



Nr 9972 - 34001100

Underground cable winch 3400

User manual



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Thank you for choosing a SAHLINS product!

We want you to be satisfied with your equipment. This instruction manual has been written to help you handle it safely and care for it correctly. Please read the manual thoroughly before using the equipment so that you are aware of the safety measures you need to take when using it.

General information

During the design and manufacture of the equipment, we have taken great care to reduce health and safety risks.

Laying cables or installing ropes involves a variety of risks, and to reduce these it is important:

- to study and follow the instructions
- to train staff in maintenance and safety on an ongoing basis
- to ensure that appropriate equipment and tools are available
- that the owner and supervisor are responsible for ensuring that effective safety programmes and regulations are developed and followed by all staff

Our instructions contain important information that all users should know and understand before they use the equipment. To ensure the safety of yourself and others, you should pay particular attention to the points/sections with following headings:

WARNING!

Important information that warns you about the risk of serious personal injuries or danger of life if the instructions are not followed.

CAUTION

Important information that describes how you should prevent damage to machinery and equipment or how to avoid a situation that can cause personal injury.

NOTE

Advisory information regarding the operation, care and maintenance of machinery and

equipment.

Safety rules

Personnel safety

1. Read and acquaint yourself with all of the warnings, precautionary measures and instructions in the user- and service manual, and read and learn the importance of all the signs on and around the equipment. In the case of any doubt, ensure that you have answers to all your questions before beginning work.
2. Do not work with machinery or equipment if you're under the influence of alcohol, strong medications, sedatives or other drugs that can make you less alert or affect your judgement.
3. Take safety measures such as not wearing loose clothing which can get stuck in moving parts or controls.
4. If possible always wear gloves to protect your hands and fingers against cuts and abrasions, burns and solvents.
5. Always use safety goggles if there is a risk of flying particles, flakes of material, dust or other objects that can damage your eyes, or where safety regulations require this.
6. Always use a protective helmet and safety shoes during work that requires this.
7. Always use hearing protection in work areas with high noise levels.

Safety in the workplace

8. Keep the work area clean and free of material.
9. Do not permit unauthorised personnel to be present within or around the work area. Always keep complete control of who is present.
10. Areas that will be touched with hands or feet must be kept clean, dry and free of oil or grease.
11. Store spare parts and tools in the designated places when these are not in use.
12. Do not stand beneath or permit anyone else to stand beneath equipment that is lifted or suspended.
13. Acquaint yourself with the weight limitations in ropes and lifting equipment and the free space required for these.

Equipment safety.

14. Warning, prohibition and information signs may not be concealed, changed, damaged or removed.

15. Before direction of portable equipment, ensure that the ground surface is firm and flat. Check that supports and locks are securely in place. Follow the instructions for locking and erection of equipment where applicable.

16. Check the components in the equipment before each operation to ensure that no parts are damaged or are suspected to be damaged. Repair or replace damaged parts or parts which are suspected to be damaged. Repair or replace damaged parts before starting and operating the equipment. Only use original spare parts.

17. Before starting on operating equipment, ensure that no people, animals, tools, spare parts or other foreign objects are present in, on, under or around it. Check that all protective and safety equipment is correctly installed and in satisfactory condition.

18. Do not permit untrained personnel to use any equipment without supervision by a trained operator.

19. Never leave the equipment without control and supervision.

20. Pay attention when using the equipment to visible defects or unusual noises that can indicate a fault. Immediately halt use if any fault is suspected.

21. Carry out all inspection, maintenance, lubrication and adjustment with great care and according to the manufacturer's recommendations.

22. Carry out all inspections, maintenance, lubrication and adjustments with great care, and in accordance with the manufacturer's recommendations. The machine must always be stopped during maintenance work.

Safety regarding flammable and environmentally-hazardous substances.

23. Store flammable, combustible and dangerous substances in a safe place and in the appropriate containers. These must be clearly marked in accordance with current regulations.

24. Do not permit smoking or open flames in the vicinity of fuel and oil tanks or other flammable regulations.

25. Shut down all engines when filling with oil and fuel. Follow the instructions and recommendations which apply to the handling of these substances.

26. Never start a diesel or petrol engine in a confined space unless it is properly ventilated. Dangerous gases can kill.

27. Do not use flammable and/or combustible substances, such as petrol, paraffin or diesel oil to clean components. Always use non-flammable solvents which are intend-

ed for cleaning.

Safety for hydraulic systems

28. Do not perform any maintenance on components in hydraulic systems without first depressurize.

29. Do not perform internal checks on oil systems before the system has been depressurized.

Oil under pressure can be dangerous if the pressure is relieved incorrectly.

Oil can become very hot during operation. Wait for the system to cool down before carrying out work.

30. Do not disassemble a hydraulic cylinder from its connections until the system is depressurized.

31. Do not operate pressure systems with worn or damaged hoses, valves and seals. Replace damaged components before operating the system again.

32. Do not attempt to disassemble hydraulic cylinders or other hydraulic equipment unless you are trained to perform such work.

