

LM Rotary Mower user manual



 **LM TOOLS**
OY LAI-MU AB



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To the owner of the LM rotary mower

Congratulations on purchasing a new LM rotary mover. This tool is the result of Oy LAIMU Ab's innovative design and expertise. This manual includes all information you will need to use the tool safely and ensure a long service life for it. All users of the LM rotary mower must read this manual before using the machine and receive training from the manufacturer or experienced user of the machine. Pay special attention to the safety instructions on this manual. The manufacturer is not responsible to cover any damage or injury if the machine has not been used correctly and according to this manual.

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To the owner of the LM rotary mower	3
1 Technical specifications.....	5
1.1 Technical data	5
1.2 Construction.....	5
1.3 Intended use, operating conditions and operator requirements.....	5
2 Operation	7
2.1 Coupling with the main machine.....	7
2.2 Preparing for operation.....	7
2.3 Height adjustment.....	7
2.4 Starting, and turning off the mower.	8
2.5 Mowing	8
2.6 Safety equipment.....	8
2.7 Driving on the road	8
3 Safety.....	9
3.1 General safety instructions	9
3.2 Danger zones	9
3.3 Warning and instruction plates	9
3.4 In case of fire	9
3.5 Safety gear	9
3.6 Information on unavoidable risks.....	9
4 Maintenance	10
4.1 Blades.....	10
4.2 Belt.....	10
4.3 Lubrication points	11
4.4 Tire pressures.....	11
4.5 Storage	11
5 Spare parts	12

1 Technical specifications

1.1 Technical data

Cutting width	180cm
Rotation speed	2200-2700rpm
Motor hydraulics demand	38-45 l/min
Total Weight	200kg
Cutting height	5...13cm
Max driving speed when mowing / on road	7km/h / 25km/h

The LM rotary mower is designed to be coupled with LM Trac 286 and LM Trac 387. Older models of the same machine size such as LM Trac 285 and LM Trac 336 are also suitable.

1.2 Construction

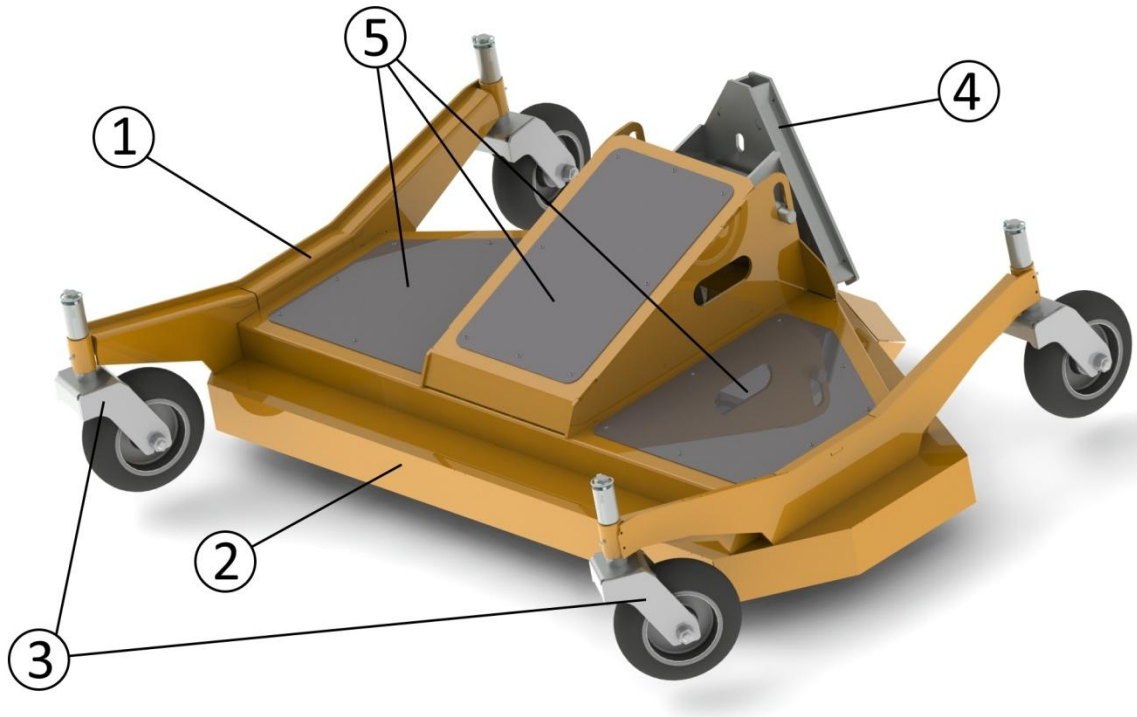


Image 1

Main parts of the LM Rotary mower:

