



OPERATORS MANUAL NA220 – NA400

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-ISO730-1.

FÖRSÄKRAN OM ÖVERENSSTÄMMELSE

LLP Farm Machinery Group Oy försäkrar härmed att följande maskin uppfyller maskindirektivet 2006/42/EY och standard SFS-EN ISO 12100 och SFS-ISO730-1.

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-ISO730-1.

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-ISO730-1.

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 / Namnförtydligande
/ Clarification of signature
/ Tydeliggjøring av signatur: Markku Lappalainen

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 follows:

- 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 articulated plough users. Manual contains detailed instructions for driving, operating and maintaining the articulated plough. Make sure that your new articulated plough 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 you 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 articulated plough. 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 articulated plough. 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 articulated plough.



IMPORTANT

Do not use the plough 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, make sure that there is not anyone close to tractor. Safety distance 5 meters.



IMPORTANT

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



DANGER

Do not operate with the damaged implement.



IMPORTANT

Use the rotary beacon while working.



WARNING

Observe Operators Manual instructions while working.



WARNING

Pay attention to other road users.



IMPORTANT

Lower implement always down to ground and stop the engine before leaving the cab.



IMPORTANT

Do not leave the implement resting on the hydraulics when serving or checking, use mechanical support. Always stop the engine for maintenance.



WARNING

Do not disconnect, connect or tighten hydraulic quick couplers when pressure is on.



WARNING

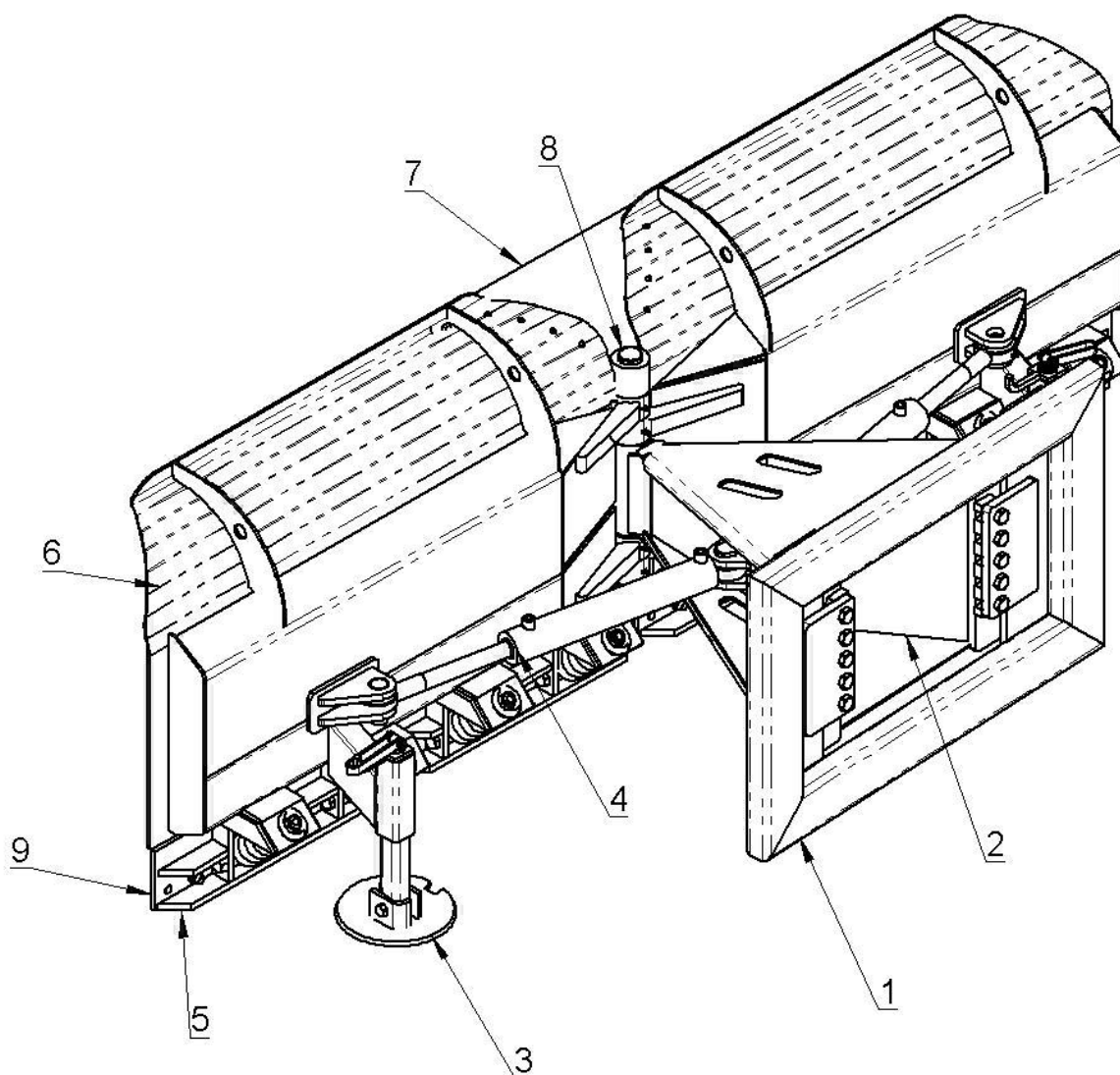
Do not inhale oil mist if a pressurized component becomes damaged. In case you have got oil in eyes wash eyes with running water and go to doctor if needed.



