Snow Plough Blade
T198

T198G1  Snow Plough Blade mechanically tiltable, with polyurethane ridge
T198FG1 Snow Plough Blade mechanically tiltable, with spring flaps
T198G1-H Snow Plough Blade hydraulically tiltable, with polyurethane ridge
T198FG1-H Snow Plough Blade hydraulically tiltable, with spring flaps
# Operating Manual

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Our service department in Aschaffenburg will be happy to answer your technical questions and to provide additional support.

Technical Support:
0049 (0) 6021 865 395
0049 (0) 6021 865 284
0049 (0) 6021 865 352

Orders for spare parts Domestic
0049 (0) 6021 865205
0049 (0) 6021 865251

Orders for spare parts Export
0049 (0) 6021 865344
0049 (0) 6021 865348

Outside of normal business hours the Kaup – Service Hotline is available to you 365 days a year:
0049 (0) 172 6295 297
Monday - Friday: 17:00 – 7:00 Uhr
Saturday and Sunday: 8:00 – 18:00 Uhr

Kaup GmbH & Co KG • Braunstr. 17 • D-63741 Aschaffenburg • email: kaup@kaup.de • www.kaup.de
1. Introduction

1.1 Working with this manual

This operating manual contains important information on how to operate the attachment properly, safely and efficiently.

The operating manual shall be read, understood and applied by all personnel working on or with the equipment, for example:

- Installation and operating the equipment
- Inspection, maintenance and repair
- Transport and disposal

The manual must be kept available for ready reference at the equipment’s place of use.

The illustrations in this operating manual may deviate from the actual version of the equipment.

1.2 Warning notes and symbols

The following symbols are used in this operating manual to highlight details of special importance:

⚠️ Identifies details relating to do’s and don’ts for the purpose of avoiding injury and property damage.

➡️ Specific details relating to the efficient use of the attachment and other advice.

- Lists are denoted by a shadowed box.

• Steps to be performed by the operator are denoted by a black dot.

(1) In illustrations, particular elements have numbered pointers. Numbers in brackets in the text refer to the corresponding elements.

1.3 Copyright

This documentation including all parts is copyrighted. Any use or change outside the narrow limits of copyright law without permission from KAUP GmbH & Co KG is forbidden and liable to prosecution. This applies, in particular, to reproduction, translation, microfilming as well as storage and processing in electronic systems.
1.4 **CE-Mark**

KAUP-Attachments carry the CE-mark. The EC Declaration of Conformity ensures that the attachment conforms to the EC machinery guideline.

1.5 **Qualified and authorised personnel**

Qualified and authorised personnel are equipped by way of their education and training to perform the tasks assigned to them in accordance with accepted practice and safety regulations. They are assigned tasks by the equipment owner.

1.6 **Warranty claims based on defects**

KAUP shall not be liable for any damage to the equipment resulting from:

- Improper use / operation.
- Modifications to components.
- Inappropriate installation, maintenance, inspection and servicing.
- Assignment of unqualified or non-authorised personnel.
- Claims raised by third parties.

1.7 **Limits of applicable use**

KAUP-attachments are intended for use under the following climatic conditions:

- Average ambient temperature for continuous operation: +25°C
- Allowable maximum ambient temperature, short term (up to 1h): +40°C
- Allowable minimum ambient temperature for attachments intended for indoor use: +5°C
- Allowable minimum ambient temperature for attachments intended for outdoor use: -20°C

2. **Safety aspects**

- As the user, extend the safety instructions with generally applicable, legal and other measures that ensure a safe and environmentally friendly operation of the attachment.
- Pay close attention to all safety- and danger-related signs on the attachment and in this operating manual. Failure to observe these can result in severe injury or even death.
- Pay close attention to the operating manual provided by the manufacturer of the fork lift truck.
Keep a safe distance away from moving, reciprocating or rotating parts of the attachment to avoid danger of crushing, pinching or entanglement.

