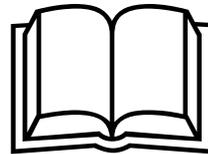


User's manual

F240H Monster

F280H Monster



Read and understand this manual
before operating the equipment!

Applies to the following models / from CE number:

F240H Monster	8020001	→
F280H Monster	8822001	→

Revision F



Tokvam AS

Vestre Totenvei 1135, N2840 Reinsvoll, Norway

SAMSVARSERKLÆRING
DECLARATION OF CONFIRMITY

Produsent/ Manufacturer: Tokvam AS
Vestre Totenvei 1135
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Company number: 979 746 156
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We hereby declare that the following products:

Snow blowers,	Model:	CE-number from and including:
	F240H Monster /	8020001 ->
	F280H Monster	8822001 ->

Which is governed by this declaration in conformity with the following standard or other normative documents:

- **NS-EN 13021:2003+A1: 2008**

Following the provisions of Directive:

- **2006/42/EF**

Utstedelsessted og dato: Reinsvoll, september 25th, 2020



Finn Kristian Tokvam (Daglig Leder/ Managing Director)

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1. Specifications

	F240H Monster	F280H Monster
Working width	240cm	280cm
Impeller diameter	97cm	97cm
Impeller depth	28cm	28cm
Intake auger	100cm	100cm
Weight	1425* / 1580** kg	1550* / 1700** kg
Power requirement	65kW/90hp	65kW/90hp
Required oil flow	180-250 l/min – 200-380 bar	180-250 l/min – 200-380 bar
Required oil flow maneuvering hydraulics	Min. 10l/min 280 bar max.	Min. 10l/min 280 bar max
Linkage/coupler system	Integrated Volvo BM	Integrated Volvo BM
Carrier	7-10 metric tons	10-17 metric tons

*weight without chute

**weight with telescopic loading chute

1.1. Machine identification plate / CE marking

All machines can be identified by a plate. The identification plate is located at the left side of the snow blower (see picture below)

The machine plate contains the following information:

Model + production number.

Year / serial number.

Explanation of the number: machine number (2 digits) + year of production (2 digits) + production number (3 digits)



2. Warning labels on the machine – significance of the symbols

Please read and learn the warning symbols.



Keep a safe distance!

Rotating parts. Risk of crushing injuries.

Keep a safe distance from this area when the machine is in operation.



Risk of crushing injuries!

Fingers may be crushed between the motor and the rotating ring.



Lubrication point. Please refer to “Service and maintenance” for more detailed information.

Read the User’s guide carefully prior to utilization of the machine!

Read the User’s guide in detail before starting the machine and prior to preventive maintenance. Know your equipment’s capabilities, dimensions and operations before operating.

Keep this manual available for reference whenever this product is being handled or used.

This manual has been published for worldwide circulation. The optional and standard equipment may vary from one country to the next.

We are continually improving our products and reserves the right to make such improvements without incurring any obligation to make changes to snow blowers previously sold. Therefore, claims cannot be made based on the data, illustrations, descriptions and maintenance recommendations set forth in this manual.

3. Safety

 It is the driver's responsibility to ensure that the equipment is not used or handled incorrectly.

- Ensure that the carrier has the capacity to handle the weight of the snow blower. Especially important is the power requirement, weight and working width. Inconsistency may lead to reduction of the warranty.
- Never allow children near the equipment.
- Do not start the carrier until all persons are at a safe distance from the machine.
- Make sure nobody is nearby when the carrier/equipment is running.
- No one must stand between the snow blower and the carrier. An inadvertent action might result in crushing danger.
- **Never** point the chute against persons, animals, cars, buildings, or other objects that might be damaged if it gets hit by snow, or possible debris such as ice, rocks etc.

The warranty will be considered void if the product is modified or repaired in any way not explicitly authorized by TOKVAM AS. This also applies to the use of spare parts not supplied by or approved by the manufacturer. Tokvam AS disclaims any responsibility for any harm to people or objects that may have arisen as a result of the above.

When ordering spare parts or accessories, please state machine type and serial number.

4. Product description

The machine is designed to remove snow and should only be used for this purpose.
The machine is **not** designed to remove other types of mass, such as soil, gravel, sand, or ice.

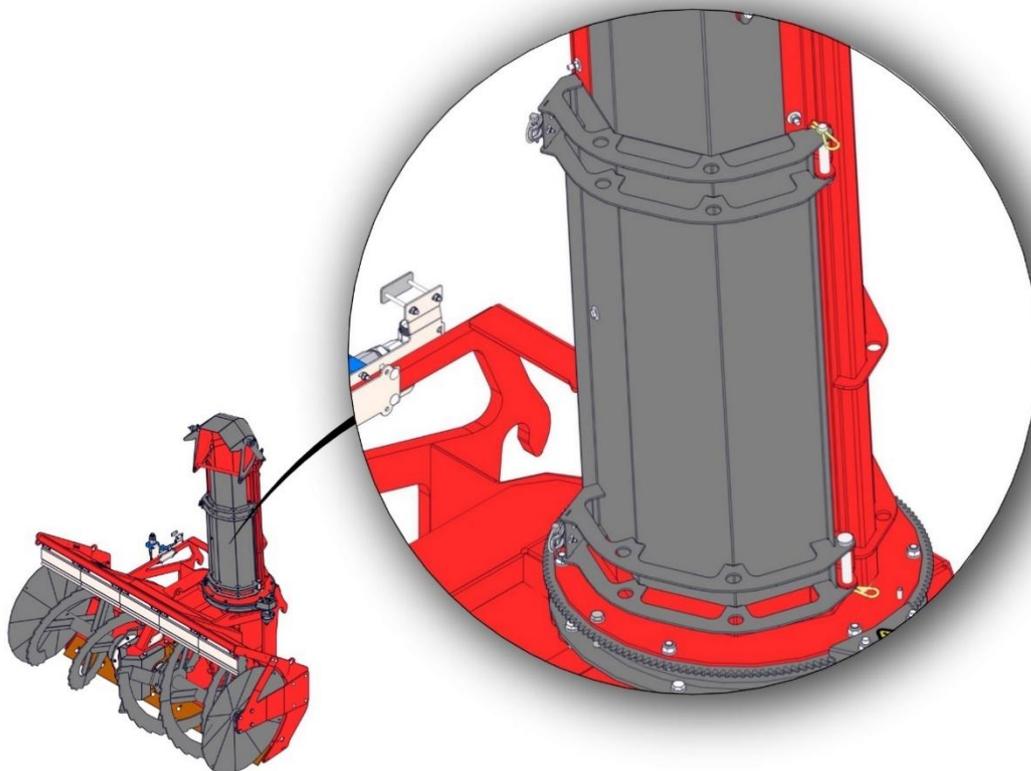
The machine is designed for mounting on wheel loaders. The snow blower has integrated attachment for Volvo BM (ISO 23727). Adapter Trima/SMS as an option.