33. Never adjust pressure settings in hydraulic systems beyond recommended values.

34. Follow the manufacturer's recommended control and maintenance instructions for pressure systems to ensure that safe conditions exist when operating.

Introduction

The Underground Cable Winch 3400 is a hydraulically-operated 4-tonne winch with variable pulling speed and force. The winch is equipped with double bullwheels and an auto layering system on the collecting drum. By having double bullwheels, this winch differs from a drum winch as follows:

-always the same uniform pulling force and speed no matter how much cable/rope there is on the collecting drum.

-fixed input point, that is, no lateral wander of the cable/rope.

-no problems with winding up the cable.

The winch features infinite control of speed and pulling force, both forwards and backwards.



Technical data

Pulling force	Max 4000 kp
Speed	Max. 28 m/min
Pulling cable	Standard: Steel L=1000 m, Ø10 mm
Operation	Hydraulic
Engine	Petrol engine 37 hp
Chassis	Push brake, spring suspended wheel axle, adjustable support legs and wheels.
Dimensions	Length 3570 mm, width 1855 mm, height 1250 mm.
Weight	1575 kg

Handling

Setting up:

Screw the support wheel up as far as it will go (1). Then lower the support legs down and pin them at a suitable height. Screw the support down until the machine is standing firmly on the support legs (2). When necessary, anchor the machine also in the special anchor point (when pulling thicker ropes/cables).

1



2



Anchor point

NOTE

You should observe the following in order to achieve the longest service life of the cable/rope:

- When using a new cable/rope, you should not use a pull force higher than about 700 kp for the first 2-4 pulls.
- Make sure the cable rollers which are used do not have too small a diameter or that they are defective in any way.
- Make sure the cable/rope is not pulled over any sharp edges such as on stones, corners or suchlike.

WARNING! VERY IMPORTANT !

A swivel must **NOT** be used when pulling as this could cause the cable/rope to untwist and thus become badly damaged. Only when there are strong requirements relating a swivel, a friction swivel of type SAHLINS 7200-1400 may be used.

WARNING !

The winch must **NOT** be used for hanging loads.

Before starting

Check the oil-level (make sure the winch is horizontal).

The engine: Top up with oil if necessary -up to the 'Full' mark on the dipstick.

Pour slowly and carefully.

Push the dipstick down properly until the cover is flush with the tube when checking.

The oil dipstick must always be fully inserted into the tube when the engine is running.

Hydraulic tank: the oil level should be between the 'min' and 'max' marks on the level glass.

Check to make sure that all hydraulic hoses and pipes are not damaged in any way.

Starting and stopping the engine

Fill up with fuel

Put the winch control into the 'zero' position (straight up).

Start the engine by turning the ignition key to the 'ON' position. Run the engine for about 5-10 minutes before pulling the cable/rope. Always run at full throttle when pulling a cable/rope. When stopping the engine, turn the ignition key to the 'OFF' position. See also separate instruction book for Vanguard petrol engine.

Operation

You perform the control forward-backward by moving the lever close to the hydraulic tank.

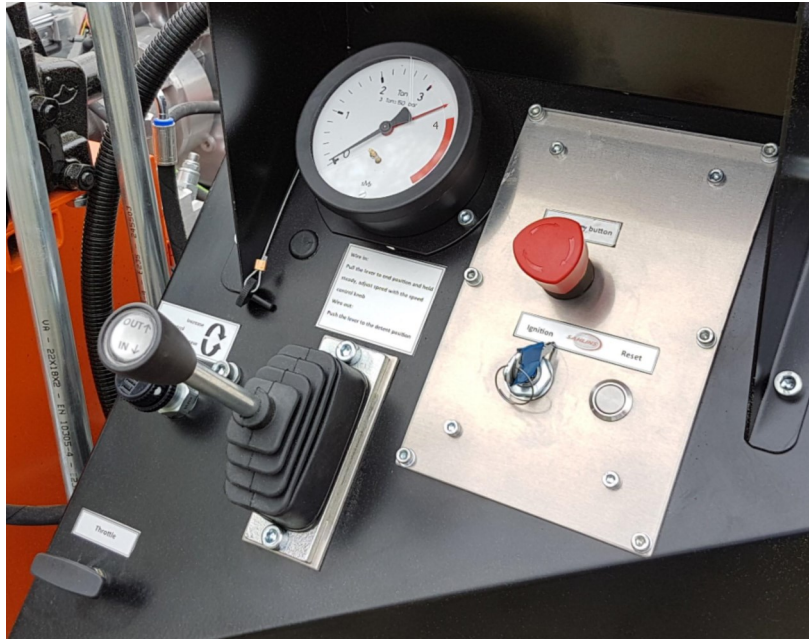
Operate by moving the lever forward or backward from the 0-point (straight up). The speed is then adjusted by turning the "speed knob".

In order to increase the pulling force when the engine is already under maximum load, you must reduce the winding-in speed.

When pulling the cable/rope out, the control lever is pushed forward to the detent. You can then pull the cable/rope out with a light pull or tug.



Pulling force limitation



The winch is fitted with a manometer from which you can read off the pulling force. The short-circuiting contact from the manometer on the winch is connected to operation of the pump. When the preset maximum pull force is reached, the variable pump is unloaded.

