



## Operator's Manual for Attachment



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## Backhoe 260 with remote control

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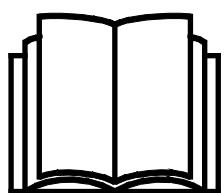
Product number:

For 500-700 series loaders

A430235

For 800 series loaders

A443267



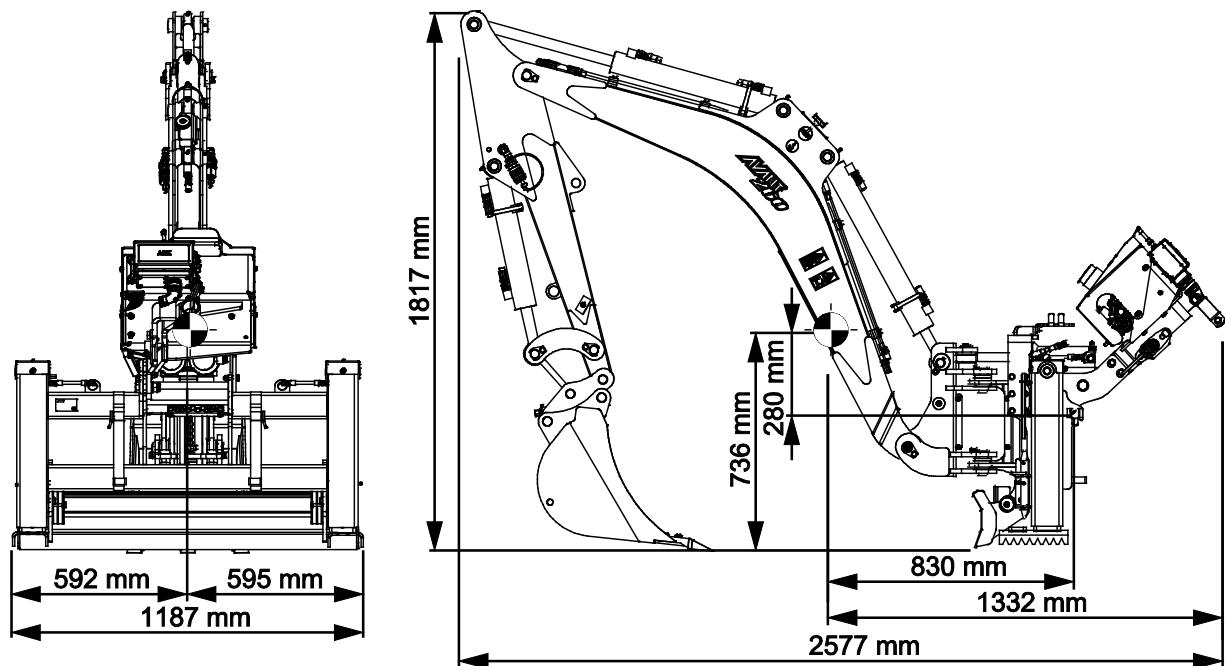
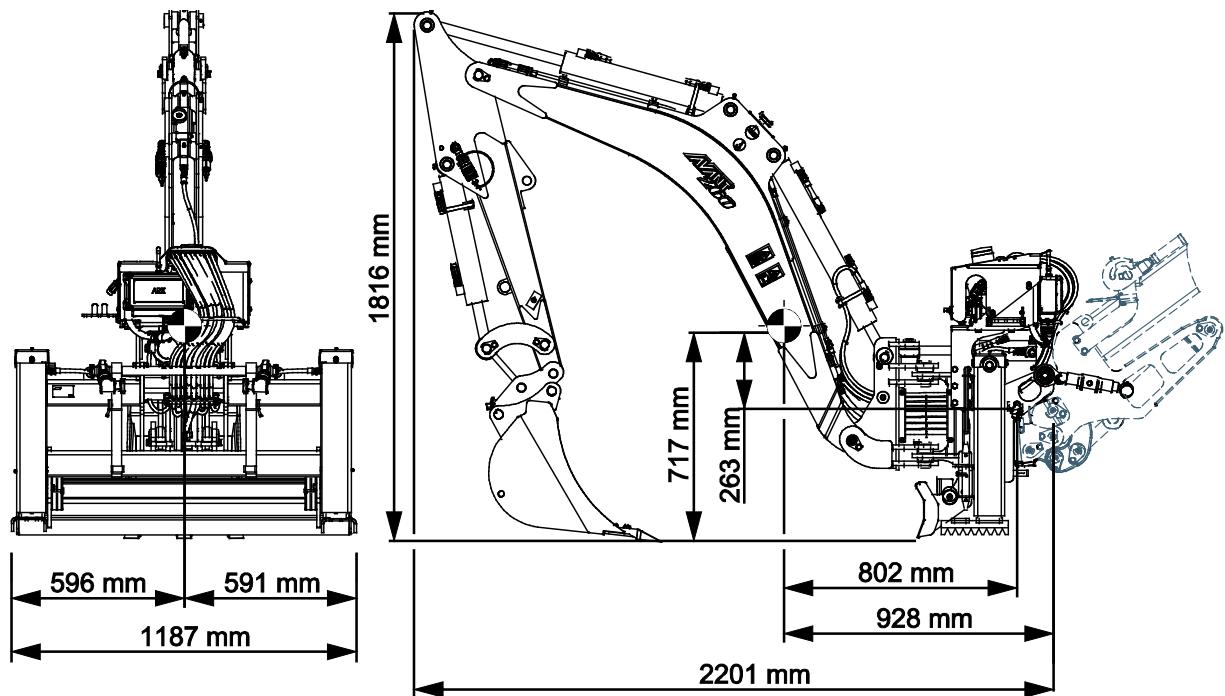
Please read this manual carefully before using the equipment,  
and follow all instructions.

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 Operator's 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 © 2022 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 Backhoe 260 with remote control is an attachment that is intended to be used with AVANT compact loaders that are listed in Table 1. The backhoe is controlled with its independent radio remote control to control the proportional control valve system of the backhoe. This universal version of the remote controlled backhoe is intended for the specific radio frequency area 2400-2483.5 MHz. Make sure that the radio frequency of this model can be used in your country.

Attaching the backhoe to a loader is quick and easy and takes only a couple of minutes. In addition to the quick coupling plate of the loader, support arms are also connected on the loader boom for greater stability during excavation.

The radio remote control unit is equipped with rechargeable batteries. A fully charged battery will last for approximately 11 hours of work. The battery charging time of the unit is approximately 4 hours. The battery is charged using a charger included in the delivery of the backhoe. The charger can be used with mains supply voltage in between 80-250 Volts. User of the radio control unit must wear the provided shoulder harness for increased ergonomics, to avoid dropping of the control unit, and to avoid accidental control movements while holding the control unit.

It is also possible to connect the control unit to the backhoe with a cable. The cable is useful in particular in conditions where it is not possible to establish a radio link between radio remote control units, or when using radio frequencies is not allowed or is dangerous, or a fully charged battery is not available. When using the cable control, all the working and control features remain the same. The length of the control cable is 5 meters.

The backhoe is shipped from the factory with a 400 mm wide standard bucket. Several other bucket options are also available to suit the backhoe for the different digging tasks. The buckets are coupled with a standard type S30-150 tool-operated quick coupling system, allowing to change the bucket easily. A tilting bucket adapter and a hydraulic thumb grapple are also available as option. The tilting adapter includes the same type of S30-150 bucket coupling. To make it easy to install the tilting adapter, the backhoe is equipped with hydraulic quick couplings for the tilting adapter as standard.

Using the digger for other purposes than excavating work with original buckets, tools, or options is prohibited. Using too large bucket, or handling too heavy loads, cause the risk of tipping the loader-backhoe combination over. The backhoe must not be used for lifting of objects. The backhoe is not intended for dredging, it must not be immersed in water.

The basic set-up and use of the remote control system, and most common possible error messages are covered with this manual. However, more detailed information about maintenance and troubleshoot can be found in the instructions of the remote control system. Contact your Avant dealer or authorized service if necessary.

The Backhoe 260 with remote control is not designed for any other use than what is specified in this manual and must not be used for any other purposes than what is intended for. The Backhoe 260 with remote control is a product of its own. The control unit and remote-control systems cannot be retrofitted to a standard backhoe 260.

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 technicians. 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 dealer if you have additional questions about the operation or maintenance of the equipment, or if you require spare parts or maintenance services.

**Table 1 - Backhoe 260 with remote control - Compatibility with Avant loaders**

Model	220	313S	520	525LPG	R20	630	735	850	e5
	225	320S	523	528	R28	635	745	860i	e6
	420	423		530	R35	640	750		
A430235	-	-	(•)	•	-	•	•	•	•
A443267	-	-	-	-	-	-	-	•	-

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.

### 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.
- This attachment 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.
- **Risk of impact and crushing - Stay clear of the work area of the backhoe.** Never stay at the swing area of the backhoe, next to, or under the moving parts of the backhoe. Stay at a position where you have good visibility to the work area, and where the backhoe can't reach.
- **Risk of electric shock - Plan all excavation tasks ahead before you dig!** Find out about the possibility of having any electric cable, gas pipe, water pipe, communications cable or similar buried in the ground. Consult local authorities, electric, water, telecommunications, and gas companies, and other relevant sources before starting to use the equipment. Your area may also have a specific hotline or helpdesk available, or a special permit may be required. If uncertain in any way, seek for more information before starting to dig.
- **Risk of collision - Prevent accidental movements.** Turn the auxiliary hydraulics control lever of the loader to its neutral position immediately after active use of the backhoe to prevent accidental movements of the backhoe.
- **Risk of serious injuries - Switch off the radio remote control when not using it.** Always switch off the transmitter when not using the radio remote control to control the backhoe, or when the work is otherwise interrupted, even for short periods. Always lower the bucket of the backhoe on the ground and follow the safe stopping procedure, even during short breaks. Accidental activation of controls of an active backhoe e.g. during short pauses of work can injure you or others near the backhoe.
- **Risk of crushing and falling objects - The attachment must not be used for any other purposes than intended.** Never use the attachment to lift objects or loads other than materials that are normally handled with a bucket. Never suspend any loads or attach any other tools than a bucket to the backhoe. Make sure that the loader is parked when operating the backhoe.



- **Tipping over hazard - Note that the excavation or trench may suddenly cave in.** Exercise extreme caution when driving near ditches or embankments, and avoid driving along a ditch or trench, as the machine could suddenly tip over if an edge caves in. Avoid driving along trenches and keep at least a distance equal to width of a trench. Consider the risk and possibility of caving in. Do not dig excavation with vertical side walls, slope the excavation according to the type of soil, among other considerations.
- **Crushing hazard - Make sure that the bucket is securely fitted.** Loose or falling bucket can cause serious injuries.
- **Risk of crushing - Keep in mind that the loader and backhoe booms can be lowered or tilted even if the engine has been shut down.** Always lower the bucket of the backhoe on the ground and follow the safe stopping procedure before leaving the driver's seat. Leaving the bucket hanging above the ground can cause risk of injury if anyone gets near the suspended bucket. Keep hands and feet away from moving parts.
- The remote control user must wear the radio remote control with an appropriate shoulder harness A426437 to avoid its fall, loss, loss of control, accidental contact and improper use.
- When using the remote control with a control cable, make sure that the cable of the transmitting unit and the corresponding connectors are intact. Route the cable in such a way as to prevent it from being getting squeezed or strained by moving parts of the backhoe or the loader. Prevent the cable from laying on sharp edges that can damage the cable's protective sheath. Allow the cable to lay on the ground, do not pull it tight. Do not use the cable for lifting the transmitting unit.
- Operate only on well lit areas. If extra caution is required to avoid hitting dangerous or fragile materials in the ground, have another person nearby to spot possible buried items.
- Do not use the backhoe on horizontally tilted terrain. Ensure the stability of the loader and firmness of the ground also on even terrain.
- Pay attention to the surroundings and any other persons and machines moving in the vicinity. Other persons must keep safety distance of 5 meters. 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.
- When removing the backhoe from the loader, ensure that it is secured against accidental movement. Familiarise yourself with the instructions concerning taking the digger off from the loader and storage.
- Make sure that overhead clearance is sufficient. Hitting an overhead obstacle may cause the loader to tip over. Keep a safe distance from electric cables, lamps, or other electric systems; hitting live parts may cause electric shock.
- 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.
- 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.
- 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**

- 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 attachment or the loader are not intended to be left to keep a load elevated for longer periods. Lower the attachment before leaving the driver's seat.
- Observe maximum load indicated in the operator's manual of the loader. Be especially careful when the load sensor indicator is activated.
- Make sure that the surface can bear the total load. Also follow the correct tyre pressure settings.
- 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.
- 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 crushing - Never allow anyone to get under the raised boom of the backhoe, bucket, or loader boom.** Keep in mind that the loader and backhoe booms can be lowered or tilted even if the engine has been shut down. The loader or the backhoe are not intended to be left to keep a load elevated for longer periods. Always lower the attachment to a safe position before approaching the loader. Press the STOP button down when the controller is not used. Follow safe stopping procedure.