DANGER

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

2. CONSTRUCTION



1. Connecting frame

2. Joint frame

3. Stand

4. Turning cylinder

5. Knife frame

6. Blade

7. Rubber flap

8. Central joint

9. Wearing blade

3. TECHNICAL SPECIFICATIONS

| Model | Width (cm) | Working width (cm) | Height (cm) | Weight (kg) | Blade angle |
|-------|------------|--------------------|-------------|-------------|-------------|
| NA220 | 220 | 173 – 220 | 92 | 560 | +/- 39 |
| NA240 | 240 | 195 – 240 | 92 | 590 | +/- 38 |
| NA280 | 280 | 235 – 280 | 92 | 655 | +/- 38 |
| NA320 | 320 | 265 – 320 | 110 | 760 | +/- 38 |
| NA360 | 360 | 295 – 360 | 135 | 1230 | +/- 35 |
| NA400 | 400 | 325 - 400 | 135 | 1330 | +/- 35 |

4. ARTICULATED PLOUGH USE

4.1. *Using area*

FMG articulated plough is specially designed to the areas and roads where working width changes often. Also you can use plough in plowing and in moving snow from the yard to the edge.

4.2. *Instruction*

Before use check that plough is engaged properly to the working machine and all the locking's are well done.

Test drive working machine and plough combination to ensure that all have been engaged well. If plough is new or it have been modified ensure that air has been eliminated from the system. Air in hydraulic system could cause unexpected movements.

When using plough ensure that your sight is clear to the ploughing area and there is not anyone in the dancer zone.

