

AVANT[®]

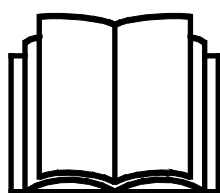
Operator's Manual for Attachment



Stump grinder

Product number

A438282



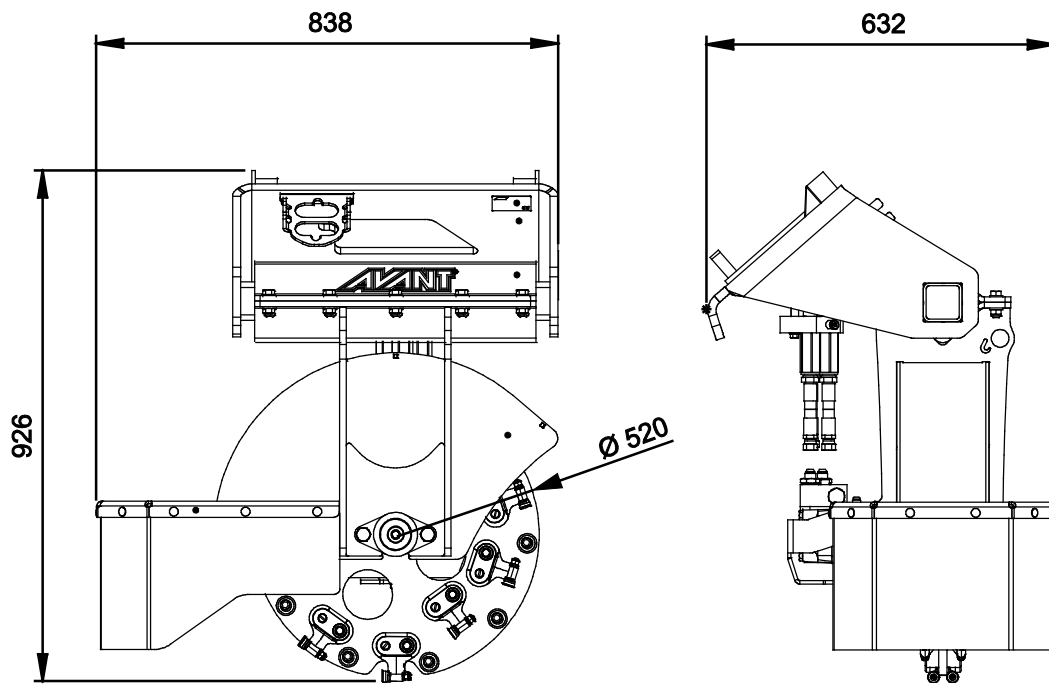
Please read this manual carefully before using the equipment,
and follow all instructions.

Keep this manual for later reference.

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I. Foreword

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 familiarizing 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 contains 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 © 2020 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 Stump grinder is an attachment that is designed and manufactured to be used with AVANT multi purpose loaders that are listed in Table 1. It is an efficient and easy to operate attachment for removal of tree stumps with an Avant loader.

The cutting disc is mounted sideways, which gives excellent visibility to the working area. The cutting disc discharges wood waste on the right side of the loader.

The stump grinder is operated from the driver's seat of the loader, and the controls and movement of the loaders are used to remove a tree stump. To move the grinder back and forth, both the forward and backward drive movement of the loader can be used, and the tilting of the attachment. The Stump grinder is intended to be used in near vertical position close to the ground. The tree stump must be sawed to as close to the ground as practical before using the stump grinder.

There are three cutting edges on the individual cutting teeth of the stump grinder. Once a tooth becomes blunt, it is easy to take into use a sharp edge by loosening the fastening bolt and turning the tooth. The stump grinder is equipped with a protective rubber cover which prevents the wood from flying around.

The stump grinder is not intended to be used in lifted position. It is not designed for and must not be used for any other purpose than removal of stumps of trees that are cut as short as possible. The stump grinder must be operated by a single operator who seated on the driver's seat, and all assisting people must stay clear from the work area. All protective covers must be in place and personal protection equipment must be used.

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.

Table 1 - Stump grinder - Compatibility with Avant loaders

Avant	220 _{series 2}	313S	419	R20	525LPG	630	745	850 860i	e5 e6
	225	320S	420	423	R28	R35	750		
	225LPG	320S+	520	523	528	635	755i		
					530	640	760i		
A438282	-	-	-	(•)	(•)	•	•	•	-

It is recommended to use the attachment only with loaders marked with • in Table 1. When using with models marked with (•), full performance may not be achieved. Additional counterweights may also be required. For compatibility with a model not shown in table, contact your Avant dealer.

Compatibility recommendations are based on the weight of the loader and recommended input of hydraulic energy.