### 3.1 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.



- When working at construction sites, a safety helmet is recommended and may be mandatory in addition to the falling objects protective structure (FOPS) on the loader. Find out about other necessary safety equipment at your specific work site.



- Wear respirator mask when operating in dusty conditions.



**Silica dust warning.** Prolonged or repeated exposure to crystalline silica can cause serious or fatal respiratory disease. Occupational health and safety officials recommend limiting exposure to dust that is present at most earth-moving and many other work sites. Avoid spreading of dust where possible, keep loader cabin clean from dust, and use respiration mask when necessary.

### 3.2 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:

1. Turn the backhoe to its middle position and lower the bucket of the backhoe flat on the ground.
2. Disable the radio remote control by switching off the radio remote control unit (transmitter).
3. Turn off the auxiliary hydraulic oil flow of the loader. Release auxiliary hydraulics control lever of the loader to its neutral position.
4. Switch off power from the backhoe control system (receiving unit).
5. Shut down the loader engine and lock the parking brake.
6. Prevent starting of the machine, remove ignition key.

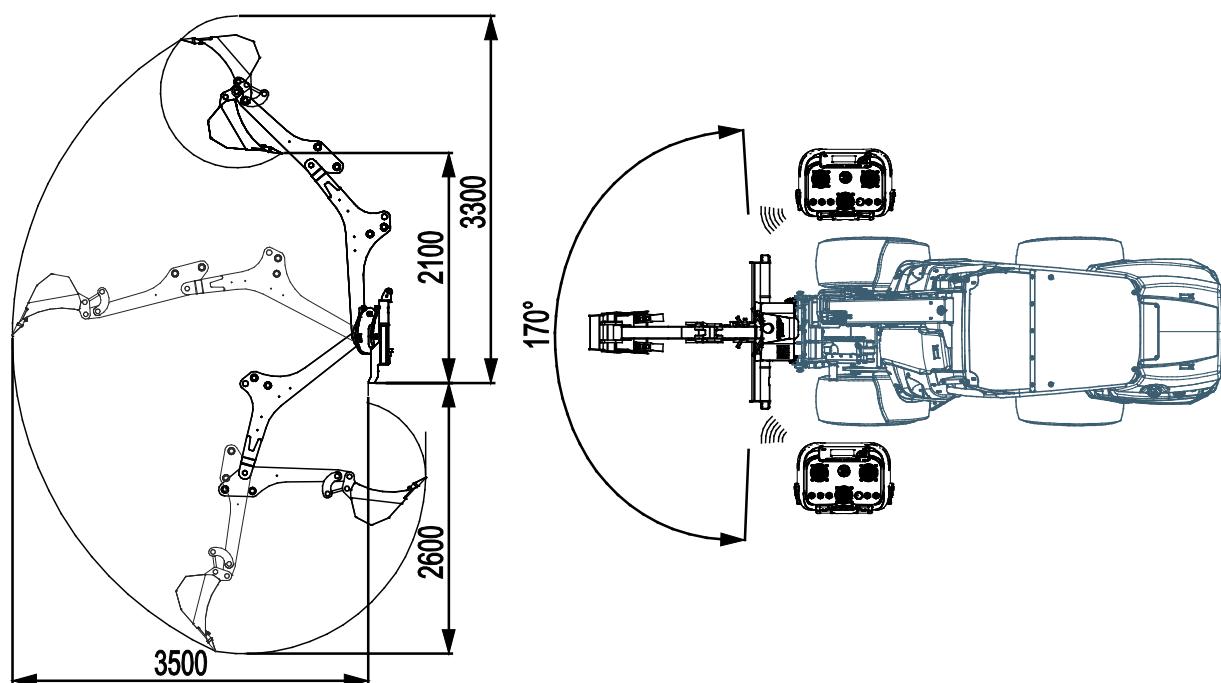
**NOTICE**

Special training, license, or permit may be required to operate the equipment at your area. Depending on area and work site, local requirements may mandate that the operator has received proper training on how to operate the equipment safely and about safety precautions, including action during emergencies. Find out about possible requirements before operating the equipment.

## 4. Technical specifications

**Table 2 - Backhoe 260 with remote control - Specifications**

<b>Product number:</b>	<b>A430235</b>	<b>A443267</b>
Maximum reach:		260 cm
Mass:	430 kg (with 400 mm bucket)	500 kg (with 400 mm bucket)
Bucket:	Standard bucket: 400 mm, 3 teeth Bucket options: See page 39	
Bucket coupling:	S30-150 tool locked quick coupling	
Boom swing angle:		170°
Recommended hydraulic flow:		20 l/min, 20,0 MPa (200 bar)
Maximum input of hydraulic energy:		45 l/min, 20,0 MPa (200 bar)
Control system:	Radio remote control Can be connected via cable (included) Electronically controlled proportional hydraulic valve	
Operating frequency band:		2400 - 2483.5 MHz
Battery, remote control unit:		7.2V / 750 mAh, NiMH, (2 pcs A425086)
Battery charger:		80 - 250 V AC 50/60Hz, A426435
Battery charging time:		~4 hours
Suitable Avant loaders:		See Table 1
<b>Options:</b>		
Waist belt for the radio transmitter:		A425087



#### 4.1 Information about Radio remote control

This attachment is equipped with a radio remote control system working in the frequency range 2400-2483.5 MHz. It can be used within these permitted frequencies. The radio remote control working in the frequency band 2400-2483.5 MHz complies with the (RED) Directive 2014/53/EU and its essential requirements.

If you are unsure about the model of the backhoe, check on the technical data plate of the receiver unit in which markets the radio remote control can be used.

Unauthorized modifications of the frequency or other parameters of the radio transmitter are prohibited. Modified or faulty radio equipment can cause the system to not comply with local regulations.

This model of the backhoe must not be operated or exported to the area where the corresponding frequency range is not in use. Other Backhoe models may be available for different market areas, contact your Avant dealer for more information.

**NOTICE**

The operating frequency of the radio remote control system is regulated by local or market area specific laws and standards. In order for the entire control system to be compliant with laws and regulations, the system must be used only in the area that is designated in the technical information of the Backhoe and its control system. The system must not be used if it does not comply with local laws, regulations, or standards.

Avant Tecno Oy cannot be held responsible if the radio remote control is set with frequencies that are forbidden in the country of use.

## 4.2 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



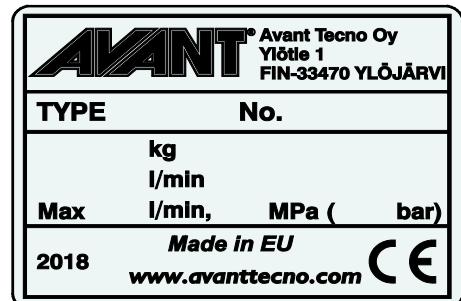
A46803



A46772



A46797



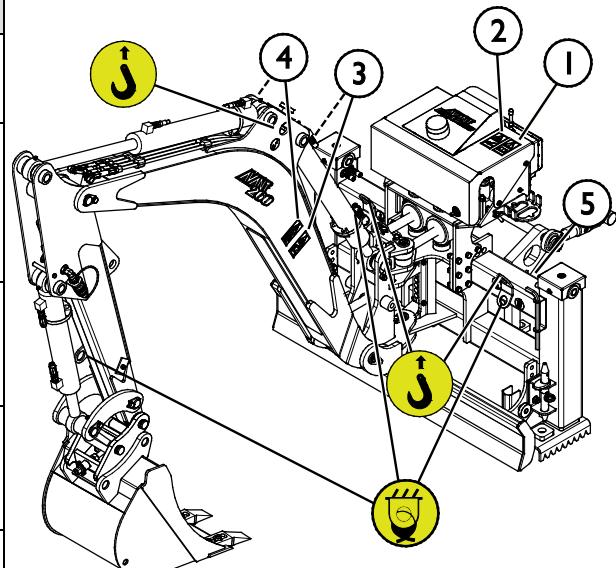
Attachment identification plate

A431057 / A443268

**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**

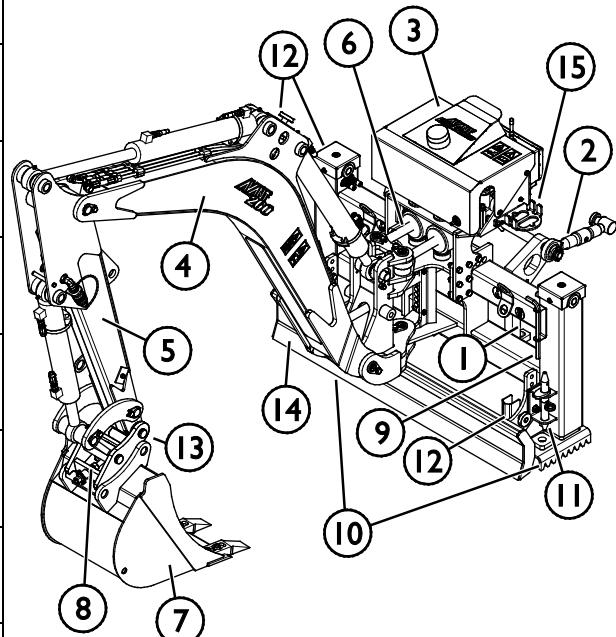
	Decal	Explanation
1	A46771	Misuse hazard - Read instructions before use.
2	A46803	Pinching and cutting hazard, keep clear of moving parts, do not leave the equipment running. Operate the attachment only from the driver's seat.
3	A46772	Crushing hazard - Do not go under a raised attachment; stay away from raised equipment.
4	A46797	Crushing hazard in the reach and swing area of the backhoe, keep bystanders away from danger area.
5	A431057 / A443268	Attachment identification plate



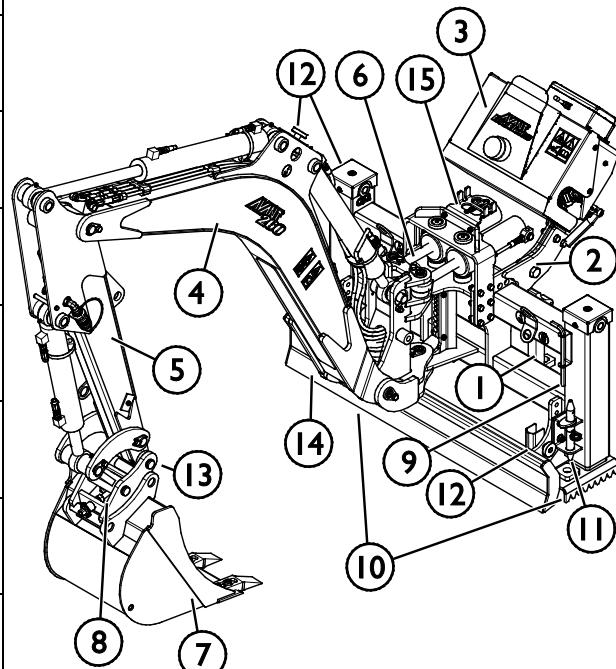
**Table 4 - Backhoe 260 with remote control - Main components**

1	Frame with Avant quick coupling brackets
2	Support arm (2 pcs) / (1 pc)
3	RC valve control unit (Receiver) with light beacon
4	Lifting boom
5	Front boom (stick)
6	Boom swing cylinders
7	Interchangeable bucket
8	Bucket S30-150 quick coupling
9	Allen key 12 mm (for bucket and support arms)
10	Hydraulically adjustable outriggers
11	Spike for hydraulic outrigger (2 pcs)
12	Service / transport support (3 pcs)
13	Tilting bucket adapter (optional extra/not in the picture)
14	Dozer blade
15	Multi connector holder

A433267



A430235



## 5. Attaching the attachment

The backhoe 260 is delivered with a 400 mm bucket fitted and it is ready for use as delivered. When coupling the backhoe onto the loader, in addition to the quick coupling and connecting the hydraulic fittings, the support arms must also be mounted.

