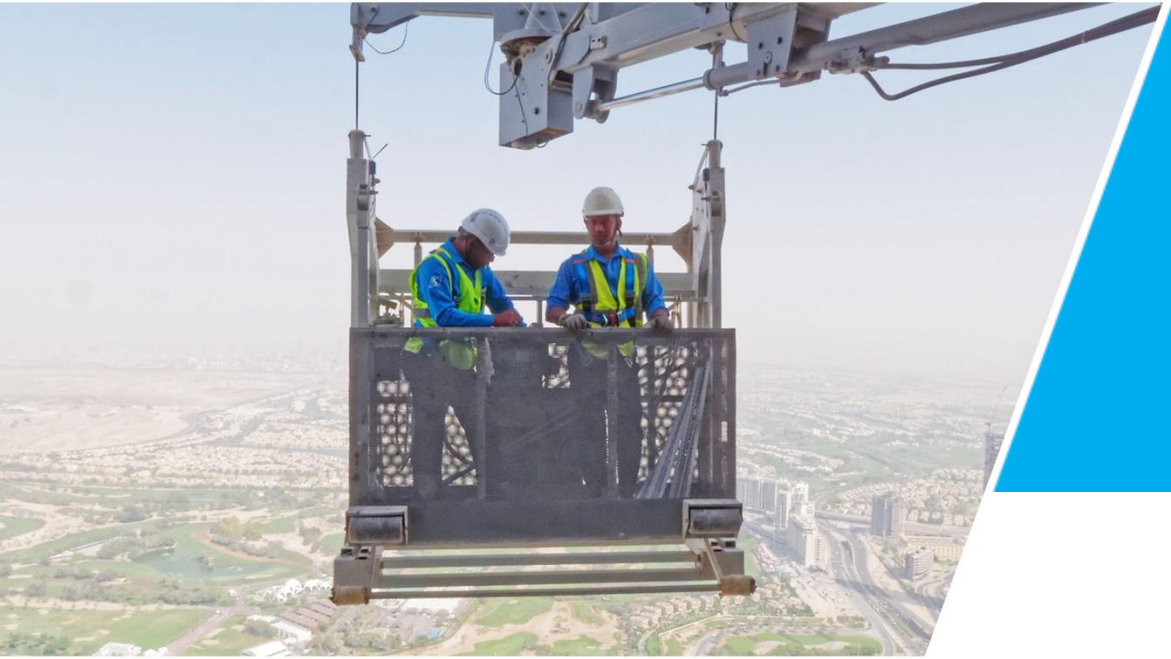


Welcome to

TRACTEL

Lifting and Handling Product Training

Why do we need Lifting and Handling Equipment

Lifting and Handling Equipment is needed to move and position loads and materials.

The loads and materials are generally too heavy to be maniplutated by hand.

Health and Safety Regulations dictate that Lifting and Handling Equipment must be used.

What can Tractel Offer as Lifting and Handling Equipment

Tractel® offers a comprehensive rage of equipment for lifting, pulling and positioning of loads and materials

Portable manual and motorised hoists and winches.

Permanent, semi-permanent or portable solutions.

- Tirfor® endless wire rope winches
- Minifor™ motorised wire rope hoists
- Tirak™ mobile wire rope winches
- Tralift™ manual chain hoists
- Bravo™ manual lever hoists
- Tralift™ TT TS and TE electric chain hoists
- Corso girder trolleys and beam clamps
- Altotir™ builder’s hoists
- Carol™ manual and electric wire rope winches
- Blocmat™ load arresters

What can Tractel Offer as Lifting and Handling Equipment

Floor handling products to lift and move.

- Pioneer™ hand pallet trucks
- Top mechanical toe jacks
- Hydrofor™ hydraulic toe jacks
- Pakrol™ transport skates

- Operations manuals are available for all products and it is strongly advised to read these in order to have a better understanding of the product characteristics.

LIFTING & HANDLING

PART 1 : Lifting and Pulling Equipment

By STEEL WIRE ROPE
TRACTION WIRE ROPE SOLUTIONS
MANUAL & MOTORIZED
COMPACT & LIGHT & EASY TO INSTALL
UNLIMITED LENGTH OF PULL & LIFT
tirfor™, supertirfor™, minifor™, tirak™

tirfor® TU

Manual wire rope winch to lift, pull and position loads

Key differentiators:

- Brand name and market leader – often copied never equalled
- There is no limitation of wire rope length
- Robust for any application proven over 70 years
- Designed for daily heavy duty applications under the most extreme conditions
- EN13157 certified
- Very low-wear clamping jaws
- With overload protection
- Is quickly installed in any location and can be used where there is no power supply
- tirfor® portable manual wire rope winches enable precise placement of loads, within millimeters
- Manriding models available – models TUP6, TUP12 & TUP24

Product Range:

- WLL 800kg to 3200kg
- An Increase of load capacity is possible by using sheave blocks

tirfor® T500

Manual wire rope winch to lift, pull and position loads

Key differentiators:

- Lighter in weight
- There is no limitation of rope length
- Very low-wear clamping jaws
- With overload protection
- Is quickly installed in any location and can be used where there is no power supply
- tirfor® portable manual wire rope winches enable precise placement of loads, within millimeters

Product Range:

- WLL 800kg to 3200kg
- An Increase of load capacity is possible by using sheave blocks

jockey™

Manual wire rope winch for lifting and pulling loads

Key differentiators:

- Easy to transport
- Light in weight
- Quick installation in any location and can be used where there i power supply
- Easy to use
- With overload protection
- Unlimited wire rope length possible
- Precise load positioning within millimetres

Product Range:

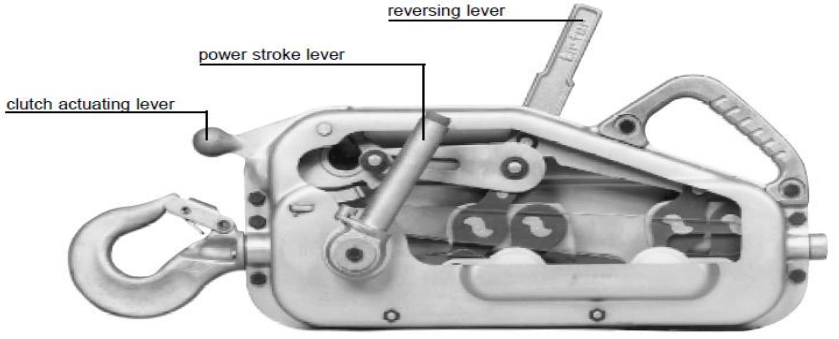
- Model J3 with WLL of 300 kg and J5 with WLL of 500 kg available.
- The load capacity can be increased by using a sheave block.

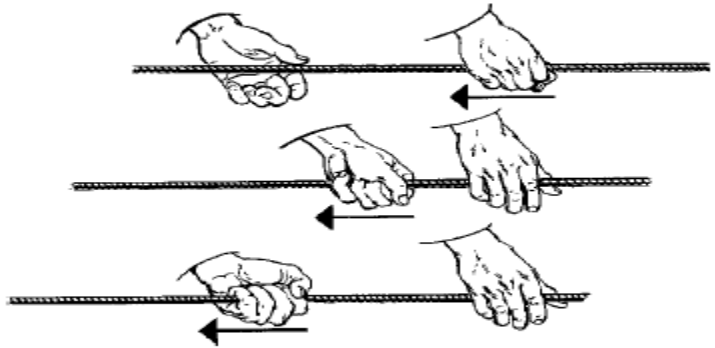
tirfor® principle

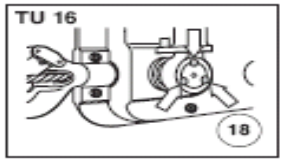
The tirfor®, an innovative and unique concept

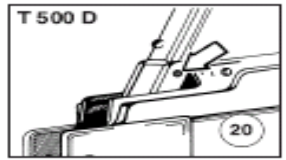
a hand-over-hand principle

- 2 hands represent the ***2 jaws*** of the tirfor®
- An effort is ***transferred*** to the jaws by means of the ***levers***
- ***Forward motion***: jaws are clamped on the wire rope to lift, pull, position or tension a load
- ***Proportional clamping***: the more important the load the more important the clamping effort on the jaws.
- In case of a ***damaged jaw***, the unclamped jaw immediately steps in to ***control the load***.

