

Wind Turbine Product Solutions



Tractel® Services

Service Lifts

Service Lift Hoists

Platforms

Climbing Aid

Fall Protection Systems

Hoists

The TRACTEL® Group in the wind turbine industry

The Tractel® Group has been providing innovative products and services for the material handling, building maintenance, suspended access and fall protection industries for over 60 years.

Its worldwide distribution network, sales outlets and manufacturing facilities emphasize Tractel®'s reputation as the leader in providing safe access solutions for working at heights.

Tractel®'s experience means that it is at the forefront in providing safe, reliable and easy-to-use equipment for access to today's wind turbines.

For over 20 years, the Tractel® Group has assisted in many successful wind turbine projects throughout the

world, while maintaining its reputation as world leader in innovation and new product technology.

Our specialties include a wide variety of products such as blade maintenance platforms, interior/exterior access and material handling equipment. Tractel® also provides fall protection devices specifically designed for personnel ascent and descent in connection with wind turbines.

The Tractel® Group engineer solutions that reduce maintenance costs.

At Tractel®, our single-source responsibility covers in-house design, manufacturing and installation services; ensuring long-term system performance value.

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Services: Technical Support / Training / Maintenance / Repair



A Global Presence:

- Local support via Tractel global network of companies,
- Creative solutions in one country can be duplicated, adapted to needs in others,
- Synergies and efficiencies thanks to economies of scale.

Technical support and training

- Technical support available for man riding applications, lifting and handling and personal safety,
- Theoretical and practical training on all Tractel® products,
- Implementation by experienced trainers, technicians and engineers.



Maintenance and Repair

- Maintenance, annual inspection and overhaul for all Tractel® devices and systems as well as calibration of load cells and measuring instruments,
- Professional repairs and uncomplicated deliveries of spare parts are part of Tractel® service offering.

Innovation:

- Tractel® products developed for global use with required local adaptations,
- Tractel® recent state-of-the-art innovations:
 - Tractelift™ climbing aid,
 - UVM 8 and UVM 10 platforms,
 - The brand new GlobeTrac service lift,
 - The HT FABATM harness, the perfect harness for windmill applications.



GlobeTrac W SL



Application:

Service lift for permanent access to the nacelle in wind turbines.

Key benefits W SL & W SH:

- Proven tirak™ hoist technology,
- Improved efficiencies,
- Cost effectiveness,
- Comfort and safety,
- Easy maintenance,
- New generation tirak™ hoist with integrated fall arrest device, overload protection and safety brake!



GlobeTrac W SL

60% lower shock factor than the legal requirements!

Up to twice the number of lifts can be shipped in a 40ft. container.



GlobeTrac control box: Within arm's reach based on a detachable plug and play system.



GlobeTrac W SH



GlobeTrac W SH

Features W SL & W SH:

- Rope guided,
- Designed as two-part sliding door or shutter door,
- Lift and hoist as a complete system,
- With innovative tirak™ hoist with integrated safety device, overload protection and safety brake,
- All functions within handreach,
- Central control box inside the service lift based on a plug & play system,
- Door security monitoring by interlock switch,
- Guided power cable,
- Electric / mechanical interlock system at the different platforms,
- Complies with Machine Directive 2006/42/CE.

Reduced wear of the wire rope due to new tirak™ hoist concept.

Installation cost reduction of up to 35%.

Characteristics	GlobeTrac W SL & W SH
Cage floor area approx. W x D (outside dimensions)	0,96 x 0,62 m
Cage height approx. (outside dimensions)	2,75 m
Weight approx.	140 kg incl. tirak™
Load capacity	240 kg (2 persons + load)
Lifting speed at 50 Hz	18 m/min
Traction hoist	tirak™ W602 P (CE)
Hoist capacity at 50 Hz	600 kg
Safety equipment	integrated fall arrest system
Wire rope	Ø 8 mm
Power supply	400 V / 480V / 690 V
Frequency	50 Hz / 60 Hz

Service lift SL4S

Application:

Service lift for permanent access to the nacelle in wind turbines.