### 5.1 Attaching the backhoe to the loader

Attaching the backhoe to the loader is quick and easy, but it must be done carefully. The backhoe can easily tip over on the loader or the operator, if it has not been properly attached. To prevent hazardous situations, always follow the attachment mounting instructions provided in the following pages. Also remember the safety instructions listed in Chapter 3.



**WARNING**

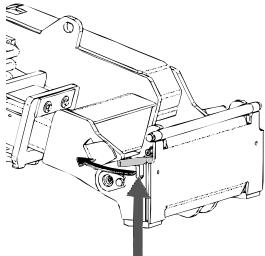
**Crushing risk - Make sure that an unlocked attachment will not move or fall over.**

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.

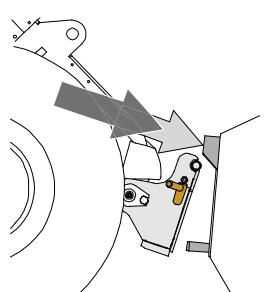
#### ***Avant quick coupling system:***

##### **Step 1:**



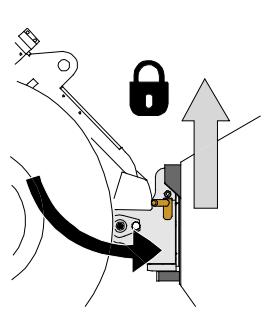
- Lift the locking pins of the quick coupling plate of the loader up, and turn them backwards into the slot, so that they are locked in the upper position.
- If your loader is equipped with a hydraulic attachment locking system, see additional instructions about the use of the locking system from the operator's manual of the loader.
- Make sure that the hydraulic hoses and the electric cables are positioned so that they will not get in between the coupling plate of the loader and the attachment, and that they will not get squeezed or chafed against sharp edges.

##### **Step 2:**



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

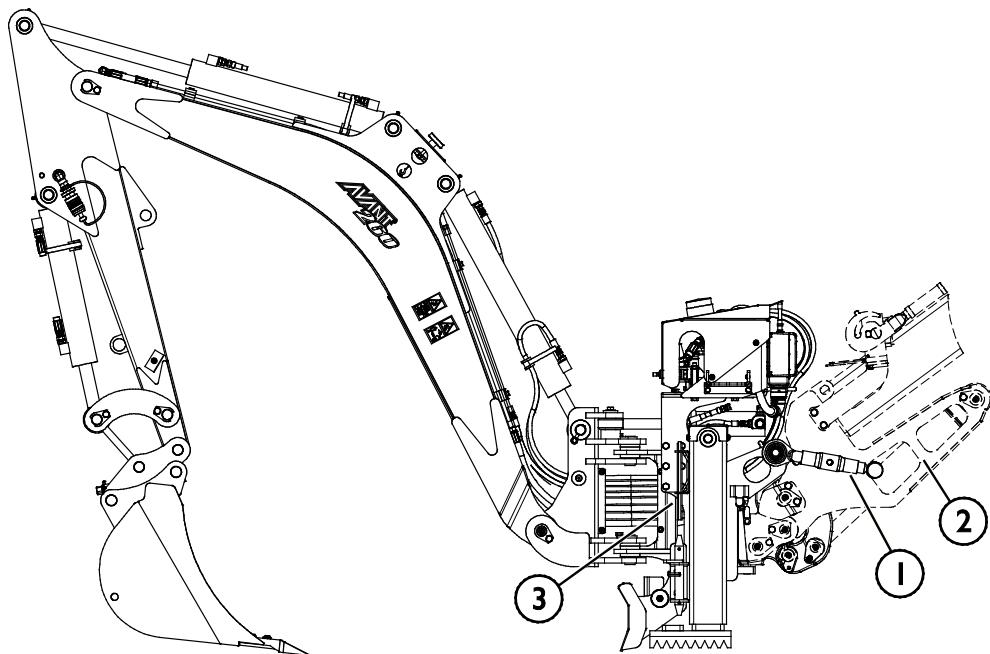
##### **Step 3:**



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

**NOTICE****Step 4 (A443267):**

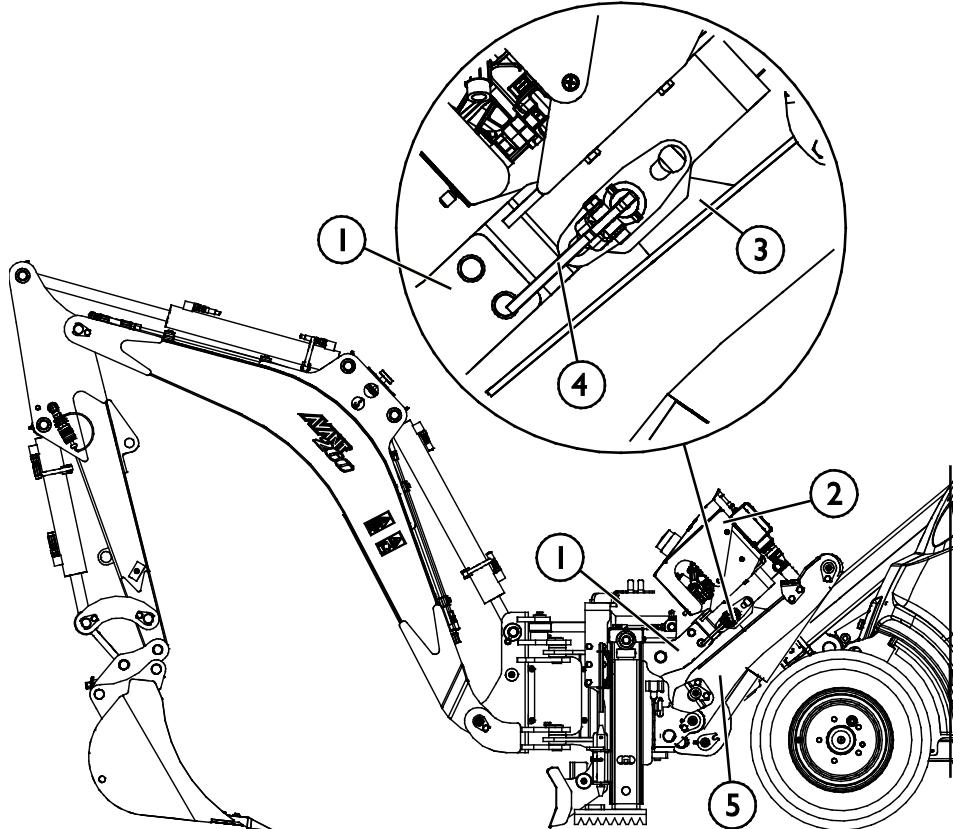
- After the locking pins are positively locked, fit the support arms (1) as shown in the figure below.
  - Align the support arms (1) with the holes on the loader boom (2).
  - Lock the backhoe on the loader boom (2) by tightening the support arms (1) with allen key (3).

**NOTICE**

Always connect the support arms before using the backhoe. The support arms stabilize the attachment and prevents the backhoe from tilting forward during its use.

**NOTICE****Step 4 (A430235):**

- After the locking pins are positively locked, fit the support arm (1) of the RC control valve unit (2) to the bracket (3) on the loader's boom.
- Align the hole of the support arm (1) with the hole of the bracket on the loader's boom (5).
- Lock the RC control valve unit (2) on the loader boom with lever (4).

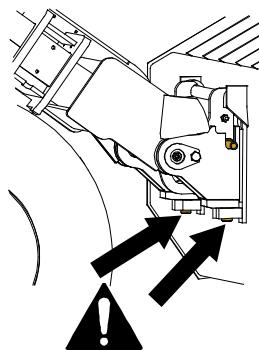
**WARNING**

**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.



**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.



## 5.2 Connecting and disconnecting hydraulic hoses

On Avant loaders the hydraulic hoses are connected using the multi connector system.



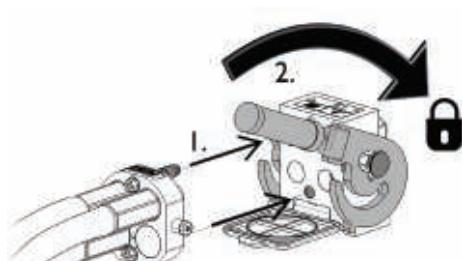
**Risk of movement of the attachment and ejection of hydraulic oil - Never connect or disconnect quick couplings or other hydraulic components while the control lever of the auxiliary hydraulics control lever is locked on or if the system is pressurized.** Connecting or disconnecting the hydraulic couplings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

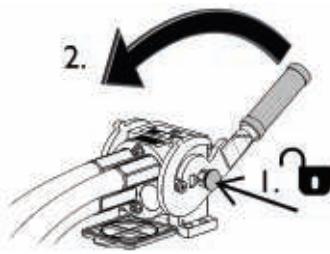


The lever should move easily all the way to its locking position. If the lever does not slide smoothly, check the alignment and position of the connector and clean the connectors. Also shut down the loader and release the residual hydraulic pressure, see page .

***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. Place the multiconnector onto its holder on the attachment and close the lid of the connector on the loader to prevent dirt 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.

## 5.3 Electric connection

### ***Electric functions of the attachment:***

The receiving unit of the backhoe, including the radio receiver and electrically controlled hydraulic valves, need electric supply from the loader in order to operate. Electric power to the receiver can be supplied with the Opticontrol® of the loader, or with the standard electric harness that is supplied with the attachment.

#### **5.3.1 To connect the electric harness of the attachment to the loader**

A separate electric harness is also supplied with the attachment, to make it possible to connect and use the attachment with loaders that are not equipped with Opticontrol® system.

There are two ways to connect the electric connector, depending on the equipment on the loader and the attachment:

##### **1. If your loader is not equipped with the Opticontrol®:**

Use the separate cable kit with a switch that is supplied with the attachment. Connect this cable to the 12 V electric socket near the operator's seat of the loader, and to the electric plug of the attachment.

1. Electric plug, connects to the 12 V electric socket near the operator's seat of the loader.

More information about the power outlet of the loader can be found in the operator's manual of the loader.

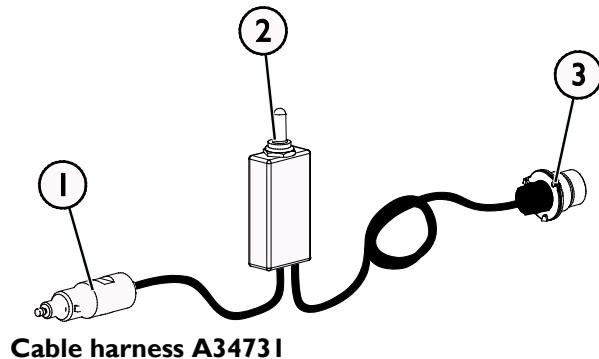
2. ON-OFF switch

Select the location of the switch in the cab so that it is easily accessible but will not be used inadvertently.

This cable with a switch can be used only to control the rotation of the chute.

3. Connect to the electric plug of the attachment.

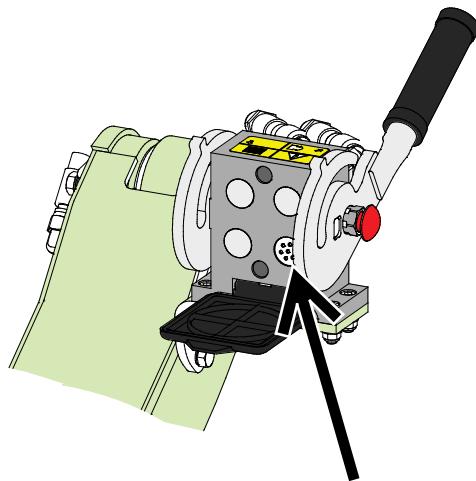
If the attachment is equipped with an electric plug that is integrated to the multiconnector of the attachment, disconnect the electric cable from the multiconnector.



**2. If your loader is equipped with the Opticontrol®:**

If the loader is equipped with the Opticontrol®, and the electric socket integrated in the multiconnector, the electric harness of the attachment is connected when the multiconnector is coupled. Clean both multiconnectors before connecting the multiconnector.

The separate cable harness A34731 is not needed when the loader is equipped with the Opticontrol®.

**Electric socket of the Opticontrol®****NOTICE**

Make sure that electric cables will not get stuck, squeezed, or stretched when the equipment moves.

With the help of the Opticontrol® system available for the loader, the attachment control switches are easily accessible at the end of the boom control lever.

More information about the power outlet of the loader can be found in the operator's manual of the loader.

