

# User's Manual

## F130THS / F150THS / F180THS / F200THS Pro / F220THS Pro

## F130H / F150H / F180H / F200H Pro / F160H Pro / F220H Pro



Read and understand this manual  
before operating the equipment!

Applies the following models / from CE number:

F130THS / F130H	/	5412011	->
F150THS / F150H	/	4312025	->
F180THS / F180H	/	4612015	->
F160THS Pro / F160H Pro	/	5612002	->
F200THS Pro / F200H Pro	/	4812015	->
F220THS Pro / F220H Pro	/	6312004	->



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SAMSVARERKLÆRING  
DECLARATION OF CONFIRMITY

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Vi erklærer herved at følgende produkt:  
We hereby declare that the following products:

Snøfresere,	Modell:	Serienummer:
	F130THS / F130H	/ 5412011 ->
	F150THS / F150H	/ 4312025 ->
	F180THS / F180H	/ 4612015 ->
	F160THS Pro / F160H Pro	/ 5612002 ->
	F200THS Pro / F200H Pro	/ 4812015 ->
	F220THS Pro / F220H Pro	/ 6312004 ->
	F130THS / F130H	/ 5412011 ->

som er omfattet av denne erklæringen, er i overensstemmelse med følgende standard eller andre normative dokumenter:

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

I henhold til bestemmelsene i direktiv:

- **2006/42/EF**

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 **ATTENTION! Note safety instructions in the manual.**

# 1. Specifications

	F130THS/H	F150THS/H	F180THS/H	160THS/H	F200THS/H	F220THS/H
Working width:	130 cm	150 cm	180 cm	160 cm	200 cm	220 cm
Impeller diameter:	42 cm			55 cm		
Intake auger:	50 cm			65 cm		
Weight:	240 kg	260 kg	280 kg	460 kg	500 kg	570 kg
Linkage (coupler system)	Optional (extras)					

## **Mechanical drive, THS:**

	<b>F130/150/180THS</b>	<b>F160/200/220THS</b>
Power requirement:	20 - 45hp	45 - 70hp
PTO*:	540-, 1000- <b>or</b> 2000rpm. Use PTO-shaft, Class 2, maximum torque 950Nm	540-, 1000- <b>or</b> 2000rpm. Use PTO-shaft, Class 4, maximum torque 1700nm
Splines:	1 3/8"	

\* The snow-blower is designed for PTO speeds 540-, 1000- **or** 2000rpm. Please contact your local dealer for custom-built options. No modifications of any kind are to be made without prior authorization from the manufacturer.

## **Hydraulic drive; model H:**

	<b>F130/150/180H</b>	<b>F160/200/220H</b>
<b>Required oil flow:</b>	80ccm motor: 55-75 l/min – 180 bar  125ccm motor: 55-75 l/min – 205 bar	125ccm motor: 100-125 l/min, 190–350 bar. 160ccm motor: 125-150 l/min, 190–350 bar. 125ccm motor: 150-180 l/min, 190–350 bar.

	<b>Max. continuous pressure</b>	<b>Max. continuous oil flow</b>
<b>F130/150/180H</b>	180 bar (80ccm) 205 bar (125ccm)	75 L/min
<b>F200H/220H</b>	400 bar	180 L/min

### 1.1.

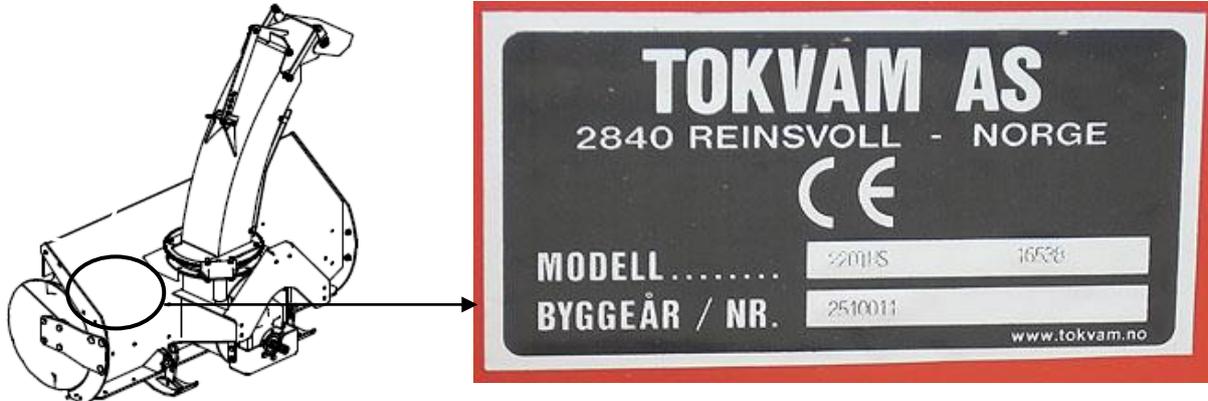
## 1.2. Machine identification plate / CE marking

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

The plate contains the following information:

Model + production number

Year / no. (serial number): Explanation of the number: Machine number (2 digits) + year of production (2 digits) + production number (3 digits).