Key benefits:

- Proven tirak™ hoist technology.
- Service lift in two separate parts:
 - Easier transportation,
 - Optimization of production and storage costs,
 - Greater flexibility of production.

2 person Service lift

Features:

- Rope guided.
- Options include enclosures and interlock devices to fulfill the Machine Directive 2006/42/CE.
- Guided power cable.
- Interlock System.
- Blocstop™ Security System.



Characteristics	SL4S
Cage floor area approx. W x D (outside dimensions)	0,96 x 0,60 m
Cage height	3,10 m
Weight approx.	120 kg incl. tirak™/BSO
Load capacity	240 kg (2 persons + load)
Lifting speed at 50 Hz	18 m/min
Traction hoist	tirak™ X402 P (CE)
Hoist capacity at 50 Hz	400 kg
Safety equipment	BSO safety device
Supply power	400 V / 480 V / 690 V
Frequency	50 Hz / 60 Hz

Service lift SL5S

Application:

Service lift for permanent access to the nacelle in wind turbines.

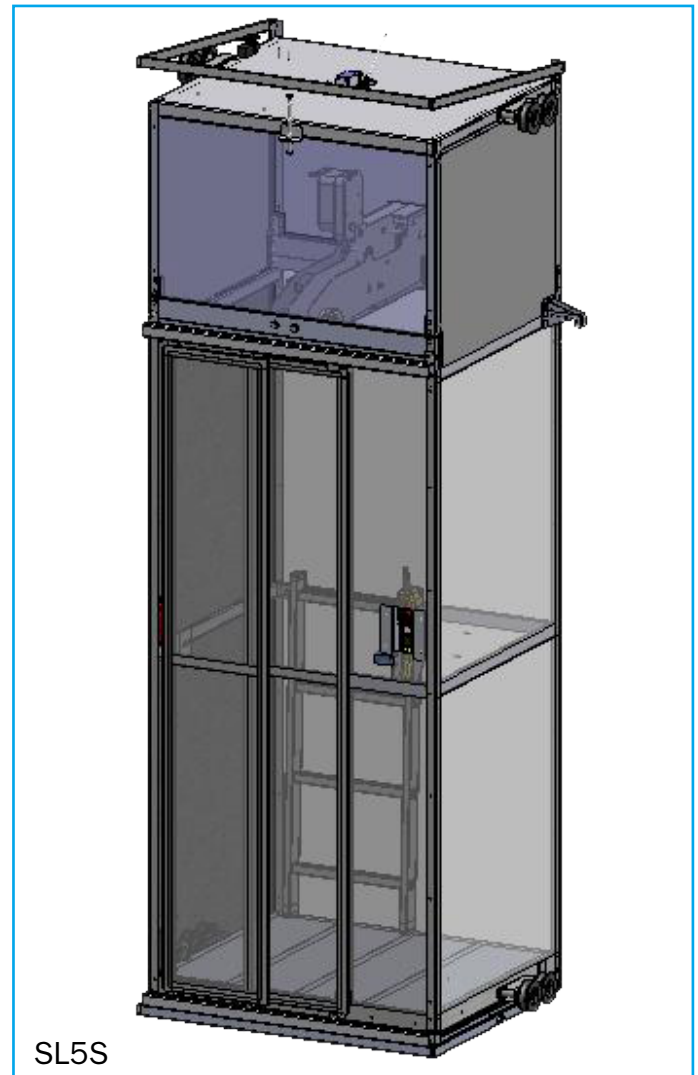
Key benefits:

- Proven tirak™ hoist technology.
- Service lift in two separate parts:
 - Easier transportation,
 - Optimization of production and storage costs,
 - Greater flexibility of production.

3 person Service lift

Features:

- Rope guided.
- Options include enclosures and interlock devices to fulfill the machine directive 2006/42/CE.
- Guided power cable.
- Interlock System.
- Blocstop™ Security System.



