

# AVANT<sup>®</sup>

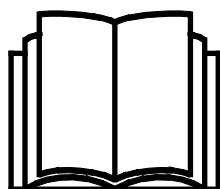
## Operator's Manual for Attachment



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### Winch

Product number      A36960



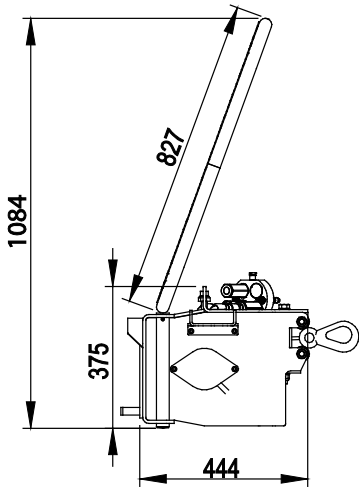
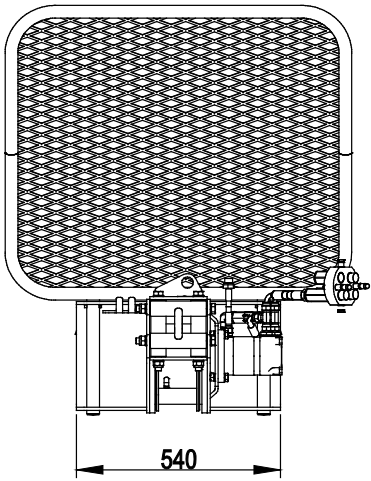
Please read this manual carefully before using the equipment, and follow all instructions.

Keep this manual for later reference.

Manufacturer:

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## I. Foreword

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Avant Tecno Oy would like to thank you for your purchase of this attachment for your Avant loader. It has been designed and manufactured based on years of experience on product development and manufacturing. By familiarising yourself with this manual and following the instructions, you ascertain your safety and ensure the reliable operation and long service life of the equipment. Read the instructions carefully before starting to use the equipment or performing maintenance.

The purpose of this manual is to help you to:

- operate the equipment in a safe and efficient manner
- observe and prevent any hazardous situations
- keep the equipment intact and ensure a long service life

With these instructions, even an inexperienced user can use the attachment and loader safely. The manual includes important instructions for experienced AVANT operators as well. Ensure that all persons using the loader have received proper guidance and familiarised themselves with the manual of the loader, each attachment that are used, and all safety instructions before using the equipment. Using the equipment for other purposes or use in any other way than described in this manual is prohibited. Keep this manual at hand throughout the service life of the equipment. If you sell or transfer the equipment, be sure to hand over this manual to the new owner. If the manual is lost or damaged, you can request a new one from your Avant dealer or from the manufacturer.

In addition to the safety instructions included in this manual, you must observe all occupational safety regulations, local laws, and other regulations concerning the use of the equipment. Particularly the regulations concerning the use of the equipment on public road areas must be observed. Contact your Avant dealer for more information about local requirements before you operate the loader on road areas.

Contact your local AVANT dealer for any questions, service, spare parts or about any problems that may occur with the operation of your machine.

This manual is a translation of the original instructions in English. Due to continuous product development some of the details shown in this manual may differ from your equipment. Pictures may also depict optional equipment or features that are not currently available. We reserve the right to change the contents of the manual without notification. Copyright © 2016 Avant Tecno Oy. All rights reserved.

## Warning symbols used in this manual

The following warning symbols are used throughout this manual. They indicate factors that must be taken into account to reduce the risk of personal injury or damage to property:



### **WARNING: SAFETY ALERT SYMBOL**

This symbol means: **“Warning, be alert! Your safety is involved!”**

Carefully read the message that follows, it warns of an immediate hazard that could cause serious personal injury.

The safety alert symbol by itself and with related safety statement indicates important safety messages throughout this Manual. It is used to draw attention to instructions involving your personal safety or the safety of others. When you see this symbol, be alert, your safety is involved, carefully read the message that follows, and inform other operators.

### **DANGER:**

This signal word indicates a hazardous situation which, if not avoided, will cause death or serious injury.

### **WARNING:**

This signal word indicates a potentially hazardous situation which, if not avoided, could cause serious injury or death.

### **CAUTION:**

This signal word is used when minor injury could result if the instructions are not followed properly.

### **NOTICE**

This signal word indicates information about the correct operation and maintenance of the equipment.

Failure to observe the instructions accompanying the symbol can lead to equipment breakdown or other property damage.

## 2. Designed purpose of use

The AVANT Winch is an attachment that is designed and manufactured to be used with AVANT multi-purpose loaders shown in Table 1. The winch is a powerful and compact hydraulic forestry and recovery winch intended for various pulling tasks. For example, you can use the winch to pull tree trunks, logs, poles, boats, or other objects from places where you cannot drive with the loader. The winch can also be used as a recovery winch to pull the loader itself in case it has got stuck.

The winch is equipped with a safety net, 30 m of wire rope, and a towing hitch with safety latch. The wire reel can be released so that you can pull wire manually from the reel. The wire can then be reeled in from the driver's seat. The winch will stop as soon as the auxiliary hydraulics control lever is released, or when the hydraulic flow is otherwise shut.

The winch is intended for typical forestry and recovery use. It is not designed to be used for lifting purposes and is not equipped with safety features needed for lifting operations. The winch should not be left loaded, or for example to support other structures by pulling. Lifting of the boom during pulling to prevent the object being towed from getting stuck is allowed, but the pulled object must not be lifted off the ground.



**DANGER**

**Hazard of falling objects - Never use the winch to lift loads.** This forestry winch is not intended to and must not be used as a hoist or crane to lift loads. The winch is not designed to be used for lifting purposes and it is not equipped with safety features needed for lifting operations. Use the winch only for its intended use.

The attachment has been designed to require as little maintenance as possible. The operator can perform regular maintenance tasks. All repair work can't be performed by the operator, and demanding repair and maintenance operations are to be left for professional maintenance. All maintenance work must be done using proper safety equipment. Spare parts must be identical with original specifications, which can be ensured by using only original spare parts. A separate spare parts catalogue may be available, consult your Avant dealer.

Familiarise yourself with the manual's instructions regarding service and maintenance. Please contact your AVANT retailer if you have additional questions about the operation or maintenance of the equipment, or if you require spare parts or maintenance services.

Inspect the wire rope regularly. Read the instructions for inspections, maintenance and service, see page 6. Any attempt to repair a damaged wire rope is prohibited. Replacement of the hook is allowed only for qualified professionals with correct equipment.