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 Stump grinder 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.
- **Impact hazard - Thrown objects.** Do not let bystanders stand closer than the safety distance of 5 metres from the machine. Stop the attachment if others get within the safety distance.
- **Hazard of entanglement - Rotating parts.** Never leave the driver's seat when the attachment is running or if the auxiliary hydraulics control is locked on. Always keep a safe distance between persons and machinery that may start or move. Stop the equipment following the safe stopping procedure and lower the attachment firmly on the ground before leaving the driver's seat, or when other persons are present at the working area.
- **Sudden movements can cause the loader to tip over - Operate the controls of the loader in a slow and calm manner.** Be careful when lifting load to high level or lifting load from high. Avoid sudden changes in speed or direction to maintain balance of the loader especially when handling heavy loads. Drive slowly and carefully especially on inclined terrain or slippery surfaces.
- **Risk of crushing under the attachment or the loader boom - Lower the attachment firmly on the ground before leaving the driver's seat.** Make sure that the attachment is properly supported during any maintenance or inspections. Do not leave the driver's seat when the loader boom is lifted. Going under a raised attachment or loader boom is dangerous, as the boom may lower due to loss of stability, mechanical fault, or if another person operates the controls of the loader.
- **Severing and crushing hazard - strong blades rotate at high speed.** Use the stump grinder only while it is lowered against a tree stump. Stop if others are present at working area or get within the safety distance of 5 metres from a running attachment. Use the attachment only if all covers in place.



- **Risk of crushing - Never go or allow anyone else to go under the loader boom or attachment.** The stability of the loader may change when leaving the driver's seat, leading to tipping over of the machine. Always remember that the boom may lower unexpectedly due to loss of stability, mechanical fault, or if another person operates the controls of the loader, leading to crushing hazard. The loader is not intended to be left to keep a load elevated for longer periods. Lower the attachment firmly on the ground before leaving the driver's seat and never allow anyone to be under the boom or attachment.
- Operate the stump grinder only from the driver's seat. Make sure the rubber cover is installed. It will help to avoid flying of wood debris while using the attachment.
- Use the stump grinder only to remove tree stumps. Grinding of any other material can cause flying of debris, noise, dust, and damage to the stump grinder. The stump grinder is not intended for cutting of trees or grinding of any other material than tree stumps.
- Never leave the driver's seat when the attachment is running or if the auxiliary hydraulics control lever is locked on. The rotating parts of the attachment keep rotating for a short period after the hydraulic supply has been shut off. Wait until all parts have stopped completely before leaving the driver's seat.
- The operating area must be well lit. Use the work lights of the loader and other light sources as necessary.
- Carrying of an heavy attachment can shift the centre of gravity of the loader and lead to tipping over of the loader. Always keep the attachment 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. Make sure to use this attachment only with a loader model that is listed on Table 1 in this manual. Use of additional counterweights can improve stability, consult your dealer.
- When unlocking and dismounting the attachment off from the loader, ensure that it is secured against accidental movement. To secure the attachment from tipping over lower it firmly on the ground and disconnect only on level surface. Ensure the attachment is properly supported during storage. Never climb on the attachment.
- 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.
- Make sure to use only an attachment that is in good condition. Do not modify the attachment in any way that could affect its safety.
- 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

Risk of entanglement and crushing - Stop the attachment before cleaning or removing blockages. The attachment can start to rotate immediately after a blockage is removed. Always follow the safe stopping procedure to prevent all rotating parts from moving when clearing a blockage.



DANGER

Wrong, improper, or careless use of the attachment causes serious risk of severe injuries or death. Familiarise yourself with the controls of the loader in a safe area. Pay particular attention to the safe stopping of the attachment and the loader; follow the safe stopping procedure shown in this manual before leaving the driver's seat.



WARNING

Risk of crushing - Never allow anyone to get under a lifted attachment or loader boom. Keep in mind that the loader boom can be lowered or tilted even if the engine has been shut down (crushing hazard). The loader is not intended to be left to keep a load elevated for longer periods. Always lower the attachment to a safe position before leaving the driver's seat.



WARNING

Hazard of thrown objects - Keep bystanders away. Note that the attachment can throw stones, gravel, or other objects found in the area at high speed. Always keep a safety distance of at least 5 metres to other persons.



WARNING

Entanglement hazard - Keep away from moving parts. Keep a safety distance of at least 5 metres from the attachment when it is running and stop the attachment immediately if anyone gets too close. Beware of the rotating parts which create entanglement hazard. Never reach into a running attachment by any means. Shut down the loader engine if reaching into the work tools of the attachment.





CAUTION

Risk of thrown objects, loss of stability, and damage to the the equipment - Use the Stump grinder only for its intended purpose. Using the stump grinder for other purposes than grinding down short tree stumps can cause hazardous ejection of material, dust, or damaged machine parts.

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:

- 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 e.g. when handling hydraulic components.