1. Frame
2. Blade housing
3. Wheel forks
4. A-Frame attachment coupling
5. Cover plates

1.3 Intended use, operating conditions and operator requirements

The LM rotary mower is intended for cutting grass. Grass can be cut to various lengths between 5...13cm. It is important that there is no unwanted objects in the grass that could damage the machine or fly out of the housing. Any length of grass can be cut, considering the driving speed must be slower with longer grass.

Operating temperature for the LM rotary mower is from 5°C to +40°C.

The operator of the LM rotary mower must be familiar with the main machine powering the mower and know how to use the main machine safely. Always stop the mower blades and engage parking brake before stepping out of the main machine. Before working with the mower, the user must read and understand this manual and receive training from the manufacturer, retailer or experienced user of the mower. Understanding and following the safety instructions on this manual is vital to prevent any accidents from happening.

- Inspect the grass area for any unwanted objects or material and remove them before cutting. This ensures the safety of the user and a long life for the machine.

2 Operation

2.1 Coupling with the main machine

Connect the LM Rotary mover as follows.

1. Move the A-frame of the main machine to the lowest position and open the securing pin.
2. Drive the machine towards the mower so that the A frame goes inside the coupling device of the mower.
3. Lift the A-frame up gently until the A-frame is on position inside the coupling device and starts to lift the mower.
4. Move the securing pin to the closed position.
5. Attach all three hydraulic hoses to the main machine quick connectors. The motor hydraulic hoses to motor hydraulic connectors and the leak line hose to the tank line connector.

A new machine is now ready for use.

Take the mower off in a similar manner on a reversed order.

2.2 Preparing for operation

Before you start to use the machine, make sure that no persons are near the mower. Check that the mower is in a good working condition and all the safety features are in use and properly attached. Replace any broken or damaged part with original spare part.

2.3 Height adjustment

The cutting height can be adjusted between 5cm and 13cm.

To adjust the cutting height:

1. Lift the mower up and turn off the main machine engine. Turn the parking brake on.
2. Remove the ring pin (1) while holding the fork (2).
3. Slide the fork (2) out of the bearing.
4. Move the metal rings (3) to the upper or lower side of the bearing until height is as desired.
5. Slide the fork (2) back to its place.
6. Install the ring pin.
7. Adjust all four forks to the same height.

