

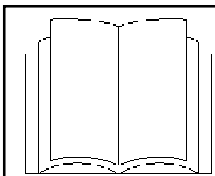
# AVANT<sup>®</sup>

## Operator's manual for Attachment



### High tip bucket

Product number:	200-series loaders:	A21092
	300-700-series loaders:	A2631
		A2824
		A21273



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

Keep this manual for later reference.

Manufacturer:

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Appendix: EC Declaration of Conformity

This manual uses the following warning symbols to indicate factors that must be taken into account to reduce the risk of personal injury or damage to property:

	<p>This safety symbol refers to important safety information in this manual. It warns of an immediate hazard that could cause serious personal injury or damage to property.</p> <p>Read the warning text accompanying the symbol carefully and ensure that other operators are also familiar with the warnings, since personal safety is at stake.</p>
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This notice symbol 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.

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. Due to continuous product development, some of the details in this manual may differ from your equipment. We reserve the right to change the contents of the manual without notification. This operator's manual is a translation of the original Finnish version.

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## 1. Foreword

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

With these instructions, even inexperienced users can use the attachment and the loader safely. The manual also includes important instructions for experienced AVANT operators. Ensure that all persons using the equipment have received proper guidance and familiarised themselves with the manual and all safety instructions before using the equipment. Keep this manual at hand throughout the service life of the equipment. If the manual is lost, you can request a new one from the retailer or manufacturer. If you sell or transfer the equipment, be sure to hand over this manual to the new owner.

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## 2. Designed purpose of use

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The AVANT High tip buckets are attachments designed and manufactured to suite AVANT multi purpose loaders for general load handling, levelling and snow clearing work. The bucket is equipped with a hydraulic tilting feature, which makes it possible to unload the bucket to a higher level than a standard bucket. The bucket can be unloaded at the height to which the tip of the bucket will reach.

The XL model is especially large in volume, making it ideal choice when loading light materials. The best tasks for the large bucket are snow transporting, loading of wood chips, recycling facilities or similar. The tilting of the XL-model is actuated by two cylinders to smooth operation even with full load.


The attachments have been designed to require as little maintenance as possible. The operator can perform regular maintenance tasks, but certain more demanding tasks must be left to qualified professionals. Appropriate protective equipment and original spare parts must be used for the maintenance. Read the maintenance and servicing instructions in this manual. 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.

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## 3. Safety instructions for using the buckets

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Please bear in mind that safety is the result of several factors. The loader-attachment combination is highly powerful, and improper or careless use may cause serious personal injury or property damage. Due to this, you should carefully familiarise yourself with the manuals of both the loader and the attachment before starting operation. Do not use the attachment if you have not familiarised yourself with its operation and the related hazards. The purpose of these instructions is to help you to:

- Use the equipment in a safe and efficient manner
  - Monitor and prevent any hazardous situations
  - Keep the equipment intact and ensure a long service life
- 
- When mounting the 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**.
  - Exercise extreme care when lifting load to high levels.
  - Always transport the bucket and the load as low and as close to the machine as possible to keep the centre of gravity low.
  - When transporting the attachment, pay attention to the contours of the terrain and other hazards, such as branches or trees reaching the drivers seat or any possible obstacles above the equipment before lifting the load high. Pay attention to the surroundings and any other persons and machines moving in the vicinity.



- Never leave the driver's seat if a load is lifted or the bucket is in tilted position.
- Do not store the tipping bucket in a tipped position.
- Shut down the loader engine before any cleaning, maintenance or adjustments.
- Do not modify the structure of the attachment in a manner that would affect its safety.
- Do not use the bucket as an access platform or to move persons. Do not climb into the bucket.
- Also read the safety instructions for the loader in the loader manual.



Note that the loader boom moves down and may be tilted even if the engine has been stopped. Never go under a raised attachment or boom or to the danger area between the boom and the attachment.

Do not move the bucket by hand. The bucket is heavy and it may tip over or you could injure yourself when trying to move it. Detach the bucket to a place from where it can be reached directly with the loader.

*Remember to wear proper protective clothing:*



- The noise level in the driver's seat may exceed 85 dB(A). Wear hearing protection while working with the loader.



- The use of safety boots is recommended while working with the loader.

