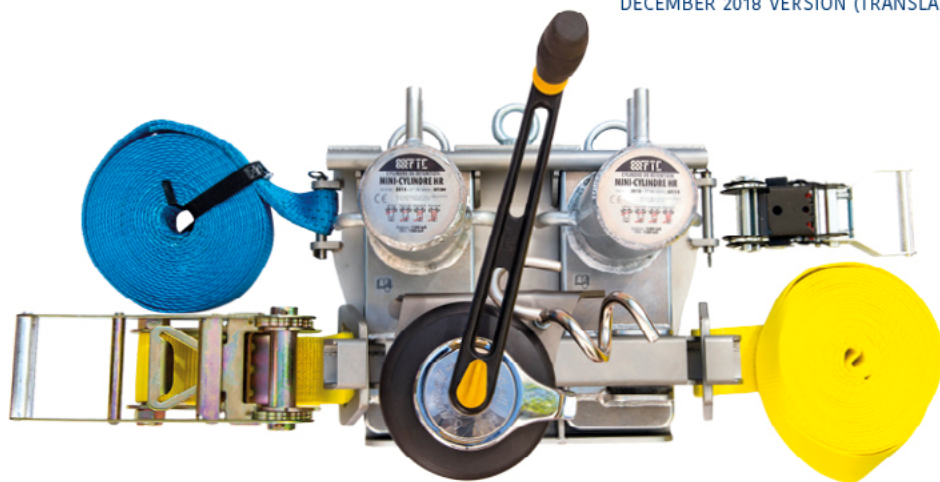


## USE AND MAINTENANCE INSTRUCTIONS

# TRANSFORMEUR LOWERING SYSTEM

DATE OF PURCHASE			
FIRST DATE OF USE			
REF. COMPLETE	FTC/TF-C	SERIAL NO.	
REF. MINI CYLINDRE WINCH	FTC/TF-KMW	SERIAL NO.	
REF. DUO KIT	FTC/TF-KD	SERIAL NO.	
REF. PLATE KIT	FTC/TF-KP	SERIAL NO.	
REF. WINCH KIT	FTC/TF-KW	SERIAL NO.	

DECEMBER 2018 VERSION (TRANSLATED)



**FTC**  
PLAY WITH GRAVITY

1355, chemin de Malombre • ZI Les Plaines  
26780 MALATAVERNE • FRANCE  
(+33) 475 528 640 • [contact@ftc-tree.com](mailto:contact@ftc-tree.com)  
[www.ftc-tree.com](http://www.ftc-tree.com)

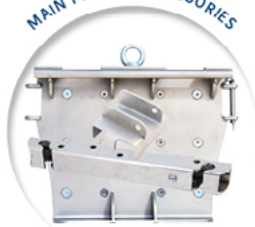
## 1 TECHNICAL DATA

COMPLETE TRANSFORMEUR	
Total weight including accessories	43 kg
System distortion	10,000 daN (depending on configuration)
System Working Load Limit (WLL)	2,000 daN (depending on configuration)
TRANSFORMEUR DUO	
Total weight including accessories	33 kg
Distortion of the 2 cylinders	10,000 daN (depending on configuration)
Duo Working Load Limit (WLL)	2,000 daN (depending on configuration)
MINI CYLINDRE	
Weight	5 kg
Cylinder distortion	HR: 5,000 daN - Safety coefficient 5 Old version: 3,850 daN - Safety coefficient 3.85
Working Load Limit (WLL)	HR: 1,000 daN - Old version: : 1,000 daN
WINCH	
Total weight including accessories	9,5 kg
Winch Working Load Limit (WLL)	800 daN

## 2 DESCRIPTION OF COMPLETE TRANSFORMEUR

- **Plate: 450 mm x 370 mm**
  - 12 rubber protection blocks (removable)
  - Upper lifting eye (DIN580) to hang the plate (WLL 340 daN)
  - CROCH'Y Hook to ease setting up
  - Tilting fastening pins
- **Friction devices MINI CYLINDRES HR in aluminium (see MINI CYLINDRE HR Instructions)**
  - Plate with rubber protection blocks 15 mm
  - Aluminium friction cylinder - Ø 100 mm, 5 mm thick
  - Rigging rope fairleads: 1 on right and 1 on left, curved and symmetric for entering rope - 2 vertical for exiting rope
  - Upper half-ring machined from solid
  - The plate is compatible with older versions of the MINI CYLINDRES.
- **Yellow main anchoring strap (bottom)**
  - 100 % polyester, 9 m, 15 t MBS / With ratchet, 10 t MBS
- **Blue secondary anchoring strap (top)**
  - 100 % polyester, 9 m, 7 t MBS / With ratchet, 5 t MBS
- **Winch with handle**
  - XT 44 AL winch with handle / Lifts 800 kg
- **Rope diameters up to 18 mm**
- **The plates (base plate and winch plate) and fastening bar are made of stainless steel (304L)**

