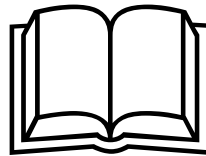


Users' Guide

Self-loading spreader, SMA



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

Applies to the following models / from CE number:

SMA510	6221027→
SMA800	7721051→
SMA1100	6021075→
SMA1600	5921071→
SMA2400	3721001→



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Original language: Norwegian

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 **NB! Please read the safety instructions in the Users' guide**

1. Technical Data

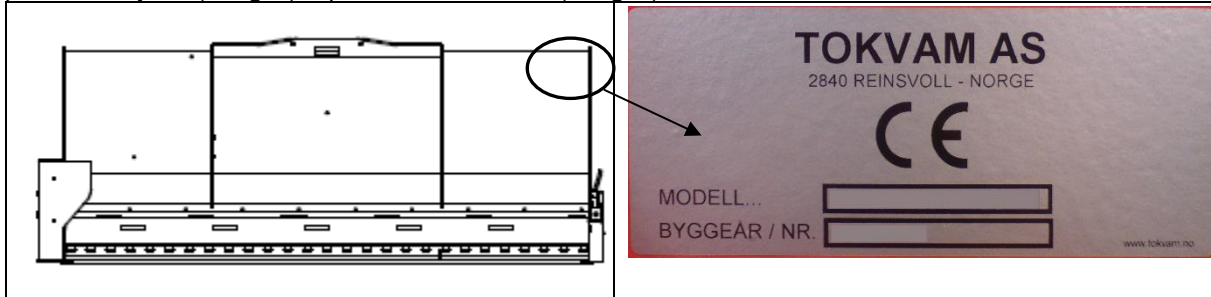
	SMA510	SMA800	SMA1100	SMA1600	SMA2400
Length:	110 cm	108 cm	128 cm	135 cm	175 cm
Width:	167 cm	217 cm	217 cm	245 cm	252 cm
Height:	74 cm	94 cm	97 cm	97 cm	121 cm
Spreading width:	150 cm	200 cm	200 cm	230 cm	240 cm
Volume:	500 liter	800 liter	1100 liter	1600 liter	2400 liter
Weight (dry):	225 kg	280 kg	405 kg	535 kg	1000 kg
Weight, full (1.5g/cm³):	975 kg	1480 kg	2055 kg	2935 kg	4600 kg
Oil requirement:	From 10 l/min – 170 bar Max. 100 l/min. Max. pressure: 200 bar				From 60-220 l/min – 200 bar Max 226 l/min. Max pressure 300 bar.
Attachments:	Optional (extra equipment)	Optional (extra equipment)	Optional (extra equipment)	Optional (extra equipment)	Volvo BM

1.1. Machine label / CE marking

All machines carry a machine label. The machine label is fitted at the rear right-hand side of the machine (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



Keep distance!

Rotating parts. Risk of crushing injuries.
Keep away when the machine is operating.



Lubrication point

This point requires regular lubrication. Ref. to "Service and Maintenance" for more detailed information

Read the Users' Guide carefully prior to utilization 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 regulations for maintenance and other service initiatives.

3. Safety

- !** The driver is responsible for ensuring that the tool is not utilized or handled wrongly.
- ▶** Make sure that the tool has the correct dimensions for the relevant type of carrier. The most significant dimensions are weight when the machine has a full load and working width. Any nonconformities in this area may result in a reduction in the product guarantee.
 - ▶** Children must not be allowed near the machine.
 - ▶** Never start the spreader 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

Modifications, amendments and reconstructions which have not been approved by the manufacturer will result in a limited or non-valid guarantee. This also applies to the use of spare parts or extra equipment which is not 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.