4.1. Safety equipment

 The following safety equipment is found on the machine, **do not remove**.

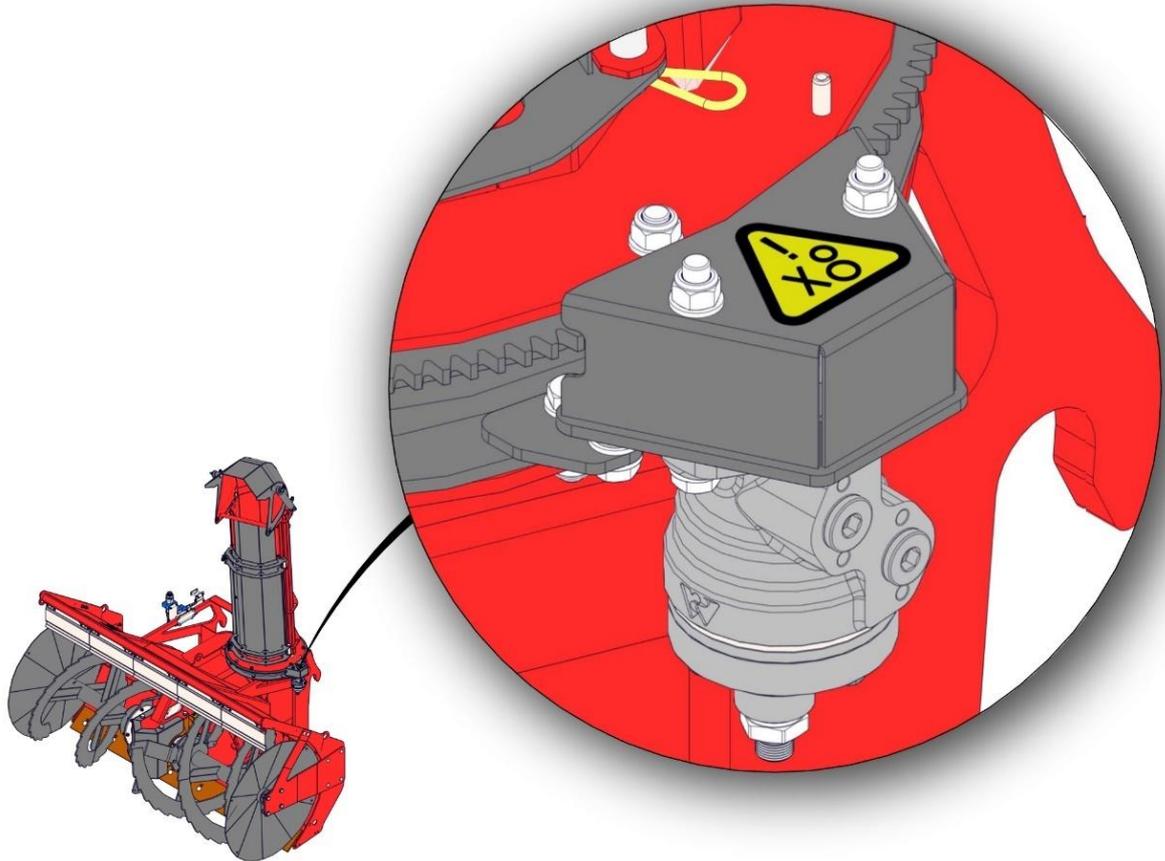
Chute guard. Prevents legs and arms from being inserted into the chute and impeller housing/impeller. The chute guard also protects against spilling. The hatch is opened similar to a hinged door.

When the snow blower is tilted backwards with the chute pointing left, the door will stay open by itself.