MAIN PLATE + ACCESSORIES



304 L STAINLESS STEEL

CROCH'ITY

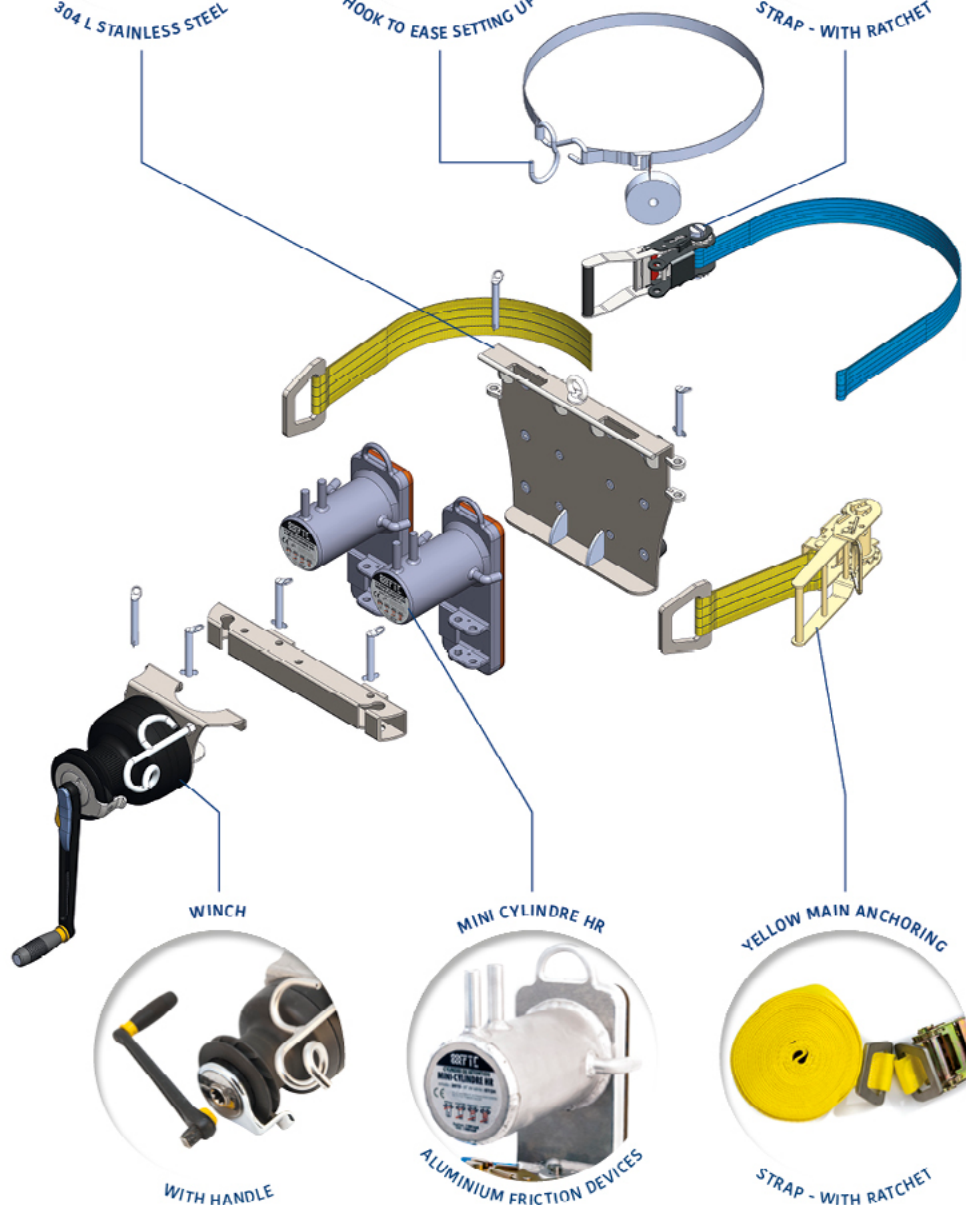


HOOK TO EASE SETTING UP

BLUE SECONDARY ANCHORING



STRAP - WITH RATCHET



WINCH



WITH HANDLE

MINI CYLINDRE HR



ALUMINIUM FRICTION DEVICES

YELLOW MAIN ANCHORING



STRAP - WITH RATCHET

## 3 USE



**ONLY FOR TREE CARE WORK. DO NOT USE WITH WIRE ROPE!**

The TRANSFORMEUR is a friction system for rigging ropes used for tree care. It is used when tree felling, to hold and lower cut branches or logs.

**This system must be used:**

- On a tree (attached) and with equipment (ropes, carabiners, mechanical adjusters etc.) having compatible size and resistance properties to the rope loads,
- By trained and/or competent people,
- In respect of the manufacturer's and/or seller's recommendations,
- Only after having read and understood these instructions.



**THE SYSTEM CONFIGURATION MUST NOT BE MODIFIED WHILE THE SYSTEM IS UNDER LOAD. UNDER NO CIRCUMSTANCES SHOULD THIS EQUIPMENT BE USED FOR BELAYING.**

## 4 TRANSPORT / CARE / STORAGE

### 4.1 • TRANSPORT

Shocks and other poor treatment can weaken the material and cause serious, and even invisible, damage. During transport and use, take the necessary precautions. Do not put the piece of equipment in contact with abrasive, acidic or corrosive materials that can damage it and/or reduce its technical performance. Ropes soiled by dirt, sand, oil, etc., can cause a higher risk of wear to the bollard and lower its performance.

### 4.2 • CLEANING / CARE

- Rubber and aluminium parts: Clean water less than 40°C, clean cloth, mild detergent.
- Winch : See Winch Instructions.
- Fixing system:
  - Ratchet: Clean water, clean cloth, mild detergent.
  - Strap: Clean water less than 40°C, mild detergent.
- Markings: Clean water, clean cloth.  
Worn labels must be replaced (see Chapter 8 Symbols and Labels).

### 4.3 • STORAGE

In a dry place, free from exposure to weather; shocks; heat sources more than 40°C; and abrasive, acidic or corrosive materials capable of damaging it and/or reducing its technical performance.

### 4.4 • REPAIRS



**REPAIRS BY ANYONE OTHER THAN FTC ARE PROHIBITED. ONLY GENUINE MANUFACTURER PARTS GUARANTEE PROPER FUNCTIONING OF THE DEVICE.**  
(if a component is discarded, spare parts can be ordered)



## 5 RECOMMENDATIONS BEFORE USE

### 5.1 • READ THE INSTRUCTIONS

- Read and understand the instructions.
- For any question or additional information, contact the vendor.



### 5.2 • INSPECT BEFORE AND DURING USE

- The competence of the users.
- That PPE are used.
- Legibility of marking symbols (see chapter 8).
- Good condition of fairleads (no distortion).
- Good condition of winch (no distortion).
- Good working condition of the winch (no distortion).
- Correct positioning of the rigging rope (entry angle on the cylinder).
- MBS composition (cylinder rope, pulley, sling pulley, anchoring point pulley).
- Solidness of the chosen support.
- Placement and tightening of the base plate.
- Good condition of MINI CYLINDRES (no heavy wear, no cracks etc.).
- Good condition and locking of fastening pins.
- Condition of the strap, ratchet and its attachment.
- General condition of the rope friction surfaces.
- Compatibility and resistance of the rigging ropes.
- Respect of the instructions and recommendations of use.



**NEVER USE IF ANY ONE OF THESE FACTORS IS NOT RESPECTED.**

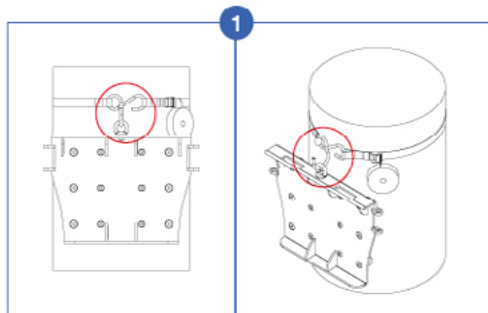
The work zone must be organised in order to enable optimal supervision of the trajectories (all moving elements) so that all collision with persons, gear or machines used at that moment and that could be dangerous. Do not use dyncema core ropes or ropes with special sliding coating (like Teflon coating).



