

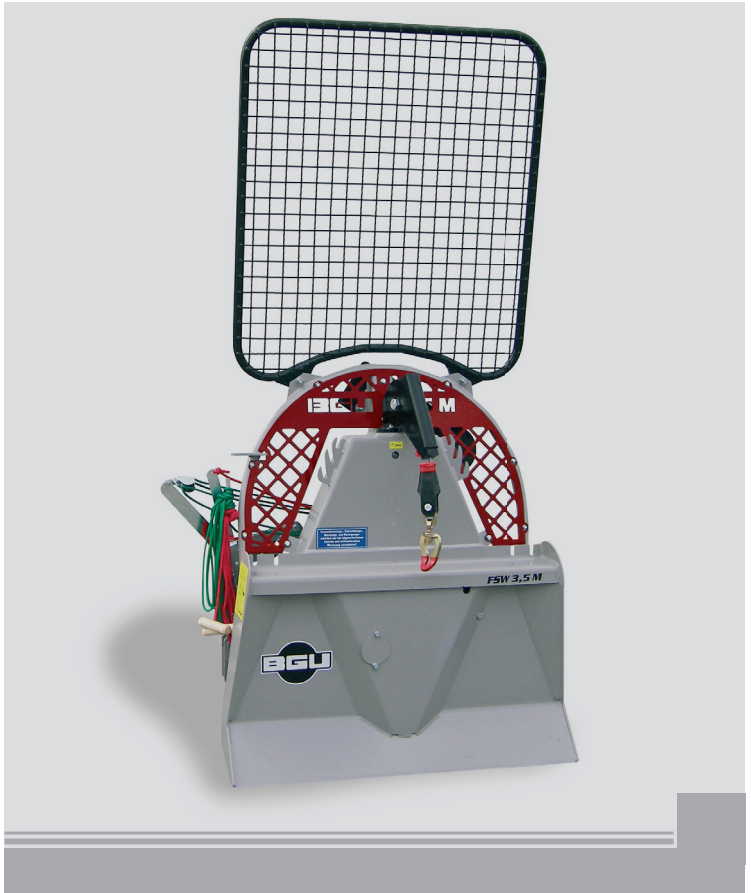
# ORIGINAL USER'S MANUAL

Carefully read these instructions before starting to skid with your log winch!

- Setup & installation
- Use
- Maintenance
- Accessories



## Logging winch FSW 3.5 M Mechanical version



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# 1. GENERAL INFORMATION

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Dear customer,

Thank you very much for your trust and preference in choosing our equipment and joining the number of our best customers in the world. We are confident that our equipment will be up to all your expectations and assure you a long lasting quality and performance.

Our timber winches are available in different versions of different pull force.

## **FSW 3.5 M pull force 3.5 t, mechanical control system**

All versions are designed and conceived for farming and logging applications. Any other use shall be considered non-compliant application. The manufacturer accepts no responsibility for damages caused by non-compliant application. In this case the operation of the machine is completely at user's risk.

### **1.1 About this manual**

Please take time to read this manual and learn to how operate and maintain the loader safely. For your easier reading this manual is laid out in several sections. The sections are progressively numbered 1 through 14 and listed on the "content" page. The information, pictures and technical data in this document reflect current or planned product features, functions, and characteristics as of the publication date. Because of on-going product improvements and feature additions, information in this document is subject to change without notice. If you are experiencing a problem or functional trouble on your machine, please read the "trouble-shooting" section to identify possible causes and remedies. When you have checked all the possible causes listed and you are still experiencing the problem, ask your Authorized Service Centre for help. When you order parts maintenance or repair services, your Authorized Service Centre, your dealer or eventually the manufacturer need your machine serial number and engine serial number. These are the numbers that you have recorded on the *product identification label* of the manufacturer on the machine.

### **1.2 Delivery and transport claims**

Upon delivery of the machine please check for visual machine damages such as damaged packing or scratched buckled parts. If so, make a remark on all copies of the delivery bill (including the one for your own use) and have the driver sign for acceptance before unloading.

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**Have the truck driver accept your claim by hand signing it.**

Should your shipper or the truck driver refuse to accept your claim and countersign the delivery bill, fully reject delivery and make sure to inform us (the manufacturer) immediately. No claims shall be taken into account by the shipper or by the insurance company, if a reservation note is not made on the delivery bill.

All transport damages must be notified within latest 2 days from delivery. Therefore delivery must be collected and inspected within this term. Later claims shall be disregarded. In case of assumed but not visually clear transport damages make sure to mark the following sentence on the delivery bill : „Reserved delivery due to assumed transportation damages“. Insurance and shipping companies act with extreme caution in case of transport damages and sometimes refuse to accept responsibility. Please make sure to provide clear and exhaustive evidence (photos) of the claimed damages.

Thank you in advance for your help and understanding in this matter.

## 2. SAFETY PICTOGRAMS AND WARNING LABELS

### 1. Machine safety label

„Read, understand, and follow all instructions in this manual and on the machine before starting!“



### 2. Safety pictogram

"Do not infringe the dangerous zone!"

Avoid standing in the dangerous zone between the tractor and the log loader.



### 3. Machine safety label

" max 540 min"

This label shows the max admissible number of PTO shaft revolutions the direction of rotation of the driveline.



### 4. Danger sign

„No hoisting!“



### 5. Machine operation sign

"Disconnect the winch, read and comply with manufacturer's maintenance instructions."



### 6. Identification label

„Product identification“

This label shows the company details of the manufacturer and the main machine technical data.