Notify the responsible department/person immediately of changes and faults in operation of the attachment that affect safety. The attachment shall be shut down.

Use aids to vision (e.g. mirrors, camera, etc.) where goods being transported obstruct vision.

Only allow work on the attachment to be carried out by qualified and authorised persons. Adhere to the legal minimum age in the country of operation!

The attachment should only be used for the purpose intended.

Never work on or with attachments while under the influence of drugs, alcohol or medicines which affect reaction time.

3. Design
3.1 Snow Plough Blade

A T198xxx snow remover blade consists of one pair of fork pockets (1) for accepting fork arms to which a support (2) is welded. The blade (3) can be pivoted in the pin (4) of the support (2) to the right and left sides by 60°. The mechanical version is locked by means of a removable tab (5). The hydraulic version allows the snow to be removed to either side by means of a cylinder (6) without leaving the lift truck.

The snow remover blade (3) has a replaceable PU slat (7). An alternative design is available featuring hinged spring flaps (8) and replaceable steel slats (9).

3.2 Proper use of the equipment

A snow remover blade is designed to be used for winter service operations, i.e. for removing snow from roads, pathways and similar places using a lift truck.

Proper use of the machine and/or equipment includes the following:

- Observance of the operating manual at all times.
- Observance of the technical data on the identification plate on the attachment.
- Adherence to the specified inspection and maintenance instructions.

3.3 Improper use

- Removal of other materials (e.g. debris).
- Dragging or pushing loads with the attachment.
- Transporting persons with the load or load handling devices.

4. Installation and checking out

4.1 Installation

Installation and commissioning should be performed by qualified and authorised personnel only.

Pay attention to a sufficient load-carrying capacity of the lifting means.

The following are examples of preferred lifting means:

<table>
<thead>
<tr>
<th>Capacity</th>
<th>Part-no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>250 kg/M16</td>
<td>9710160008</td>
</tr>
<tr>
<td>1200 kg/M16</td>
<td>0360010201</td>
</tr>
<tr>
<td>2000 kg/M16</td>
<td>0360010301</td>
</tr>
</tbody>
</table>
• Adjust the clearance between the fork arms to the clearance of the fork pockets.

• Fully move the fork arms (1) of the lift truck into the fork pockets (2) of the snow remover blade (3).

• Make sure that the snow remover blade is locked by means of the two clamping levers (4) below the fork pockets.

• For the hydraulic version, connect the pivoting cylinder (5) to the hydraulic system of the lift truck.

• Before initial operation, check the functions and the identification of the attachment with the movement directions of the operating elements (operating lever, joystick, etc.).

• Mount the residual carrying capacity notice and identification of the operating elements (if not already present) of the combination of lift truck/attached equipment on the lift truck.

4.2 Checking out

KAUP-attachments are delivered pre-lubricated. If the attachment has been in storage for a longer period, we recommend that it be lubricated again before being placed in service. See 6. Maintenance and onwards.

Failure of the safety devices (e.g. the pressure relief valve and the non-return valve) and incorrect connection of the controls to the actuators can cause malfunctioning of the attachment and damage to it.

After mounting and before initial operation, check the functions and the identification of the attached equipment with the movement directions of the operating elements (operating lever, joystick, etc.).
4.2.1 Bleeding the hydraulic system

- Start the lift truck.
- Move the snow remover blade to the right and left stop.
- Inspect the hydraulic connections for leakage.

5. Operation

5.1 General

At least once per working shift, the machine and equipment must be inspected for visible damage and defects.

Repeat faults to your superior and have them rectified without delay.

Be aware of persons present in the area where you are working or driving and ensure that they are not endangered.

The snow remover blade must be pivoted only when it is lifted. The position of the tab (16) is changed only after removing the safety pin (13) and pin (10). Refer to chapter 6.3.

5.2 Driving

Do not drive with the mast tilted forward.

Make sure that the snow remover blade is locked on the fork arms.