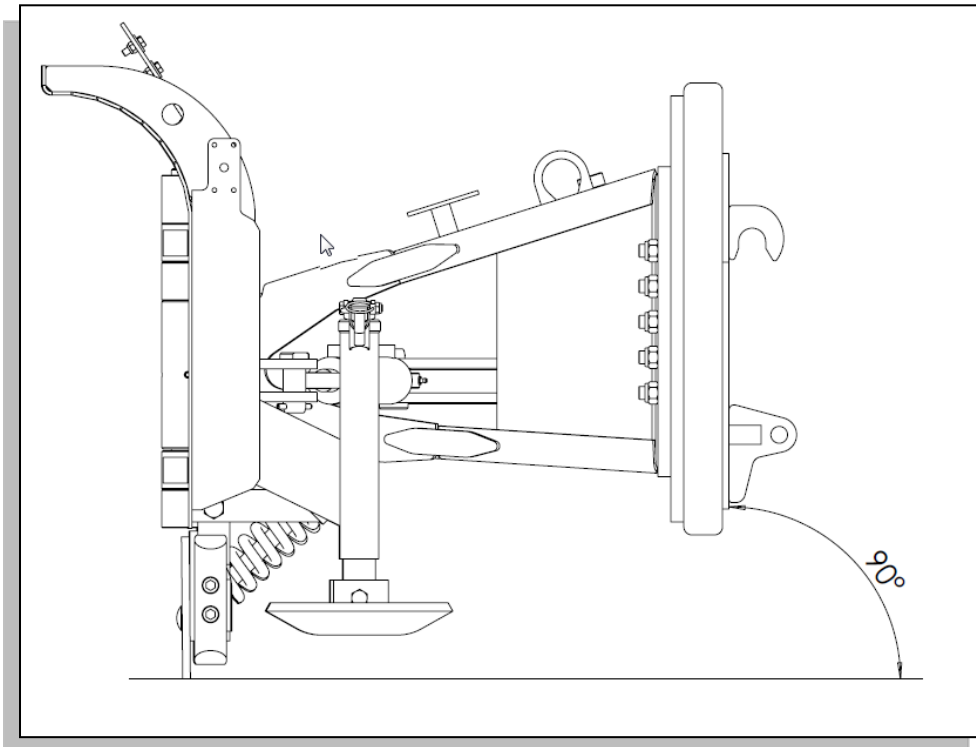
When disengage plough, put shields to the hydraulic hoses.

When disengage plough outside ensure that ground is balanced to help next engage. Wood blocks would be beneficial to balance the area.

If plough will stay longer period without usage, lubricate piston rods with CORRSHIELD VPCI-369 corrosion shield or with storage oil to avoid corrosion.

4.3. *Articulated plough use*

Working position of plough is correct when frame is in the upright position (Picture 1)



Picture 1. Plough frame in the upright position



IMPORTANT

When plough is new take care that air from hydraulic system will be eliminated by turning cylinders against to the limit stoppers couple of the time.

Adjust support legs in order to blade will get correct height from the surface.

In case of front loader application beam support are recommended.

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 all the blades
- Check knife attachments

- Test drive all the movements
- Clean the equipment in the end of the working day

5.2. Weekly service

- Lubricate all the nipples
- Check that there are not leakages

5.3. Service after 500 working hours

- Check pin condition
- Check screw tightness

5.4. Annual service

All above mentioned. Lubricate all the lubrication points always when leaving equipment to the storage.



NB!

When serving you should follow the service table also taking care of the previous services.



NB!

Tightness of the screws should be checked also after the first drive.

