

# OPERATION, MAINTENANCE AND SPARE PARTS MANUAL

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## FOREST CRANE AND FOREST TRAILER FARMİ 2740 + FARMİ 70



**READ THIS OPERATION AND MAINTENANCE MANUAL CAREFULLY  
BEFORE USING THE MACHINE**

**FARMİ**<sup>®</sup>  
FOREST

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# FARMI 2740 + FARMI 70

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When ordering spare parts, please indicate the machine's type and serial number from the machine plate, spare part's order number, description and quantity required. Example. FARMI 2740, serial number, order number, description, 2 pc

# FARMI 2740 + FARMI 70

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## INTRODUCTION

This manual includes the information and maintenance instructions required for operating the machine in the optimal manner.

Although you have experience in using this kind of machinery, read the operation and maintenance instructions carefully since they include information enabling efficient and safe operation. Regular maintenance is the best way to guarantee the efficient and economical performance of the machine.



**Each and every operator must read, understand, and follow all safety instructions and procedures.**

## WARNING SYMBOLS IN THIS MANUAL



- **imminent danger which could cause serious personal injury or death**



- **danger which could cause personal injury**



- **conditions or misuse that could damage equipment or machinery**
- **reminders, such as for performing checks or carrying out maintenance or repair procedures**

## PRODUCT WARRANTY

Farmi provides a 12-months warranty on all Farmi products.

Register on our home page ([www.farmiforest.fi](http://www.farmiforest.fi)) under FeedBack ("Product Registration" form) within 30 days after the receipt of the product to get full product warranty and additional information on your product. If it is not possible for you to register via internet, please register as follows: Complete the registration form on the last pages of this manual and return it to us within 30 days after the receipt of the product.

## CUSTOMER FEEDBACK

We are happy to receive your opinions and suggestions for improvements by mail, fax or e-mail. All implemented suggestions for improvements will be rewarded.

# FARMI 2740 + FARMI 70

## GENERAL SAFETY INSTRUCTIONS

These safety instructions are meant for the owners of FARMI equipment, as well as those who operate, service or repair it.

The instructions help with:

- using the machine safely, appropriately and effectively.
- identifying, avoiding and preventing potentially dangerous situations.

The manufacturer supplies an instruction manual, which must always be available at the place of operation of the machine. Each user must read the safety, maintenance and operating instructions before operating the machine, and comply with these instructions at all times.



**Ensure that every operator of the machine is familiar with the content of the instruction manual and situation-specific safety instructions, and has been suitably trained before operating the machine.**

The machine complies with technical requirements and applicable safety regulations. However, incorrect use, maintenance or repair of the machine may cause risks.

In addition to the instruction manual, remember to comply with regulations of the local occupational health and safety authorities, and with your country's laws and decrees.

**The manufacturer is not liable for damages caused by:**

- incorrect, negligent or inappropriate use of the product.
- non-original spare parts.
- normal wear and tear.
- misuse caused by an untrained person's improper actions.
- alterations made without the manufacturer's permission.



**Written authorization must be requested from the manufacturer for any alterations to the machine.**

## STARTING

- Familiarize yourself thoroughly with the use, operation and controls of the machine and its equipment before starting.
- Familiarize yourself with the capacities and limitations of the machine and its equipment.
- Do not use the machine unless you are completely familiar with its operation.
- Be aware of the machine's danger zones.
- During operation, prevent bystanders from entering the danger zone.
- Ensure that each operator has the necessary safety equipment, such as a helmet, safety goggles, work safety boots and suitable protective clothing.
- Never wear loose clothing around moving parts. Protect long hair!
- Ensure that work is carried out according to the stipulations of applicable occupational health and safety legislation.
- Before starting up or using the machine, ensure that it cannot cause a risk to other people or property.
- Perform a safety check on the machine before every use. If you observe any faults or deficiencies, repair the machine immediately.
- Before operating the machine, ensure that there are no foreign articles in it.
- Place the machine on a hard, level surface for operation. In the winter avoid working in slippery areas.
- Before mounting and using the machine, check the PTO drive shaft for correct condition and attachment.
- Never use a faulty or deficient machine.

