shaped fastening buckle. The quick cinch system allows simple attachment, without having to girth hitch your chainsaw to the small metal d-ring.	Clip-on tool lanyards allow for fast-switching between tools.
notchequipment.com	notchequipment.com



TREERAPTOR

Tree climbing harness with excellent price-performance ratio

- Double Lock buckles on the leg loops
- 45 mm Triple Lock buckle on the waist belt
- Padding on the back and hips
- Ability to attach the TREEREX FIRST AID KIT
- 4 large gear loops
- Stretchy waist belt with a VCR strap for a comfortable fit




Discover the TREERAPTOR



Images NOT to Scale

●● = OK but not ideal

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BRAND	PETZL	REECOIL	REECOIL
MODEL VARIANT	TOOLEASH	Standard V2	Big Boss
PRODUCT CODE	S049AA00	-	-
ORIGIN			
COST approx retail inc tax	£25 \$35 €25	£23 \$30 €26	£62 \$75 €66
BREAKAWAY	no	no	no
CHAINSAW/HEAVY TOOL	-	●	■
LIGHT CHAINSAW	■	■	■
RETRACTED LENGTH	40cm/15.75"	69cm/27"	35cm/13.8"
EXTENDED LENGTH	105cm/41.3" *	140cm/55"	170cm/67"
MATERIAL	Polyester	Nylon	Nylon
WEBBING WIDTH / Ø	25mm/1"	20mm/0.8"	25mm/1"
WEIGHT	56g/2oz	100g/3.5oz	358g/12.6oz
SAFE WORKING LOAD MBS	5kg/11lb	5kg /11lb 210kg/462lb	12kg/26.4lb* 750kg/1650lb
CONNECTER/SHORTEN	crab (using optional tether)	Steel ring	-
HARNESSTERMINATION	Inverted loop	Inverted loop	Inverted loop
TOOL-ENDTERMINATION	Sewn eye + alu carabiner*	Sewn eye	Sewn eye
STANDARDS	ANSI, CE, UKCA		
NOTES	 <p>* This extends to up to 120cm with the addition of one of three sizes of optional leash extensions to make switching between tools easier.</p>		<p>* equates to 12kg dropped 1.5m to remain below the WLL of 107kg/235lb.</p> <p>Designed for heavier, rear-handled saws. Once girth-hitched to the handle there is a carabiner eye protruding for direct harness attachment</p>
WEBSITE	petzl.com	recoil.com	recoil.com

CHAINSAW LANYARDS/TETHER

			
RECOIL	ROCK n ARB	SAFEWAZE	SINGING ROCK
Full Reach	Raider	Med Heavy Duty Tether	Tool Holder
-	-	SW431 SW433	W1028BY00
			
£54 \$57 €64	£28 \$33 €35	£30 \$34 €37	£11 \$15 €12
no	no	no	no
-	■	■	-
■	■	■	■
55cm/21.6"	91cm/36"	127cm /50" 66.6"	70cm /33.5"
150cm/59"	127cm/50"	168cm /66" 80.5"	130cm /51"
Nylon	Nylon	Polyester	Nylon & Polyester
25mm/1"	25mm/1"	25mm/1"	10mm/0.4"
200g/7oz	203g/7.2oz	200g /7.1oz	30g /1oz
5.3kg /11.75lb 250kg/550lb	6.8kg/15lb	16kg/35lb	3kg/6.6lb 25kg/55lb
Sewn eye - optional crab	Steel ring	-	Stainless steel ring
Inverted loop	Inverted loop	Inverted loop	Sewn eye
Sewn eye	Sewn eye + alu carabiner	Captive Swivel Carabiner	Inverted loop
		ANSI-ISEA-121	
Carabiner not included Available in Pink  for Breast-Cancer Foundation	Carabiner included Also available in Neon Green 	Also available with two captive eye swivel carabiners	
recoil.com	rocknarbor.com	safewaze.com	singingrock.com