- Wear protective gloves when handling hydraulic components.

## 4. Bucket specifications

**Table 1 – High tip bucket technical data**

Product number	A21092	A2631	A2824	A21273
Total width:	1 050 mm	1 050 mm	1 280 mm	1 800 mm
Weight:	120 kg	120 kg	160 kg	320 kg
Volume:	160 l	150 l	350 l	900 l
Maximum operating pressure:	18,5 MPa (185 bar)	22,5 MPa (225 bar)	22,5 MPa (225 bar)	22,5 MPa (225 bar)
Suitable AVANT loader	216, 218, 220	300-600	400-700	(528) 600-700

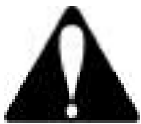
The suitability recommendations are based on the width of the loader model, its lifting capacity and breakout force. Do not use a bucket that is too wide for the loader when handling heavy materials. As the width of the bucket increases, the available breakout force (tilting power) decreases, making it more difficult to use the bucket effectively. With the following table and the load diagram on the operator's manual of the loader the lifting capacity of the loader can be estimated.

**Table 2 – Typical material densities for estimating load lifting capacity**

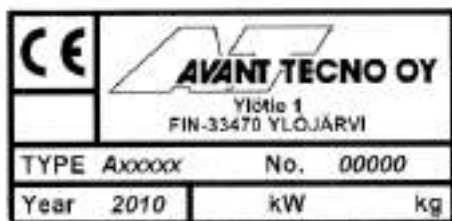
The figures in the table are as guidelines. Actual material densities may vary greatly according to factors such as moisture content and compactness of the material.

Snow	0.1 - 0.8	kg / l (t / m <sup>3</sup> )
Wood chips	0.15 - 0.3	
Wood pellet	n. 0.65	
Peat	0.4 - 0.7	
Soil	1.5 - 1.8	
Sand	1.5 - 2	
Gravel	1.7 - 1.9	
Crushed rock	1.65 - 2.6	

Listed below are the markings and labels fastened to the attachment, and they must be visible on the equipment. Replace the warning labels, if they have become unclear or detached completely. New labels are available via your retailer or contact information provided on the cover page.



The warning decals contain important safety information. Replace damaged or missing decals with new ones.



Identification plate of the attachment



A46771



A46772



A46803

- A46771 – Read instructions before use.
- A46772 – Do not go under a raised attachment, stay away from raised equipment.
- A46803 – Crushing hazard, keep clear of moving parts.

## 5. Assembly of the bucket

The high tip buckets are delivered in a working condition. Mount the attachment and its hydraulic hoses according to the following instructions and practise its use in a safe area. Read the following instructions for mounting, using and maintenance of the bucket before starting to operate the equipment.

Mounting the attachment to the loader is quick and easy, but it must be done carefully. If the attachment is not locked to the loader, it may detach from the loader and cause hazardous situations. In the worst case, the attachment may slide onto the driver along a raised boom. For this reason, the attachment must under no circumstances be raised over one metre when it has not been locked. To prevent hazardous situations, always follow the attachment mounting instructions provided in the following pages. Also remember the safety instructions in Section 3.

### 5.1. Mounting the bucket to the loader

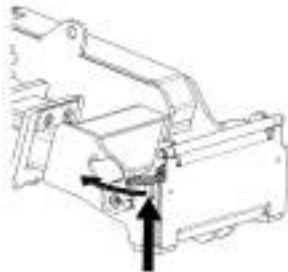
These instructions are applicable to mounting the bucket to the boom quick attach plate of AVANT loaders that have standard quick attach locking. If your machine is equipped with a hydraulic locking and/or serial quick attach system, refer to the relevant manuals for additional mounting instructions.

The attachment is mounted to the AVANT loader boom quick attach plate and the counterpart on the attachment. The locking is semi-automatic; the locking latches are released as the locking pins hit the pin guides when the boom front plate is tilted towards the loader (300-700-series) or the locking pin hits the boom (200-series). The attachment is mounted to the loader as follows:

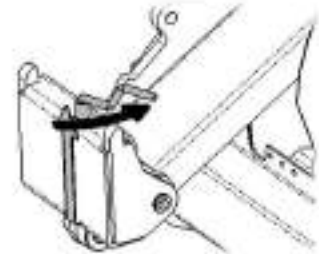


Never move or raise an attachment that has not been locked.