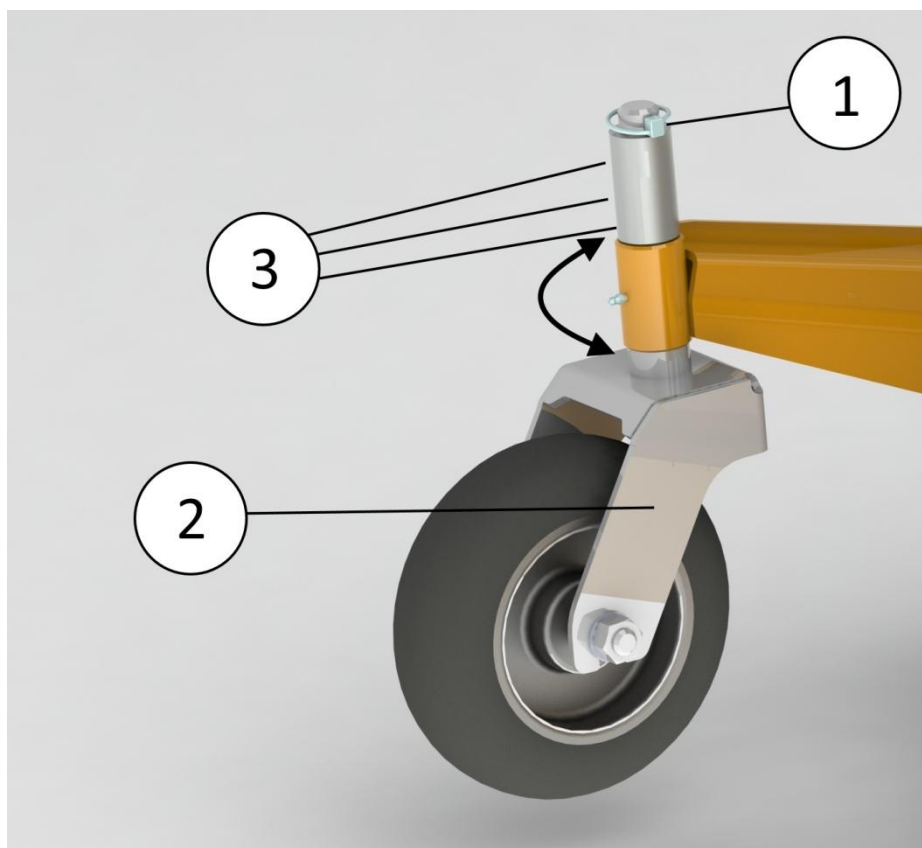


Image 2

2.4 Starting, and turning off the mower.

1. Start the main machine according to its user manual.
2. Lower the A-frame down, and **set the A-frame on floating mode.**
3. Engage motor hydraulics on a low power and speed. Make sure the motor is spinning before adding power. The motor only spins on the right direction. Maximum flow for the mover is 45l/min and it must never be exceeded. See 2.5 for LM Trac hydraulic speed settings.
4. Drive the machine carefully on a low speed forwards or backwards to perform mowing.
5. When you are finished with mowing, disengage the motor hydraulics, set the floating mode off and lift the mover up.
6. Always lift the mower up and clean it before driving on the road. Never clean the blade housing from the inside when the main machine engine is running. Use cut-proof gloves. Always secure the mower mechanically before working under it.
7. Turn off the main machine according to its user manual.

2.5 Mowing

When the mower is running the speed can be adjusted by the main machines controls to make it spin on a desired speed between 2200-2700rpm.

Coupled with LM Trac 286 set engine revolutions between 2200...2600rpm.

Coupled with LM Trac 387 set the hydraulic flow control between 5...8.

Always use the lowest possible speed to get the smoothest results and best fuel economy.

While mowing, adjust the driving speed according to the grass thickness and the smoothness of the terrain. Thicker grass and uneven terrain both require slower driving speed to ensure good results and to avoid any accidents or brakedowns.

Cover plates must never be opened when the machine is running. Always turn off the mower and the main machine before doing any maintenance or adjustment work.

The mower blades may sometimes stop for some of the reasons:

- Too low rotation speed
- Too low power
- Dull blades.
- Too thick grass / too high driving speed.
- Loose belt.

If the mower stops, always turn off the mower and the main machine before removing the problem. If the belt is loose, tighten it. If driving speed is too high / grass too thick and the mower gets blocked up, drive slower or increase blade speed within given limits.

2.6 Safety equipment

The operator is responsible for ensuring that no-one gets close to an operating mower. The operator is responsible for ensuring that the danger zone of the mower is clear of unauthorised persons and objects.

The cover plates of the mower must always be attached when using the machine.

2.7 Driving on the road

Always lift the mower up when driving on the road. Maximum Driving speed on the road is 25km/h.

Always be careful when driving on the road with the mower. If you drive with the mower attached, be aware of the increased dimensions and weight of the vehicle. Driving characteristics may change with the tool attached.

3 Safety

3.1 General safety instructions

- The blades of the mower spin at speed and have a great cutting force.
- NEVER GO CLOSE A RUNNING MOWER! NEVER PUT HANDS, FEET OR OTHER PARTS OF BODY UNDER A RUNNING MOWER!
- Make sure that the covers of rotating parts are in good condition, the guards and covers of all equipment are in place.
- Stop the mower whenever you carry out repair, adjustment or maintenance work. The main machines engine must also be turned off and unintentional starting prevented!
- The owner of the LM rotary mower is responsible for informing all those involved in operating it how to use the mower safely and how to avoid accidents at work.
- It's not allowed to open the cover plates, or any other part when the mower is in operation!
- The spinning blades can shoot small rocks etc. out of the machine at speed. Keep the danger zone clear of persons to avoid any accidents.

3.2 Danger zones

The spinning blades create a danger zone around the mower. The user must ensure that no persons or animals are in the danger zone while operating.