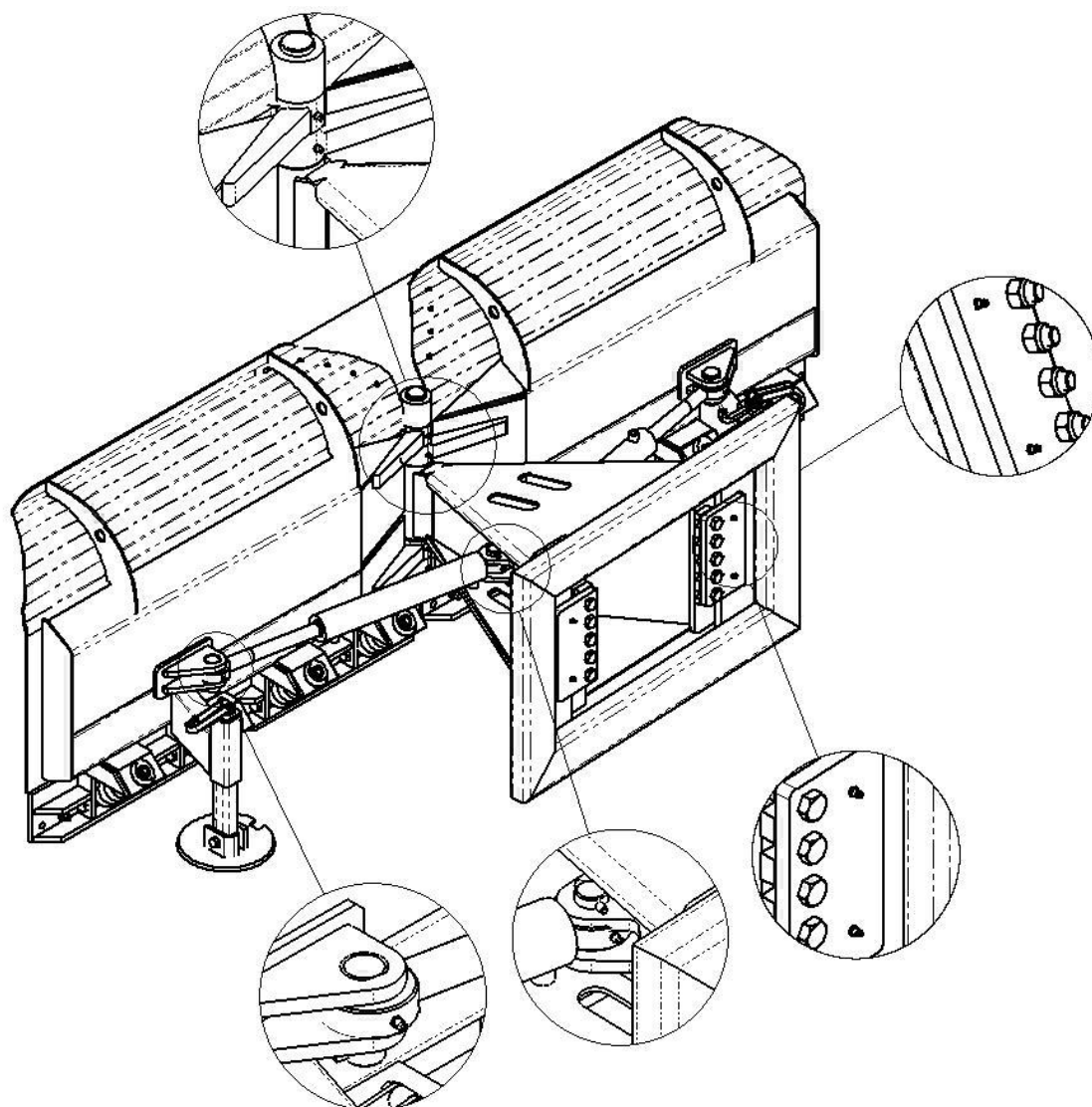


NB!

Lubricate also piston rods when leaving equipment to the storage place.