### Step 1:



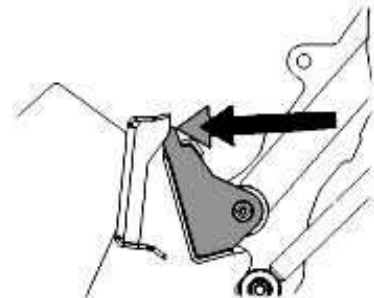
- Lift the quick attach plate locking pin / locking pins up and turn them backwards into the slot so that they are locked in the upper position.
- Ensure that the hydraulic hoses are not in the way during installation.



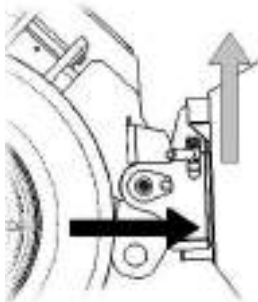
### Step 2:



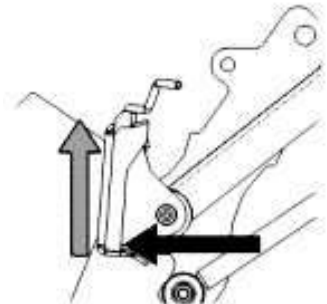
- Turn the quick attach plate hydraulically to an obliquely forward position.
- Drive the loader onto the attachment. If your loader is equipped with a telescopic boom, you can utilise this.



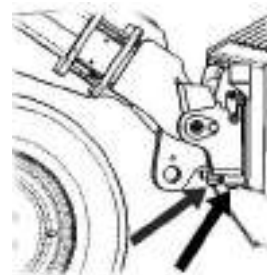
### Step 3:



- 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.
- Turn the boom control lever further left so that the automatic locking of the attachment triggers the locking pins.



Before moving or lifting the attachment, ensure that the locking pins are in the lower position and come through the fasteners on both sides. Unlocked attachment may fall on the boom or operator and cause injuries.



**Do not use** the automatic return of the locking pins when the attachment or the boom has been lifted **at a height of over one metre**. Excess tilting increases the risk of toppling over. We recommend that you lower the attachment onto the ground and secure the locking manually.

The automatic return of the locking pins is a useful feature, when mounting an empty attachment to the loader. In other cases we recommend that you lock the pins manually.

## 5.2. Connecting and disconnecting the hydraulic fittings

The two hydraulic fittings of the bucket are connected to corresponding fittings on the loader. The hoses should be connected so that the fittings with coloured caps are connected. This way the auxiliary hydraulics control lever will move the bucket the same way every time it is used.

To connect and disconnect the fittings, move the collar at the end of the female fitting. Before connecting or disconnecting hydraulic fittings, shut down the loader engine and move the auxiliary hydraulics lever on the loader to its extreme positions a few times. This way, there will be no residual pressure in the system and the fittings are easy to connect.

In a 200-series machine, the hose can be connected by pushing the fitting in the counterpart. When connecting and disconnecting the 200-series hydraulics quick couplings, you should pay attention to their locking. The locking prevents the female and male fittings from being disconnected from each other by accident when the attachment moves. The fitting collar may also turn by accident into the locking position, making it impossible to connect or disconnect the fittings.



In the 200-series equipment, there is a small groove in the collar of all female fittings and a small ball below the collar. When the fittings need to be disconnected, the above-mentioned groove and ball need to be aligned. Then, the grooved collar of the female fitting is pulled downwards to disconnect the fittings from each other.



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



Never connect or disconnect quick couplings or other hydraulic components while the system is under pressure. High-pressure fluid ejection may cause injuries.

When finished working with the bucket and storing it, lower and close the bucket completely. Move the auxiliary hydraulics control lever to release residual pressure. This way the fittings are easier to disconnect or to connect.

Keep the fittings as clean as possible; use the protective caps for the quick couplings on both the attachment and the loader. Dirt, ice, etc. may make using the fittings significantly more difficult. Note that the protective caps on the loader and the attachment can be fastened to each other during operation to reduce the accumulation of dirt. Never leave the hoses hanging on the ground; place them on top of the equipment.