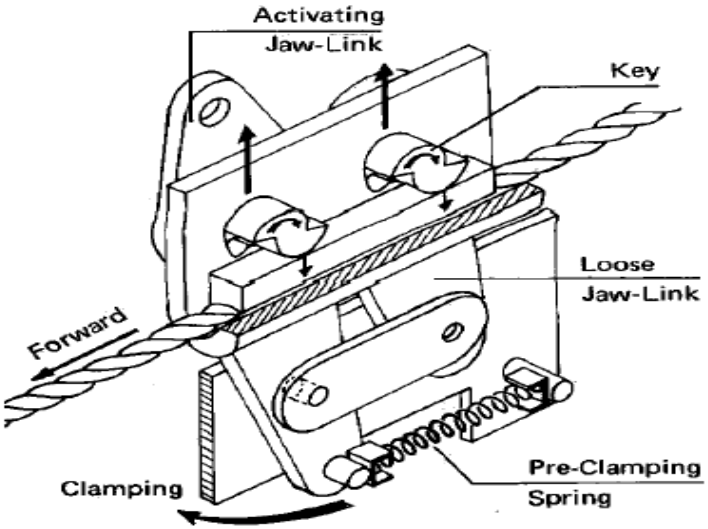


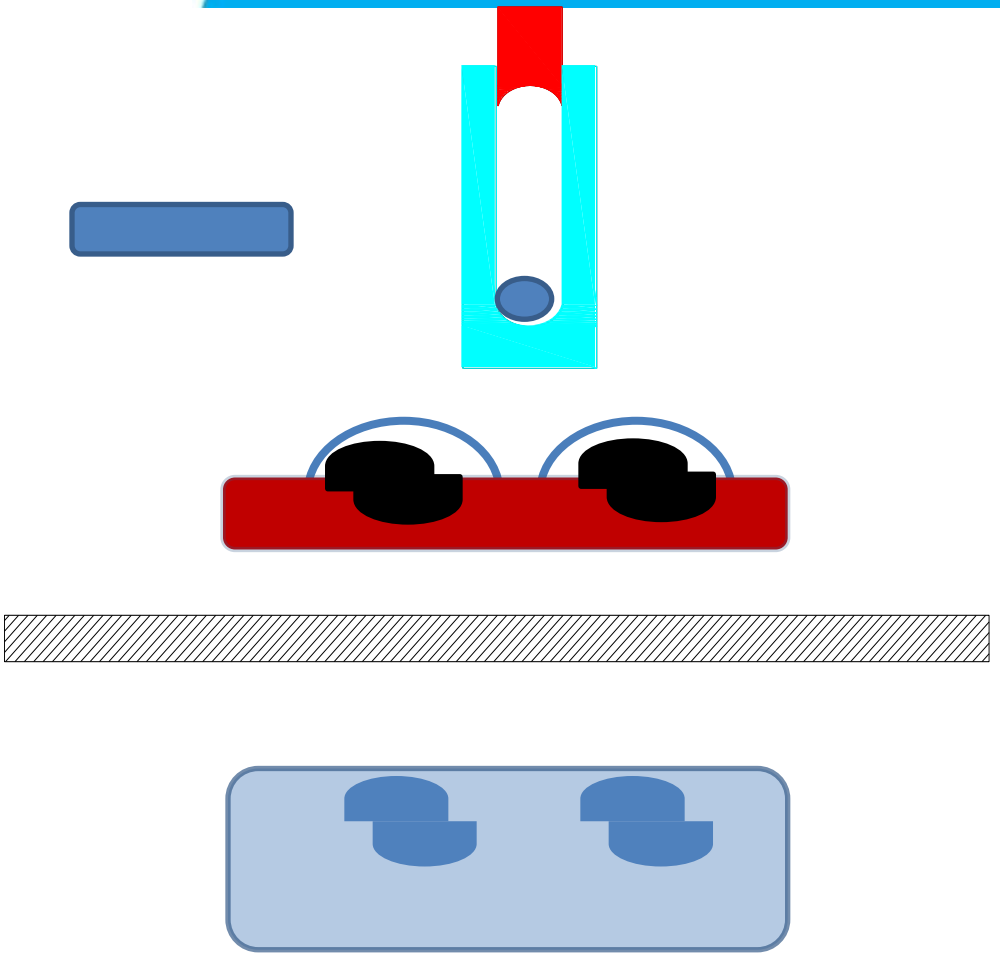




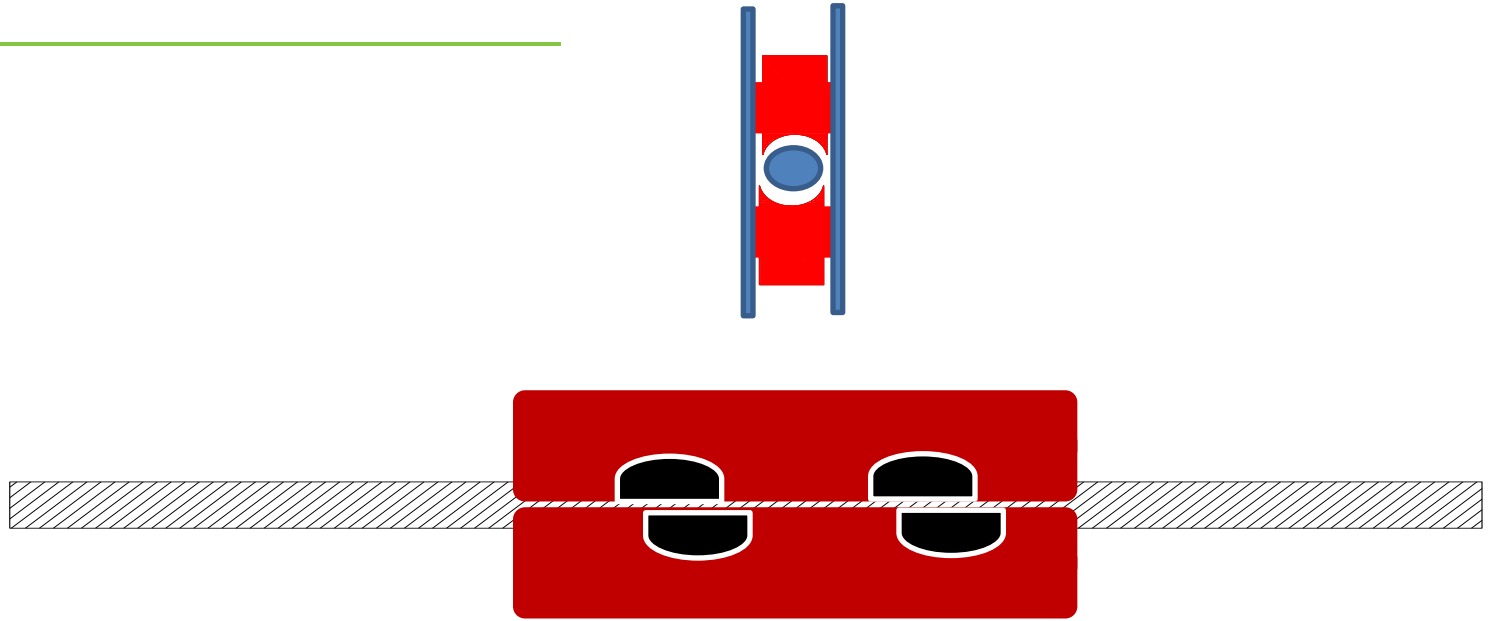


tirfor® TU jaws

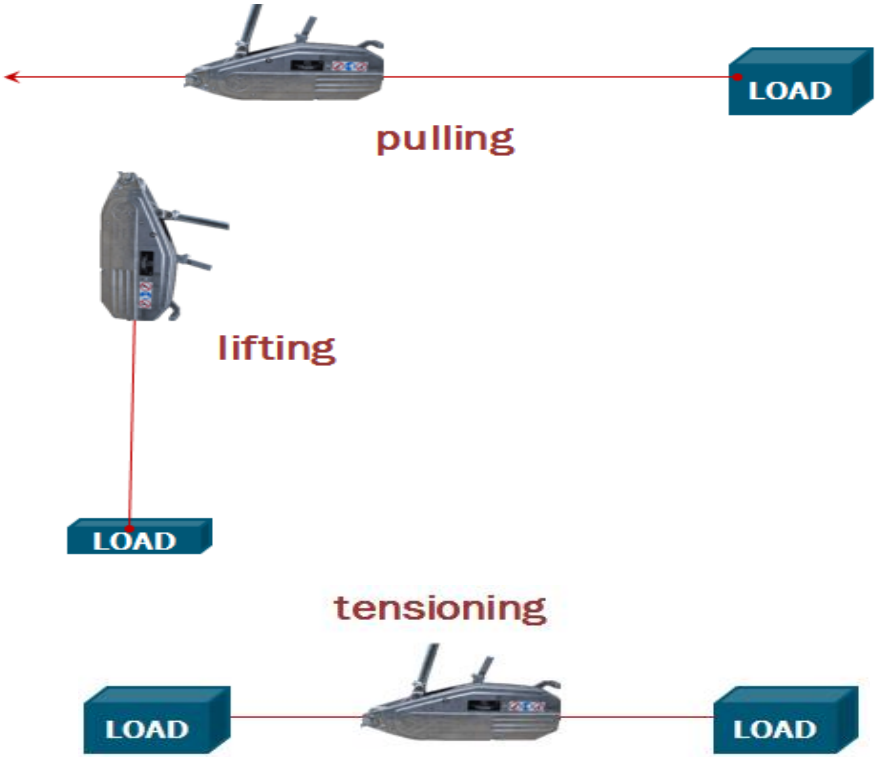




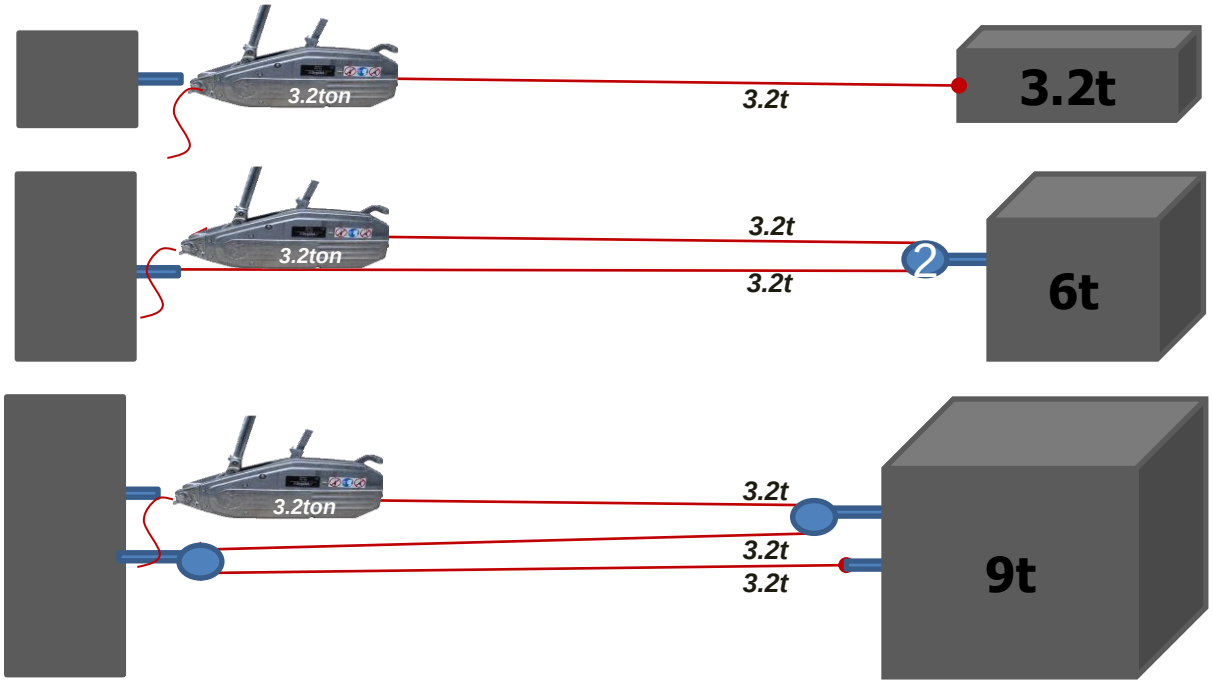
tirfor® T500 jaws

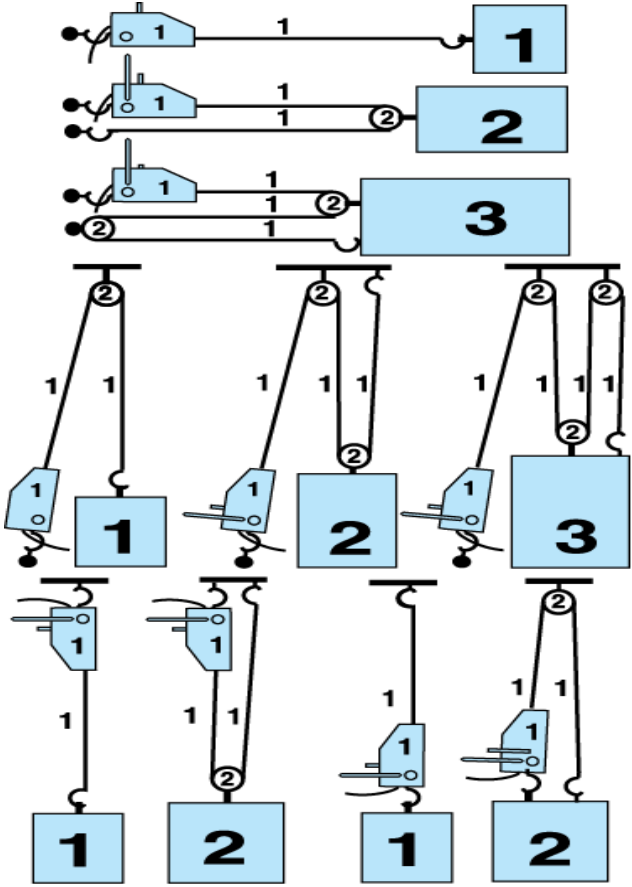


tirfor® application



Sheaving pulleys





tirfor® TU H

Hydraulic tirfor® is a portable motorised hoists and winches

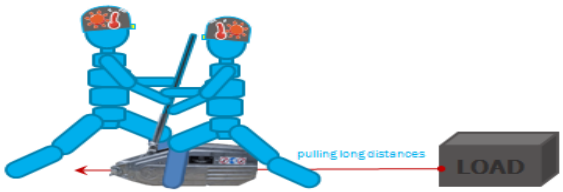
Key differentiators:

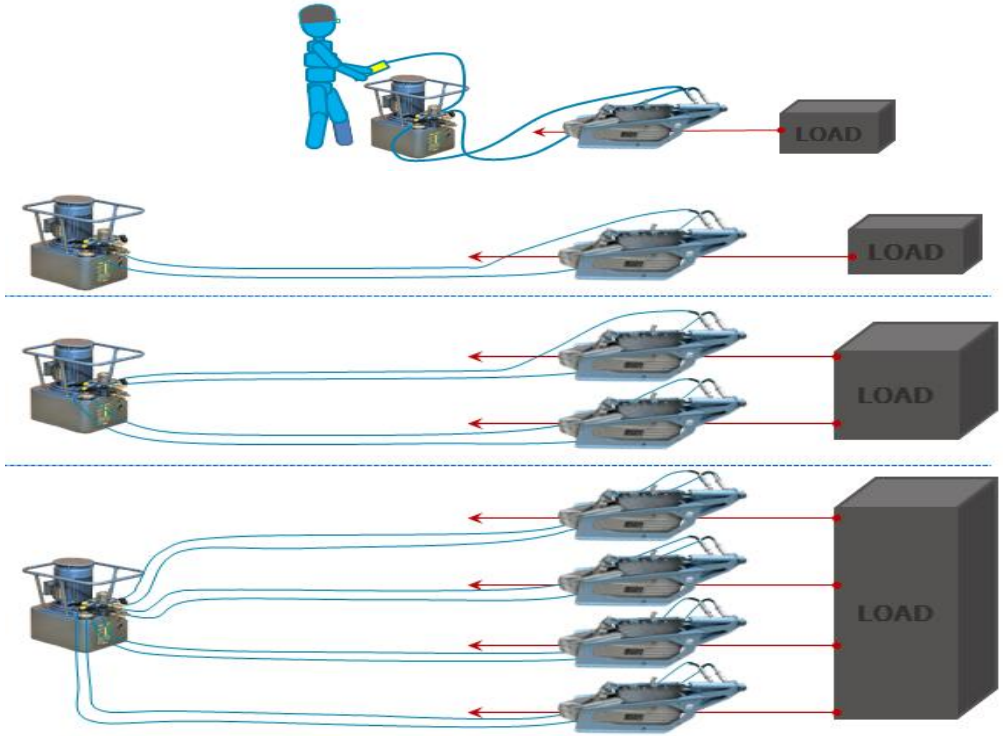
- Low weight
- Fast and easy installation
- No limitation of wire rope length
- No operator fatigue
- Fewer operations since one man can operate multiple machines
- Variable speed control
- Overload protection
- The tirfor TU H hoists are suitable for use in numerous configurations and the perfect solution for use in professional applications
- The hydraulic hoists are operated by an hydraulic cylinder powered by an electrical power pack or a petrol motor power pack.

Product Range:

- WLL 1600kg and 3200kg with increased capacity by sheaving

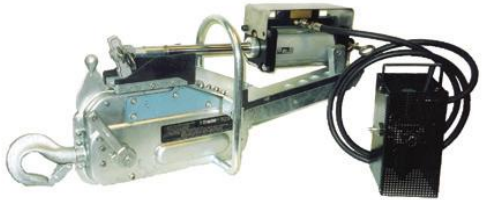
Standard tirfor® vs. motorised tirfor®





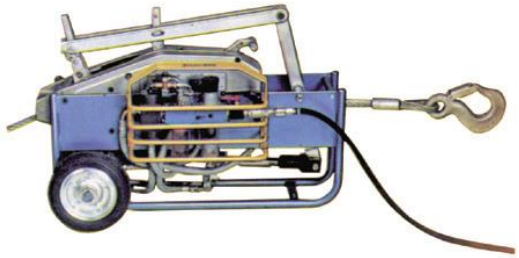
tirfor® TU A

Manual wire rope winch to lift, pull and position loads over great distances



Key differentiators:

The tirfor® is suitable for automatically moving loads over long distances. Many building sites have an air supply by using a compressor. The pneumatic tirfor® can be connected to this compressor and has a standard control unit. If the air pressure is lost, the tirfor® can also be operated manually.



tirfor® TU P has all the same features and benefits as the tirfor® TU range

