



# OPERATORS MANUAL RAP245 – RAP300

ORIGINAL



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### EY-VAATIMUSTENMUKAISUUSVAKUUTUS TUOTTEESTA

LLP Farm Machinery Group Oy vakuuttaa, että markkinoille saatettu kone täyttää direktiivin 2006/42/EY ja standardit SFS-EN ISO 12100 ja SFS-ISO 730:2020.

### FÖRSÄKRAN OM ÖVERENSSTÄMMELSE

LLP Farm Machinery Group Oy försäkrar härmed att tillförda maskin uppfyller maskindirektivet 2006/42/EY och standard SFS-EN ISO 12100 och SFS-ISO 730:2020.

### CERTIFICATE OF CONFORMITY FOR A PRODUCT

LLP Farm Machinery Group Oy certifies that the following machine, which has been brought into the market, conforms to directives 2006/42/EY and standards SFS-EN ISO 12100 and SFS-ISO 730:2020.

### SAMSVARSERKLÆRING FOR MASKIN

LLP Farm Machinery Group Oy bekrefter herved at følgende maskin, som er sendt ut på markedet, er i samsvar med direktivene 2006/42/EF, SFS-EN ISO 12100 og SFS-ISO 730:2020.

Tuote / Produkt / Product / Produkt: \_\_\_\_\_

Valmistusnumero / Tillverkningsnummer  
/ Serial number / Serienummer: \_\_\_\_\_

Teknisen tiedoston kokoaja / Teknisk  
dokumentation samlare / Technical file collector: Sakari Ruotanen

Valmistaja / Tillverkare / Manufacturer  
/ Produsent: LLP Farm Machinery Group Oy

Osoite / Adress / Address / Adresse: Levytie 4, FIN-74510 Iisalmi

Puhelin / Telefon / Telephone: +358 (0) 201 984 020

Paikka / Ort / Place / Sted: Iisalmi

Aika / Datum / Date / Dato: \_\_\_\_\_

Allekirjoitus / Underskrift / Signature  
/ Signatur:



Nimenselvennys / Расшифровка подписи  
/ Clarification of signature  
/ Tydeliggjøring av signatur:

Jarkko Hyyrönmäki

## WARRANTY TERMS

- All the products produced by LLP Farm Machinery Group Oy have twenty four (24) months warranty.
- During the warranty period all the defects in material and in workmanship will be covered, in practical life FMG will replace defected parts with the new parts. Travelling expenses and freight of parts are not included in warranty.
- Warranty will start in the beginning of usage of the product, if nothing else has been agreed.
- Warranty is not covering damages due to misuse of product or use in the purposes where it has not been designed, lack of services or product has been modified without the permission of FMG.
- Wearing of the normal usage is not covered by the warranty.
- Losses in income, costs and loosen working hours caused by the defected part is not covered by the warranty.
- Warranty repairs should be done by the FMG service dealer or service dealer appointed by the manufacturer.
- In case the defects shown in reclamation is not valid or if case otherwise is not in the warranty area FMG has right to reject from the compensation.
- Warranty reclamation should be done in written form by the FMG seller within one (1) month after notifying the defect.

## IN CASE OF DEFECT PROCEDURE IS AS FOLLOW:

- clarify the defect and defected area
- be prepared to deliver defected parts to the manufacturer
- contact FMG seller and make reclamation as follows:
  - type of the product and serial number
  - delivery date of the product (invoicing date)
  - date of the damage
  - description of the damage and pictures
  - description of the working conditions and the type of the base machine

## TO THE OPERATOR

- The purpose of this manual is to provide support and instructions to scraper users. Manual contains detailed instructions for driving, operating and maintaining the scraper. Make sure that your new scraper is always handled and maintained in the correct way in order to ensure reliability and economical operation for many years.
- We recommend that you read the manual thoroughly. Follow the maintenance and service program carefully and include the daily maintenance in your normal routine. This is both your and your tractor interest.
- Maintenance, repairs and adjustments which are not described in this Operator Manual require the use of special tools and exact technical data. In case of that kind need please contact your FMG seller or factory.
- Use only genuine FMG spare parts for optimum performance from your tractor and scraper. Spares will be sold through the FMG seller.