Characteristics	SL5S
Cage floor area approx. W x D (outside dimensions)	0,96 x 0,80 m
Cage height	3,10 m
Weight approx.	150 kg incl. tirak™/BSO
Load capacity	320 kg (3 persons + load)
Lifting speed at 50 Hz	18 m/min
Traction hoist	tirak™ L502 P (CE)
Hoist capacity at 50 Hz	500 kg
Safety equipment	BSO safety device
Supply voltage	400 V / 480 V / 690 V
Frequency	50 Hz / 60 Hz

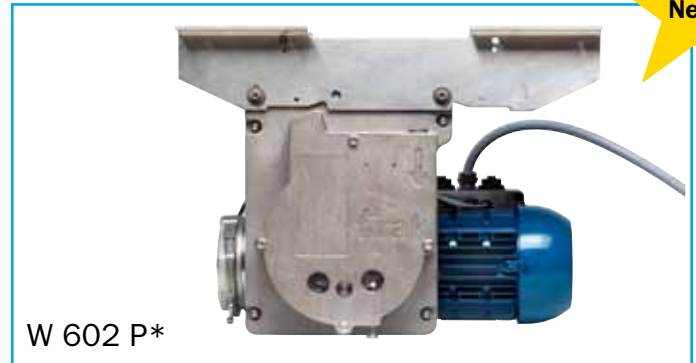
tirak™ hoist

Application:

Lifting device for service lifts in wind turbines.

Key benefits W 602 P:

- Innovative design based on proven technology,
- 2 diverter pulleys needed instead of 4
- Lightweight compact hoist,
- Integrated safety device,
- Capacity 600 kg.



* Registered model - 2 patents pending.

Key benefits L 502 P:

- Proven technology in many service lifts,
- Lightweight compact hoist,
- Controls provided as customer requires,
- Capacity 500 kg.



Key benefits X 402 P:

- Proven technology in many service lifts,
- Lightweight compact hoist,
- Controls provided as customer requires,
- Capacity 400 kg.



Characteristics	W 602 P	L 502 P	X 402 P
Capacity at 50Hz	600 kg	500 kg	400 kg
Power supply	400 V / 480 V / 690 V		
Frequency	50 Hz / 60 Hz		
Speed at 50 Hz	18 m/min		
Wire rope Ø	8 mm		

Platform CT5

Applications:

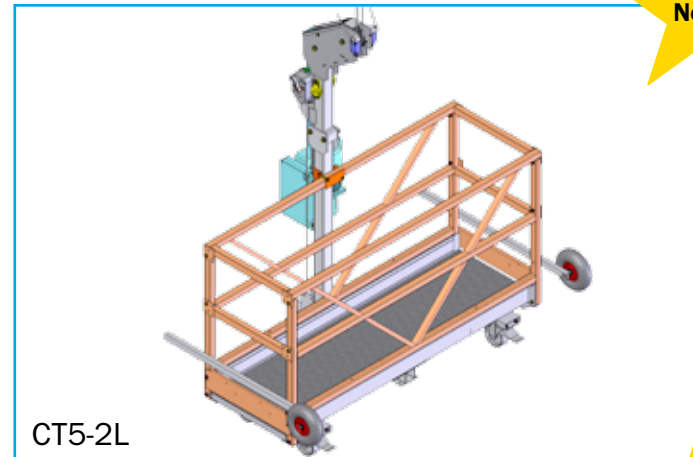
- For temporary access of circular steel and concrete towers for wind turbines,
- Tower inspections & maintenance,
- Rotorblade inspections.

Key Benefits:

- Proven tirak™ hoist technology,
- Light-weight,
- No assembly time,
- Low installation height.

Features:

- Compact,
- Max. 240 kg,
- Foldable C-stirrup for easy transport.



Characteristics	tirak™	Load capacity	Power supply	Frequency	Wire rope Ø
–	–	kg	V	Hz	mm
CT5-2L	X500P	240	400	50	8
CT5-1L2W					
CT5-2L	X501P		230		
CT5-1L2W					
CT5-2L	X520P		400		9
CT5-1L2W					
CT5-2L	X521P	230			
CT5-1L2W					

Other models on request!