3.3 Warning and instruction plates

The chipper has following warning plates, tags or symbols:

- Danger, keep hands and feet away
- Turn off before servicing
- Read the operating manual before use

3.4 In case of fire

Extremely dry grass has a small possibility of igniting from a spark between a rock and a spinning blade. To prevent this, always ensure that there is no sand/rocks/objects on the grass. In case of a fire, stop the main machine, turn off the main machine and exit. The fire can then be put out with an extinguisher. **In case of fire always call local emergency number. Never set yourself to danger with a burning machine.** Only try to extinguish the fire yourself if you can do it safely with proper gear. In case of fire it is important to turn off the machine, as the spinning blades feed air to the flames.

3.5 Safety gear

Operating the LM Rotary Mower does not require any use of safety gear. When maintaining or cleaning the blades, cut-proof gloves must be used.

3.6 Information on unavoidable risks

In order to keep the operating of the machine possible, it has not been possible to eliminate the following risks completely:

- No barriers can be built under the blades to prevent human damage caused by the blades.
- The risk caused by objects flying out of the blade casing cannot be eliminated.

4 Maintenance

Always turn off the mower and the main machine before doing any maintenance work. In addition, disconnect the hydraulic hoses to ensure unintentional starting of the mower. Always be careful when doing maintenance work with the mower. Avoid the sharp blades and when it is necessary to handle them, use cut-proof gloves.

-After the first hour of use, stop the mower and check the tightness of all screws and nuts.

-Perform all maintenance work with great care. After maintenance work, always check that everything is tight and correctly on place before starting the machine.

4.1 Blades

-The blades need to be sharpened frequently. The sharpening intervals depend on the cleanliness of the grass. Dirty grass will make the blades dull faster. Unsmooth results or weak power of the mower inform of dull blades. Check the blade sharpness after every 50hours of use and sharpen if dull.

-To sharpen the blades always remove them from the mower. The blades can be taken off by opening the attachment screws on the bottom of the axles. Sharpen the cutting edges with proper gear. Always follow all local regulations for hot working and ensure a safe working area. Never direct sparks towards other people, the mower or the main machine. Maintain the original cutting angle for the best performance. Re-attach the blades and make sure the screws are tight before using the mower again.

-If the blades have been sharpened many times and they are worn out, replace all blades with new ones.

4.2 Belt

-Check the belt tightness every 50 hours. Open a side cover plate to check the tightness. The belt should move about 1-2cm by hand between the front pulleys when it is correctly tightened (Image 3). Always re-attach the cover plates before operating with the mower. Replace a worn out belt with original spare part.

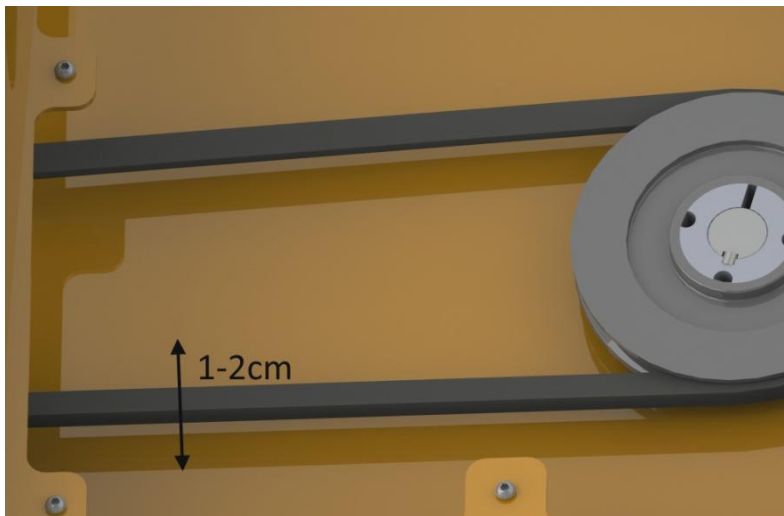


Image 3

-If the belt is loose:

1. Open the center cover plates.
2. Loosen the tensioner screws (1).
3. Pull the tensioner in arrow (2) direction.
4. Tighten the tensioner screws (1).
5. Re-check the belt tightness.
6. Install cover plates.