## 2. Safety labels – Signal words

READ, UNDERSTAND, and FOLLOW the Safety Messages shown in this Manual.



Keep distance!  
Rotating parts. Crush Danger.  
Never allow anyone to be around the equipment when it is operating.



Crush Danger!  
Stay clear of hydraulic chute rotation drives - crush danger!



Lubrication points  
Lubricate regularly. See "Service and Maintenance" for further information.

### Read and understand this manual before operating the equipment!

Read manual prior to installation, operation or 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.

ATTENTION! This manual has been published for worldwide circulation. The optional equipment may vary from one country to the next. Therefore, please disregard the equipment that is not on your machine.

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 recommendation set forth in this manual.

### 3. Safety

-  It is the driver's responsibility to ensure that the vehicle is not used or handled incorrectly.
-  Ensure the carrier has the capacity to handle the weight of the snow blower. Especially important is the power requirement, weight and working width. Disagreement may lead to reduction of the warranty.
  -  Never allow children to play on or around carrier or implement.
  -  Don't start the carrier until all persons are at a safe distance from the machine.
  -  No one must stand or pass nearby the snow blowers working area.
  -  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 expressly authorized by TOKVAM AS. This also applies to the use of spare parts or accessories not supplied by or approved by the manufacturer. Tokvam AS replaces nor 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 or sand.

Designed for mounting on front end loader, Skid Steer Loaders etc. Different mounting brackets as an option.

### 4.1. Safety equipment

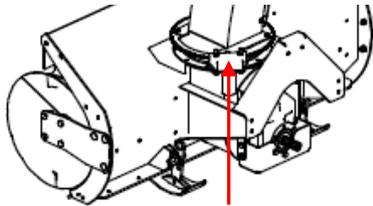
 The following safety equipment found on the machine; **do not take it off**:



#### 1. Chute guard / protecting lattice

The chute guard prevents the legs or arms to be inserted into the chute and impeller housing / impeller.

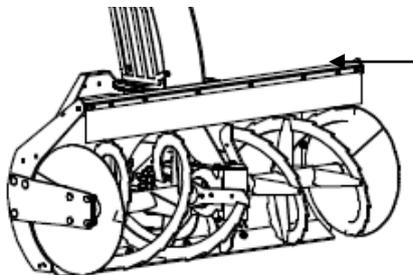
The chute guard is attached with 4 screws and rivet nuts.



#### 2. 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.

The cover is attached to the hydraulic motor bracket by means of two nuts.



#### 3. Rubber in front of the Intake Auger

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

The rubber is fixed with mounting rail and 8 screws and nuts.

*Versions with mechanical drive:* Ensure the protective device at the PTO-shaft always is on and without any damage or defects. See also the manual that comes with PTO-shaft, or contact your dealer.

Shear bolt  
See section 8.1.

## 4.2. Standard and available accessories

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

For installation instructions for additional equipment, see the manual (if the additional equipment is purchased as a part of the snow blower). When follow-up-order additional equipment; the user manual is enclosed.

Item	Short description	F130 THS/ H	F150 THS/H	F180 THS/H	F200/220 THS/H
		S / E	S / E	S / E	S / E
<b>Hydraulic Chute Rotation</b>	Hydraulic motor and hoses.	S	S	S	S
<b>Skid shoe</b>	Set of 2 pieces of skid shoes	S	S	S	S
<b>Hardox wear blade</b>		S	S	S	S
<b>Chute Deflector</b>	1 piece Chute Deflector	S	S	S	S
<b>Additional Chute Deflector</b>	Provides better management of the throwing process.	S	S	S	S
<b>Hydraulic Chute Deflector</b>	Cylinder and hoses.	E	E	E	E
<b>Hydraulic single chute deflector, for tractors with only one double-acting spool valve.</b>	Enables operating the chute rotator and the chute deflector from one and the same spool valve.	E	E	E	E
<b>Side wings</b>	For cutting and shaping.	E	E	E	E
<b>Wheels</b>	2 pcs inflated tires.	E	E	E	E
<b>Linkage (mounting bracket)</b>	Different mounting brackets depending on type of carrier. Interchangeable brackets, mounted with bolts.	E	E	E	E

Mechanical drive, THS:

<b>PTO shaft</b>	F150/180THS: PTO-shaft strength class 2 F200THS: PTO-shaft strength class 4	E	E	E	E
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Hydraulic drive, model H:

<b>EI-hydraulic unit</b>	For operating chute rotator and chute deflector when carrier only has one spool valve.	E	E	E	E
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## 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

By placing the machine on a pallet, the pallet must be intact and designed to withstand the machine's total weight.