Product Range:

WLL 1600kg and 3200kg

tirfor® wire ropes and accessories

- MAXIFLEX WIRE ROPE
- The Maxiflex original wire rope guaranteed by Tractel®
- REELS FOR MAXIFLEX WIRE ROPE
- GROUND SCREW ANCHOR FOR TIRFOR®
- GROUND ANCHOR WITH PINS FOR TIRFOR®
- SHEAVE BLOCKS FOR TIRFOR® HOISTS
- CONICLAMP - WIRE ROPE CLAMP

tirfor® applications

Construction
- Formwork
- Precast
- Lifting Platforms
- Guying
- Tensioning

Pipe Laying
- Positioning Pipes for joining
- Laying concrete pipes
- Underwater pipeline assembly

Steel Structures
- Aligning Structures
- Erecting Structures

Industry
- Installation & Removal of machines

Escalators & Elevators
- Installation of escalators
- Lifting & positioning cabins

Electricity
- Positioning of transformers
- Erecting antennas and masts
- Tensioning of cables
- Guying operations

Bridges
- Positioning Formwork
- Guying
- Pulling Precast concrete beams

Mines and Quarries
- Handling & Positioning machinery
- Tensioning Conveyors

Shipbuilding
- Centring Ships in Dry Docks
- Anchoring Barges

Rail & Road
- Lifting and removal of pylons
- Load binding heavy equipment
- Load and unloading

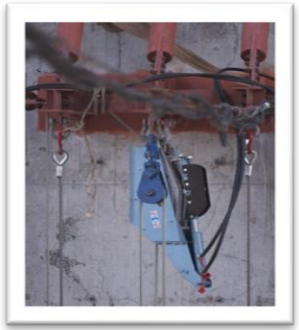
Armed Forces
- Recovery of vehicles
- UN safari vehicles

Civil Defence & rescue
- Removing Crash wreckage

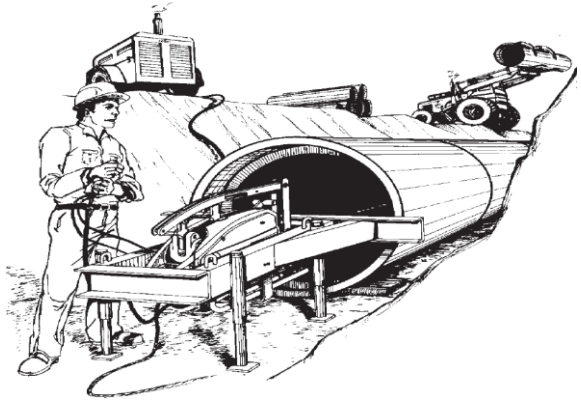
Agriculture
- Recovery of vehicles
- Tree felling

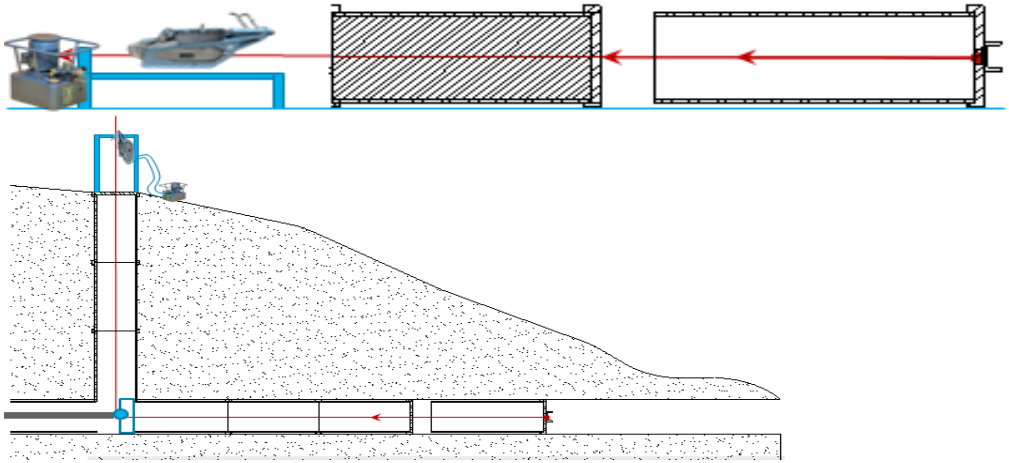
tirfor® application

Lifting platform synchronisation



Pipe pulling applications





tirfor® application

Cable pulling and installation

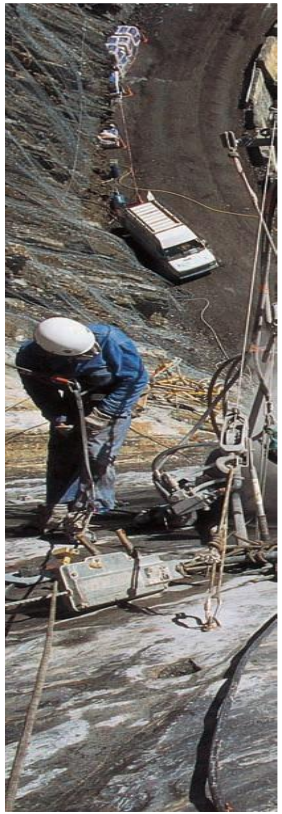
Cable installations :