**Table 1 - Winch - Compatibility with Avant loaders**

|       |                   |                                          |                       |            |            |    |                      |                          |                            |
|-------|-------------------|------------------------------------------|-----------------------|------------|------------|----|----------------------|--------------------------|----------------------------|
| Avant | 216<br>218<br>220 | 220 <sub>series 2</sub><br>225<br>225LPG | 313S<br>320S<br>320S+ | 419<br>420 | 520<br>R20 | e5 | 525LPG<br>R28<br>528 | 630<br>R35<br>635<br>640 | 745<br>750<br>755i<br>760i |
| A2631 | (•)               | •                                        | •                     | •          | •          | •  | •                    | •                        | •                          |

To use with Avant 218 or 220 series 1 loaders, a separate coupling adapter and additional hydraulic connectors are required. They are available from your Avant dealer. For compatibility with a model not shown in table, contact your Avant dealer.

### 3. Safety instructions for using the attachment

---

Please bear in mind that safety is the result of several factors. The loader-attachment combination is highly powerful and improper or careless use or maintenance may cause serious personal injury or property damage. Due to this, all operators must carefully familiarise themselves about correct use and the operator's manuals of both the loader and the attachment before starting operation. Do not use the attachment if you have not completely familiarised yourself with its operation and the related hazards.



**DANGER**

**Misuse, careless use, or using an attachment that is in poor condition, may cause risk of serious injuries.** Familiarise yourself with the controls of the loader, correct coupling procedure, and the correct way to operate the attachment at a safe area. Study especially how to stop the equipment in a safe manner. Read all safety precautions carefully.

#### *Read all safety instructions carefully before handling the attachment*



**WARNING**

- When attaching an attachment to the loader, **ensure that the locking pins of the loader's quick attach plate are in the lower position and that they have locked the attachment to the loader.** Never lift or move an unlocked attachment.
- The Winch is designed to be used by one operator at a time. Do not let others near the danger area of the equipment when it is in use.
- Always transport the attachment as low as possible to keep the centre of gravity low, and keep the telescopic boom retracted during driving.
- The operating area must be well lit. Use the work lights of the loader and other light sources as necessary.
- Never use the winch if anyone is at the zone where the wire rope can reach. In case the wire rope detaches from the load that is being pulled, the wire rope can whip with high speed and force. The wire rope can cause serious injuries to anyone at the area where the wire rope can reach. The minimum safety distance is the length of the wire rope.
- Operate the winch only from the driver's seat. Make sure the safety net is installed on the winch. It will help to avoid the loose wire rope from reaching the operator's area.
- Handle the wire rope carefully and avoid damaging it. See instructions about correct handling of the winch in this manual.
- Pull loads only from the front direction. Side pull can cause the loader to tip over.
- Keep the loader stationary during pull. Avoid pulling on downhill. Turn the articulated frame of the loader to straight position before pull. Keep the loader boom close to the ground during pull to avoid tipping of the loader.
- Drive slowly and carefully on inclined terrain or slippery surfaces. Avoid sudden changes in speed or direction to maintain balance of the loader especially on uneven surfaces or hills.
- Carrying heavy loads can shift the centre of gravity of the loader and lead to tipping over of the loader. Always transport the load as low and close to the machine as possible with the telescopic boom completely retracted to keep the centre of gravity low and for the best stability.

**WARNING**

- Pay attention to the surroundings and any other persons and machines moving in the vicinity. Pay attention to the contours of the terrain and other hazards, such as branches and trees that can reach to the driver's area, loose rocks, and slippery surfaces.
- Ensure that ventilation is sufficient when operating indoors. Do not operate the loader in closed spaces regardless of the engine or fuel type. Exhaust gases may concentrate to hazardous levels.
- Never use the attachment to lift or to transport persons or as any kind of work platform even temporarily.
- Make sure to use only an attachment that is in good condition. Check the attachment thoroughly in regular intervals. Do not modify the attachment in a manner that would affect its safety. It is prohibited to drill holes on the attachment, and welding or other means of fixing hooks or other objects on the attachment is strictly prohibited.
- Shut down the loader and place the attachment to a safe position as shown in Safe stopping procedure before any cleaning, maintenance, or adjustments.
- Use the attachment only for its intended purpose. Other use may create unnecessary safety risks, and the equipment may get damaged.
- Make sure that the loader is equipped with necessary safety components, and that they are in working condition. Seat belt must be used. If there are specific hazards related to the operating area, use appropriate safety equipment.
- Also read the safety instructions and correct use of the loader from the operator's manual of the loader.

**DANGER**

**Entanglement hazard - Never allow others to be near the winch during use.** The pull of the winch can easily crush hands, and even arms near the winch. Never allow anyone to be near the wire rope. The wire rope may rotate, causing gloves to lock on the wire rope, making it impossible to let go. Operate the attachment only from the driver's seat and allow the winch to do the pulling.



### 3.1 Safe shutdown procedure

*Safe stopping of the attachment, before going near the attachment:*



**WARNING**

**Always stop the attachment following safe stopping procedure before leaving the driver's seat.** Safe stopping procedure prevents all unintentional movements of the attachment. Note that the loader boom can move down even if the engine of the loader is turned off. Safe stopping procedure:

- Release any tension on the wire rope.
- Lower the boom and the attachment on the ground.
- Shut down the loader engine and lock the parking brake.
- Release residual pressure from the hydraulic system; move all hydraulic control levers to their extreme positions a couple of times.
- Prevent starting of the machine, remove ignition key.

### 3.2 Personal protective equipment

*Remember to wear proper personal protective equipment:*



- The noise level at the driver's seat may exceed 85 dB(A) depending on loader model and operating cycle. Extended exposure to loud noise can cause hearing impairment. Wear hearing protection while working with the loader.



- Wear protective gloves.



- Wear safety boots whenever working with the loader.



- Wear safety glasses when handling hydraulic components.

## 4. Technical specifications

**Table 2 - Winch - Technical specifications**

| Product number                     | A36960                                 |
|------------------------------------|----------------------------------------|
| Type:                              | Forestry and recovery winch, hydraulic |
| Weight, without rope:              | 55 kg                                  |
| Weight with rope:                  | 105 kg                                 |
| Wire rope:                         | 30 m steel                             |
| Pulling force*:                    | 9,8 kN (1000 kp)                       |
| Hydraulic motor:                   | 315 cc                                 |
| Maximum input of hydraulic energy: | 20,0 MPa (200 bar), 30 l/min           |
| Compatible AVANT loader models:    | See Table 1 on page                    |

\*Actual pulling force depends on the loader model and the amount of wire rope on the drum.