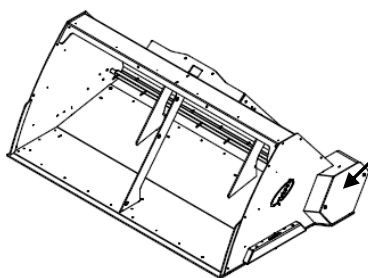
4. Product description

The machine is designed for use as a spreader for icy roads and car parks during the winter. The machine is designed for a range of spreading substances such as gravel (2-8 mm) and salt. The machine is not designed to be used as a digging tool. The machine is not designed to be used as an agricultural tool, for example for fertiliser, sowing seeds etc. The machine is designed for hydraulic operation for carriers/wheeled loaders and tractors with sufficient hydraulic and lifting capacity. Ref. Item 1 Technical Data for more detailed specifications. The machine is designed for 3-point mounting, loader or front hydraulics on a tractor or on a loader on wheeled loaders. (Optional attachments are extra equipment on all machines.)

4.1. Safety equipment

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

1. Machine cover

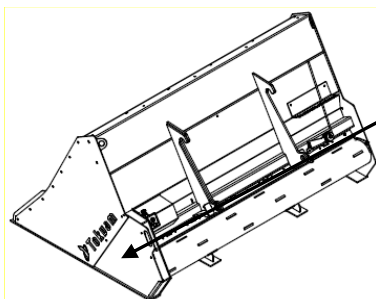


On SMA510/800/1100/1600:

Cover/chains are on right hand side

The cover is attached with two screws.

SMA2400:



Cover (and oil motor) are located on left hand side

The cover is attached with two screws.

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	Short description	SMA 510	SMA 800	SMA 1100	SMA 1600	SMA 2400
		S/E	S/E	S/E	S/E	S/E
Volume regulation valve	Hydraulic regulation of volume	E	E	E	E	S
Mixer	Keeps the spreading material in movement and breaks down any lumps	S	S	S	S	S
Attachments	Bolted attachments are available with different versions of the machine.	E	E	E	E	S*
(Telescopic) cylinder	Used for three-point fitting behind tractor	E	E	E	E	-
Canopy		E	E	E	E	E
Extension frames	Extra volume	-	-	E	E	E
Extra plate	To reduce spreading width.	E	E	E	E	-
Support legs		S	-	S	S	-

* SMA2400 has integrated Volvo BM attachment.

5. Transport and storage

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.

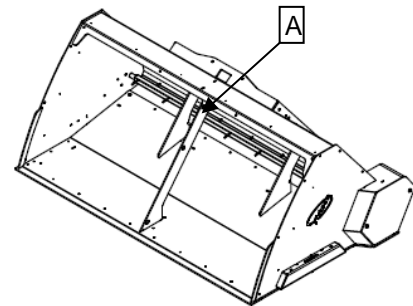
Lifting/moving

Always make sure that the tool utilized 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.

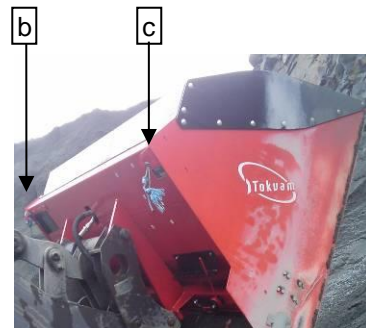
1. Lifting the machine using a carrier with a frame which fits the attachment on SMA.
2. Lifting the machine on a pallet using the forks on a forklift truck or other carrier.
3. Lifting the machine using straps or similar. *

*If using straps or hooks to lift the machine, the straps/hook shall be attached in the holes (A) at the top of the central support.



SMA2400 has two (2) lifting lugs which shall be used when lifting the machine. (B+C)

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



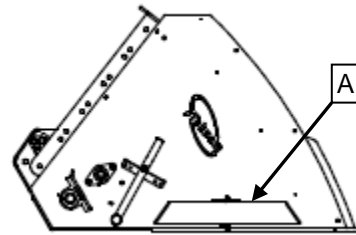
Transport by vehicle/on trailer

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, ropes or other tools to attach the spreader during transport are not supplied.