5.5. *Lubricating points*

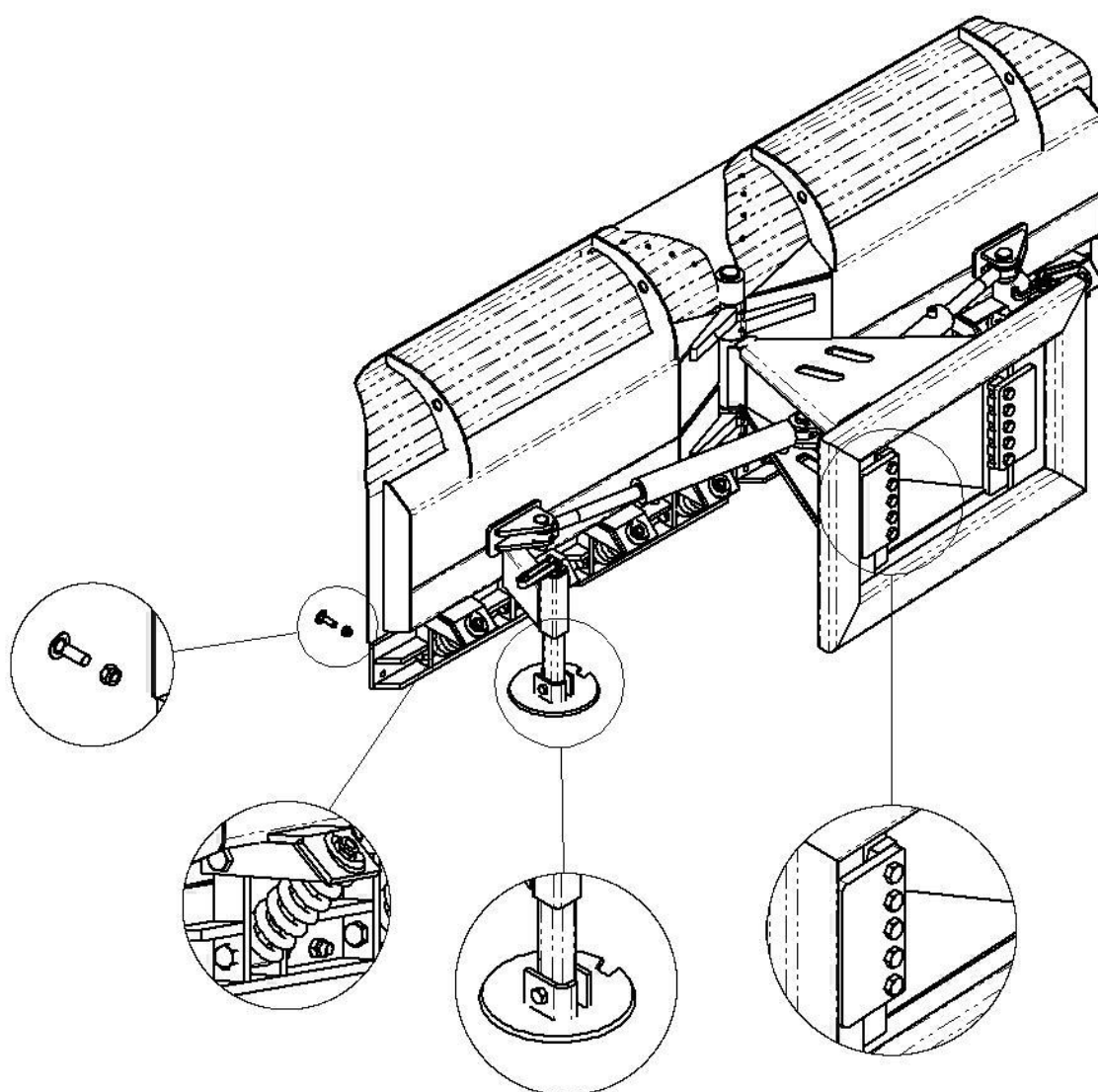
- Lubricate nipples shown in the picture weekly. Clean the top of the nipple before lubrication.
- Central joint grease nipples (4)
- Cylinder grease nipples (4)
- Sliding frame and connecting frame grease nipples (8)



5.6. Screws to be tightened

Tighten all the screws after 10 hours' drive and after that between 500 working hours. Inspect the knife attachment daily.

- Attaching frame screws
- Stand fixing screws
- Knife frame and spring fixing screws and nuts
- Knife fixing screws



6. ELECTRIC VALVE CABLES



| | |
|----------------------------|-------|
| Connection for 8/3 valve: | |
| Yellow-green → ground | 3/31 |
| Blue → supply for valve 1 | 2/54g |
| Brown → supply for valve 2 | 4/R |
| Connection for 6/2 valve: | |
| Ground | 3/31 |
| Supply for valve 1 | 2/54g |





LLP FARM MACHINERY GROUP OY

LEVYTIE 4
74510 IISALMI, FINLAND

PUH. +358 (0)20 1984 020
FAX +358 (0)20 1984 029

www.fmg.fi

