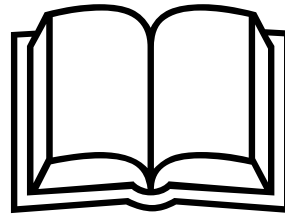


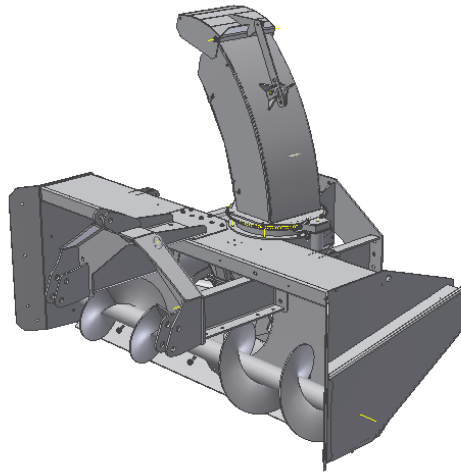
Users' Guide 241THS Flex



Read the Users' Guide prior
to utilisation of the machine!

Applies to the following models / from CE number:

241THS / 6413005




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 **NB!** Please read the safety instructions in the Users' Guide.

1. Technical Data 241THS Flex

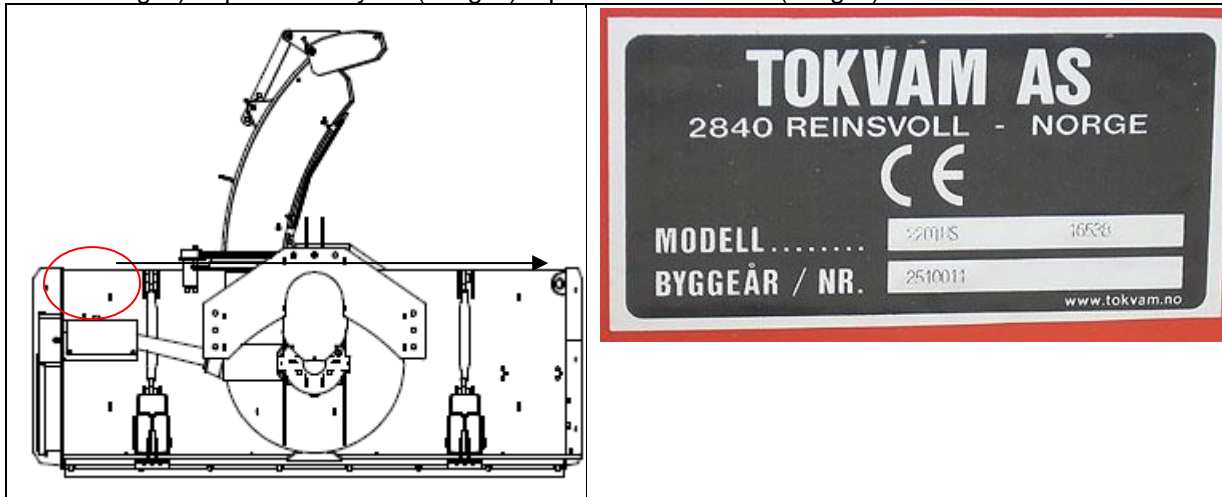
Working width:	240cm
Impeller diameter:	75cm
Impeller depth:	28cm
Intake auger:	44cm
Weight:	950kg
Power requirement:	70 – 110 HP
PTO:	540 rpm (rear-mount and for rear-pushing), max. torque 2,700 Nm. 1,000 rpm (front-mount), max. torque 1,400 Nm
Spline:	1 ¾"
Attachment:	Three-point

1.1. Machine label / CE marking

All machines carry a machine label. The machine label is fitted at the rear on the left-hand side of the snow-blower (see illustration below).

The following information is provided on the machine label:

- Model (machine type) + production order number
- Year built / number (serial number): The number is made up of the machine number (2 digits) + production year (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!
The rotating ring can be rotated/may rotate and fingers may be crushed between the engine and the rotating ring.



Lubrication point
This point requires regular lubrication. Read "Service and Maintenance" for more detailed information.

Read the Users' Guide carefully prior to utilisation of the machine!

Read the Users' Guide in detail before starting the machine and prior to preventive maintenance.

Get to know the equipment and read all the instructions. Store the Users' Guide so that it is easy to find during use of the machine.