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## TRANSPORT

- Before driving with the machine, ensure the safe mounting of the machine. Make sure that the journals are seating correctly and that the pins are tight. Check the tension of the lower link stabilizers.
- Before driving with the machine, make sure that the required lamps and reflectors as well as the slow moving vehicle sign are attached correctly. Moreover, the lamps should be checked for correct functioning.
- Before driving with the attached machine, make sure that the hydraulic unit of the machine is depressurized (unless otherwise instructed in the operating instructions).
- When driving on public roads, always observe the valid traffic regulations. The travel speed must be adapted to the specific conditions.
- When driving, please take into consideration the additional mass resulting from the machine's weight. It may affect the reactions, the steerability and the braking function of the tractor.
- Please note that the machine rear sways when turning.
- Pay attention to the machine's height near bridges or other height restricting objects.
- When backing off, the machine may obstruct the rear view. Exercise extreme caution. If necessary, ask a flagman to help you; he can indicate the required distances.
- It is prohibited for other people to ride on the machine.

- If any faults arise that may jeopardize occupational safety, turn off the machine.
- During operation, the machine's operator is responsible for safety in the whole work area. Work may not be carried out in the presence of any factors that jeopardize occupational safety.
- Exercise extreme caution when hitching / unhitching the machine from a tractor/trailer.



**The machine's operator must have constant, unobstructed visibility of the work area. If this is not possible, the operator must work with an assistant.**

- Look out for moving parts when the machine is in operation.
- Secure the machine against unauthorized and accidental operation (e.g. moving when parked) whenever it is left unattended.
- Never leave the machine running unattended.
- Avoid causing fast, stroke-like loading.
- Never exceed the given operating values.
- All safety and warning signs on and in the machine must be legible and intact.
- The machine may not be operated by persons who are unwell or under the influence of drugs or alcohol.

## OPERATION



**Many occupational accidents take place in abnormal circumstances. Therefore it is important to take into account all the possible circumstances that may arise during operation of the machine.**

- Depending on the machine's type, it will have diverse safety devices and protectors. These are meant to protect the machine and its operator, and they must never be removed or altered. Never start up or use the machine without all the safety devices and protectors in place. Also check the universal joint's safety equipment and joints.
- Never insert any body part into the machine with the engine running.

## MAINTENANCE

- The machine may only be serviced and repaired by professionals.
- Electrical and hydraulic faults may only be repaired by authorized professionals.
- In cases requiring welding, contact the manufacturer.
- Turn off the tractor engine and disconnect the universal joint before beginning service or maintenance actions.
- Before any maintenance work, turn the main power switch of the tractor to OFF.
- Ensure that there is no pressure in the hydraulic system.
- Take out the key from the tractor's ignition for the duration of the servicing or maintenance. Check that the power is off from the machine you are working on.
- When servicing the machine, place it on a level surface and ensure that it cannot be moved.

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- Observe the service intervals and annual safety inspections.
- All spare parts and equipment must fulfill the manufacturer's requirements. This can be guaranteed by using original parts.
- Put all safety devices back into place immediately once servicing or maintenance is complete.



**When lifting the machine, check that the lifting/hoisting equipment is in perfect working order. Check the weight of the machine before lifting it. Choose lifting trajectories so that they do not cause any danger.**

Many countries have specific legislation on lifting, hoisting cables and hoists. Always comply with local safety regulations.

## OILS AND LUBRICATION

- Always use the oil types recommended by the manufacturer. Other types of oil may cause faults or improper operation of the equipment, which could lead to serious damage to people or property.
- Never mix different liquids or oils.
- Always follow the manufacturer's lubrication instructions.
- Use control equipment carefully until the hydraulic oil has had time to reach its operating temperature.