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# 1. SAFETY INSTRUCTIONS

This section summarizes the regulations that must always be followed when working with the scraper. However, these regulations do not exempt the driver from statutory and other national regulations regarding traffic safety and occupational health and safety. Safety regulations that apply to different types of working sites and existing road traffic laws must always be observed. Tractor safety regulations accepted by the Finnish occupational safety and health administration have already been taken into account in the equipment design. The following section describes general safety precautions that must be observed regarding the use of the scraper.



## IMPORTANT

**Do not use the scraper for other purposes than it has been designed. Please read this manual carefully before using the implement.**



## IMPORTANT

**Before driving, make sure that all movements and functions work correctly.**



## DANGER

**When testing different movements of the grader make sure that there is no one close to tractor. Safety distance 5 meters.**



## IMPORTANT

**Advise other users on the use of the implement and ask them to read the manual.**



## DANGER

**Do not operate a faulty implement.**



## IMPORTANT

**Use the rotary beacon while working.**



**WARNING**

Observe the manufacturer's instructions while working.



**WARNING**

Pay attention to other road users.



**IMPORTANT**

Always lower the implement and stop the engine before leaving the cab.



**IMPORTANT**

Never service or clean an implement that is resting on the hydraulics. Use mechanical support. Always stop the engine for maintenance.



**WARNING**

Do not disconnect, connect or tighten pressurized hydraulic plugs.



**WARNING**

Do not inhale oil mist if a pressurized component becomes damaged. If oil comes into contact with the eyes, rinse with plenty of water and contact a doctor immediately.