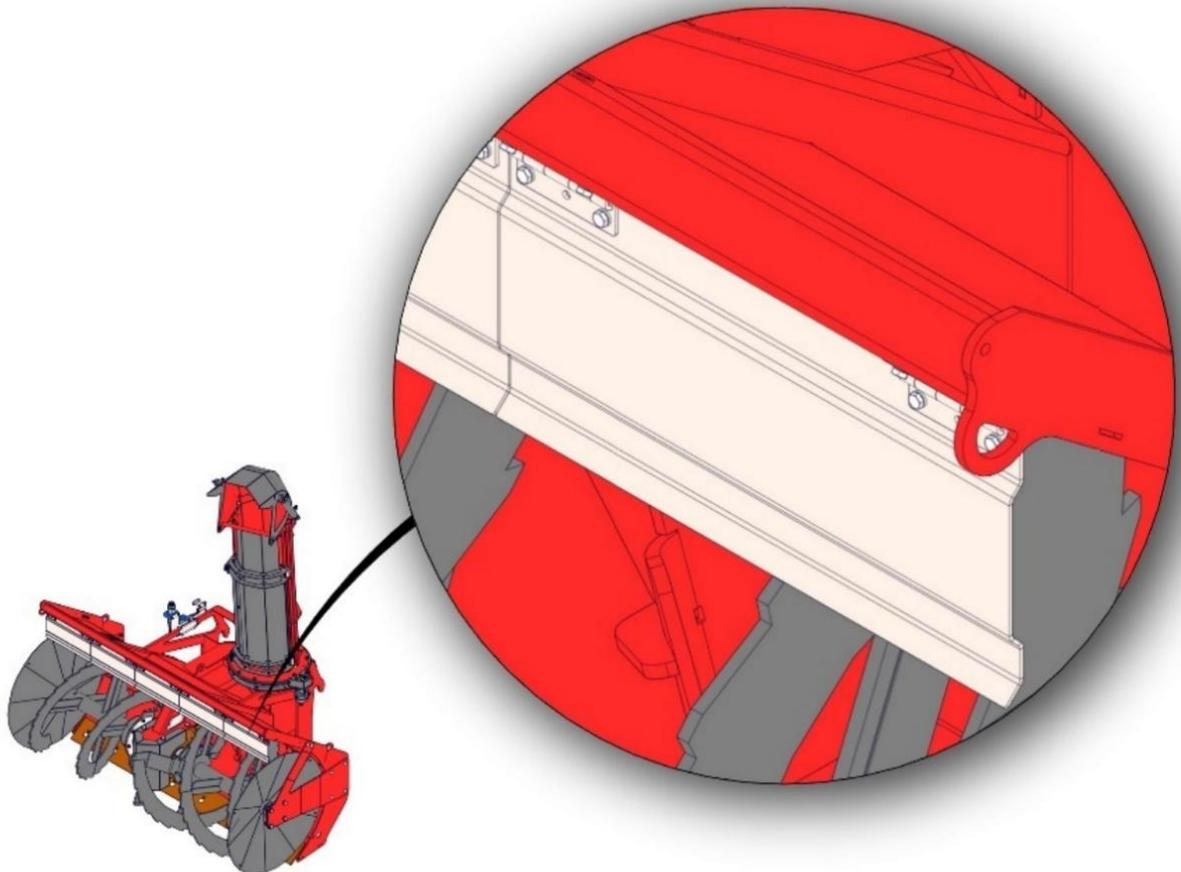
Slewing ring/motor cover

The cover prevents access to the hydraulic chute rotation when the machine is operating, and protects it against dust and gravel. In addition, the cover prevents splashing of possible oil leaks from the hydraulic motor.



Cover in front of the intake auger

The design and size of the auger can induce a risk of snow being thrown out in front of the machine.



The cover reacts like a splash protector. Take notice! There will still be some snow thrown out in front of the snow blower. Keep persons out of risk zone.

4.2. Standard equipment and available accessories

The table below gives an overview of what comes standard in most markets (S) and what is available as addition equipment (E).

For installation instructions, please see the manual. When ordering aftermarket parts, the manual is always enclosed.

Item	Short description	F240H Monster	F280H Monster
Snow cutters	Height 1,8m, left+right side	E	E
Curb deflectors	Left + right side	E	E
Oscillation frame	Makes the machine follow the underlying surface. Weight 261 kg.	E	E
Wheels	Foam-filled tires	E	E
Diverter valve for 2 or 3 functions	Used if the carrier is equipped with less double acting outlets than needed to operate the snow blower. Operated with included switch or switch(es) integrated in carrier.	E	E
Solenoid 24V	For carriers with 24V voltage system	E	E
Trima/SMS adapter	Mounting bracket for SMS. Increased length by 20 cm	E	E
Stepless adjustable slide shoes including wear plate for slide shoes.		S	S
Ice blades	Instead of standard wear blades.	E	E
Perforated wear blades	Instead of standard wear blades	E	E
Telescopic loading chute	Min/max height 315/415 cm	E	E
Casting chute	Height 256 cm measured from ground to deflector	E	E

5. Transport

The machine should always be parked on a flat, stable surface that can withstand the machine's load. For weight, see technical specifications.

Placing the machine on a pallet

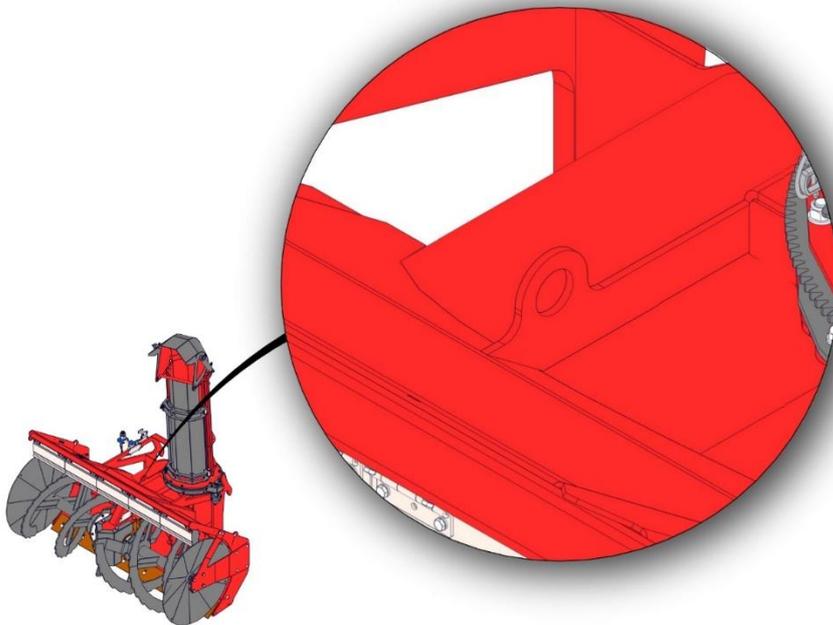
The pallet must be intact and designed to withstand the machine's weight.

Hoisting / transfers

Before hoisting, check that both the crane and the cable/sling have sufficient capacity to lift the load. The machine should only be lifted/moved using one of three options below:

1. Lifting the machine attached to a carrier's linkage.
2. Lifting the machine on pallets with a forklift or forks mounted on a loader.
3. Lifting the machine using slings etc.*

*When lifting the machine using straps or hooks, use the lifting eye shown below:



Take notice! Chute must NOT be pointing forwards when lifting.

Straps and hooks shall not be attached at other locations on the machine than described here.

Transporting at lorry / trailer

It is the driver's responsibility to ensure that the machine is strapped on in accordance with prevailing requirements of the transport equipment. Slings, ropes, or other means for securing the snow blower is not included at the delivery.

6. Connecting the machine to the carrier

 Nobody must stand between the machine and the carrier when connecting / disconnecting

 Crushing hazard! Nobody must stand between the machine and the carrier while the operator is seated in the carrier.