## 6 INSTRUCTIONS FOR USE

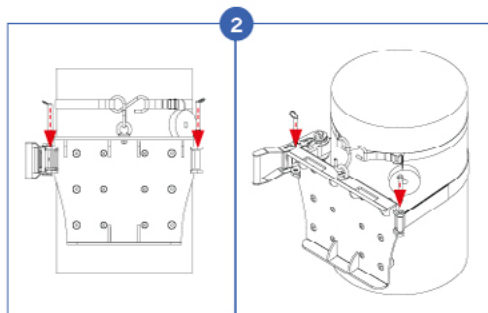
### 6.1 • CONFIGURATIONS

#### A SETTING UP THE MAIN PLATE



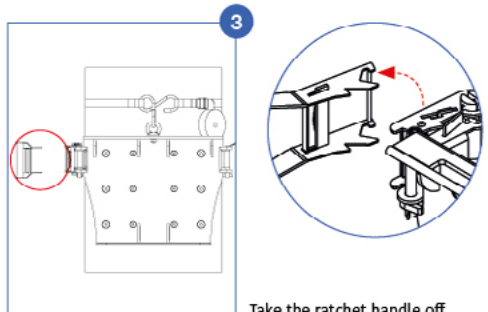
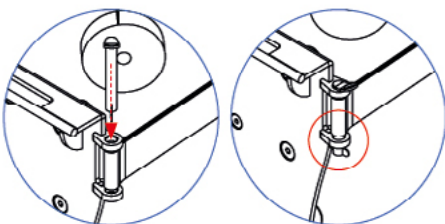
Position the CROCHTY and its strap so that the plate will be hanging parallel to the tree and perpendicular to the ground.

See Chapter 6.2 Fastening the system.



Fix the blue secondary strap to the plate with the fastening pins.

Fasten the pins and use the ratchet to tighten the strap.



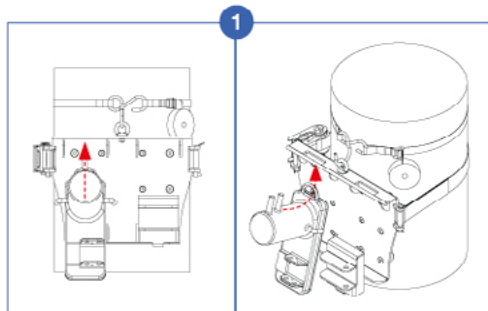
Take the ratchet handle off.

**!** THE STRAPS MUST FOLLOW THE SAME AXIS AS THE PLATE.

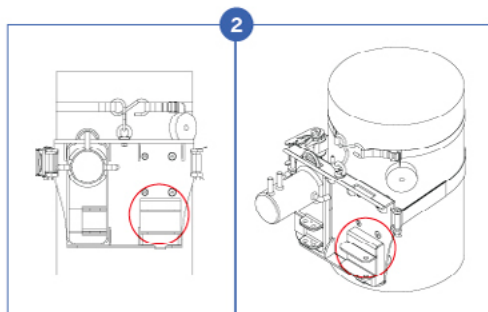
REGULARLY CHECK THEIR POSITION AND GRIP.



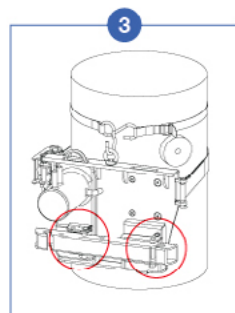
## B SETTING UP ONLY ONE MINI CYLINDRE



Slide the MINI CYLINDRE in one of the plate holes.



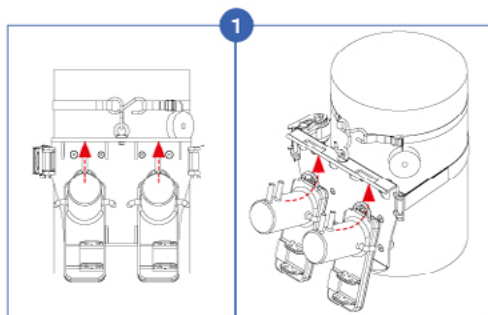
Insert the mono plate (adjustment for use with only one cylinder) to fix fastening bar.



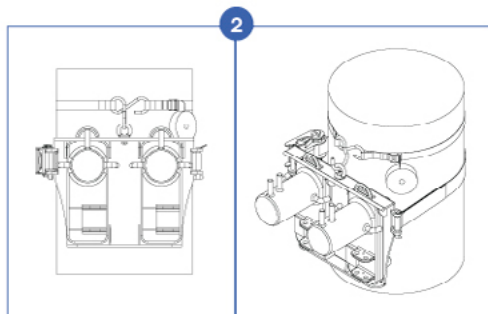
Set up and secure the fastening bar. **D**



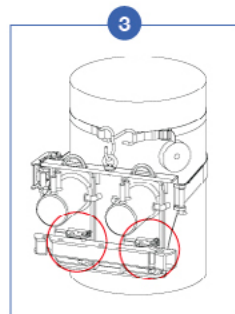
## C SETTING UP BOTH MINI CYLINDRES



Slide the 2 MINI CYLINDRES in the plate holes.



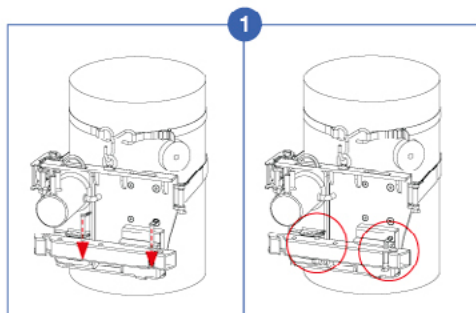
Always check the position of the plate against the troc.



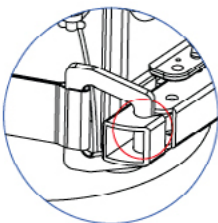
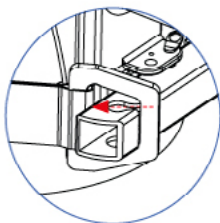
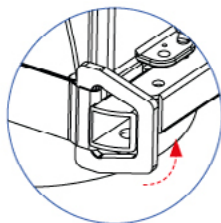
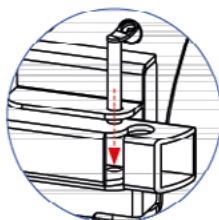
Set up and secure the fastening bar. **D**



## D SETTING UP THE FASTENING BAR



Insert and fasten the pins  
(same for 1 or 2 MINI CYLINDRES).