### 4.1 Safety labels and main components of the attachment

Listed below are the labels and markings on the attachment. They must be visible and readable on the equipment. Replace any unclear or missing label. New labels are available via your retailer or contact information provided on the cover.



**Make sure all warning decals are readable.** The warning labels contain important safety information and they help to identify and remember the hazards related to the equipment. Replace damaged or missing warning labels with new ones.



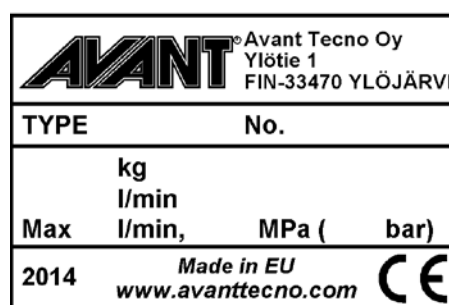
**A46771**



**A46772**



**A46804**

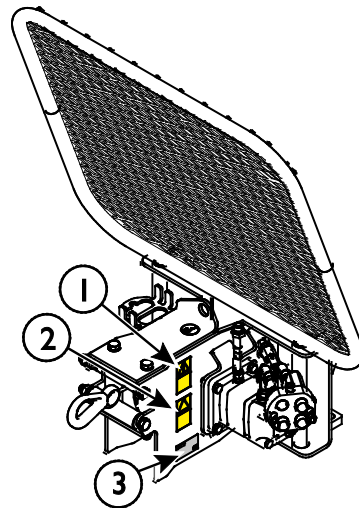


**Attachment identification plate A421257**

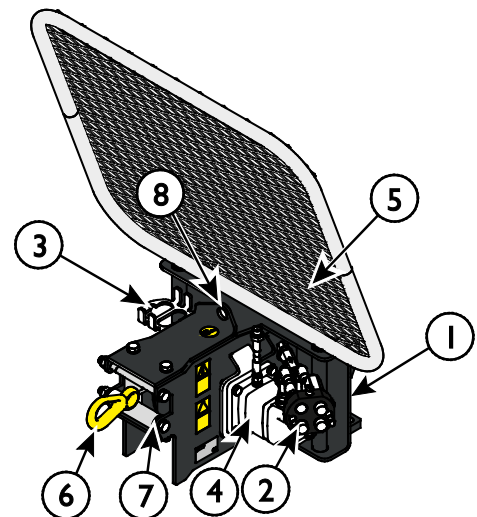
**To apply a new label:** Clean the surface thoroughly to remove all grease. Allow it to dry completely. Peel off the protective film of the label and press firmly to apply. Take care not to touch the glue of the label.

**Table 3 - Decal locations and warning messages**

|   | Decal   | Warning message                                                                              |
|---|---------|----------------------------------------------------------------------------------------------|
| 1 | A36771  | Misuse hazard - Read instructions before use.                                                |
| 2 | A36772  | Crushing hazard - Do not go under a raised attachment; stay away from raised equipment.      |
| 3 | A46801  | Entanglement hazard, keep clear of moving components. Stop the machine before going near it. |
| 4 | A421257 | Attachment identification plate                                                              |


**Table 4 - Winch - Main components**

|   |                                      |
|---|--------------------------------------|
| 1 | Frame with quick attach brackets     |
| 2 | Multi connector hydraulics coupling  |
| 3 | Multi connector holder               |
| 4 | Hydraulic motor of the winch         |
| 5 | Safety net                           |
| 6 | Hook with safety latch               |
| 7 | Rolling guides                       |
| 8 | Lifting point to lift the attachment |



## 5. Attaching the attachment

Attaching the attachment to the loader is quick and easy, but it must be done carefully. The attachment is mounted to the loader boom by using the quick attach plate on the loader boom and the counterpart on the attachment.

If the attachment is not locked to the loader, it may detach from the loader and cause a hazardous situation. The loader must not be driven and the boom must never be lifted when the attachment has not been locked. To prevent hazardous situations, always follow the coupling procedure shown below. Also remember the safety instructions shown in this manual. The attachment is mounted to the loader as follows:



### WARNING

**Make sure the loader is compatible with the attachment.** Stability of the loader, possible overload of the attachment, and compatibility of loader control systems must be ensured in addition to mechanical compatibility of the attachment. If you use the attachment with a loader that is not fit to be used with the attachment model you have, risks include tipping over, damage to attachment due to overload, and risks related to uncontrolled motion of attachment and its parts. If your loader is not listed in Table 1 on page 6, ask your Avant dealer before using this attachment.



### CAUTION

**Crushing risk - Make sure that an unlocked attachment will not move or fall over.** Do not stay in the area between the attachment and the loader. Mount the attachment only on level surface.

Never move or lift an attachment that has not been locked.

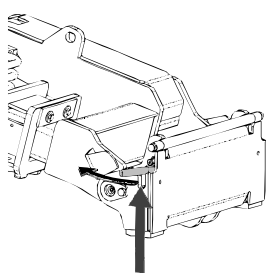
### Avant quick coupling system:

#### Step 1:

- Lift the quick attach plate locking pins up and turn them backwards into the slot so that they are locked in the upper position.

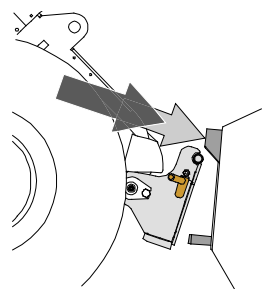
If your loader is equipped with a hydraulic attachment locking system, see how to operate the hydraulic locking on the following page.

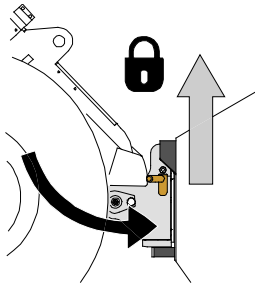
- Ensure that the hydraulic hoses (and the electric harness, if applicable) are not in the way during installation.



#### Step 2:

- Turn the quick attach plate hydraulically to an obliquely forward position.
- Drive the loader onto the attachment. If your loader is equipped with a telescopic boom, you can utilise this.
- Align the upper pins of the loader's quick coupling plate so that they are under the corresponding brackets of the attachment.