NB! This Users' Guide has been published for all markets. Please note that extra equipment may therefore vary. Please ignore information on any equipment not found on your machine.

We make constant improvements to our products and therefore reserve the right to make changes and amendments as we see fit. Improvements and changes are not implemented on products (machines or extra equipment) that have already been delivered and are in use. We reserve the right to amend data and specifications for new machines without prior notice. The same applies to instructions for maintenance and other service initiatives.

3. Safety

- ⚠** The driver is responsible for ensuring that the tool is not utilised or handled wrongly.
- Make sure that tools have the correct dimensions for the relevant type of carrier (tractor). Factors of particular importance are power requirement, weight and working width. Any nonconformities in this area may result in a limited product warranty.
 - Children must not be allowed near the machine.
 - Never start the carrier unless all persons are at a safe distance from the machine.
 - In all events, make sure there are no persons nearby the machine when it is in operation.
 - Never allow persons to stand between the machine and its carrier when the machine has been fitted to the carrier. Unintended events may result in crushing injuries.
 - **Never** direct the snow spray towards persons, animals, vehicles, buildings or other objects that may be injured/damaged if hit by the snow spray or objects that may be part of the snow spray (ice, stones etc.).

Modifications, amendments and reconstructions which have not been approved by the manufacturer will result in limitations to the warranty or a void warranty. This also applies to the use of spare parts or extra equipment that have not been delivered or approved by the manufacturer. Tokvam AS cannot be held liable for personal injuries or damage to property which has occurred due to the above.

When ordering spare parts or extra equipment, please state the machine type and serial number.

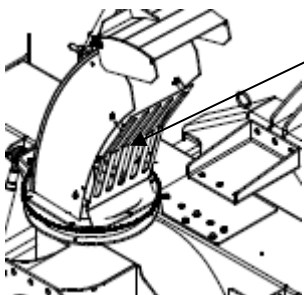
4. Product description

The machine has been designed to remove snow, and shall only be used for this purpose. The machine has not been designed to remove any other types of material, such as soil, gravel or sand.

The machine is designed for mechanical operation, i.e. with transmission from a carrier via a drive shaft.

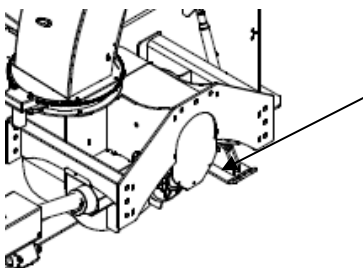
4.1. Safety equipment

- ⚠** The following safety equipment is provided with the machine and **utilisation is obligatory**:



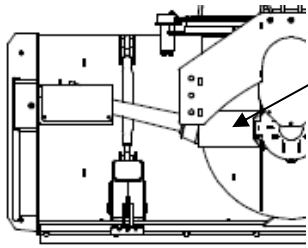
1. Chute protection/protective lattice
The chute protection prevents arms or legs getting caught in the chute and coming into contact with the impeller housing/impeller.

The chute protection is attached with 4 screws and blind rivet nuts.



2. Cover over PTO stubs, rear
The cover prevents access to the PTO stubs when they are not in use.

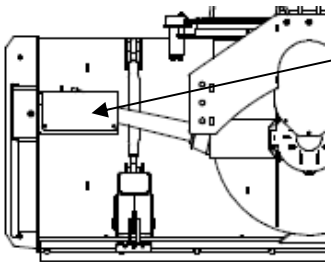
Pull the cover in place at the top edge and attach with 1 screw at the bottom edge.



3. Cover over inner shaft

The cover prevents access to rotating parts on the drive shaft for the intake auger.

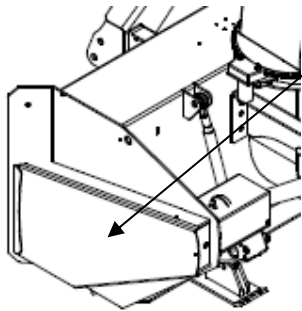
The cover is hinged and secured using a rubber strap.



4. Cover over protective device, rear

The cover prevents access to rotating parts on the drive shaft for the intake auger.

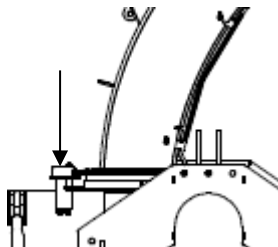
The cover is hinged and secured using a rubber strap.