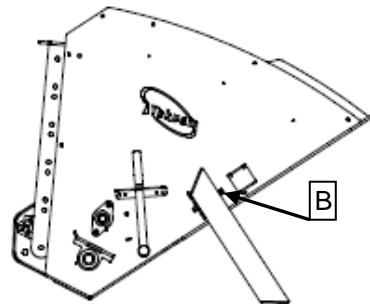
5.1. Support legs

If the machine is to be disconnected from the carrier before it has been emptied of spreading material, the accompanying support legs may be utilized (2 legs) to prevent the material from emptying out of the machine.


The legs are attached to the side of the machine on delivery (A).





Attach the legs to the second bracket (B) and fit the bolt. The spreading box can now be safely placed on a stable surface.




6. Connection to carrier

 Never allow any uninvolved 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.

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

Machine:	Max. oil flow/pressure
SMA510/800/1100/1600	100 l/min – 200 bar
SMA2400	225 l/min – 300 bar

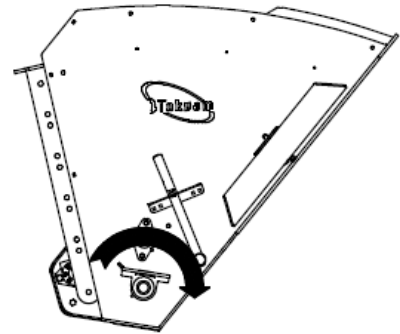
 Jets of hydraulic oil under high pressure may penetrate the skin and cause serious injury. Consult with a doctor immediately if hydraulic oil has penetrated the skin or if you have hydraulic oil in your eyes. Hydraulic oil can also cause allergic reactions. If you get hydraulic oil on your skin, it is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

Test and get to know every function of the machine before use!

Bearings and chains are lubricated when the machine is delivered from the factory.

6.1. Connection to carrier, SMA 510/800/1100/1600

Pressure hose is marked with red color.
The return hose is equipped with a non-return valve to ensure the correct rotation direction on the feed roller.
If the oil from the bearing machine flows in the wrong direction, the oil flow is blocked.
The Correct rotation on the feed roller is shown on the drawing.



a) Three-point mounting on tractor:

Fit the hydraulic top bar on the tractor and fit hoses to the double-action hydraulic outlet. Extract the cylinder and the spreader can be fitted to the tractor's three-point attachment. The operating hoses can now be fitted to the double-action hydraulic outlet .

b) Mounting on front loader or front hydraulics:

The machine is fitted on the carrier and the operating hoses are fitted to the double-action hydraulic outlet on the carrier. Check with the supplier of the carrier that the hydraulic outlet at the front can withstand continuous load. If not, the hoses can be extracted from the machine's hydraulic outlet at the rear.

Remember to ensure that the bolts are properly tightened.

NB! Always check the spreader in every possible position to make sure the hoses do not get clamped.

Adjust the rubber plate to regulate the feeder aperture:

Rubber plate pressed against the feed roller with springs and regulated by a lever on the side of the machine. Pull the lever towards point B to tighten the rubber plate. If you want to empty the machine, pull the lever towards point A while the roller is in operation.

It is recommended to fully tighten the rubber plate if using salt. For sand at high speeds (with large volumes), the rubber plate should not be too tight.

NB! The rubber plate should not be tightened more than necessary as this will result in major wear and tear to the rubber and feed roller.

6.2. Connection to carrier, SMA2400

The machine can be attached to a wheel loader or a tractors three-point attachment. (Three-point attachment requires adapter/extra equipment)

Remember to ensure that the bolts are properly tightened.

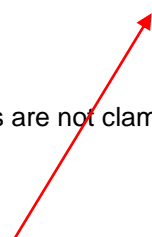
The hoses for operating can now be fitted to the carrier's double-action hydraulic outlet.

The left hose (as seen from behind) is the pressure hose. It is marked with "P" by the outlet. Connect this to the carries pressure outlet.

Ensure that the hoses are correctly connected by checking that the feed roller rotates the right direction.

NB! Place the machine in all possible positions to ensure the hoses are not clamped.

Volume regulation valve:




Spreader volume is adjusted with the volume regulation valve on the hydraulic motor.