### 7. Identification label

„BGU-Maschinen“ manufacturer's logo"



### 8. Operator's safety label

„Wear steel-toe safety shoes“



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### 3. SAFETY

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**Strictly perform installation, set-up, maintenance, cleaning and transportation of the winch with the power switched off and all moving parts motionless against accidental operation.**

The user shall strictly comply with these operation, set-up, maintenance, repair and trouble-shooting instructions in order to assure safe operation and no damages to the equipment. Moreover, we recommend let the machine be run only and strictly by trained and skilled staff who must be familiar with the applicable occupational safety and health administration rules as well as applicable transportation rules. Incorrect use of the winch can cause serious injury or death. No person under school leaving age should operate a logging winch.

Those who have reached school leaving age but are below the age of 18 may operate a winch if supervised by a competent person of 18 years or over. The machine shall be installed and kept in a suitable location selected by the customer for safest operation.

Make sure that the equipment stands on a safe stable foundation.

The working area around the machine must be kept as clear as possible from surrounding obstacles and slippery foundation floors should be duly treated (do not use saw dust or wood ash for this purpose).

- Due and proper illumination of the working site must be provided at all times.
- Set up the winch on a firm surface and ensure that a wide but confined area is available around it assuring maximum working freedom.
- Mind all operation signs and warning labels on the winch and comply with the instruction given herein.
- Operators must wear steel toe safety shoes, working protective gloves, protective helmet and snug-fitting, tear-resistant work cloths.
- It very dangerous and strictly prohibited to sit/stand on the winch while transporting it.
- Never leave the winch unattended while at work.
- Before switching power on and putting the winch to work make sure that there are no bystanders in the dangerous area and that you have good and clear visibility on the work area.
- Provide due and correct mounting of the winch.
- Make sure to comply with driving speed requirements for the specific road conditions. Use caution when changing direction or turning while skidding uphill, downhill or across slopes.

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- Do not stand in the dangerous area. Assure that nobody stands in between winch and tractor, unless the tractor is safely braked and blocks have been put underneath the wheels to avoid accidental moving.
  - Do not remove nor start handling timber before the winch has come to a complete stop.
  - Periodically check that all screws and fixations are tightly in place.
  - Before putting the winch to work perform a visual checkup of the overall conditions and let a skilled technical overhaul and service your winch at least once a year.
  - It is strictly prohibited to use the winch for any other application than mentioned in this manual. CAUTION: do not use the winch for hoisting applications! (Figure 5)
  - Make sure that power is fully disconnected from the winch and that the tractor has been switched off before performing any repair or work on the winch.
  - Never operate the winch without its safeties and protections duly in place.
  - Strictly use wire rope of adequate crush resistance, strength and quality. Provide for immediate wore rope replacement, if any fault or anomaly is detected.
  - Be sure that your wire rope length provides for a free gap to the upper drum profile of at least 1.5 the rope diameter when fully spooled. In other words, when the rope is fully spooled there should be space left on the drum for at least two more coils.
  - Make sure that your helpers do not put any extra load on the winch without prior informing the tractor driver.
  - Strictly operate the winch from a safe place, at safety distance from the load, the rope and such other dangers as unfelled trees. The driver seat accounts as a safe place only if a safety screen is provided to separate the winch from the tractor in such a way that it may not be removed or bypassed.

The work site and the area around the logging winch must be kept free from hindrances and obstacles. Make sure that all access ways are properly maintained so that timber can be safely skid, loaded and shipped.

### **3.1 Mandatory application field**

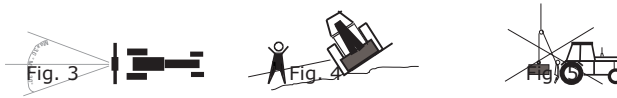
Our logging winches are designed and conceived for farming and timber skidding applications. Any other use shall be considered non-compliant application. The manufacturer accepts no responsibility for damages caused by non-compliant application. In this case the operation of the machine is completely at user's risk.

The user shall strictly comply with these operation, set-up, maintenance, repair and trouble-shooting instructions in order to assure safe operation and no damages to the equipment.

- **CAUTION:** it is very dangerous to stand in front of a tree to be felled and winched away. (Figure 1)

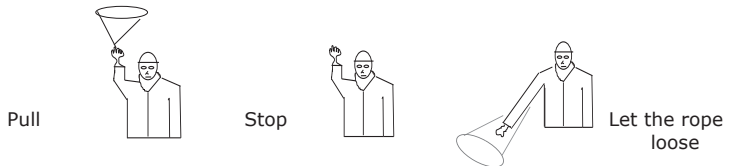


- Winching with a pulley originates a three-sides dangerous area where none is allowed to stand during winching operations. (Figure 2) .
- Never exceed the max admissible pull angle of 30° (Figure 3).
- **CAUTION:** tip-over risk (Figure 4) when winching on rough terrain or exceeding the maximum admissible pull angle.



### **Keep away from the dangerous area!**

- You and your helper must establish clear and precise hand signals and review them so everyone clearly understands.



- If your winch is equipped with lower snatch block, use it also for pulling operations.
- The operator should monitor the load throughout the entire pulling operation. Although winches are one-man equipment, you should never work alone and a second person should be ready to help in the event of lack of full visibility.
- Attach your winch to any tractor equipped with road transport tires to avoid infringement of road travel profiles. If this is not available, provide your towing vehicle with protection chains. Chains are mandatory on all types of tire for travel on icy or snowy foundations.
- Before disconnecting the winch from the tractor, park on a safe and flat surface. Drive the winch down on the special stabiliser foot and hang the driveshaft on the special mount provided on board of the winch.
- Pinched-hands and injuries danger in the three-point hitching area!