### Hoisting / Transfers

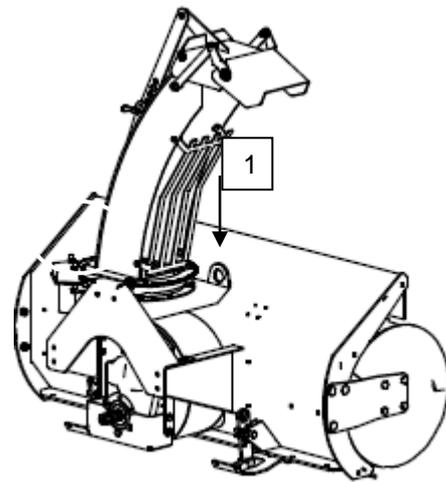
Before hoisting, check that both the crane and the cable / sling have sufficient capacity to lift the load. Machine should only be lifted / moved by using one of the three options below.

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

\* When lifting machine using straps or hooks; use the lifting eye (1).

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

Slings 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, rope or other means for securing the snow blower is not included at the delivery.

## 6. Connecting the Snow Blower to the Carrier

 Nobody must stand between the Snow Blower and the Carrier when connecting / disconnecting.

 Nobody must stand between the Snow Blower and the Carrier while the operator is seated in the Carrier.

1. Mount the Snow-blower at the Carrier's quick coupler or 3.-point linkage. Make sure that all bolts are secure.

Take Notice! We strongly recommend mechanic top linkage when working on sensitive surfaces such as artificial turf, loose gravel roads etc.

 Crush Danger! Do not expose yourself or others for any crush risk when connecting / disconnecting the machine, especially if using fixing bolts.

2. Assembly of hoses for hydraulic chute rotation: Attach the hoses in the Carrier's double-acting hydraulic outlet. Max pressure 175 bar.

Make sure all hydraulic connections are tight and that all hoses are undamaged before you activate 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 can be rotated 235 degrees.

Mechanical drive, THS:

**3a. Assembling the PTO-shaft**

 Lower the machine to the ground, apply the parking brake on the carrier and remove the key from the ignition before assembling the PTO-shaft.

Ensure the closed and extended length of the guard and the drive shaft are right for the tractor and machine. **IMPORTANT** – always refer to the manufacturer's fitting, operating and maintenance instructions. Assemble then the PTO-shaft and the fitting guards to the tractors PTO-output and the snow-blowers PTO-input. If the PTO-shaft is too long it will result in serious damage on PTO-shaft, the tractors PTO-output- and/or snow-blowers PTO-input shaft.

Remember to connect the restraining chain to the tractor and the snow-blower. This will prevent the guard rotating with the shaft. Rotate the PTO-shaft by hand to check its function. Be aware of possible conflicts with other objects. Lift and the lower the machine to check out the movement before operating. Consider the shaft's vertical and lateral movements during work.

Take Notice! The size and the grade of the PTO-shaft shall be in accordance with recommendations given by Tokvam AS:

F150/180THS: Strength class 2, max. torque shear bolt: 950nm.

F200THS: Strength class 4, max. torque shear bolt: 1700nm

Hydraulic drive, model H:

**3b. Assembly of hydraulic hoses for operation of the Snow Blower:**

Attach hoses for main operation and drain oil.

**Important! Drain oil hose must always be used.** (Direct to tank without quick coupling)

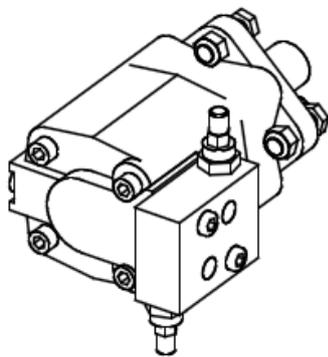
**IMPORTANT! Oil motor for hydraulic drive snow blower and its pressure hose must be filled with oil before startup!**

Pressure hose is marked red.

