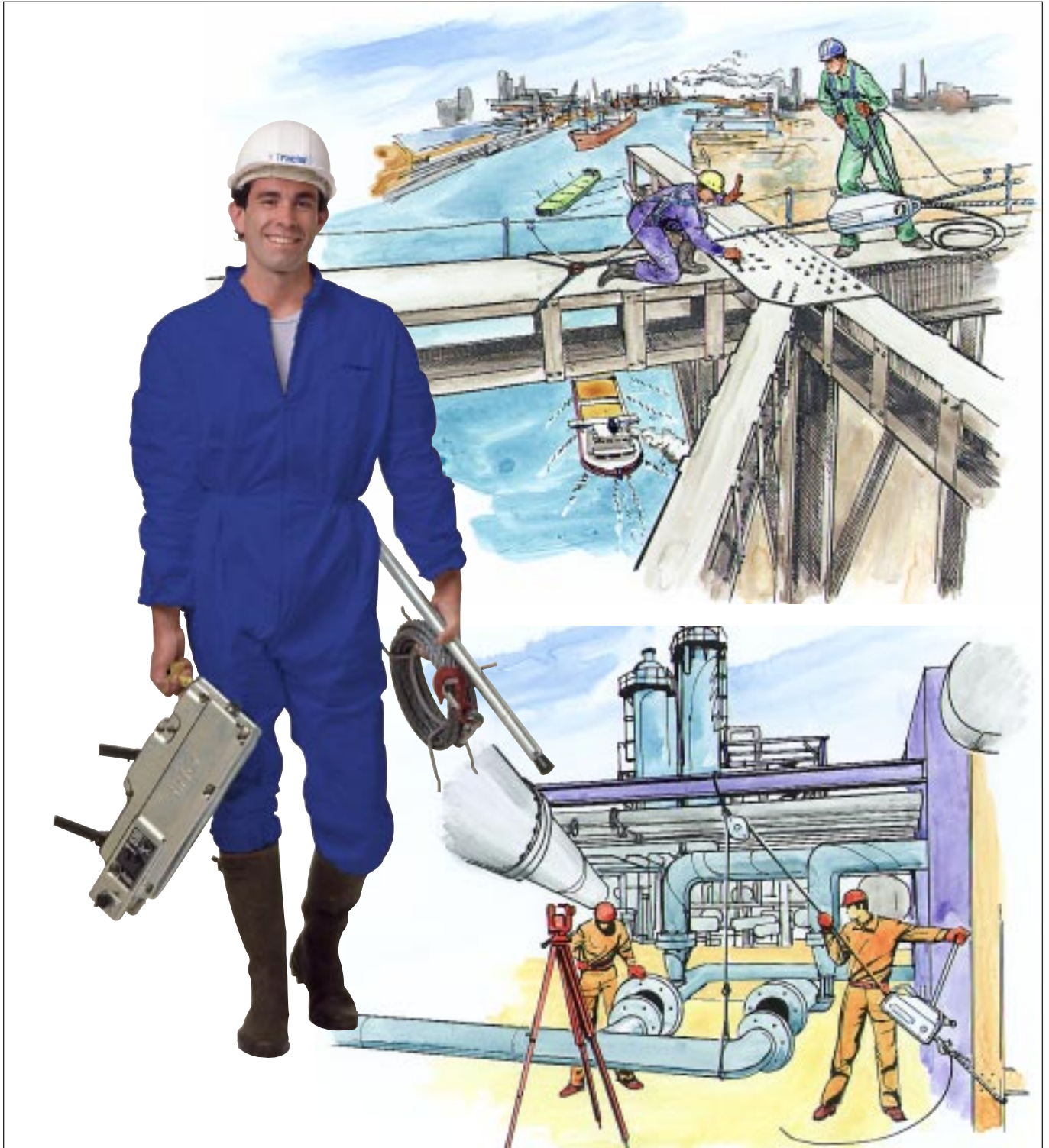


# tirfor®

lifting and pulling machines  
with unlimited wire rope



 **Tractel** Group

# TIRFOR. . . lift, pull, lower and position



Fig. 1 - TIRFOR TU standard range

**POWERFUL:** TIRFOR TU machines are in daily operation on construction sites around the world putting power where it is needed for lifting, pulling and handling a wide variety of loads. Only the TU models are approved for man-riding. (Please refer to your local safety regulations).

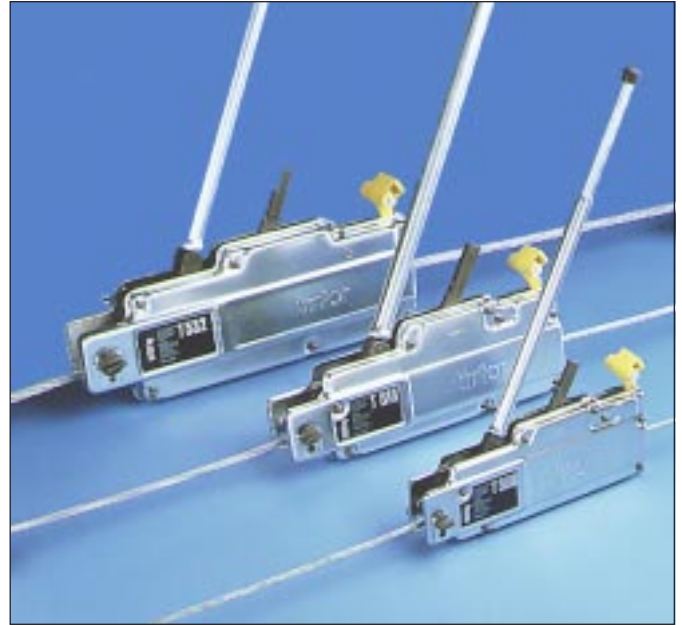


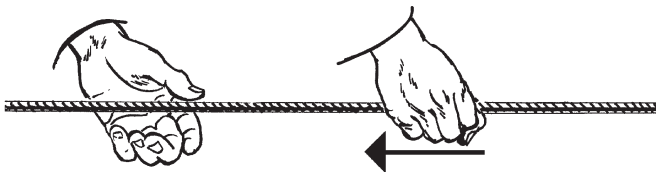
Fig. 2 - TIRFOR T-500 light duty range

**CHOICE:** Smaller and lighter, the TIRFOR T-500 machines are even easier to handle, whilst still giving a high mechanical advantage and complete operating safety.

The TU and T-500 ranges of versatile TIRFOR lifting and pulling machines are safe, reliable and efficient. Suitable for many applications, TIRFOR machines are lever operated hoists using a separate wire rope. One-man operated, using a telescopic operating handle, they can work in any position and over any height of lift. They can replace conventional winches and other hoists for many applications.

## The TIRFOR principle

The principle may be described as "hand-to-hand", like a sailor pulling on a rope. While one hand pulls the other changes position to pull in turn. The two hands represent the 2 jaws of the TIRFOR. They grip the wire rope without damaging it, and alternately pull it during forward operation and hold it during reverse operation. The effort is transferred to the jaws by two levers: one for forward operation and the other for reverse operation. The load is held securely at all times.



## TIRFOR wire rope

The wire rope for the TIRFOR machine is not a standard production rope; it has been developed specially to suit the TIRFOR machine. TIRFOR wire ropes are supplied on a reeler for ease of transport and storage.

Fig. 3 - Standard 20 m wire rope on reeler



# in complete safety. . .

## the main advantages of the TIRFOR

### multiple operation

- works in any position  
horizontal, vertical or angled
- unlimited length of wire rope
- increase the nominal capacity with multiple sheave blocks

### simple

- fast and easy installation
- simple to feed in  
or remove the wire rope
- continuous operation without snatching
- reduced maintenance by simple  
cleaning and regular lubrication
- changeover from forward to reverse  
operation by transferring the operating  
handle from one lever to another

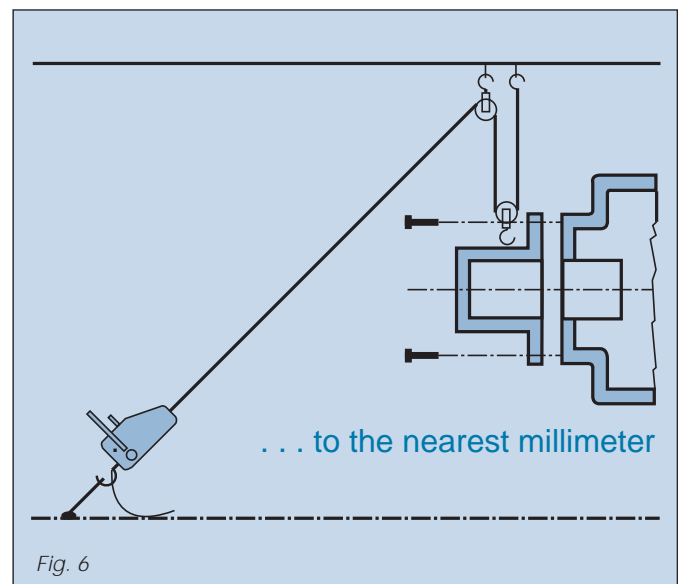
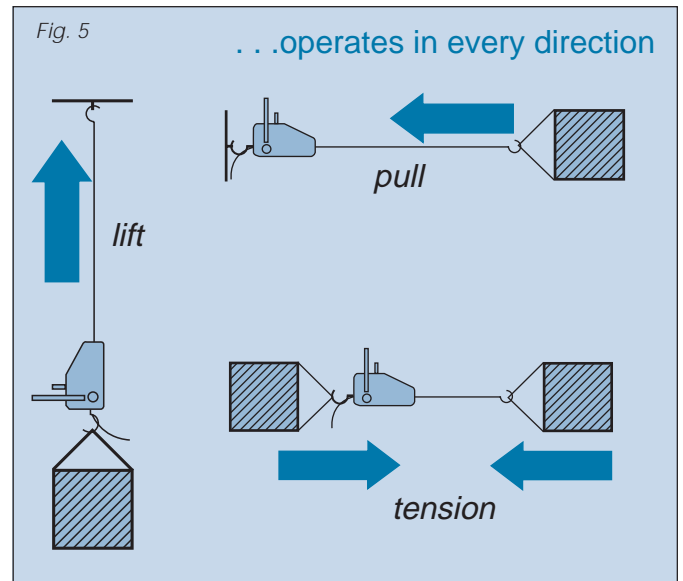
### robust

- high mechanical advantage
- both ranges will operate in the most  
difficult conditions

### safe and reliable

- whether lifting or lowering, the load is  
permanently controlled with the utmost  
precision; when operation stops,  
the load is spread between the two  
jaw blocks
- safety device to prevent overloading
- TU range approved for man-riding  
applications

## the original TIRFOR. . . even better than ever



# The TIRFOR, the right tool for the job. Here is a selection of the many applications.



## Construction, public works, civil engineering

- moving and positioning formwork horizontally or vertically (Fig. 9)
- positioning sections of precast concrete beams
- lifting work platforms or suspended working platforms
- dragging, general lifting, guying, tensioning, etc. . .