**Read this basic guide carefully, familiarize yourself with the operation of your winch before having to maintain it and be constantly safety oriented!**



## 4. PTO-POWERED OPERATION

- Use only and strictly CE approved drivelines duly connected and secured in compliance with the manufacturer's instructions.
- Never use a PTO driveline without safety shield or with a damaged guard.
- Make sure that the shield is of the correct size and length for the drive shaft and is duly mounted on it.
- Use safety chains to secure the shield against dangerous rotation and distortion
- Before operating the PTO driveshaft make sure the rpm-number and direction comply with the one shown by the arrow-sign on the winch. Take all due measures to avoid unauthorized thirds standing the the dangerous area of the winch!



**Never run the PTO shaft when the tractor motor is switched off! After dismounting the PTO shaft use the special holder on the winch to safely store it away.**

## 5. OPERATION

This logging winch is designed for skidding applications only. The winch comprises a welded frame, a main shaft, a chain wheel clutch, a drum with wire rope, a brake and a snatch-block.

The wire rope is slipped around the timber, the timber is pulled to the skid and the rope is hung up to the special grooves in the skid by means of fixation chains. Timber and long tree trunks are so winched to a parking

area for loading on trucks and further delivery.

### 5.1 Tractor requirements

**Do not PTO operate winch at any faster speeds than max. 540 RPM.**

To mount your winch to the tractor use three-point hitch CAT I and Cat II only.

### 5.2. Attaching the winch to your tractor



**Make sure that nobody stands in the dangerous area while connecting the winch to your tractor**

Logging winches can be mounted on any tractor equipped with 3-point hitch of category I or II.

With a special arrangement it is also possible to mount the winch to a tractor with automatic hitch mechanism on the lower hitch points.

Make sure to strictly use approved IID types and that proper shielding with chain fixation is available.

Make sure to perform accurate connection of your PTO driveline both on winch and power input side.

In order to transfer torque from the tractor to the winch you must use a driveline with torque overload clutch coupler. Mount the winch to the tractor and then secure the stabilisers underneath the lower hitch points. Finally incline the winch by approximately 20° using the upper hitch bar.

### 5.3 Positioning the drawbar to the PTO shaft

The length and height of a tractor drawbar may need to be adjusted to match the implement to the manufacturer's specifications. It is important to make these adjustments to ensure that the PTO driveline does not compress or separate during operation.

To make this adjustment:

- Mount the winch to the tractor!
- Pull the two halves of your shaft apart and respectively mount them to the tractor and to the winch and perform a crosscheck as shown below (Fig. 6)
- For increased safety make sure that a minimum wrapping of 200mm (b) occurs when pulling the hitch bar all the way up and down. With the shaft parallel to the ground also make sure that the shaft doesn't hit the stand (wrapping (a) should be still at least 20mm).
- For shortening of the PTO shaft, first cut the telescope off and then the external one by the same length.
- Grind both shaft ends, clear chips and dust away and oil all sliding contact areas before final assembly.

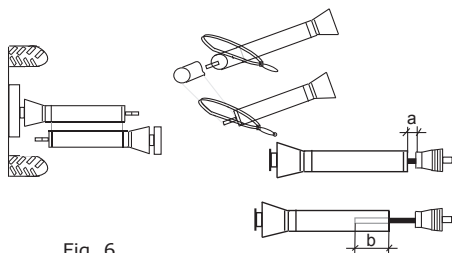
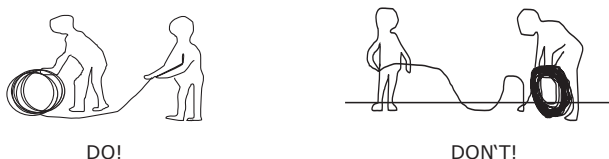


Fig .6

### 5.4 Wire rope installation



Remove the small protection grid and then take the cap off (Fig. 8 pos. 7). Now turn the drum to the right position for releasing and removing the drum screw (Fig. 8). Before loosening of the drum screw, make sure to engage the brake by shifting the Lever (1) in figure (7) to the (AUS) position.

Insert the wire rope through the inlet fairlead (on top) and feed it to the drum by means of the upper block.

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Fit the rope into the special groove and tighten the screw (Pos. 8). Now start spooling as described under pulling procedures.

In order to avoid possible rope damages keep winding up for a while after complete spooling of the entire rope length, as described under section "Spooling of the wire rope".

#### **5.4.1 Unwinding the wire rope**

After you have correctly installed the winch, you can start spooling the rope off. To accomplish successful unwinding:

- Pull the red line (Pos. 2) till the Lever 1 snaps into the AUS position (Fig. 7).
- Release the brake and start spooling the wire rope off.
- If the wire rope is tangled or badly wounded on the drum, first unwind the entire rope length.

Keep running the tractor idle while loading the winch and completely rewinding the rope onto the drum. Stop pulling as soon as the tractor reaches close to the anchor-point where the rope end was attached.

- Now disengage the clutch lever.

**Make sure that pulling is performed smoothly and without rush movements that could result into tangling, twirling or kinking of the rope.**

#### **5.4.2 Checking the wire rope quality**

- Strictly use brand new ropes.
- Make sure to use ropes of approved quality, suitable strength and compliant to the specifications identification label.
- Do not use longer ropes than instructed in the technical specifications of this manual.

#### **5.4.3 Winding up the wire rope**

Completely spool the rope making sure to wind it tightly and evenly onto the drum and avoiding both overwinding and underwinding.

Correct winding is accomplished by:

- Simply pulling of a load
- Firmly attaching one end of the cable to a stable anchor-point suitable to withstand the pull force while the rope starts spooling onto the drum pulling tractor and winch towards the anchored rope end. It may be convenient to carry out this operation either on a slight gradient with the idled tractor facing uphill or alternatively with braked tractor.