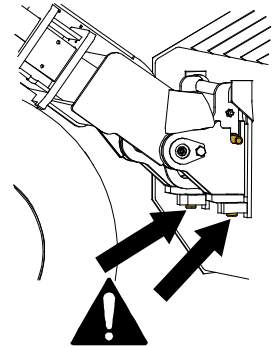
### Step 3:

- Lift the boom slightly – pull the boom control lever backward to raise the attachment off the ground.
- Turn the boom control lever left to turn the bottom section of the quick attach plate onto the attachment.
- Lock the locking pins manually or lock the hydraulic locking.
- **Always check the locking of both locking pins.**



### Risk of falling objects - Prevent dropping of attachment.

An attachment that has not been completely locked to the loader may fall on the boom or towards the operator, or fall under the loader during driving, causing loss of control of the loader. Never move or lift an attachment that has not been locked. Before moving or lifting the attachment, make sure that the locking pins are in the lower position and come through the fasteners on the attachment on both sides.



### Risk of crushing - Avoid tipping over the attachment.

Excessive tilting or lifting of an unlocked attachment increases the risk of tipping the attachment over. Do not use the automatic locking of the locking pins when the attachment is lifted more than one meter from the ground. If the locking pins do not return to the normal position when tilting, do not tilt or raise the attachment any more. Lower the attachment on the ground and secure the locking manually.

## 5.1 Connecting and disconnecting the hydraulic hoses

On Avant loaders the hydraulic hoses are connected using the multi connector system. If you have an Avant 300-700 series loader with the conventional quick couplers and wish to change to the multi connector system, contact your Avant dealer or service point for instructions or installation services.



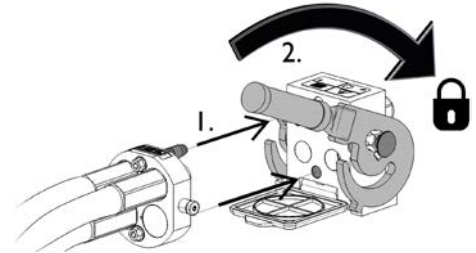
**Risk of movement of the attachment and ejection of hydraulic oil - Never connect or disconnect quick couplers or other hydraulic components while the control lever of the auxiliary hydraulics control lever is locked on or if the system is pressurized.** Connecting or disconnecting the hydraulic couplings while the system is pressurized may lead to unintended movements of the attachment, or ejection of high-pressure fluid, which can cause serious injuries or burns. Follow safe stopping procedure before disconnecting hydraulics.

### NOTICE

Keep all fittings as clean as possible; use the protective caps on both the attachment and the loader. Dirt, ice, etc. may make using the fittings significantly more difficult. Never leave the hoses hanging on the ground; place the couplings onto the holder on the attachment.

#### Connecting the multi connector system:

1. Align the pins of the attachment connector with corresponding holes of the loader connector. The multi connector will not connect if the attachment connector is upside down.
2. Connect and lock the multi connector by turning the lever towards the loader.

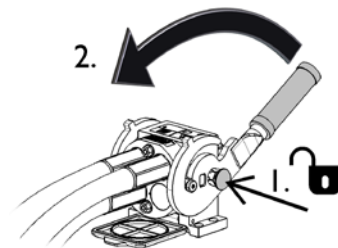


The lever should move easily all the way to its locking position. If the lever does not slide smoothly, check the alignment and position of the connector and clean the connectors. Also shut down the loader and release the residual hydraulic pressure.

#### To disconnect the multi connector system:

Before disconnecting put the attachment down on a solid and even surface.

1. Switch off the auxiliary hydraulics of the loader.
2. While pushing unlock button, turn the lever to disconnect the connector.
3. After ending operation put the multi connector on its holder on the attachment.



#### Disconnecting hydraulic hoses:

Before disconnecting the fittings, lower the attachment to safe position on solid and level surface. Turn the control lever of the auxiliary hydraulics to its neutral position.

### NOTICE

When uncoupling the attachment, always disconnect the hydraulic couplings before unlocking the quick attach plate, to prevent hose damage and any oil spills. Reinstall the protective caps on the fittings to prevent impurities from entering the hydraulic system.

#### Releasing residual hydraulic pressure:

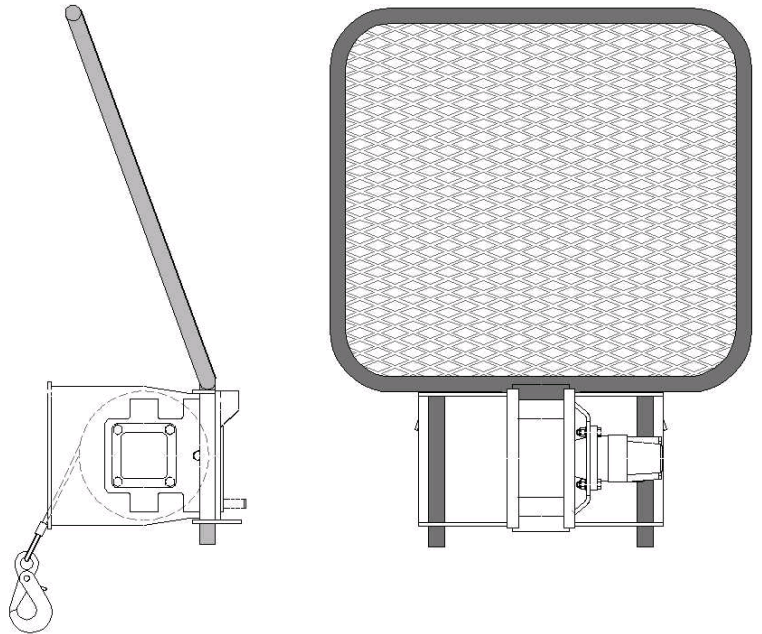
In case residual pressure is left in the hydraulic system of the attachment, it is often possible to disconnect the hydraulic couplings, but it may be difficult to connect them the next time. If the fittings will not connect, the residual pressure must be released by turning the auxiliary hydraulics control lever of the loader, when the engine is turned off. To make sure that there will not be residual pressure in the hydraulic system of the attachment, shut down the loader engine and move the auxiliary hydraulics control lever of the loader back and forth before disconnecting the couplings.

