

User Guide

Version: 05 / 01.07.2021



HIT-TRAC 8E

06151_HIT-TRAC 8E v=1-6m/min 1.0kW

06187_BA for HIT-TRAC 8E 1.0kW



Jakob AG

Dorfstrasse 34
3555 Trubschachen
Switzerland

☎ +41 (0)34 495 10 10

📠 +41 (0)34 495 10 25

✉ info@jakob.ch

🏠 jakob.com

Prüfzertifikat

Wir bestätigen, dass die genannte Maschine geprüft wurde und den Auftragsanforderungen, Spezifikationen, Zeichnungen sowie gültigen Normen und Vorschriften entspricht.

Motorseilzugmaschine *HIT-TRAC® 8* mit Elektromotor

Certificat d'inspection

Nous déclarons que le produit faisant l'objet du certificat a été contrôlé et est conforme aux exigences de la commande, aux spécifications, aux dessins ainsi qu'aux normes et prescriptions.

Machine motorisée de traction par câble *HIT-TRAC® 8* avec moteur électrique

Test certificate

We hereby confirm that the machine described below was tested and satisfies the requirements posed in the order, specifications, drawings as well as the relevant valid standards and regulations.

Motor-driven rope pulling machine *HIT-TRAC® 8* with electric motor

Geräte Nr. / N° de la machine / Machine no.:

Art. Nr. / N° art. / Product. no.:

Motor-Nr. / N° du moteur / Motor no.:

Steuerung-Nr / N° du contrôle / control no.:

Datum/Date/Date:

Unterschrift/Visa/Visa:

Contents

1	General specifications	6
1.1	Drive mechanism	6
1.2	Housing cover	6
1.3	Rope.....	6
1.4	Operation	6
1.5	Electrical control system	6
1.6	Limit switch.....	7
1.7	Lowering and breaking	7
2	Assembly and performance	8
3	Safety instructions.....	9
3.1	Proper use	9
3.2	Safety instructions in this user guide.....	9
3.3	General safety instructions.....	10
3.4	Approved users.....	13
3.5	Warranty and Guarantee	13
3.6	Actions in case of emergency	13
4	Technical specifications.....	14
5	Operation	15
5.1	Preparation.....	15
5.2	Insert rope	16
5.3	Pulling and hoisting	17
5.4	Lowering	17
6	Faults	18
7	Maintenance	19
8	Replacement parts	19
9	Disposal	20
10	Accessories	20
10.1	Supporting pipe	20
10.2	Storage boxes	20
10.1	Generators.....	20

Warranty and Guarantee

Jakob AG will grant the user replacement as well as installation and removal of any parts which are rendered unusable due to material or manufacturing errors.

The warranty period (guarantee period) is 12 months.

Warranty and guarantee claims for personal injury or damage to property are not included if they can be traced back to one or more of the following causes:

- improper use of the rope pulling machine;
- improper operation and maintenance of the rope pulling machine;
- failure to comply with the information provided in the user guide regarding operation and maintenance of the rope pulling machine;
- unauthorised structural changes to the rope pulling machine;
- inadequate monitoring of machine parts which are subject to wear and tear;
- improper repairs being carried out;
- catastrophic events caused by external influences and force majeure;
- utilisation of externally procured replacement parts if these have not been designed and constructed to be fit for purpose and to meet the required degree of safety.
- It is in your interests to only use replacement parts by Jakob AG.

Preface

You have made a wise decision in opting for the HABEGGER motor-driven rope pulling machine *HIT-TRAC 8*. Using this new type of rope pulling machine you can pull, hoist and lower loads. Handling and maintenance are very simple and guarantee hassle-free and reliable operation when handled correctly.

You may already know how your newly purchased rope pulling machine works.

We at Jakob AG still recommend, however,

that you read the user guide carefully prior to starting up the machine for the first time! It contains all the essential information you require about motor-driven rope pulling machines.

Important information in the user guide will help you to:

- Avoid danger
- Reduce repair costs and downtime, and
- to increase the reliability and lifespan of your rope pulling machine.