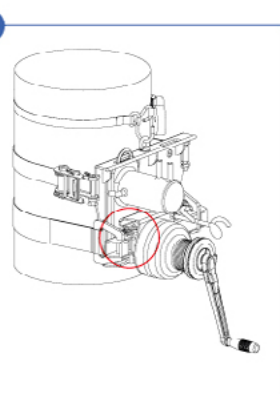
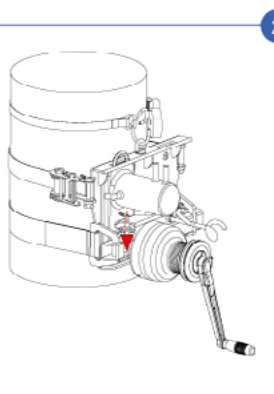
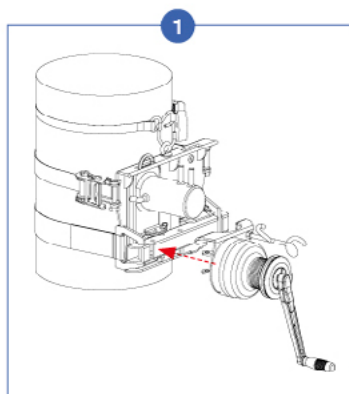


Slide and secure the hook  
of the main strap (yellow).

Tighten the strap with the  
ratchet.

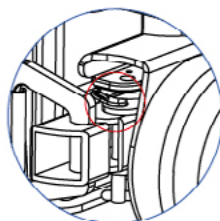
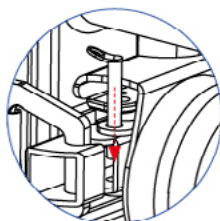


## E SETTING UP THE WINCH



Position the winch on the fastening bar at the  
2 fastening holes (same for 1 or 2 MINI CYLINDRES).

Insert and fasten the pins on the fastening bar.

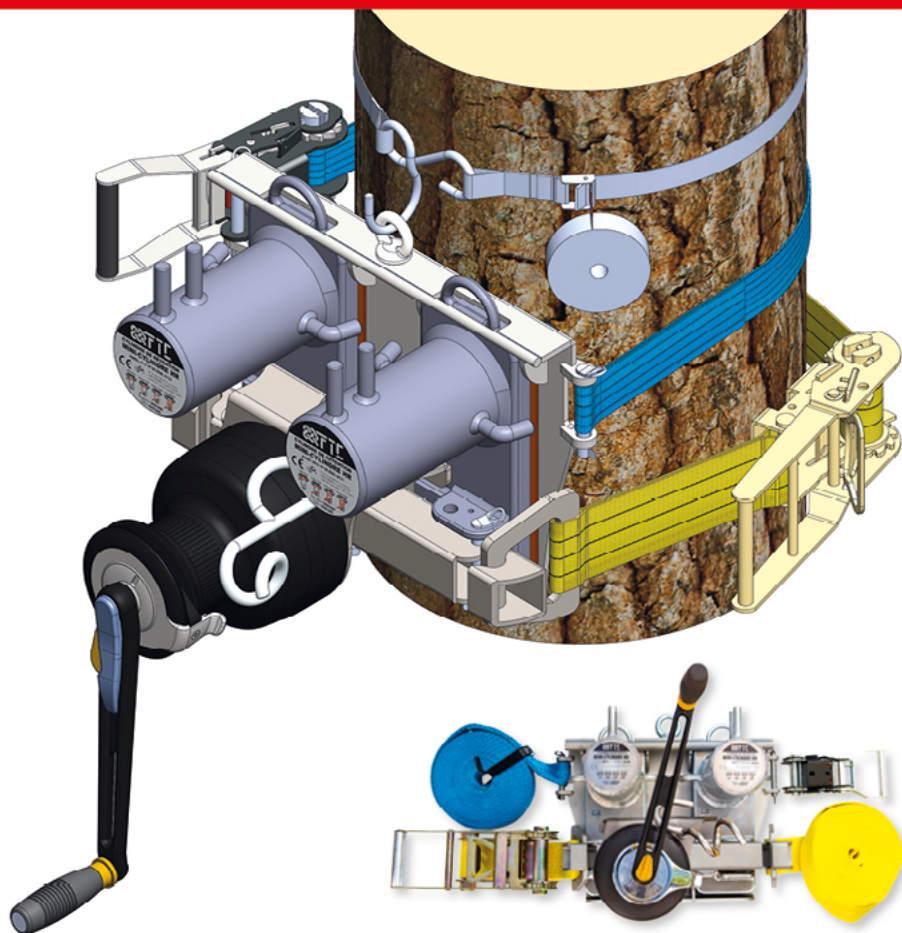




FOR ALL CONFIGURATIONS, THE FASTENING BAR MUST ALWAYS BE SECURED ON THE PLATE, AS WELL AS THE 2 STRAPS.

THE PINS MUST BE SET AND FASTENED AT ALL TIME.

BOTH RATCHETS MUST BE AT OPPOSITE SIDES OF THE TRUNK, ONE ON THE RIGHT SIDE OF THE PLATE AND THE OTHER AT THE LEFT SIDE IN ORDER TO ENSURE A STRONG SUPPORT BEFORE TIGHTENING.



FOR THE USE OF THE CYLINDRE(S),  
SEE THE INSTRUCTIONS FOR  
THE MINI CYLINDRE HR.