## 5.2 Install the safety net

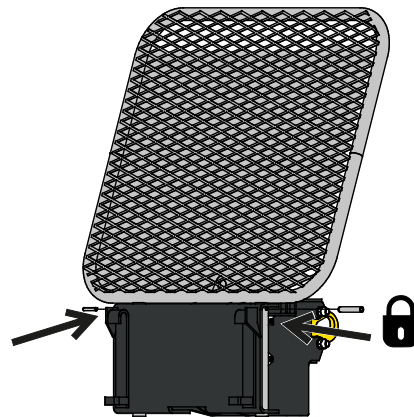
Install the safety net before you use the winch.

The safety net is intended to stop a loose or broken wire rope, preventing it from reaching the operator.

- 1 Slide the safety net to the winch so that it is tilted forward, as shown in the adjacent figures.



- 2 Secure the safety net in place with two spring cotter pins. Use a hammer to place the pins.



## 6. Instructions for use

Practise the use of the attachment and the controls of the loader in a safe area. If you are unfamiliar with the particular loader model, it is recommended to practice its use without any attachments.



**WARNING**

### **Risk of tipping over - Keep winch close to the ground.**

Loader can tip over if you lift the winch during pulling. When you notice that the rear wheels of the loader are about to lift from the ground, stop the winch. Never pull fixed objects.



**WARNING**

### **Never go under the winch - Risk of falling objects.**

Hook or load may drop, or the loader can tip forward, causing hazard to anyone near the winch. Use the winch only for pulling purposes. Lifting of loads or persons is prohibited.



**WARNING**

### **Never use winch to lift objects - Risk of falling objects.**

Use the winch only for pulling purposes. The winch is not designed for lifting purposes and is not equipped with the safety equipment necessary for lifting purposes. If you use the winch to pull logs, you can lift the winch slightly to make the pull easier. Lifting of loads or persons is prohibited.



## **6.1 Checks before use**

- Check that the safety net is in place, see page 15.
- Check the condition of the wire rope and the hook. Do not use the winch if you suspect any damage. Do a thorough inspection regularly. See page 6 for more information.
- Check that all obstacles have been removed from the way of the towed object. Remember correct working methods and leaving the driver's seat unnecessarily.
- Before you start the winch make sure anyone is not within the danger area of the wire rope. Never assume that bystanders will remain where you last saw them; especially children are often attracted to moving equipment. Stop the winch if anyone gets too close to the winch.
- Check the general condition of the attachment and the loader, and check for possible hydraulic oil leaks. The attachment must not be used, if there is a fault in the hydraulic system of the loader or the attachment. Refer to Chapter 7 for maintenance instructions.
- Before first use or after service: Make sure that the winch is operated to the correct rotating direction.

## **6.2 Operator qualification**

Anyone who intends to use the winch must:

- Know the intended use of the winch.
- Know how to use the loader safely in different operating conditions.
- Read and always follow the instructions concerning the use of the attachment in this operator's manual.
- Have this manual and the operator's manual of the loader available.
- Ensure that the loader and the attachment are used in a safe manner and as intended.
- Never allow children to operate the equipment.
- Never operate the loader or attachments while under the influence of alcohol, drugs, medication that may impair judgement or cause drowsiness, or if not otherwise medically fit to operate the equipment.
- Complete any possible mandatory training required by the employer before use.

### 6.3 Correct use

For your safety, follow the instructions and recommendations regarding correct use of the winch. This forestry and recovery winch is intended only for pulling of loads. Never use the winch for lifting purposes.



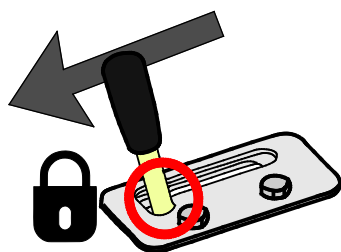
**Operate the winch only from the driver's seat - Risk of impact from wire rope.** The safety net must be installed to protect the operator's station in case wire rope breaks loose.



**Pull load only from directly ahead of the winch - Risk of tipping over.** Pulling from the sides will affect the stability of the loader. Pulling sideways may cause the wire rope to come off from the reel or damage the wire rope.

#### 6.3.1 To pull wire rope from the winch

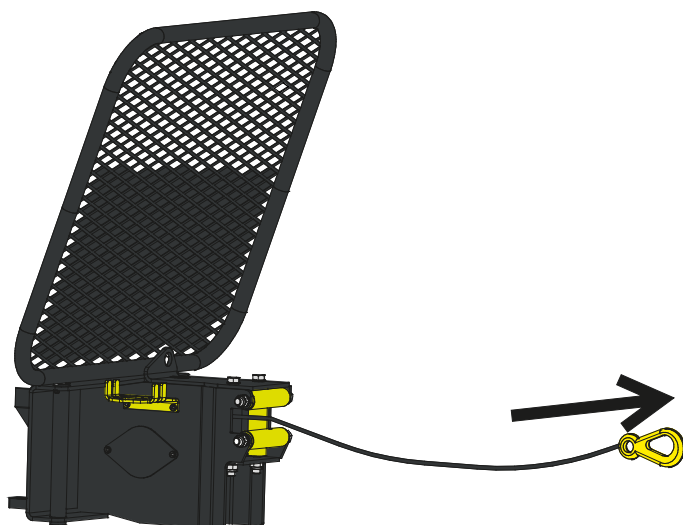
1.



Lock the auxiliary hydraulics control lever to its locking position.

This will release the winch so that you can pull wire rope, when the loader engine is running.

2.



Pull the needed length of wire rope.

Leave at least three rounds on the drum.

Release the auxiliary hydraulics control lever to its neutral position.

If the drum unwinds too easily, or is too tight, adjust the control brake. See page 26.

#### NOTICE

Pull out only as much wire rope as is necessary. Avoid leaving the wire rope on the ground to keep it clean.

#### NOTICE

Do not unwind the reel completely. Leave at least three rounds of wire on the reel. This will reduce load from the fixing point of wire rope on the drum.

## 6.3.2 How to handle the wire rope

The wire rope and its hook are vital for the safety of the winch. Handle them with care. If the wire rope or the hook are damaged, they must be replaced before the winch can be used.

The service life of the wire rope depends heavily on how it is used and maintained. See page 6 for maintenance instructions.