You can set the maximum pull force on the manometer by turning the red indicator by means of the key which is attached.

You press the key down whilst turning it.

Reset by pressing the reset button.

MAINTENANCE

Engine: See separate instruction book for Vanguard Engine.

Cooling system:

Grass and other litter can easily clog the cooling system after operation over a long period. Remove the fan shroud once a year or after every 100 hours of operation and clean it to prevent the engine from overheating and overrevving. Always keep the silencer and the area immediately around it free from grass, dirt and litter.

Air cleaner: See separate instruction book for Vanguard Engine.

Hydraulic system:

Hydraulic oil should be analysed or changed at least once a year. The tank should be cleaned if the oil deposits a layer of dirt.

Hydraulic oil: OK Delta Oil 32, Shell Tellus T32 or equivalent.

Tank capacity: approx. 130 litres.

Hydraulic oil filter: Replace the filter after about 200 hours of operation, but at least every 6 months. (For position see page 11 part no. 65) In addition, you should replace the oil filter when changing the oil or whenever

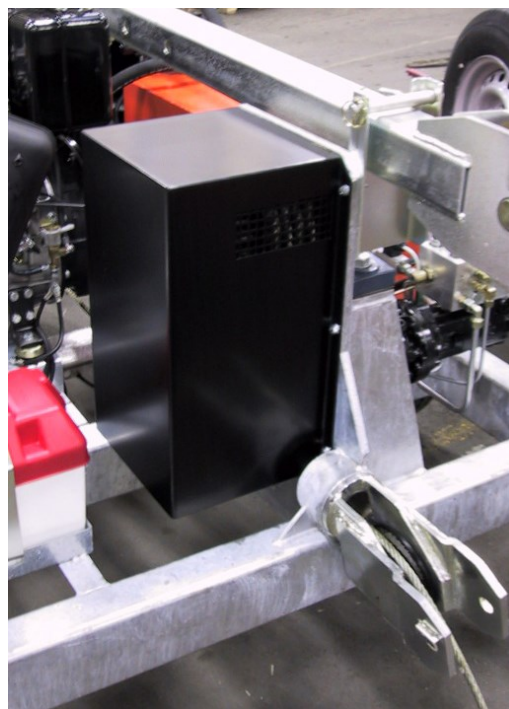
you make any major adjustment or repair to the hydraulic system. The filter cartridges must on no condition be washed, as reusing washed cartridges could cause serious damage to the system. Always change to a new cartridge. Check the control and all hydraulic connections for signs of any leakage. If there is leakage, tighten the connections.

Filter cartridge: Sahlins 9671-003.

Winch housing:

Grease the bearing next to the wheels.

Tighten the drive chain when necessary by placing shims between the bearing bracket and the support. Check to make sure the protective casing for the wheels not damaged in any way but actually covers the wheels fully.



Planetary gear:

Oil change:

You should change the oil the first time after between 50 and 100 hours of operation. The recommended oil change interval after that is every 12 months. The oil should be changed when it is warm to prevent sludge from forming.

Amount of oil: **1 litre.**

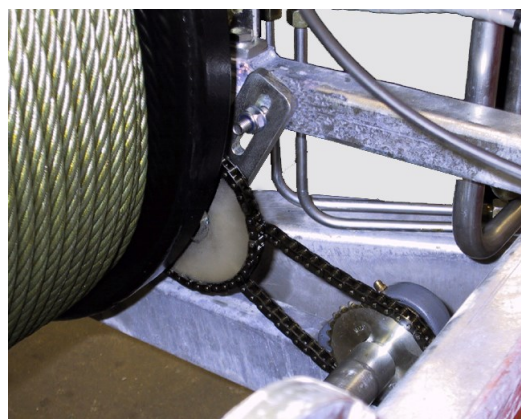
Oillevel:

The level should be up to the level plug at the centre line on the gear. You should check this at least once a year.

Type of oil: gearbox oil SAE 90.

Collecting drum and auto laying head.