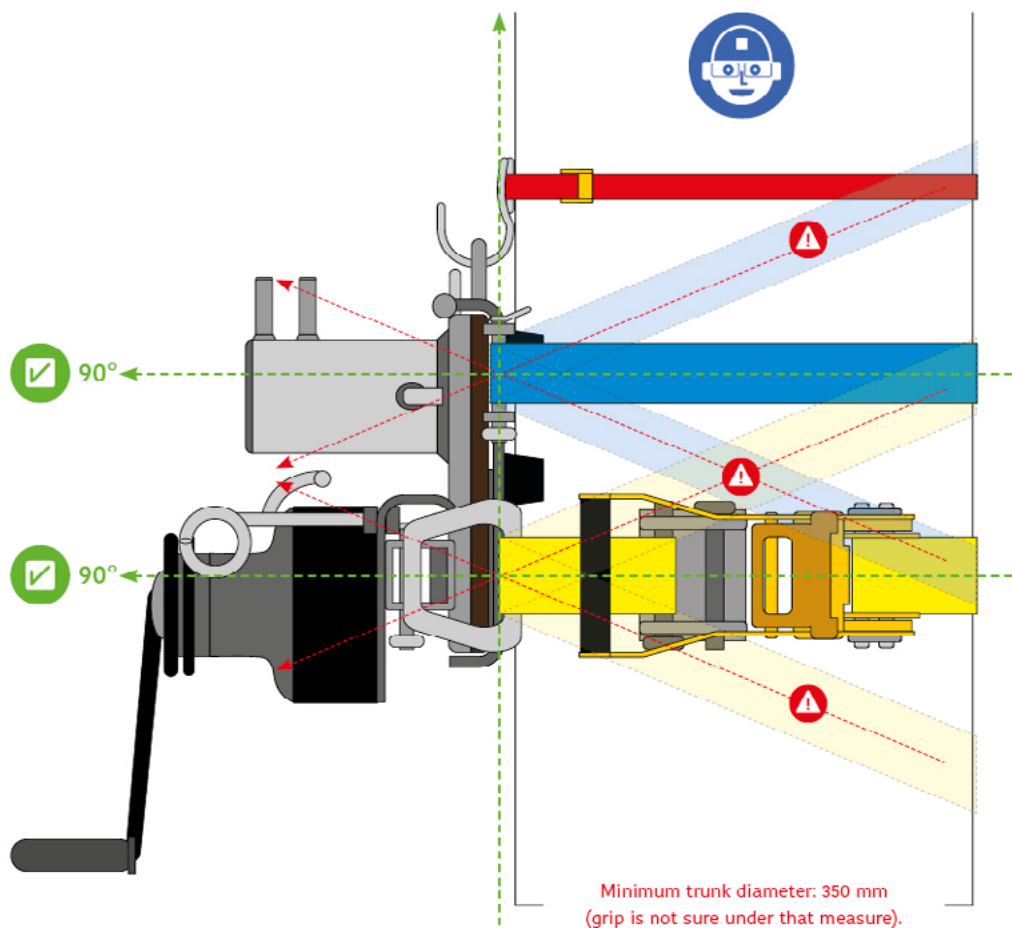
You can download the FTC Instructions  
at [www.ftc-tree.com](http://www.ftc-tree.com).



## 6.2 • ATTACHING THE SYSTEM

It attaches to the base of the tree to be felled, or to any tree able to resist the stress and shock produced during moving of loads. To optimise tightening, the strap's longitudinal axis must be at a 90° angle to the vertical axis of the device's base plate.

During use, regularly check correct positioning, tightness and condition of the strap, as well as the condition of the tree serving as support. Warning: Inflicted or bleeding trees having surface defects or irregularities reduce the system's grip.



## 6.3 • USE OF THE CYLINDER

The cylinder's purpose is to provide restraint to felling loads. The braking strength depends on the rope type (diameter, design, etc.) and the number of wraps around the cylinder.

Only ropes used specifically for rigging, by virtue of their construction, guarantee correct operation of the device. Ropes with diameters up to 18 mm can be used.





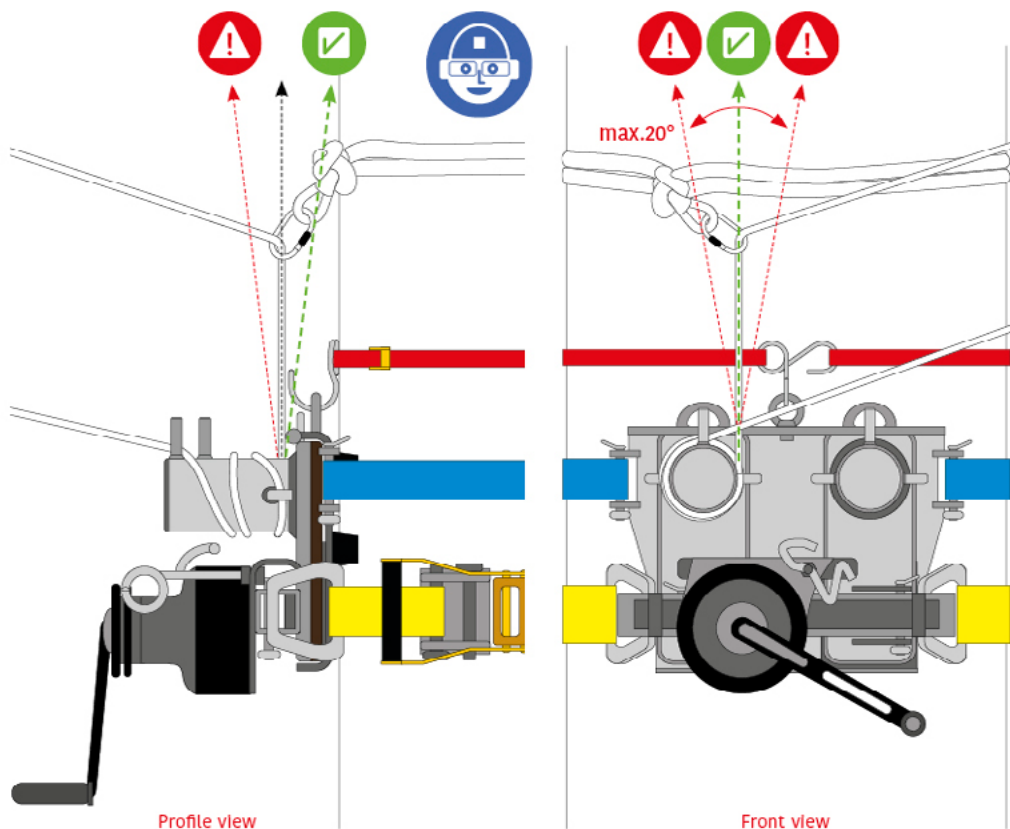
## 6.4 • APPROACH OF THE RIGGING ROPE TO THE CYLINDER

The rope's entry on the cylinder must respect two angles in order to ensure grip of the base plate to the trunk and to prevent it from falling off (see illustration).

## 6.5 • CORRECTING ROPE ENTRY

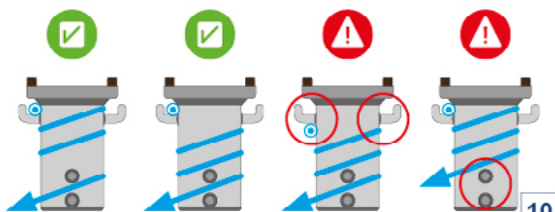
In order to respect these two angles, the rigging rope entry can be corrected.

**TO ENSURE A CORRECT POSITIONING OF THE ROPE, YOU CAN USE A REDIRECT**  
(see illustrations below).



## 6.6 • POSITION OF THE RIGGING ROPE ON THE CYLINDER

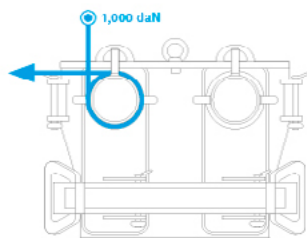
The rope must strictly enter through the rounded fairleads nearest to the plate (right or left). The last wrap must be separated from the others by passing between the two vertical fairleads in order to prevent overlapping of the rope when lowering the load. Overlapping of the rope can cause it to jam on the cylinder.