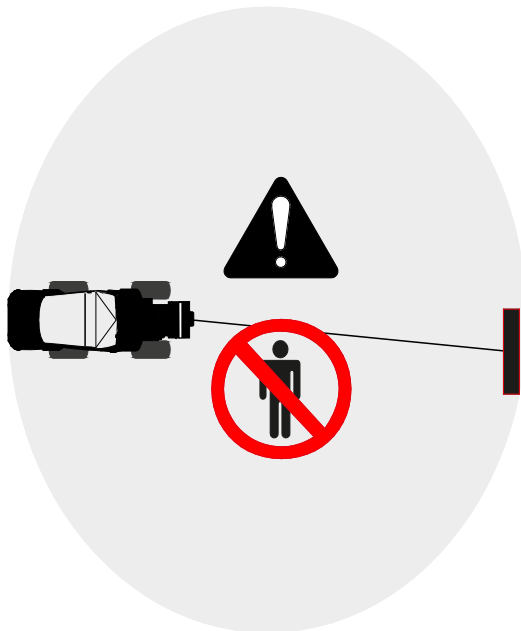
Keep the wire rope clean. Reel out the wire only as much as is necessary. Avoid leaving the wire rope loose on the ground.



**Wear protective gloves - Wire rope can have sharp strains.** Always wear thick gloves when handling the wire rope. Damaged wires of the wire rope are sharp and can cause cuts. Do not handle the wire with bare hands. Check damaged wire thoroughly before use to determine if it can be used. See page 6.

## 6.4 To pull loads with the winch

*Keep away from risk area*

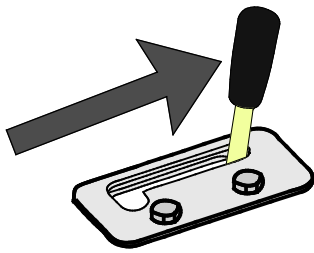


**Risk of impact from loose wire rope - Keep the safety area clear.** If the wire rope becomes loose or snaps, it can whip with high force, causing serious or lethal injuries to anyone staying in the danger area of the winch. The area to forward and side directions is as long as the length of wire rope that is pulled from winch. Always operate the winch only from the driver's seat.



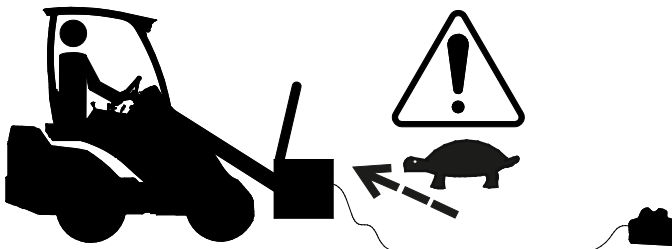
**Use additional tools as needed to securely grip loads - Risk of impact and cuts from loose wire rope.** Make sure that the fastening point can withstand the loads from pull. A wire rope that comes loose may cause a hazard regardless of the safety net. Never loop the wire and put the hook around the wire rope to avoid damage.

### To start the winch:

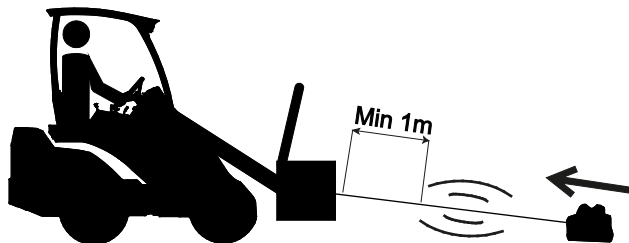


Move the auxiliary hydraulics control lever away from the locking position to pull with the winch.

- Start the winch with lowest possible speed. Use low loader engine rpm and one auxiliary hydraulics pump, if applicable.
- Pull slowly until wire rope is tightened and slack is removed. Tighten the rope carefully by reversing the loader or by operating the winch.
- Increase speed gradually. Observe the maximum allowed speed.



- Pull slowly until wire rope is tensioned.
- Make sure the load is fastened.
- Observe the tightening of the rope and fastening of the load.



- Pull carefully when the wire rope is tight.
- Stop when load is close to the winch.
- Release tension of the wire rope before leaving the driver's seat.
- Do not pull objects that would exceed the capacity of the winch.



### CAUTION

**Entangled wire rope can pinch - Risk of crushing of fingers.** Wire rope could get entangled and stuck when it gets pinched in between loose lower layers. Do not attempt to manually untie the wire rope to avoid injuries from the tensioned wire rope. If the wire rope becomes stuck, pull the wire rope out with the help of the loader. When the wire rope is coiled in neat and tight manner, the possibility of getting the wire rope entangled is reduced.

### NOTICE

The wire rope could begin to coil only on either side of the drum. In this case, use the steering wheel of the loader to turn the winch slightly.

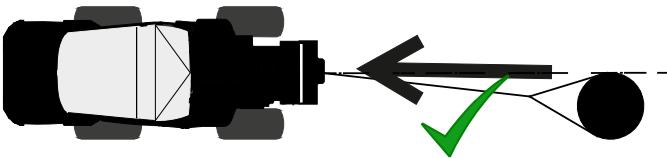
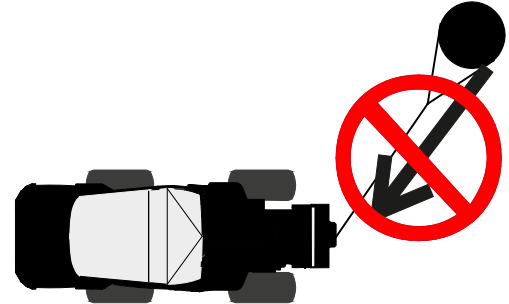
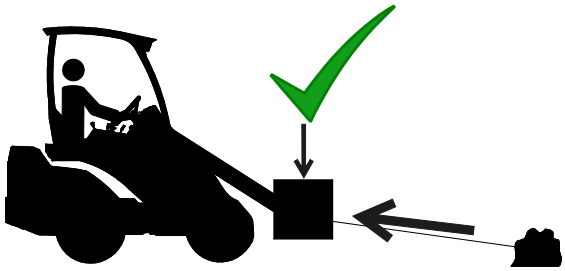
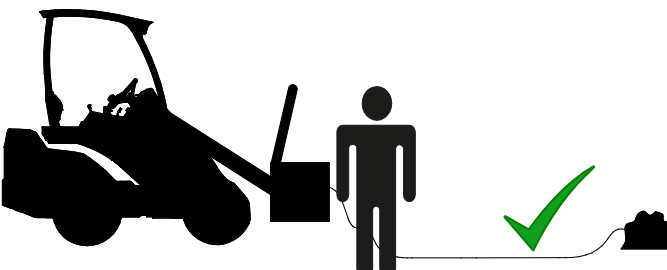
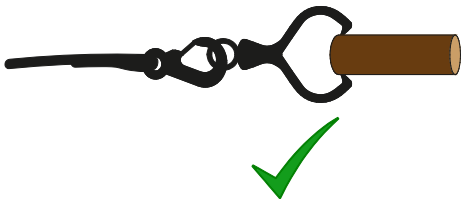
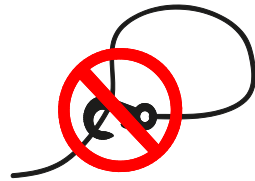
### NOTICE

Reel in the wire rope with moderate load. Loosely coiled wire rope can become entangled with the lower layers. This can cause bending or abrasions of the wire rope that make it unusable.