## 5.4 Uncoupling and 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.

### 5.4.1 Removing the backhoe from a loader

#### 1. Set outriggers for storage

- Set the outriggers of the backhoe evenly on level and solid surface.
- If the dozer blade on the front frame of the backhoe has been lowered, adjust the outriggers so that the backhoe will stay steadily on its outriggers.

#### 2. Operate the backhoe to set it to correct storage position

- Leave bucket just off the ground to allow to move the backhoe for removal of the support bracket pin

#### 3. Turn the auxiliary hydraulics control lever of the loader to its neutral position.

#### 4. Remove the pin of the support bracket

- Tilt the loader boom as necessary to release any force that is applied against the pin

#### 5. Shut down the loader engine and release residual hydraulic pressure

- While the engine is turned off, turn the control joysticks of the remote controller to all directions. Turn also the auxiliary hydraulics control lever from the driver's seat to its extreme positions. This procedure will release the residual pressure left in the backhoe and the bucket and the backhoe booms will lower to a stable position.

#### 6. Disable the radio remote control

#### 7. Disconnect the hydraulic multi connector

#### 8. Release the quick coupling plate locking and drive the loader away from the backhoe



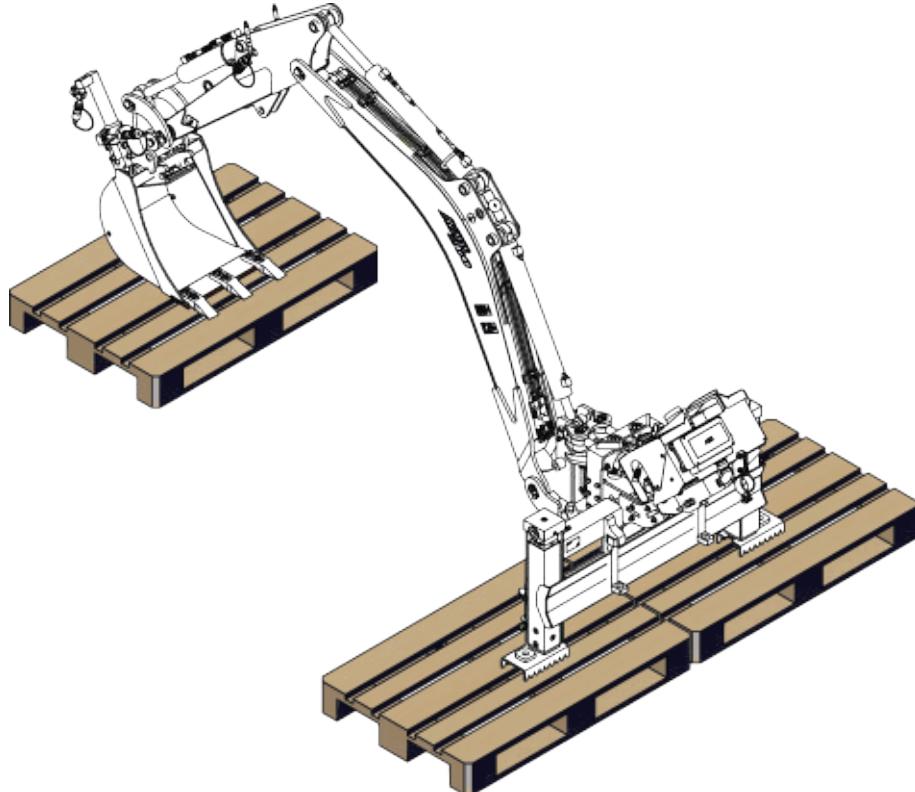
**WARNING**

**Risk of tipping over - Make sure the attachment is secured against any movement during storage.** If necessary, use, for example, blocks of wood under the supports to ensure adequate stability.

***Correct storage position:***

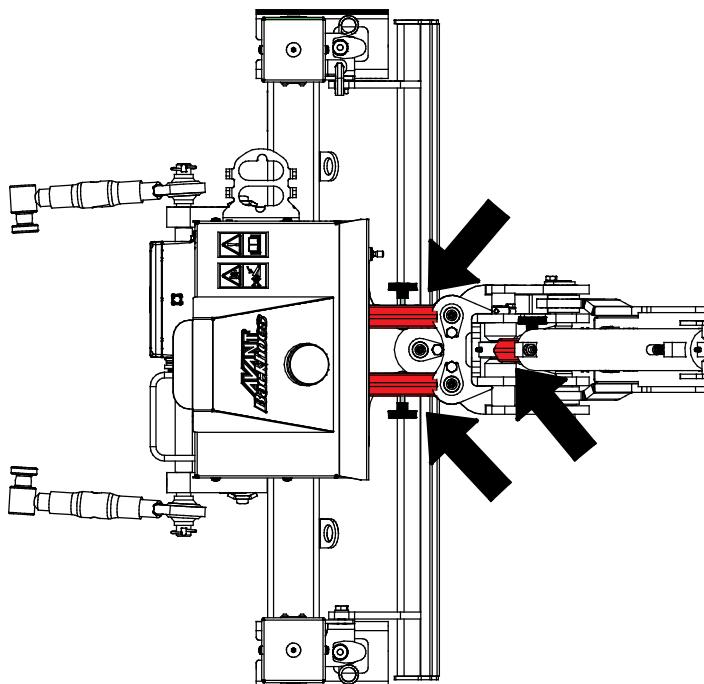
Turn the backhoe to the position as shown in the figure below:

- Bucket flat on the ground, straight front, not too close to the frame
- Boom in such position that the storage supports can be locked

***NOTICE***

Storage the radio controller separately from the attachment. Remove the battery and storage the radio controller and its battery in dry location.

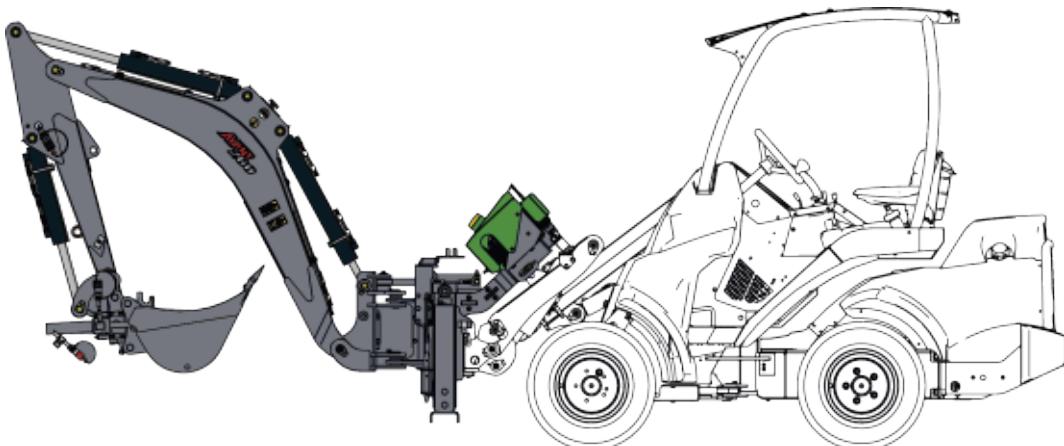
#### 5.4.2 Using the storage/transport support

***Before storage, transport, or service:***

- Lock the boom of the backhoe to prevent it from moving or falling
- 1. Keep the backhoe locked to the loader
- 2. Operate the controls of the backhoe to move its boom to centre position and lift so that the cylinder can be locked
- 3. Secure steering cylinders and lift cylinder of the backhoe with the red transport supports stored on the backhoe.

### 5.4.3 Transport position

Turn the backhoe to its middle position (straight forward) so that it will not affect the stability of the loader. The middle position will obstruct visibility from the driver's seat as little as possible. Keep the loader stable. Always transport the backhoe as low and close to the ground as possible. Keep the telescopic boom retracted during drive.



## 6. Instructions for use

Check the attachment and the operating environment once more before starting to work, and that all obstacles have been removed from the operating area. Quick inspection of the equipment and the operating area before use are parts of ensuring safety and the best performance of the equipment.



WARNING

**Risk of tipping over - Avoid overload.** Loader can tip over when handling too heavy loads, or because of dynamic movements caused by driving with and handling of a heavy load. Do not extend the telescopic boom when the load approaches the lifting capacity of the loader, or when the loader boom is in horizontal position. When you notice that the rear wheels of the loader are about to lift from the ground, or if the load indicator of the loader (if fitted) signals:

- Lower the load calmly and retract the telescopic boom
- Avoid sudden changes in speed or direction whenever load is lifted
- Use additional counterweights as needed



WARNING

**Cave-in hazard - Never drive along excavation.** Driving near the edge of an excavation can cause the edge to cave in, and the loader can fall as a result. Inspect the job site and take notice of any potential hazards in the area. Especially loose soil can cave in easily, but cave-in can happen with most types of soil. If it is necessary to reinforce the trench, have materials ready when starting trenching. Pile loose soil far enough from the trench, never right next to it. Enter trench only after thoroughly evaluating the safety of doing so. Local requirements may set limits to depth of a trench without reinforcements. Mark or fence the digging area and keep others away.



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.



CAUTION

**Risk of falling of load and loss of stability - Never lift objects with the backhoe.** The backhoe is not intended to lift loads and is not equipped with lifting eyelets for lifting objects.

**Risk of flying objects - Make sure that there are no outsiders in the operating area.**

Braking of hard soil by digging it with the backhoe may cause loose debris thrown at high speed. Always keep safety distance of 5 meters from bystanders.

## 6.1 Checks before use

- Check that all obstacles, including any possibly hidden ones, have been removed from the working area or marked visibly before operation.
- Make sure that it is safe to dig at the location. Find out if there are electric cables, water lines or similar at a depth that can be reached with the equipment. Find out about local regulations concerning digging safety. It may be mandatory to contact local authorities before starting digging operations.
- Check the bucket is positively locked and the bucket pins are secured.
- Operate the digger only at well lit areas.
- Ensure that bystanders are at a safe distance of 5 meters 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.
- Remember correct working methods and make sure 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.
- Make sure that the receiving- and transmitting units are intact
- Make sure that the symbols on panel on the transmitting unit and on the receiving unit are clearly visible.
- Make sure that the mechanical operation of the STOP pushbutton on the transmitting unit is correct.
- Check that the wiring of the receiving unit is intact and connected.
- Never use the radio controller during thunder.

## 6.2 Operating the backhoe

The backhoe can be controlled only with the remote control unit, either via radio link or with a cable. There are no manual control levers on this attachment.

1. Check that the backhoe is fully coupled to the loader before setting up the control unit
  - Both of the quick coupling pins of the quick coupling must be in locking position
  - The support bar of the backhoe must be locked and secured to the loader boom
  - Connect the multiconnector. If the loader multiconnector does not include an electric socket, connect the electric cable of the backhoe separately.
2. After the backhoe is connected correctly to the loader, drive the loader to the work site. Once the backhoe is aligned to be ready for work:
  1. Lower the backhoe on the ground using the loader boom.  
The telescopic boom of the loader should be fully retracted when using the backhoe.
  2. Push the loader boom completely down to apply pressure on the backhoe. For the best stability, enough weight must be applied on the frame of the backhoe and the outriggers. The front of the loader can be lifted slightly off the ground.
  3. Set up and switch on the remote control:
    1. Set up the remote control unit only when the backhoe is otherwise set ready for work.
    2. Adjust the loader engine to run at medium rpm. Check the operator's manual of the loader for RPM setting that provides auxiliary hydraulic flow within recommended range.
    3. Extend the outriggers so that the front wheels of the loader lift just off the ground. See page 32.

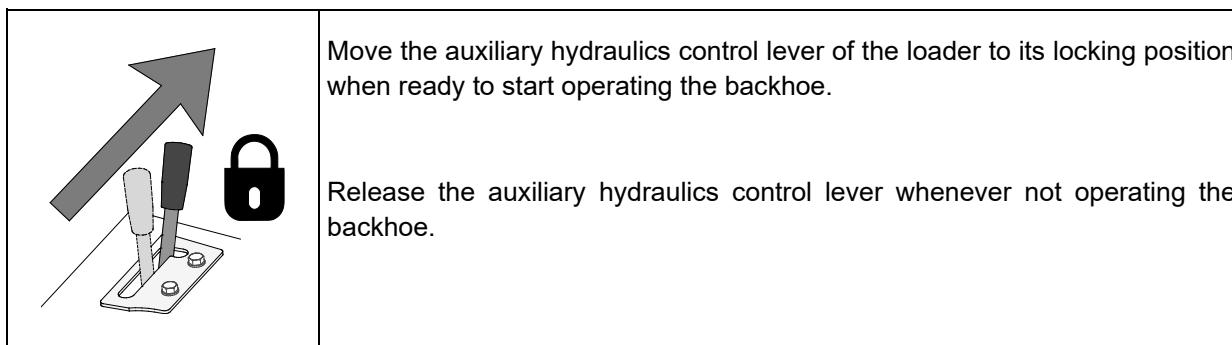
**NOTICE**

Make sure the backhoe is locked correctly on the loader. **Never use the backhoe without the support arms correctly fitted.** The purpose of the support arms is to lock the tilting, and to make the backhoe more stable for more effective operation.