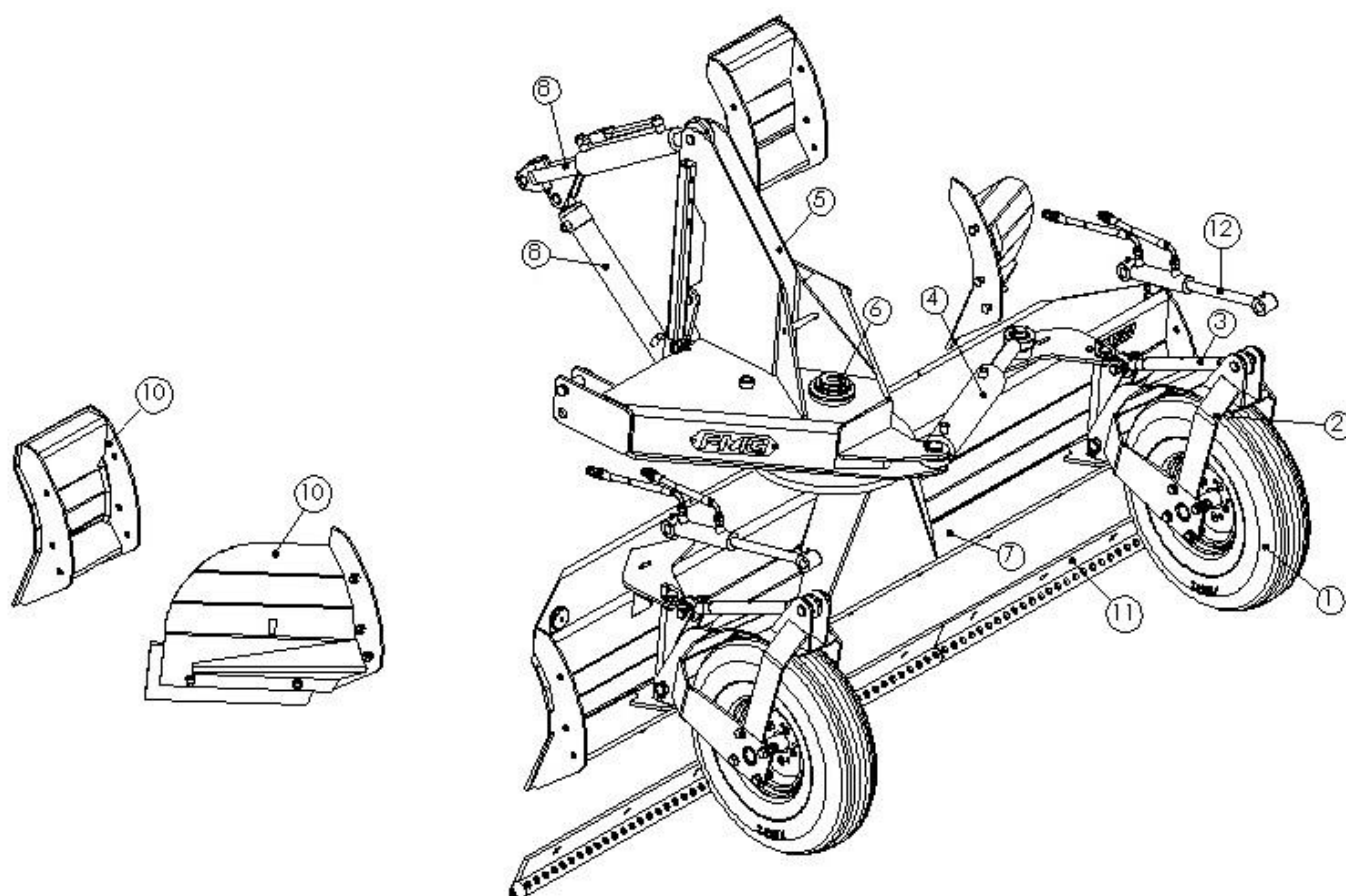


**DANGER**

Pay attention to the direction of the plough in relation to the tractor. The plough attempts to steer the tractor.



## 2. CONSTRUCTION



1. Support wheel (standard)
2. Wheel bracket
3. Top link of the wheel (standard)
4. Turning cylinder
5. Frame
6. King pin of the frame
7. Blade frame
8. Pressing cylinder
9. Hydraulic top link
10. Extension wing (extra equipment)
11. Blade
12. Hydraulic top link of the wheel



### 3. TECHNICAL INFORMATION

Model	Width (cm)	Working width (cm)	Height of the wing (cm)	Weight (kg)	Turning angle
RAP245	245	215 – 245	55	640	+/- 28
RAP275	275	245 – 275	55	650	+/- 28
RAP300	300	270 - 300	55	680	+/- 28

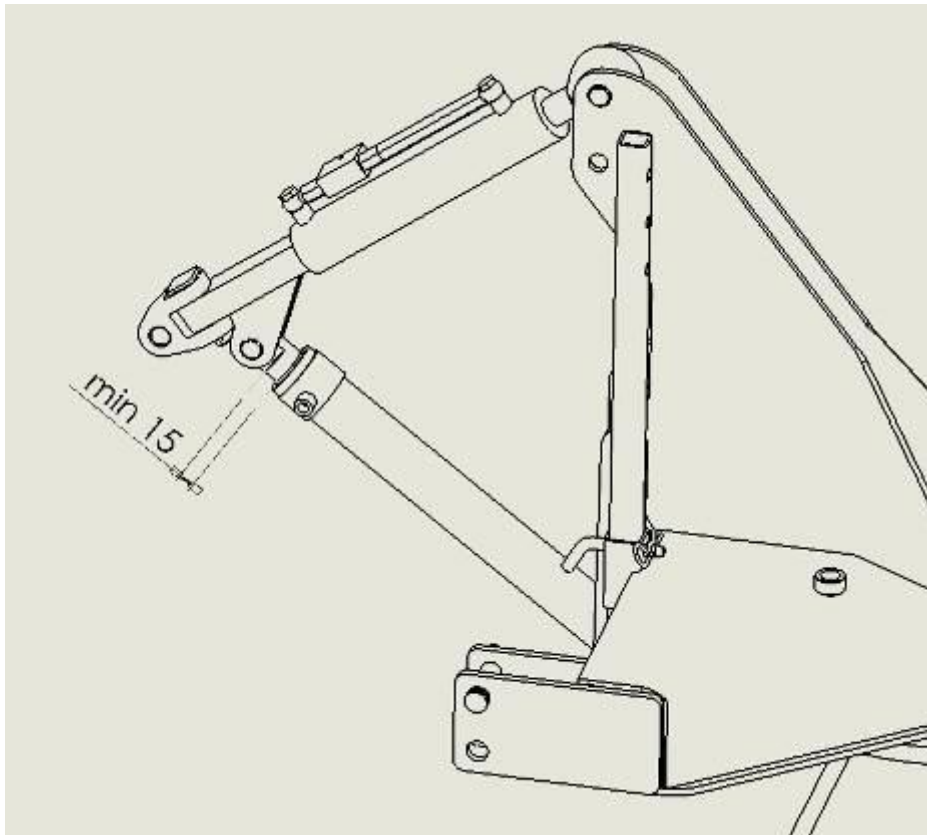
Sound level is less than 70 dB (A).