## SAFETY INSTRUCTIONS FOR HYDRAULIC CIRCUITS

1. Work on hydraulic equipment may only be carried out by professional hydraulic engineers.
2. Be cautious when using the equipment in cold conditions.
3. Check the machine for leaks. Do not use the machine if there is a leak from any system. Check all hydraulic hoses – particularly those which are bent during use – and replace any that are in poor condition or have leaks. Ensure that all joints are tight and that the lines are not damaged. Check that all protective caps and filler caps are closed properly. Check the hose sheathing for damage.
4. Check that all hose connectors, lengths and qualities comply with applicable requirements. When replacing or repairing hoses, use original parts or hoses and connectors recommended

5. by the manufacturer. Check particularly that the pressure classes of the hoses and connectors are suitable to the operating pressure levels.
5. Check that all safety devices such as pressure relief valves, etc., are in place and work properly. Familiarize yourself with their use. Safety systems may never be bypassed.
6. Check the main hydraulic parts daily, and always after a fault. Replace any damaged parts immediately.
7. If a component is damaged, clean it before repairing it. Do not use solvents when cleaning parts.
8. Do not attempt to carry out repairs that you are not fully familiar with.
9. Never carry out repairs of the hydraulic circuit when the system is pressurized. When pressurized, the oil spray can penetrate the skin and cause mortal danger.
10. Never work below a device or component that is only being held up by hydraulics. Use separate supports when carrying out maintenance or repairs. Do not disconnect cylinders or their valves until the machine is well supported.
11. Most hydraulic oils do not evaporate easily. Risk factors include hot oil, spills and oil mist (pressurized).
12. If oil gets into your eyes, rinse with plenty of water and contact a doctor.
13. Avoid prolonged or repeated contact with your skin.
14. If sprays or contact with the skin cannot be avoided, use protective gloves, goggles and clothing as necessary. Do not use oily clothing.
15. Avoid discharging hydraulic oil into the environment, as it can pollute waterways and the groundwater. If biodegradable oil is to be used, please contact the manufacturer beforehand and have the suitability of your equipment for the operation with biodegradable oil confirmed by him before such oil is used.
16. Store the oil in sealed containers provided by the manufacturer. Try to transfer the oil directly from its container into the tank.
17. If the oil must be passed through other containers, ensure that they are completely clean. Caps, funnels, sieves and filling holes must also be clean.
18. Never store oil outdoors, as water could condense in it.
19. Always dispose of oil in a suitable container, never into the environment!

## SAFETY INSTRUCTIONS FOR LOADERS

- Ensure the machine is properly supported during storage.
- Council of State Decision 856/1998 requires that loading crane operators be at least 18 years of age and have received sufficient instruction in its operation. This applies in Finland.
- Before starting the machine, ensure that there are no bystanders within a radius of 20 meters.
- During operation, the vehicle must be positioned on sufficiently solid ground, in a properly stable position. The support legs must be used in all circumstances.
- Always put on the parking brake during loading.
- Do not exceed the given load values.
- Never stand beneath a hanging load.
- Do not leave booms in raised position unattended!
- The loader must not be used for lifting people.
- When lifting, note that the booms sag slowly.
- When working in the proximity of live wires, always adhere to the given safety distances (cf. table).
- Take particular care when lifting heavy loads and turning the loader to the side.
- Never use the loader for towing.
- Do not run the machine's movements to their extremes at full speed.
- If the vehicle assembly falls over, do not jump out of the vehicle.
- If the booms sag down under excess loading, use the shifting boom to shift the load closer to the column. Do not open the grapple.
- If the machine comes into contact with a power line, do the following:
  - Call for assistance immediately and ensure that no one enters the danger zone.
  - If you are outside the machine, do not touch any part of the machine.
  - If you are inside the machine, leave it by JUMPING OUT. When you jump, make sure both feet touch the ground at the same time. Do not touch the vehicle or the ground with your hands after jumping out. Move at least 20 meters away from the vehicle by hopping on two feet.