The machine has a one-way valve on the return hose to prevent wrong rotation.

F130 / F150 / F180

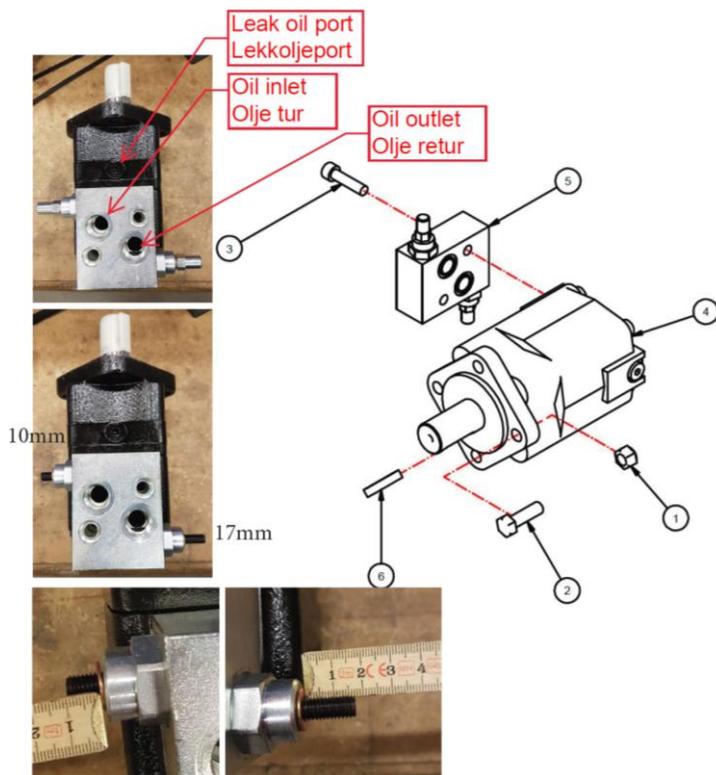
1. Hoses for main operation minimum 3/4" hose (1/2" connection)
2. Hose for Drain oil minimum 3/8" (3/8" connection)



Old version



new version



F160H Proff / F200H / F220H

1. Hose for drain oil 3/8" (125ccm M18x1,5 connection, 160-180ccm M22x1,5 connection)
2. Hoses for main operation minimum 1" hose (SAE J518 1-1/4" connection)



	Max. continuous pressure	Max. continuous oil flow
<b>F130/150/180H</b>	210 bar	80 L/min
<b>F200H</b>	380 bar	Varies

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

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 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 the attached manual. 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 the snow-blower is attached to an adequate carrier. See section 1. Specifications; Power requirement. The use beyond this is at your own risk.

**Always remember to reduce rpm before start / stop PTO (THS) or hydraulic drive (H). "Sudden stop" of snow blower will cause breaking shear bolt and unnecessary wear on the driveline.**

Bearings and chains are lubricated and the gearbox(es) is properly filled with oil when the machine is delivered from the factory.

Adapt the forward speed according to the snow-blower's size and capacity. Do not drive faster than the snow-blower can handle. Prolonged overloading will reduce the driveline's lifetime and increase the fuel consumption.

### 7.1. Adjustments

The snow-blower is attached with adjustable skid shoes at the rear. Adjust the skid shoes to desired height before operating. Make a final adjustment by means of the top link to ensure the snow-blower is leveled to the ground. Most of the weight shall primarily rest on the skid shoes (or wheels as an option).

Initial operating at loose gravel roads etc.: Retract the top link to lift the front of the snow-blower to avoid stones etc. to get into the fan

Take Notice! Do not extract the top link to much. This will give a sharp angle which in turn will overload the PTO-shaft and cause the fan to touch the ground. For ordinary use we do not recommend hydraulic top link.

The chute is adjusted to desired direction by using Carrier's hydraulics.

 Never attempt to rotate the chute if there are bystanders in the working area.

Adjust the chute deflector to the desired position, using the manual rod. If equipped with a hydraulic cylinder it is operated from the Carrier.

 Take Notice! Crush Danger. Keep bystanders out of working area when adjusting the chute!

### 7.2. Safety when operating the Snow Blower - 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!

 Squeeze risk: 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

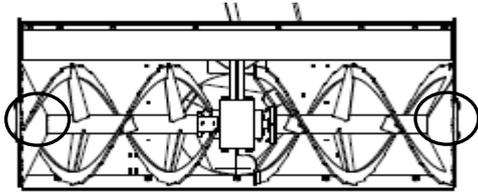
Disconnect the machine this way:

1. Park the Snow Blower on a flat, stable surface.
2. Disconnect hydraulic hoses from the carrier.
3. Disconnect the PTO-shaft (applies only when mechanical drive; THS).
4. Dismantle bolts at top link and lower linkage (or disconnect quick coupler). Keep them for later use.
5. Disconnecting is now completed.