**NOTICE**

***Stop pulling with the winch immediately if you notice any of the following:***

- the wire rope tends to form a loop or a tight turn
- the wire rope is against a sharp corner
- the wire rope is coiled unevenly on the drum
- the wire rope is loosely on the winch and new layers get in between lower layers of wire rope

| DO                                                                                                                                                                                                                                | DON'T                                                                                                                                                                                                                    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Always make sure to pull only from the front direction.</p>                                                                                   | <p>Never pull load from the side. The loader can tip over or move sideways.</p>                                                        |
| <p>Lower the winch close to the ground before you start the winch.</p>                                                                          | <p>Keep the winch close to the ground. Loader can tip forward, if you lift the winch.</p>                                             |
| <p>Always loosen the wire rope first before leaving the driver's seat.</p>                                                                     | <p>Never handle wire rope when it is pulled or stuck. If the wire suddenly becomes loose, it can hit with high speed and force.</p>  |
| <p>Use a grabbing tool, such as timber tongs or a chain. Choose the tool according to pulling task. Follow the instructions of each tool.</p>  | <p>Do not loop the wire rope around itself. The wire rope will wear and get damaged.</p>                                            |

## **6.5 Vehicle recovery use**

If you use the winch to pull the loader itself, lock the wire rope securely to a heavy object. You can use the drive function of the loader simultaneously with the winch as necessary.

If you use a sheave or a pulley, secure the wire rope on the tie-down point on the frame of the loader. Do not use the lift point on the attachment. It is not designed for this purpose and may break.

## **6.6 Operating on inclined terrain**

Extra caution is needed when using the equipment on inclined terrains and slopes. Drive slowly especially on inclined, uneven, or slippery surfaces, and avoid sudden changes in speed or direction. Operate the controls of the loader with careful and smooth movements. Watch out for ditches, holes on the ground, and other obstacles, as hitting an obstacle may cause the loader to tip over. The loader frame articulation should be kept straight when used in slopes to improve stability.

Maximum pull capacity can not be used on inclined terrain because the loader can tip over. If the loader is facing downhill when pulling, use additional wheel blocks to prevent the loader from skidding forward. Make sure to pull only from the forward direction.

## 7. Maintenance and Service

The attachment has been designed to be as maintenance free as possible. Continuous maintenance includes regular cleaning and lubrication, and monitoring the condition of the attachment. Because of the crushing hazard caused by lowering machine parts, all maintenance work must be done when moving parts have been lowered down completely and the attachment is lowered flat against the ground.



**Risk of crushing - Never go under lifted attachment.** Make sure the attachment is properly supported during all maintenance work. Never go under a lifted attachment. The loader boom may lower unexpectedly during maintenance causing serious injuries from crushing or impact even when the loader engine is not running. All maintenance and service must be performed when the attachment has been lowered down to a safe position.

### 7.1 Inspection of hydraulic components

Check the condition of the hydraulic hoses and components when the engine has been turned off and the pressure has been relieved. Do not use the equipment, if you have discovered a leak in the hydraulic system of the attachment or the loader. Leaking hydraulic fluid may penetrate skin and cause serious injuries. Seek medical attention immediately in case hydraulic fluid penetrates the skin. Wash any part of body that has been in contact with hydraulic oil carefully with water and soap. Hydraulic fluid is also harmful to the environment and any leak to the environment must be prevented. Repair all leaks immediately after detecting them; a small leak can quickly grow into a big one. Operate the attachment only with type of hydraulic oil that is accepted for use in Avant loaders.



**Risk of high pressure fluid injection through skin - Release residual pressure before maintenance.** Never handle hydraulic components when the hydraulic system is pressurised, since a fitting may break or become loose and the released oil may cause serious injuries. Do not use the equipment, if you have discovered a fault in the hydraulic system.



Check hoses visually for cracks or abrasions. If there are signs of leaks, to check a component, hold up a piece of cardboard in the area where a leak is suspected. Do not use hands to search for leaks. Monitor the wearing of the hoses and stop the use, if the surface layer of any hose has worn off. Check the routing of the hoses; adjust the hose clamps to avoid abrasion to the hoses. The hoses have limited service life. Depending on operating conditions all hoses must be inspected thoroughly no later than after 3 to 5 years of use, and if required, they must be replaced with new ones.

Finding any fault means that the hydraulic hose or component must be replaced and the equipment must not be used until it is repaired. Spare parts are available from your nearest AVANT retailer or authorised service point. Leave the repair work to professional service technicians, if you don't have adequate knowledge and experience about hydraulic assemblies and how to perform the repairing safely.

## **7.2 Cleaning of the winch**

Clean the external surfaces of the attachment regularly. Pressure washer is not recommended. The wire rope must not be deliberately soaked in water or sprayed with water. Do not use solvents.

Wipe the wire rope clean and dry with a cloth if it has become dirty or wet. Dirt will have an adverse effect on the wire and its service life. Dirt that gets into the wire rope causes wear of the individual strands, and will promote internal corrosion by retaining water in the wire rope.

To protect the rope from rust and dirt, apply thin oil that will penetrate the wire rope and wipe with a cloth. Do not grease the rope. Thick grease will not penetrate into between the wire strands and will speed up the accumulation of dirt into the wire rope.

Check the hook and its safety latch. Regularly check the fixing of the hook on the rope. Replace the wire rope and the hook with similar as the originals. Do not use damaged equipment.

Uncouple and store the attachment on level ground, but avoid leaving the attachment laying directly on against the ground. Place it on blocks of wood or on a pallet, for example. The best way to store the attachment is a place where it is protected from direct sunlight, rain, and extreme temperatures. Make sure that the attachment is secured against all movements during storage. Never climb on the attachment.