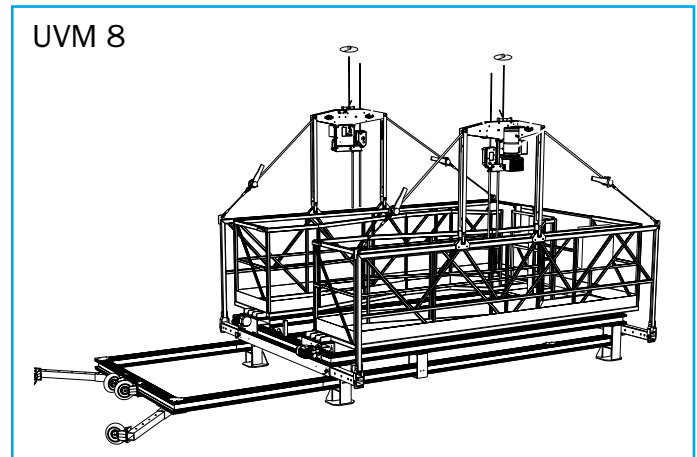
UVM8 & UVM10 platforms

Application:

Inspection and maintenance of rotor blades.

Key benefits UVM8 & UVM10:

- Proven tirak™ hoist technology,
- Reduced wind turbine down time,
- No external crane needed,
- Time to install platform less than 2 hours,
- Increased load rating due to absence of counter weights,
- All platform movements are electrically controlled,
- Tractel® patented parallelogram design enables adjustment of the center of gravity,
- The hoist position pushes the platform against the tower for higher stability.



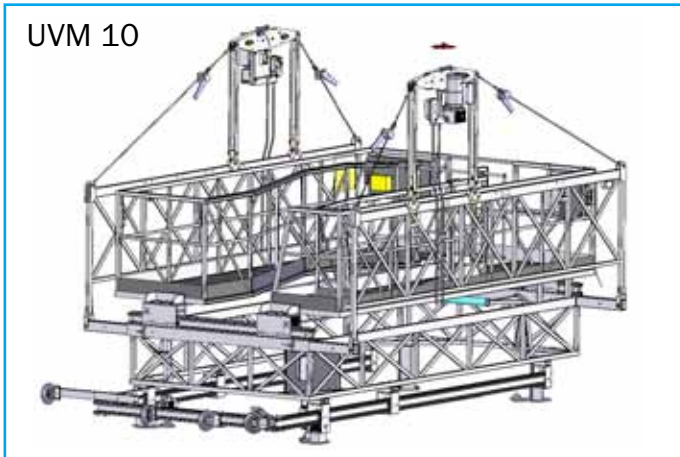
"Once you have tried a platform from Tractel®, you don't want anything else. It is so stable compared to the rest!"

from a worker in the industry

Features:

- 2 symmetrically arranged working half-platforms with an opening in between them,
- Enclosed base frame with side mounted trapezoids fitted with hoist parallelograms plus lifting hoists and Blocstops™,
- Parallelogram inclination can be adjusted (using the lever hoists) ensuring the platform's centre of gravity can be re-aligned,
- Extendable positioning frame with swivelling and adjustable pressure roller components,
- 2 independent systems activating the Blocstop™ safety device in case of excessive inclination of the platform.

UVM 10



UVM10 platforms

Features: (in addition to the UVM8)

- Emergency descent system in case of power failure,
- Maximum dimensions of the platform 250 x 1090 cm,
- Higher load capacity,
- Eccentric platform movement,
- All electric movements activated by remote control.



Proven user acceptance at most blue chips wind turbine manufacturers.