Always keep a copy of this user guide where the motor-driven rope pulling machine is located and ensure that it is read and implemented by every person who works with the machine. It should be available to every user in order to avoid handling errors.

Alongside the user guide and the mandatory regulations for accident prevention in the operator's country and country of operation, the recognised industry rules for safe and correct work must be observed.

We wish you every success and hope that you enjoy using your HABEGGER product.

EC declaration of conformity



We,

Jakob AG
Dorfstrasse 34
CH-3555 Trubschachen

hereby declare that the

HIT - TRAC 8E

conforms to the health and safety requirements of the EC Machinery Directives in its conception and design, as well as in the version placed on the market by us.

In the event of improper use, as well as modifications or changes which are unauthorised by us, this statement loses its validity.

This declaration of conformity also loses its validity if the relevant user guide and maintenance manual are not followed or are violated.

Applicable EC directives:

EC Machinery Directives 2006/42/EG

Applied harmonised standards:

DIN EN 14492-1: 2010-06
EN 60204-1: 2006
EN ISO 12100: 2011-01

Location:

Trubschachen

Date:

1. July 2021

Stv. Leiter Technik

Suppléant du chef technique / deputy Head of Technology
Thomas Gerber

Leiter Seil- & Hebetchnik

Chef câbles et levage / Head of Hoisting and Lifting
Urs Schneider

1 General specifications

The motor-driven rope pulling machine *HIT-TRAC 8* is designed for pulling, hoisting and lowering loads.

1.1 Drive mechanism

A special HABEGGER steel rope of desired length, which is guided over the relevant guide elements by the driving wheel and then ejected in an unloaded state, is used as the drive mechanism.

1.2 Housing cover

The removable cover on the driving wheel prevents the entry of foreign objects and protects against accidents resulting from improper access. There is also an anti-derailment device for the traction rope integrated into the housing cover.



- Always close and lock the housing cover over the driving system before operation.

1.3 Rope

In the factory, the machine is preconfigured to use ropes with diameters of **8.2 mm**. This rope is suitable for all hoisting, pulling and lowering work.



- Only suitable, original HABEGGER ropes should be used.

1.4 Operation

The machine operates on an alternating current of 230 volts using a transformer and a three-phase rotary current motor

1.5 Electrical control system

On / off control system

The control system is located, alongside the transformer, in the control box on the motor.

The input comes from the mains plug via a 5m long supply cable.

Also connected to the control box, via a 3m long control cable, is a pendant station with the control buttons UP/DOWN, the emergency stop button, and a rotating knob to control the speed.

1.6 Limit switch

Hook observation

The limit switch stops the hoisting movement when the hook is pulled against the housing or when the rope shaft is swivelled forwards (insert rope).



- The limit switch only responds when the motor is rotating in the correct direction (the rotary field of the power connection).

1.7 Lowering and breaking

You can place the load precisely in the desired position using the control buttons UP/DOWN.

Breaking during lowering takes place using the motor without an energetic recovery system in the mains. When stationary or powered off, this takes place using the spring-loaded holding brake. As this energy is converted into heat, the output due to heat in the control box is limited during lowering.

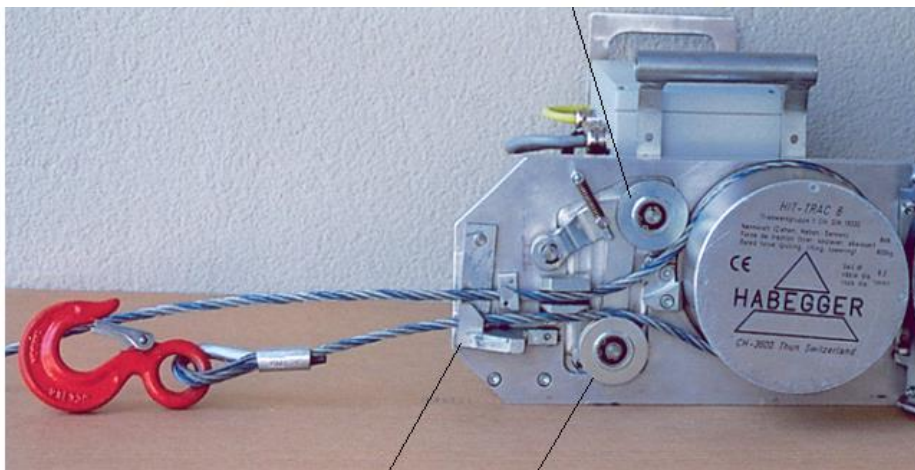


- Heavier loads may only be lowered over short distances.