1. Mount the snow blower to the carrier's linkage.

 Crush danger! Do not expose yourself or others to any crush risk when connecting / disconnecting the machine to the carrier. Take extra care when sliding in bolts.

2. Assembly of hoses for hydraulic chute operation: Attach the hoses to the carrier's double-acting hydraulic outlet. Maximum pressure 200 bar.

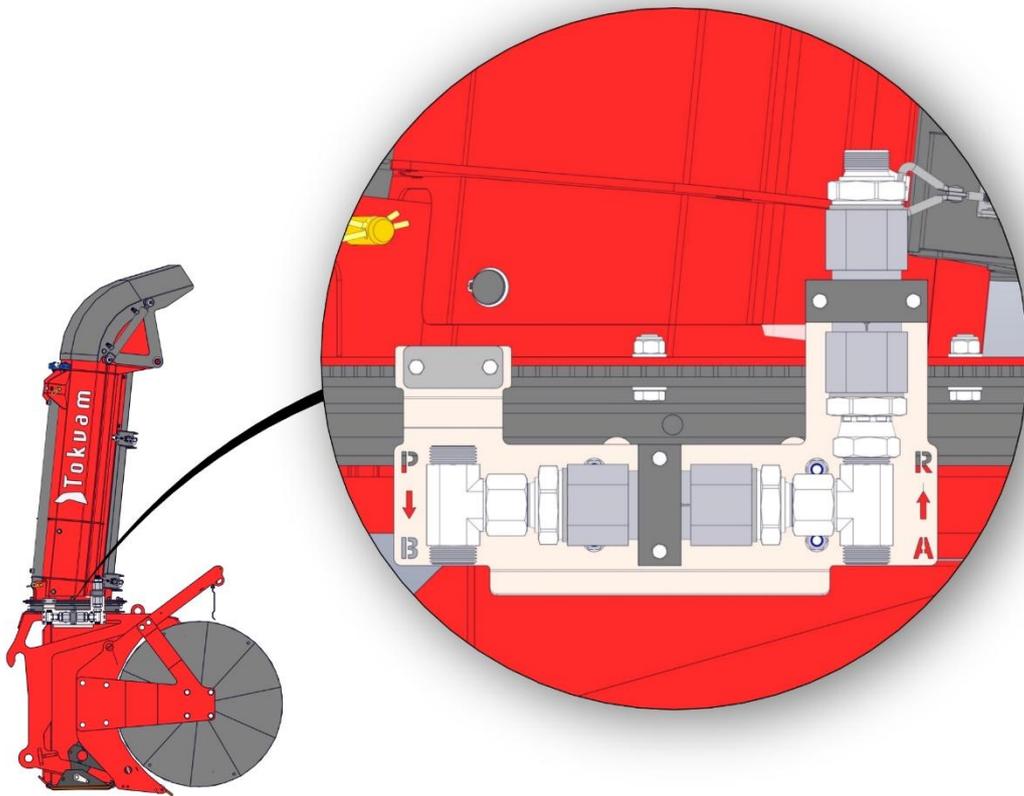
Quick couplings suitable for the carrier should be mounted.

Adjust oil flow until all movements are smooth and controllable, and sudden stops are avoided.

Ensure that all hydraulic couplings are free from leaks and all hoses are undamaged before activating the hydraulic system. Air in the hydraulic system can cause sudden and accidental movements of hydraulic functions. Get familiar with the manner of operation before operating the snow blower.

The chute has a 285-degree angular range.