Images NOT to Scale

●● = OK but not ideal

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BRAND	SINGINGROCK	SKYLOTEC	STEIN
MODEL VARIANT	Tool Holder MAX	Stropp	Bungee Tool Lanyard
PRODUCT CODE	W1054BR00	ACS-0285	5060483280110
ORIGIN			
COST approx retail inc tax	£13 \$19 €15	£30 \$41 €26	£22 \$30 €26
BREAKAWAY	no	no	no
CHAINSAW/HEAVY TOOL	■	●	■
LIGHT CHAINSAW	■	■	■
RETRACTED LENGTH	85cm /33.5"	70cm/27.6"	95cm /37.4"
EXTENDED LENGTH	150cm / 59"	120cm/47.2"	140cm /55"
MATERIAL	Nylon & Polyester	Polyester	Treated Nylon
WEBBING WIDTH / Ø	16mm/0.6"	25mm/1"	25mm/1"
WEIGHT	95g / 3.4oz	120g/4.2oz	140g/5oz
SAFE WORKING LOAD MBS	10kg/22lb 300kg/660lb	10kg/22lb	20kg /44lb
CONNECTER/SHORTEN	Stainless steel ring	Steel ring	Steel ring
HARNESSTERMINATION	Sewn eye	Loop	Inverted loop
TOOL-ENDTERMINATION	Inverted loop	Sml steel ring	Inverted loop
STANDARDS			
NOTES	A heavier duty version of the toolholder which will not breakaway in the event of chainsaw/lanyard being snagged	The Stropp lanyard is a heavy-duty elastic strap which resists permanent twisting or stretching of the strap, even after prolonged use. The rings at the end of the stropp allow it to be easily attached to your harness with a carabiner. With a capacity load of up to 10 kg, it is designed for tools such as drills or chainsaws for example.	Nylon is treated to be water, oil and grease repellent
WEBSITE	singingrock.com	skylotec.com	steininternational.com

A full-page photograph of an arborist working in a tree. The arborist is wearing a black helmet, a black t-shirt with a blue logo, black pants with a 'Teufelberger' logo on the leg, and red gloves. They are equipped with a complex harness system featuring multiple green ropes and colorful carabiners. The arborist is positioned on a tree branch, holding a tool connected to a rope. The background is a dense forest with sunlight filtering through the leaves.

Arborist tools

for every situation

MARKET GUIDE

<p>Images NOT to Scale</p> <p>●● = OK but not ideal</p> <p>£\$€ any price in 'burnt-orange' is a Currency conversion only-exc shipping, duties,taxes etc</p> <p>MBS in the case of these lanyards, usually refers to impact force and should therefore be in kiloNewtons kN or pounds force. For reference 1kN=102kg of force or 225 pound-force</p>			
BRAND	TANGO	TANGO	TEUFELBERGER
MODEL VARIANT	Slim	Vario Plus	Anti-Shock Ring +Krab
PRODUCT CODE	15012340005	15012340010	
ORIGIN			
COST approx retail inc tax	£20 \$35 €21	£41 \$54 €48	£50.64 \$66.85 €58.75
BREAKAWAY			
CHAINSAW/HEAVY TOOL			
LIGHT CHAINSAW			
RETRACTED LENGTH	70cm /27.6"	75cm /29.5"	73cm /28.7"
EXTENDED LENGTH	140cm /55"	140cm /55"	135cm /53.1"
MATERIAL	Polyester	Polyester	Polyester & Nylon
WEBBING WIDTH / ø	15mm/0.6"	15mm/0.6"	25mm/1"
WEIGHT	72g/2.5oz	107g/3.8oz	140g/5oz
SAFE WORKING LOAD MBS	70-140*kg /154-308lb	70kg /154lb	20kg /44lb >224kg/494lb*
CONNECTER/SHORTEN	Steel ring	Steel ring	Alloy ring
HARNESSTERMINATION	Loop	Small loop + 2x sml rings	Shock absorber-Option crab
TOOL-ENDTERMINATION	1 or 2 small rings	Detachable loop	Inverted loop + sml steel ring
STANDARDS			
NOTES	<p>*Small ring designed to break at 70kg or 140kg if you connect to both rings at the same time.</p>	<p>The <i>Vario Plus</i> has detachable tool loops (1 supplied or the kit has 2 spare loops or purchase all components separately) so that chainsaws/tools can be swapped in seconds. The offset buckles ensure that it does not open unintentionally. The small lower loop rests on the chainsaw handle (this fits all chainsaws of all brands, even the largest) and can remain there for a long time. It is sized so that it does not touch the ground. Breakaway strength depends on one small ring or two.</p>	<p>The <i>Teufelberger Antishock</i> tool lanyard was the first chainsaw carrying lanyard with an integrated shock absorber. If the chainsaw falls or gets stuck and the impact (static) reaches 2 kn, the antishock absorber tears open completely after 70 cm of pull to mitigate the shock of up to 1.5 Kn on the climber's harness. *MBS from 224 to 240kg of force.</p>
WEBSITE	drayer.de	drayer.de	teufelberger.com