2 Assembly and performance



8 1 2 3 4 5 6 7



10 11

- 1 Rotating knob for rope speed
- 2 "Lower" button
- 3 "Raise" button
- 4 Emergency stop button
- 5 Pendant station
- 6 Plug
- 7 Towing hook
- 8 Cover latch
- 9 Thrust roller
- 10 Rope guide
- 11 Guiding pulley

3 Safety instructions



The HABEGGER motor-driven rope pulling machine HIT-TRAC 8 complies with current technical standards. To protect against accidents, it is equipped with effective safety devices as required by the recognised safety standards, guidelines and laws.

But laws, regulations and safety devices do not provide any protection against carelessness and negligence!

Use the motor-driven rope pulling machine only when it is in perfect condition and when taking the user guide into consideration.

Before working with the motor-driven rope pulling machine you should carefully read and take note of the following safety instructions.

It is all about your safety!

3.1 Proper use

The motor-driven rope pulling machine HIT-TRAC 8 is designed for pulling, hoisting and lowering loads.

The maximum tensile force is: **8 kN (800 kg)**



- The HIT-TRAC is not to be used to transport people under any circumstances.
It is forbidden to carry people in a hanging HIT-TRAC structure.
- Please note the safety instructions on the machine and in this user guide in the interests of your health!

3.2 Safety instructions in this user guide

The following symbols and specifications are used for hazards, instructions and important information:



- Instructions are very important information which must be complied with in order to properly operate the specified technology.



- Caution! Information regarding danger to the machine, machine parts and the environment.



- Danger! Information regarding danger to the health and life of the operator and other persons in the motor-driven rope pulling machine's operating area.

3.3 General safety instructions

Location

- Always ensure that the device is in a fixed and secure location during operation.
- Always stand outside the danger zone of the load to be moved and never within range of the exiting rope.
- Use a motorised winch for longer ropes (longer than approx. 50m).
- You require enough space in which to move. You should therefore ensure that you have a large enough platform.
- Do not use a ladder as a platform.
- If you do not have a suitable platform, deploy pulleys and choose a better location.



- When setting up the machine please ensure that no external hazards can exert influence on the rope pulling machine, the traction rope, the load or the operating personnel during operation (e.g. falling objects, passing vehicles, overhead power lines, etc.).

Anchorage

The anchorage point must be able to withstand the expected tensile force (possibly test beforehand).

The best anchorage points are:	- fixed objects and structures - rings which have been cemented in place - eyelets or poles
Natural anchorage points:	- strong/heavy boulders - trees - other suitable objects
Technical anchorage points:	- Habegger field anchor with piles - rock bolt, concrete anchor - round timber anchor in the ground - these anchors are highly dependent on soil conditions.

Secure the machine to the anchoring bolts with sufficiently strong straps or loops.



- The machine must be able to freely position itself in the rope's pulling direction. Danger of housing breaking!

Do not use any damaged ropes or connecting loops.

Rope couplings and safety devices should not be able to detach themselves in the event of a rope being loose.



- If the machine is being used in one location for an extended period of time, check the anchors regularly!

Traction rope

The reliability of the driving system is dependent on the condition of the traction rope.

Rope construction and inherent stability (crush resistance, impact resistance) must be able to withstand the active loads.



- You should therefore only use ropes provided or approved by Jakob AG.
- The traction rope should not be lubricated.

We will accept no responsibility for any damages and liabilities resulting from the use of ropes which are unsuitable or have not been approved by us.

The rope diameter must be in accordance with the information on the identification plate.