5. Cover over chain on side

The cover prevents access to the chain and chain wheel when the machine is in operation, and protects the chain and chain wheel from dust and gravel.

The side cover is pushed into place and attached using the forward flap on the chain guard, then fitted using one screw at the rear edge.



6. Rotary ring engine cover

The cover prevents access to the rotating ring engine when the machine is in operation, and protects the rotary ring engine from dust and gravel. The cover also protects against splashes of hydraulic oil in the event of an engine leak.

The cover is attached using two screws with nuts fitted to the oil engine fittings on the machine.

Never use transmission with defective protective devices. Please also read the Users' Guide provided with the drive shaft or contact your dealer.

Shear bolt/safety screw
Ref. item 8.1.

4.2. Standard and available extra equipment

The table below provides an overview of the equipment supplied as standard on most markets (S) and extra optional equipment (E) per machine.

For fitting instructions for extra equipment, please refer to the Users' Guide which accompanies the extra equipment when delivered with the machine. If extra equipment is ordered after the machine order, the Users' Guide will be supplied with the extra equipment.

Equipment	Brief description	Standard/extra equipment
Hydraulic chute rotation	Oil engine and hoses.	S
Skid shoes	Set of 2 skid shoes	S
Hardox wear blade	Reversible and can be lowered. NB! Options on delivery: perforated blade or ice blade	S
Chute deflector flap	1 x chute deflector flap	S
Hydraulic chute deflector	Cylinder and hoses.	E
Extra chute deflector flap	Provides double chute deflector to improve control of snow.	E
Right side wing	Extra extension of 12cm.	E
Left side wing	Extra extension of 12cm.	E
Wear blade on side wing	Hardox	E
Hydraulic side wing on right	Provides effective extension of 250 mm, max. 350 mm.	E
Spring releaser (for three-point attachment)	For three-point attachment, for rear pull.	E
Wheels	Set of wheels, filled with fluid.	E
Loading chute	210cm high, compared to standard chute that is 90 cm high.	E
Wear blade on skid shoe	Hardox	E
Perforated wear blade	Instead of normal, smooth wear blade.	E
Ice blade	Instead of normal, smooth wear blade.	E
Drive shaft (PTO)	540 rpm (rear-mount and for rear-pushing) 1,000 rpm (front mount)	E
Chain tensioner	Automatic chain tensioner	E
Automatic torque limiter	The user does not have to replace the shear bolt.	E

5. Transport

The machine shall always be placed on a level, stable surface which can withstand the weight of the machine. Ref. technical data for the machine in question to find the weight of the machine.

If placing the machine on a pallet, the pallet must be intact and have the correct dimensions to withstand the total weight of the machine.

Lifting/moving

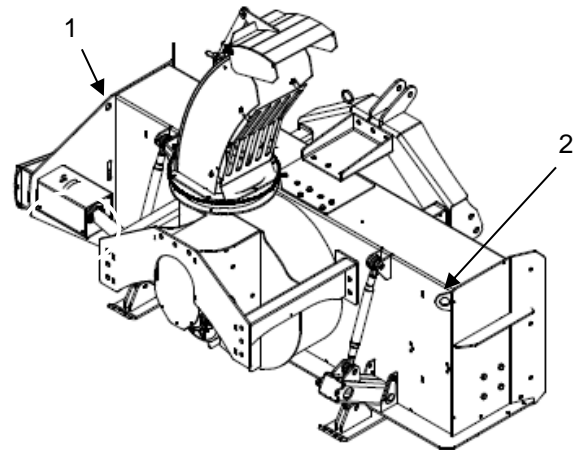
Always make sure that the tool utilised to lift the machine has the correct dimensions to lift the total weight of the machine.

The machine shall only be lifted/moved using one of the three alternatives described below.

1. Lifting the machine using a carrier with a three-point frame.
2. Lifting the machine on a pallet using the forks on a forklift truck or other carrier.
3. Lifting the machine using straps or similar*.

* If using straps or hooks to lift the machine, you must always use 2 lifting ears on the machine (1+2).

Straps and hooks shall not be attached to any other parts of the machine than those described here.