**Wind the rope tightly and evenly onto the drum. Before putting your winch to work spool the rope off leaving only 3-4 winds on the drum and then rewind it again! Check the rope over for any signs of damage, flattening, broken wires, wear and corrosion.**

## 5.5 Skidding

Set the hydraulic cylinder of the tractor three-point hitch in its lowest position. Firmly settle the winch down on the skid and engage the tractor manual brake. NEVER start pulling operations before having securely and firmly settled the winch in a stable position. Pull the green line (Pos. 5) to shift the Lever 12 in its EIN position (Fig. 8). The wire rope will now start to wind up onto the drum. To stop winding simply release and set the green line loose. When doing so, the brake immediately stops the drum and keeps the load away.

**Changes and self-modifications to the mechanism controlling the brake engagement system (Pos. 1, Fig. 7) are STRICTLY PROHIBITED, as this may prevent concurrent operation of the brake and the clutch. NEVER operate (pull) the brake lever (Pos. 1 in Figure 7) during skidding!**

**Do not raise the hydraulic cylinder of the tractor three-point hitch during skidding! (DANGER: you may damage your drive-line).**

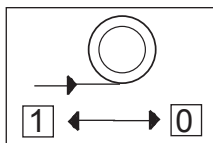
Notwithstanding the consistent PTO power speed, the pull force is subject to variations.

Even at consistent power ratings, the pull force of the winch still depends on the length of the remaining rope spooled onto the drum. The maximum pull force is obtained with the first rope coils on the drum. The pull force decreases as the rope winds up on the drum. The skidding speed is inversely proportional to the pull force and reaches the peak speed as the rope is fully spooled onto the drum. The rated pull force is the largest force produced as the rope starts winding up onto the drum.



**This is also the figure that is shown in the technical data reported on the product identification label on the winch. The pull force of the winch decreases as the rope keeps winding further more onto the drum. At fully wound rope the pull force of the winch amounts 50-60% of the rated force.**

## 5.6 Settings



- 1 → EIN/ENGAGED
- 0 → AUS/DISENGAGED

### 5.6.1 Clutch

**Before attempting any intervention, make sure to first switch the tractor engine off and remove the ignition key!**

Proper clutch settings will ensure optimum pull force. The clutch is set by the manufacturer during final testing of the product before shipment. However, possible wear of the lining may require some extent of adjustment as the time passes. Clutch adjustment should be performed every time when your winch no longer reaches the required pull force. For clutch adjustment attach a torque wrench to the green line. If you don't have any torque wrench available you can also use a spring balance of sufficient measuring scale. Attach the torque wrench (or scale), apply a 350 N (35 kg) force to the line (Pos. 5, Fig. 8) and make sure that the clutch slowly shifts towards the winch frame as you apply the force and stops moving when hitting against the winch. If the force applied is too small, tighten the nut (Pos. 9, Fig. 8) by turning it clockwise and making sure that as you do this the clutch lever gradually shifts towards the winch frame and stops there. Keep tightening until the required force is reached that is till the lever 6 backs away from the winch. Finally slightly turn the nut anti-clockwise to release it a little bit. Now the clutch is set and ready to work.

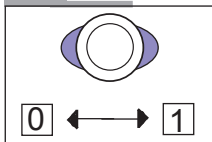


Each winch is factory set at the maximum pull force shown on the product identification label. It is strictly forbidden and very dangerous to achieve higher settings and run the winch at higher force ratings!

### 5.6.2 Prebrake regulation

To facilitate winding of the wire rope, perform prebrake regulation with the screw (10) and respective wingnut (11) (Fig. 8). Exact prebrake regulation will also prevent the rope from unwinding excessively fast or accidentally slipping off the drum. Extreme fast unwinding and abrupt brake disengagement may cause severe damages to the wire rope. Exact prebrake regulation occurs when the rope can be effortlessly spooled off the drum. The prebrake arrangement must be disengaged for uphill skidding operations in order to ensure easier pulling of the rope.

### 5.6.3 Brake



1 → engaged  
0 → disengaged



**CAUTION:** tripping of the brake lever occurs when the clutch lever is engaged with the brake lever still in its left-hand position.

The brake is engaged by means of a nut (3) and a nut (4). When the brake is engaged the lever (1) shifts into its position EIN (Fig. 7).

First adjust the nut (3) using an open-end spanner until the nut stands approx 5 mm away from the lever. Then adjust nut (4) till the sliding plate underneath the nut projects 3-4 mm out of the winch frame. If you cannot reach the required brake force, repeat the same steps tightening the nut by further turning it to the right side.

Excessive brake force will cause troublesome unwinding procedures. In this case release the nut by slightly turning it to the left.

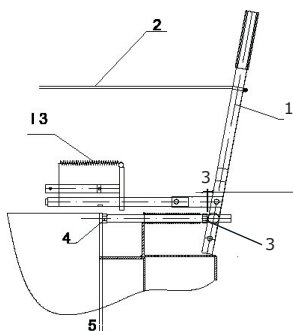


Fig. 7

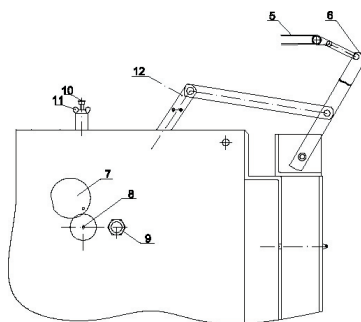


Fig. 8

#### 5.6.4 Stretching of the drive chains

After the first operation hours you possibly experience some extent of release of the drive chain that will then need to be restretched.

Stretching is accomplished by first removing the safety guard on it (Pos.1 - Fig. 9). Then slightly release the fixation screws on the mount (Pos. 2 - Fig. 9) and finally access the chain and start stretching it by means of the special adjustment screw (Pos. 4).

Adjust the chain so that you can still provoke some extent of deflection by applying one finger tip pressure in the middle. Then make the PTO shaft turn and check for troublefree and effortless turning. Properly stretched chains can still be deflected by 1-3 mm by applying your maximum hand force in the middle of the distance between sheaves.