- Danger of injury! Always close and lock the housing cover over the driving system before operation.
- Wear gloves when handling wire ropes.



- Secure freely suspended loads against twisting so that the rope will not become twisted.



- Damage to the rope: squashed, untwisted, non-circular ropes, bent rope or ropes with kinks or broken strands should not be used.
- Ropes with protruding strands: remove protruding strands.
- Damage to either end of the rope: If possible, shorten rope.
- Replace the rope when more than 10% of the rope's nominal diameter is worn out at its thinnest point.

Rope connections, sleeves, compression heads, short splices, etc. should not be fed through the driving system.

When diverting the rope over sharp edges, obstacles, etc., protect the rope using appropriate floor rollers or wooden or plastic supports.

The rope must be professionally laid, i.e. it must be unwound from the winch so that there are no loops, kinks or twists.

The free end of the traction rope is coloured.



- Danger! Stop the machine as soon as the coloured end reaches the machine during lowering.



- Danger! To relieve the rocker, the unloaded end of the rope should not hang down more than **50 m**.

Load

The load is attached to the traction hook using the appropriate means of fastening. This prevents the load from slipping or tipping during operation.

Appropriate means of fastening are, e.g., eyelets, loops, straps, harnesses.

The load's inherent stability must be guaranteed in order to prevent any slipping or tipping during operation.

Be aware of obstacles which would cause the load to tip or jam.

Refrain from using unchecked loads (e.g. buckets, containers) during the operating stroke or in intermediate positions or monitor them with a load-weighing device.

Please take possible stress peaks (in static positions) from external influences into consideration during periods of resting during operation and anchoring work.

Excessive blows to and stresses on the rope pulling machine (e.g. anchoring to machines which have been moved, wind, etc.) should be prevented by use of a strain release wire.



- Danger! Do not store load, pulleys and ropes in the danger zone!



- Secure freely suspended loads against twisting!

Pulling, hoisting and lowering

Check that you have the correct direction of rotation for hoisting and lowering before commencing operation. If the direction of rotation is incorrect, consult an electrician to check the direction of rotation of the phases and, if required, to correct them (check any extension cables which may be present). (See chapter 2).

The careful installation of the rope drive and correct machine assembly are the best guarantee of smooth operation.

Place the rope on the rocker as shown on the information sheet (see chapter 5.2, observing the location of the rope with the load hook)

Check the length of the rope and the machine's hoisting abilities by pulling!

Keep an eye on the load when it is moving!

When pulling diagonally upwards, the rope pulling machine can tip over. Shim with wood or avoid diagonal pull using a pulley.

If anything is unclear, request supervision from an assistant, via radio communication if required.



- Always close and secure the housing cover over the driving system using screws before operation. This way the rope is protected against derailment and no foreign objects can enter.

The free end of the rope must also be able to exit the rope pulling machine unhindered.



- Never allow the hook to touch the housing.

When lowering, ensure that the rope is long enough. Stop at least 2 m before the end of the rope and shim or rehang the load.

3.4 Approved users

The motor-driven rope pulling machine may only be operated by specialists and authorised persons. As the operator of the motor-driven rope pulling machine, ensure that the user guide manual is made available to the user and ensure that they have read and understood this.

3.5 Warranty and Guarantee

Warranty and guarantee claims for personal injury or damage to property are not included if they can be traced back to non-compliance with the following user guide:

3.6 Actions in case of emergency

Check before starting operation if and where you can get mobile phone reception or where there is an available telephone. Check the availability of a first-aid kit.