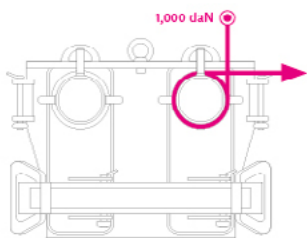
Only the rope configurations represented in the following illustrations are guaranteed. Ropes must strictly enter behind the rounded fairleads and exit between the 2 vertical fairleads. You can adapt the number of wraps to the braking strength you need (see Chapter 6.6 Rope positions on the cylinder).



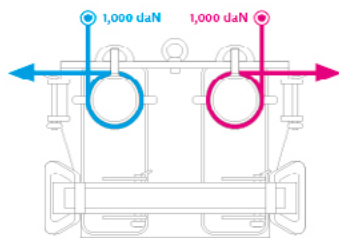
## 1 DUO: MAIN PLATE + 2 MINI CYLINDRES



1 ROPE  
1 3/4 wraps, exit left



1 ROPE  
1 3/4 wraps, exit right



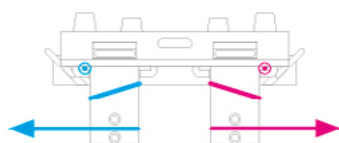
2 ROPES  
1 3/4 wraps, exits left and right



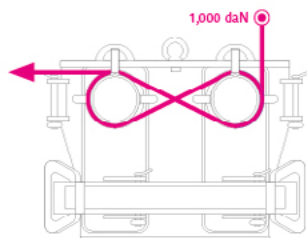
1 ROPE  
3 3/4 wraps, exit left



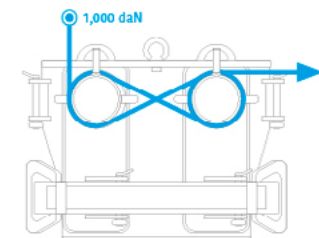
1 ROPE  
3 3/4 wraps, exit right



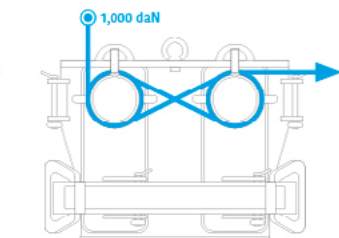
2 ROPES  
3 3/4 wraps, exits left and right



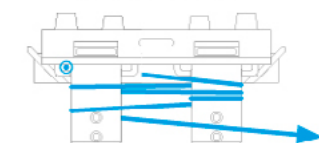
1 ROPE FIGURE-EIGHT KNOT  
2 3/4 wraps, exit left



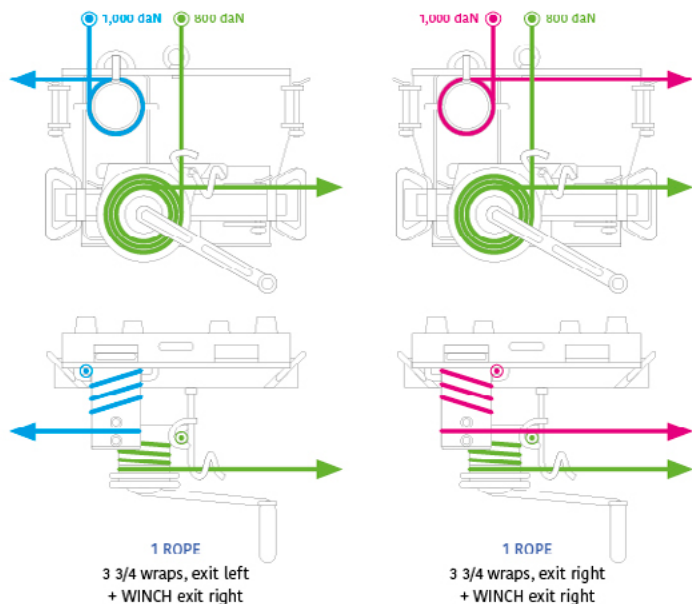
1 ROPE FIGURE-EIGHT KNOT  
3 3/4 wraps, exit right



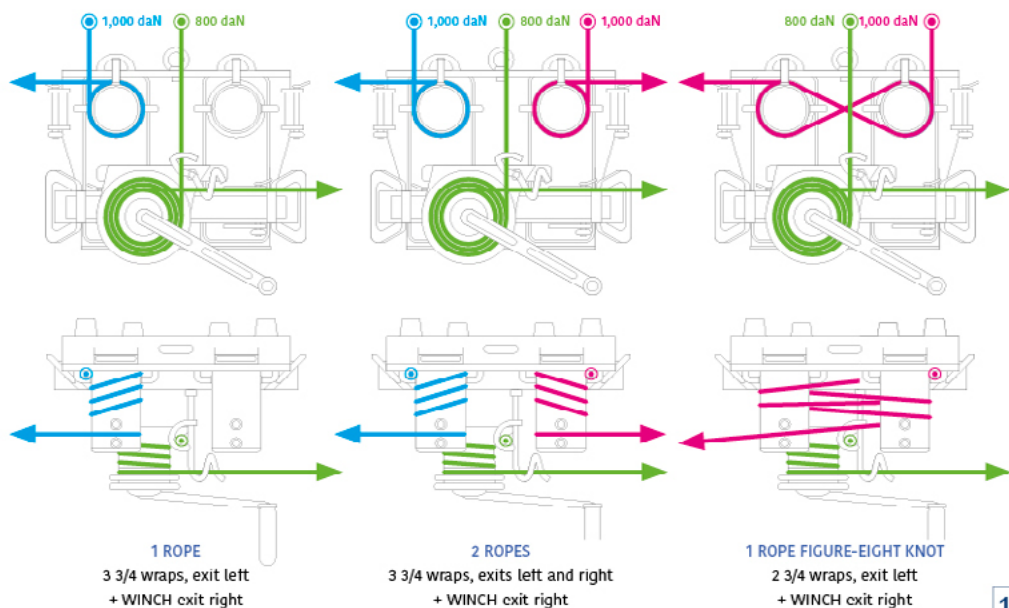
1 ROPE FIGURE-EIGHT KNOT  
4 3/4 wraps, exit right



## 2 MINI CYLINDRE AND WINCH: MAIN PLATE + 1 MINI CYLINDRE + WINCH



## 3 COMPLETE TRANSFORMEUR: MAIN PLATE + 2 MINI CYLINDRES + WINCH



## 6.7 • LOCKING THE SYSTEM UNDER LOAD

To lock the system, you must make as many wraps as possible (the most wraps guarantee the possibility for easy, risk-free release) and secure by making figures of eight around the vertical fairleads with the slack going behind a curved fairlead.