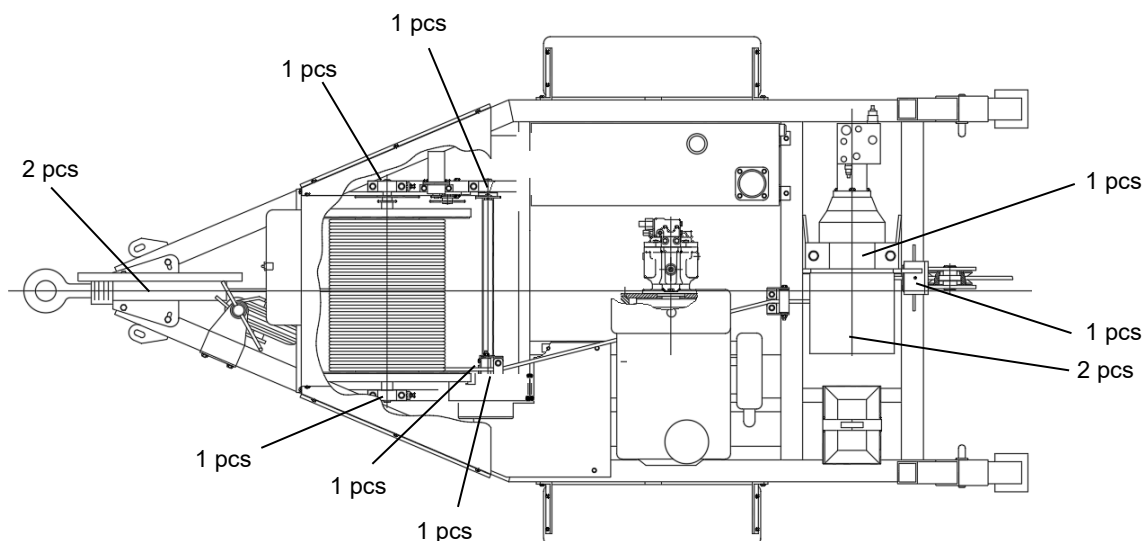
Check, lubricate and tighten the chain for the auto laying head when necessary. Grease the bearing brackets and auto layering head screw and lubricate the bearings on the guide rollers.



Chassis:

Check the front support wheel and tyres at regular intervals (tyre pressure 275 kPa / Psi).

Lubricating points



Guide assembly:

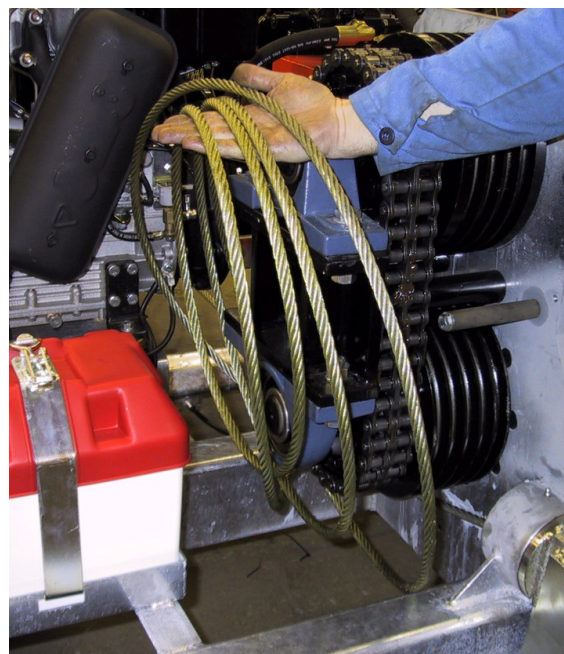
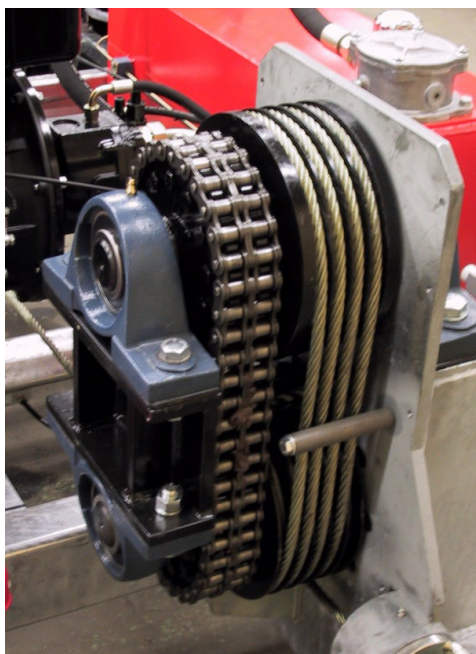
Clean and lubricate all rollers with oil to enable them to run easily and smoothly.

Pull cable/rope:

Check at regular intervals to ensure there is no damage.

Fitting the cable/rope bullwheels:

- Make five loops.
- Fit the outgoing cable/rope of the final loop into the input roller on the winch.
- Fit the cable/rope around all grooves of the bullwheels, through the guide assembly
- Move the auto layering head to the end position where the fixing point of the cable/rope on the drum is located.
- Move the auto layering head until it has precisely passed the end position and starts to move towards the centre of the drum and remains there.
- Fit the cable/rope through the auto layering head and fit cable / rope to drum.
- Fit the protective casing over the bullwheels ensuring correct alignment of rope.