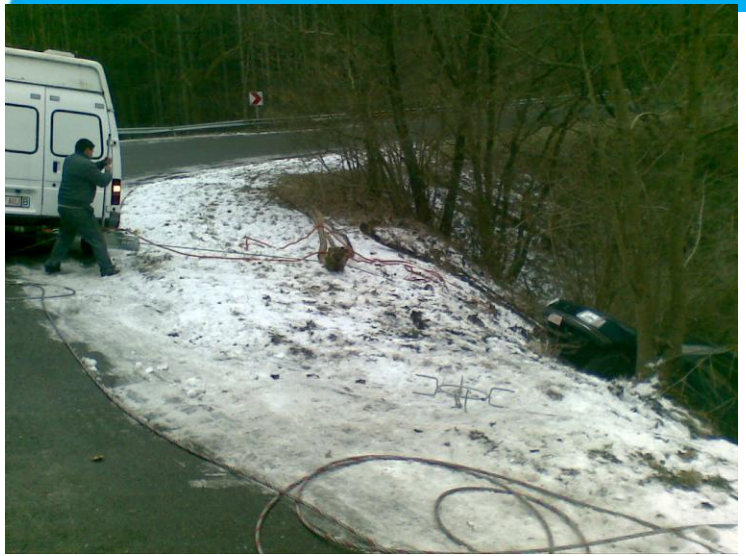
Power lines

Telecommunications

Mountain & mining applications

tirfor® application



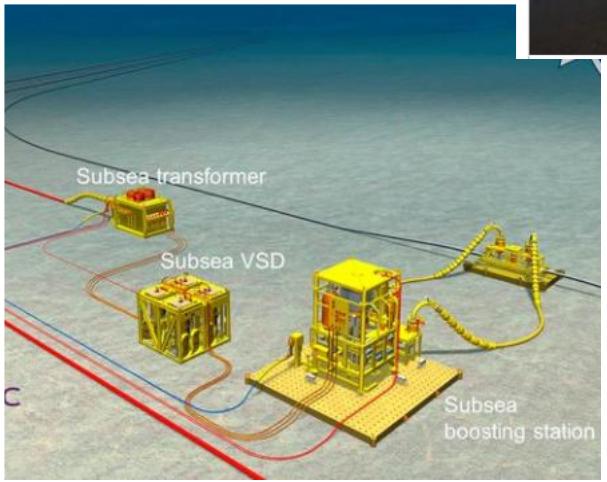


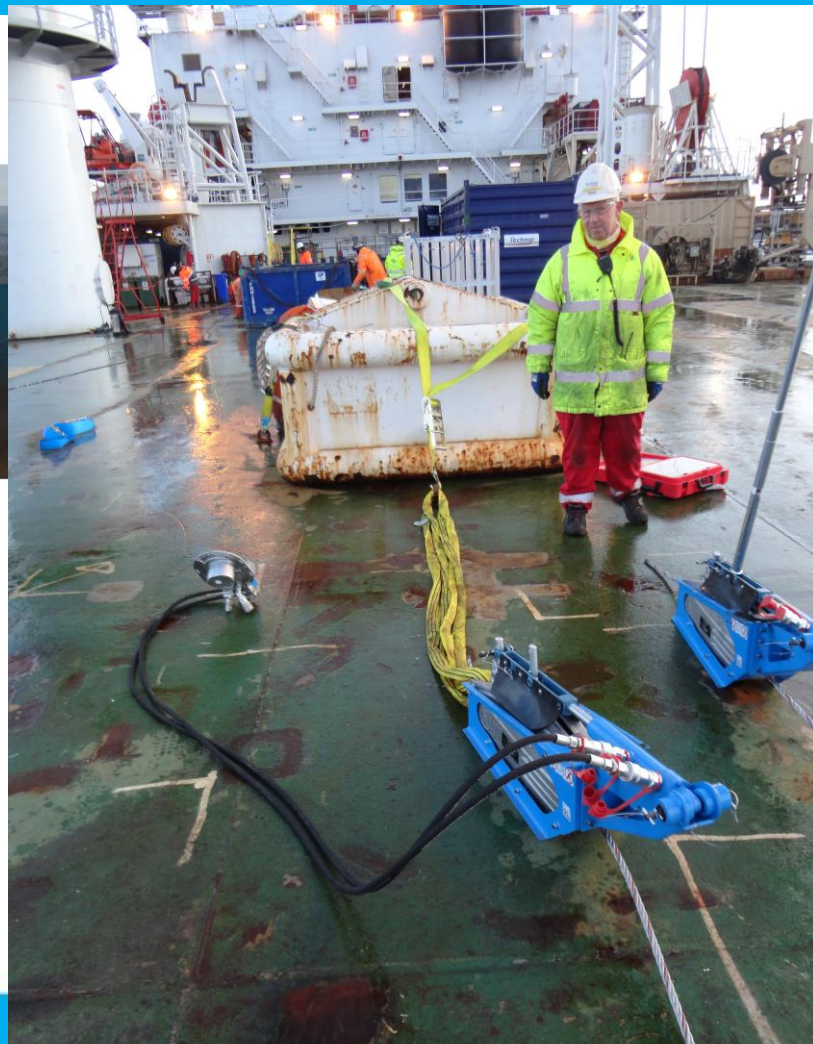
tirfor® TU H application

Subsea and surface operations
Energy companies

Off shore wind parks
Oil and Gas

Subsea Power distribution stations





tirfor® TU H application

Foam work lifting operations by civil construction companies

Supetrtirfor TU 32 – 4 way powerpack sheaved to obtain a WLL over 20 t

minifor™

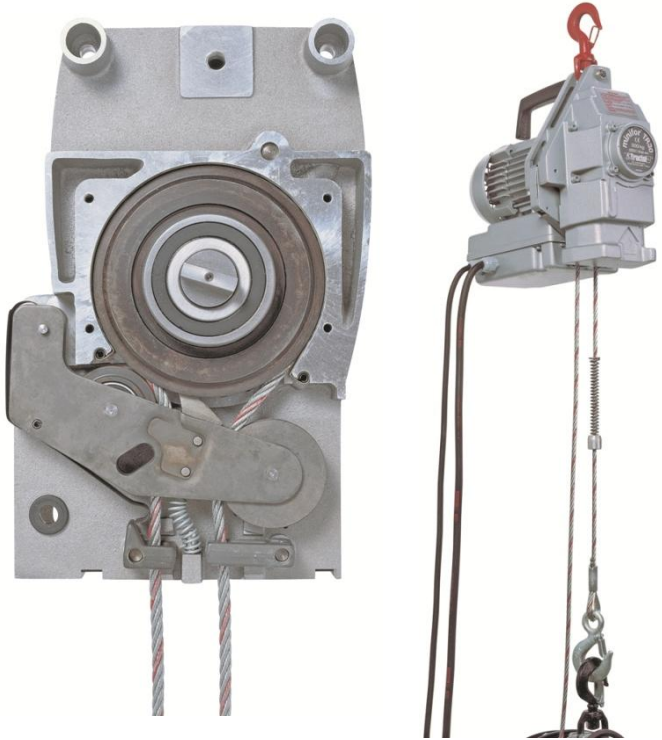
High performance portable electric hoists, for work at any height

Key differentiators:

- Light in weight
- Quick installation
- Unlimited wire rope length
- Easy to use; simple & robust design
- Operate in any position
- Constant torque and speed; temperature sensor
- Double-insulated pendant control with emergency stop button
- A mobile lifting solution for work sites and limited work spaces
- For lengths over 100m it would be better to offer tirak

Product Range:

- WLL 100kg to 500kg
- An Increase of load capacity up to 950kg by using sheaving kits



minifor™ options

High performance portable electric hoists with multiple options:

- Sheaving kit to double capacity
- Remote radio control
- Spring tension reeler
- Metal storage/transportbox
- Diverter pulleys

minifor™ TR55/110

Overview

minifor™ has been a core Tractel® product since the 1980's and has proven itself in many markets to be robust and reliable.

In order to maintain our market advantage and to offer an improved minifor™ we are introducing 2 new models to the minifor™ range – TR55 and TR110 which will take the load capacity from a maximum of 950kg (TR50 sheaved) to a maximum of 1100kg with the TR110 sheaved minifor™.

This will mean that for a single fall minifor™ we will increase the load capacity 10% from 500kg to 550kg and for a sheaved double fall by 16% from 950kg to 1100kg.

minifor™ TR55/110

Overview

In order to be able to offer a load capacity of 1100kg an electronic load limiting device is fitted to the TR110 so ensuring that the TR110 is in conformity with the European Machine Directive.

TR55 does not include a load limiting system and so is restricted to a single fall and is fitted with a system to prevent the use of the sheaving kit.

TR110 however can be available in a single fall configuration with a load capacity of 550kg which includes a load limiter but this will have an additional cost to the TR55 and so would attract a more specialist application which may be demanded from time to time from the customer so this option should be remembered.

In order to achieve these greater load capacities a number of changes have been made to bearings and gears to strengthen these parts so as to withstand the greater forces applied.