4. Technical specifications

Table 2 - Stump grinder - Specifications

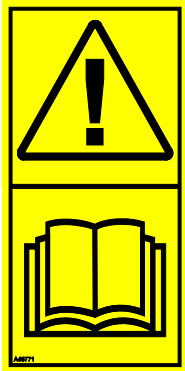
Product number	A438282
Cutting disc diameter:	540 mm
Number of teeth:	20 pcs
Total width:	840 mm
Horizontal distance of centre of gravity from the coupling plate:	370 mm
Weight:	174 kg
Recommended input of hydraulic energy:	40-60 l/min, max 20,0 MPa (200 bar)
Maximum input of hydraulic energy:	75 l/min, 22,5 MPa (225 bar) <i>Not for continuous use</i>
Compatible AVANT loader models:	See Table 1 on page 6

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.



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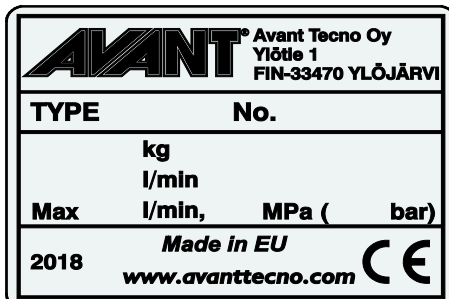
A46772



A46799



A46802



Attachment identification plate A438354

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 A46771	Misuse hazard - Read instructions before use.
2 A46772	Crushing hazard - Do not go under a raised attachment; stay away from raised equipment.
3 A46799	Beware of thrown objects; keep a safe distance from the equipment (2 m minimum, up to 30 m).
4 A46802	Beware of sharp blades – never reach to the rotating components and do not use the equipment without all covers in place.
5 A438354	Attachment identification plate

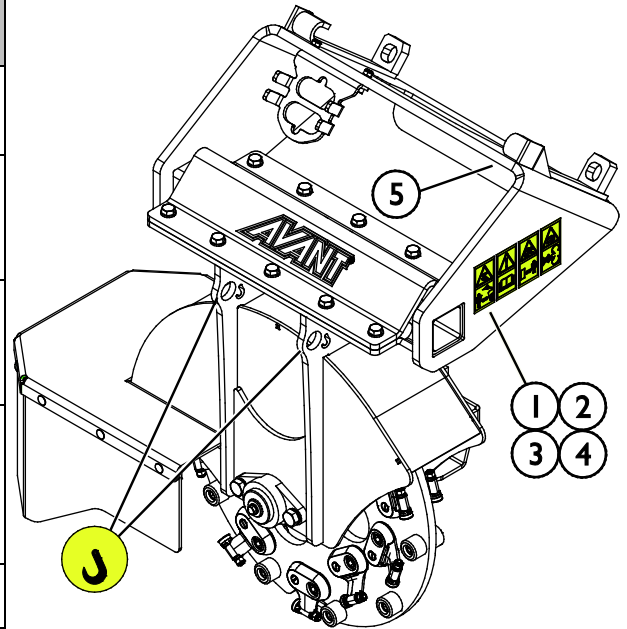
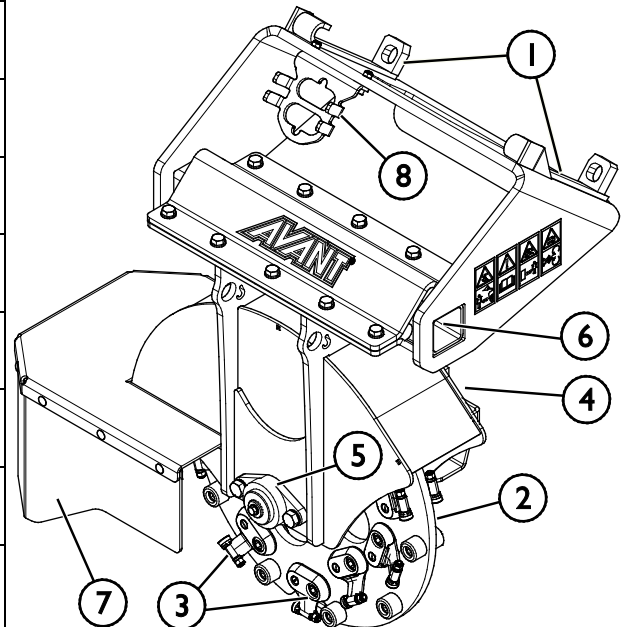


Table 4 - Stump grinder - Main components

1	Frame with Avant quick coupling brackets
2	Grinding disc
3	Tool holders (20 pcs)
4	Hydraulic motor
5	Bearing
6	Vibration dampening frame
7	Rubber protective guard
8	Multi connector holder



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:



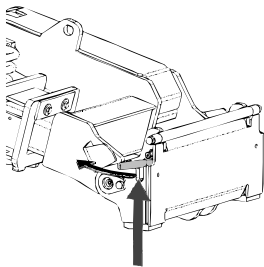
WARNING

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.