3. Connect hoses for hydraulic operation.



Connect hoses to the hydraulic motor for operation of the snow blower

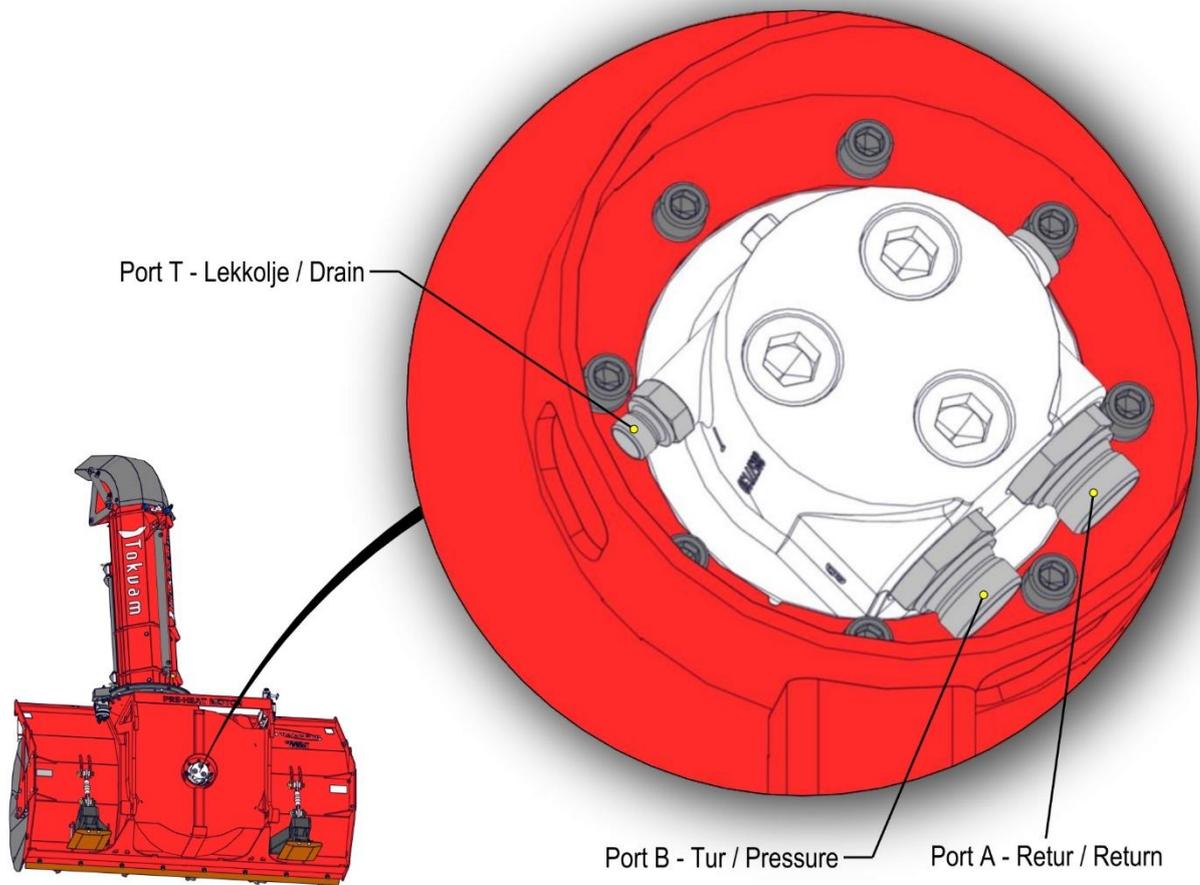
P = Pressure

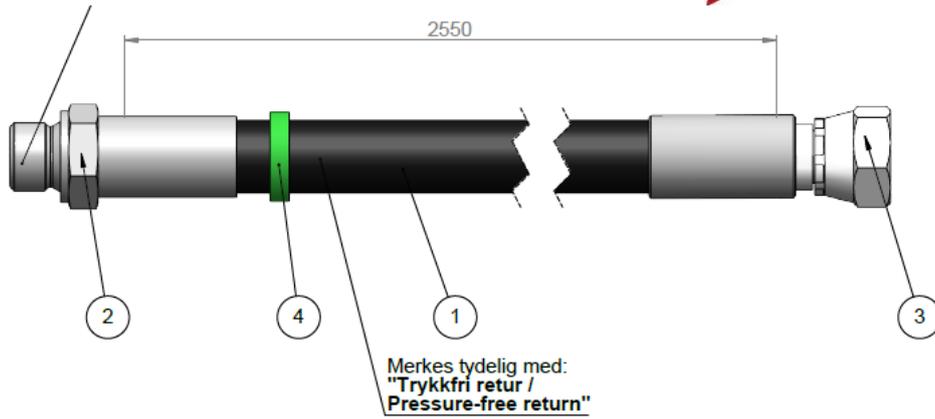
R = Return

IMPORTANT! Hose for drain / leak oil must be attached (directly to tank without quick coupling), see illustration below.

The hydraulic motor can withstand very little house pressure and therefore requires pressure-free drainage of leak-oil. It is the user's responsibility to ensure pressure-free drainage. The following is recommended:

- Leak oil should go directly to the tank. The drain line must not meet other lines, as it may create back pressure.
- It should be ensured that couplings or other transitions do not create resistance.
- Hose dimensions on the wheel loader must be at least the same dimension as those the snow blower is delivered with. When using long hoses, the dimension should be increased.



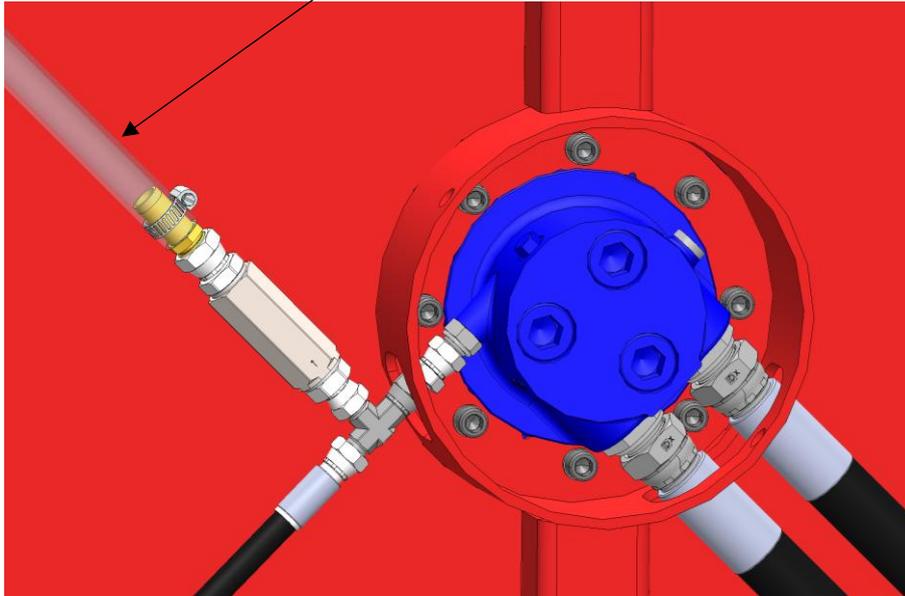


3/8" hose, marked with green strip

Safety Hose for Drain / Leak Oil

An additional line has been installed to indicate whether drainage to the tank is satisfactory. A 5-meter transparent hose is mounted here, which is recommended to be routed together with the other hoses to the carrier machine. It must be placed so that it is visible from the operator's position. If this hose begins to fill with oil, there is an issue with the connection of the leakage oil hose. This makes it possible to correct the problem before the hydraulic motor fails.

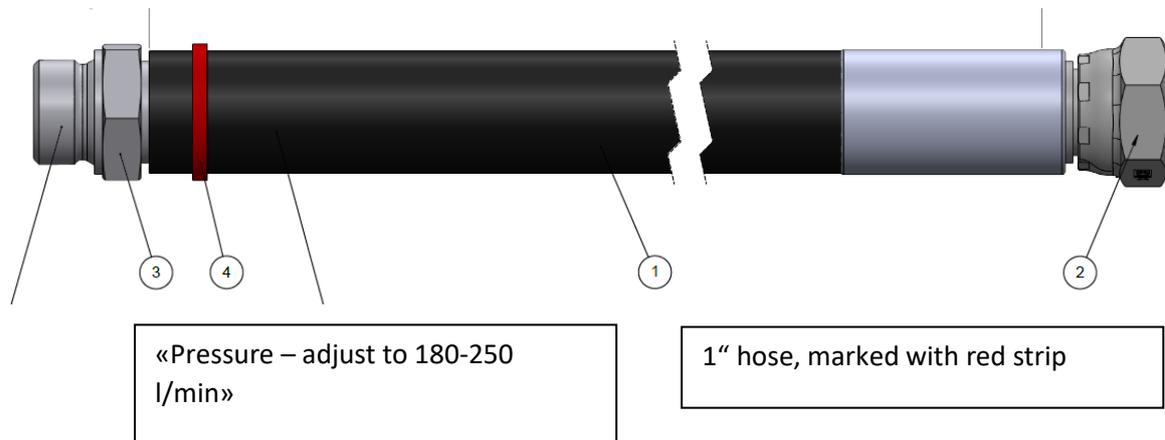
Safety hose for drain / leak oil



Recommended routing of the safety hose together with other hoses:



IMPORTANT! The hydraulic motor and its pressure hose must be filled with oil BEFORE starting the machine and operating the snow blower.