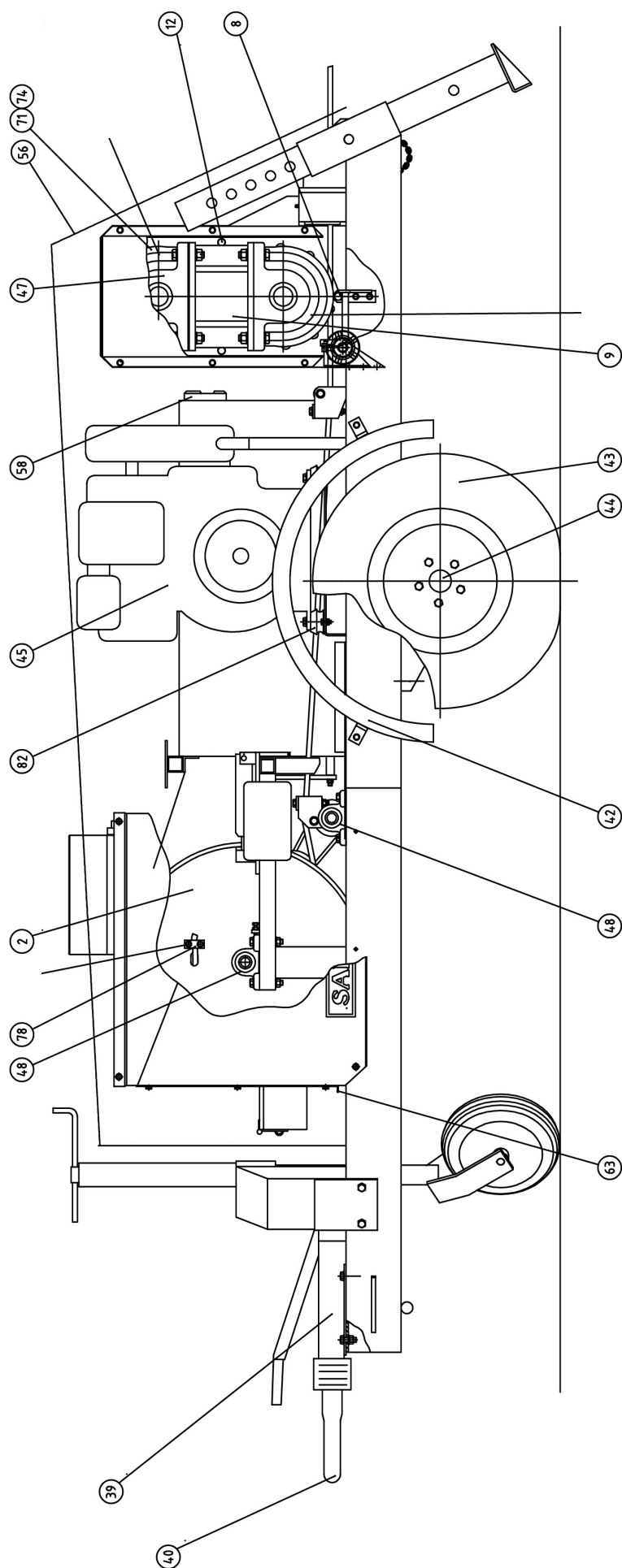


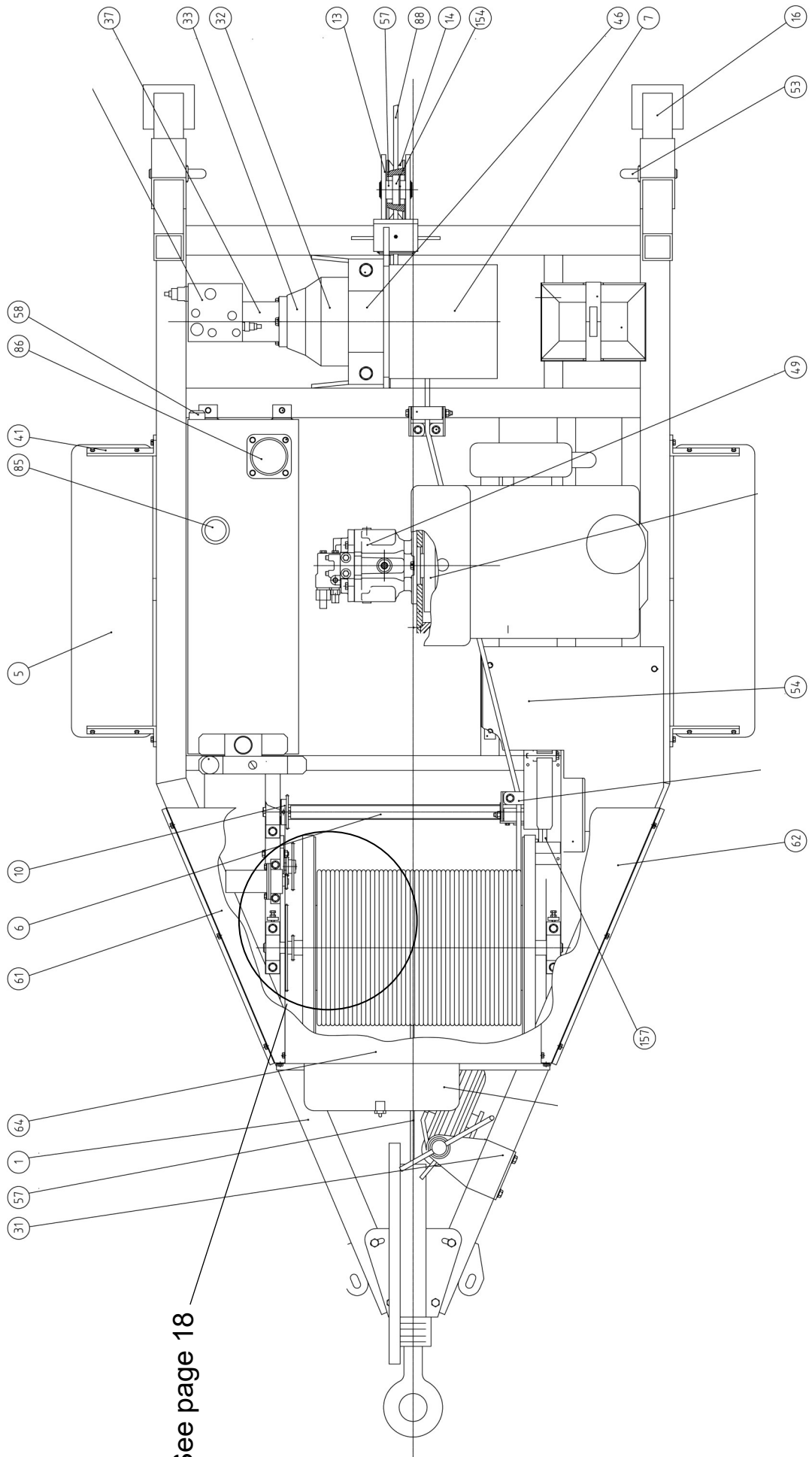
NOTE that you must be extremely careful when fitting the casing. Always check to make sure that the steel cable is in the correct position in the grooves.