These changes will also be reflected in the current TR30S and TR50.

minifor™ TR55/110

Range extension

Model	Capacity	No Falls	Voltage	Speed	Wire Rope Dia
TR10	100kg	1	230V 1Ph	15m/min	6.5mm
TR10	200kg	2	230V 1Ph	7.5m/min	6.5mm
TR30	300kg	1	230V 1Ph	5m/min	6.5mm
TR30	600kg	2	230V 1Ph	2.5m/min	6.5mm
TR30S	300kg	1	230V 1Ph / 400V 3Ph	13m/min	6.5mm
TR30S	600kg	2	230V 1Ph / 400V 3Ph	6.5m/min	6.5mm
TR50	500kg	1	230V 1Ph / 400V 3Ph	7m/min	6.5mm
TR50	950kg	2	230V 1Ph / 400V 3Ph	3.5m/min	6.5mm
TR55	550kg	1	230V 1Ph / 400V 3Ph	7m/min	6.5mm
TR110	1100kg	2	230V 1Ph	3.5m/min	6.5mm

minifor™ TR 125 SY

Portable electric hoists with synthetic rope

Key differentiators:

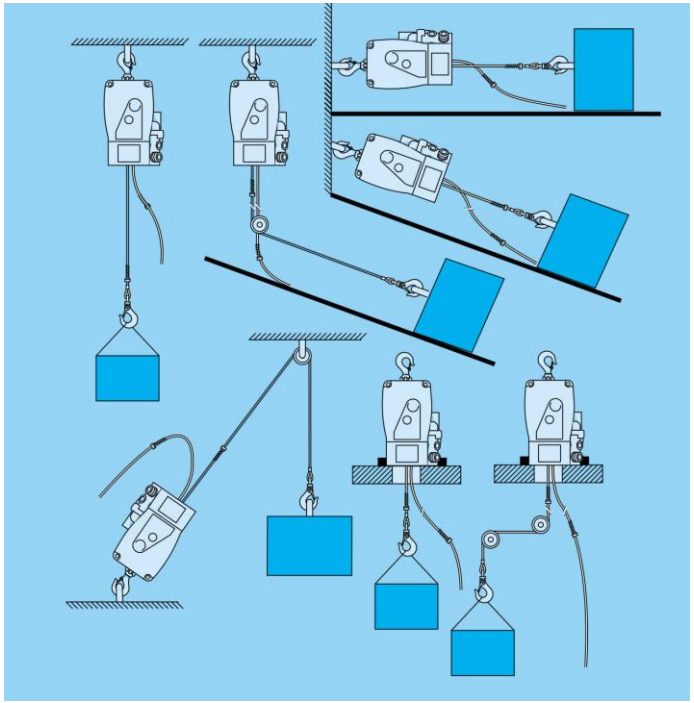
- Lifting over great heights is possible
- Standard rope length up to 200 m
- Longer rope lengths on request
- Steady torque
- Stable speed at 30m/min
- Integrated brake for safe operations
- Push button pendant control
- The minifor™ TR125 SY hoist is equipped with a special synthetic rope.

Product Range:

- WLL 125kg or 250kg with sheaving
- It is available with different voltages and is suitable for various applications.

minifor™ applications

Minifor can be used in a multitude of configurations for lifting and pulling loads



minifor™ applications

- Lifting Materials
- Long Lifts and pulling

Construction

- Lifting tools and joints

Steel Structures

- Lifting light components during maintenance
- Silos

Industry

- Lifting tools and guide rails in the shaft

Escalators & Elevators

- Shifting and position Props
- Advertising in convention centres and malls

Entertainment & Advertising

- Lifting light components during maintenance

Mines & Quarries

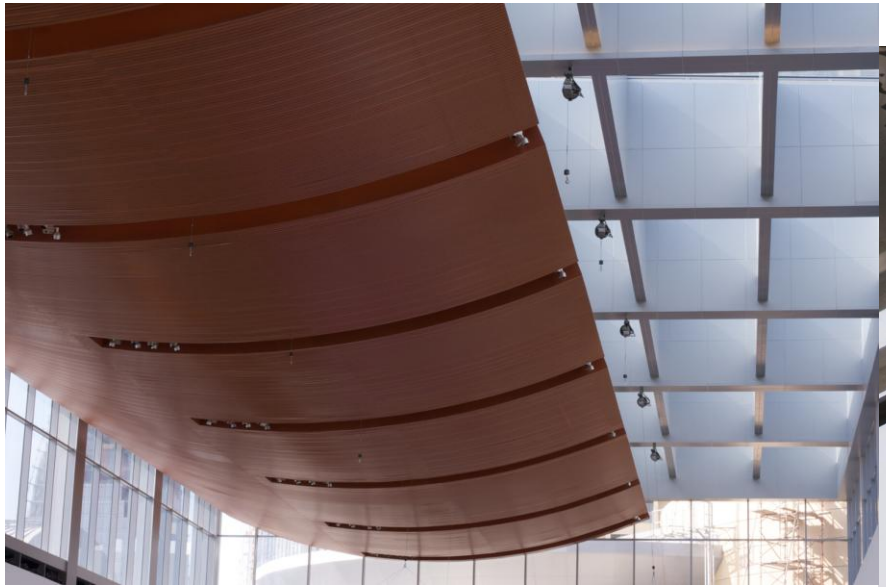
minifor™ application

Construction site:
Lifting loads with pendant remote control

Construction site:
Lifting loads with wireless remote control

Civil engineering: Tracpode as anchor point

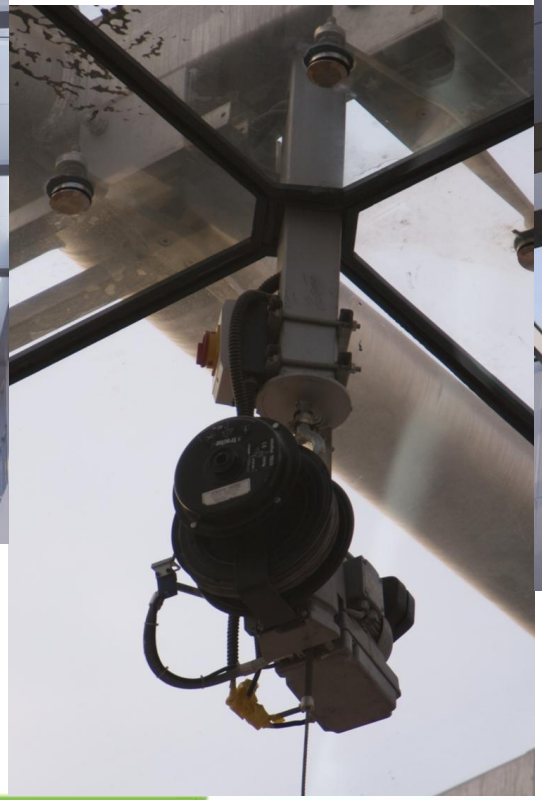
minifor™ application



Shopping mall:

Lifting loads with wireless remote control
TR 50 & TR 10 wireless in order to lift publicity panels.

With reeler
400 m radio remote distance



Embedded in ceiling structure

minifor™ application

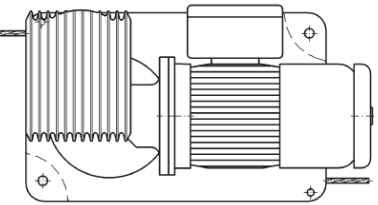
Elevator shafts : installation, rail lifting, maintenance & service

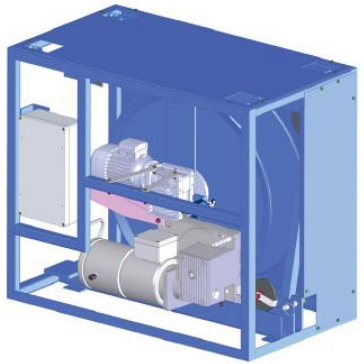
500 up to 1100 kg
Radio remote control up to 500 m

Tirak … what to expect ?

Traction wire rope hoist with unlimited length of pull and lift

- Man riding up 2000 kg
- Material handling up to 3000 kg
- Pulling / Lifting
- X & T series, L series
- Standard & customized
- With frame and reeler up to 800 m



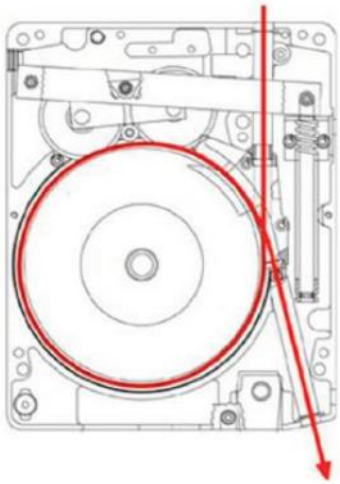


Tirak mechanical components … inside

Mechanical load limiting device

Clamping arm
Driving disk grooved
X series single
T series double
L series Light

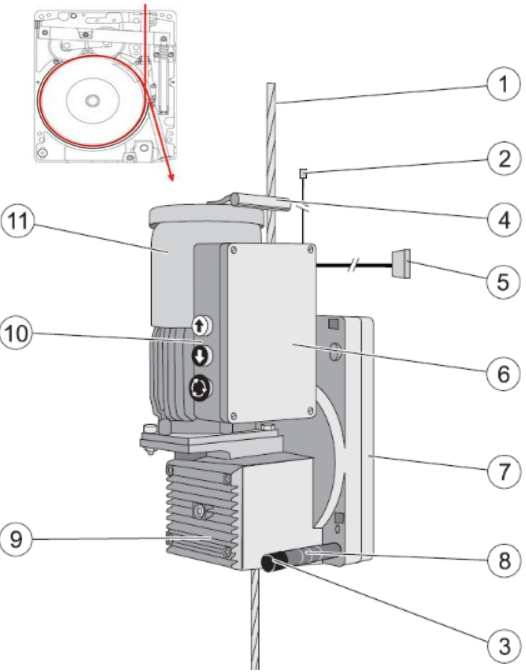
Aluminum casing
Reinforced wire entry
Emergency descent system
(secondary brake)



Tirak main components… outside

Traction wire rope hoists tirak™

tirak™ Man Riding & Material handling hoists X



- 1 •Rope with unique diameter and construction
- 2 •Plug for limit switch
- 4 •Motor Handle
- 5 •Plug for pendant
- 6 •Terminal / Control Box
- 7 •Rope drive and body
- 8 •Carry Handle
- 3 •Brake Lever

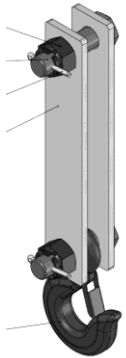
- • Man riding 300, 400, 500, 1000 and 2000 kg & material 3000 kg
- • Single and double speed
- 1 •Adapter for easy installation
- 2 • Diverter pulley
- 3 • Extra power plug
- 4 • direct upper limit switch
- • overload limiting device
- • High Duty factor

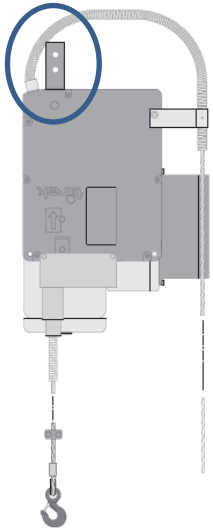
Tirak … history and trends X SERIES big capacities

Tirak big capacities :

X1500 material handling
X 2000 man riding
X 3000 material handling

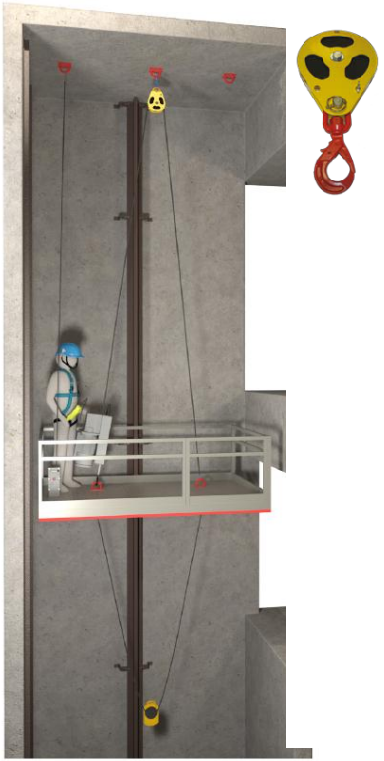
Single & double speeds
With pendant control
With radio remote
End limit switches
Eye adapter
Wire rope guiding device
Emergency descent system
(secondary brake system)