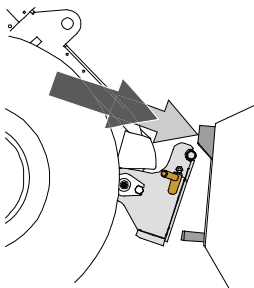
Never move or lift an attachment that has not been locked.

Avant quick coupling system:



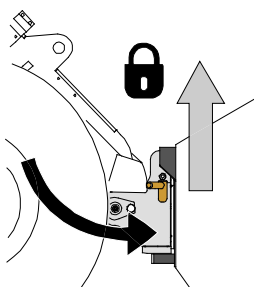
Step 1:

- 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 additional instructions about the use of the locking system from the relevant manuals.
- Ensure that the hydraulic hoses 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.**



WARNING

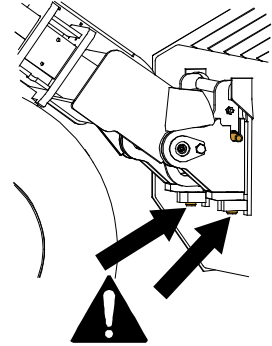
Risk of crushing - Avoid tipping over the attachment. Excessive tilting or lifting of an unlocked attachment increases the risk of tipping the attachment over. Do not use the automatic locking of the locking pins when the attachment is lifted more than one meter from the ground. If the locking pins do 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.



WARNING

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.



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.

5.1 Connecting and disconnecting 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.



WARNING

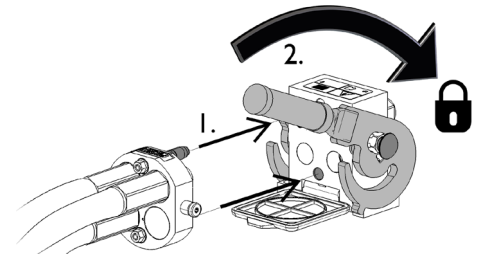
Risk of movement of the attachment and ejection of hydraulic oil - Never connect or disconnect quick couplings or other hydraulic components while the control lever of the auxiliary hydraulics control lever is locked on or if the system is pressurized. Connecting or disconnecting the hydraulic couplings 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 multiconnector system:

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

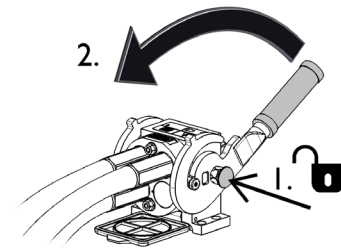


The lever should move easily all the way to its locking position. If the lever does not slide smoothly, check the alignment and position of the connector and clean the connectors. Also shut down the loader and release the residual hydraulic pressure.

To disconnect the multiconnector 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 multiconnector 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 coupling 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.

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.



Hazard of thrown objects - Keep bystanders away. Note that the attachment can throw stones, gravel, or other objects found in the area at high speed. Always keep a safety distance of at least 5 metres to other persons.



Entanglement hazard - Keep away from moving parts. Keep a safety distance of at least 5 metres from the attachment when it is running and stop the attachment immediately if anyone gets too close. Beware of the rotating parts which create entanglement hazard. Never reach into a running attachment by any means. Shut down the loader engine if reaching into the work tools of the attachment.



Risk of crushing - Ensure that the parking brake of the loader is engaged when working near the attachment. Use additional blocks if needed. Whenever possible, lower the attachment firmly on the ground.



6.1 Checks before use

- Check that all tool holders, teeth and stoppers are installed on the rotating disc. Replace any damaged or missing components.
- If necessary, adjust the position of a blunt tooth as described in this manual.
- The vibrating dampening frame must be firm and not move when manual force is applied to the attachment. If the rubber dampeners give in too easily, replace all four of them with new ones.
- Ensure that bystanders are at a safe distance when operating the equipment. Do not let anyone to enter danger area of the boom or to stay directly in front of the loader. Also make sure that it is safe to reverse with the loader. Never assume that bystanders will remain where you last saw them; especially children are often attracted to the moving equipment.
- 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.
- Operate the attachment and the controls of the loader only when seated on the driver's seat. Ensure that the loader and the attachment are used in a safe manner and as intended. Do not 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.
- Remember correct working methods and avoid leaving the driver's seat unnecessarily.

6.1.1 Check the operating area

- Check that the tree stump is cut to a short length.
Stump grinder is intended to remove only the last bit of the tree.
- Check for possible rocks or debris around the tree stump.
To keep the cutting disc in good condition, remove any loose rocks. If there are large rocks just beside the tree stump, they may need to be removed first to avoid damaging the cutting disc.
- Make sure there is enough light at the work area.
You need to be able to see easily how the work progresses and what is exposed from the ground.
- Inform others to stay back while you operate the stump grinder.
During the stump removal process, other people must not be within the safety distance from the attachment.