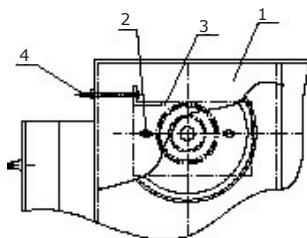


Fig. 9

## 5.7 Lubrication



**Make sure that the motor is switched off and all moving parts are secured before performing any maintenance/repair work on the machine. Improper lubrication may cause dangerous contamination of the sliding parts and consequent damages for which the manufacturer holds no responsibility!**

The winch is equipped with self-lubricating bearings that require no further lubrication or maintenance.

Maintenance is mainly required on the engagement/locking mechanism (Pos. 13 - Fig. 7) that needs periodical checkup. Clean all metal surfaces preferably with WD-Spray like agents in order to:

- increase lubricant efficacy and
- inhibit formation of humidity, condense water and ice on the leverage and the control rods and therefore prevent consequent functional troubles.

Lubricate the housing of the upper block every 40 hours.

Provide regular maintenance of the drive chain removing any eventual residual dirt and slightly greasing it. Use grease suitable for high temperature (it should not melt as common low-price grease) in order to prevent grease contamination of the sliding clutch surfaces.

Strictly use special spray lubricant for link chains.

Provide PTO shaft lubrication in accordance with the instructions of the manufacturer (Fig. 10).



**Make sure to avoid contamination of the clutch lining with grease as this may lead to a significant loss of the pull force and to early wear of the clutch plates that will then need to be replaced!**

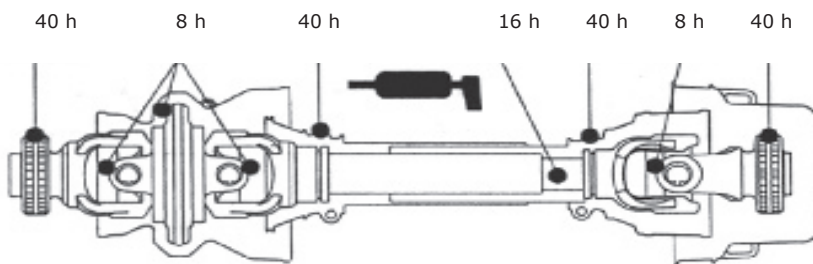


Fig. 10

## 5.8 Troubleshooting

Type of malfunction	Possible origins	Remedies
Winch is not skidding enough	<ul style="list-style-type: none"><li>• Rope is too short</li><li>• Wrong clutch setting</li><li>• Oil on clutch discs</li><li>• Worn-out clutch lining</li><li>• Damaged winch drives</li></ul>	<ul style="list-style-type: none"><li>• See technical specification</li><li>• Reset the clutch</li><li>• Clean the clutch lining or replace clutch</li><li>• Replace damaged parts</li></ul>
Brake is not holding	<ul style="list-style-type: none"><li>• Wrong brake setting</li><li>• Oily brake lining</li><li>• Braking mechanism is damaged</li><li>• Brake collar is worn out</li></ul>	<ul style="list-style-type: none"><li>• Adjust the brake force</li><li>• Clean both brake collar and contact surface</li><li>• Replace eventual damaged parts</li><li>• Replace brake collar</li></ul>
Rope is hardly spooling off	<ul style="list-style-type: none"><li>• Wrong setting of the pull force</li><li>• The rope is damaged</li><li>• The brake collar is damaged</li></ul>	<ul style="list-style-type: none"><li>• Adjust rope pull force</li><li>• Change the rope</li><li>• Replace the brake collar</li></ul>
Winch skids even if the clutch is released	<ul style="list-style-type: none"><li>• Wrong clutch setting</li><li>• Damaged drum</li><li>• Damaged clutch discs</li></ul>	<ul style="list-style-type: none"><li>• Check pull force</li><li>• Replace the drum</li><li>• Replace the clutch</li></ul>

Repair works require help of a skilled technician or technical service.

All log winches are function and safety tested by the manufacturer before shipment. Please strictly use original spare parts for replacements. Use of non-original spare parts may lead to functional troubles or damages that will void the manufacturer's warranty and liability. Modification, alteration or deviation to the winch should only be made by the original manufacturer.



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## 6. REPAIRS AND MAINTENANCE

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**Make sure that the machine is fully disconnected and all moving parts are secured before performing any maintenance/repair work on the machine.**

### 6.1 Periodic maintenance

Before starting to work with your winch, make sure to perform the following visual inspections:

- Make sure that all screws and nut are tight
- Check for mechanical damages to the winch chassis
- Make sure that all locking pins and rings are in place
- Check for PTO shaft correct installation and connection and make sure that safety shield and chains are duly in place.
- Check the lower hitch points of the tractor and make sure they are firmly secured (no cross, horizontal movement).
- Check for clutch proper setting, check the brake and the rope pull out force
- Make sure to fix any anomaly or problem before starting to work.