Characteristics	UVM8 - 3,7 x 2,1 x 9,15	UVM10 - 4,2 x 2,1 x 8,1	UVM10 - 4,2 x 2,1 x 10,9
Platform opening length	3,7 m	4.2 m	4.2 m
Platform opening width	1,0 to 2,1 m	1.0 to 2.15 m	1.0 to 2.15 m
Positioning frame pullout	0.45 to 5.45 m	0.2 to 3.75 m	0.2 to 6.55 m
Safety roller/bumper roller clearance	4,15 to 9,15 m	4.6 to 8.1 m	4.6 to 10.9 m
Over all height	3,35 m	4.0 m	4.0 m
Max. permitted wind speed	14 m/s = 50 km/h	12.5 m/s = 45 km/h	12.5 m/s = 45 km/h
Rated speed	9 m/min	9 m/min	9 m/min
Rated load	300 kg	450 kg	380 kg
Independent secondary brake (2x)	Blocstop™ BSO 1020 EFA	Blocstop™ BSO 1030EFA	Blocstop™ BSO 1030EFA
Traction hoist (2x)	tirak™ X820P	tirak™ X1030P	tirak™ X1030P
Working load limit hoist (2x)	800 kg	1000 kg	1000 kg
Power supply	400V/ 50 Hz	400 V/ 50 Hz	400 V/ 50 Hz
Control voltage	48 V/ 50 Hz	48 V/ 50 Hz	48 V/ 50 Hz
Length of power supply cable	max. 130 m	max. 150 m	max. 150 m
Nominal wire rope diameter	9 mm	10 mm	10 mm
Length of wire ropes	max. 130 m	max. 150 m	max. 150 m

Tractelift™ I

Application:

Climbing aid to relieve the weight of the climber during the ladder climbing.

Key benefits:

- Increased safety on the ladder,
- Economical solution for both new and retrofit turbines.

Features:

- Relieves effort while ascending and descending,
- Reinforced belt,
- Reduces employee fatigue and injuries,
- Increases productivity,
- Can be installed on any ladder,
- Option of detachable motor including controls.



Tractelift™ I

New!

Tractelift™* II

Key benefits:

- Better performance all around.
- Improved Ergonomics.
- Increased safety on the ladder.
- Economical solution for both new and retro-fit turbines.

Features: (in addition to Tractelift™ I)

- Levels of pulling force can be adjusted on-site,
- Smooth running providing controlled starts and stops,
- User remote with illuminated LCD display,
- Detachable control box available.

**"The best system I ever used",
from Industry Expert.**



Tractelift™ II

Characteristics	Tractelift™ I	Tractelift™ II
Continuous loop	Allows multiple climbers to use without reset time.	do.
Adjustable force	The force can be preset on the sliding clutch.	The force can be set by means of the remote.
Assist on descent	Provides relief and minimizes joint damage.	do.; smooth action
Automatic start	The systems starts running when the ascent or descent commences.	do.
Start-up	When user start climbing; no additional actions required to start the system.	By means of a remote control; soft start and stop
Automatic stop	System automatically stops when user stops climbing.	do.; emergency stop is also available
Power Supply	230 V 50 Hz, 60 Hz / 400 V 50 Hz, 60 Hz	230 V 50 Hz, 60 Hz
Temperature range	-20 °C to 40 °C Applicable temperature conditions	do.
Pulling force	40 daN (equivalent to 40 kg)	max. 75 daN (equivalent to 75 kg)
Free running speed	37m/min	do.
Approvals	Machine directive: 2006/42/EC; Low tension Directive: 2006/95/EC; EMC Directive: 2004/108/EC; EN ISO 12100-1; EN ISO 12100-2; EN ISO 13849-1; EN ISO 14121-1.	Machine directive: 2006/42/EC; Low tension Directive: 2006/95/EC; R&TTE Directive: 99/5/EC; EMC Directive: 2004/108/EC; EMC: EN 301489-1 v1.8.1/V17 & V1.3.2:2008; Radio: EN 300328: v1.7.1:2006; Electrical Safety: EN 60950-1:2006 + A11:2009

Choose the Tractelift™ climb assist model best suited to your needs:

Options	Tractelift™ I	Tractelift™ II
Fixed motor and control	Yes	Yes
Fixed motor and removable control	No	Yes
Removable motor and control	Yes	Yes



Note: The Tractelift™ is not a fall arrest system. A suitable and compatible fall arrest system is always to be used in combination with the Tractelift™.