6. Maintenance and servicing

6.1 General

Regular maintenance is essential to ensure reliable operation and long service life of the KAUP attachment.

Ensure that maintenance and servicing are performed by qualified and authorised personnel only.

Lubrication and cleaning work on the attachment may also be performed by the lift truck operator.

Perform maintenance and servicing work only when the attachment is parked securely on a stable, level foundation. For installing and removing, it is recommended to use a pallet to take the attachment. The attachment can thus be securely placed and transported.
Pay attention to a sufficient load-carrying capacity of the lifting means.

Replace missing or defective warning signs on the attachment.

Do not use third party spare parts. Through poor quality or incorrect matching they can result in a risk of accident. The EC Declaration of Conformity by the manufacturer becomes invalid and you assume full responsibility in the case of accident.

Use only original spare parts from the manufacturer.

The hydraulic system is under pressure. During work on hydraulic components oil spurting out can cause injuries. Unload the system in accordance with the operating instructions of the lift truck manufacturer. In the case of injuries caused by high pressure oil, inform the works physician and seek out a specialist immediately.

Screw connections can loosen due to vibration of the attachment. During routine maintenance check that screw connections are correctly torqued and replace screws which are visibly damaged.

Note the following tightening torques which are valid for screws with connecting surfaces according to ISO 4762, ISO 4014, ISO 4032 etc.:

<table>
<thead>
<tr>
<th>Screw/bolt rating</th>
<th>8.8</th>
<th>10.9</th>
<th>12.9</th>
</tr>
</thead>
<tbody>
<tr>
<td>M6 thread</td>
<td>9.3Nm</td>
<td>14Nm</td>
<td>16Nm</td>
</tr>
<tr>
<td>M8 thread</td>
<td>23Nm</td>
<td>33Nm</td>
<td>39Nm</td>
</tr>
<tr>
<td>M10 thread</td>
<td>45Nm</td>
<td>66Nm</td>
<td>77Nm</td>
</tr>
<tr>
<td>M12 thread</td>
<td>77Nm</td>
<td>115Nm</td>
<td>135Nm</td>
</tr>
<tr>
<td>M16 thread</td>
<td>190Nm</td>
<td>280Nm</td>
<td>330Nm</td>
</tr>
<tr>
<td>M20 thread</td>
<td>385Nm</td>
<td>550Nm</td>
<td>640Nm</td>
</tr>
</tbody>
</table>

Failure of the safety devices (e.g. the pressure relief valve and the non-return valve) and incorrect connection of the controls to the actuators can cause malfunctioning of the attachment and damage to it.

After mounting and before initial operation, check the functions and the identification of the attached equipment with the movement directions of the operating elements (operating lever, joystick, etc.).

6.2 Significant modification

Significant modifications are, for example, those which affect the stability, performance, speed and strength of components.

The EC Declaration of Conformity is invalidated by a significant modification of the attachment.

Modifications to the attachment may only be made with prior approval by the manufacturer.
6.3 Schedule for routine maintenance and lubricants

<table>
<thead>
<tr>
<th>Lubricants approved and recommended by KAUP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greases</td>
</tr>
<tr>
<td>Lithium soap grease NLGI Class 2</td>
</tr>
<tr>
<td>Complex soap grease NLGI Class 2</td>
</tr>
<tr>
<td>Teflon spray</td>
</tr>
</tbody>
</table>

The specified maintenance schedules can change as a result of the operating conditions such as extreme cold, heat and dust or poor ground conditions and this must be taken into account by the owner.

With other loads, such as fork arms with a length of over 2,400 mm or raised load centres, amended/shorter maintenance intervals should be agreed by the user with the manufacturer.

Daily

- Check all lines, hoses and connections for leakage and damage.
After 50h / every 500h thereafter

Check screws:

- (1) at the spring flap (2) and snow remover blade (3),
- (4) at the spring flap (2) and steel slat (5),
- (6) and the nut (7) at the snow remover blade (3) and PU slat (8).