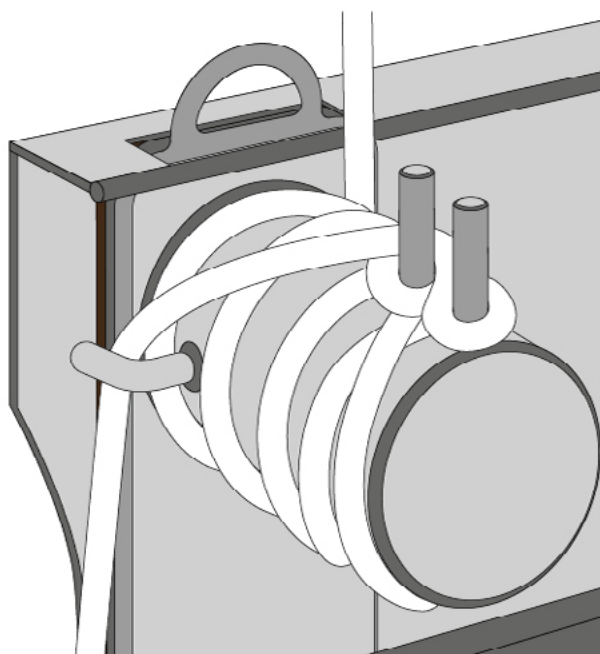
### BRAKING STRENGTHS

As an example, the braking strengths measured with a  $\varnothing$  12 new ANACONDA rope are:

3/4 wrap	75 daN
1 3/4 wraps	200 daN
2 3/4 wraps	470 daN
3 3/4 wraps	1,000 daN

These braking strengths are given as reference only. Please note that they can vary according to: Braiding, wear, the cleanliness of the ropes used, and environmental conditions.

The average force of the user holding the rope is between 30 and 40 daN.



## 6.8 • USE OF THE PLATFORM'S UPPER RING

The ring is a comfort accessory. It serves to position the plate properly with the CROCHTY and the strap (see Chapter 6.1 Setting up the main plate). It cannot take too heavy loads: its WLL is 340 daN.

## 6.9 • USER POSITION DURING LOWERING

When lowering, never stand under the load. Wear gloves when working with rope so as not to burn your hands. In order to avoid catching fingers or hands, the user must stand at least 2 m from the cylinder to let the rope slide around it.

The rope must be held with two hands, the slack properly positioned, without knots or tangled branches. Never wrap the rope around user's body or hand. It must be to one side of the operator, held with both hands.



**WHEN LOWERING, NEVER STAND UNDER THE LOAD.  
DO NOT LOWER LOADS RIGHT ABOVE THE FRICTION SYSTEM,  
IT COULD BE DAMAGED IF THE LOAD WERE TO FALL.**

## 6.10 • DYNAMIC LOWERING

This solution is applied in the following two cases:

### 1 Mandatory for loads located above the pulley anchoring point:

When the logs or the crowns found above the pulley are cut, they fall and then are retained. If the rigging rope is blocked on the cylinder (too many wraps or the user is holding tightly), an important shock will be produced in the braking system and could break or damage the equipment.



**WARNING! 100 kg falling from 1 metre = approx. 600 daN of shock force**

It will be necessary to absorb the shock. To do this, let the load slide down and brake it gradually. The cut log falls and the system becomes taut, the rigging rope slips around the cylinder, the user gradually slows the log fall and stops it. Only this procedure ensures absorption of the shock produced by the log.

### 2 Optional for loads located under the pulley:

To secure the climber, the branches located under the pulley can slip down quickly after they are cut and then be stopped using the dynamic braking. The rope is tight but not blocked. The branch is cut, it falls and the rigging rope slips around the cylinder. The user gradually slows the fall and stops it.

## 6.11 • WINCH

The winch is a comfort accessory that can be used with the cylinder(s).

It is used to create a lifting force to tighten the rigging rope or pull it taut for maximum braking on the cylinder. This way, loads can then be pulled taut or moved up, to be lowered using the friction from the cylinder.



## 7 TRANSFORMEUR WITH WINCH

### 7.1 • TECHNICAL DATA

#### PERFORMANCE

The traction force of the winch is the ratio between the force applied on the Winch handle and the resulting force on the rope. With a 2-speed winch, there are 2 ratios: with the lower speed, the average force is around 800 daN (see table below).

#### RETRIEVAL SPEED

The retrieval speed (S) is the length of rope that is retrieved with one turn of handle. The XT 44 AL winch has 2 retrieval speeds (see table below).

#### APPROACH OF THE RIGGING ROPE TO THE WINCH

The approach angle is corrected by the rope guide (stainless steel). It is between + 2° and - 10 ° C (see Chapter 6.5 Correcting rope entry).

Ref.	Performance ratio		(S) mm		Rope	Weight kg	D	d	H
	1°	2°	1°	2°	ø mm	Aluminium	mm	mm	mm
XT 44	43	20	38	80	8 / 16	6,3	173	93	195

#### Auto-adjustable self-tailing

This system is used for all Antal winches. The new spring self-tailing adjusts automatically, even with smaller ropes. It can be used with ropes with diameters from 8 to 16 mm.

### 7.2 • USING THE WINCH



**THE ROPE MUST ENTER THE GUIDE FROM BEHIND TO ENSURE A PROPER ANGLE INTO THE GUIDE.**

The rope must be wrapped at least 3 times around the winch drum (to make sure that a too heavy load will not make the rope slide between the self-tailing jaws), then follow the self-tailing arm and go between the self-tailing jaws - make sure the rope is taut for that last step. To turn the drum, insert the handle into the top cap, in the axis of the Winch.



**TURN CLOCKWISE > SLOW SPEED MAXIMUM POWER  
COUNTERCLOCKWISE > HIGH SPEED MINIMUM POWER**

### 7.3 • CARE

After taking off the winch, clean old grease and dirt with a brush, using a thinner (such as diesel), then dry with a clean cotton cloth (preferably lint-free).

#### LUBRICATION

With the same brush, apply a little grease on all moving parts: ratchets, spindles, gears, shafts, bearings, washers.

#### ASSEMBLING RATCHETS AND GEARS

When reassembling the gears, be sure to check the assembly direction of the ratchets on the gears. Frequency: Under normal conditions, this operation should be done twice a year.