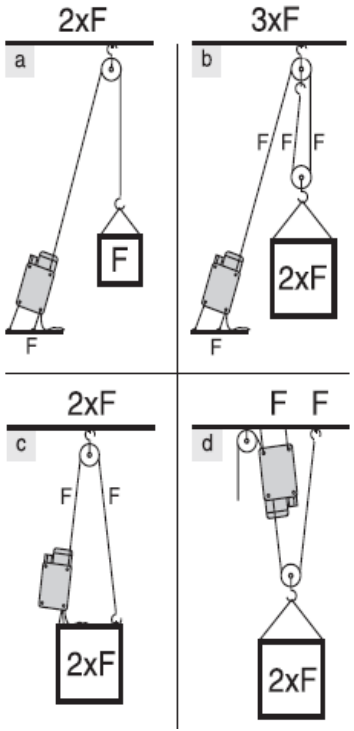




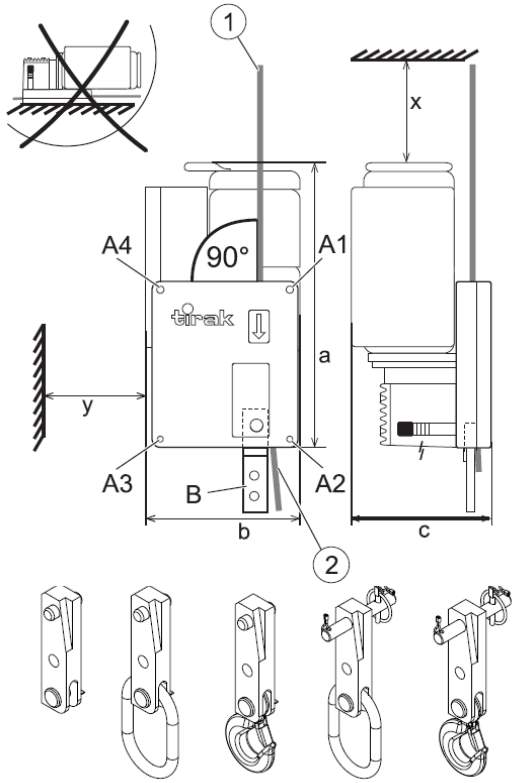
Tirak configuration for installation

Tirak anchoring and sheaving modus





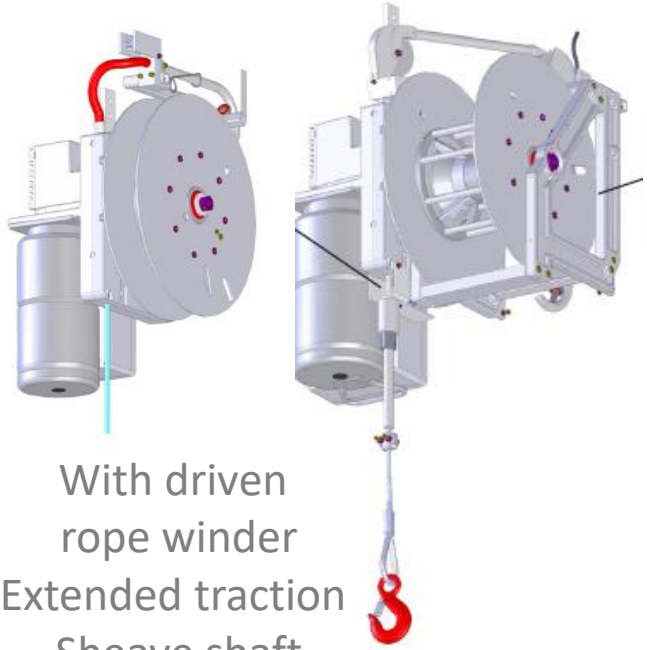
- Universal
- Compact
- Light
- Easy to install
- Multiple WLL
- Man riding pulley



Tirak X series … mobile winch systems

Tiraks X series equipped with rope reelers and winders

With free running
rope reeler
Reeling by rigid
wire rope construction
60 m-110m

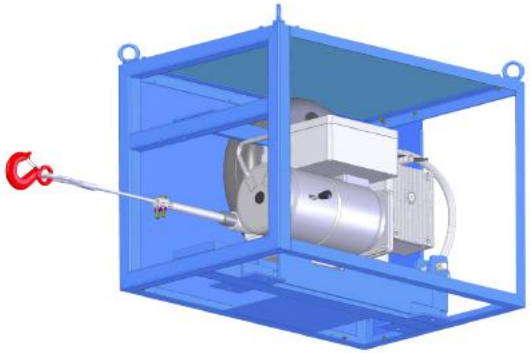


With driven
rope winder
Extended traction
Sheave shaft
Different lengths
80-350 m

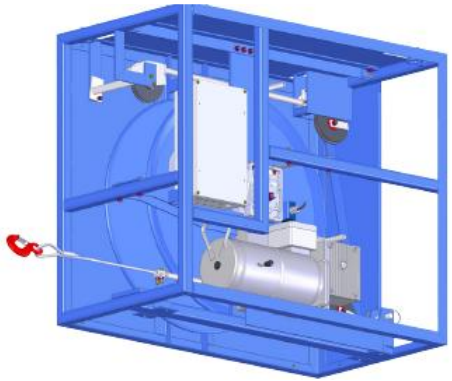
- UPPER limit switch
- Return guiding spring
- End wire rope detector
- Overload from 1000 Kg
- Pendant control box
- Eye adapter
- Radio remote(option)

Tirak X series … mobile winch systems

Tiraks X series integrated frame and wire rope reelers



With free running
rope reeler
Rigid wire rope
60 m-110m



With driven
rope winder
Extended traction sheave shaft
Separately driven for longer L
Different lengths
Up to 800 m

- UPPER limit switch
- Return guiding spring
- End wire rope detector
- Overload from 1000 Kg
- Pendant control box
- Fame anchor for towing
- Radio remote(option)

Tirak X Series … applications

- Elevator
- Power plants
- Bridge construction
- Masts, towers
- Tunnels
- Civil engineering
- Window installation
- Cable pulling
- Positioning
- Platforms
- Steel construction
- Tube
- Media & advertisement
- Cranes
- Silos, shafts
- Pulling to an Fro
- Inspection
- Repair
- tank covers
- Mining
- training centers
- Military
- Quarries
- Conveyor belts
- windtowers
- antennas & TV towers

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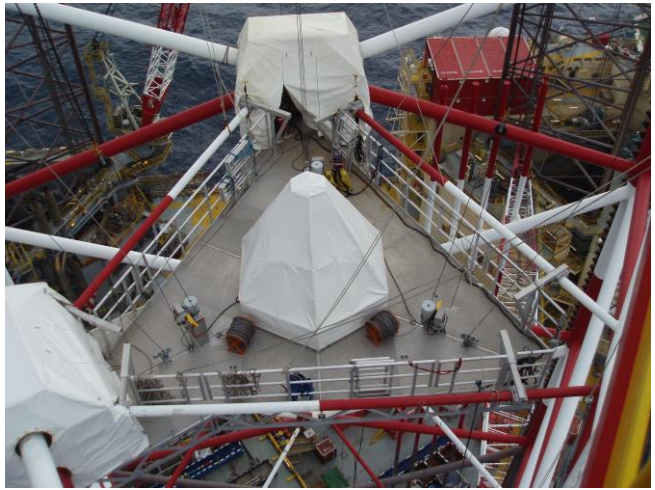
Tirak … applications

Some examples … MATERIAL handling



Crane construction
Norway STB

Power plant & tower maintenance
Bosnia

Tirak … applications

Some examples MATERIAL handling

Pillars maintenance and inspection rion Anterion bridge Greece

Tirak T 1000 To and Fro pulling applications

Some examples … MATERIAL handling

To and Fro pulling effort **on quarry (Norway)**

T 1000 to and for pulling applications

BRIDGE CONSTRUCTION

Hidepito Hungary

Tirak … applications

Some examples … MATERIAL handling

ELEVATOR SHAFTS

Material handling X series and Mobile winch systems w/driven reelers

LIFTING & HANDLING

PART 2 : Lifting and Pulling Equipment

By STEEL CHAIN

MANUAL & MOTORIZED

PUSH TROLLEY & MOTORIZED TROLLEY

tralfit™, bravo™, Volt Trac™, tralift™ TT, corso™ trolleys

tralift™

Manual chain hoist to lift loads – UNIQUE DESIGN

Key differentiators:

- Easy to install
- Ideal for lifting, precise positioning
- Tested to 150% of working load limit
- 360° swivel hooks with overload opening indication
- Can be used in any location as a permanent or portable lifting solution
- Use in conjunction with a Corso trolley for load movement
- Optional load limiting device for 0.5t and above
- Optional chain locking and shortening device for added safety

Product Range:

- WLL 0.25t to 20t

tralift™ application

Industry: Workshop applications
Various loads & machinery

Industry: Workshop applications

Installation
Service
Testing

Construction:

Civil construction

Fishing industry:

bravo™

Manual lever hoist to lift and pull loads

Key differentiators:

- Easy to install
- Desynchronised brake system for ultimate safety
- Pull through chain in neutral for quick and easy hook positioning
- Ideal for pulling, lifting, precise positioning
- Tested to 150% of working load limit
- 360° swivel hooks with overload opening indication
- Can be used in any position in any location
- Optional load limiting device for 0.5t and above
- Optional chain locking and shortening device for added safety

Product Range:

- WLL 0.25t to 9t

1. Use case – lever hoist

- Use vertically
  - ➢ Lifting tasks

- Use horizontally
  - ➢ Pulling tasks (traction)

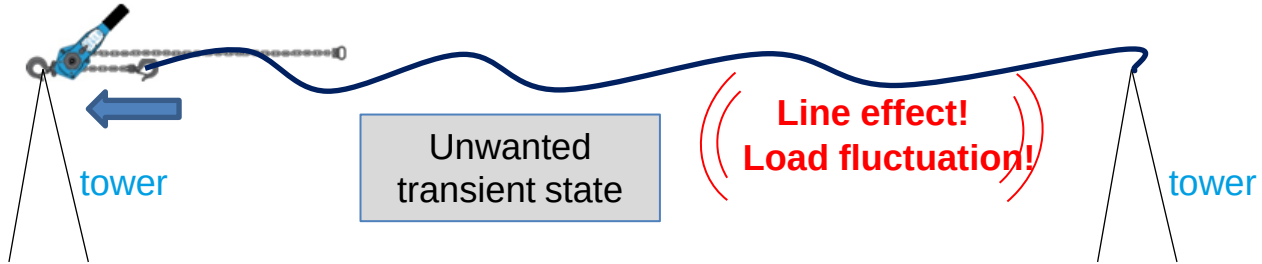
- Use horizontally

Line tensioning tasks in industry and public works or tasks with a fluctuating load.