## Pipelaying and jointing

- positioning of pipes for welding and jointing
- laying concrete pipes and pulling them together
- underwater pipeline assembly

## Bridges

- positioning formwork (Fig. 16)
- guying (Fig. 8)
- pulling pre-cast concrete beams
- suspending inspection and maintenance platforms

## Steel structures

- plumbing or aligning steel structures (Fig. 7)
- erecting steel silos

## Industry

- installation and removal of machine tools and presses (Fig. 10)
- loading and unloading of heavy equipment
- lifting and pulling during maintenance operations

## Escalators, elevators

- loading, unloading and rigging of prefabricated escalators (Fig. 27)
- lifting and positioning the cabins and drawing mechanisms

## Electricity and telecommunications

- positioning transformers (Fig. 15)
- erection of mobile aerials and antennas (Fig. 25)
- tensioning underground and overhead cables
- guying operations

. . . and wherever there is a need  
for lifting, or pulling heavy loads



Fi.



Fig.



Fig. 11

# The TIRFOR, the right tool for the job. Here is a selection of the many applications.

## **Oil and chemical industries**

- controlled positioning and assembly of pipes and ducting (See front cover)
- guying silos and tanks during construction
- inspection and maintenance work

## **Mines and quarries**

- handling and positioning equipment and underground machinery
- tensioning conveyors

## **Shipbuilding and marine engineering**

- centering ships in dry dock (Fig. 13)
- anchoring barges and pushers

## **Rail and road transport**

- lifting and removal of pylons and signals (Fig. 11)
- maintenance and tensioning of catenaries
- load binding heavy and difficult loads
- loading and unloading
- de-bogging equipment

## **Armed forces**

- many applications in the different sections of the Armed Forces (Engineering, Air Force, Artillery, Navy and Marines, signals and transportation)

## **Fire services and civil defence**

- removing crash wreckage (Fig. 14)
- handling and siting of emergency bridges

## **Agriculture**

- controlling the direction of fall of a tree (Fig. 12)
- clearing trees and fences
- debogging lorries, tractors and all mobile equipment
- tensioning fences



Fig. 13



Fig. 14

... and wherever there is a need  
for lifting, or pulling heavy loads



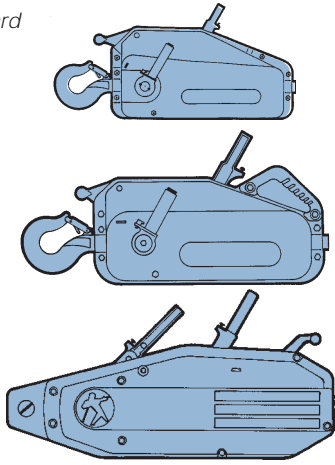
Fig. 12



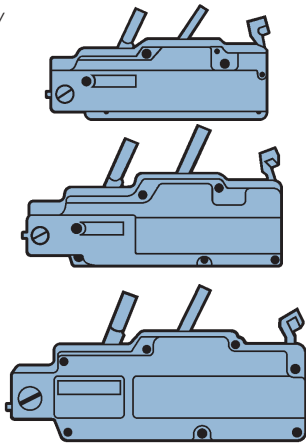
Fig. 15

# Technical specification

standard range



light-duty range



model	nominal capacity daN/kg	weight (kg)		dimensions (mm)		special TIRFOR w. r.	
		machine	w. r. 20 m	machine	handle ext./closed	dia. mm	break. strain kg
TU-8	800	8.4	7	528 x 284 x 113	730 450	8.3	4800
TU-16	1600	20	12.5	660 x 360 x 145	1147 648	11.5	9600
TU-32	3200	27	26	685 x 365 x 156	1147 648	16.3	19200
T-508	800	6.6	7	420 x 250 x 99	690 405	8.3	4800
T-516	1600	13.5	12.5	530 x 315 x 127	1147 648	11.5	9600
T-532	3200	24	26	631 x 357 x 148	1147 648	16.3	19200

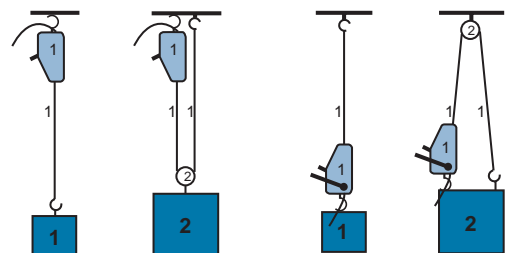
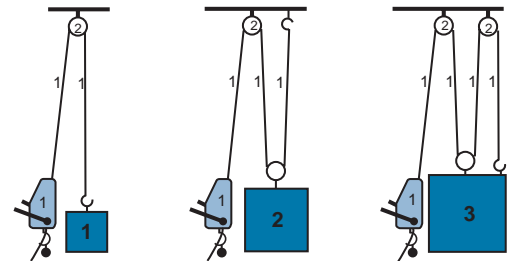
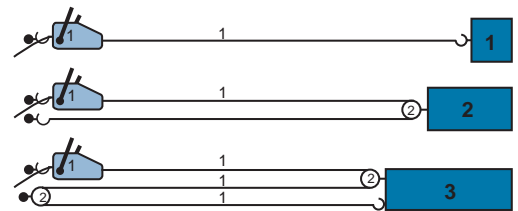
## Increase the capacity of the TIRFOR

The lifting and pulling power of TIRFOR machines can be greatly increased by the use of multiple sheave blocks. These can increase the nominal capacity of the TIRFOR machine by 2, 3 or 4 times or more (see diagram opposite). For most applications, an allowance must be made for friction in the sheaves. Ensure that the capacity of the blocks and fittings and anchor points are suitable for the load. When using the TIRFOR for pulling purposes it should be remembered that the necessary pulling effort is not equal to the weight of the load to be moved.

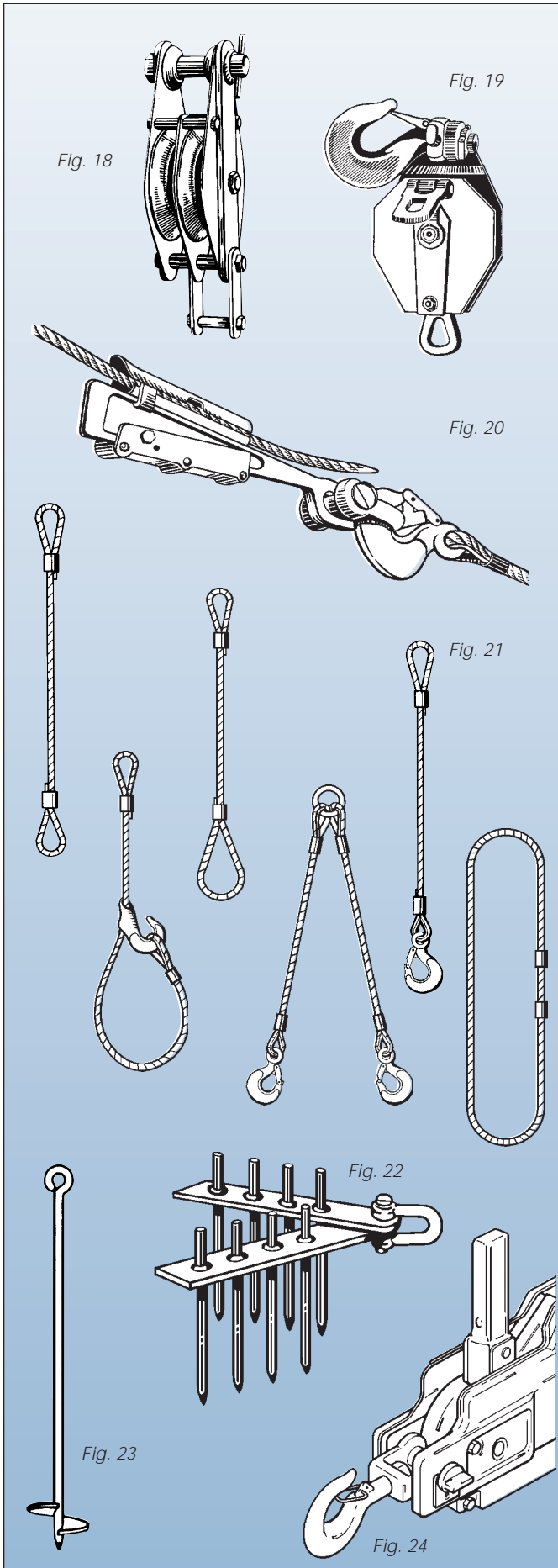


Fig. 16

Fig. 17



# Accessories



To make the best use of the TIRFOR machine, choose from the range of specially developed accessories.

## Sheave blocks

to increase the capacity of TIRFOR machines in complete safety as described on the previous page.

The following standard blocks are available:

- single side opening snatch block (Fig. 19)
- single snatch block, non-opening
- double blocks (Fig. 18)
- lightweight opening blocks

## CONI-KLAM, wire rope gripper (Fig. 20)

to quickly lengthen a wire rope or sling. The wire rope is held by a pair of serrated jaws, operated by a self-gripping wedge

type	max. load (kg)	suitable for wire rope dia. (mm)
EC 10	1000	5 - 10
EC 14	2000	10.5 - 14
EC 21	3000	15 - 21

## Slings (Fig. 21)

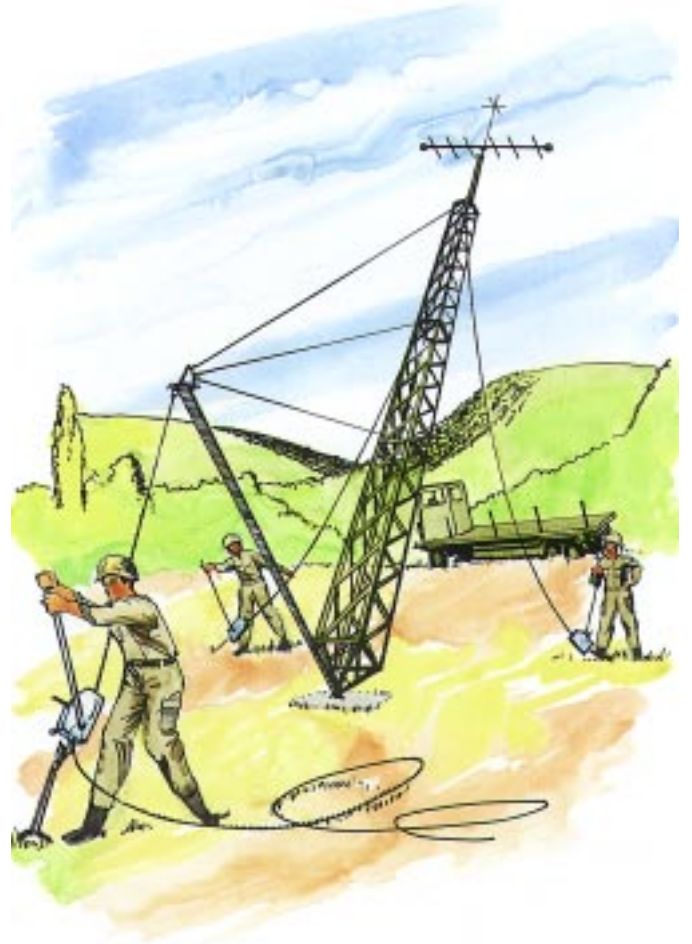
for anchoring the TIRFOR or the load.