# FARMI 2740 + FARMI 70

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## FARMI 2740 INTRODUCTION

This manual gives you detailed overview about forest crane FARMI 2740. Read the manual carefully before you start using this machine. The manual contains essential directions for efficient and safe use of this equipment. These instructions should always be followed. This forest crane is constructed for loading works in forestry and agriculture. It can be mounted on FARMI 70 forest trailer. This machine meets all technical standards and safety regulations of EU Machinery Directive and its amendments. Forest crane is fitted out with CE marking.

Operator of forest crane is obliged to be aware of and strictly follow all safety precautions and instructions described in this manual. In addition to this, instructions of local occupational safety authorities, as well national laws and regulations, must be followed. Using the machine for other tasks than those for which it is intended or exceeding its performance is not allowed. The manufacturer/dealer is not responsible for damage caused by misuse of the forest crane.

Pay attention to regular maintenance. In case there will occur problems with forest crane, which are not covered in this manual, contact authorized dealer or manufacturer.

## FARMI 70 INTRODUCTION

This manual gives you detailed overview about forest trailer FARMI- 70. Read the manual carefully before you start using this machine. The manual contains essential directions for efficient and safe use of forest trailer. These instructions should always be followed. This forest trailer is constructed to transport raw wood material from forest as well for transportation treated wood. Forest trailer is build for use with agricultural tractors. This machine meets all technical standards and safety regulations of valid EU Machinery Directive and its amendments. Forest trailer is fitted out with CE marking.

User of forest trailer is obliged to be aware of and strictly follow all safety precautions and instructions described in this manual. In addition to this, instructions of local occupational safety authorities, as well national laws, regulations and highway codes, must be followed. Using the machine for other tasks, than those for which it is intended or exceeding its performance, is not allowed. The manufacturer/dealer is not responsible for damage caused by misuse of the forest trailer.

Pay attention to regular maintenance. In case there will occur problems during use of forest trailer, which are not covered in this manual, contact authorized dealer or manufacturer.

# FARMI 2740 + FARMI 70

## FARMI 2740 TECHNICAL DATA

|  |           |
|--|-----------|
| Max reach, m   | 4,0       |
| Lifting torque, kNm, bruto                                   | 27        |
| Lifting power on 4m without grapple and rotator, kg          | 510       |
| Lifting power on full reach without grapple and rotator , kg | 510       |
| Grapple, m2  | 0,17      |
| Rotator  | GR 30     |
| Grapple and rotator weight, kg                               | 79        |
| Slewing torque, kNm  | 5         |
| Slewing cylinders  | 2         |
| Boom rotation,°  | 370       |
| Hydraulic valve, standard                                    | HC 5/7 XY |
| Working pressure, bar  | 180       |
| Hydr pump capacity, l/min                                    | 20-30     |
| Total weight, kg   | -         |