General:

Lift the winch by the front lifting eye and in the upper holes on the support legs using an approved lifting device.

Spare parts



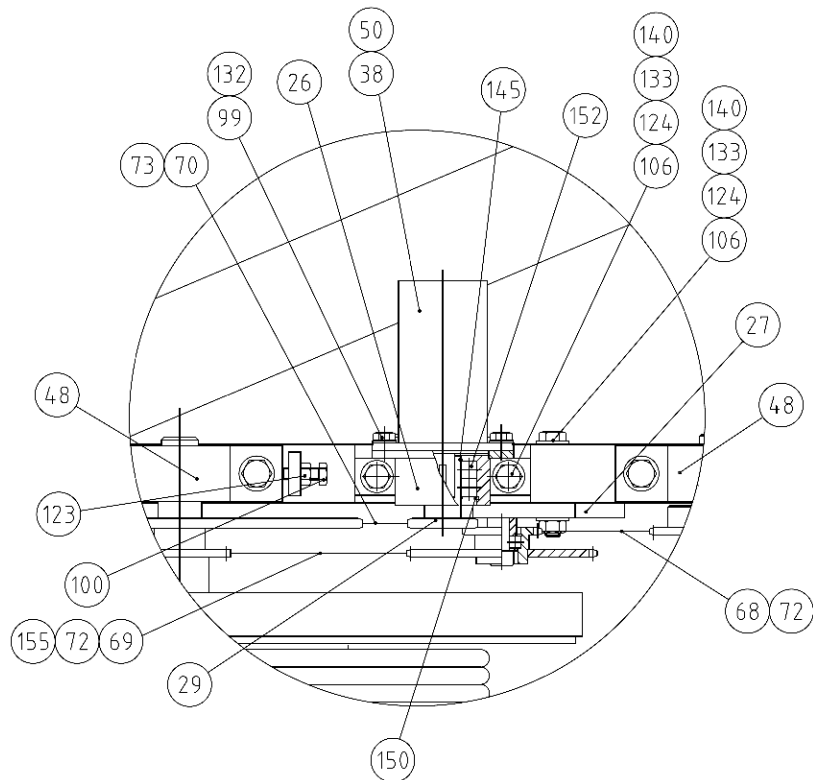


See page 18

Table for pages 14 – 15			
Ref. No.	Qty.	Part No.	Part name
1	1	3300-5001	Frame
2	1	3300-5002	Drum
5	1	3300-5010	Hydraulic tank
6	1	3300-5011	Auto layering screw
7	1	3300-5012	Bullwheel protection
8	1	3300-5013	Sliding off guard
9	1	3300-5014	Shaft spacer
10	1	3300-5015	Chain wheel
12	2	3300-5016	Sliding off guard
13	1	3300-5017	Housing - guide roller
14	1	3300-5018	Guide roller
15	1	3300-5019	Shaft for break roller
16	2	3300-5020	Support leg
31	1	9583-007	Support wheel
32	1	9680-004	Planetary gear
33	1	9686-001	Flange
37	1	9641-10202	Hydraulic motor
39	1	9582-016	Push brake
40	1	9582-010	Towing eye
41	4	3300-5039	Mudflap fitting
42	2	3300-5042	Mudflap
43	2	9581-013	Wheel
44	1	9580-009	Wheel axle
45	1	9604-2801	Engine Vanguard
46	1	9231-313	Bearing housing
47	2	9231-310	Bearing housing
48	4	9231-205	Bearing housing
49	1	9642-0041	Transmission pump
53	2	9804-2807	Locking pin
54	1	3300-5029	Ramp
55	2	3300-5043	Roller
56	1	3300-0010	Cover
57	2	3300-5038	Spacer
58	1	9673-001	Level glass
61	1	3300-5035	Casing - left section
62	1	3300-5036	Casing - right section
63	1	3300-5033	Casing - front section