## 8. Service and maintenance

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

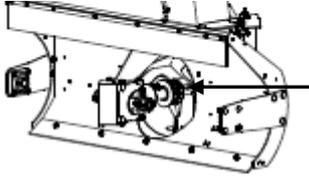
**Tighten all screws after 10 operation hours. Lubricate all moving parts with grease / oil.**



There are bearings at each end of the intake auger (2 pcs)

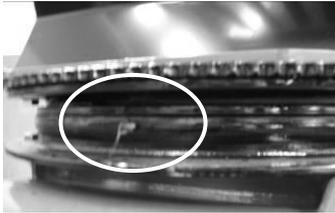
Grease the bearings every 20 operating hours.  
Take care: If fittings are over-lubricated seals may be damaged.

### Chain connection



Chain connection (located between transfer gearbox and the fan).  
Lubricate each 40th operating hour.

### Slewing ring



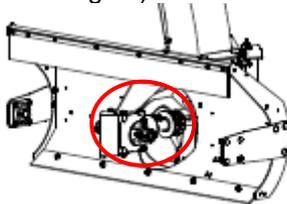
The grease nipples at the slewing ring should be greased every 40 operating hours. Also remember to grease the driveline for the chute rotator (hydraulic motor).

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).

### Gearboxes

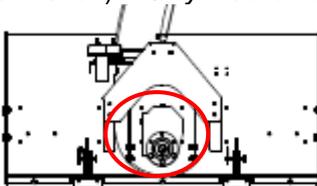
**Transfer-gearbox** (located between the intake augers)



Check gear boxes for leaks and fracture simultaneous when greasing the chains (each 10th operating hour).

If any leakage is found: Repair or replace the gearbox before operating the snow-blower.

**Parallel-gear / fan drive** (located at the rear of the fan) – *Only mechanical drive, THS*



### Wear blade

Pay attention to the wear of the blade. Replace the blade before it is worn out to prevent damage on screws and fasteners.

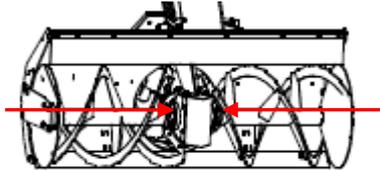
The blade is fastened with 14x35mm (F130-180) or 16x45mm (F200) screws and nuts.

## PTO-shaft (only mechanical operations, THS)

MAINTENANCE – always refer to the manufacturer’s fitting, operating and maintenance instructions.

### 8.1. Shear bolts

The shear bolt is a security against the destruction of machinery because of hidden objects such as large rocks or other objects in the snow. The shear bolt will break if the drivelines are overloaded. The intake augers will stop immediately.



The snowblower is attached with 4 shear bolts to protect the intake augers against overloading. When a shear bolt is broken - always replace a pair (located at the intake augers / transfer gearbox (2 at each side)).

**⚠** Lower the machine to the ground, connect the parking brake on the carrier and take out the key from the ignition before removal of the foreign object before replacing the shear bolt.

**⚠** Be aware that the fan or auger can be in tension. It is extremely high crush danger when loosening the object.

Model	Size and the grade of shear bolts
F130THS	M8x30mm, Grade 8.8
F150THS	
F180THS	
F200THS	

The size and the grade of the shear bolt depend on the Snow-Blower model. Replacement of the shear bolt with one of any other size or grade will be considered as an unauthorized modification and the warranty will be void.

Shear bolt at the PTO-shaft; always refer to the manufacturer’s instructions or contact your local dealer.

### 8.2. Out of season / by prolonged storage

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

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

#### Replacing oil at gearboxes:

The oil should be replaced after each season. The gears should be rotated each 6th month. Recommended oil EP 90 or equal.

#### Transfer gear-box (located between the intake augers)

Oil capacity transfer gear-box F130/150/180: 1.8 L.

Oil capacity transfer gear-box F200: 2.5 L.

#### Parallel-gear / fan drive (located at the rear of the fan):

Oil capacity F130/150/180: 1.0 L.

Oil capacity F200 2.25 L.

Check hydraulic hoses and fittings for leaks and fracture.

## 9. Demolition

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 Purchaser learns of the facts on 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.