Transport by vehicle/on trailer

The transport company is responsible for ensuring that the machine is attached/strapped in accordance with the prevailing requirements for the method of transport in question. Straps, rope or other tools to attach the snow blower during transport are not supplied.

5.1. Fitting the chute

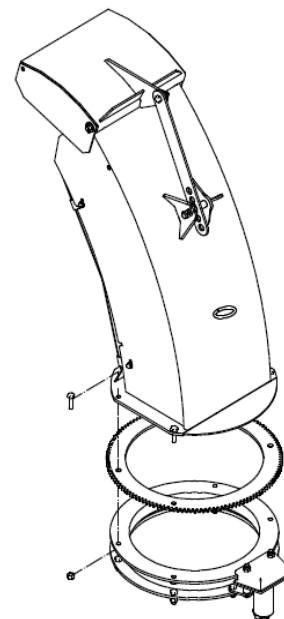
The chute is not always fitted when the snow blower is dispatched by the manufacturer. The chute shall be fitted **before** connecting the machine to the carrier.

1. Position the chute on the rotating ring together with the gear rim below. The rotating ring is fitted to the snow blower by the manufacturer.


If necessary, the chute can be lifted into position using a strap that is attached to the position where the bar for the chute deflector and chute deflector flap are joined (cylinder instead of bar if the chute deflector is hydraulic).


2. Attach using the screws provided (4 screws), rotate the chute manually to check that the chute rotates.

If your snow blower is fitted with a hydraulic chute deflector, pull the hoses through the ring that is welded to the puller at the front (together with the hoses for hydraulic rotation).




6. Connection to carrier

 Never allow any unauthorised persons to stand between the machine and carrier during connection/disconnection.


 Never allow any persons to stand between the machine and carrier when a person is seated in the driving seat in order to prevent crushing injuries.

1. The snow blower shall be attached to the tractor's three-point fitting. Check that the bolts are tight.

 Risk of crushing injuries! Never expose yourself or others to the risk of crushing injuries when you are connecting the snow blower to the tractor's three-point fitting. This applies to bolts for the pulling attachment and top bar.

2. Assembly of hoses for hydraulic rotation of chute: Fit the hoses in the tractor's double-action hydraulic outlet. You should make sure that all hydraulic connections are sealed and that all hoses are free of damage before activating the hydraulic system. Max. pressure is 175 bar. Air in the hydraulic system can cause sudden unexpected movements of the hydraulic functions. Make sure you are familiar with these functions before using the snow blower.


3. Check the drive shaft and make any adaptations required before initial use. Please also read the Users' Guide provided with the shaft or contact your dealer. The drive shaft is then fitted with the protective device facing the snow blower. If the drive shaft is too long, the bearings in the gear box and/or stubs on the tractor may break when the snow blower is lifted. Remember to attach the chains on the shaft to the tractor and snow blower. This is important in order to prevent the protective device on the shaft from following the shaft rotation. Check that the drive shaft can be rotated manually to ensure that there are no obstructions.

 Always make sure the engine on the carrier is turned off and the ignition key removed when fitting and removing the drive shaft.

NB! The drive shaft shall comply with the size and quality recommended by Tokvam AS.
Ref. item 1. Technical Data.


NB! Check to make sure the drive shaft is not in conflict with the intake auger by lifting the snow blower into its uppermost position on the steady-braces. This depends on the position of the PTO stub and lifting height on the tractor.

 Never place hands or feet in the machine once it has been connected to the carrier.

 High-pressure hydraulic jets may penetrate the skin and cause serious injury. Consult with a doctor immediately if hydraulic oil has penetrated the skin or if you have hydraulic oil in your eyes. Hydraulic oil can also cause allergic reactions. If you get hydraulic oil on your skin, it is essential to wash the area immediately.

For assembly of other equipment, refer to the spare parts lists for extra equipment with assembly guidelines, enclosed when such equipment is provided. In principle, any extra equipment provided by the manufacturer is supplied separately and must be fitted by the customer, unless otherwise agreed.

7. Operation of the machine

 The driver is responsible for ensuring the safety of him/herself and others during operation of the machine.

Please note that you must only use a snow blower that has been designed for the size of tractor in question. Ref. Item 1. Technical Data for power requirement. The customer is liable and responsible for any other use than the one described in this manual.

Remember always to lower the rotation speed before starting and stopping the drive shaft. If you suddenly stop power take-off, the shear bolt may break and you will cause unnecessary wear and tear to the drive line.