 Do not put hands or feet near rotating parts when operating the machine.

 Warning: fine jets of hydraulic fluids at high pressure, can penetrate the skin causing severe injury. If hydraulic fluid penetrates the skin or you get it in the eyes, get medical help immediately. Hydraulic oil can also cause allergic reactions. Immediately flush eyes with plenty of water / wash skin with soap and water.

For installation instructions for additional equipment, see part list (enclosed when purchasing the equipment). Additional equipment is principally not assembled if nothing else is arranged.

7. Operating the snow blower

 It is the operator's responsibility to protect himself and bystanders from injury or death.

Ensure that the snow blower is attached to an adequate carrier. See section 1, power requirements. Use beyond this is at your own risk.

Always remember to reduce carrier's engine rpm before starting and stopping hydraulic systems. Sudden stops and starts will cause unnecessary wear to the oil motor and driveline.

Make sure bearings are lubricated, and the gearbox is properly filled with oil when the machine is delivered from the factory. Remove excessive snow and ice from the fan housing before parking to ensure the fan is not stuck frozen

Remember that the snow blower's capacity determines the speed you can keep.

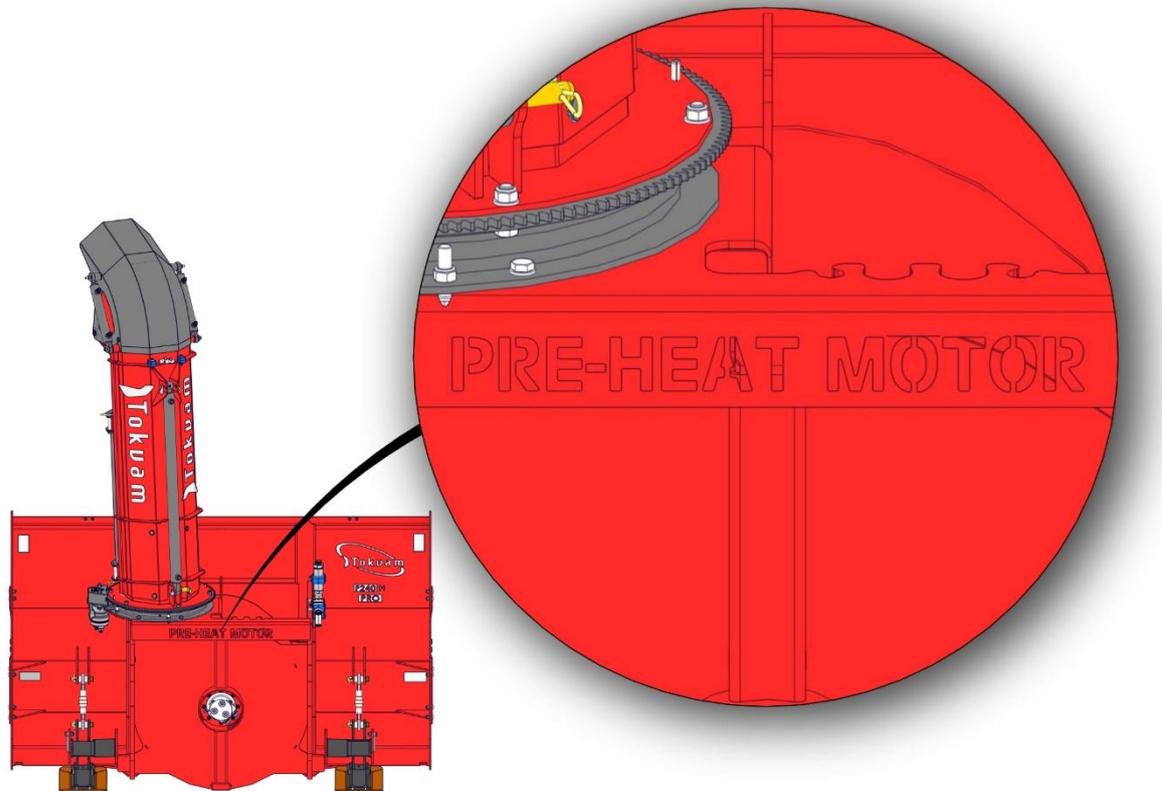
Do not drive at higher speeds than the maximum speed where the snow blower can operate properly.

If driving at higher speeds than the snow blower can efficiently cope with, the effective service life of the entire driveline will be significantly reduced, and furthermore result in poor fuel economy.

In order to avoid damage and unnecessary wear to the hydraulic system, the snow blower must be pre-heated for approx. one minute at low oil flow (rotating parts running without load) to slowly heat the hydraulic motor. At lower outside temperatures and/or cold engine/carrier it is recommended to extend the pre-heating time to at least two minutes.

Take extra precautions when a cold snow blower is connected to an already heated carrier.

The snow blower is clearly marked with the text “PRE-HEAT MOTOR” to remind the operator about this, in order to avoid unnecessary wear and damage.



7.1 Adjustments

The snow blower is equipped with stepless adjustable skid shoes. The skid shoes should be adjusted to correct height after the snow blower is connected to the carrier. Place the snow blower parallel with the ground on a flat surface. The weight of the snow blower should mainly rest on the skid shoes or wheels (optional equipment)

At the beginning of the season, we recommend tilting the snow blower slightly backwards to avoid stones, gravel, and other debris to get into the machine.

NB! Never tilt the snow blower too much forwards. It will result in excessive load on the driveline, and the auger might touch the ground.

The chute is adjusted to the preferred position using the carrier's hydraulics.