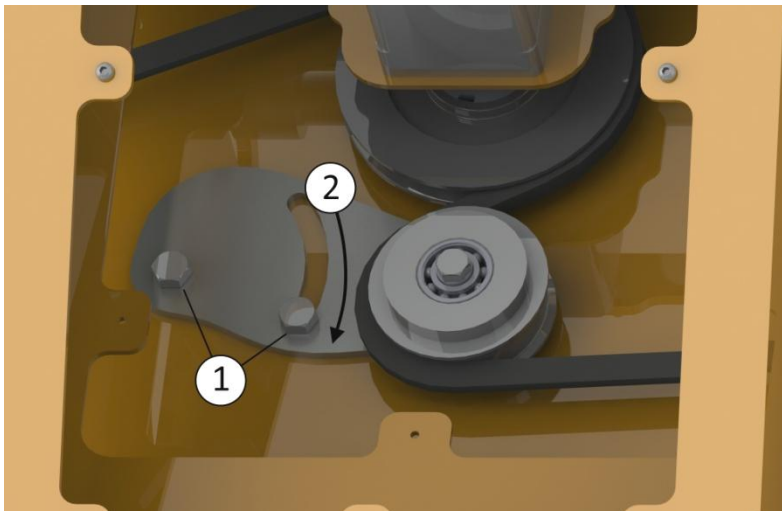
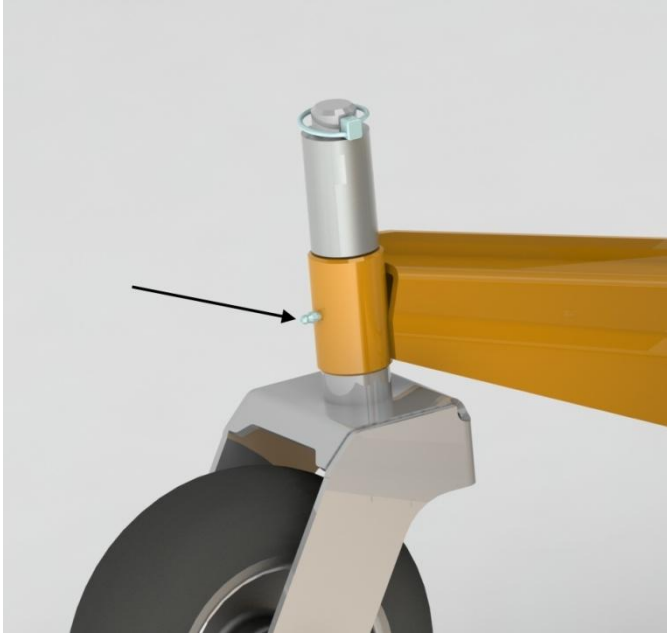


Image 4

4.3 Lubrication points

The bearings of the wheel forks must be lubricated every 50 hours. Use a grease gun and press 1-2 actuations to every grease nipple (4pcs).



4.4 Tire pressures

Check the tire pressures monthly. Use a pressure stated on the tire walls. Driving with too low tire pressures increase the risk of tire and/or wheel damage. Never operate the mower with a flat tire.