Manufactured in steel wire rope. The diagram shows the standard types, which are available in the length required.

Any other type on request.

## Ground anchor with spikes (Fig. 22)

to provide a fixed anchor point in the ground



# Powered TIRFOR. . . a winning hand!

The powered models of the TIRFOR machines complement the manual units for heavy loads, such as operating large work platforms, lifting shuttering, moving machinery, etc. . .

Depending on the application, the working conditions and the power available, powered operation can be electro-hydraulic or pneumatic.

- saves time and labour
- no operator fatigue
- continuous operation
- increased safety

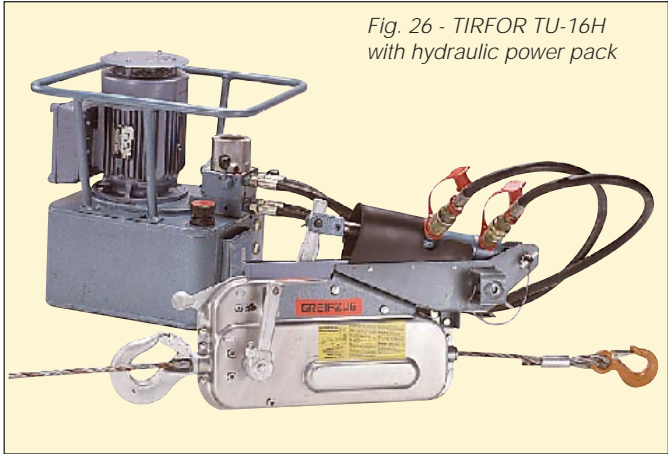


Fig. 26 - TIRFOR TU-16H with hydraulic power pack

### Hydraulic TIRFOR

The TIRFOR hydraulic system includes a hydraulic power pack which allows remote operation (individually or simultaneously) of one, two or four machines: TIRFOR TU-16H (1600 kg) or TU-32H (3200 kg), each fitted with a self reciprocating hydraulic ram.

### Pneumatic TIRFOR

This machine (model TU-32P) is particularly suitable for operating on construction sites and in industries where there is a danger of explosions or in industries already provided with compressed air facilities.

*For additional information, please ask for descriptive documentation on motorised TIRFOR.*



Fig. 27 - Installation of mechanical escalator (TU-16H)

### TIRAK the fast powered winch

As with the TIRFOR machine, the TIRAK also operates on a wire rope which passes through the mechanism. The originality and dependability of its wire rope drive mechanism make it a powered mobile winch which can replace conventional winches in a large number of applications.

Mounted in a frame with its wire rope reeler, the TIRAK assembly is very compact and easily moved from site to site.

The TIRAK has been approved as a man-riding hoist by safety organisations in the majority of industrialised countries.

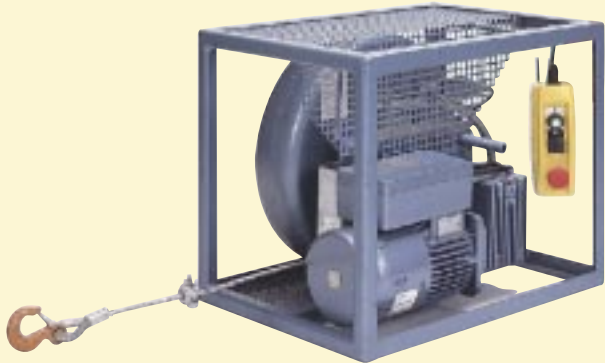


Fig. 28 - TIRAK mobile winch with wire rope reeler mounted in a compact frame.

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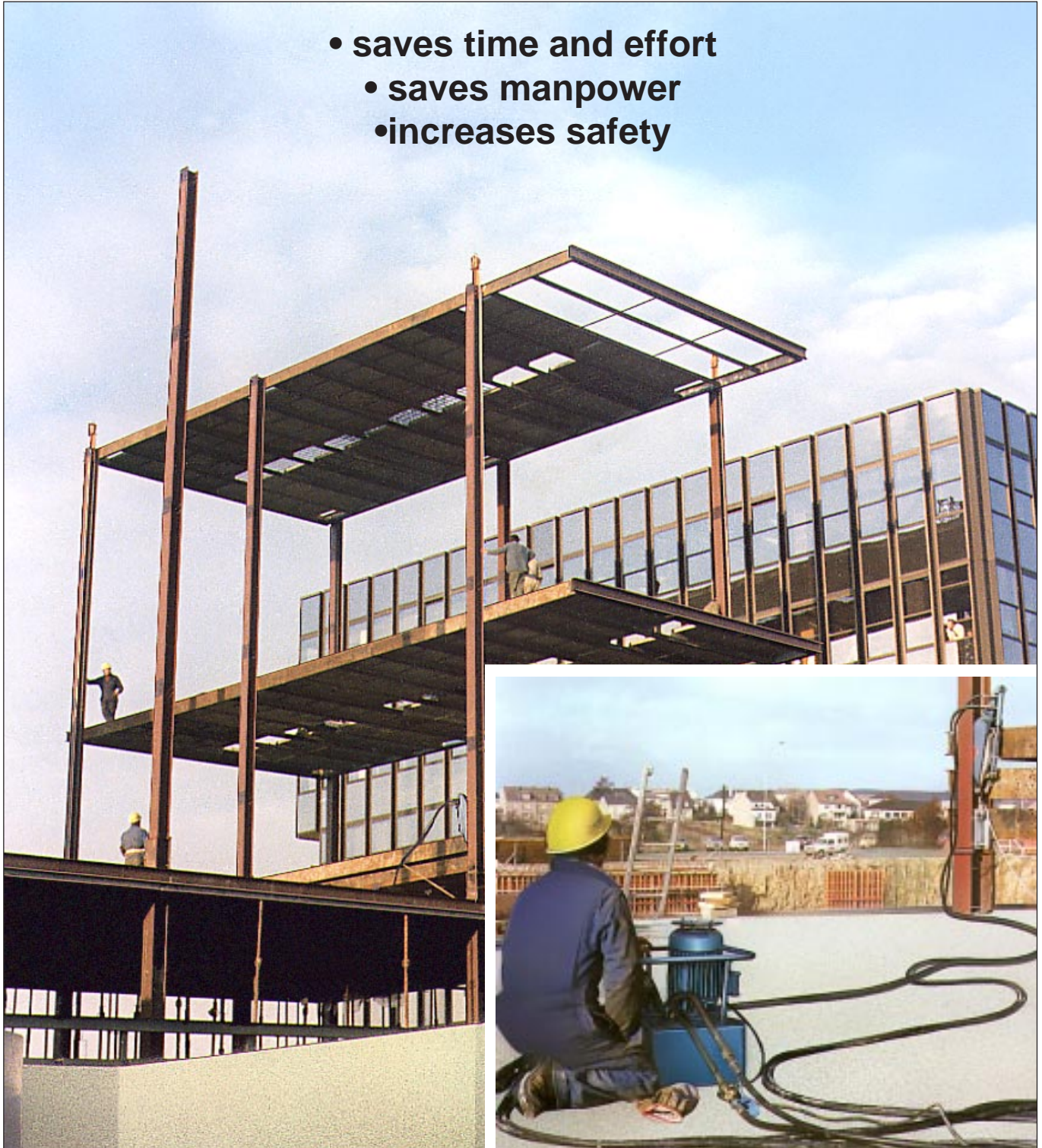
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# motorised tirfor®

power-operated machines for lifting and pulling

- saves time and effort
- saves manpower
- increases safety



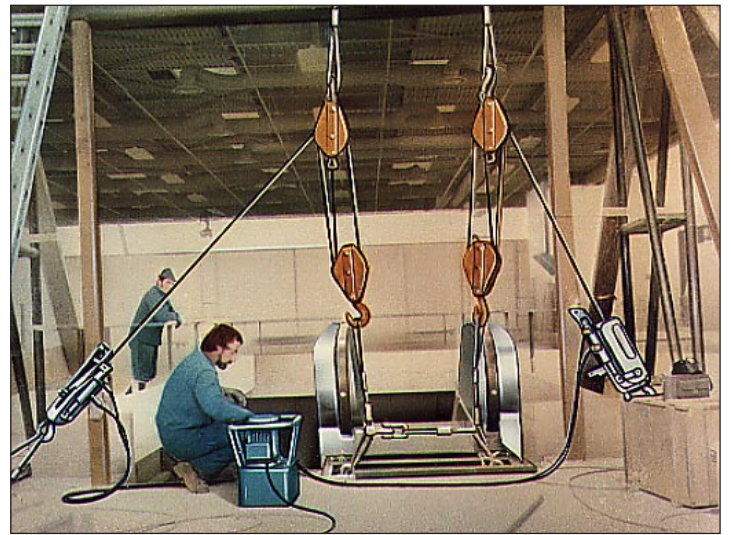
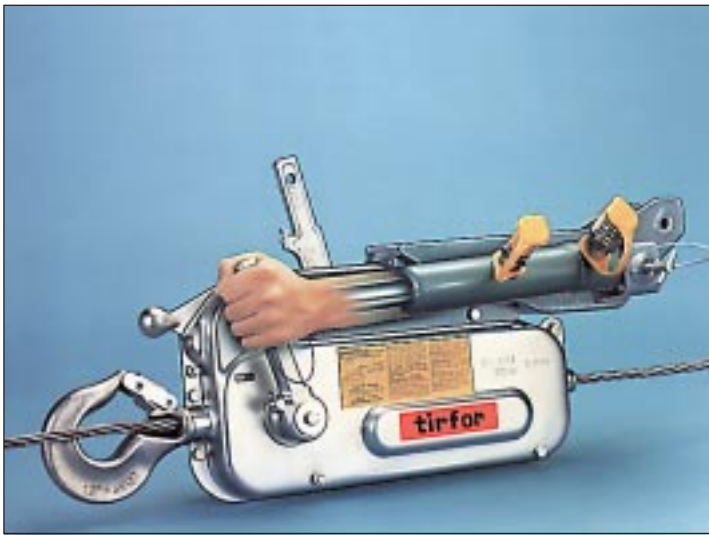


Fig. 3 - Installation of a mechanical escalator (TU-16H). The nominal capacity is increased by using multiple sheave blocks.