TREEHOG	TREEHOG	TREEHOG	TREERUNNER
Standard	Heavy Duty	Mini loop Clip	Chainsaw Strop/overload
TH1111	TH1112	TH1115	71-778
£16 \$20 €21	£26 \$35 €30	£14 \$19 €15	£14 \$19 €20
no	no	no	
85cm /34"	90cm /35.4"	70cm/27.6"	68cm / 27"
120cm /48"	130cm /51.2"	130cm /51.2"	115cm / 45"
Polyester	Polyester	Polyester	Polyester
25mm/1"	25mm/1"	25mm / 1"	15mm / 0.6"
110g/3.9oz	213g/7.5oz	190g/7.5oz	120g/4.2oz
30kg /66lb	30kg /66lb	30kg /66lb	35-70kg /77-lb
Steel ring	Steel ring	Steel ring	Steel ring
Loop	Loop	Loop	Loop
Inverted loop	Inverted loop	Inverted loop	Sewn eye+1 or 2 sml rings
			Breakaway rings can be used together to double the 35kg limit to 70kg
treehog.co.uk	treehog.co.uk	treehog.co.uk	grube.eu

MARKET GUIDE

Images NOT to Scale

●● = OK but not ideal

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BRAND	WEAVER ARBORIST	WORKGEAR UK	WORKGEAR UK
MODEL VARIANT	Bungee Chainsaw Clip	Arborist	Arborist HD
PRODUCT CODE	08-98228 08-98225	WG-TL04	WG-TL05
ORIGIN			
COST approx retail inc tax	£2030 \$1926 €2436	£9 \$15 €13	£15 \$23 €22
BREAKAWAY	no	no	no
CHAINSAW/HEAVY TOOL	■	■	■
LIGHT CHAINSAW	■	■	■
RETRACTED LENGTH	76.2cm / 3330"	90cm / 35.4"	90cm / 35.4"
EXTENDED LENGTH	116cm / 4845.5"	130cm / 51"	120cm / 47.2"
MATERIAL	Nylon	Nylon	Nylon
WEBBING WIDTH / Ø	25mm / 1"	25mm / 1"	25mm / 1"
WEIGHT	159g/5.6oz 250g/8.8oz	190g/6.7oz	221g/7.8oz
SAFE WORKING LOAD MBS	6.8kg / 15lb 8kN	30kg / 66lb	30kg / 66lb
CONNECTER/SHORTEN	Steel ring	Steel ring	Steel ring
HARNESSTERMINATION	Sewn Eye+Crab Clip	Sewn Eye	Sewn Eye+ CE Crab
TOOL-ENDTERMINATION	Inverted loop	Inverted loop	Inverted loop
STANDARDS			
NOTES	Also available with just one ring £14 or two rings £15. Optional tool extension loops to connect to bungee lanyard carabiner.	Available with carabiner for £3/\$5/€4 more.	Available without carabiner for £3/\$5/€4 less.
WEBSITE	weaverarborist.com	workgearuk.com	workgearuk.com