Perform the following maintenance works when needed and carry out periodic checkup:

- Lubricate all moving parts as needed

What to do?	When to do?	How to do?
<ul style="list-style-type: none"> <li>• Spool the rope out until 3-4 winds are left on the drum and strongly pull with load on</li> <li>• Check the rope fixation</li> </ul>	<ul style="list-style-type: none"> <li>• Only for new winches</li> <li>• Always when the rope is loose</li> </ul>	visually
<ul style="list-style-type: none"> <li>• Check the chain tension</li> <li>• Replace the clutch discs</li> </ul>	every 48 operation hours if required or after 3000 operation hours	by customer service
<ul style="list-style-type: none"> <li>• Replace the brake collar</li> </ul>	Every time when adjusting the brake force is no longer possible and latest after 3000 operation hours	by customer service
<ul style="list-style-type: none"> <li>• Lubricate the drive chain</li> </ul>	all 48 operation hours	Lithium grease
<ul style="list-style-type: none"> <li>• Change the oil</li> </ul>	Every 48 operation hours and then once a year	
<ul style="list-style-type: none"> <li>• Lubricate the bearings of the upper and lower snatchblocks as well as all other sliding parts</li> </ul>	at least once a month	Lithium grease
<ul style="list-style-type: none"> <li>• Clean casings inside</li> </ul>	every 100 operation hours or more frequently in case of hard working conditions	Loosen all screws and remove cover making sure to avoid removing of the nuts



**The winch functionality and safety are tested by the manufacturer. For any repair or intervention on the winch make sure to strictly use original spares only. Use of non-original parts and spares will void your warranty just as well as wrong repairs or changes.**

## 6.2 Effects of overload and misuse

- burning of the clutch or brake collar lining
- damaged brake mechanism
- tearing of the chain
- broken rope reel or damaged reel bearing
- damaged power drive/PTO shaft housing
- damaged power drive, PTO shaft or chain wheels
- strain of winch frame parts
- overstrained, cracked, broken lines, rope or Choker-chain
- deformed drum axle.

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## 7. DISPOSING OF AN OBSOLETE WINCH

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When the winch is fully obsolete and cannot be of any longer use, it should be duly dismantled ahead of discarding. Certain components need deactivation and dismantling in order to assure that no further use is made by other parties and that no worn out parts are recycled for other applications.

During dismantle be alert for possible recyclable materials and components that belong to differentiated waste collection procedures applicable in your country.

The manufacturer is not liable and undertakes no responsibility for personal injuries or damages that may result from the recycling of worn out machine parts and eventual re-use in other applications different than originally stated in this manual.

### **Dismantling procedure:**

Take good note please: each and every dismantling task must be performed by authorized service centres or trained skilled staff only!

- Pull the machine down into single components
- Lock and clamp all moving machine parts
- Deliver each single component only to authorized waste management facilities
  - Drain oil and fuel out of respective tanks and lines before disposal of the machine
- Remove rubber and plastic parts from the machine that must be separately disposed of.

Deactivated, clamped moving/driving parts and components are of no further risk and danger.

Electric components must be separately disposed to avoid substantial environmental threat. In the event of fire on the electric deployment system of the machine, use of an explosion-proof extinguish system is required (for example powder fire extinguishers).

## 8. TECHNICAL SPECIFICATIONS

Technical data	Unit of measurement	FSW 3,5 M
Max skidding capacity	t	3,5
Cable winch speed at 300 RPM of the PTO shaft	m/s	0,90
Rope length	m	70
Compacted steel rope Ø	mm	8
Rope tensile strength	kN	70
Max cable rewind length with compacted steel rope	m/mm	75 / 8
Tractor power requirements	kW/PS	12/15
Braking force	t	4,40
Width /height /depth	mm	1020/1150/450
Overall height including safety shield	mm	2100
Weight (without rope)	kg	252 (226)
Chainsaw holder, peaveys jacks or axes mount		standard

The manufacturer reserves itself the right of product modifications without further notice as a result of product implementation and quality upgrade.

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## 9. OTHER AREAS OF POSSIBLE DANGERS

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### 9.1 Mechanical dangers

Possible dangers related to machine moving parts are minimized by means of suitable safeties and protections that cannot be dismantled unless special tools and equipment is used.

**WARNING:** skidding without due safety devices might result into serious injuries to the operator or the other person around the workplace.

### 9.2 Electric danger

All machine parts staying under voltage are duly insulated or sealed inside a fixed casing to avoid accidental contact. For safety reasons all fixed casings can be only removed using special tools and equipment.

**WARNING:** removing a fixed protection casing when the machine is running or without having priorly cut the power off, may result into major danger of electrical shock!

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## 10. LEGAL WARRANTY

All BGU machines are covered with warranty terms in accordance with the law. Customers should promptly notify the manufacturer eventual material or production claims on their detection. While asking for warranty service, customer should show copy of their purchase invoice or receipt. The warranty does not cover for faults due to natural wear, temperature or weather agents as well as misuse, faulty installation or set-up, improper operations and lubrication or act of vandalism. No warranty will be given on parts damaged by improper handling, use and application. The manufacturer is further not responsible for warranty service on machines used for other applications as mentioned in this manual, altered or modified by the customer or other thirds, or overloaded.

No warranty applies to consumable parts (for instance: V-belts, blades, tools, and other implements) and to adjustment/calibration works.schlossen.

## 11. EXTENDED WARRANTY

All SÚMA consumer products are covered with 24 or 12 months total warranty from the date of purchase for private/industrial users and rentals. This warranty extension does not substitute nor void the legal warranty. Customers should promptly notify eventual material, production or workmanship claims on their detection. While asking for warranty service, customers should show copy of their purchase invoice or receipt. Buyer's address and type/model of equipment must be clearly stated in the case of industrial users/contractors/dealers. All claims related to material or production failures during the total warranty time, shall be repaired notwithstanding eventual user's faulty/wrong operation or maintenance.