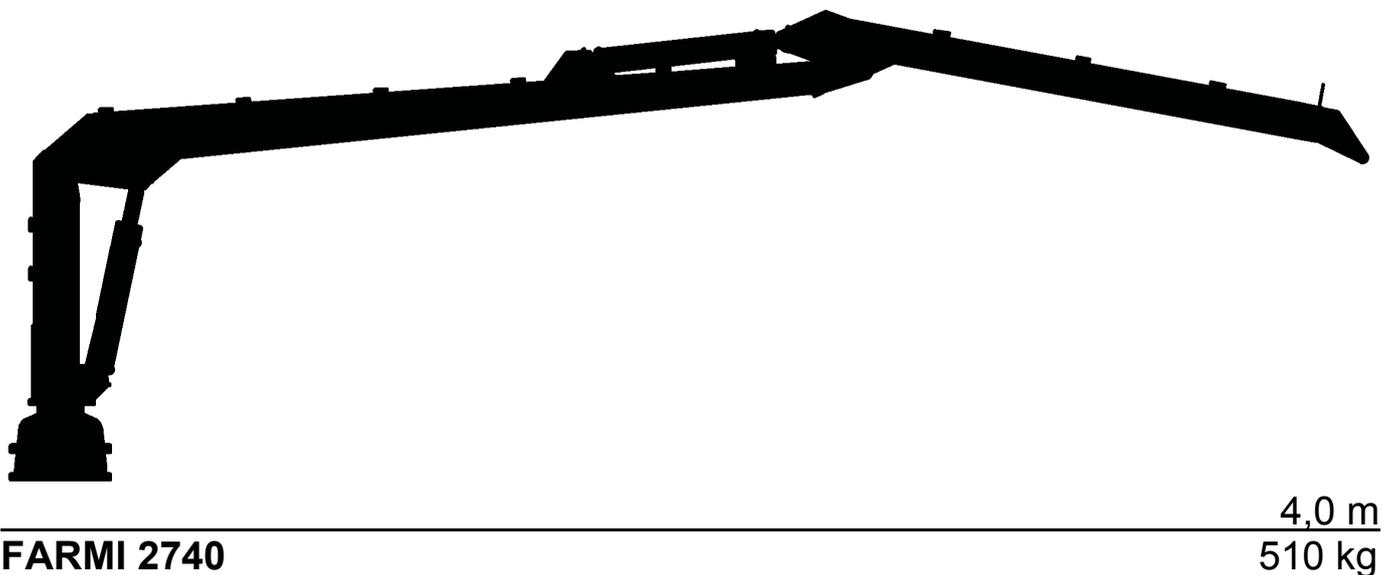


Figure 1. Farmi 2740 lifting power on different distances

Manufacturer reserves the right to change specifications without prior notice.

# FARMI 2740 + FARMI 70

## FARMI 2740 DIMENSIONS

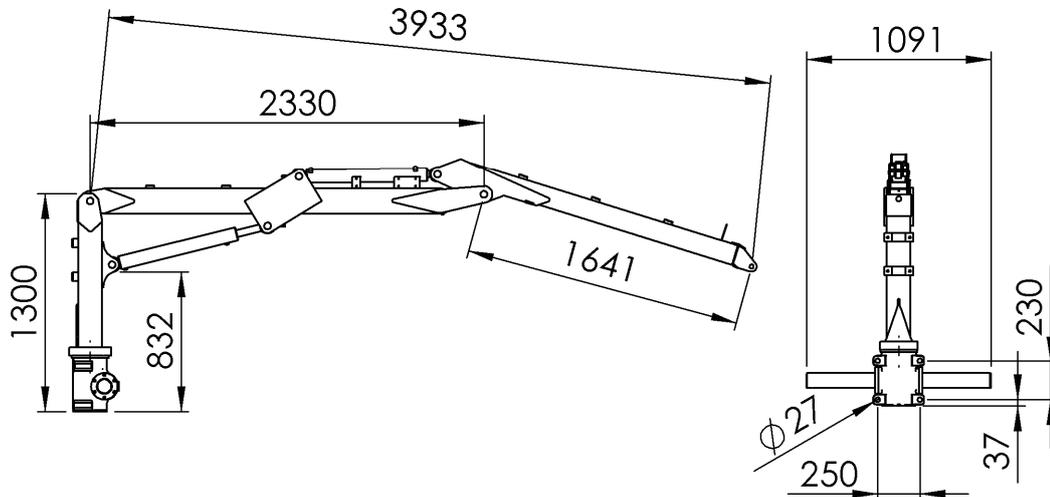


Figure 2. Forest crane FARMi 2740 dimensions (mm)