CAUTION

Risk of thrown debris - Choose a discharge direction away from e.g. people, roads, pathways, or areas where people could be present. Position the loader around the tree stump so that the discharge is not directly towards areas where people are likely present or walk by. Also avoid the direction of buildings, vehicles or other property that can get damaged from flying debris.

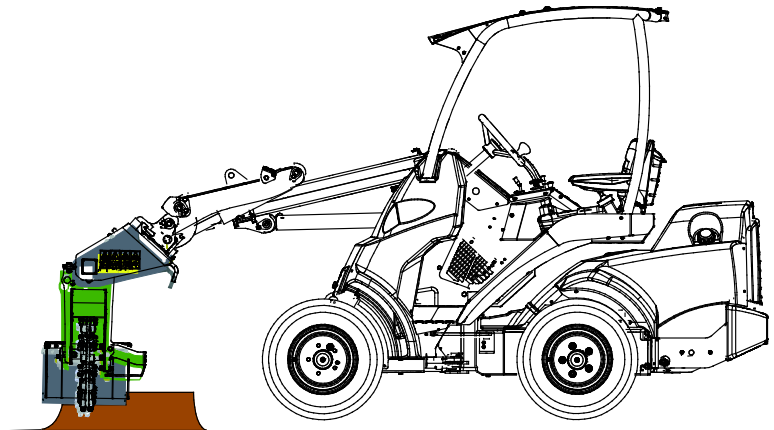
6.2 Using the stump grinder

Correct work position

After you have attached the stump grinder as described in this manual and you have made all pre-work checks, position the Stump grinder just above a tree stump, as shown in the adjacent figure.

Using the telescopic boom of the loader

If your loader is equipped with a telescopic boom, you can utilize it for a better view to the working area. Avoid moving the attachment with the telescopic boom during use. With most loader models using the telescopic boom during use will reduce the flow of hydraulic oil to the attachment, and will cause the Stump grinder to stall.



Lift the Stump grinder off from the tree stump before using the telescopic boom, or use the drive pedals to move the Stump grinder back and forward.



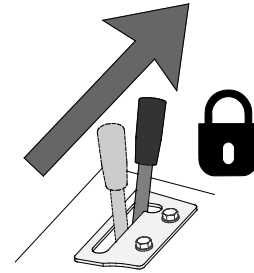
Risk of serious personal injuries - Never leave the equipment running unattended.

Start the attachment only when it is ready to be used. Do not go near the equipment when another person operates the controls of the loader.

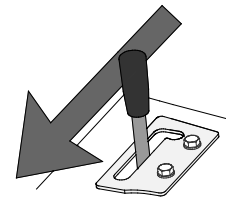
	<p>Push the control lever right to tilt the attachment towards the loader's working position.</p>	
	<p>Pull the control lever left to tilt the attachment forward.</p>	

Auxiliary hydraulics control

- Moving the auxiliary hydraulics control lever towards its locking position will start the stump grinder.
 - You can also use the buttons of the electric joystick (optional equipment).
- Correct direction of rotation is counter-clockwise, when seen from the driver's seat.
- To stop the stump grinder, release the auxiliary hydraulics control lever to its neutral (centre) position (or release buttons on electric joystick).



- Moving the auxiliary hydraulics to opposite direction will rotate the grinder disc to opposite direction. This direction should not be used.



Recommended operating speed and maximum allowed oil flow:

NOTICE

Operate the attachment keeping the hydraulic flow within recommended range. Never exceed maximum allowed input of hydraulic energy.

NOTICE

Avoid moving the attachment with the telescopic boom during use. Using the telescopic boom during use will reduce the flow of hydraulic oil to the attachment, and will cause the grinder to stall. Lift the grinder off from the tree stump before using the telescopic boom, or use the drive pedals to move the loader back and forward.



CAUTION

Risk of thrown parts - Avoid running the attachment at very high speed. Operating the attachment at too high speed may cause high vibrations, noise, or thrown parts from the attachment, or damage that could lead to personal injury. See recommended input flow in this manual.

Running in

Check the tightening torques of the teeth and tool holders after first 30 operating minutes. Use the following tightening torques:

NOTICE

- tooth nut 27 Nm
- tool holder 244 Nm with lubrication and 325 Nm when dry

See page 25 for more information.

6.3 Preventing and clearing blockages

Keeping the rotating speed sufficiently high on demanding conditions is essential to avoid blockages. Wet wood waste can get coiled around the cutting disc shaft. Keep the equipment clean, so that material will not stick on it.

If blockage occurs, it needs to be cleared manually using suitable tools. Follow safe stopping procedure before going near the stump grinder.