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## 11.1 OPERATION TIPS FOR NEW WINCHES

Before putting your new winch to work make sure to read the user's manual and get familiar with all operation and safety instructions contained in the manual. •Spool the rope off making sure to leave 3 to 4 coils on the drum

- Check for possible eventual damages
- Apply approximately 1.5 - 2 t load when rewinding



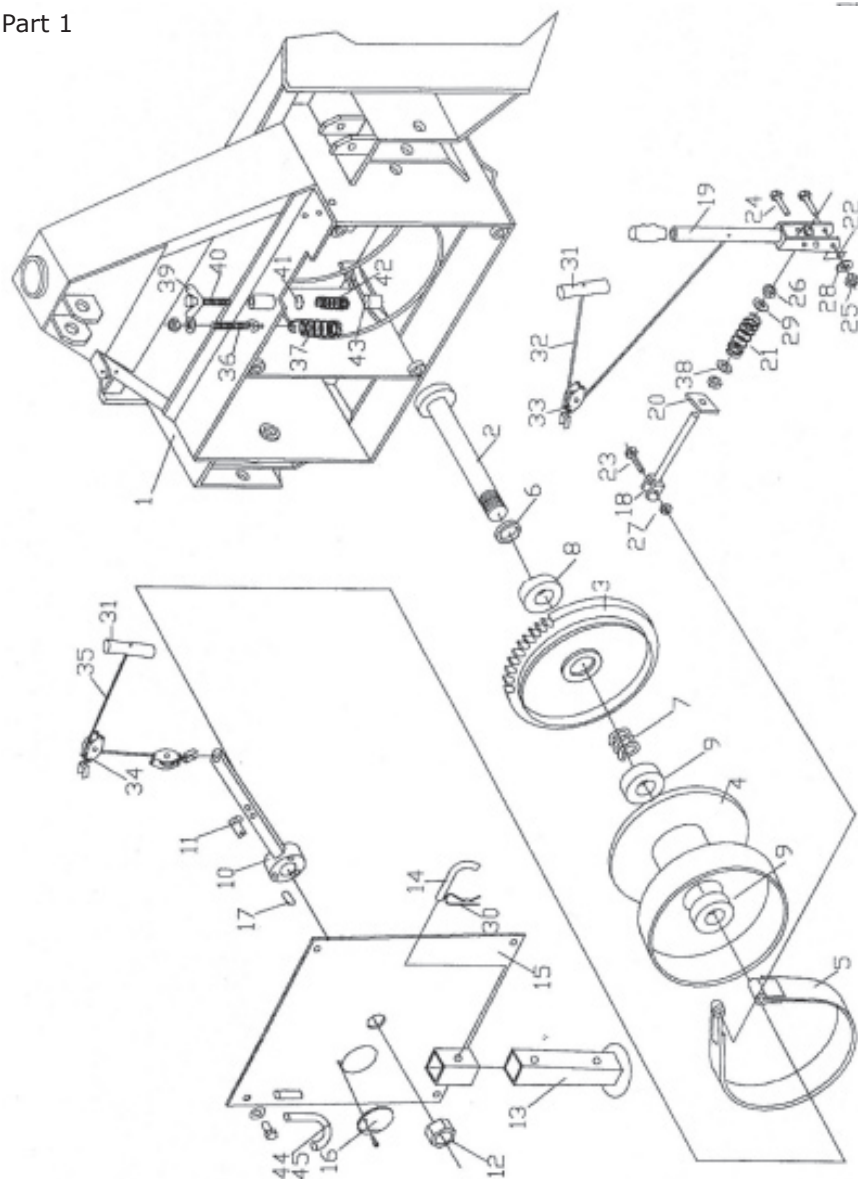
**Lack of compliance with this instruction  
may cause permanent rope damages!**

Mind for rope twirling, changes of rope construction, strands nicking and wear! DANGER!

The warranty applies only to brand new, undamaged wire ropes. No warranty claim shall be considered for worn-out , damaged or used ropes or parts!