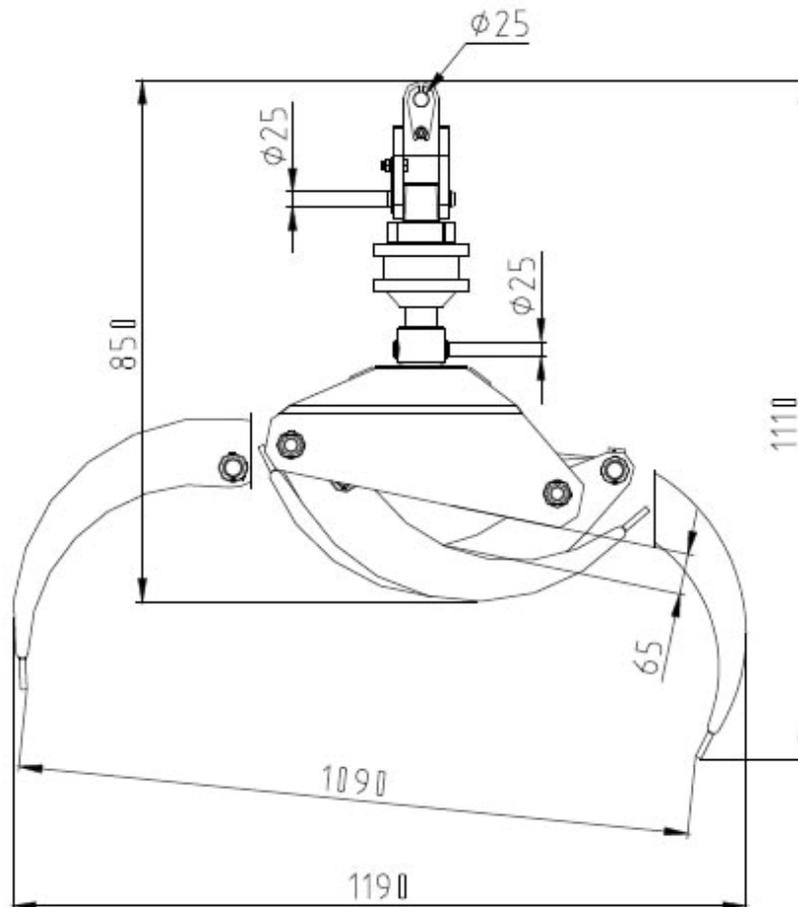


Figure 3. Grapple PTK 017 (0,17 m<sup>2</sup>) dimensions (mm)