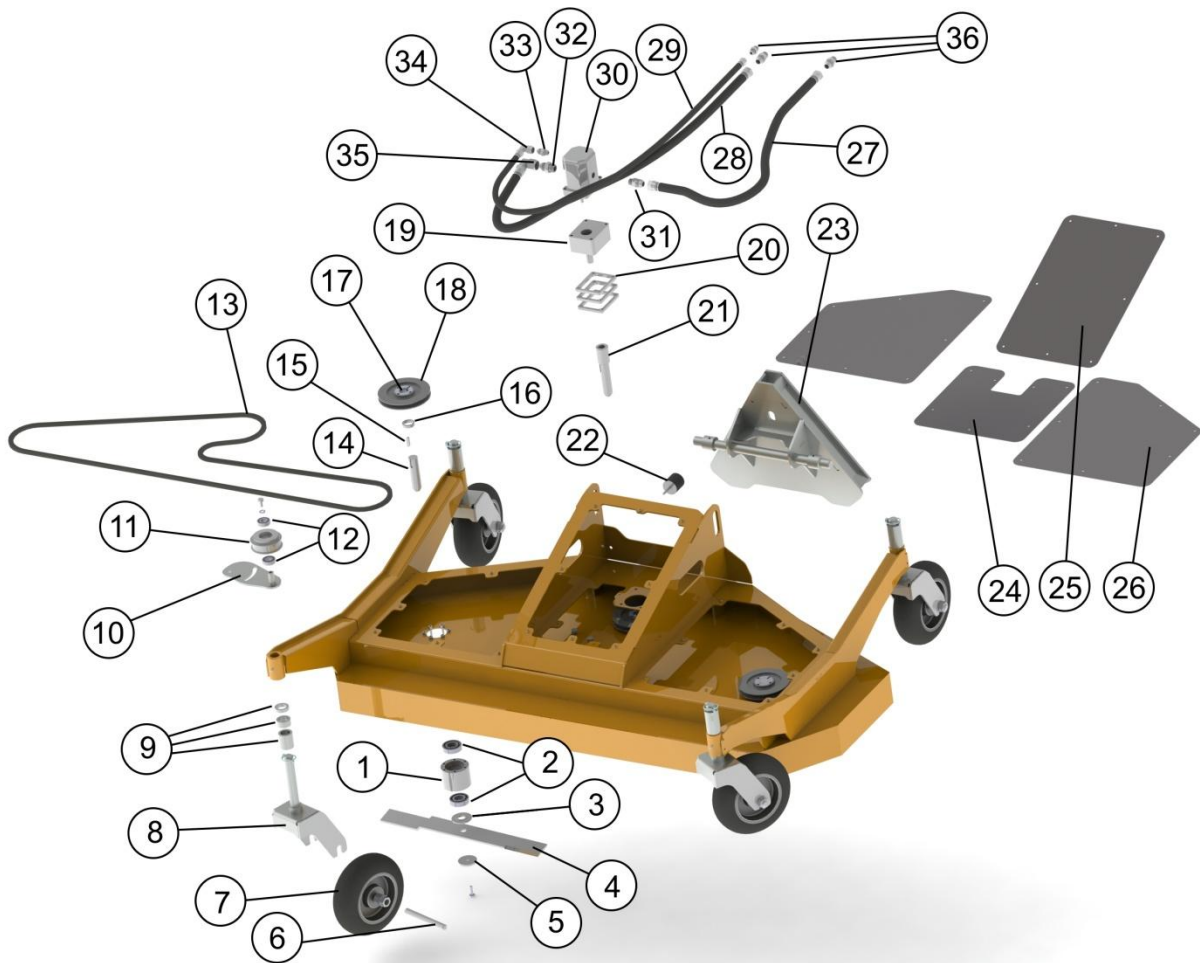
4.5 Storage

If you store the mower for a long time, do the following:

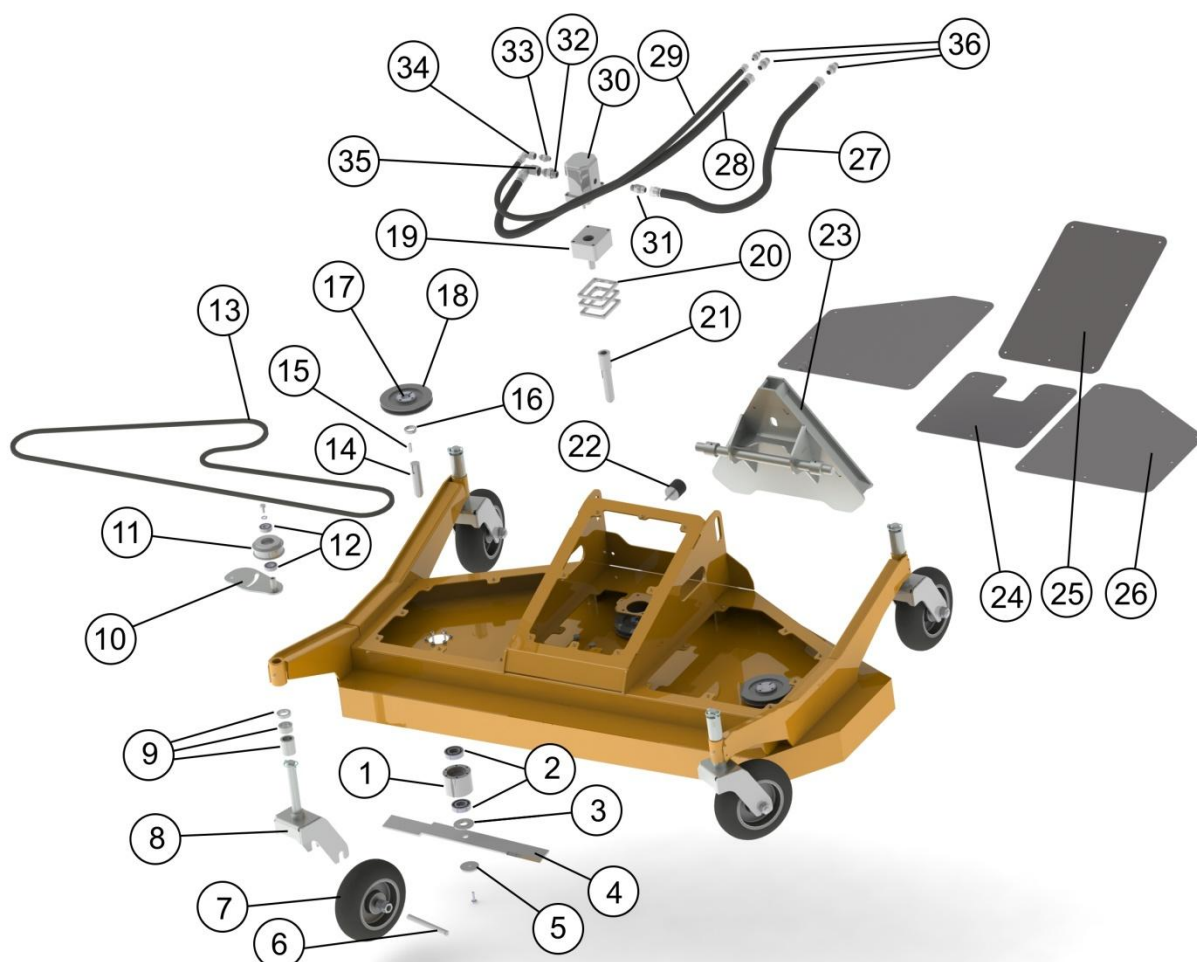
- Clean the mower well.
- Wipe the blades with oil to prevent rust.
- Loosen the belt.
- Store in a locked and dry shelter.