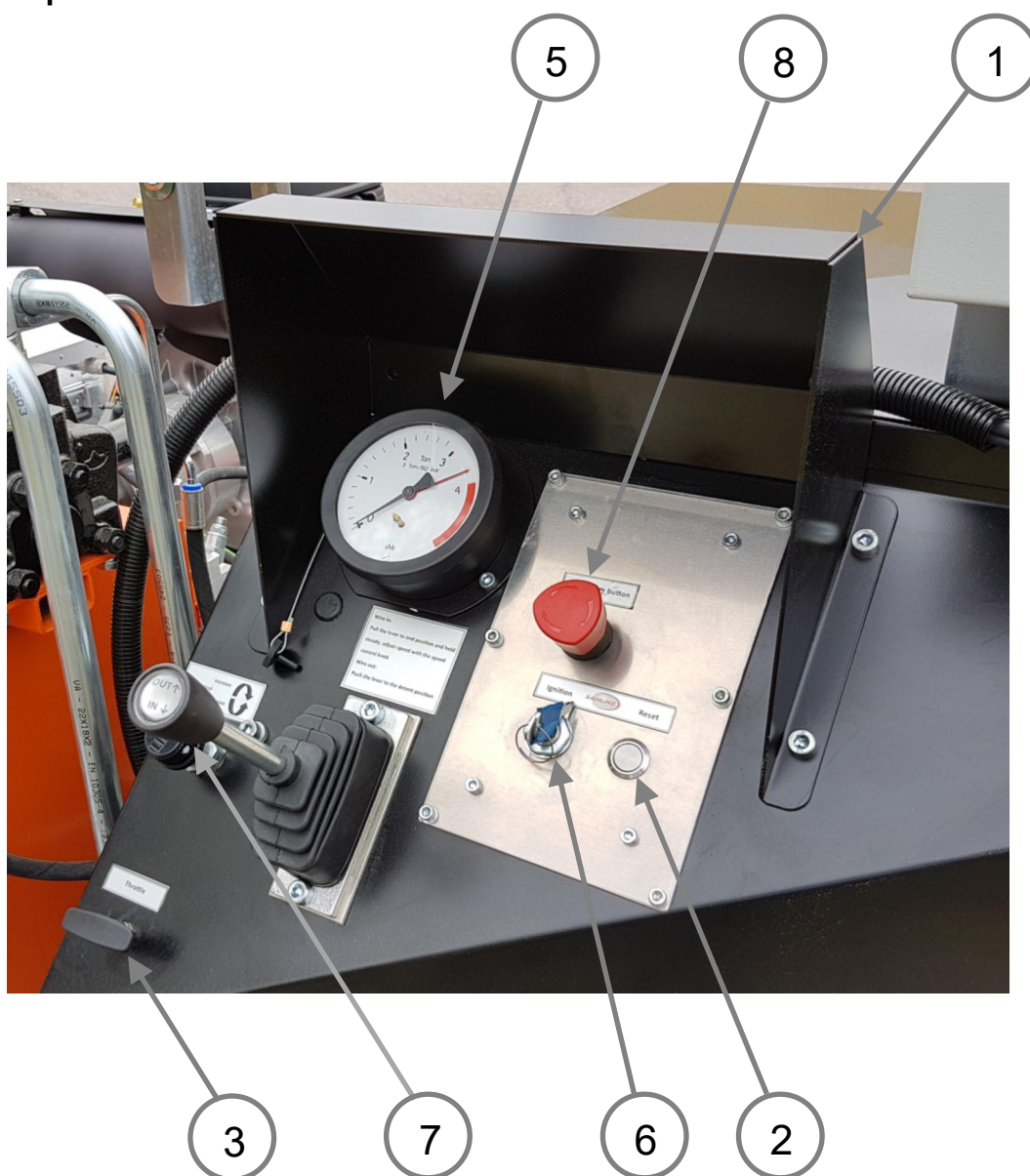
Table for pages 14– 15			
Ref. No.	Qty.	Part No.	Part name
64	1	3300-5034	Casing - upper section
71	1	9541-16B-1	Roller chain
74	1	9542-16B-2-A	Straight coupling link
78	1	3200-5063	Locking plate
82	4	9503-002	Isolator
85	1	9674-002	Air bleed filter
86	1	9671-002	Hydraulic filter
88	1	7543-001	Steelwire
154	1	9201-6208-2	Grooved ball bearing
157	1		Drum break