## 6. Instructions for use

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After the bucket has been mounted as described in the section 5, it is ready to be used.

- Before use check that the bucket is intact and that all obstacles have been removed from the working area. Remember correct working methods and avoid descending from the loader unnecessarily.
- Ensure that the loader and the attachment are used in a safe manner and as intended. Do not use the bucket to lift persons or as an access platform.
- If transporting objects with the bucket, ensure that the load stays on the bucket for example by using load-securing straps.
- Operate the attachment from the driver's seat only.

At the first use, the hydraulic hoses and the cylinder may have air trapped in them, which causes the bucket to move inaccurately. The hydraulic system will bleed itself, when the bucket is tilted to its extreme positions a few times.

## 6.1. Operation

Lifting material from a pile requires the most power from the loader. Especially when using a bucket with a long base, the correct working method should be observed for the best performance of equipment. Filling the large bucket by ramming straight into a pile of heavy material and then trying to lift or tilt the bucket is not possible with any loader type. The loading is most effective when only the tip of the bucket is pushed into the pile, and then by simultaneous driving, lifting and tilting the equipment, material is cut into the bucket. Use high engine revolutions and read the instructions for correct use of the drive pedal from the loader manual.



When lifting load from a high level, the loader could tip forward when reversing with the loader. Do not reverse the loader while simultaneously dragging the load. Make sure that the loader can handle the load being lifted.

The tipping feature of the high tip bucket is meant only for emptying the bucket. Do not use a tilted bucket for example dozing purposes. The bucket may get damaged. Do not place any objects in between the tilting bucket and its frame. If transporting objects with the bucket, make sure that they stay in the bucket with suitable means, for example with load securing straps.

A boom floating system is available for some loader models. Floating refers to a system that releases the boom lift cylinder, allowing the boom to follow the contours of the ground. With the boom floating, levelling work is easier. The floating should also be used when dozing with the bucket, to allow the bucket to follow the ground surface. Note that the floating will not prevent the loader from stopping suddenly in case an object has been hit.



Note that hitting an obstacle will stop the loader suddenly, for example in snow clearing work. Check the operating area before operation.



*In case the loader is not equipped with the boom self levelling:*  
When lifting the bucket to a high level, the front plate must be simultaneously tilted to prevent the load from falling from on the loader or the operator. Fitting the loader with the boom self-levelling option makes the repeated lifting work easier.



Do not use the buckets to lift persons or as any kind of work platform even temporarily.

### 6.1.1. Slope operation and uneven terrains

Using the equipment on inclined terrains and slopes requires extra caution. Fill especially the wider buckets in a way that centre of gravity will not get shifted by too much sideways, and that the stability of the loader will remain. On sideways inclined terrains a heavy load should not be lifted high. The articulated frame should be kept straight when lifting heavy loads; turning the articulation of the loader during lifting will affect the stability of the loader and may lead to overturning the machine. Use low speed and do not make sudden changes in speed or direction. Operate the boom with careful and smooth movements. Do not overload the bucket according to the operating environment and always transport the load as low as possible.



## 7. Inspections, maintenance and servicing

Continuous maintenance includes regular cleaning and lubrication of the equipment. The condition of the hydraulic hoses and components should be monitored. Due to crushing hazard caused by the movements of the loader boom and the tipping bucket, all maintenance work must be done when the attachment has been lowered on the ground, the bucket is lowered to normal operating position and the residual pressure has been released.



All maintenance procedures must be performed when the bucket and the loader boom have been lowered down completely. The boom may lower by itself causing serious injuries.

Check the condition of the hydraulic hoses and components when the engine has been turned off and the pressure has been relieved. Repair all leaks immediately after detecting them; a small leak can quickly grow into a big one. Do not use the equipment, if you have discovered a fault in the hydraulic system. Leaking hydraulic fluid may penetrate the skin and cause serious injuries. Hydraulic fluid is also harmful to the environment.

Check hoses visually for cracks or abrasions. Monitor the wearing of the hoses and stop the use, if the surface layer of the hose has worn off. If there are signs of leaking, to check the component, hold up a piece of cardboard in the area where a leak is suspected. Finding any of these faults means that the hydraulic hose or component in question must be replaced. Spare parts are available from your nearest AVANT retailer or service point.