**Power-operated TIRFOR machines are based on the manual TIRFOR but with specially strengthened levers, cranks, spindles and jaw blocks, as well as a special power-operated self-reciprocating ram, which works the TIRFOR machine (pulling, lifting, lowering etc) without any effort by the operator.**

**Depending on the application, the working conditions and the power available, power operation can be hydraulic or pneumatic.**

**As a result of its increased specification, the power-operated TIRFOR machine is recognised by many companies as an essential tool for certain modern construction techniques (climbing shuttering, work platforms) and for installation work (lifts and goods hoists, mechanical escalators, etc).**

Fig. 2- Operation of self climbing shuttering, PERI system (TU-32H).



As with hand operated T I R F O R machines, the power-operated models have all the same benefits:

- unlimited length wire rope
- operate in any position
- fast and easy installation
- high level of safety and reliable operation

**... to these can be added the specific advantages of power operation:**

- no operator fatigue
- fewer operators required since one man can control several machines
- saves time, because work is continuous
- increased safety since operation can be controlled at a distance, and shear pins prevent overloading
- increased precision of operation through the control system

**Motorised TIRFOR machines are approved for lifting personnel in the main industrialised countries.**

Fig. 4 - Operation of suspended platforms for the inspection and maintenance of bridges (TU-32H).





Fig. 5 - Operating of heavy work platforms.

### Hydraulic TIRFOR

The TIRFOR hydraulic system includes a hydraulic power pack which allows remote operation (individually or simultaneously) of one, two or four machines: TIRFOR TU-16H (1600 kg) or TU-32H (3200 kg), each fitted with a self reciprocating hydraulic ram.

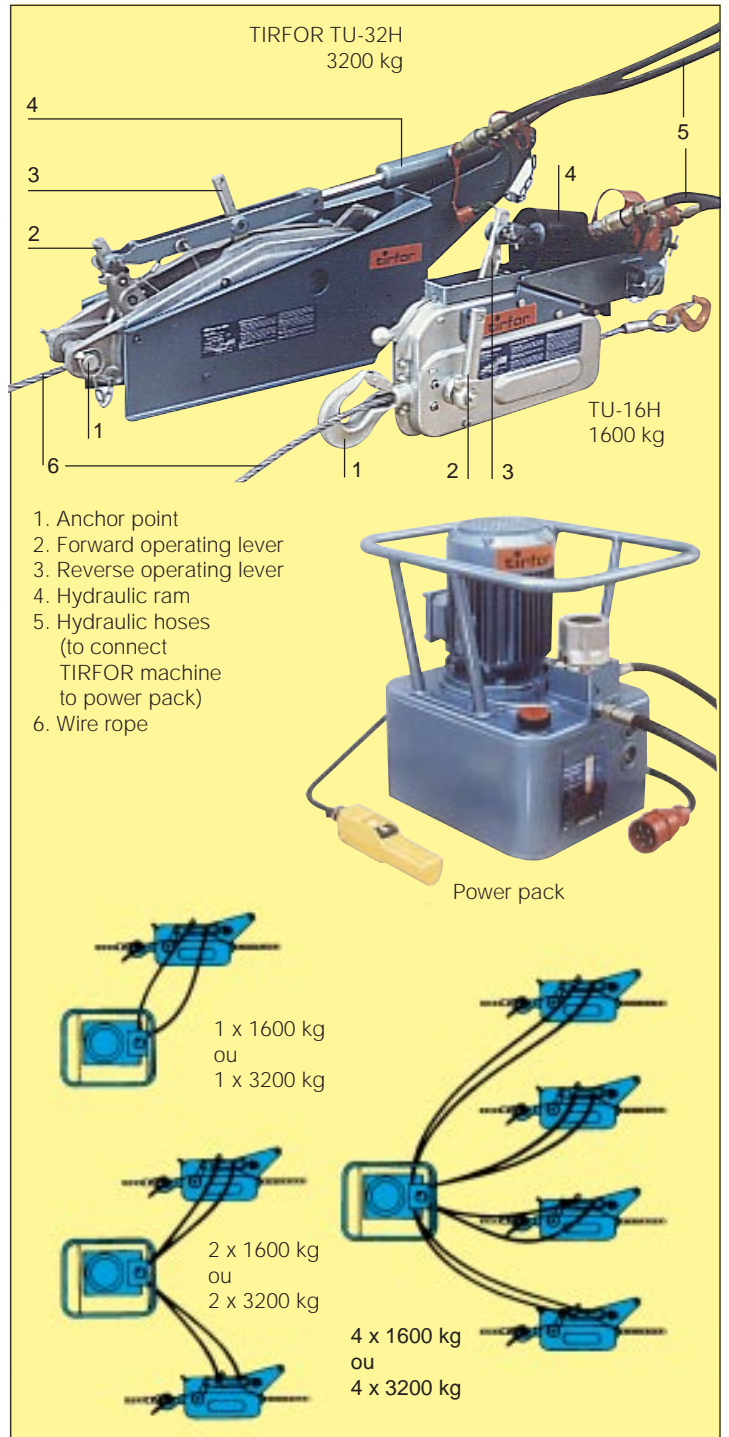
The hydraulic power pack is fitted with an electric motor or petrol engine. It is also possible to utilise the hydraulic power take-off from a lorry, tractor or other existing power source. The speed of operation is controlled using a variable flow control valve. Of course, it is always possible to operate the TIRFOR machine by hand using the telescopic operating lever, eg. in case of a power failure.

		TU-16H	TU-32H
Nominal capacity (increase of power by multiple sheave blocks)	kg	1600	3200
Max. speed forward operating (lifting)	m/mn	2	0.7
Max. speed rev. operating (lowering)	m/mn	2.65	1.60
WEIGHT: TIRFOR machine with ram	kg	29	52
hydr. power pack (with oil), elec. mot.	kg		53
as above, but with petrol engine	kg		51
TIRFOR wire rope, diameter	mm	11,5	16,3
standard lenght	m	20	20
(other lenghts available on request)			

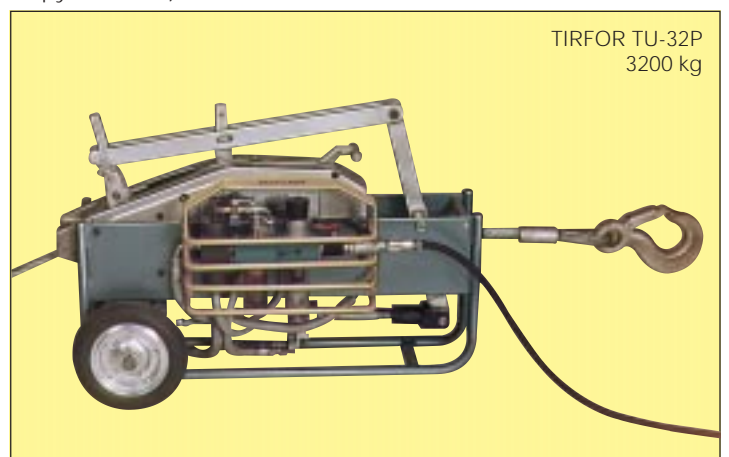
### Pneumatic TIRFOR

The pneumatic TIRFOR machine (model TU-32P) is operated by a self reciprocating pneumatic ram, supplied by compressed air. The TU-32P is particularly suitable for operating on construction

		TU -32P
Nominal capacity (increase of power by multiple sheave blocks)	kg	3200
Speed in forward operation (lifting)	m/mn	0,60 - 0,94
Max. speed rev. operation (lowering)	m/mn	1,80
Operating pressure	bar	4 - 7,5
Flow	l/mn	500- 700
Weight (overall)	kg	88
TIRFOR wire rope diameter	mm	16,3
standard lenght	m	20
(other lenghts available on request)		



sites and industries where there is a danger of explosions eg. oil refineries, chemical industries etc. or in industries which are already provided with compressed air facilities (power stations, shipyards, etc.).





**Power-operated TIRFOR machines  
... for moving heavy loads**

7. Operation of self climbing shuttering (the Biemont system).
8. Lifting and installation of pre-assembled roofing structure at ground level.
9. 72 m suspended platforms fitted with 16 TIRFOR TU-1 6H machines.
10. Pre-stressed platform (Freyssinet system), fitted with TU-32H machines.
11. Demolition work. The pulling effort is checked by means of DYNAFOR load indicating devices.
12. Moving heavy machinery.
13. Moving grandstand seating in an indoor arena.
14. Fitting and removal of a sluice gate.
15. Pulling prefabricated sections of a bridge into position.
16. Assembling drainage pipes. Air operated TIRFOR machine TU-32P.
17. TU-32H machine as an emergency pulling unit on a fire engine.
18. Lifting an inflatable cover over the Nimes amphitheatre with 32 TU-32H machines.



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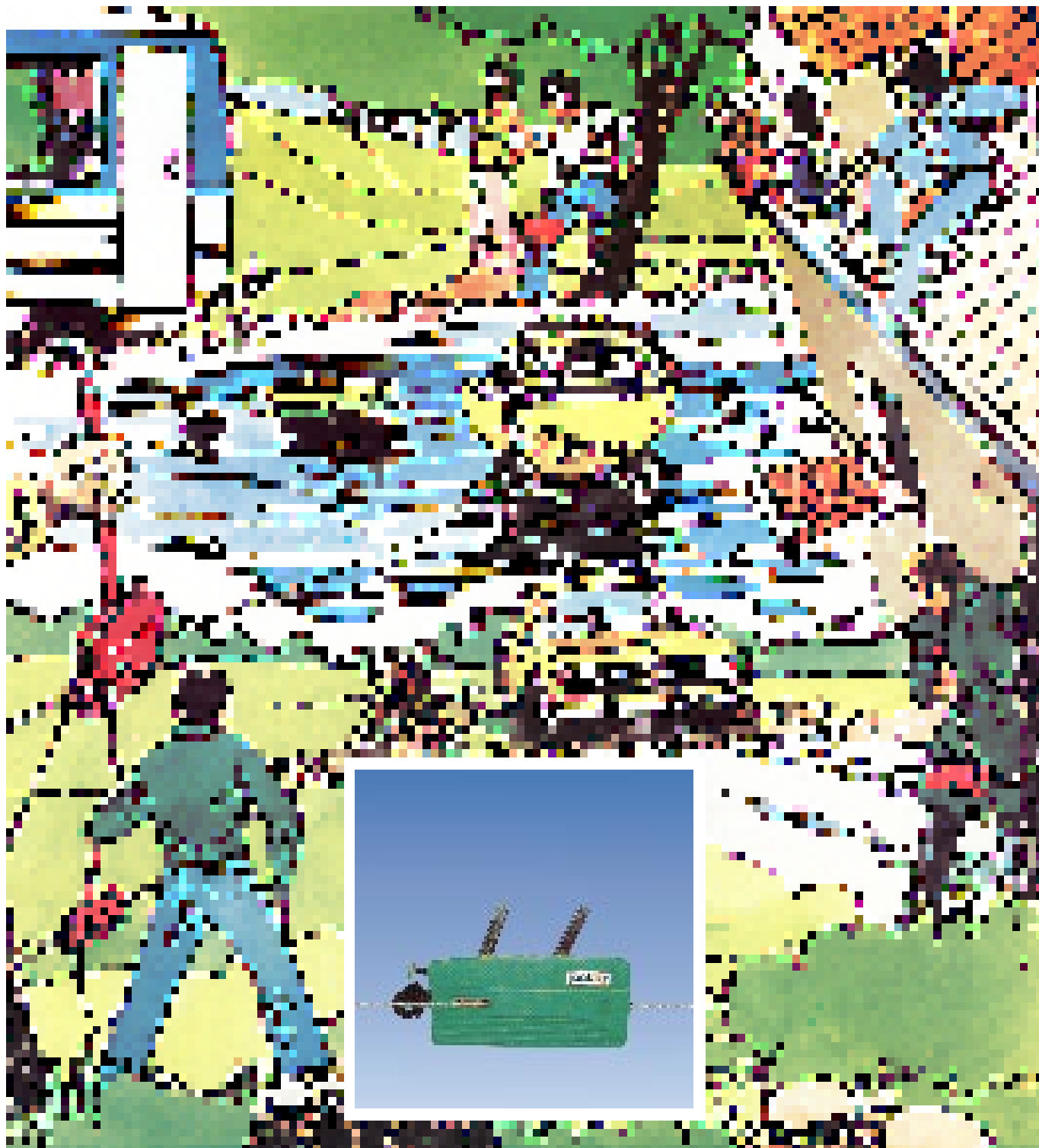
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# jockey®