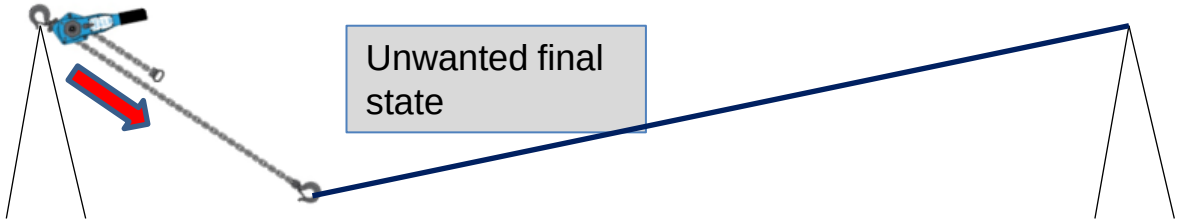
Depending on the context, this type of use may be problematic.

2. Use in line tensioning: Dangerous situation

➢ Task - tensioning a line between 2 towers



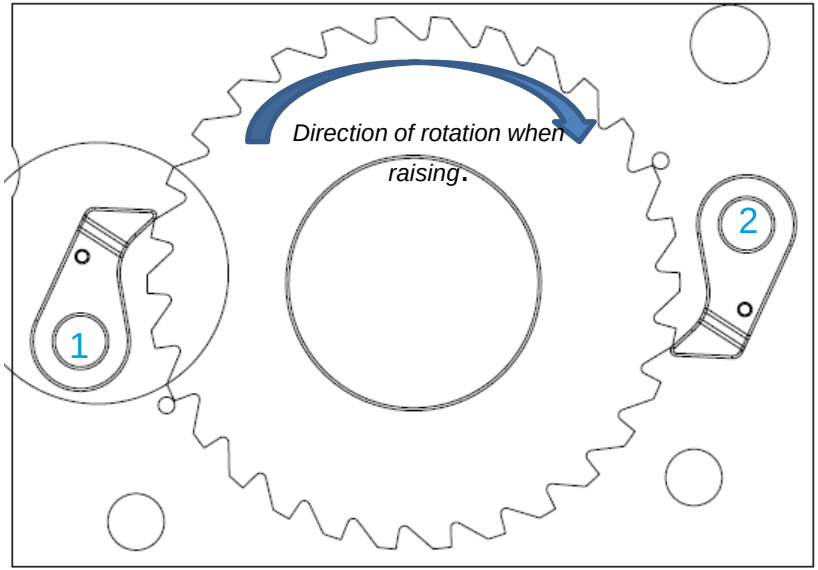
During tensioning, a **line effect** occurs, owing to a load fluctuation or another outside event: gust of wind, shock related to the environment, something else,etc.



Possible consequence: the ratchet wheel turns in the opposite direction (= load goes in direction of ground) at high speed, the load unwinds, the slack strand of the chain moves quickly and in an uncontrolled manner.
=> **There is a critical risk for persons and for goods.**

3. Problem case of synchronised pawls

Reminder : Hoists with 2 pawls provide redundancy of the ratchet locking function. Thus, if one of the pawl fails (broken pawl, broken spring, etc.). the second pawl still guarantees the "locking" function.

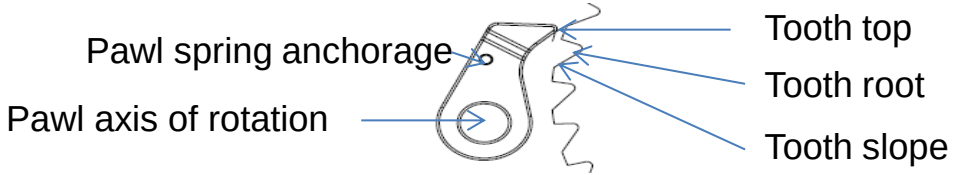


However, the 2 pawls have an **identical engagement position** on each side of the ratchet.
In other words,
- If pawl n°1 is on tooth top, then pawl n°2 is also on tooth top.
- If pawl n°1 on tooth root, then pawl n°2 is also on tooth root.

=> **Synchronisation** does not guarantee engagement of at least one of the pawls.

Risk of the pawls bouncing/rebound on tooth tops.

4. Workings of the pawl in a manual hoist



A pawl ensures its "locking" function if and only if it is set in a tooth root position.

Normal working condition

- The purpose of the "locking" function of a pawl is to stop the ratchet wheel turning in the opposite direction (= load goes in direction of ground).

Problematic working condition

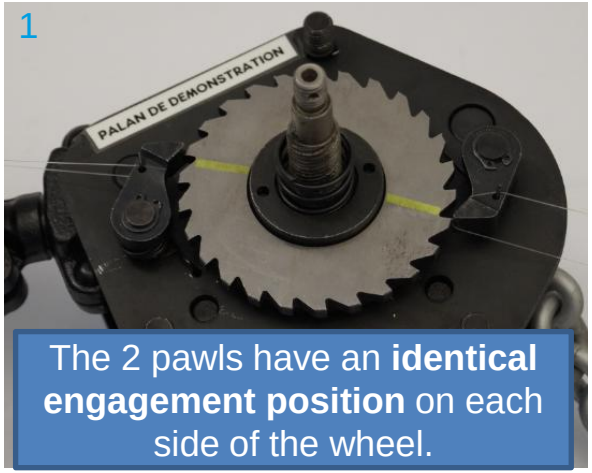
- A line effect occurs due to environment/surrounding : shock loading
- Elastic potential energy is propagated up to the hoist's ratchet
- Pawls "thrown" backwards
- Under the tension of the springs, the pawls bouncing/rebound on to the tooth tops
- The hoist runs away in an uncontrolled manner

Subsequently:

⇒ Either **the pawl fails to mate with a tooth root…** in this case the runaway continues until the load reaches the ground.

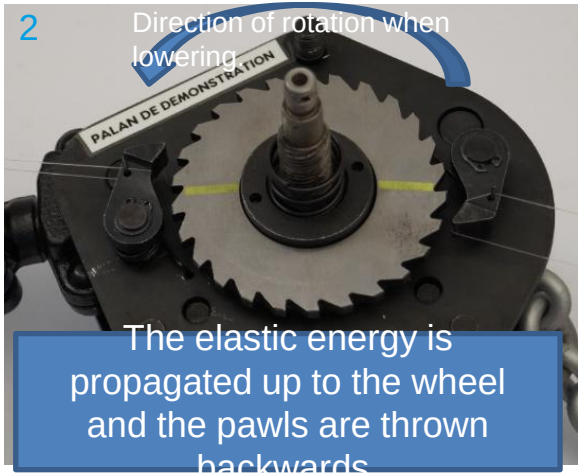
⇒ Or **the pawl mates with a tooth root** during the unwinding phase, the accumulated kinetic energy then perhaps leading to a "hammer effect": breakage of the pawl or an initial tooth followed by stripping of the teeth from the wheel or binding of the appliance and destruction of its components.

5. Illustration of the problematic phenomenon



The 2 pawls have an **identical engagement position** on each side of the wheel.

LINE EFFECT - LOAD FLUCTUATION



The elastic energy is propagated up to the wheel and the pawls are thrown backwards

The pawls rebound on the tooth tops

⇒ Total unwinding.

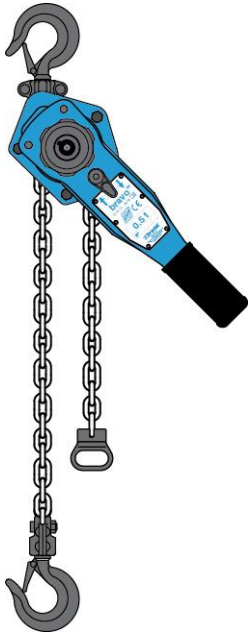
⇒ Stripping of the teeth from the wheel or binding of the appliance and destruction of the components.

6. Tractel®'s exclusive *double click* solution

Desynchronised pawls

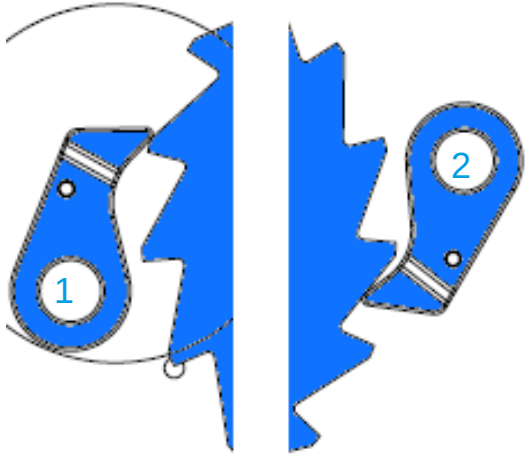
The *double click* system based on desynchronised dual pawls doubles the lifting precision and ensures an unequalled safety against shock loading for highly demanding pulling and tensioning applications.

The bravo™ hoist now has the *double click* system.



7. Explanation of the "back-up" effect

Desynchronised pawls



The 2 pawls have an **opposite** engagement position on each side of the wheel.
In other words, if pawl n°1 is on tooth top, then pawl n°2 is on tooth root.
The pawls are **desynchronised**.

The components (wheel, spring, pawl, etc.) have been redesigned to ensure ideal operation.

The bouncing/rebound phenomenon leading to unwinding is impossible, as one of the pawls is always almost "sloping" to prevent the toothed wheel turning in the opposite direction.
This is the back-up effect.

8. Advantages of *double click*

✓ Problem 99.999% solved (tested to 1,000,000 lever cycles without unwinding).

Enhanced safety

✓ Frequency of passage of one of the two pawls into a tooth root is doubled and hence the precision in use is doubled.

Optimised precision

✓ New *double click* Tractel® system, is integrated in **bravo™** manual lever hoists.