DANGER

Cutting hazard - Unexpected starting. Clearing a blockage can start the stump grinder unexpectedly immediately after clearing the blockage, if the auxiliary hydraulics of the loader is left on.

Always stop the loader by following the safe stopping procedure before going near the stump grinder. Never reach to the device if the cutting disc can move.

To prevent accidents, turn the auxiliary hydraulics control lever of the loader to its neutral position, shut down the loader engine and release the residual pressure always before going near the attachment.



DANGER

Risk of serious personal injuries - Unexpected starting. To make sure that the attachment will not rotate, disconnect the multiconnector (or hydraulic quick couplings) before going near it.

6.4 Material handling

Use maximum load indicated in the diagram of the operator's manual of the loader as a guideline. Remember that the actual load carrying capacity varies according to operating conditions, especially unevenness of operating area has a great effect. Be especially careful when the load sensor indicator is activated. Also, make sure that the ground surface is firm and follow recommended tire pressures.



WARNING

Risk of tipping over - Avoid overloading the loader by keeping the stump grinder close to the loader while moving with the loader. Keep the stump grinder close to the ground whenever driving, especially during turns and uneven terrain. Pay attention that a heavy load or long distance between the loader and the centre of gravity of the load will affect the balance and handling of the loader. The use of additional counterweights is recommended especially when operating smaller loader models. With heavy loads, the telescopic boom must be kept retracted while moving with the loader. Always wear seat belt.

6.5 Working on uneven ground

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.

Maximum lifting capacity can not be achieved on inclined terrain. On horizontally tilted terrain the load must not be lifted high. The loader frame articulation should be kept straight when lifting heavy loads; turning the load during lifting operation will affect the stability of the loader and may lead to overturning of the machine.

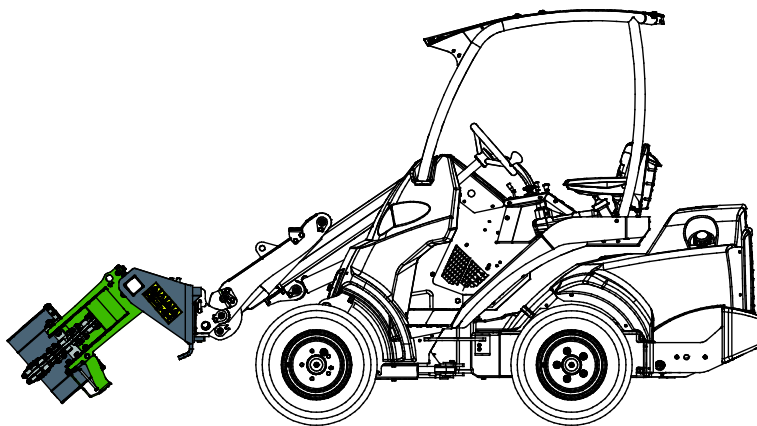
6.6 Operation with a tilt adapter

The attachment is not intended to be used with a tilting adapter fitted in between the attachment and the quick coupling plate of the loader. The attachment must be coupled directly to the quick coupling plate of the loader.

6.7 Transport position

When driving with the loader, keep the Stump grinder low and close to the ground and loader, as shown in adjacent figure.

Adjust the drive speed according to the operating conditions and surface. Always drive slowly while transporting the Stump grinder.



CAUTION

Keep the loader stable. Always transport the attachment as low and close to the ground as possible. Keep the telescopic boom retracted during transport drive.

6.8 Storage

Uncouple and store the attachment on level ground. The best way to store the attachment is a place where it is protected from direct sunlight, rain, and extreme temperatures.

- Avoid leaving the attachment laying directly on the ground. Place it on blocks of wood or on a pallet, for example.
- Place the multiconnector on to its holder as indicated with an arrow in the figure below. Never leave the hydraulic connector on the ground.
- Make sure that the attachment is secured against all movements during storage.

Never climb on the attachment.

To ensure the stability of the attachment during storage, lay it down on a pallet so that the quick coupling plate is easily accessible with the loader, as shown in figure below.



Risk of crushing - Uncoupled stump grinder may tip over; keep a safe distance during coupling. Ensure stability of uncoupled attachment by placing the stump grinder firmly on a pallet so that the quick coupling plate is easily accessible with the loader.