FABA™ System A12 & AL2

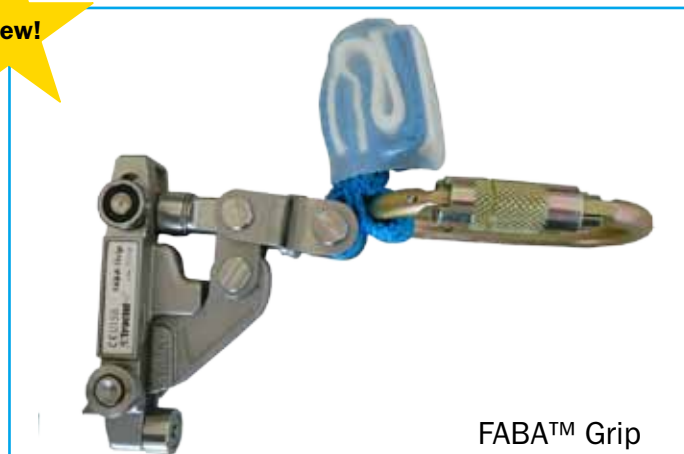


Application:

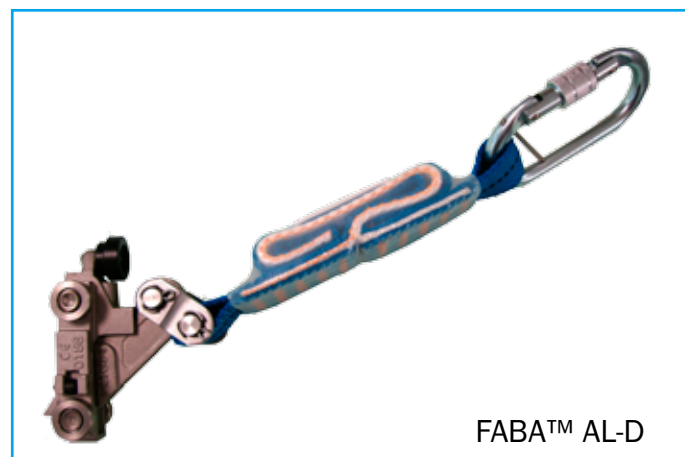
- Climbing on ladders to the nacelle of the wind turbine,
- To be used as a safety exit, when the lift is defective.

Key benefits:

- No height limitation,
- Smooth climbing due to the design of the system,
- Comfortable and ergonomic climbing position (leaning into the harness) due to the new slider FABA™ Grip,
- Shock absorber reduces the impact factor to the body.



FABA™ Grip



FABA™ AL-D

Features:

- A12: Available in galvanized or stainless steel
- AL2: Available in aluminium, light and robust,
- Asymmetrical rail: Not possible to use the sliders in the wrong position,
- 2 sliders available: FABA™ AL-D and FABA™ Grip,
- Compliance w/DIN 18799. T.2 and EN 353-1.



FABA™ A12



FABA™ AL2

Stopcable™ S



Applications:

Rigid fall arrest for permanent and temporary installation on the ladder.

Key Benefits:

- The Stopcable™ S can be used with an absorber on the cable, on the fall arrest device or both,
- The cable can be fixed at the upper and lower ends or at the upper end only and with a counterweight at the lower end,
- Safety
 - Personal security during the ascent,
 - In compliance with standards EN 353-1 (test sheet VG11 CNB/P/11073 dated October 2010.)and EN 353-2.

Features:

- Anchor points, top and bottom, used to secure the ends of the cable,
- Material: Stainless or galvanised steel,
- Energy absorber fitted with a fall arrest indicator.



Fall arrester with 2 M10 connector & energy absorber



Fall arrester with M10 connector



Tractel® Rescue kit

Application:

Emergency evacuation at high working positions like the nacelle of a turbine.

Key Benefits:

- A complete, ready to use, rescue kit for evacuation at height,
- Consecutive descents possible,
- Strong and waterproof storage box,
- Complete equipment ready for use,
- Proven safety thanks to the Derope™ UP A,
- Inspection of the kit is simplified,
- Length of rope to customers specification.