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TYPE 1 & 2, EN 397, NFPA 1951



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The **National Tree Safety Group** Launches 2nd Edition of

Common Sense Risk Management of Trees

Following an extensive review and revision process The National Tree Safety Group has launched its revised 2nd edition of Common Sense Risk Management of Trees. The NTSG Drafting Group has worked for over three years in consultation with sector experts, refining and amending the document to provide the most up to date advice to landowners who are responsible for the management of trees under their control.

The National Tree Safety Group was formed in 2007 to bring together a cross-section of stakeholders with a shared interest in tree safety to assist those who own and have responsibility for trees, including householders with gardens, rural landowners and farmers, large charities, public and private sector organisations, and local and national government.

The first edition of its guidance was published in December 2011 and has been widely accepted as a sector standard on how trees should be managed in the context of safety and how a landowner can fulfil their duty of care to staff, visitors and the general public. This 2nd edition builds on that work.

The drafting group comprised members of the following organisations who represent a wide cross section of the sectors at which the guidance is aimed:

Arboricultural Association; Simon Richmond, Treework Environmental Practice;
Nev Fay, The London Tree Officers Association;
Andy Tipping, Forest Research;
Elaine Dick, Forestry Commission;
Hilary Allison, NTSG Chair and Jim Smith.

The first edition of this guidance supported a growing awareness among those duty holders of the need to check their trees and provided guidance on a widely accepted approach to managing risks from trees, based on sector-wide consultation. More than a decade on, the NTSG has taken stock of what has changed, such as the emergence of widespread tree disease, growing public activism and advocacy around the benefits of trees now reflected in Government policy, and a number of new legal cases. There are reasons why trees require a specific and unique approach to safety management: As natural organisms they organically change from year to year. While tree diseases are not new, emerging pests and diseases have moved from being isolated problems to impacting a large percentage of the nation's stock of trees.

This 2nd edition, comprising a Full Guidance Publication and a Summary document, is about an overall approach and lays out

the principles behind tree risk management. Its scope is not prescriptive in dealing with tree pathology and failure. The Full Guidance Publication includes Scenarios providing examples of how trees can be managed in practice in different types of ownership and use. Safety and human health are paramount.

The Full Guidance Publication and the Summary are available to purchase as hard copy through the Arboricultural Association's online bookshop for £30 and digital copies can be downloaded from the NTSG website.



Arboricultural Association Chief Executive Officer John Parker said:

"We're really pleased to be strongly engaged with The National Tree Safety Group and assisting it to deliver its messages about better care for trees in the context of safety issues. It has never been more important for all those concerned with tree care to understand that the risks they pose must be balanced with all the benefits they provide."

Ross Murray, the incoming NTSG Chair and Forestry Commissioner, said:

"I am indebted to all the members of the drafting group who worked so hard for so long on this 2nd edition. Their contribution has been instrumental in achieving a valuable tool for landowners who also own trees. I must especially mention Hilary Allison, Forestry Commissioner and Outgoing Chair of the NTSG who has championed the NTSG generally and steered the drafting group by providing high level support, encouragement and advice".

"The Forestry Commission has been a supporter of the NTSG since its inception and it continues to be so. I look forward to continuing the excellent work of Hilary and previous Chairs so the NTSG's mission and guidance becomes second nature to all those whose land has trees growing on it".

National Tree Safety Group:

The National Tree Safety Group (NTSG) was formed in 2007 in response to concerns over the unnecessary removal of trees. One of our aims is to develop a nationally recognised approach to tree risk management and to provide guidance that is reasonable and proportionate to the actual risks from trees. We believe that what is reasonable with respect to tree risk management should be based upon an evaluation of benefits and risk. This judgement can only be undertaken in a local context because trees provide different types of benefit across a wide range of circumstances.

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