### 4. RAP USE

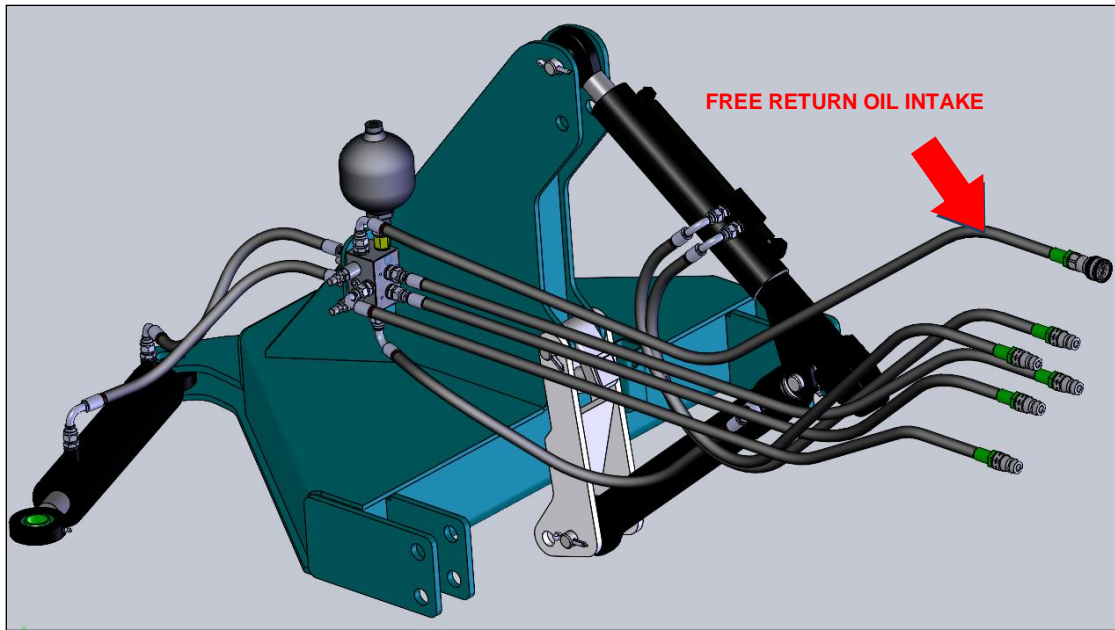
#### 4.1. Engage to tractor

Scraper will be engaged to the 3-point linkage of tractor. RAP requires 2 double acting and one single acting hydraulic valves and free return oil intake.

When engaging check that pressing cylinder won't hit the bottom you should have 15 mm reserve (Picture 1).



Picture 1. Position of the pressing cylinder



Picture 2. Quick couplers



**IMPORTANT!**

Hose from the shock valve have to be connected to the free return tank line



**NB:**

In case of free return oil hose is not engaged to free return oil intake warranty is not in use

## 4.2. *Use of scraper*

Scraper is designed to the handling of different material, balancing of the roads and ice removing from the roads.

## 4.3. *Instructions*

Before use check that engage to tractor is well done and all the safety pins are properly assembled.

Before reversing, equipment must be lifted up.

Before use test drive equipment and be sure that all the functions works well. In case of the first drive or after reparation check that all the air is eliminated from the system, because air in hydraulics could cause impetuous movements.

When driving be sure that you see whole of the working zone and there are nobody in that area.

After disengaging equipment, put all the covers on top of the hydraulic quick couplers.