**NOTICE**

Always switch the Smooth drive (Option for loaders) ON when using the loader boom. This reduces stress on the loader boom caused by the support arms. Keep the backhoe stable by switching the Smooth drive OFF during excavation.

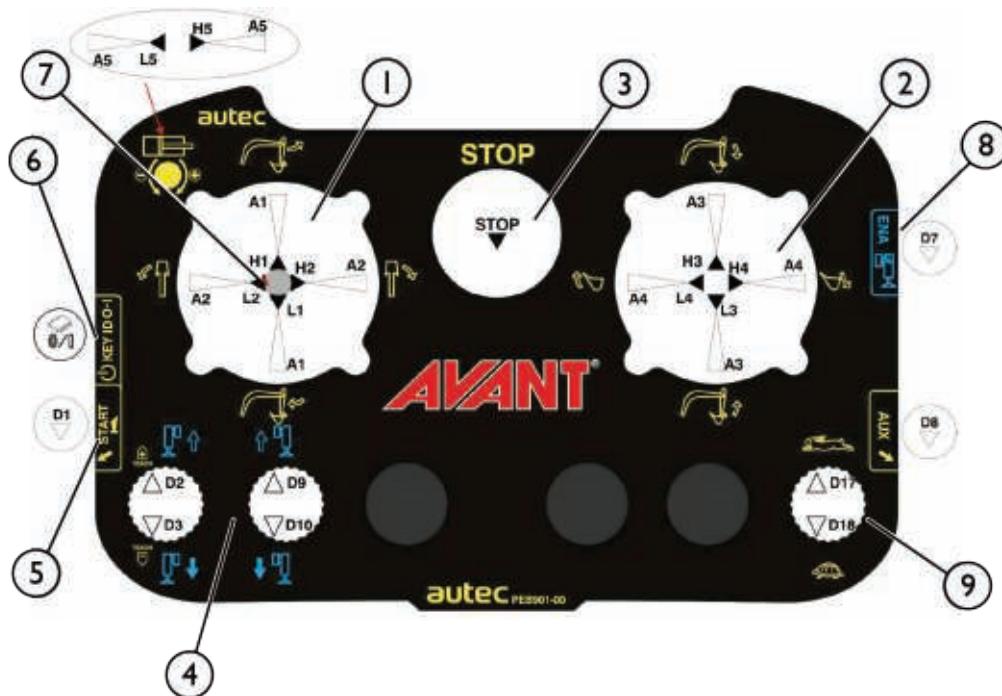
## 6.2.1 Controls



### NOTICE

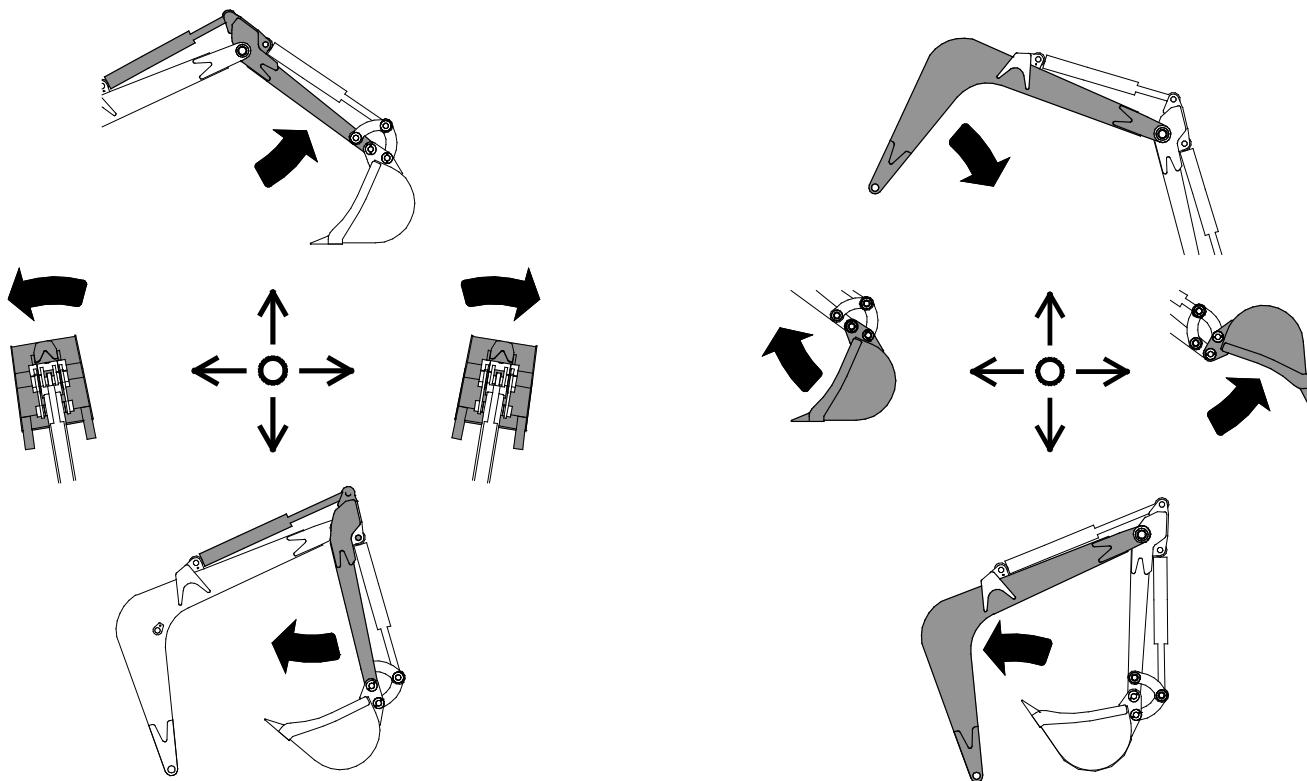
The auxiliary hydraulics oil flow should not exceed 45 l/min. See the operator's manual of the loader for correct loader engine RPM setting.

The following label on the radio transmitter describes the functions of the control levers.



\*) For using the outriggers, it is necessary to push simultaneously the actuator and ENA [D7] (8) button on the radio transmitter's side.

\*\*) For using the tilting bucket adapter or thumb, rotate the control lever (7).



**Left control joystick:**

- front boom (stick)
- slewing

**Switch on the left joystick:**

- Bucket tilt adapter/Thumb (optional equipment)

**Right control joystick:**

- main boom
- bucket



**Crushing hazard - Prevent unintentional movements of the attachment.** Switch off the auxiliary hydraulics as soon as not using the backhoe to disable the controls of the backhoe. Turn on the auxiliary hydraulics only at the digging site when ready to start operating the backhoe.

### 6.2.2 Outriggers

The backhoe is equipped with hydraulic outriggers, which stabilize the backhoe during use and especially when moving material to the sides.

**To adjust the outriggers:**

For using the outriggers, it is necessary to push simultaneously the switch (4) and ENA [D7] button (8) on the radio transmitter's side.



**Risk of tipping over - Keep outriggers on ground.** For stability, the backhoe must be lowered on the ground and the outriggers must be firmly on the ground when operating the backhoe. Weight on the bucket can shift the centre of gravity of the equipment and cause tipping over on slopes. Operate the backhoe only with the loader on level ground and outriggers applied.

### 6.2.3 Starting to use the backhoe with remote controller

**WARNING**

**Risk of impact and crushing - Stay clear of the backhoe when setting it up.** The backhoe may start unexpectedly during set up causing serious injuries from crushing or impact. Keep bystanders away from the swing area of the backhoe.

**WARNING**

**Risk of unexpected movement - Possible delay in radio control.** Notice that in cases of radio interference, loss of radio link, or other situations where the radio link is weak, there may be a delay before the movements are stopped. In these conditions, activating the STOP pushbutton or returning the actuators may not result in an immediate stopping of the attachment.

**WARNING**

**Risk of serious injuries - In case of trouble with setting up the remote control or any malfunction, disable the radio remote control and disconnect the hydraulic multiconnector.** In case of malfunction, switch off the transmitting unit and disconnect power supply from the receiving unit, and also disconnect the hydraulic multiconnector from the loader to prevent accidental unintentional movements while troubleshooting.

**NOTICE**

To prevent unauthorised use of the controller the controller has a key operated power switch. To activate the radio remote control it is necessary to use key switch as described in the procedure below.

**NOTICE**

Do not leave the radio control on if not used.

**Start the radio transmitter as follows:**

Switch on the remote control system after the backhoe has been set up ready for digging work. See page 32.

1. Connect the electric harness to the radio receiver of the loader.

- If the loader is equipped with the Opticontrol® system, the receiver is started with the ON/OFF switch of the attachment control switch pack.
- Otherwise use the separate switch of the cable kit A34731 rev. D.



2. Make sure that the radio transmitter's STOP pushbutton is not activated.

Turn the pushbutton to unlock it, if necessary.

- When the STOP pushbutton has been activated, after releasing the pushbutton it is necessary to wait a while before the control restarts.



3. Turn the power keyswitch on the left side of the radio transmitter's housing to upright position.

4. Start the radio transmitter by pushing the green pushbutton (D1) on the left side of the transmitter's housing.

- When the radio transmitter is started, the blue LED (Status) blinks with audible signal on the radio receiver. Then the transmitter and receiver are working properly by communicating with one another.

5. For using the outriggers, it is necessary to push simultaneously the actuator and ENA (D7) button on the radio transmitter's side. Outriggers controls are marked with blue on the transmitter.

6. The radio transmitter switches off when the STOP pushbutton is activated or the power keyswitch on the bottom of the transmitter's housing is turned in the horizontal position.

7. The radio receiver switches off with the ON/OFF button on the attachment control switch pack, or with the 2-way switch on the cable kit or when the loader engine is shut down.





**Risk of unexpected movement - Improper use.** To prevent loss of control, accidental contact, or improper use, the user must always wear a waist belt or shoulder harness with the radio transmitter during operation.



**Risk of impact and crushing - Stay away from the reach area of the backhoe.** Position yourself so that you have a good visibility to the work area but stay clear of moving parts of the backhoe. Keep clear of the reach area of the backhoe so that accidental control movements do not cause the backhoe to hit you.



### NOTICE

Make sure that the power key switch is in upright position during operation. The radio transmitter might not work if the power key switch is not positioned properly.

## 6.3 Using digging equipment

Check the attachment and the operating environment once more before starting to work, and that all obstacles have been removed from the operating area. Quick inspection of the equipment and the operating area before use are parts of ensuring safety and the best performance of the equipment.

### ***Planning and efficient use of the digging equipment***

Digging work is always started with thorough inspection of the site and planning the work in advance. Things to consider include at least the following:

- Inclinations and loader capabilities
- Digging movements and reach of the equipment
- Where to dump or transport soil
- Need to enter the excavation or trench and protection from cave-ins
- Maintaining the stability of the loader at all times
- Possible hazards exposed during excavation

### ***Basic excavating technique:***

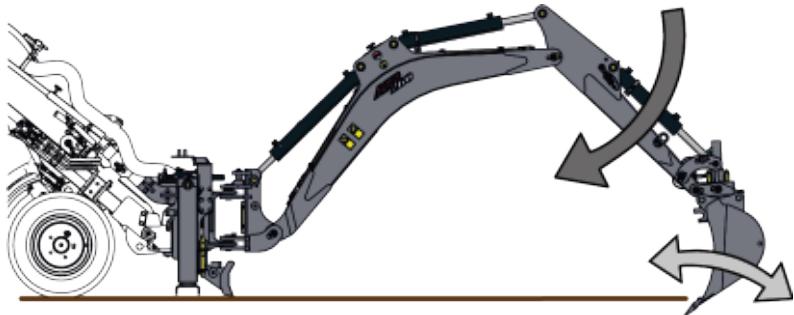
Maximum digging force is achieved by combining the hydraulic power of the boom, dipper and bucket.