Rope drum operation



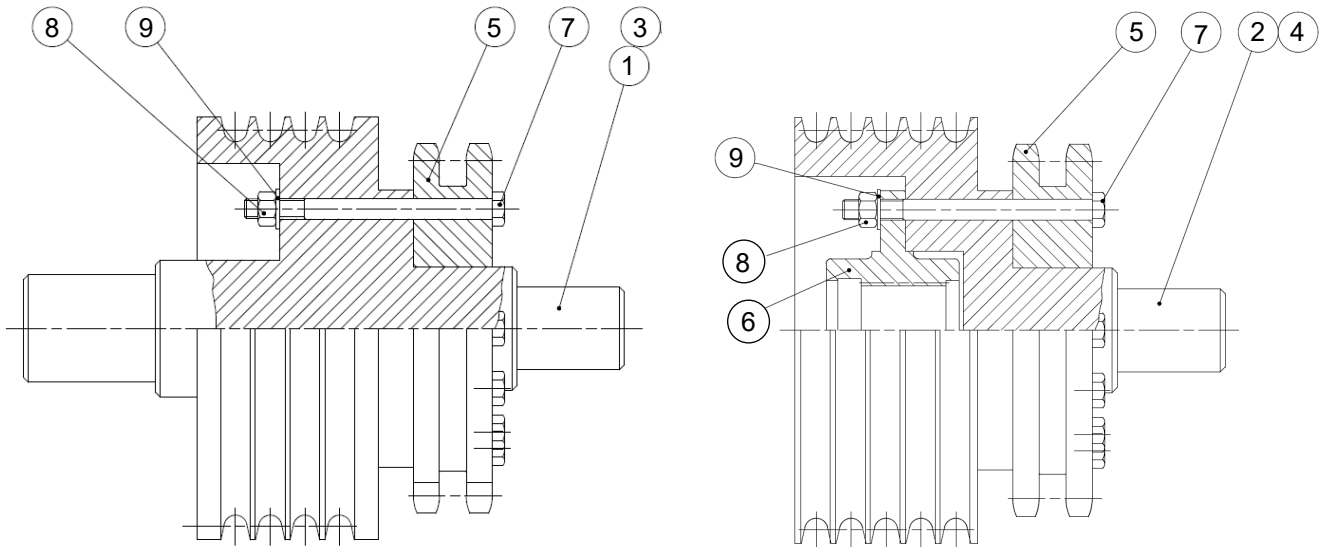
Ref. No.	Qty.	Part No.	Part name
26	1	3200-5040	Bearing housing
27	1	3200-5041	Chain tensioner
29	1	3300-5041	Chain wheel
30	1	3200-5056	Chain wheel
38	1	9641-03201	Hydraulic motor
48	1	9231-2050	Bearing housing
66	1	3200-5062	Spacer pipe
68	1	3300-5044	Roller chain
69	1	3300-5045	Roller chain
70	1	3300-5046	Roller chain
72	1	9542-06B-1	Straight coupling link
99	2	9361-08020	Screw M6S M8x20
100	2	9361-08030	Screw M6S M8x30
106	1	9361-10060	Screw M6S M10x60
119	1	9371-10050	Allen screw M6S M10x50
123	2	9421-08	Nut M8
124	4	9421-10	Nut M10
132	2	9444-082	Spring washer FBB 8,2
133	4	9444-102	Spring washer FBB 10,5
14	4	9441-105	Washer BRB 10,5
145	1	9302-025	Retaining ring
149	1	9301-026	Retaining ring
150	1	9301-047	Retaining ring
152	2	9201-6005-2	Grooved ball bearing
155	1	9542-06B-1-B	Coupling link

Instrument panel



Ref. No.	Qty.	Part No.	Part name
1	1	3200-5045	Instrument protection
2	1	9711-108	Reset button
3	1	9609-003	Throttle control
4	1	9609-004	Throttle cable
5	1	9672-011	Manometer with electric contact
6	1	9604-5003	Ignition lock
7	1	9661-025	Lever
8	1	9711-009	Emergency switch

Bullwheel



Ref. No.	Qty.	Part No.	Part name
1	1	3300-5003	Wheel Ø12 - upper
2	1	3300-5004	Wheel Ø12 - lower
3	1	3300-5105	Wheel Ø10 - upper
4	1	3300-5106	Wheel Ø10 - lower
5	2	3300-5006	Chain wheel
6	1	9687-005	Flange
7	24	9361-12150	Screw M6S M12x150
8	24	9421-12	Nut M12
9	24	9441-130	Washer BRB 13/24x2,5



EG-försäkran om överensstämmelse **EC declaration of conformity**

Vi försäkrar, i egenskap av tillverkare, att nedanstående produkt uppfyller alla tillämpliga bestämmelser i 2006/42/EG.

We declare, as a manufacturer, that the following product meets all applicable provisions of 2006/42 / EC

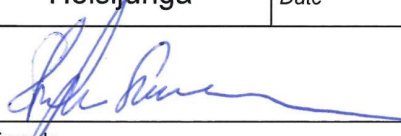
Artikelnummer Article number	3400-0001
Benämning Name	Jordkabelvinsch 4T / Underground cable winch 4T

Tillämpade harmoniserande standarder / Applied harmonised standards

Andra tillämpade standarder och specifikationer / Other applied standards and specifications

Behörig att sammanställa teknisk dokumentation / Authorised to compile technical documentation

Namn Name	Undertecknad / Undersigned	Adress Address	Enligt nedan / As below
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Ort Town/City	Holsljunga	Datum Date	2019-09-02
Namn Name			
Namnförtydligande Name in block letters	Stefan Svensson		
Befattning Position	VD / CEO		

Notes

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Notes

[illegible]



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