Bearings and chains are lubricated and the gear boxes filled with the correct volume of oil when the machine is delivered from the factory.

7.1. Adaptations to the snow blower


The snow blower can be adapted using the top bar attachment and levelling crank (not supplied with the machine) until the snow blower is level on the ground. The weight of the snow blower shall mainly be positioned on the skid shoes/wheels at the rear.

For initial use during the autumn, we recommend operating the snow blower with a slightly long top bar in order to avoid stones, gravel and other foreign objects.


NB! Never adjust the snow blower into a position which is too far forwards. This will result in excessive load on the drive shaft and front bearings. We therefore do not recommend a hydraulic top bar.

The rear skid shoe is moved into the required position by screwing the bars until the snow blower is positioned as required.

The chute deflector flap on the chute is adjusted into the required position using the manual bar or tractor's hydraulic system.

 NB! Risk of crushing injuries. Make sure no unauthorised persons are nearby when adjusting the chute.

The discharging chute is adjusted to the correct side using the tractor's hydraulic system.

 Never try to move the chute round when there are persons close by.

7.2. Front-mount and rear-mount

Rear-mount

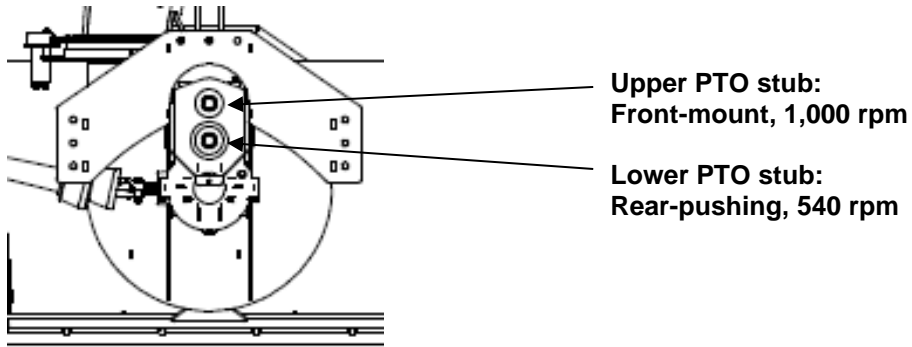
1. Park the snow blower on a level surface.
2. The upper and lower puller canals are attached to the body using three screws each.
3. The puller is attached using nine screws in the canals. All screws are tightened to 425 Nm.
4. Check the screws after 1 hour of use.

PTO speed for rear-mount shall be 540 rpm

NB! The cover for the rear PTO stubs shall always be fitted when the snow blower is used as rear-mount.

Front-mount/rear-pushing

1. Park the snow blower on a level surface.
2. Unscrew the upper and lower puller canals from the body and remove the cover over the PTO stubs.
3. The puller is attached using nine screws at the rear of the snow blower. All screws are tightened to 425 Nm.
4. Check the screws after 1 hour of use.



NB! There is a separate PTO drive for front-mount.

7.3. Safety during use – IMPORTANT!

! Never direct the snow spray towards persons, animals, vehicles, buildings or other objects that may be injured/damaged if hit by the snow spray or objects that may be part of the snow spray (ice, stones etc.).

! If it is necessary to remove stuck snow in the discharging chute or for other service work, the tractor shall always be stopped and the ignition key removed before carrying out such work.

! Never use your hands or legs for staking. Use proper tools for staking (a spade or crowbar etc.). If you do not already have suitable tools in/on your tractor, we recommend that you purchase such tools before you start to clear snow.

! If an object gets stuck in the chute impeller, please note that there may be tension in the impeller resulting in an extreme risk of crushing/impact when the object comes loose.

! Never walk between the tractor and the snow blower when the transmission drive shaft is in operation. You must also prevent other persons or animals from walking between the tractor and snow blower, unless the tractor has been stopped and the ignition key removed.

! For reversing the carrier with machine fitted, please be aware of the risk of crushing injuries. The snow blower may reduce visibility. Never reverse towards persons on the ground.

! Never place the snow blower on the ground/surface if persons or animals are in immediate proximity, due to the risk of crushing injuries.

! Never walk under the snow blower when it is suspended on the tractor's hydraulics.

! When in transport position, the snow blower may cover the lights on the carrier if lifted too high.