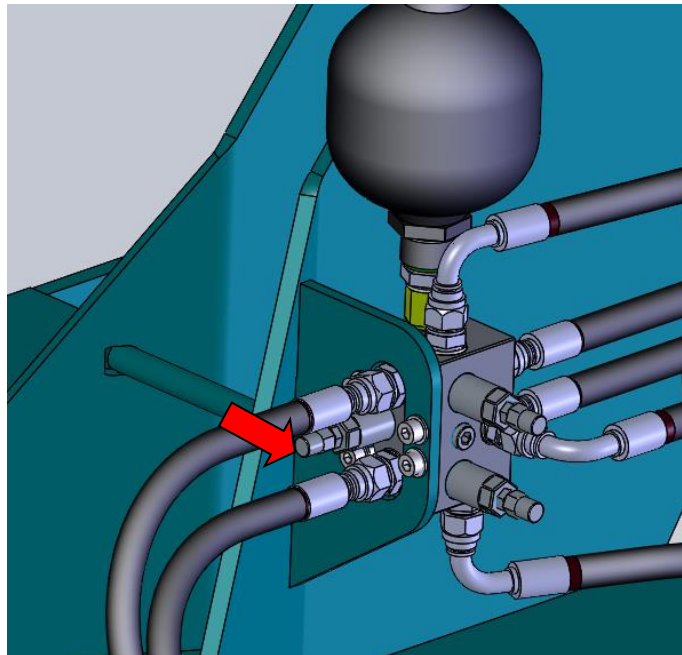
In case of leaving equipment outside check that ground is balanced to help next engagement. Wooden plank would be helpful to balance the area.

In case of season storage cylinder rods would be good to shield with CORRSIELD VPCI-369 or with some other storage lubrication oil.

Working depth and blade angle will be adjusted with the hydraulic top link. Turning angle of the blade will be adjusted with the turning cylinder. Blade pressing will be done with the pressing cylinder and when lifting chock valve of the pressing cylinder will release oil to the tank line.

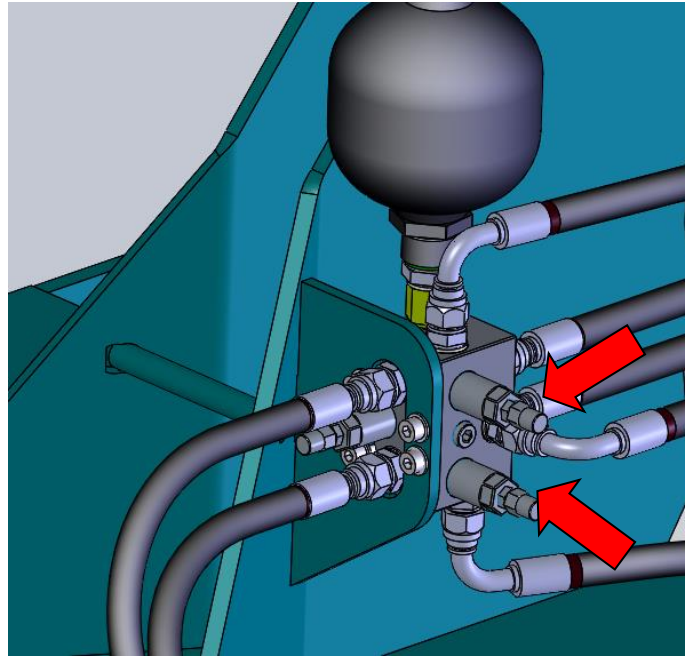
#### **4.4. Adjustment**

Pressing force will be adjusted with the chock valve. When tightening pressing force will increase and when opening pressing force will decrease (Picture 3). Factory setting of pressing force is 110 bar (adjusting screw 4 turns open). The desired pressing force depend on weight of tractor, road surface and type of blade on the scraper.



**Picture 3. Adjustment of the pressing force**

The scraper has chock valve also in turning and duo to that force of the turning cylinder will be also adjusted (Picture 4). Factory setting of chock valve is 90 bar (adjusting screw 5,5 turns open).



*Picture 4. Adjustment of the turning cylinder*

## 5. SERVICE

The most important thing to get maximum reliability is good service in time. Service costs are smaller compared to the repairing's costs. Below mentioned service includes all the lubrications and adjustments.

### **5.1. Daily service**

- Check the wear of the blade
- Check the tightness of the blade
- Check all the movements
- Clean equipment after working day

### **5.2. Weekly service**

- Lubricate all the nipples
- Check that there are no leak from the quick couplers

### **5.3. Service after 500 hours**

- Check all the pins
- Check tightness of the screws

#### **5.4. Annual service**

All the above mentioned service points. Lubricate all the nipples.