winch-hoist with unlimited wire rope



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# jockey®

## capacity: 300 kg

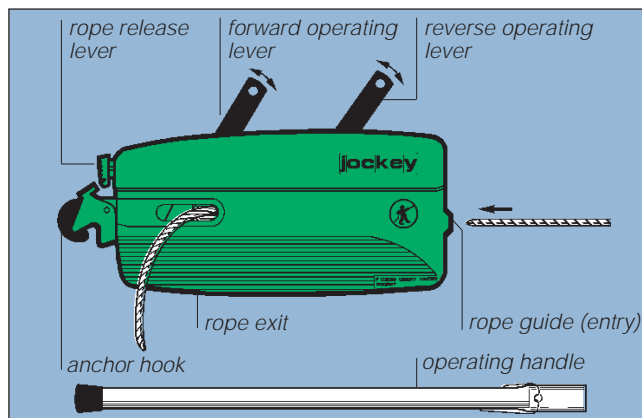
The JOCKEY is an all-purpose lifting and pulling machine.

A safe and robust unit, it is easy to use and maintain and will help on many occasions to perform your pulling, lifting and positioning operations, eq.:

- freeing cars when bogged down in mud, snow or a swamp
- removing and refitting a car engine
- positioning trailers or caravans in places impracticable for a car
- launching or beaching boats and small craft
- emergency assistance in mountains
- tensioning wire fencing
- uprooting small trees and roots of small fruit trees
- moving equipment and machines
- positioning light construction sections, etc.

### Avantages

Light and compact the JOCKEY can operate in any direction with an unlimited length of wire rope. Used for lifting either as a winch or hoist the JOCKEY is in permanent control of the load both when raising and lowering, with absolute accuracy. When the equipment is not in use, the wire rope can be removed and coiled separately, making handling easier. Fitting the wire rope and anchoring the JOCKEY by its hook are completed in a few minutes. The JOCKEY is a tool with a high mechanical efficiency, which has been designed to withstand the severest conditions of use and only requires periodic lubrication for maintenance.



### Principle of the JOCKEY

The principle of the JOCKEY is simple. The wire rope passes through the unit without reeling. It is moved by two jaws which grip and haul it without damaging it. The jaws are self-gripping: **the heavier the load, the greater the grip.** Each jaw is capable of holding the full load. Moving the operating handle to and fro operates the jaws alternately on the rope. With one jaw open, the other grips the rope, ensuring complete operating safety. As soon as the operating handle stops, both jaws grip the rope and the effort from load is divided automatically between the two jaws. The load is held perfectly safely. The change from forward to reverse operation is immediate by simply transferring the operating handle from one lever to the other.

### Technical data

Nominal capacity	kg	400
Weight	kg	1.75
Dimensions	mm	320x200x40
Effort on lever at rated capacity	±kg	13
Diameter of wire rope	mm	4.5
Length of standard wire rope	m	10
(other lengths on request)		

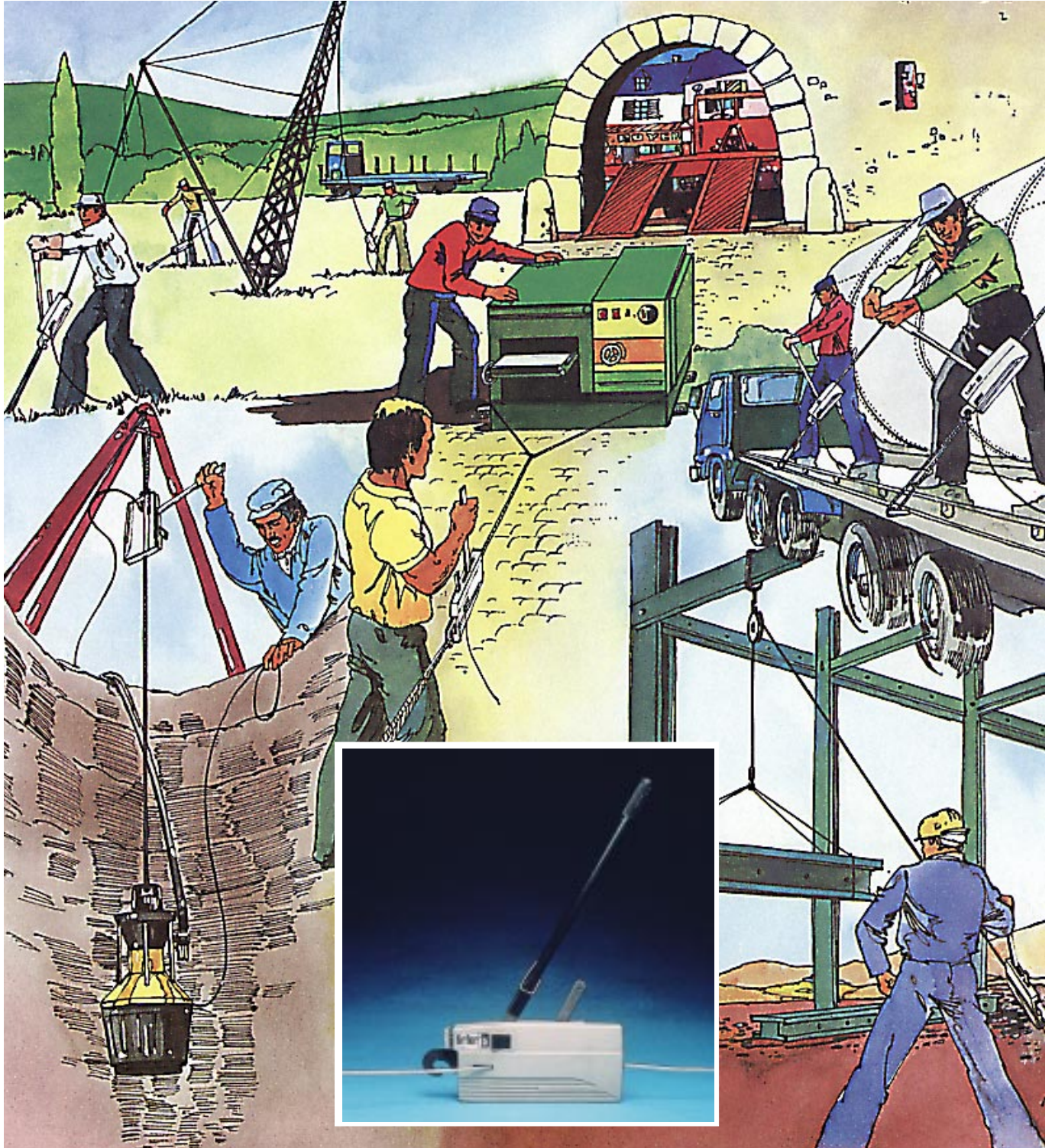


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# Jockey® j5

unlimited lifting and pulling



# jockey® j5

**Lifting : 500 kg**

**A safe and robust machine, easy to use and maintain to help you with your pulling, lifting and positioning problems.**

Designed for use by professional, industrial and private users, the JOCKEY j5 is particularly useful in the following applications:

**Prefabricated structures** : installation of columns, lifting of beams, assembly and adjustment of frames and prefabricated structures, etc.

**Steelwork, boilerwork** : lifting, erection, assembly and adjustment of pipes, etc.

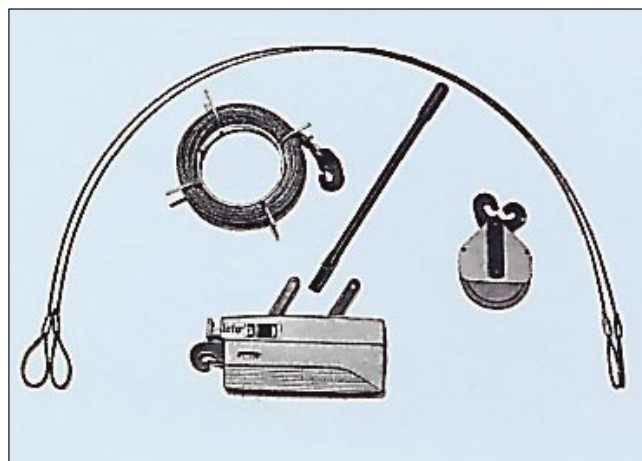
**Transport** : loading and unloading of machines, furniture, etc., load binding of bulky freight.

**Factories and workshops** : handling and servicing of machines, etc.

**Vehicles** : debogging cars, lifting and installing of engines as part of the vehicle's repair kit, etc.

**Agriculture and forestry** : loading timber, shrub clearance, tightening fences, pulling out stumps, etc.

**Leisure activities** : launching or beaching small craft, mountaineering or mountain rescue, positioning on debogging caravans, as rally car equipment, etc.



## Principle of the JOCKEY J5

The jockey J5 is an all-purpose lifting and pulling machine. Its principle is simple. The wire rope is pulled straight through the mechanism, using two jaw-blocks which lock onto the wire rope and pull it but without damaging it.

The jaw-blocks are self-clamping: the heavier the load, the firmer the grip.

Moving the operating lever closes the jaw-blocks alternately on the rope. Each jaw-block is designed to take the whole load and the opening of one closes the other, ensuring complete operating safety.

As soon as the lever is stopped the force due to the load is divided automatically between the two blocks and the load is held perfectly safe.

Change-over from forward to reverse movement is done instantaneously by simply transferring the operating handle from one lever to the other.