 Take notice! Crushing hazard. Keep bystanders out of working area when adjusting the chute.

The chute deflector is adjusted to desired direction by using the carrier's hydraulics.

7.2 Safety when operating the machine – IMPORTANT!

 **Never point the chute** against persons, animals, cars, buildings or other objects that might be damaged if it gets hit by snow, or possible debris such as ice, rocks, etc..).

 Stop the motor immediately if the auger or fan is blocked by snow or a foreign object. Take out the ignition key. Take the same precautions when servicing the machine.

 Never use hand or leg to open an internal blocking. Use appropriate tools (spade, iron bar, crow bar etc.).

 If an object is stuck in the fan or the intake auger, be aware they might be in tension. It is extremely high crush danger when loosening the object.

 Never go into the area between the snow blower and the carrier when the motor is running. Don't allow other personnel or animals to go into the area between the snow blower and the carrier when the motor is running. Take out the ignition key to prevent unintended start!

 **Crushing hazard:** Keep persons or animals at safe distance when lowering the Snow Blower

 Be aware; the Snow-blower can block the operator's vision directly in front of the Snow-blower.

 **NEVER** go under a lifted Snow Blower.

7.3 Disconnecting

Disconnect the machine this way.

 **Crushing hazard!** The snow blower could tip over if not placed on a flat and stable surface. Please note that the center of gravity will be moved when adapters/mounting brackets are used.

 No unauthorized persons should be between the snow blower and carrier when connecting or disconnecting the snow blower

 Due to crushing hazard no one should be between the snow blower and carrier while the carrier is being operated

 **Crushing hazard!** Pay attention when connecting or disconnecting the snow blower from the carrier, especially when fastening bolts.

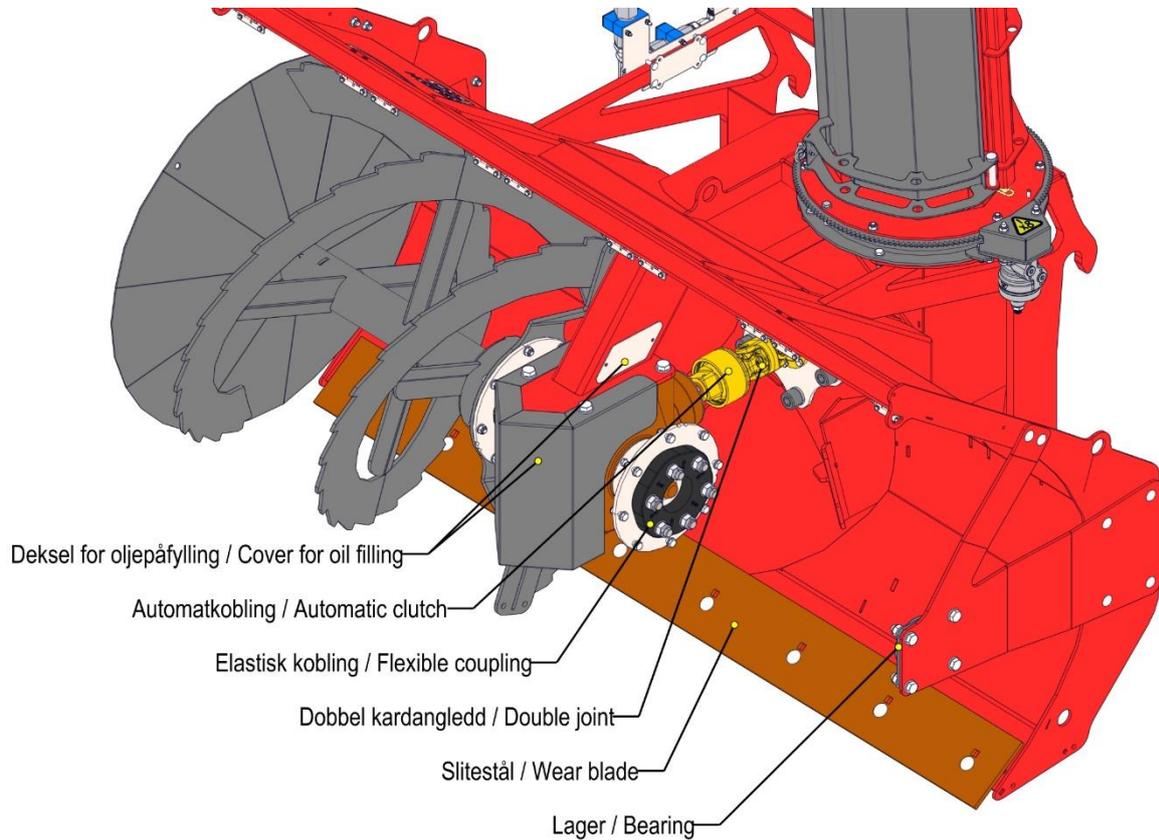
1. Park the machine on a flat, stable surface
2. Disconnect the hydraulic hoses from the carrier
3. Disconnect the linkage/quick coupling
4. Remove excessive snow and ice from the fan housing before parking to ensure the fan is not stuck frozen
5. Disconnecting is now completed

 **Leak oil hose must not be plugged or sealed!** This is important to avoid pressure build-up due to temperature changes in the hydraulic oil. This may lead to major damage on the hydraulic motor.