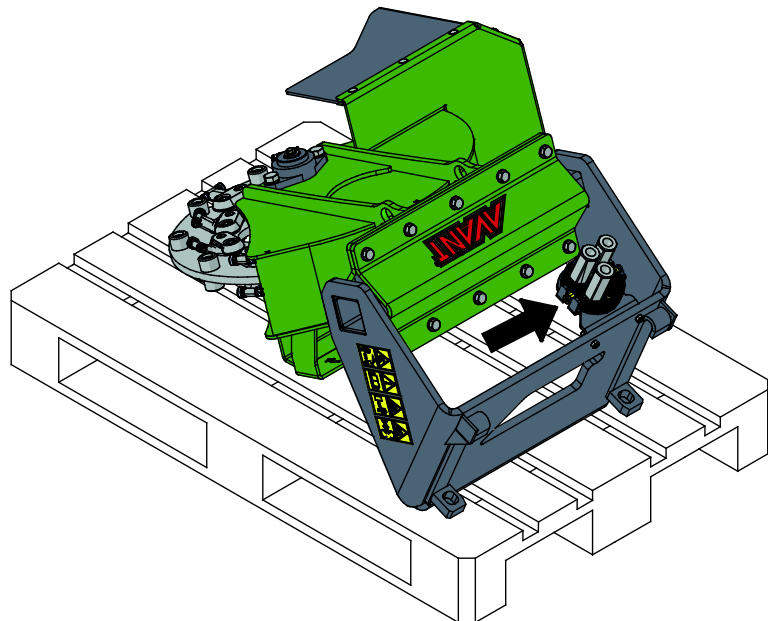


Correct storage position:

To ensure the stability of the attachment during storage, always store it in position shown in adjacent figure.

Make sure that hydraulic hoses will not be left under the attachment.

Place the multiconnector to its holder on the attachment.



NOTICE

Avoid storing the attachment directly on the ground to prevent rust damage and for easier coupling procedure. Place the attachment on a pallet fork, for example.

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, system has cooled down, 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.

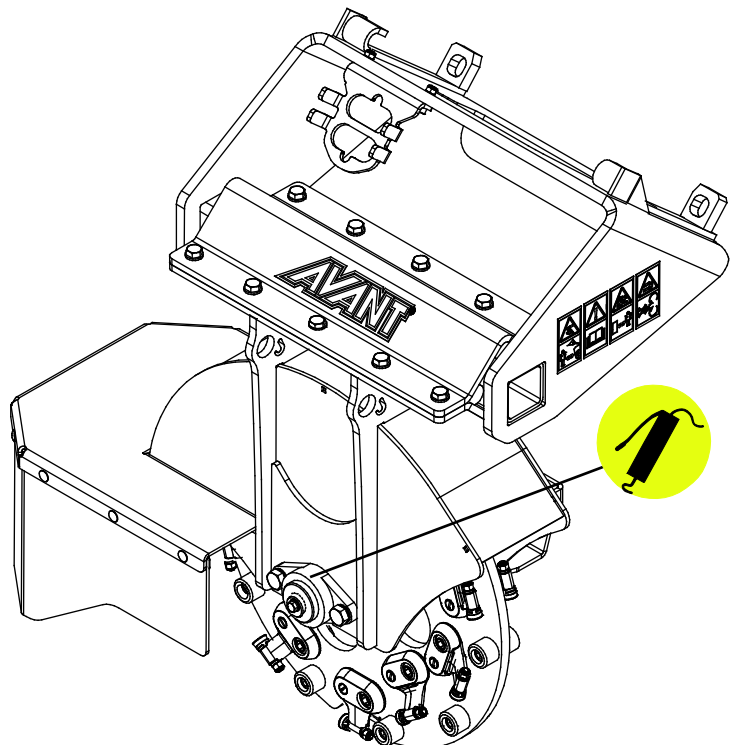
Finding any fault means that the hydraulic hose or component must be replaced and the equipment must not be used until it is repaired. Spare parts are available from your nearest AVANT retailer or authorised service point. Leave the repair work to professional service technicians, if you don't have adequate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

7.2 Cleaning and lubrication

Clean the attachment regularly to prevent accumulation of dirt which is more difficult to remove. A pressure washer and mild detergent can be used for cleaning. Do not use strong solvents, and do not spray directly at the hydraulic components, or at the labels on the attachment.

There are lubricating point at the bearing on the Stump grinder, as shown in the adjacent figure. The bearing should be greased after every 5 to 10 hours of use.

Clean the end of the nipple before greasing and add only a small amount of grease at a time. The lubrication nipple is a standard R1/4" nipple. Replace if damaged.



NOTICE

Bearing must be lubricated approximately after every 5 to 10 operating hours. Clean the end of the nipple before greasing. Only add the grease amount of a couple of grease press pushes at a time.

7.3 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 attachment must be used. For more information about repairs contact your nearest service point.

7.4 Cutting disc maintenance

The condition of the cutting disc should be checked at least after every few uses. The teeth wear down in normal use and can get damaged if hitting a rock or hard surface.

If the performance of the grinding has decreased from the original, the cutting teeth have probably become blunt. Uneven grinding results, increased power requirement, and increased vibration level are signs of blunt or damaged teeth.