**NB:**

**When making service we have to follow service table mentioned in this book**



**NB!**

**All the screws must be tighten after first use**



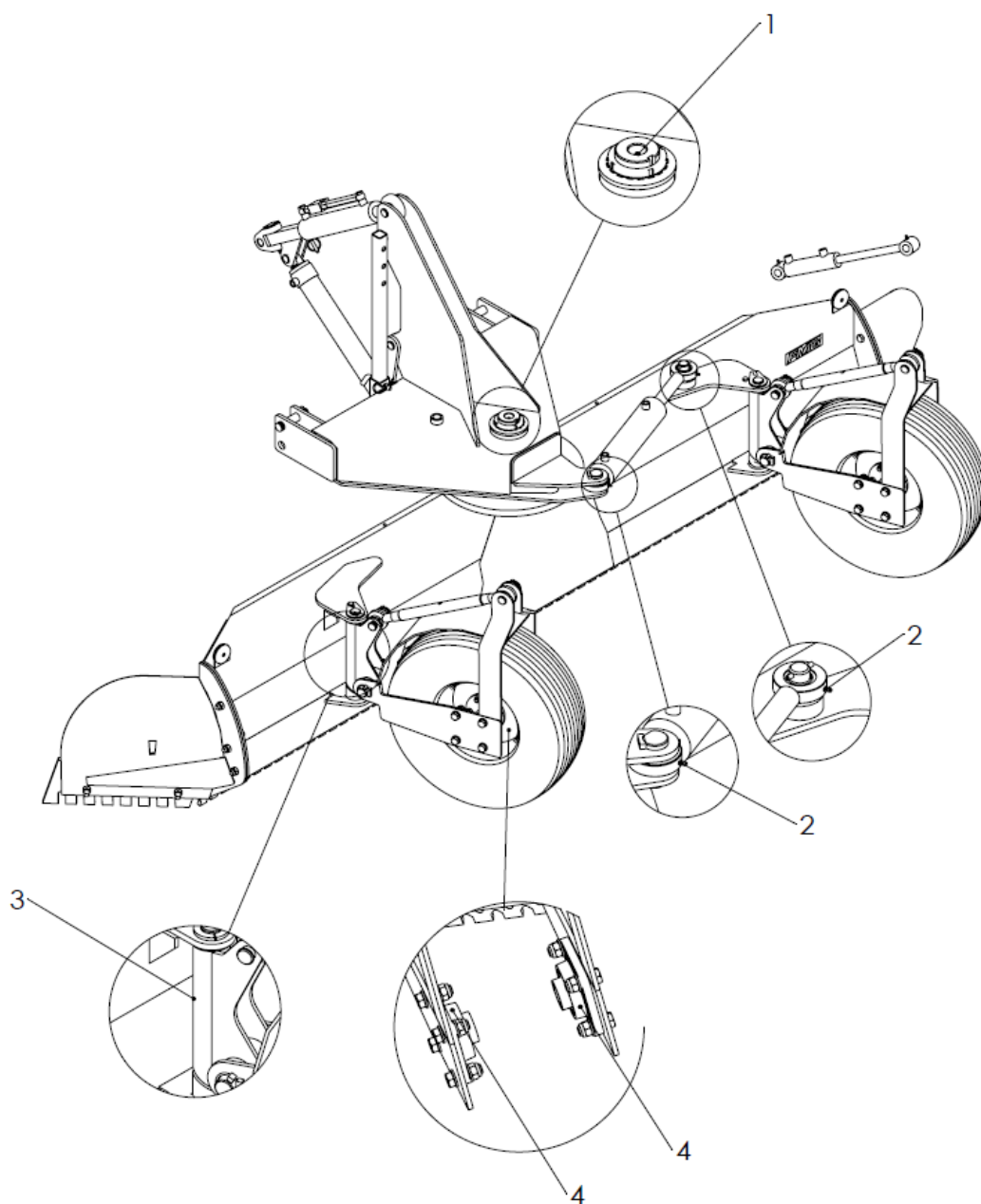
**NB!**

**In case of storage all the cylinder rods must be lubricate**

## 5.5. Lubrication

Lubricate all the nipples weekly. Clean the top of the nipple before lubrication.