7.4. Disconnection

Disconnect the machine as follows:

1. Place the machine on a level, stable surface.
2. Disconnect the hydraulic hoses from the carrier.
3. Disconnect the transmission drive shaft.
4. Remove the bolts on the top bar and steady-braces. Remember to keep these for subsequent use.
5. The machine is now disconnected and can be left in this position.

8. Service and maintenance

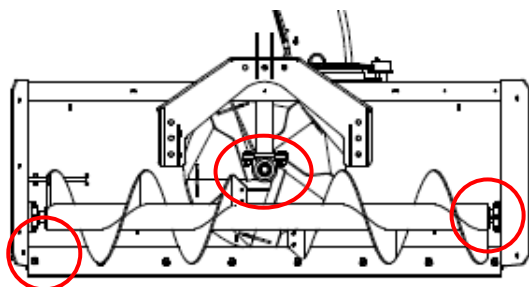
! The machine shall be placed on the ground, then activate the parking brake on the tractor, turn off the engine and remove the ignition key before carrying out service and maintenance.

Tighten all screws after the first 10 hours of operation. At the same time, lubricate all moving parts with grease/oil.

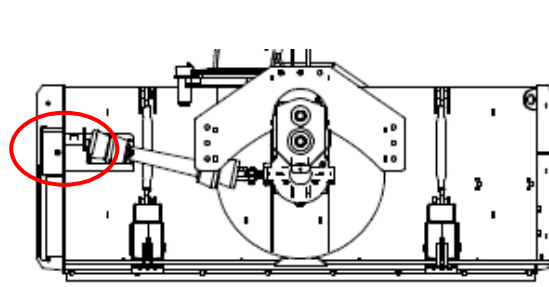
Bearings

There are bearings on the front side of the impeller shaft, at each end of the intake auger and two bearings on the drive line on the left-hand side on the rear of the snow blower.

Snow blower from front



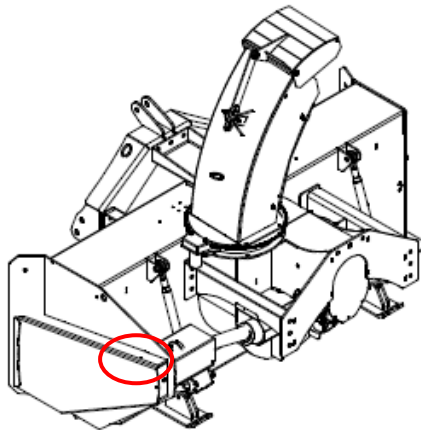
Snow blower from rear



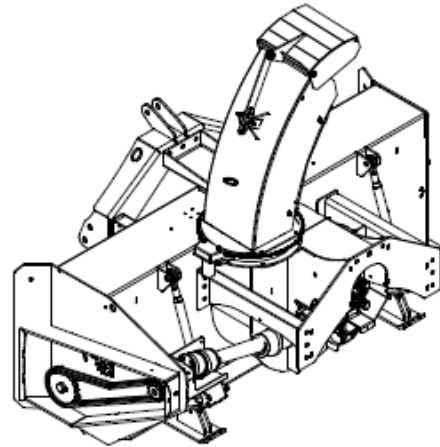
The bearings require lubrication after every 40 hours of operation. Carefully apply the lubricant in order to avoid ruining the seals on the bearings.

Chain

The chain on the side requires lubrication after every 10 hours of operation.



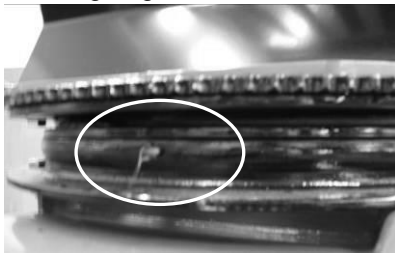
The lubrication hole is positioned at the top of the chain guard on the side.



To remove the chain cover, see item 4.1 Safety equipment.

The chains on the snow blower must be checked and tightened as required. The chains shall have a slack of 1.5 to 2 cm when you press down in the middle of the chain.