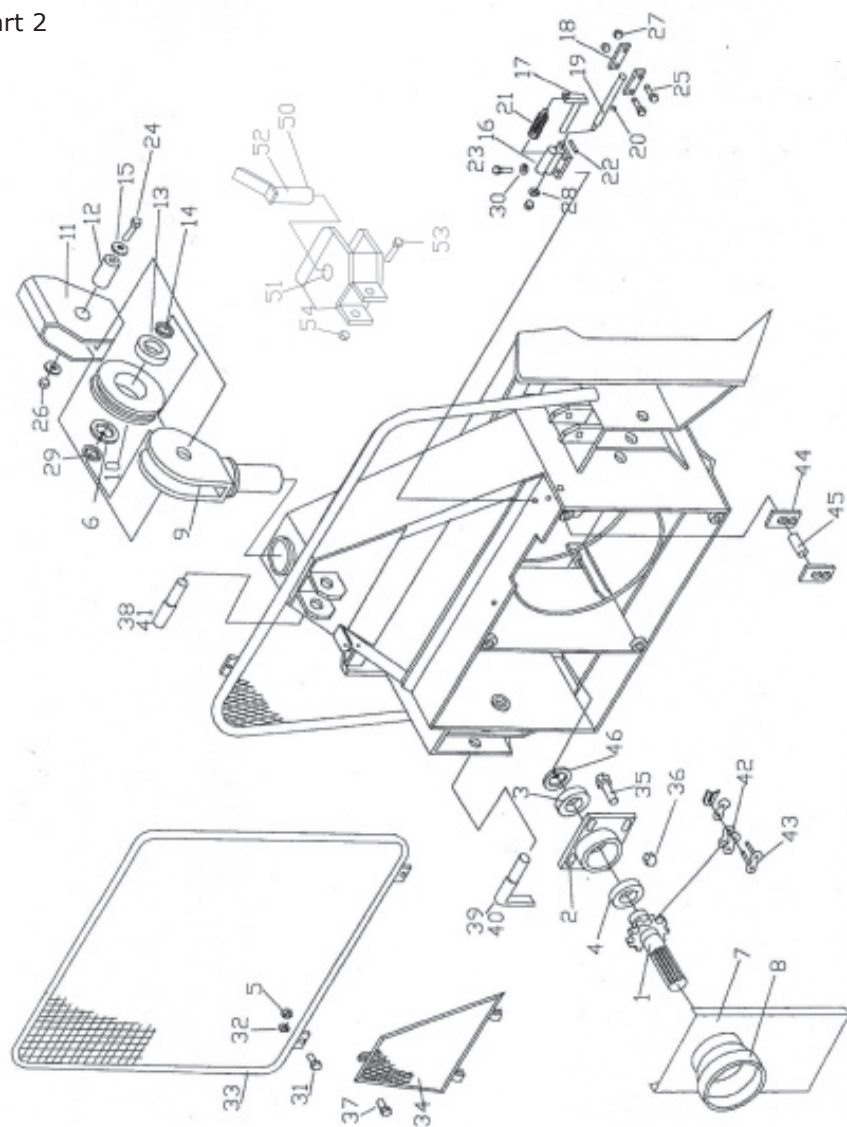
## 12. EXPLODED DRAWING - FSW 3.5 M

Part 1





## Part 2



## 13. SPARE PART LIST, FSW 3.5 M

### 13.1 Part 1

Pos.	Description	Number of pieces	Pos.	Description	Number of pieces
1	Welded steel construction	1	30	Cotter pin 3	1
2	Main shaft	1	31	Pull grip	2
3	Sprocket assembly with clutch	1	32	Brake line (red)	1
4	Rope drum	1	33	Control roller	1
5	Brake collar	1	34	Dual control roller	1
6	Spacer sleeve	1	35	Clutch line (green)	1
7	Pressure spring	1	36	Screw with ring	1
8	Grooved ball bearing 6306 2RS	2	37	Tension spring	1
9	Grooved ball bearing 6306 2RS	3	38	Washer Ø 12 DIN 125 A	1
10	Lever	3	39	Wing nut M10x32 PVC	1
11	Angle iron	1	40	Screw M10x32	1
12	Nut M 30 DIN 985	2	41	Washer Ø 15	1
13	Stabilizer leg	1	42	Compression spring	1
14	Bolt	1	43	Bolt Ø 15x32	1
15	Plate	1	44	Holder for driveline	1
16	Plug	1	45	Spring pin Ø 3x32	1
17	Split pin	3			
18	Tensioning screw	1			
19	Brake lever	1			
20	Thrust washer	1			
21	Pressure spring Ø 15x75	1			
22	Coil spring Ø 16x30	1			
23	Screws M10x40 DIN 931	1			
24	Screws M8x70 DIN 985	1			
25	Nut M8 DIN 985	4			
26	Nut M12 DIN 985	8			
27	Nut M10 DIN 985	1			
28	Washer Ø 18,5 DIN 125 A	5			
29	Washer Ø 13 DIN 125 A	4			

## 13.2 Part 2

Pos.	Description	Number of pieces	Pos.	Description	Number of pieces
1	Shaft w. chain sprocket	1	30	Washer Ø 8,5 DIN 125 A	4
2	Shaft guard	1	31	Screws M12x40 to DIN 933	2
3	Grooved ball bearing 6306 2RS	1	32	Washer Ø 13 to DIN 125 A	2
4	Grooved ball bearing 6306 2RS	1	33	Safety shield	1
5	Nut M12 to DIN 985	1	34	Safety shield (small)	1
6	Spacer sleeve	1	35	Screws M10x30 to DIN 933	4
7	Protection plate for sprocket wheel	1	36	Nut M10 to DIN 934	4
8	Shaft protector	1	37	Screws M8x16 to DIN 933	2
9	Pulley casing	1	38	Bolt with chain	1
10	Pulley	1	39	Bolt with chain	2
11	Wire rope guide	1	40	Linch pins	2
12	Bolt	1	41	Linch pins	1
13	Grooved ball bearing 6306 2RS	1	42	Roller chain 3/4" 12B-1, 71 links	1
14	Spacer sleeve	1	43	Connecting piece 3/4" 12B-1	1
15	Washer	1	44	Plate	2
16	Shaft protector	1	45	Bolt Ø16x48	1
17	Rod	1	46	Seeger Ring, outer diam. 30	1
18	Plate	1	50	Linch pins	1
19	Pull rod	1	51	Connector	1
20	Ball Ø 8,7	2	52	Bolr	1
21	Tensioning spring	1	53	Screws M16x100 to DIN 931	1
22	Spring pin 6x32	1	54	Locking groove M 16 to DIN 985	1
23	Screws M8x16	2			
24	Screws M20x60 to DIN 931	1			
25	Screw M8x60 to DIN 931	2			
26	Nut M20 to DIN 985	1			
27	Nut M8 to DIN 985	5			
28	Washer Ø 13 to DIN 125 A	2			
29	Spacer sleeve	1			

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## 14. EC STATEMENT OF COMPLIANCE

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to EC Machine Directive No. 2006/42, Annex II A

We hereby declare that the equipment described in this manual responds in full to the actual version brought on the market. We, the manufacturer further declare that this equipment was duly designed and manufactured in accordance with the actual European Safety and Health Standards settled by the relevant EEC directives as well as the latest electromagnetic standards issued by the European Council of 3.5.89 and later enforced by all member states. This statement of compliance does not apply to customer modifications of the equipment without manufacturer's written approval.

Machine type:	<b>Logging winch</b>
Models:	<b>FSW 3,5 M</b>
Production No.:	see product identification label
Applicable European Standards:	EC Machine Directive 2006/42 and further modifications and additions
Other applicable Standards and technical specifications::	EN ISO 12100-1, EN ISO 12100-2, EN ISO 4254-1, EN ISO 14492-1

Person in charge of the technical documents: René Pareis (Director)

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Nordhausen, 23.11.2016

Date

  
René Pareis (Director)









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Subject to changes

<b>Form: 2095.23.11.2016 - Rev. C</b>
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