Derope™ UP A

Application:

Controlled descent evacuation device.

Key Benefits:

- Durable: Bench tested to ensure optimal endurance,
- Simple & rapid maintenance operations,
- Compact.

Features:

- Designed to evacuate:
 - One person (up to 150 kg) from a height of up to 400 m;
 - Two persons (up to 225 kg) from a height of up to 150 m.
- Derope™ body: Aluminium,
- Polyamide waterproof rope (Tractel®) 10,5 mm diameter,
- Sealed PE Bag (Combipro bag of appropriate capacity or a special Derope™ bag, specifically designed for rescue operations),
- Aluminium ascension wheel (option),
- Derope™ UP complies with EN 341 class A and EN 1496 class A version 2006.



Blocfor™ 10 AES



Application:

Automatic self retracting fall arrester in case the fall distance is limited.

Key benefits:

A new generation of automatic self retracting fall arresters with 3 key advantages.

Easy to:

- Install,
- Work with,
- Maintain.

Provides enhanced safety in the event of a fall.

Features:

- Integrated Tractel® AES system at the end of the rope,
- Housing made of ABS plastic-reinforced polyamide, UV-resistant, highly impact and durable,
- Galvanized steel, stainless steel or synthetic fiber ropes,
- Easy maintenance due to the optimized design,
- Complies with EN 360.



Blocfor™ 10 AES

Enhanced safety thanks to Tractel® patented AES system

LPA (Lanyard POY Absorber)



Tractel® new shock absorbing POY lanyard.

Key benefits:

More compact, lighter-weight and enhanced ergonomics.

Features:

- A Pre-Oriented Yarn webbing strap of 30 mm width with elongation properties for energy absorption in case of a fall,
- A 35 mm tubular sheath around the POY strap that provides protection against abrasion and cuts,
- The LPA lanyard complies with EN 355.



30% less volume!

POY Lanyard

Stopfor™ KS

A significant innovation in the field of sliding fall-arresters thanks to a very simple design.

Key benefits:

- Light weight;
- Compact;
- Attractive and simple design;
- Easy to install;
- Ergonomic; slides up and down without sticking;
- Corrosion resistant.



**Slides up or down
without ever sticking!**

Features:

- Compatible with static kermantle rope 11 to 12.5 mm,
- The Stopfor™ KS satisfies the requirements of standard EN 353.2 and EN 358,
- All the Stopfor™ KS devices can be used as fall arresters on the Tractel® 11 mm or 12.5 mm diameter ropes, in compliance with standard EN 353.2., terrace utilization,
- All the Stopfor™ KS devices can be used as lanyard tensioner-reducer on the Tractel® 12.5 mm diameter ropes, in compliance with standard EN 358.

LDAD Lanyard

Key benefits:

Lightweight double lanyard for safe working in and on the nacelle.

Features:

- Different connectors available,
- Complies with standard EN 355.



LDAD Lanyard

tirak™

Applications:

- Lifting maintenance & service platforms,
- Lifting service lifts & heavy loads like generators, gearboxes, rotorblades.

Features:

- For material handling and man riding,
- Lifting capacity from 300 kg to 3000 kg,
- Unlimited rope length,
- Different speeds of 4.5 m to 18 m,
- Available as mobile winch,
- Specially adapted to customer needs,
- Low maintenance costs,
- High safety standards thanks to electromagnetic brake, centrifugal brake, overload protection,
- Complies with the European Machine Directive 2006/42/CE.



Minifor™ with synthetic rope

Application:

- To position or to lift components,
- To move tool bags,
- To lower counter-weights.

Key Benefits:

- High performance portable electric hoist.
- Constant torque which allows the use of long synthetic ropes without any losses of pulling force,
- Portable; Work can be performed horizontally, vertically or at an angle,
- Synthetic rope reduces weight compared to chain and steel rope,
- Synthetic rope avoids damage to surroundings,
- Lifting speed 15m/min and 30m/min.