## Advantages :

Light and compact, the JOCKEY J5 can operate in any direction with an unlimited length of rope.

It can thus operate over any distance, and the rated capacity of the unit can be increased with the use of pulley blocks.

Used for lifting either as a winch or hoist the JOCKEY J5 continuously holds the load both when lifting or lowering, with complete accuracy.

When the equipment is not being used, the rope can be removed and coiled separately, to facilitate handling and use. Setting up for operation is completed in only a few minutes.

The JOCKEY J5 is a tool of high mechanical efficiency, which withstands the severest conditions of use and only requires periodic lubrication for maintenance.

Under normal conditions of use the JOCKEY J5 is guaranteed for 1 year against any manufacturing fault and each machine is individually tested in the works before despatch.

The jockey J5 is one unit in the Tirfor range: other capacities are available up to 3 tons for direct lifting and 5 tons pulling.

## Information available on request.

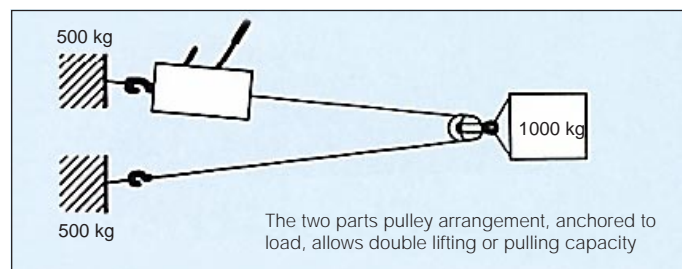
Always concerned to improve the quality of its products, the manufacturer reserves the right to modify the specifications without prior notice

Specifications	
Rated lifting capacity	500kg(DAN)
Pulling capacity	800 kg (DAN)
Weight of unit	3.750 kg
Overall dimensions	370 x 215 x 55
Length of handle (at rated load of 500 kg)	20 kg (DAN)
Cable travel per complete stroke (to and fro) of the lever	25 mm
Diameter of the "special TIRFOR" rope	6.5 mm
Rope breaking load	3100 kg

Overload protection by breaking of shear pin.

Jockey j5 is offered in two kinds:

- with a 10 m rope, two anchoring slings (2 m + 2 m)
- with a 20 m rope, two anchoring slings (2 m + 2 m) and a pulley-block to double the unit's capacity (J5 M).



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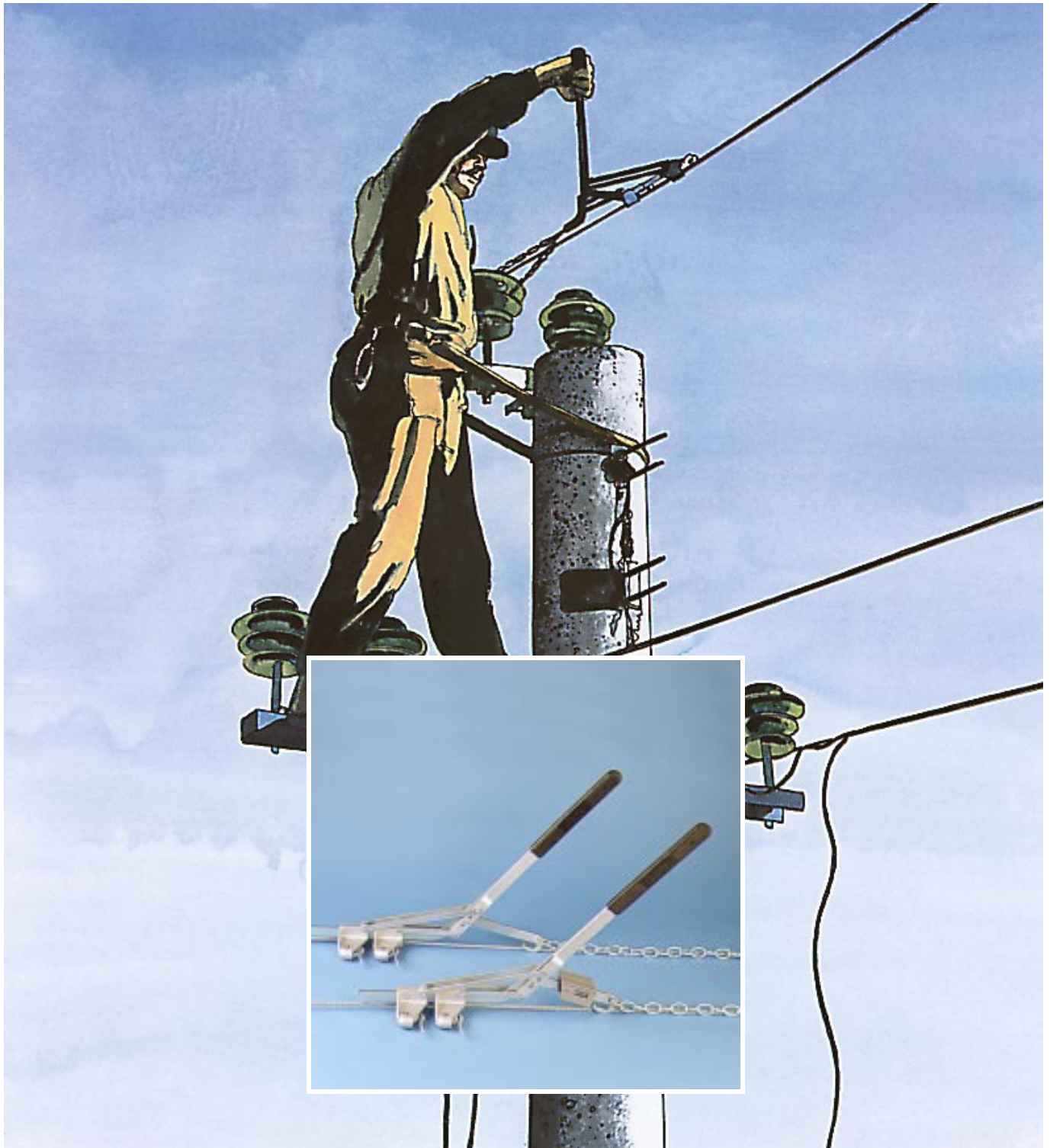


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# tirvit<sup>®</sup>

cable and wire rope tensioning device



 **Tractel** Group

# tirvit®

**cable and wire rope  
tensioning device**

**3 models:**

**F2 : 400 daN**

**F3 : 600 daN**

**F4 : 800 daN**

**Option:**

**F3D: 600 daN**

Model with integrated  
load indicator.

**Lightweight, handy and  
compact, the TIRVIT  
tensioning device  
combines simplicity and  
sturdiness.**

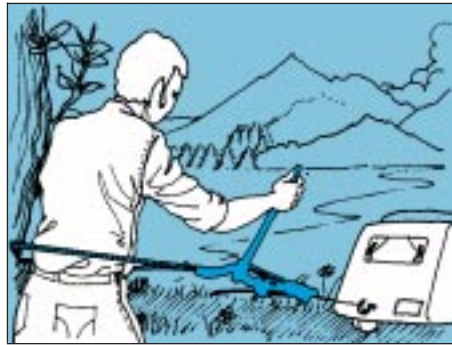
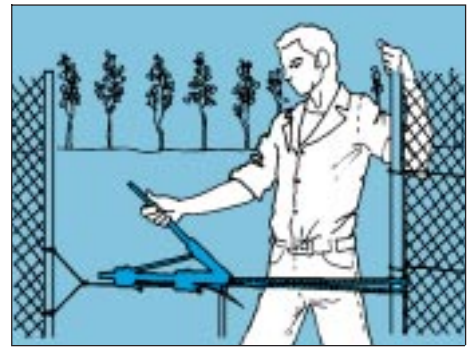
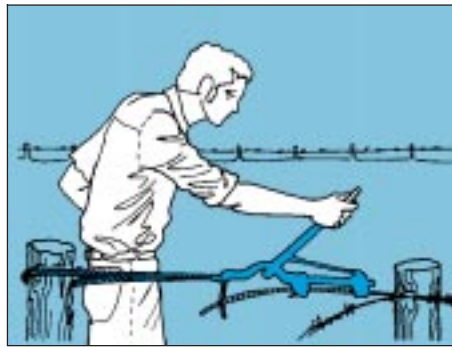
**It is immediately ready  
for operation and it is  
extremely easy to use.**

**Applications:**

**for tensioning** electric  
and telephone lines,  
fences, trellis-work, guy  
ropes and stay-wires . . .

**for pulling** caravans,  
bogged vehicles, light  
machines, loads onto  
lorries, boats onto dry  
land or onto trailers . . .

**for pulling** out stakes,  
brushwood, small trees  
and shrubs . . .



**Principle:**

The TIRVIT tensioning device  
comprises a guide frame on  
which an operating lever is  
hinged. This lever alternately  
drives two self-gripping auto-  
matic jaws which grip the cable  
or wire rope.

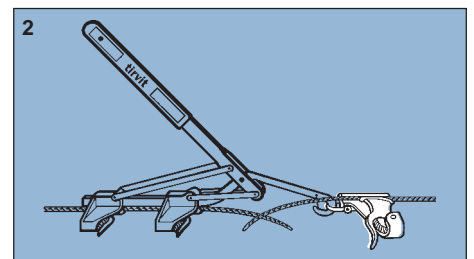
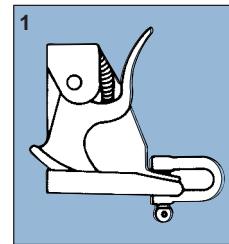
Each movement of the opera-  
ting lever moves the jaws in  
opposite directions on the  
guide frame, one pulling the  
cable whilst the other slides  
freely to grip it in turn when the  
movement of the operating  
lever is reversed.

The TIRVIT with **integrated  
load indicator** (model F3D)  
allows the operator to check  
the load in the ropes and wires,  
and to measure the pulling effort

**Accessories:**

Designed on the same principle as  
the TIRVIT, the self-gripping jaws or  
frogs (Fig. 1), grip and hold the wire  
ropes or cables of different diameters  
prior to fastening or adjustment.

Attached to the TIRVIT in place of the  
short chain (Fig. 2), they can easi-  
ly tension cables  
and wire ropes  
and connect  
them suitably  
before releasing  
the assembly.



TIRVIT with integrated load indicator

TIRVIT	model	F2	F3 F3D*	F4
Ø of cable or wire to be pulled	mm	2 - 8	7 - 15	14 - 18
To and fro travel of lever	mm	65	75	90
Pulling capacity	daN	400	600	800
Weight	kg	4	5.2	6.2
Frog	model	G 2	G 3	G 4

\*model with integrated load indicator, accuracy of ±1 %.