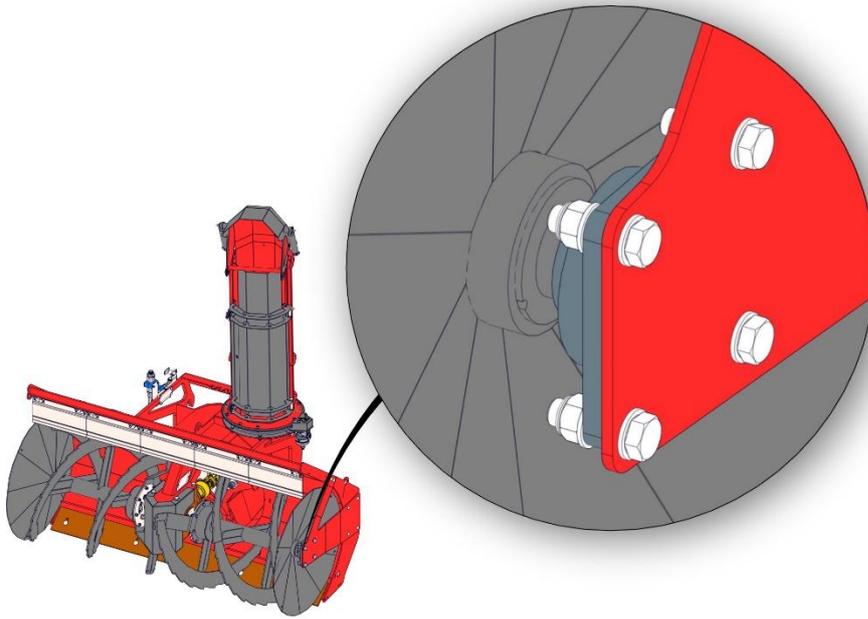
8. Service and maintenance

 Lower the machine to the ground, connect the parking brake on the carrier and remove the key from the ignition before service and maintenance is carried out.

Retighten all bolts after 10 operation hours. Lubricate all moving parts with grease/oil.



Bearings



Bearings are located at both ends of the augers.

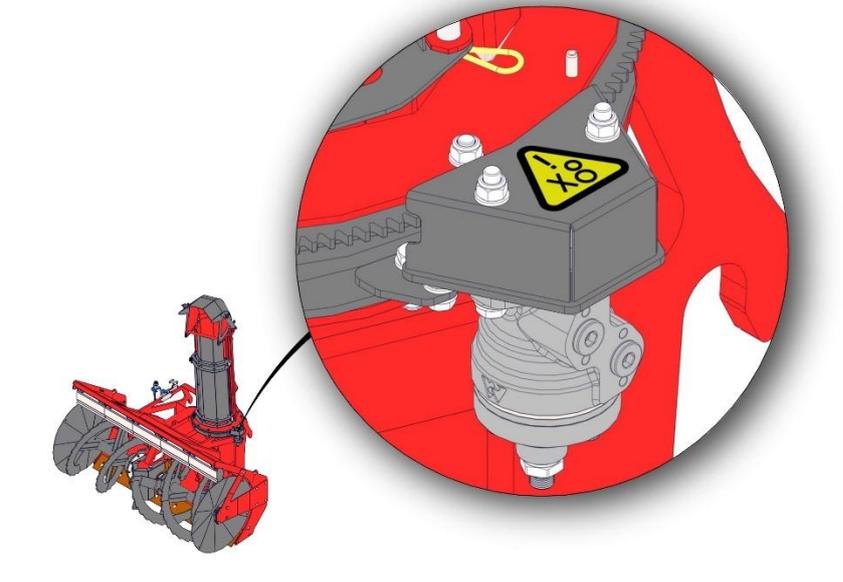
Lubricate bearings every 20 operating hours. Take care: if bearings are over-lubricated seals may be damaged.

Chute

Lubricate every 40 operating hours. Please see lubrication points in figure below (grey arrows), the lubrication points are located at the cylinder ends.



Slewing ring



The grease nipple at the slewing ring should be greased every 40 operating hours.

Rotate the chute to distribute the grease.

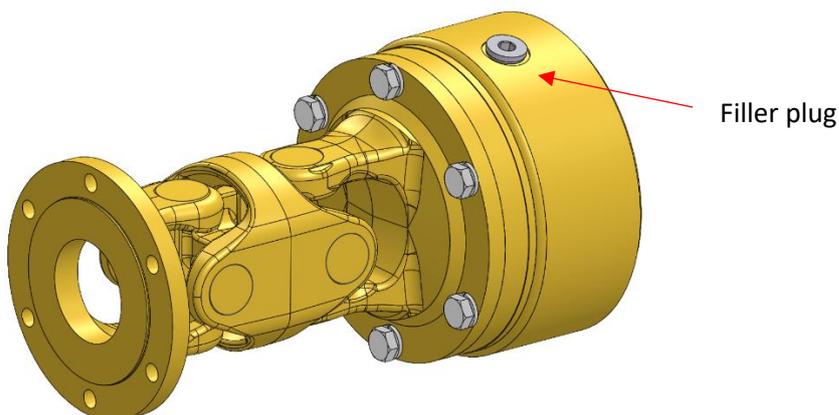
Note that the slewing ring is exposed to weather conditions. Use cold weather grease -40°C (depending on climatic zone)

Automatic coupling

The machine is equipped with an oil filled automatic safety coupling between the fan and auger.

Oil change is required by end of each season. The coupling is filled with 140 ml EP 85W90 oil.

It is very important that the coupling is filled with exactly 140 ml oil to ensure correct function of the coupling.



After season / by prolonged storage

 **Crushing hazard!** The snow blower could tip over if not placed on a flat and stable surface. Please note that the center of gravity will be moved when adapters/mounting brackets are used.

Annual inspection of machine to be implemented by the employer in accordance with the country's regulations (Norway: FOR 1998-06-26 nr 608).

Wash off any dirt or salt and lubricate properly before storage.

Replacing oil at gearbox:

The oil should be replaced after each season. The gears should be rotated every 6 months. Oil type grade 80-90 hydraulic oil or equal.

T-gear (located between the augers):
Oil capacity 10,7 liters

Check hydraulic hoses and couplings for leaks and damages.

Check the rubber elements in the elastic couplings for degradation after each season.

9. Decommissioning and scrapping

At the end of the lifetime the machine shall be scrapped according to national laws and regulations.

Any oil and other liquids / harmful objects remaining in the machine shall be disposed according to the country's applicable law.

10. Claims and warranties

Tokvam AS warrants that the goods purchased are free from defects in material or workmanship. The warranty is provided by applicable law.

Purchaser claims must be made to the Authorized Dealer from whom Purchaser purchased the goods within reasonable time after the Purchaser learns of the facts which the claim is based.

This limited warranty does not apply to any part of the goods which has been subjected to improper or abnormal use, negligence, alteration, modification, or accident (read this Manual)

The warranty does not apply to damage due to lack of maintenance mentioned in this Manual.

Normal wear and tear on the product and its components are not covered by the warranty.