## **7.3 Inspection of wire rope**

It is important that all components of the winch are in good condition for safe use. All parts of the winch must be inspected, and those that wear during normal use, must be checked frequently. The wire rope, hook, and fastening of the wire rope must be checked at least annually, and after any incident that could cause damage or abnormal wear.

In frequent use check the rope and hook at least monthly. If you notice that the wire is bent during use, check its condition before use. Permanent bending may make it necessary to replace the wire rope. Never use a wire rope that is bent, visibly damaged or corroded.

Replace damaged components with parts that have equal or greater rating than the original ones. Never attempt to repair by yourself. Hook must be fitted with special tools, not with reusable parts and fittings.

Check the metal structures of the winch visually. Stop the use, if you notice deformation or heavy corrosion on the frame or the drum.



**WARNING**

**Follow maintenance instructions and inspect the winch regularly.** Corroded wire ropes must be taken out from service. They can fail from the inside out. There is no way to accurately determine the remaining strength and life of the wire rope. Good lubrication and correct use will help prevent wear of the wire rope.

## **7.4 Inspection of metal structures**

Also the metal structures of the attachment must be inspected regularly. Check visually for damages and inspect the quick attach brackets and their surrounding area carefully. The attachment must not be used if it is deformed, cracked, or torn.

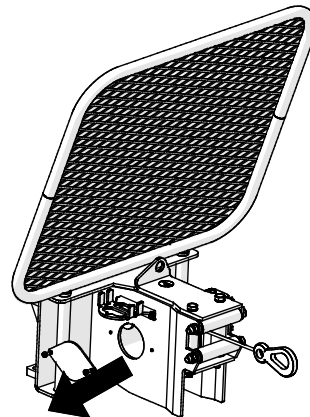
Welding repairs are only allowed to be carried out by professional welders. When welding, only methods and additives suited for steel used in bucket must be used. For more information about repairs contact your nearest service point.

## 7.5 Fastening of the wire rope

The wire rope is fixed on the reel with two shackles. Sufficient tightness of the shackles is important, so that the wire rope will not come off from the reel during pulling. To lower the stress applied on the shackles do not unwind the reel completely, but leave at least three rounds of rope on the reel.

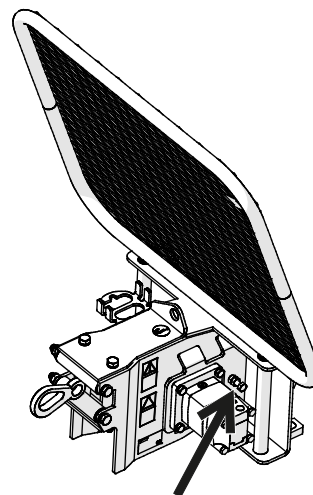
Check the tightness of the shackles at least annually or every 20 hours of use. The shackles, shown in the adjacent figures, can be tightened from the right side of the winch. Remove the cover to access the clamps.

When replacing the wire rope, fix the new in the same way as the original. Note the correct turning direction on the reel: the wire should lean against the round block fixed on the reel. The wire is coiled on the reel from the upper side. The correct winding direction is counter-clockwise in the adjacent figures.



## 7.6 Adjust drum brake

On the left side of the drum, there is a bolt that pushes a slide pad against the drum. It should be adjusted so that the drum will not rotate freely. This prevents the wire rope from unwinding in uncontrolled way. Loosen the inner nut to adjust slide pad from its bolt when necessary.



## **8. Warranty terms**

---

Avant Tecno Oy grants a warranty of one year (12 months) from the date of purchase for the attachment it manufactures.

**The warranty covers repair costs as follows:**

- Work costs are covered, if the repair is not performed at the factory.
- The factory replaces any defective components or consumables.

The factory may reimburse the price of components purchased by the customer in special cases that have been agreed in advance.

**The warranty does not cover:**

- Normal maintenance work or parts and consumables required for it.
- Damages caused by unusual operating conditions or ways of use, negligence, structural changes made without the consent of Avant Tecno Oy, use of non-original parts or lack of maintenance.
- Consequences of a defect, such as interruption of work or other possible additional damages.
- Travel and/or freight costs caused by the repair.

EY-vaatimustenmukaisuusvakuutus  
EG-försäkran om överensstämmelse  
EU samsvarserklæring  
EF-overensstemmelseserklæring  
EC Declaration of Conformity



Valmistaja / Tillverkare / Produsent / Producent / Manufacturer /:  
Osoite / Adress / Adresse / Address / Adresse /:

AVANT TECNO OY  
Ylötie 1  
33470 YLÖJÄRVI, FINLAND

Vakuutamme täten, että alla mainitut tuotteet täyttävät konedirektiivin turvallisuus- ja terveysvaatimukset (direktiivi 2006/42/EY muutoksineen). Seuraavia yhdenmukaistettuja standardeja on sovellettu /

Vi försäkrar härmed att nedan beskrivna produkter överensstämmer med hälso- och säkerhetskrav i EG-maskindirektiv (EG-direktiv 2006/42/EG som ändrat). Följande harmoniserade standarder har tillämpats /

Vi erklærer herved at produktet som er oppgitt under er i samsvar med forskriftene i Maskindirektivet (direktiv 2006/42/EC med endringer). Følgende harmoniserte standarder har blitt anvendt /

Vi erklærer herved, at nedenstående produkter er i overensstemmelse med bestemmelserne i maskindirektivet (direktiv 2006/42/EF indeholdende ændringer). Følgende harmoniserede standarder er anvendt /

We hereby declare that the products listed below are in conformity with the provisions of the Machinery Directive (directive 2006/42/EC as amended). The following harmonized standards have been applied:

SFS-EN ISO 12100, SFS-EN ISO 4413

Mallit / Modeller / Modeller / Modeller / Models :

| Avant                                                                                                                                                                                                                                                                       |        |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| Hydraulitoiminen vetovinssi; Avant-kuormaajan työlaite<br>Hydraulisk vinsch; arbetsredskap för Avant lastare<br>Hydraulisk vinsj; redskap for Avant minilastere<br>Hydraulisk spil; redskab til Avant Minilæssere<br>Hydraulic forestry winch; attachment for Avant loaders | A36960 |



31.8.2017 Ylöjärvi, Finland

Risto Käkelä,  
Toimitusjohtaja / Verkställande direktör / Administrerende direktør /  
Managing Director

Original language version





**AVANT<sup>®</sup>**