Rotating ring

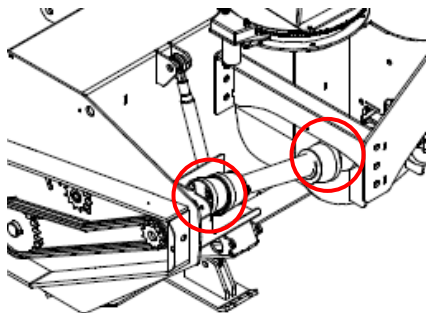


The rotating ring for the discharging chute has a lubrication point that requires lubrication after every 40 hours of operation.

The chute should be lubricated in different positions to ensure even distribution of the lubricant.

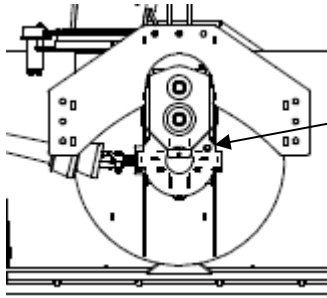
Please note that the rotating ring has a lot of exposure to weather and wind. The lubricant you use should withstand temperatures as low as -40 °C

Drive shaft



The drive shaft at the rear of the snow blower should be lubricated after every 10 hours of operation (at the same time as the chains).

Gear box

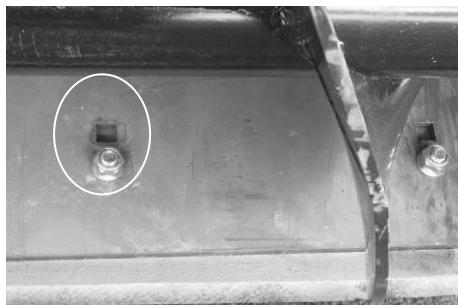


Also check the oil level on the gear box when you lubricate the bearings (after every 40 hours).

Unscrew the level plug to fill oil.

Refill if necessary with EP 90 gear oil or similar.

Wear blade



The wear blades have double sets of holes and can be lowered and then turned round.

Attach the wear blades using 16 x 45 mm screws with the correct nuts.

NB! It is important to closely monitor wear and tear on the wear blades. If the wear blades are not replaced in time, the screws and fittings will be severely damaged.


Drive shaft


Lubricate the drive shaft in accordance with the Users' Guide provided with the drive shaft.

8.1. Shear bolt/safety screw

The shear bolt/safety screw for the intake auger is under the cover on the left-hand side at the rear of the snow blower.

The shear bolt is a safety device to prevent damage to the machine caused by unexpected objects in the machine, for example large stones or other objects hidden in the snow. The shear bolt will break in the event of excessive resistance on the drive shaft. The intake auger will stop rotating.

 Place the machine on the ground, turn off the ignition and remove the ignition key before removing the object and replacing the shear bolt.

 Please note that there may be tension in the elements that can result in the risk of crushing injuries/impact.

The dimension of the shear bolt is defined according to the size of the snow blower. The use of a shear bolt with incorrect dimension or quality may result in limitations to the warranty or a void warranty.

Shear bolt dimension
Screw 8 x 45 with lock nuts, 8.8 quality

For shear bolt for the drive shaft, refer to the Users' Guide provided with the drive shaft or contact your dealer.

8.2. When the season ends / for long-term storage

Annual inspection of the machine shall be carried out by the employer in accordance with Regulation relating to use of working equipment (FOR 1998-06-26 no. 608).

The product shall be carefully cleaned and lubricated before storage.

The oil in the gear box should be replaced after every season. Oil volume is 4 litres. Use EP 90 gear oil or similar. Ref. item on the gear box above for removal of cover and control of oil level.

The gears should not be left inactive for more than 6 months.

Inspect hydraulic hoses and connections for leaks and cracks.

9. Scrapping

Once the machine has reached the end of its lifetime, it shall be scrapped in accordance with the prevailing legislation and regulations in the country where the machine has been used.

If there are oil products in the machine, these shall be removed and disposed of in accordance with the prevailing legislation and regulations in the country where the machine has been used.

10. Complaints and warranties

Tokvam AS guarantees that the product is delivered from the factory without faults or defects. A warranty is issued in accordance with prevailing legislation.

The customer must notify the seller of any complaints within reasonable time after he/she has detected or should have detected any defects.

The warranty does not cover any faults or defects caused by the product being exposed to overload or any other form of careless use (ref. this Users' Guide).

The warranty does not cover faults or defects caused by lack of maintenance (ref. this Users' Guide).

The warranty does not cover normal wear and tear to the product and its components.