4 Technical specifications

Hoisting/lowering tensile force	8 kN
Rope speed:	approx. 1 - 6 m/min
Duty cycle	Hoisting Lowering
	30% 30%
Rope path: hoisting/lowering	unlimited/unlimited
Width / length / height dimensions:	394 mm / 509 mm / 295 mm
Effective driving wheel diameter:	160 mm
Dead weight	rope pulling machine
	32 kg
Gear grease	Liquid grease Microlube GB 0
Traction rope:	
Model	HABEGGER 4 x 25 FW+FC galvanised
Diameter	8.2 mm
Length	optional
Breaking load	50 kN
Driving motor:	Electric motor
Model / output	NDS 056-S1-210-1500-RT22-EMB-E
Voltage - nominal current	1 x 230 V – 3.22 A
Standard / protection class	VDE 530 / IP 44
Duty cycle during intermittent operation	Duty cycle = 30%
Mechanism group (DIN 15 020)	1 C _m DIN 15 020
Current supply, residual- current circuit breaker	RCCB Typ B
Plug	T12 (1xL+N+PE)
Holding brake	Permanent magnet brake
Nominal braking torque	10 Nm
Armature voltage	24 V
Control system version	920-0016
Sound power level L _{WA}	max. 85 dB

5 Operation

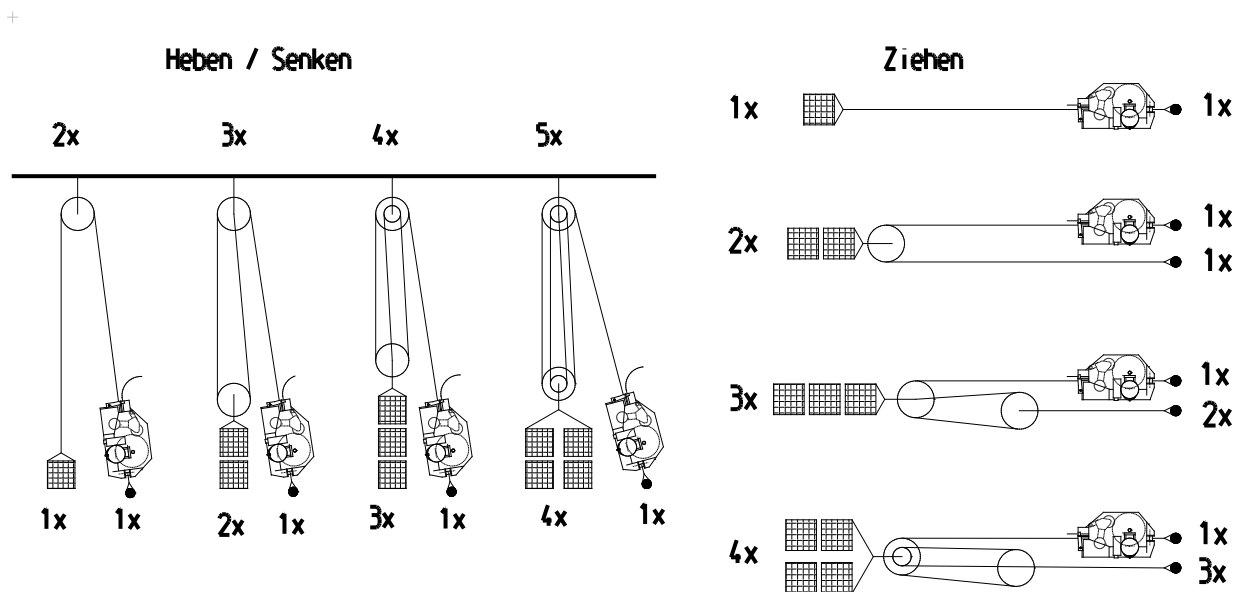
5.1 Preparation

Tensile force

- Estimate using the load to be moved or calculate using a load-weighing device.
- Smaller or larger tensile forces will arise depending on whether the load is simply being pulled or whether it is being hoisted.
- The tensile force may not be larger than the rope pulling machine's nominal tensile force (employ rope tension meter).

For larger forces:

- Reduce the tensile force using pulley blocks. Use the correct anchors and means of fastening (straps) for the force.



Determine and prepare mounting options for the load

Identify a location where the machine can be anchored and attach the rope pulling machine in the pulling direction using the correct means of fastening.