If the carrier has variable regulation of hydraulic flow: Open the volume regulation valve on the spreader to the maximum setting so that the spreader volume can be regulated using the volume of oil on the carrier

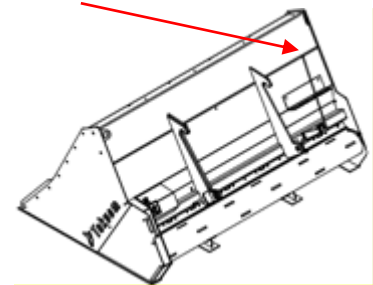


Adjust the rubber plate to regulate the feeder aperture:

 Rubber plate pressed against the feed roller with springs and regulated by a lever on the side of the machine. Pull the lever towards point B to tighten the rubber plate. If you want to empty the machine, pull the lever towards point A while the roller is in operation.

It is recommended to fully tighten the rubber plate if using salt. For sand at high speeds (with large volumes), the rubber plate should not be too tight.

NB! The rubber plate should not be tightened more than necessary as this will result in major wear and tear to the rubber and feed roller.





Loading


Loading must be controlled and carried out with caution, particularly when the machine is fitted to a three-point mounting.


If the top bar is too long or the steady-braces too high, there is a risk of "driving over" the machine.

7. Safety during use – IMPORTANT!


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


 If it is necessary to remove stuck objects in the spreader bucket or for other service work, the carrier shall always be stopped, and the ignition key removed before carrying out such work.


 If an object gets stuck in the mixer or feed roller, please note that there may be tension in these parts resulting in an extreme risk of crushing/impact when the object comes loose.

 Never use your hands or legs to remove stuck objects.

 Please note that visibility at the back/front may be impaired by the spreader.

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

 Never walk under the spreader when it is suspended on the carrier's hydraulics.

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

7.1 Disconnection

After use, the machine is disconnected as follows:


1. Place the machine on a level, stable surface. Make sure that it is in a steady position.
2. Disconnect the hydraulic hoses from the carrier.
3. Remove any bolts on the top bar and attachments. Remember to keep these for subsequent use.
4. If the telescopic cylinder is fitted, this must also be disconnected (if three-point mounting).
5. The machine is now disconnected and can be left in this position.

The machine can also be disconnected while still containing spreading material, ref. item 5.1.

NB! Always empty the machine before storage if there is a risk of frost.

NB! The rubber plate should be loosened prior to long-term storage.

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 each end of the feed roller and mixer, 4 in total. Remove the cover to lubricate the bearings on the operating end.

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 requires lubrication after every 10 hours of operation. Remove the cover to lubricate the chain.

Removing the cover over the chain

To remove the cover, unscrew the screws and lift the cover off.

8.1. Salt and potassium chloride

It is recommended to thoroughly clean, lubricate, and protect with an anti-rust agent based on lanolin or linseed oil, especially if the sand spreader is used with salt or calcium chloride or in coastal areas.

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 the Regulation relating to use of working equipment (FOR 1998-06-26 no. 608).

The product shall be carefully cleaned and lubricated before storage.

Inspect hydraulic hoses for leaks and cracks.

Loosen the rubber plate.

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 guarantees

Tokvam AS guarantees that the product is delivered from the factory without faults or defects. Guarantees are 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 guarantee 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 guarantee does not cover faults or defects caused by lack of maintenance (ref. this Users' Guide). The guarantee does not cover normal wear and tear to the product and its components.

11. SAMSVARSERKLÆRING

DECLARATION OF CONFIRMITY



Manufacturer: Tokvam AS

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We hereby declare that the following product:

Self loading spreader, SMA	Modell:		CE number:	
	SMA510	/	6221027	→
	SMA800	/	7721051	→
	SMA1100	/	6021075	→
	SMA1600	/	5921071	→
	SMA2400	/	3721001	→

which is covered by this declaration complies with the following standard or other normative documents:

- NS-EN 13021:2003+A1 : 2008

In accordance with the provision in Directive:

2006/42/EF

Place and date of issue: Reinsvoll, 20. mai 2021



Finn Kristian Tokvam (Daglig Leder/ Managing Director)