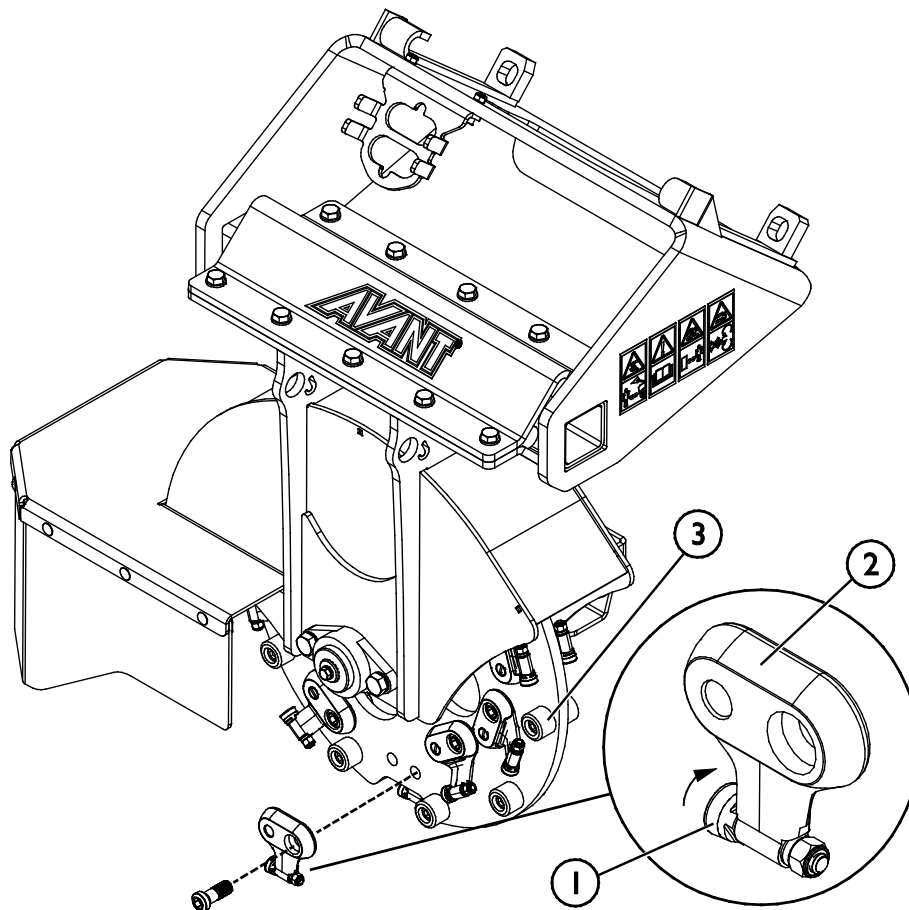
Cutting teeth have three cutting edges: once a tooth becomes blunt, it is easy to open its fastening bolt and to turn the tooth so that a sharp cutting edge comes into use.

Check the tightening torques of the teeth (1) and tool holders (2) and tightening of the stoppers (3). Use the following tightening torques:

- tooth nut 27 Nm
- tool holder 244 Nm with lubrication and 325 Nm when dry

Check the torque after first 30 operating minutes. Do not overtighten the screws.

When the teeth are worn out and you are replacing them, make sure that you fix them in the same manner as they were originally.



NOTICE

The fastening nuts should be replaced with new ones when replacing teeth.



CAUTION

Risk of thrown parts - Check that all teeth, tool holders and stoppers are connected securely and that none of them is missing. Loose, damaged, or missing teeth can cause ejection of parts from the cutting disc. Only use locking nuts for fastening the teeth.

NOTICE

If the teeth have worn down excessively, they must be replaced. Always use good protective gloves when handling the cutting disc.

NOTICE

Check that the cutting disc is balanced to avoid damage to other components. Repair the cutting disc, if you notice any abnormal vibration or noise. Contact service for assistance.

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.

FI EY-vaatimustenmukaisuusvakuutus Alkuperäinen kieliversio
 SE EG-försäkran om överensstämmelse Originalversion
 EN EC Declaration of Conformity Original language

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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 /

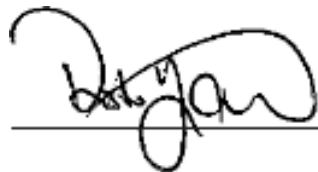
We hereby declare that the products listed below are in conformity with the provisions of the Machinery Directive (directive 2006/42/EC as amended). The following harmonized standards have been applied:

SFS-EN ISO 12100, SFS-EN ISO 4413

Mallit / Modeller / Models

Avant	
Hydraulitoiminen kantojyrsin; Avant-kuormaajan työlaite Hydraulisk stubbfräs; arbetsredskap för Avant lastare Hydraulic stump grinder; attachment for Avant loaders	A438282

CE



14.1.2020 Ylöjärvi, Finland

Risto Käkelä,
 Toimitusjohtaja / Verkställande direktör /
 Managing Director



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