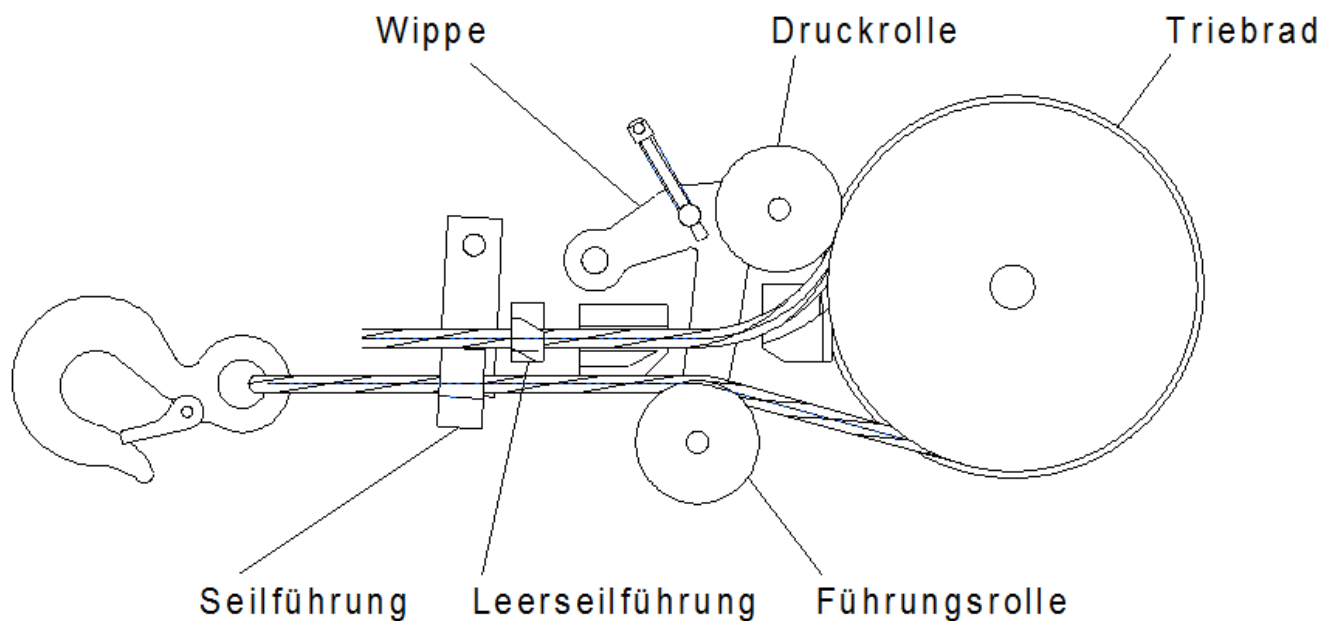
- The rope pulling machine must be able to freely position itself in the direction in which the rope is moving. Danger of housing breaking!

Laying the rope.

5.2 Insert rope

Insert the rope only once you have carried out all the preparatory works, i.e. you have anchored the rope pulling machine and attached the load. This means that the rope can be pre-tensioned by hand and placed on the desired point on the driving wheel without an idle stroke. The rope is placed in the driving wheel as shown in the following diagram (also see chapter 2):

1. Unlock cover and swivel open.
2. Loop the rope with the load hook at the bottom
3. Place loop in driving wheel keyways.
4. Place unloaded rope at the top underneath the thrust roller (lift rocker).
5. Place load-bearing rope in guiding pulley.
6. Place load-bearing rope in rope guide
7. Place unloaded rope in empty rope guide
8. Gently tighten rope using motor.
9. Double check rope placement is correct.
10. Close and lock cover



5.3 Pulling and hoisting



- Check that you have the correct direction of rotation for hoisting and lowering before commencing operation.
- If the direction of rotation is incorrect, consult an electrician to check the direction of rotation of the phases and, if required, to correct them (check any extension cables which may be present).



- Any extension cables up to 30 m long must have a minimum cross section of 5x2.5 mm².
- For longer cables, this must be at least 5x4 mm².

After inserting the rope, start the motor by pushing the button on the pendant station.

Press the “Raise” button. (see chapter 2)

When hoisting, ensure that neither the housing nor the rope are being diverted or tilted by objects or obstacles. The freely exiting rope should not be impeded.