Market exclusive

tralift™ TT

The industrial quality for your lifting operations

Key differentiators:

- Easy to operate and maintain
- Reliable and Long-Lasting
- Minimal noise level while running (65 dB)
- 3 years warranty
- Adjustable top and bottom limit switches
- The electric hoists tralift™ TT have been specially designed to meet the market /customers requirements, where safety is important
- Trolley suspension – manual and electric

Product Range:

- WLL 160kg to 1250kg (FEM dependent)
- Single and double speed
- ATEX and food industry versions available
- Synchronised double hoists available

tralift™ TS

Electric chain hoist tralift™ TS for lifting loads

Key differentiators:

- Adjustable top and bottom limit switches
- Power supply voltage 230 V or 400 V, 50 Hz or 60 Hz
- Trolley suspension – manual and electric
- Tralift TS hoists are designed for permanent installation on a jib crane, underneath an overhead crane or on motorised or non-motorised trolleys
- The hoist is available in a single or three phase version with high duty factor adapted to hard working conditions

Product Range:

- WLL 1600kg to 5000kg
- Single and double speed
- ATEX and food industry versions available

tralift™ TS application

Lifting drums in production area

tralift™ TE

Electric chain hoist tralift™ TE for lifting loads

Key differentiators:

- Capacity from 125 kg to 2000 kg
- Robust construction in aluminium casing
- Motor with thermal protection
- Load limiter
- Upper and lower limit switch
- Switchable voltage from 230V to 400V 3 phase
- Tralift TE hoists are designed for permanent installation on a jib crane, underneath an overhead crane or on motorised or non-motorised trolleys.
- They are suitable for handling relatively heavy objects while reducing the physical effort of the user.
- Trolley suspension – manual and electric

Product Range:

- WLL 125kg to 2000kg
- Single and double speed

corso trolley

Girder trolleys to move and position loads

Key differentiators:

- Handle included for quick and easy adjustment of the hanger bar to suit the beam size used
- Folded steel end stops which also act as anti-drop bars and anti-tilt devices welded onto side plates
- Hanger bar preventing from rotating by tightening a grub screw
- Steel wheels with ball bearings
- Compatible with other Tractel® lifting devices

Product Range:

- WLL. 250 kg to 20000kg
- Push, Geared and Electric versions

corso beam clamp

Fixed girder anchor points

Key differentiators:

- Easy width adjustment to the size of the steel beam
- Generously sized body made of steel alloy
- High stability when fixed correctly
- Spindle bar is locked from rotating by tightening a grub screw
- Compatible with other Tractel® lifting devices

Product Range:

- WLL. 1000 kg to 10000kg

altotir™

Builder’s hoists

Key differentiators:

- ***Lifting height 25 m***
- Speed 25m/min
- ***Robust device***
- The installation of the altotir™ hoist on a standard scaffold tube or window frame as well as on a jib crane is possible
- The device is operated by a push button pendant control box with emergency stop.

Product Range:

- Capacity 200 kg

altotir™ application

altotir™ hoist for work on scaffolding

sodenic™

The SODENIC™ is a complete jib crane with integrated wire rope winch. Perfect for lifting materials from a roof.

Modular configuration and easy to transport and assemble by two people, without any special tools, Fits in elevator, once disassembled

.

Specifications:

- Galvanized steel construction
- Wire rope with swivel safety hook
- Sheave blocks with self-lubricating bearings
- Counterweight 750 kg (30 blocks of 25 kg each)
- Limit switches
- Topping and rotating the jib
- One-man operation

Product range:

- 250kg wire rope length 45m and 60m
- 200kg wire rope length 80m
- Electric motor
- Petrol motor

caRol™

Manual wire rope winch for installation in permanent location

Key differentiators:

- Option ***to release the drum*** in unloaded position
- Full capacity on all layers of wire rope
- ***Automatic*** brake
- ***Adjustable*** crank
- ***Variable wire rope length*** depending on load capacity

Product Range:

- caRol™ wire rope winches are available in 2 versions
  - Winch with spur gearing
  - Winch with worm gearing
- The wire rope is wound onto the drum by turning the crank
- WLL 150kg to 3000kg

electric caRol™

Electric drum winch

Key differentiators:

- ***Capacity***: 200, 300, 500 & 800 kg
- ***Wire rope capacity*** from 60 m to 85 m
- Full capacity on all layers of wire rope
- Single phase and 3 phase
- ***24 V DC electromagnetic brake***
- ***Controlled*** via a 24 V ELV pendant control station

Product Range:

Two series: Standard TE & TC with chassis (building sites)

pioneer

Pioneer: Everyday movement of loads across the floor

Key differentiators:

- Robust chassis and forks manufactured from steel
- High-performance hydraulic pump
- Controlled lowering of the load
- 3-position operation
- Polyurethane, Nylon or Rubber Steering wheels
- Polyurethane or Nylon load rollers

Product Range:

- 2000kg to 3000kg

pakrol™

Transport skates to move heavy loads across the floor

Key differentiators:

- Robust construction
- A modular system to steer and move loads
- Trolley skates have turntables
- Skates can be joined together to increase capacity
- Nylon or PU rollers with ball bearings

Product Range:

- WLL 2000kg to 20000kg
- The load can be pulled and steered by the drawbar
- The floor must be completely smooth and flat in order to move the loads.

top

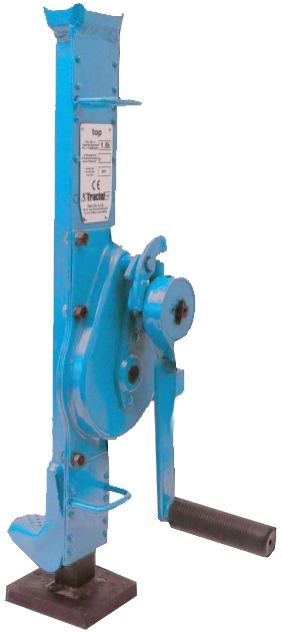
Mechanical toe jacks

Key differentiators:

- Robust steel construction
- *Vertical and horizontal operation*
- Load capacity *100%* on the head or toe
- Crank with folding handle
- Back and forth action on the handle

Product Range:

- WLL 1500kg to 10000kg



hydrofor™ L

Hydraulic toe jacks

Key differentiators:

- Heavy duty operations from one of the lightest jacks on the market
- Vertical and horizontal functionality
- Full lifting capacity on head or toe
- Pressure limit device prevents overload for safe operation
- Screw release valve for easy and controlled lowering
- 360 degree swivel of the jack body for ease of positioning
- Handle rotates through 180 degrees

Product Range:

- WLL 5000kg to 25000kg

blocmat™ BS

Compact wire rope load arrester

Key differentiators:

- Minimum free fall height (<100 mm)
- Fall is stopped gradually
- Low weight
- Quick installation
- Wire rope length 10 m or 15 m
- Installation via flange or hole
- In the event of a fall the device will stop the fall of the load in a short distance.

Product Range:

- Capacity 250 kg

blocmat™ S-SI

Resetable wire rope load arrester

Key differentiators:

- Wire rope length 8 m or 25 m
- Ready for reuse immediately after stopping a fall
- No factory reconditioning after stopping a fall required
- Stops a fall within 100 mm
- Fall arrest device can be reset by simple action of the lever

Product Range:

- WLL 500 kg, 800 kg and 1000 kg
- blocmat™ S is mounted on a soffit
- blocmat™ SI is a wall mounted model
- blocmat™ SIP and M are specially designed for show business applications

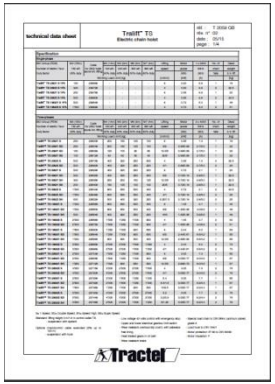
blocmat™ application

Application in industry

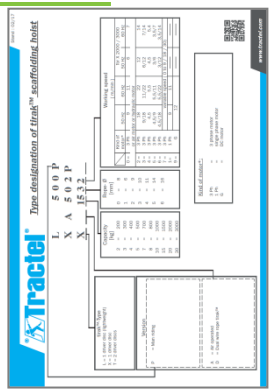
Application in sport halls

Sales support tools

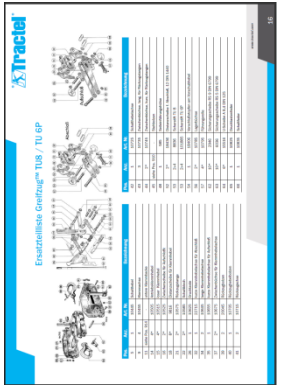
Operating Manuals for all mentioned products



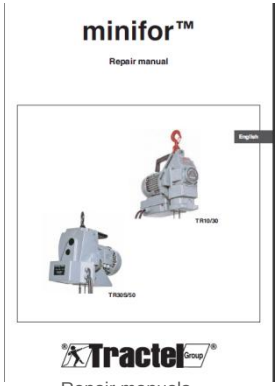
Technical data sheets for all mentioned products



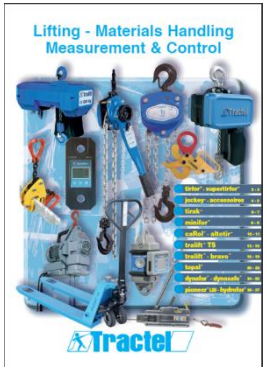
tirak™ codification overview



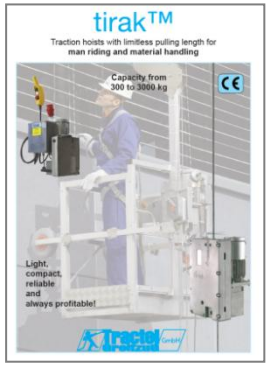
Spare part lists for selected products



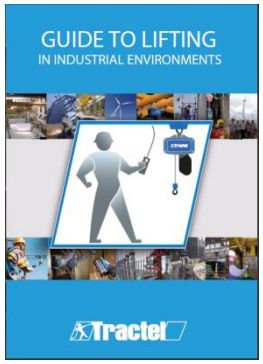
Repair manuals selected products



L&H catalogue – new version in progress

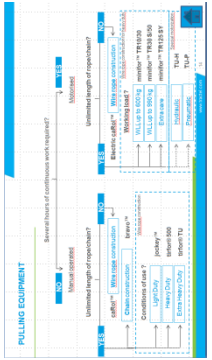


tirak™ brochure

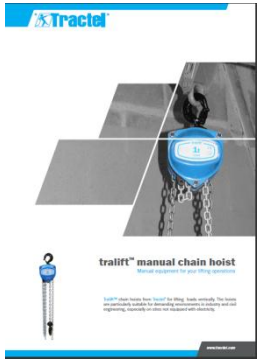


LAMI brochure - new version on progress

Global group presentation



L&H selection guide



tralift™ new design flyer

bravo™ desync flyer