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# tirak<sup>®</sup>

mobile winch  
with unlimited length of wire rope

CE

*Telecom Tower,  
Kuala Lumpur/ Malaysia.  
Lifting and positioning of  
16 decorative panels  
(each weighing 4 tons)  
by motorised TIRAK  
machines.  
Lifting height 280 m.*



XI 3000  
the new TIRAK<sup>®</sup> 3000 kg

 **Tractel** Group

# TIRAK®

## for lifting and pulling with an unlimited length of wire rope

The TIRAK® is a powered winch using wire rope with unlimited length of pull or height of lift.

The design of the conveying mechanism, passing the rope through the TIRAK® without storing it, allows unlimited length. For ease of operation and storage certain TIRAK® models come with a wire rope reeler mounted within a frame.

Compared to its capacity (up to 3000 kg), the TIRAK® is very easy to handle and extremely compact, and may be simply moved from site to site.

With its reliable design, the TIRAK® is a particularly safe machine.

The TIRAK® is suitable as a hoist for building and construction sites, as a materials hoist, for operating conveyors, for opening and closing hangar doors, for moving theatrical scenery, for moving goods waggons, for pulling underground cables, ...

The TIRAK® is also well suited to many lifting and pulling applications in factories and a variety of inspection and maintenance applications.



TIRAK T-1000

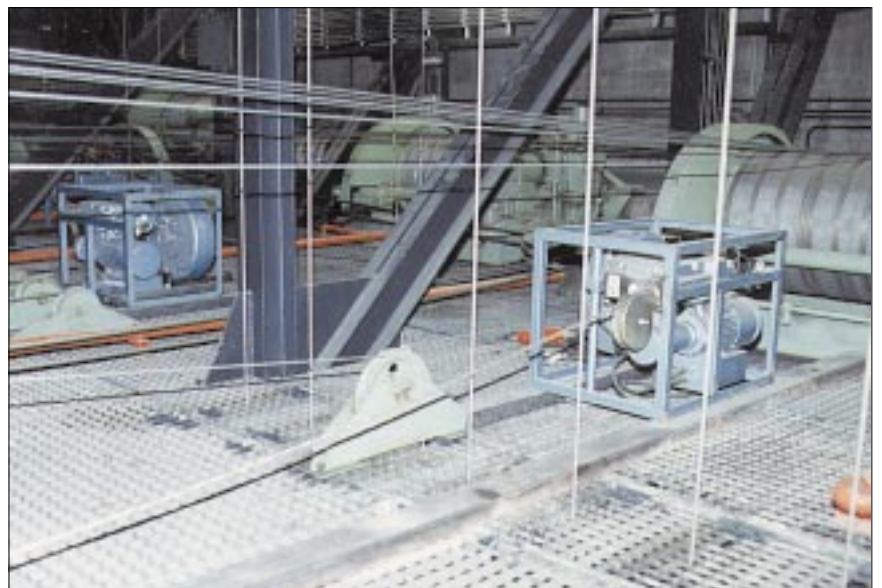


For **lifting operations**, the TIRAK® may be mounted above the load.

Another way is to anchor the winch to the ground (especially for low heights of lift). This is the most common method and the one most recommended.

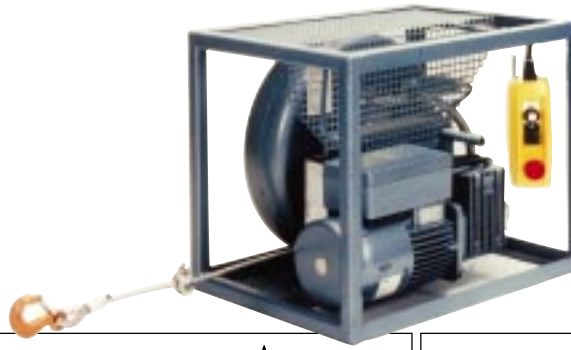
The TIRAK® may even be anchored to the load itself; in this case it climbs up the wire rope with the load.

The most usual method for **pulling** is to anchor the TIRAK® at the point to which you want to pull the load.

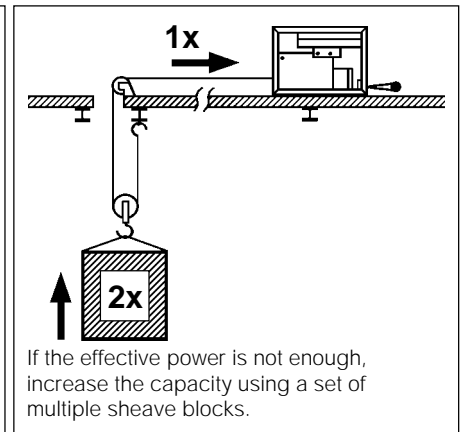
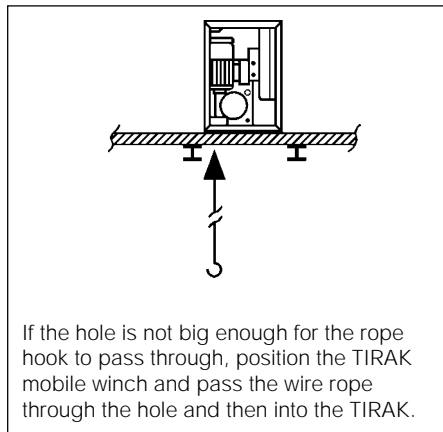
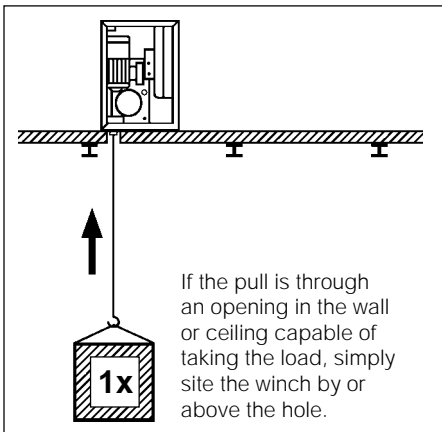
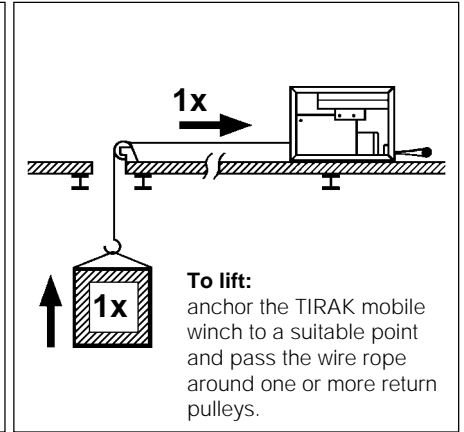
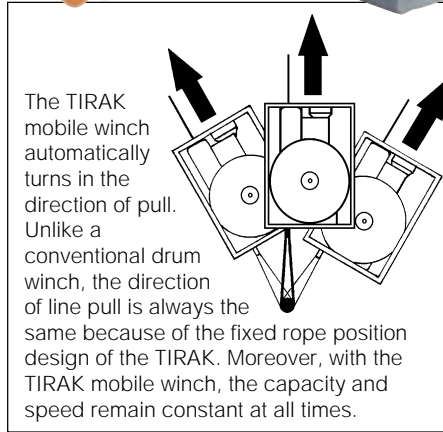
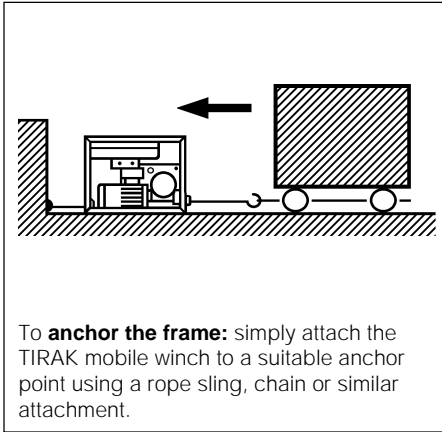


*If required it is also possible, for lifting as well as pulling applications, to increase the capacity of the TIRAK® hoist by using multiple sheave blocks.*

# the compact frame: the really practical solution



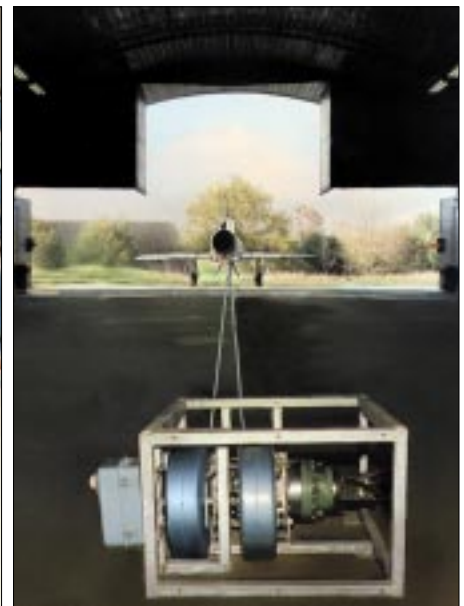
compact frame with TIRAK® X-500 and wire rope reeler for 80 m of wire rope



Unfolding a staircase used during a theatrical performance carrying about 60 people. Municipal Theatre, D-Hagen.



Compact frame with TIRAK T-1000 and wire rope reeler used for operating working platforms suspended inside the lift shafts. Thyssen-Aufzüge, D-Stuttgart-Neuhausen.



Compact frame with hydraulic TIRAK and wire rope reeler for pulling jet aircrafts into shelters.