- Digging with the backhoe is the most efficient when the edge of the bucket is kept at an angle that allows the edge to cut the soil the most effectively.

Operate both control levers simultaneously to use all three functions at once

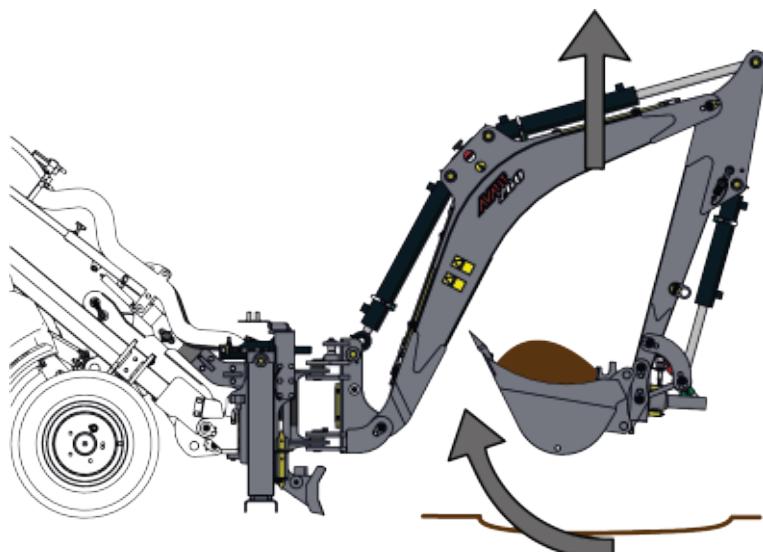
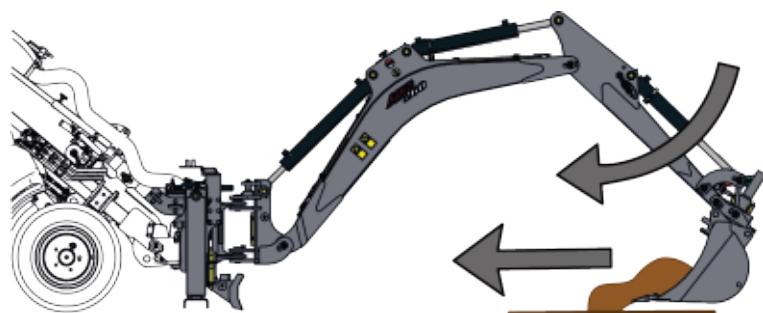
Let the bucket teeth and cutting edge work for you. The teeth do the initial cutting by breaking the soil into pieces. The crumbling spoil begins to fill the bucket and the curling action holds the spoil in the bucket.

1. ■ Penetrate the ground with the bucket
  - Depending on soil material, the most efficient angle varies.
    - In typical digging conditions, start with the bucket at about a 45° angle to the ground.
    - When digging hard ground, it may be necessary to decrease the bucket angle of entry to the point where the back of the bucket almost contacts the ground. It may also be necessary to apply downward pressure with the boom on the bucket.
  - For a clean excavation, make the first cut carefully, as it determines the position and direction of subsequent digging.


**NOTICE**

The bucket should not be pressed too hard downwards, as it would cause the outriggers (and also the front tyres of the loader) to lift off the ground, pulling the loader towards the trench, and making digging ineffective.

2. ■ Operate the stick to pull bucket parallel to the ground towards the loader. At the same time, turn the bucket to keep the flat bottom of the bucket parallel to the ground.
  - On sloped terrains never pull material from the sides to keep the machine stable.
    - Preferably always drive the loader so that digging is performed from the front of the loader.
3. ■ With a sufficiently full bucket, close the bucket and lift the backhoe boom.
  - Dump material to the side, typically at least 60 cm from the excavation. Unstable soils require more distance.
  - Repeat until it is necessary to move the loader to another position.



**NOTICE**

Operate the backhoe only with its own hydraulic system and set of controls. Do not excavate by using the driving force of the loader. Working this way can damage the loader boom or the backhoe.

**NOTICE**

Avoid sideways loading of the bucket. Working with the swivel force can damage the backhoe or the loader boom. Do not operate the bucket while turning the backhoe sideways at the same time.

**NOTICE**

Avoid working with the dropping force by lowering the bucket quickly against the ground. Also, do not use the bucket's falling force as a hammer or pile-driver. Working this way can greatly reduce the machine's service life and damage the loader as well.

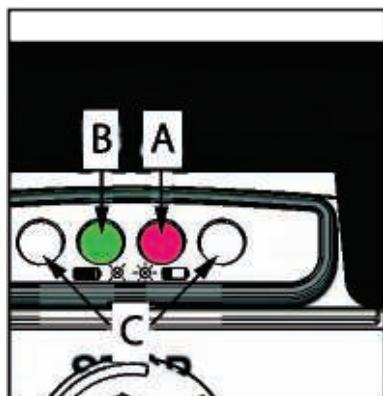
**WARNING**

**Risk of tipping over - Never dig from the extreme side reach.** The backhoe is intended only to dump material to the sides and all digging must be made from the front of the loader.

## 6.4 Light signals

### **Remote controller**

The remote controller (transmitting unit) provides information as follows:



- |   |  |            |
|---|--|------------|
| A |  | Red LED    |
| B |  | Green LED  |
| C |  | not in use |

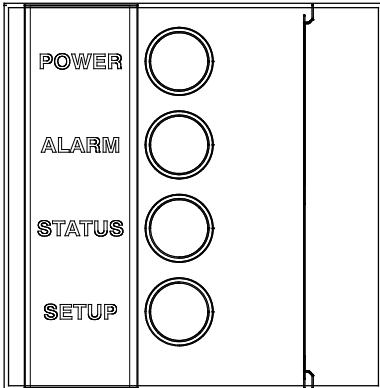
**The meaning of signals provided by the green LED [B] are as follows:**

Signal	Meaning	
Green LED	Red LED	
off	off	The transmitting unit is off.
fast blink	off	The transmitting and receiving unit do not communicate.
slow blink	off	The radio remote control is started and the units communicate with one another.

Signals provided by the red LED [A] indicate a radio remote control malfunction. If the red LED is on or blinks, see the separate manual of the FJR Transmitting Unit.

## Receiving unit

The receiving unit provides information as follows:



### **POWER**

The POWER LED indicates the status of the receiving unit and the radio link.

### **ALARM**

The ALARM LED warns about anomalies in the receiving unit.

### **STATUS**

*The meaning of signals provided by the ALARM LED are described in separate ARX Receiving Unit manual.*

The STATUS LED warns about anomalies on the outputs or on the power supply and indicates the reception of data from the transmitting unit.

### **SETUP**

The SETUP LED is normally off. It shows information related to internal functions and programming of the receiving unit, intended for service professionals.

*The meaning of signals provided by the SETUP LED are described in separate ARX Receiving Unit manual.*

The table of possible malfunctions that are signalled by the LEDs on the receiving unit and the solution to those malfunctions are described in separate ARX Receiving Unit manual.

The meaning of signals provided by the POWER LED are described as follows:

Signal	Meaning	
<b><i>The POWER LED is</i></b>	<b><i>off</i></b>	The receiving unit is off.
	<b><i>on</i></b>	The receiving unit is powered, and radio link is not connected.
	<b><i>blinking</i></b>	The receiving unit is powered and radio link has been established.

The meaning of signals provided by the STATUS LED are described as follows:

Signal	Meaning	
<b><i>The STATUS LED is</i></b>	<b><i>off</i></b>	No radio link.
	<b><i>blinking slow</i></b>	Over-voltage on power supply.
	<b><i>blinking fast</i></b>	The receiving unit receives data from the transmitting unit.
	<b><i>on</i></b>	Over-current in one of the PWM proportional outputs.

## 6.5 Light beacon

There is a light beacon on top of the control unit of the backhoe. It signals the status of the remote control of the backhoe.

When the radio transmitter is started, the blue LED (Status) blinks simultaneously with the light beacon on the radio receiver of the backhoe. The light beacon blinks always when the radio link between the transmitter and receiver is active.

## 6.6 Operating on inclined terrain

Extra caution is needed when moving 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 carrying heavy loads or attachments; turning the load during lifting operation will affect the stability of the loader and may lead to overturning of the machine.



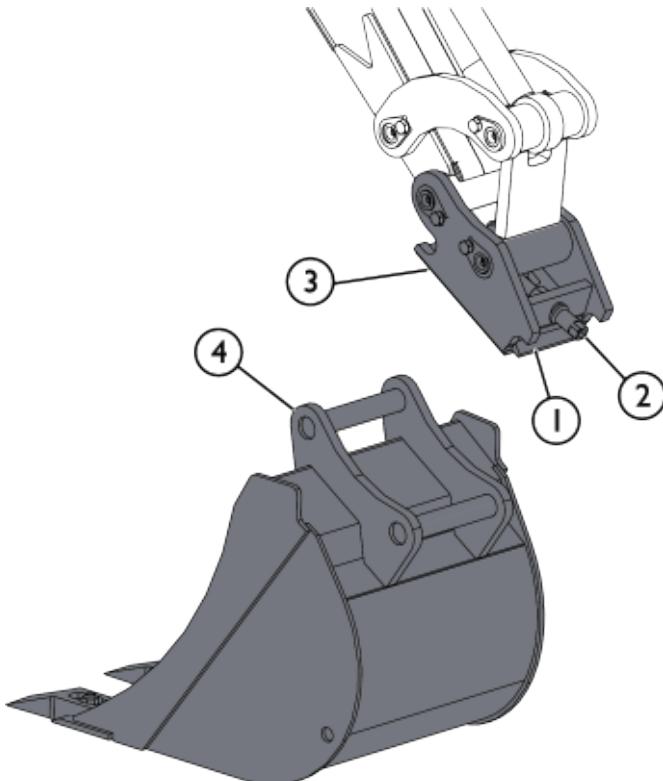
**WARNING**

**Tipping over hazard - Never use the backhoe on horizontally inclined terrain.** Slight unevenness of the ground can be compensated with the outriggers, but the outriggers are not intended to straighten the loader and the backhoe on a slope.

## 6.7 Changing of bucket

Lower the bucket close to the ground so that it will not fall when uncoupled.

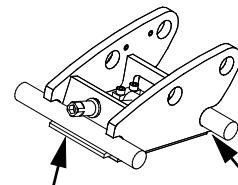
1. Release the locking bracket (1) with locking screw (2) on the bucket coupling adapter. Use the Allen key that is stored on the frame of the backhoe. See page .
2. When the S30 quick coupling (3) of the backhoe is fully unlocked, lift and tilt the boom above the bucket.
3. When attaching a new bucket and the quick coupling (3) of the boom is completely aligned with its counterpart (4), lock the locking bracket (1) with locking screw (2). Tighten the screw and ensure that the bucket is fully locked.



**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.



**Table 5 - Backhoe 260 with remote control - Bucket options**

	A414301	A414304 (standard bucket)	A35230	A35583
Width:	250 mm	400 mm	750 mm	1000 mm
Edge:	2 teeth	3 teeth	straight	straight
Weight:	54 kg	66 kg	90 kg	130 kg

	A21638	A36374
Width:	650 mm	912 mm
Edge:	1 teeth	1 teeth
Weight:	45 kg	48 kg

## 6.8 Installation of hydraulic options

**WARNING**

**Pinching and crushing hazard - Make sure any part of attachment cannot move.**

- Make sure the attachment is securely lowered on the ground.
- Shut down the loader engine and set the moving components so that they will not cause hydraulic pressure to the system.
- Any part of the attachment must not be supported only by hydraulic pressure or hydraulic cylinders.
- Do not loosen any fitting if any part of the attachment might move as a result.
- Use additional supports as necessary.

**WARNING**

**Risk of crushing - Never allow anyone to go under a lifted object.** Falling objects may cause serious injuries. Do not allow anyone to get under a lifted object or attachment. The stone or other object might slip from the thumb or bucket. Wet surfaces, sand, or dust between the thumb and the object may cause the object to slip more easily. Always close the thumb hard against any stone or other similar object that is being lifted.

**CAUTION**

**Risk of falling objects - Make sure that the grabbing surfaces are intact and in good condition.** Never use when there are visible cracks or other damages on the thumb. Never lift stones above people.