- Keep an eye on the rope during movement.
- Danger of slipping with small loads!
- When hoisting to over 50 m, the unloaded rope should not be allowed to freely hang down.

As the special design of the motor does not allow for forced ventilation, long-term use should be interpreted as intermittent operation with a duty cycle of 30%. When driving longer ropes or for slightly longer duty cycles, the temperature of the motor should never exceed a value of 80°C.

Never allow the hook to touch the housing.

Stopping the driving wheel:

Release button

In emergencies, e.g. in the case of jams:

Press the “Emergency stop” button. (see chapter 2)

5.4 Lowering

Press the “Lower” button. (see chapter 2)



- Danger of falling! Pay attention to end of rope! The unloaded rope should slide into the machine freely and without kinks. Stop lowering at least 2 m before the end of the rope.



- Danger of burns! The resistor underneath the motor can get very hot during lowering.

6 Faults

Faults	Possible causes	Actions
Motor will not start when button is pressed	Power cable not plugged in Extension cable not connected Extension cable broken Fuse in the supply has blown Emergency stop button on pendant station pressed Hook touching housing and Limit switch pressed Other causes	Insert plug Connect cable Replace cable Clarify cause, secure Replace Release button Press the "Lower" key and the override button on the control box Call an electrician, diagram is in control cabinet
The motor is not moving despite making noise	Pull on rope is greater than permitted tensile force	Reduce load or employ pulley block pulling system
Rope is not moving despite driving wheel turning	Rope incorrectly inserted Too small or too thin rope inserted Rope severely worn out Driving wheel or rope too heavily greased Groove in driving wheel heavily soiled No load on rope	Insert rope according to diagram Insert correct rope Insert new rope Clean Clean Load rope

7 Maintenance

The following checks and maintenance work should be carried out:

Task	At the start of operation	As required	Comments
General visual checks: - driving system - housing - Anchor bolts, anchoring straps	X		
Screw check		X	after first use or overhauls
Clean driving wheel		X	
Direction of rotation for electric motor	X	X	UP button = Rotation of driving wheel in anticlockwise direction
Sprocket re-lubrication		X	Gear grease
Rope: Visual checks - compression sleeve - eye hooks with fastenings	X		Checking for deformities, damage, tears or broken wires
Rope: Cleaning		X	
Rope: Diameter check		X	for worn out ropes, when rope diameter < 7.4 mm, change the rope!

The machine, the rope and the accessories must be checked at least **every 2 years** (see sticker on machine) by a qualified professional. This ensures that all parts are checked for deformities, wear and tear, and cracks. The results of these checks should be entered into the test book. The checks should be arranged by the operator. Additionally, local regulations, as well as additional checks at short intervals in case of severe operating conditions, must be implemented by a qualified professional.



8 Replacement parts

Replacement parts are provided on a separate list. This can be requested from Jakob AG.

9 Disposal

Please refer to country-specific regulations for disposal.

Empty all oil from your HIT-TRAC.

Dispose of even the smallest quantity of oil professionally, i.e. take it to the relevant location.

When dismantling the machine, separate the different types of material as much as possible in order to facilitate recycling:

Store and recycle metals and plastics separately.

Consider the fact that protecting the environment and recycling materials helps us all.

10 Accessories

10.1 Supporting pipe

Using the supporting pipe, the rope can be effortlessly wound onto and unwound from the winch.

1. Remove crank handle
2. Slide winch onto hub and secure using star grip.
3. Place rope under rope guide.
4. Unwind rope.
5. To wind the rope, clamp the crank handle to the winch.



- For ropes longer than 50 m, we recommend using a winch drive in order to avoid faults or accidents caused by the loose end of the rope lying around.

10.2 Storage boxes

A storage box can be used to store and transport the motor-driven rope pulling machine and the rope.

10.1 Generators

To use the HIT-TRAC with a generator, an electrical output of at least 1 to 1.5 times the motor power must be generated.

Jakob AG will gladly support you in evaluating the generator.