When taking the mower back to service, check that all the screws and nuts are tight, and tighten the belt.

5 Spare parts



Nro Ref	Kpl Qty	Osan numero Part no	Huom Note	Osan nimi	Description
1	3	204921021		Laakeripukki	Bearing housing
2	6			Laakeri	Bearing
3	3	204921025		Holkki	Sleeve
4	3	130612		Terä	Blade
5	3	204921049		Levy	Plate
6	4	204661054		Pyörän akseli	Wheel axle
7	4	810260100		Pyörä, täydellinen	Wheel, complete
8	4	204920009	incl. 9	Pyörähaarukka	Wheel fork
9	4	204921046	10mm	Pyöräaseman holkki	Fork sleeve
	4	204921047	20mm		
	4	204921048	50mm		
10	1	204920005		Kiristin	Tensioner
11	1	204921028		Rulla	Roller
12	2	834125		Kiristimen laakeri	Tensioner bearing
13	1			Hihna	Belt
14	2	204921024		Teräakseli	Blade axle
15	3	1023007008		Kiila-avain	Key
16	3	204921026		Holkki	Sleeve
17	3			Holkki	Sleeve
18	3			Hihnapyörä	Pulley
19	1			Tukilaakeri	Support bearing
20	3	204921015		Levy	Plate
21	1	204921027		Moottoriakseli	Motor axle
22	2	416020120		Kumivaimennin	Rubber dampener



23	1	204920003		A-raami sovite	A-frame coupler
24	1	204921051		Suojalevy, keski	Cover plate, middle
25	1	204921052		Suojalevy, moottori	Cover plate, motor
26	2	204921050		Suojalevy, oikea ja vasen	Cover plate left and right
27	1	6024927000		Hydrauliikkaletku	Hydraulic hose
28	1	6024927001		Hydrauliikkaletku	Hydraulic hose
29	1	6024927002		Hydrauliikkaletku, tankkilinja	Hydraulic hose, tank line
30	1			Hydrauliikkamoottori	Hydraulic motor
31	1	660F40XS2012		Hydrauliikkaliitin	Hydraulic connector
32	1	660F40XS2034		Hydrauliikkaliitin	Hydraulic connector
33	1	660F40XS1238		Hydrauliikkaliitin	Hydraulic connector
34	1	660C6XS12		Hydrauliikkaliitin, kulma	Hydraulic connector, angle
35	1	660C6XS20		Hydrauliikkaliitin, kulma	Hydraulic connector, angle
36		available		Pikaliittimet ja nipat konekohtaiset	Quick connectors and their connectors machine specific
	1	891129010095			Sticker, read operating manual
	1				Sticker, keep hands and feet away
	1	891129010045			Sticker, turn off before servicing

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