Never tighten a hydraulic fitting under pressure, since the fitting may break and the released oil may cause serious injuries. Do not use the equipment, if you have discovered a fault in the hydraulic system.



### 7.1. Cleaning and storage of the equipment

Clean the attachment regularly. You may use a pressure washer and a mild detergent. Do not use strong solvents or spray directly at the hydraulic components or at the labels on the attachment either. On 105-128 cm wide bucket models note the protective housing for the hydraulic cylinder under the bucket, to which dirt might build up.

Do not let water to stay in the bucket. For longer storage periods touch up the paint where needed, grease the lubrication points and oil the visible parts of hydraulic cylinder shafts to prevent rust damage. Do not store the attachment directly against the ground; place it on blocks of wood or on a pallet, for example.

### 7.2. Lubricating

There are a total of 4 lubrication points on the standard buckets and 6 on the XL model. The lubricating points are located in the front hinge of the bucket and the cylinder / cylinders. Small amount of lubricant should be added 1 to 3 times a year. All lubrication nipples are standard R1/8" nipples. Replace any damaged nipples.



Lubricant must be added 1 to 3 times every year. Clean the end of the nipple before greasing. Only add the grease amount of a couple of grease press pushes at a time.

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## 8. Warranty terms

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

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

**EY-vaatimustenmukaisuusvakuutus**  
**EG-försäkran om överensstämmelse**  
**EC Declaration of Conformity**  
**EG-Konformitätserklärung**



**Valmistaja / Tillverkare / Manufacturer / Hersteller:**  
**Osoite / Adress / Address / Adresse:**

AVANT TECNO OY  
 Ylötie 1  
 33470 YLÖJÄRVI, FINLAND

Vakuutamme täten, että alla mainitut tuotteet täyttävät konedirektiivin turvallisuus- ja terveysvaatimukset (direktiivi 2006/42/EY muutoksineen). Seuraavia yhdenmukaistettuja standardeja on sovellettu:  
 SFS-EN ISO 12100-1, SFS-EN ISO 12100-2, SFS-EN 982, SFS-EN 474-1

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:  
 SFS-EN ISO 12100-1, SFS-EN ISO 12100-2, SFS-EN 982, SFS-EN 474-1

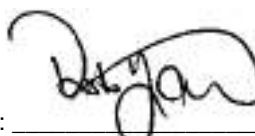
We hereby declare that the products listed below are in conformity with the provisions of the Machinery Directive (directive 2006/42/EC as amended). The following harmonized standards have been applied:  
 SFS-EN ISO 12100-1, SFS-EN ISO 12100-2, SFS-EN 982, SFS-EN 474-1

Wir erklären hiermit, dass die nachstehend aufgeführte Maschine konform ist mit den Bestimmungen der EG-Maschinenrichtlinie (EG-Richtlinie 2006/42/EG mit Änderungen). Die folgende harmonisierte Normen wurden angewandt:  
 SFS-EN ISO 12100-1, SFS-EN ISO 12100-2, SFS-EN 982, SFS-EN 474-1

Kuvaus: Avant-kuormainten kanssa käytettävä hydraulitoiminen kauha  
 Beskrivning: Hydraulisk skopa; arbetsredskap för Avant lastare  
 Description: Hydraulic bucket; attachment for Avant loaders  
 Beschreibung: Hydraulische Schaufel; Anbaugerät für Avant Radlader

Mallit / Modeller / Models / Modellen:

Avant		300-700-series	200-series
Kärkikippaava kauha Högtippande skopa High tip bucket mm Hochkippschaufel	105 cm, 140 l	-	A21092
	105cm, 150l	A2631	-
	128cm, 350l	A2824	-
Avant		600-700-series	
Kärkikippaava kev. mat. kauha Högtippande lättmat. skopa High tip light material bucket Hochkippleichtgutschaufel	180 cm, 900 l	A21273	

Allekirjoitus / Namnteckning / Signature / Unterschrift:  10.6.2010 Ylöjärvi, Finland

Risto Käkelä,  
 Toimitusjohtaja / Verkställande direktör /  
 Managing Director / Geschäftsführer





**AVANT<sup>®</sup>**