## 8 SYMBOLS AND LABELS

The presence of symbol labels on the device is mandatory. If they deteriorate or disappear, replace them. You can order them from your vendor.

### MINI-CYLINDRE HR LABEL

On the front of the cylinder (see MINI-CYLINDRE HR instructions).  
The serial number is also stamped on the rim of the base plate.

### TRANSFORMEUR LABEL

On the main plate (see label below).  
The serial number is also under the rubber pad at the top right corner of the plate (underside).

**TRANSFORMEUR**

**SYSTÈME DE FREINAGE**

ANNÉE      N° SÉRIE

Product name      Type of product

Manufacturing year      Serial number

Read the instructions      Mandatory protections

CE Conformity

Illustrations of rope position on MINI CYLINDRE

Illustrations of rope position on TRANSFORMEUR

Configuration

Working Load Limit (WLL)

CONFIGURATION	CMU	RUPTURE
MONO	1 000 daN	5 000 daN
DUO	2 000 daN <small>selon configuration</small>	10 000 daN <small>selon configuration</small>
COMPLET	2 000 daN <small>selon configuration</small>	10 000 daN <small>selon configuration</small>
MINI-CYLINDRE	1 000 daN	3 850 daN
MINI-CYLINDRE HR	1 000 daN	5 000 daN

MBS

**BIEN LIRE LE MANUEL D'UTILISATION**

**FTTC**

Brand

Manufacturer's address

**PLAY WITH GRAVITY**

1355, chemin de Malombre • Z.I. Les Plaines  
26780 MALATAVERNE • FRANCE  
(+33) 475 528 640 • [contact@ftc-tree.com](mailto:contact@ftc-tree.com)  
[www.ftc-tree.com](http://www.ftc-tree.com)

COMPLIES WITH THE CE DIRECTIVE

## NEW DEVICE SUBJECT TO SELF-CERTIFICATION

Manufacturer	FTC: 1355, chemin de Malombre • ZI Les Plaines • 26780 MALATAVERNE (+33) 475 528 640 • <a href="http://www.ftc-tree.com">www.ftc-tree.com</a>
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SIRET number	812 605 061 000 25
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Declares that the new equipment indicated below:

Type	TRANSFORMEUR / LOWERING SYSTEM
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Serial number	
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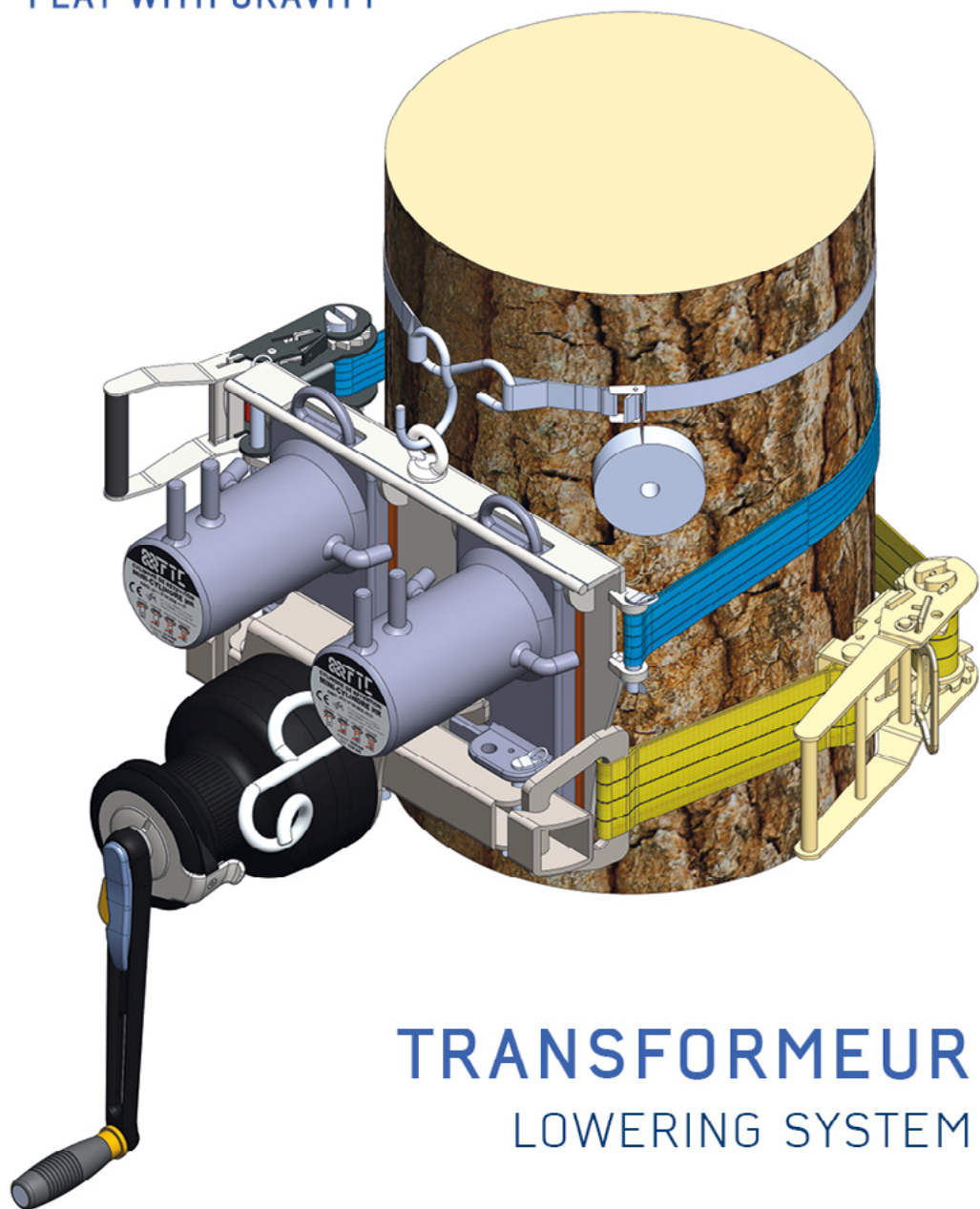
Manufacturing date	
--------------------	--

Working Load capacity	WLL: 2,000 daN (depending on configuration)
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Complies with the conditions in the revised Machinery Directive (2006/42/CE)  
and the national legislation transposing it.  
Complies with the dispositions defined by the revised decrees no. 92-765, 92-766, 92-767 of July 29, 1992.

Application of marking on the listed equipment.  
The technical documents for commissioning, maintenance and use are delivered with the devices.

Signature of company representative: Laurent PIERRON, Director



# TRANSFORMEUR

LOWERING SYSTEM



PLAY WITH GRAVITY

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