Replace loose or damaged screws. Torque the screws as specified in Chapter 6.1 General.

Every 200h

Check wear on:

- wear-off bar (5, 8),
- bolt (9, 10),
- pressing lever (11),
- rubber buffer (12),
- lug (16).

As necessary

Replaced the following items if worn:

- Steel slat (5) by removing the bolts (4),
- PU slat (8) by removing the bolts (6) and nut (7),
- Pin (9) by removing the snap ring (14),
- Pin (10) by removing the linchpin (15),
- Pressing lever (11) by unscrewing,
- Rubber buffer (12) by removing the nut (17),
- Lug (16) by removing the safety pin (15) and pin (10).

Replace defective or leaking cylinders (18) by removing the cotter pin (15). Tap the pin (10) out upwards. Replace defective parts and reinstall pin (10) with cotter pin (15).
6.3.1 Identification plate and caution board

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
<th>KAUP order number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Identification plate</td>
<td>only by quality department</td>
</tr>
<tr>
<td>2</td>
<td>Before putting into operation carefully read and take note of the operating and security instructions.</td>
<td>0100016401</td>
</tr>
<tr>
<td>3</td>
<td>Never reach into the unit as long as parts could still be moving due to the danger of squashing or shearing.</td>
<td>0100016601</td>
</tr>
<tr>
<td>4</td>
<td>kaxxxxxx</td>
<td>KAUP – order number without, engraved in the material</td>
</tr>
</tbody>
</table>
7. Troubleshooting

Troubleshooting should only be performed by qualified and authorised personnel.

<table>
<thead>
<tr>
<th>Fault</th>
<th>Possible cause</th>
<th>Correction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pivoting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clearance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Bearing clearance too large</td>
<td>bolt is worn</td>
<td>Replace bolt</td>
</tr>
<tr>
<td>Oil leakage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ At cylinder</td>
<td>WE throttle leaky</td>
<td>Replace the WE throttle</td>
</tr>
<tr>
<td></td>
<td>Sealing kit defective</td>
<td>Replace sealing kit</td>
</tr>
<tr>
<td></td>
<td>Screw fitting is leaking</td>
<td>Tighten / seal screw fitting</td>
</tr>
<tr>
<td></td>
<td>Piston rod scored</td>
<td>Replace piston rod and sealing kit</td>
</tr>
</tbody>
</table>

Legend: FFZ = lift truck, DBV = Pressure relief valve, WE-Drossel = elbow-type screwed throttle

8. Disposal

Prevent environmental damage by disposing of the following items properly in accordance with relevant national regulations:

- □ Hydraulic fluids, greases, lubricants and soiled working materials (Cleaning rags, etc.)
- □ Packaging material (Pallets, straps, cartons and plastic sheeting)

After decommissioning, the attachment should be disposed of in accordance with local legislation and regulations.

9. Transport

During transport of the attachment, care should be given to using appropriate means of support (e.g. pallets). These must not be damaged. The attachment must be secured against slipping or tipping over on the support.

KAUP recommend to thoroughly clean the snow remover blade from gritting salt and to apply corrosion inhibitor after winter season to ensure serviceability.

10. Decommissioning and storage

If the attachment is to be stored for an extended period, all hydraulic connectors must be sealed against contamination and damage. Store the attachment in a clean, dry environment.
11. **Spare parts list** (not part of the Operating Manual)

12. **EC Declaration of Conformity (Summary)**

KAUP GMBH & Co. KG •
Braunstraße 17 •
D-63741 Aschaffenburg

we hereby declare that the machinery

<table>
<thead>
<tr>
<th>Model:</th>
<th>Snow Plough Blade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type:</td>
<td>T198xxx, T198xxx-H</td>
</tr>
</tbody>
</table>

conforms to the latest valid version of the Machinery Direktive 2006/42/EG.

The person authorised to compile the technical documents:

see **EC-Declaration of Conformity**

KAUP GmbH & Co. KG