# TIRAK® mobile winches in compact frames: technical specifications

Compact frame with  
TIRAK® X-500 and  
guided reeler for  
250 m of wire rope



	TIRAK® type	capacity	speed	motor			TIRAK wire rope	weight w/o wire rope	dimensions				
				type	capacity	amps. at 400 V			operating factor	length	width	height	
		kg*	m/mn**	—**	kW	A	%	—***	± kg	mm	mm	mm	
automatic wire rope reeler maximum length 80 m	X-300	300	9	230/400V 3-phase	0,5	1,6	100	8,3 mm Ø 0,250 kg/m	50	615	430	480	
	X-302		18		0,9	3,0							50
	X-500	500	4,5		0,75	2,0			72	715	480	540	
	X-500		9		0,9	2,8							70
	X-500		4,5 / 9		0,5 / 0,9	2,9 / 3,0							72
	X-502		4,5 / 18		0,5 / 1,8	2,0 / 5,0							72
	X-502		9 / 18		0,9 / 1,8	3,6 / 5,8							72
	X-700	700	4,5		0,75	3,2			74	715	480	540	
	X-700		9		1,5	3,9							72
	X-700		4,5 / 9		0,75 / 1,5	3,0 / 3,9							74
	X-702		4,5 / 18		0,75 / 3,0	3,6 / 8,2							74
	X-702		9 / 18		1,5 / 3,0	4,0 / 8,0							74
	T-1000	980	4,5		0,9	3,7			105	750	510	560	
	T-1000		9		1,9	4,6							105
	T-1000		4,5 / 9		0,9 / 1,9	3,6 / 4,6							115
T-1002	4,5 / 18		0,9 / 3,6	4,0 / 9,7	117								
T-1002	9 / 18		1,9 / 3,6	5,5 / 9,5	115								
guided wire rope reeler maximum length 250 m	X-500	500	4,5	230/400V 3-phase	0,5	2,0	100	8,3 mm Ø 0,250 kg/m	82	750	630	550	
	X-500		9		0,9	2,8							80
	X-500		4,5 / 9		0,5 / 0,9	2,9 / 3,0							82
	X-502		4,5 / 18		0,5 / 1,8	2,0 / 5,0							82
	X-502		9 / 18		0,9 / 1,8	3,6 / 5,8							82
	X-700	700	4,5		0,75	3,2			87	750	630	550	
	X-700		9		1,5	3,9							85
	X-700		4,5 / 9		0,75 / 1,5	3,0 / 3,9							87
	X-702		4,5 / 18		0,75 / 3,0	3,6 / 8,2							87
	X-702		9 / 18		1,5 / 3,0	4,0 / 8,0							87
	T-1000	980	4,5		0,9	3,7			135	900	655	565	
	T-1000		9		1,9	4,6							135
	T-1000		4,5 / 9		0,9 / 1,9	3,6 / 4,6							145
	T-1002		4,5 / 18		0,9 / 3,6	4,0 / 9,7							147
	T-1002		9 / 18		1,9 / 3,6	5,5 / 9,5							145
max. 500 m	T-1000	980	4,5	2	0,9	3,7	100	8,3 mm Ø 0,250 kg/m	190	1100	460	950	
	T-1000		9	speeds:	1,9	4,6							
	T-1000		4,5 / 9	230V or	0,9 / 1,9	3,6 / 4,6							
	T-1002		4,5 / 18	400V	0,9 / 3,5	4,0 / 9,7							
	T-1002		9 / 18	3-phase	1,9 / 3,5	5,5 / 9,5							

\* Using multiple sheave blocks, possibility to increase the capacity of the winch.

\*\* On request: other speeds, other voltages and winches with hydraulic or pneumatic motor.

\*\*\* Effective breaking strength: Ø 8,3 mm = approx. 4800 kg.  
Please specify length of wire rope.

For the specifications of the new TIRAK® winches X-2000/3000, please refer to the technical sheet T-3111.

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# minifor<sup>®</sup>

portable electric hoists  
with unlimited height of lift

- easy to handle
- powerful
- robust



CE

minifor  
100 to 500 kg range

# minifor® TR 10 - TR 30

*With its simple and efficient design the minifor range makes it easy for you to choose the right hoist for your applications.*

These two versions give you :

- unlimited length of hoist cable, adapted to the requirement
- light, easy to handle aluminium alloy design
- integral handle for easy carrying
- suitable for building sites, fast setup
- efficient operation with swivelling suspension hook
- extremely good weight/power ratio
- reduced maintenance
- quiet operation (70 dB)
- operational safety :
  - upper and lower limit switches
  - brake motor
  - pendant control with emergency stop
  - CE socket

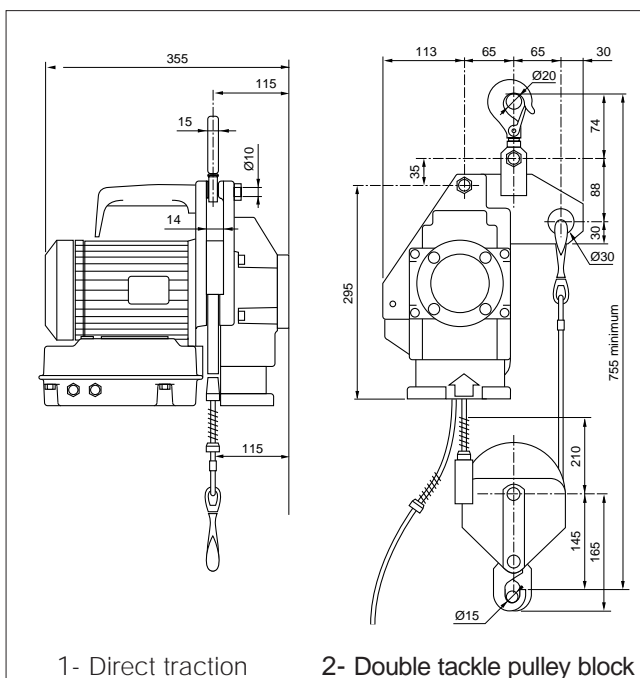
Conform to European directive no. 89/392 - 91/368 - 93/44 - 93/68 - 89/336 and to standards EN 50 081-2 and 50 082-2.

## Options :

- Spring cable reel, capacity 20 m and 40 m
- 9m/min 3-phase version, 48 VAC control, 0.55 kW motor (TR30 only) - diagram n°1
- Special motors
- Long power supply and remote control cables
- Pulley block kit - diagram n°2
- Self-locking hook
- Radio remote control with «lift/lower» function



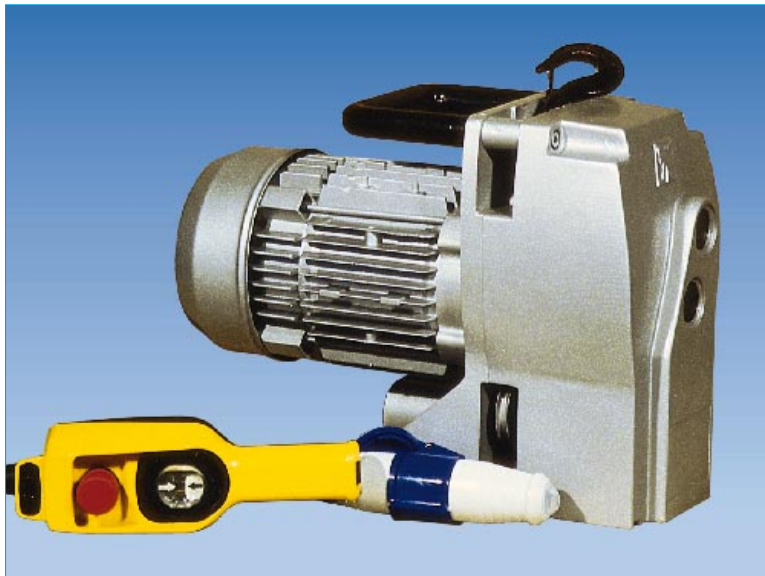
Model	unit	TR 10	TR 30
Hoisting capacity	kg	100	300
Hoisting speed	m/min	15	5 single ph. 9 - 3 phase
Weight of hoist	kg	20	20.2
Dimensions mm	mm	355x420x180Cable diameter 5	
Cable weight (per m)	kg	0.105	
Motor power single phase	kW	0.37	
3-phase	kW	0.55	
Cable breaking load factor 5	kg	1500	
Power supply single 3-phase		115 V - 50 & 60 Hz - 230 - 50 Hz 230- 400 V - 50 Hz	
Operating factor	%	40	
Double insulated control pendant		IP 65 - 3 controls	
Degree of protection		IP 55	
Current with brake motor	A	7.5 at 115 V - 50 Hz single phase 9 at 115 V - 60 Hz single phase 4 at 230 V - 50 Hz single phase 1.8 at 400 V - 50 Hz 3-phase	





# minifor® TR 30S - TR 50

Have been designed to be compatible with the new techniques for high level building sites, to provide you with the best service :



- integral handle for easy carrying
- unlimited length of hoist cable, adapted to the requirement
- suitable for building sites, fast setup
- efficient operation with swivelling suspension hook
- extremely good weight/power ratio
- reduced maintenance



## operational safety :

- upper and lower limit switches
- brake motor
- pendant control with emergency stop
- CE socket

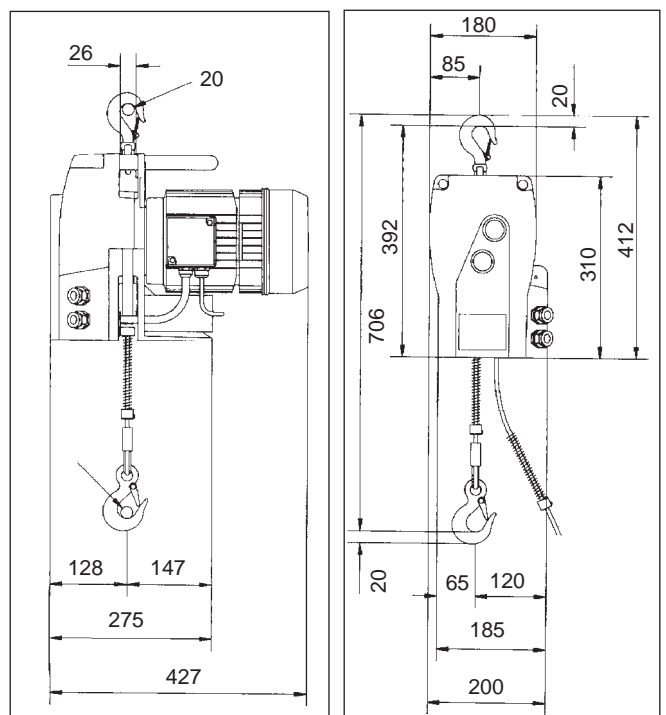
Conform to European directive no. 89/392 - 91/368 - 93/44 - 93/68 - 89/336 and to standards EN 50 081-2 and 50 082-2.

## Options :

- Metal storage case

Model	unit	TR 30S	TR 50
Hoisting capacity	kg	300	500
Hoisting speed	m/min	13	7
Weight of hoist	kg	31.6	31.6
Dimensions of hoist	mm	427x200x412	
Cable diameter	mm	6.5	
Cable weight (per m)	kg	0.170	
Motor power			
single phase	kW	1.1	
3-phase	kW	1.1	
Cable breaking load factor 5	kg	2500	
Power supply		115 V - 50 & 60 Hz - 230 - 50 Hz 230-400 V - 50 Hz	
Operating factor	%	40	
Double insulated control pendant		IP 65 - 3 controls	
Degree of protection		IP 55	
Current with brake motor	A	18 at 115 V - 50 Hz single phase 20 at 115 V- 60 Hz single phase 9 at 230 V - 50 Hz single phase 3.4 at 400 V - 50 Hz 3-phase	

«France Stade» building site



# beltrac electric belt hoists

*Innovation with unrivalled advantages.*



Model	unit	Beltrac	
Hoisting capacity	kg	300	600
Hoisting speed	m/mn	12	6
Weight of hoist	kg	42 single phase 37.5 3-phase	
Dimensions of hoist	mm	640x260x435	
Belt size	mm	30x3	
Motor power single phase 3-phase	kW kW	1.1 1.1	
Belt breaking load	kg	3500	
Power supply single / 3-phase		230-400 V - 50 Hz	
Operating factor	%	40 30 starts / hour	
Double insulated control pendant		IP 65 - 3 controls	
Degree of protection		IP 55	
Current with brake motor	A	9 at 230 V - 50 Hz single phase 5.9/3.4 at 230/400 V 3-phase	



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