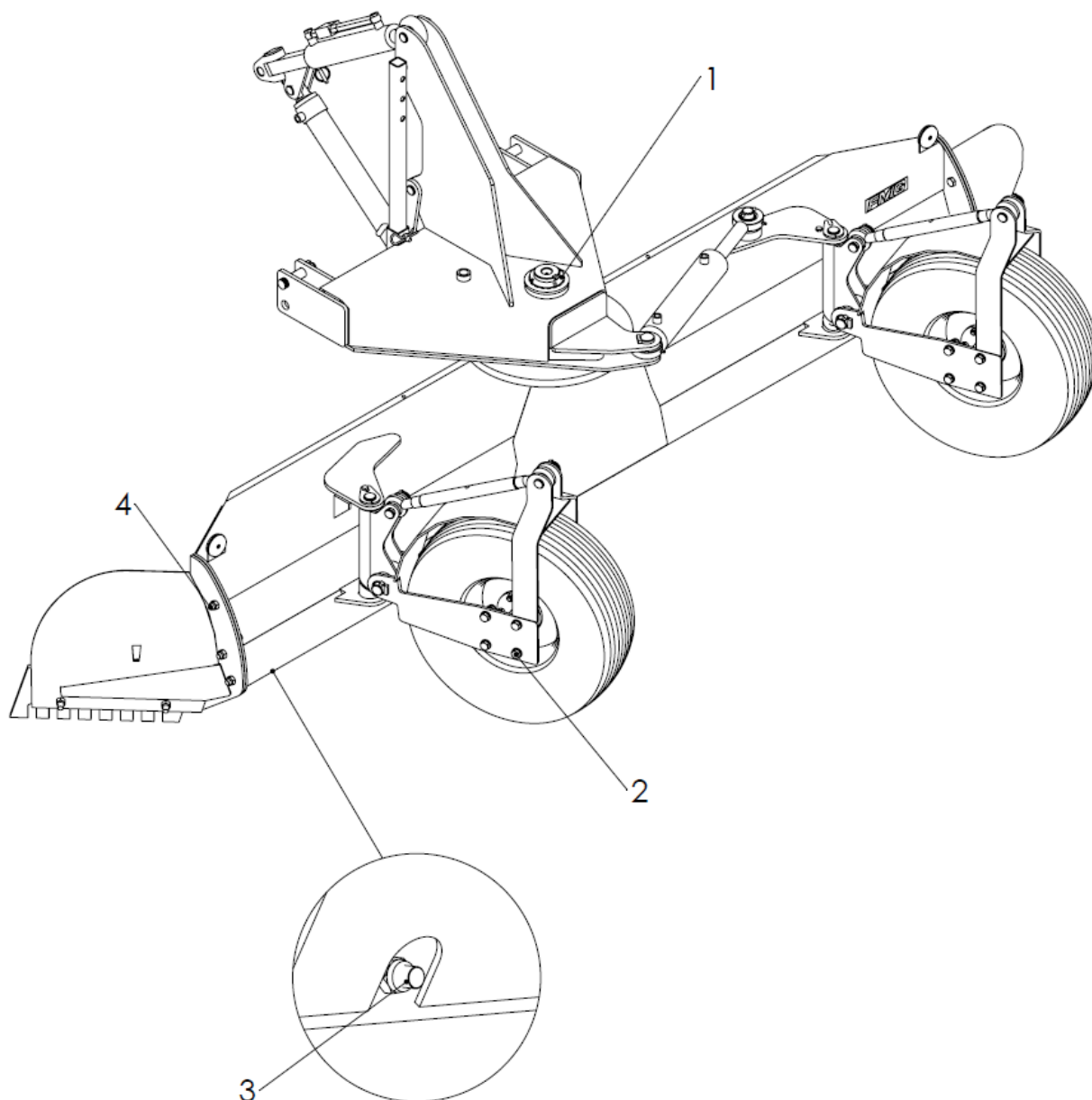
1. King pin lubricate nipple (1 unit)
2. Turning cylinder lubrication nipples (2 units)
3. Wheel bracket lubrication points (2 units)
4. Wheel bearing lubrication nipples (4 units)



## 5.6. *Screws to be tighten*

Tighten all the screws after first 10 working hour and after that after every 500 working hour.

1. King pin tightening nut
2. Support wheel screws
3. Tightening screws of the blade
4. Extension wing tightening screws







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