Features

- Lifting capacity: 100 kg,
- Aluminum alloy housing,
- Adjustable upper and lower ends stop; Automatic brake,
- Complies with: European Machine directive: 2006/42/CE.



Light, quick and practical.

Tirfor™

Application:

- To position or to lift components,
- To lift foldable wind turbine,
- To move tool bags,
- To pull or to tension wire ropes.

Key Benefits

- Constant torque which allows to use long wire ropes without any losses in pulling force (Tirfor 'through rope' technology),
- Portable; Work can be performed horizontally, vertically or at an angle,
- Reduced number of tools, the capacity can be increased using sheave blocks,
- High accuracy positioning: Loads can be moved by millimeters at speed,
- Protected against overloads by shear locking pins.

Features:

- Lifting capacity: 800, 1600 and 3200 kg,
- Unlimited length of the lifting wire rope,
- Safe, reliable and sturdy,
- The load is supported by the mechanism (not the housing),
- Maintenance reduced by periodic simple cleaning and lubrication,
- Complies with: European Machine directive: 2006/42/CE.



Portable multi-position!

Dynafor™

Application:

- To measure weight and force of loads and connecting systems.

Key Benefits

- Precision up to 0,1% of nominal capacity,
- Capacity range of 0,5 t up to 250 t,
- Wireless controls with a range up to 80 meters,
- PC connection for information storage.



High accuracy.

Bravo™

Applications:

To position, to pull or to lift components.

Key Benefits:

- Can be used in any position.
- The hoist can rotate freely on 360° on swivel hooks for an adequate positioning.
- Easy chain length adjustment on neutral position.
- Automatic brake engagement when load applied.

Features:

- Lifting capacity: 250 kg, 500 kg, 750 kg, 1500 kg, 3000 kg, 6000 kg,
- High-tensile alloy steel,
- Double brake disks,
- Double pawls (except on the 250 kg),
- Robust construction to avoid product deformation.



Multi-purpose, robust and safe!

Tralift™

Applications:

To position, to lift components.

Key Benefits:

- Smooth hand chain manoeuvring,
- Hoist can rotate freely on 360° on swivel hooks for an adequate positioning,
- Automatic brake engagement when load applied,
- Open cover for easy brake maintenance.

Features:

- Lifting capacity: 250 kg, 500 kg, 1000 kg, 1500 kg, 2000 kg, 3000 kg, 5000 kg, 10000 kg, 20000 kg,
- High-tensile alloy steel,
- Double brake disks,
- Double pawls (except on the 250 kg),
- Robust construction to avoid product deformation.



Multi-purpose, robust and safe!

All Tralift™-Bravo™ products comply with the European Machine Directive 2006/42/CE.

Corso Clamp

Key Benefits:

- The central threaded spindle allows easy adjustment onto the beam.
- Its compact design makes the clamp transport easy.
- Quick and versatile anchoring point for hoisting equipment.



Quick and safe to install!

Features:

- Lifting capacity: 1000 kg, 2000 kg, 3000 kg, 5000 kg, 10.000 kg.
- Extremely robust due to side plate thickness.
- Easy jaws adjustment on various beam sizes.
- Designed to work with lever hoist, chain hoist, pulleys and electrical synthetic rope hoist.

Tralift™ TE

Applications

To lift components.

Key Benefits:

- Improved safety due to friction load limiter system preventing overload on the hoist,
- Friction load limiter acts as an emergency chain end stop,
- Low voltage pendant control,
- Complete aluminium body for better corrosion resistance,
- Standard electrical components for economical and easy maintenance.



Features:

- Upper and lower limit switches,
- Chain storage bag or bucket,
- Load hook with 360° rotation,
- 48 V low voltage control,
- Emergency stop on the pendant control box,
- Lifting motor equipped with a thermal probe,
- Combination with manual or electrical trolley is available.

All Corso-Tralift™ products comply with the European Machine Directive 2006/42/CE.



For further information
and contact details,
please check:

www.tractel.com