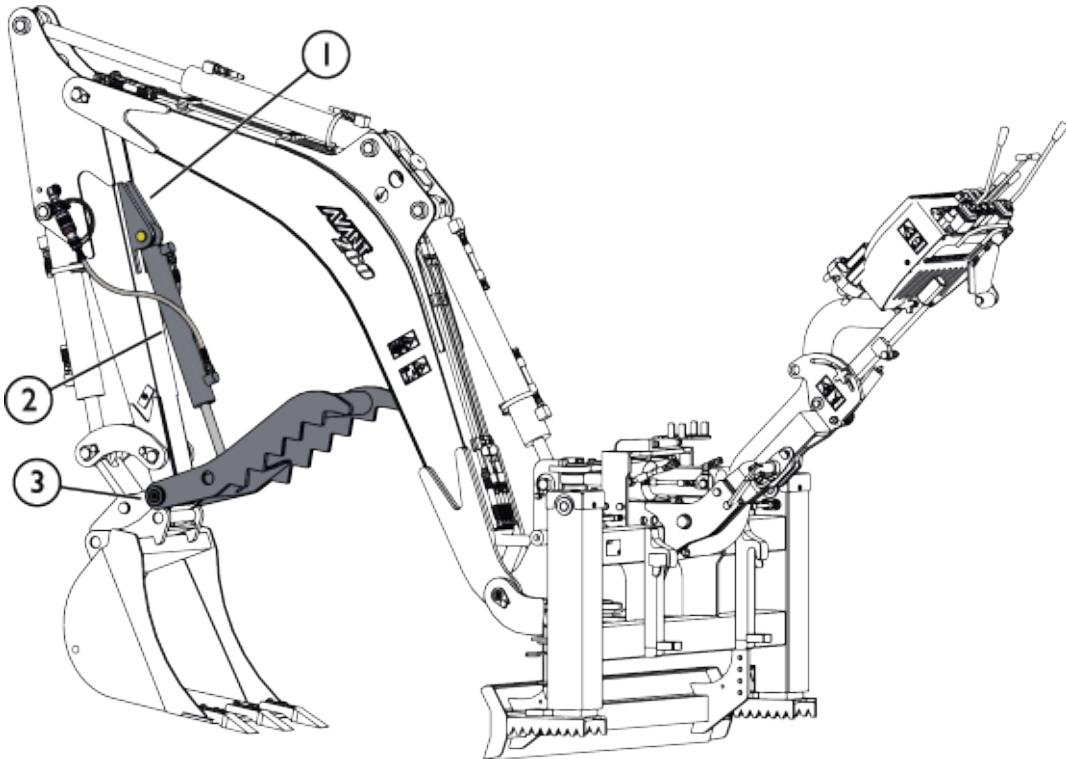
**NOTICE**

It is not possible to fit both options tilting bucket adapter and excavator thumb at the same time.

### 6.8.1 Excavator thumb (Optional extra)

The Backhoe 260 can be equipped with an excavator thumb. The hydraulic excavator thumb makes it possible to handle irregular material such as rocks, concrete, branches, and debris that does not otherwise fit into the bucket.

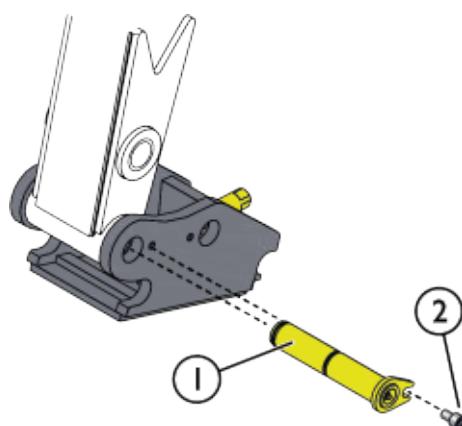
Starting from year 2019 the front boom is equipped with brackets (1) for the hydraulic thumb cylinder (2). The other end of the excavator thumb is fixed on the bucket pivot pin (3), so the thumb rotates on the same pivot as the bucket preventing material to slip during lift.



#### 6.8.1.1 Installing excavator thumb

The backhoe is equipped with necessary hydraulic quick couplings as standard. The excavator thumb kit A435527 includes all necessary components needed in installation. Install the excavator thumb as follows:

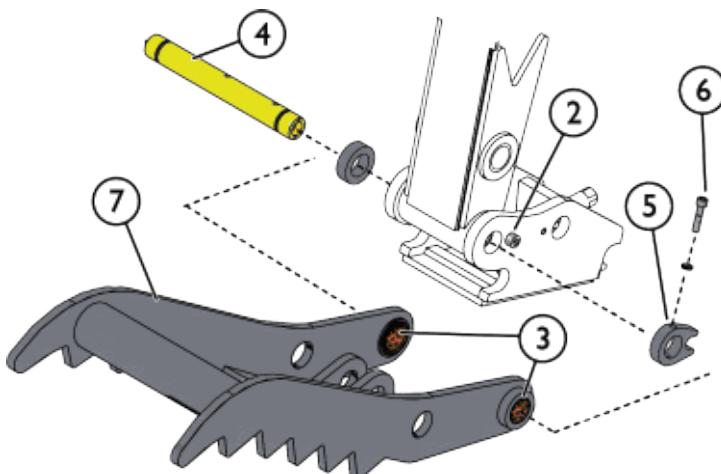
1. Uncouple the bucket as shown in this manual.
2. Lower the bucket coupling close to the ground so that it will not fall when uncoupled.
3. Remove the pivot pin (1) holding the S30 quick coupling. Reinstall the retaining screw (2) in the tapped hole of the quick coupling.



4. Make sure that the slide bearings (3) are fixed to the mounting ends of the thumb (7).

Slide the pivot pin (4) through the whole structure so that the boom, S30 quick coupling and bushings are fitted between the mounting ends of the thumb (7) as shown in the adjacent figure. Use a soft hammer to help to slide the pivot pin (4), if necessary.

Lock the retainer bushing (5) on the pivot pin (4) with retaining screw (6). Ease the installation by aligning the holes of the pivot pin (4) and the retainer bushing (5) when fitting the pivot pin (4). Install the greasing nipples at the ends of the pivot pin (4), if not installed.



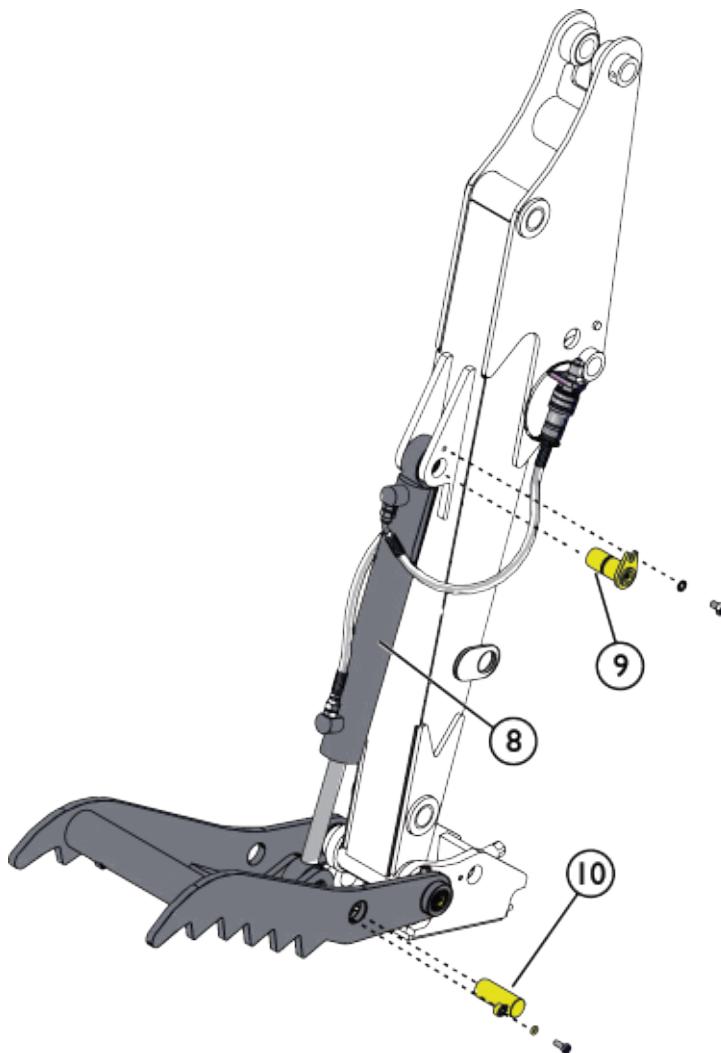
5. Fix the hydraulic thumb cylinder (8) between the lug and thumb (7) with pins (9 & 10) as shown in the adjacent figure. Lock the pins with retaining screws.

Connect the hydraulic couplings. The hydraulic couplings are marked with colours and they fit only one way in order to avoid mistakes during installation.

6. Check the function of the excavator thumb.

Grease the lubrication points.

7. Reinstall the bucket as shown in this manual



### 6.8.2 Tilting bucket adapter (Optional extra)

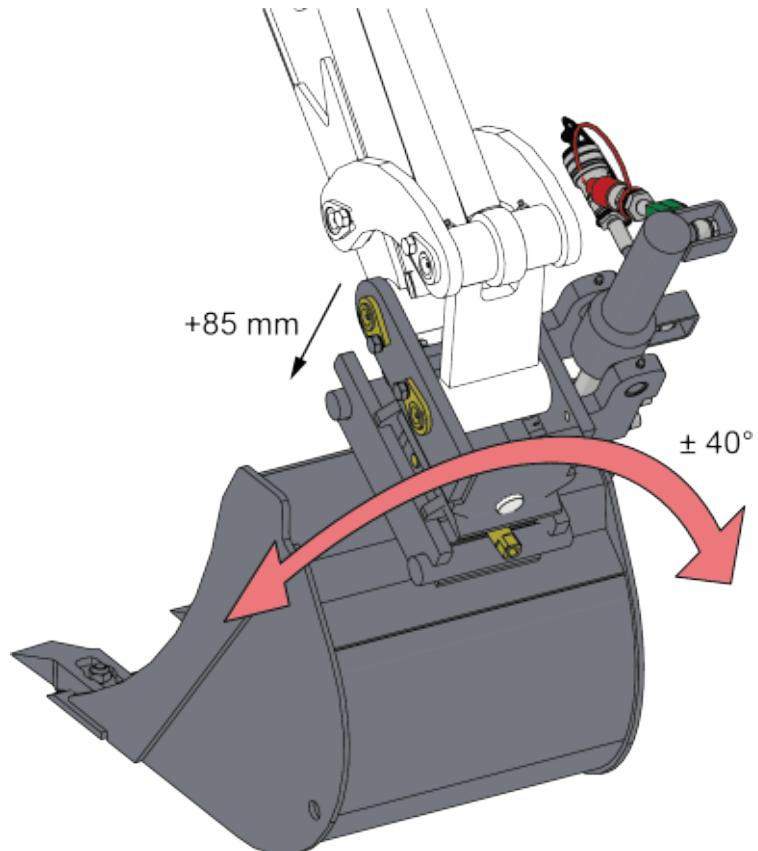
The Backhoe 260 can be equipped with a tilting bucket adapter. With the tilting adapter, a grading bucket can be used to level the ground surface to desired slopes or, for example, to dig a ditch. The tilting adapter includes the same S30-150 quick coupling system for the bucket as the backhoe itself, so the same buckets can be used with the tilting system.

The tilting adapter kit A35249 includes all necessary components needed in installation.

#### **Tilting angle**

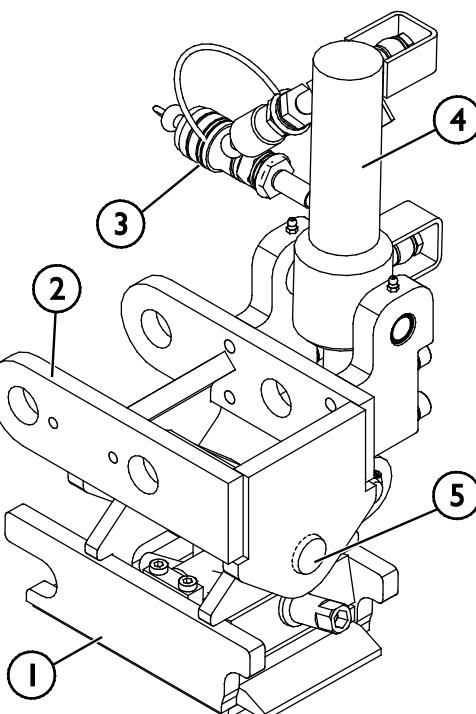
The tilting is controlled with the backhoe controls, and the maximum tilting angle is approximately 40 degrees in both directions.

The displacement of the bucket is approximately 85 mm, when the tilting bucket adapter is in use.



**Table 6 – Tilt adapter components**

1. S30 quick coupling for bucket



2. Upper frame, installed to the backhoe

3. Hydraulic quick couplings, 2 pcs

4. Tilting cylinder

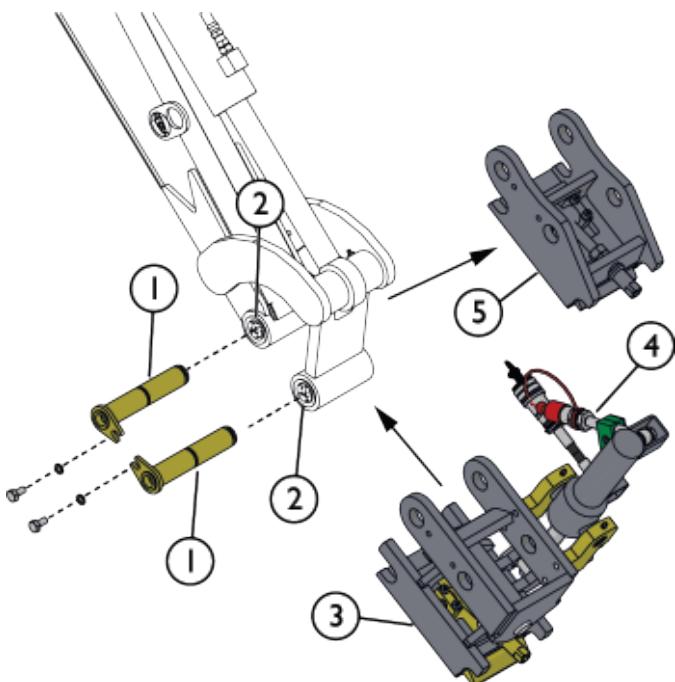
5. Pivot pin

#### **6.8.2.1 Installing tilt adapter**

The tilting bucket adapter is mounted between the front boom of the backhoe and the bucket. The tilting bucket adapter replaces the standard coupling, and is also equipped with S30-150 quick coupling for the bucket. The backhoe is equipped with necessary hydraulic quick couplings as standard.

Replace the standard coupling with tilt adapter as follows:

- 1 Uncouple the bucket as shown in this manual.



- 2 Lower the bucket coupling close to the ground so that it will not fall when uncoupled.

- 3 Remove the pivot pins (1) holding the S30 quick coupling (5).

Use a soft hammer to help to slide them out. Strike only gently to avoid damaging the pins. Move the S30 quick coupling (5) to a different position, if the pins will not slide.

- 4 When attaching the tilt adapter (3), clean the pins and apply grease. Place the washers (2) under the pivot pins.

- 5 Connect the hydraulic couplings (4). The hydraulic couplings are marked with colours in order to avoid mistakes during installation.

## 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.



**DANGER**

**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.



**WARNING**

**Risk of serious injuries - Always disable the radio remote control before any adjustments, cleaning, or maintenance operation.** Switch off the transmitting unit and disconnect power supply from the receiving unit before maintenance. For your own safety, follow the safe stopping procedure before any maintenance operation.

### 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.



**DANGER**

**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 the attachment

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 or electric components, or at the labels on the attachment.

## 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.



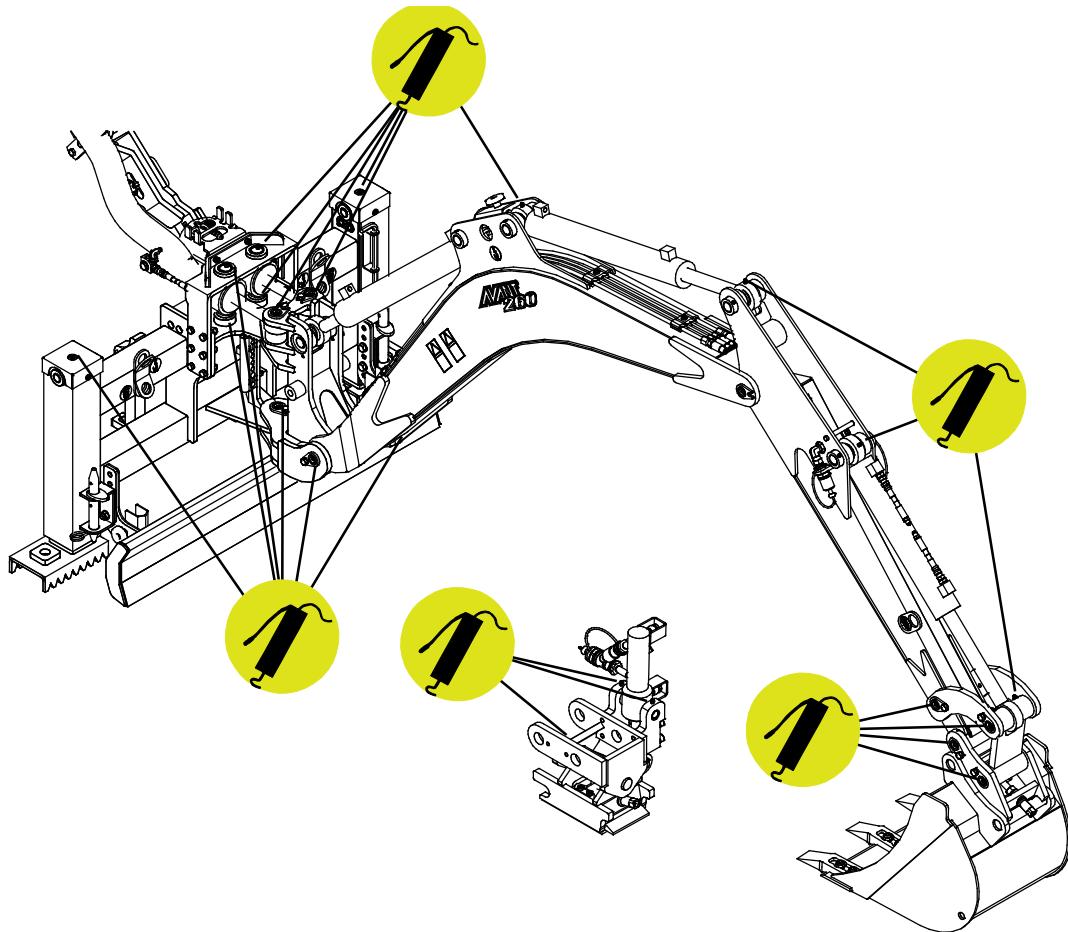
**Risk of falling objects - Never modify the attachment.** Repairing by welding is allowed only for qualified service professionals. Improper welding methods or materials used in welding can cause the backhoe to fail in use. Never weld any additional parts onto any part of the backhoe or its bucket.

## 7.4 Lubrication

There are a total of 19 lubrication points at the joints of the backhoe. If a tilting bucket adapter is installed, there are 3 additional lubricating points. A small amount of grease should be added regularly.

Correct lubrication interval depends heavily on operating conditions but lubricant must be added at least after every 10 hours of use. Sufficient lubrication of the joints must be ensured, and if the joints have become dirty, lubricant must be added; added lubricant will push out dirt from joints.

Clean the end of the nipple before greasing and add only a small amount of grease at a time. All lubrication nipples are standard M6 or R1/8" nipples. Replace any damaged nipples.



## 7.5 Radio remote control maintenance

**NOTICE**

Before any maintenance operation, disconnect the receiving unit from the power supply, and uncouple the hydraulic multiconnector.

**NOTICE**

After maintenance or service, check that all control commands sent by the transmitting unit activate only the corresponding expected operations. Stop use and contact service in the unlikely case that the programming or memory of the control unit has been reset and movements do not correspond with controls. The backhoe must be reprogrammed.

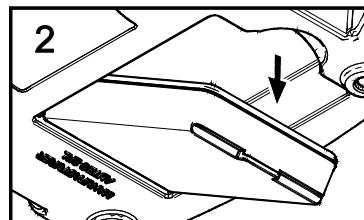
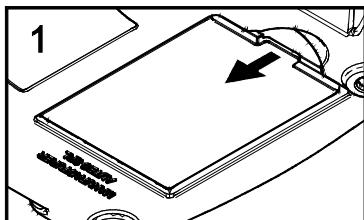
Keep the remote control unit stored at a cool, dry place. Remove battery before long term storage. Do not leave the remote control outside exposed to rain. Use a damp cloth to clean the exterior of the remote control unit.

For detailed instructions about maintenance of the Remote control unit, follow the separate instructions provided by the manufacturer of the remote control system.

### 7.5.1 Battery maintenance

**Battery removal**

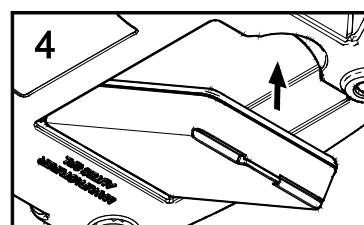
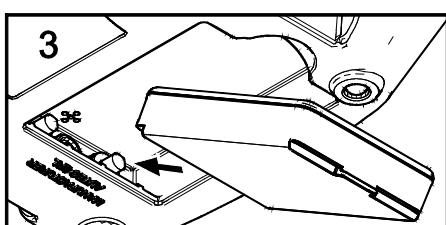
Push the battery towards the contacts on the transmitting unit (1) and remove it from the housing (2).



When the transmitting unit is not in use, remove the battery if possible.

**Insertion**

Push the battery towards the contacts on the transmitting unit (3) and insert it inside the housing (4).

**NOTICE**

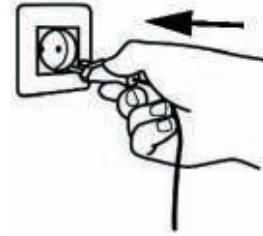
Only use appropriate batteries with the radio controller.

**NOTICE**

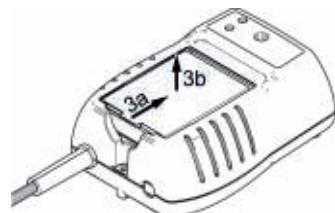
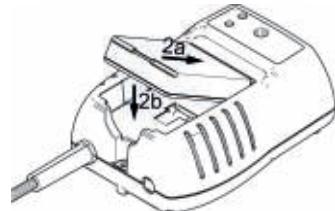
The battery slides easily into place and connects correctly only if it is inserted with the plate facing its housing, so that the battery's contacts match the transmitting unit's contacts.

### **Recharging the battery of the remote control**

1. Connect the battery charger to the AC mains socket. The POWER LED turns on with steady light.

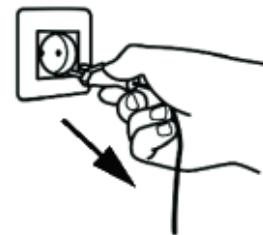


2. Insert the battery in its designated housing in the battery charger
  - a. Push the battery towards the contacts on the battery charger
  - b. Push the battery downwards. Charge starts, and it is signaled by CHARGE LED steady on.
3. The battery is fully charged when the CHARGE LED switches off. To remove the battery:
  - a. Push the battery towards the contacts on the Battery Charger.
  - b. Lift the battery.



Remove the battery form the charger after the charge is completed. The battery will wear and loose its capacity if it is left connected to the charger for prolonged periods. The charge cycle will stop after the battery is fully charged, but may start again after the battery has self-discharged enough.

4. Disconnect the battery charger from the AC mains socket. The POWER LED switches off.


**NOTICE**

The transmitting unit can only be powered by original rechargeable batteries A425086. Recharge them only with the suitable battery charger A426435. Battery charger A425085 with supply voltage in between 9 - 30 VDC is available as an option.

## **8. Warranty terms**

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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**  
**SE EG-försäkran om överensstämmelse**  
**EN EC Declaration of Conformity**

Alkuperäinen kieliversio  
Originalversion  
Original language



Valmistaja / Tillverkare / Manufacturer  
Osoite / Adress / Address

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 /

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	
Hydraulitoimininen kaivuulaite kauko-ohjauksella; Avant-kuormaajan työlaite Hydraulisk grävaggregat med fjärrkontrol; arbetsredskap för Avant lastare Hydraulic backhoe with remote control; attachment for Avant loaders	A430235 A443267

CE

3.8.2022 Ylöjärvi, Finland

Jani Käkelä,  
Toimitusjohtaja / Verkställande direktör /  
CEO





**AVANT**<sup>®</sup>