# FARMI 2740 + FARMI 70

## FARMI 2740 LIFTING REACH

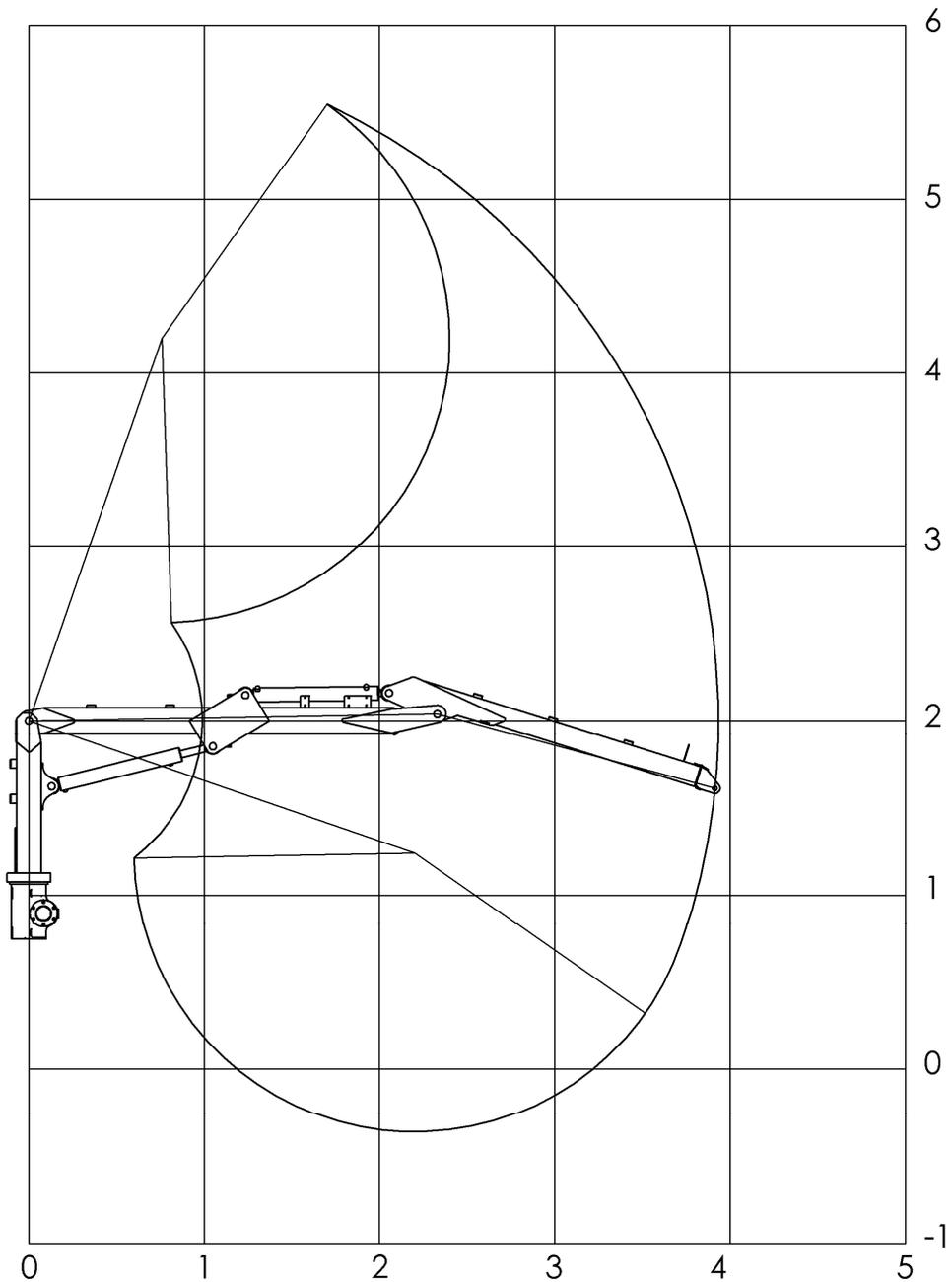


Figure 4. Lifting reach of FARMi 2740 forest crane

|  |                |           |
|--|----------------|-----------|
| <b>Farmi Forest Corporation</b>              |                | <b>CE</b> |
| Ahmolantie 6<br>FIN-74510 IISALMI<br>FINLAND |                |           |
| TYPE   | FORESTRY CRANE | 41012100  |
| MODEL  | FARMI 2740     |           |
| SERIAL NO.                                   |                |           |
| YEAR OF MANUFACTURE                          | 20             |           |
| WEIGHT CRANE/WITH SL                         | 500/575 kg     |           |
| MAX. HYDR. PRESSURE                          | 180 bar        |           |
| OIL FLOW NEEDED                              | 20-30 l/min    |           |

Machine plate FARMi 2740 40147530

|  |                |           |
|--|----------------|-----------|
| <b>Farmi Forest Corporation</b>              |                | <b>CE</b> |
| Ahmolantie 6<br>FIN-74510 IISALMI<br>FINLAND |                |           |
| TYPE   | FOREST TRAILER | 40147530  |
| MODEL  | FARMI 70       |           |
| SERIAL NO.                                   |                |           |
| YEAR OF MANUFACTURE                          | 20             |           |
| OWN WEIGHT                                   | 800 kg         |           |
| MAX. TOTAL WEIGHT                            | 7800 kg        |           |

Machine plate FARMi 70 41012100

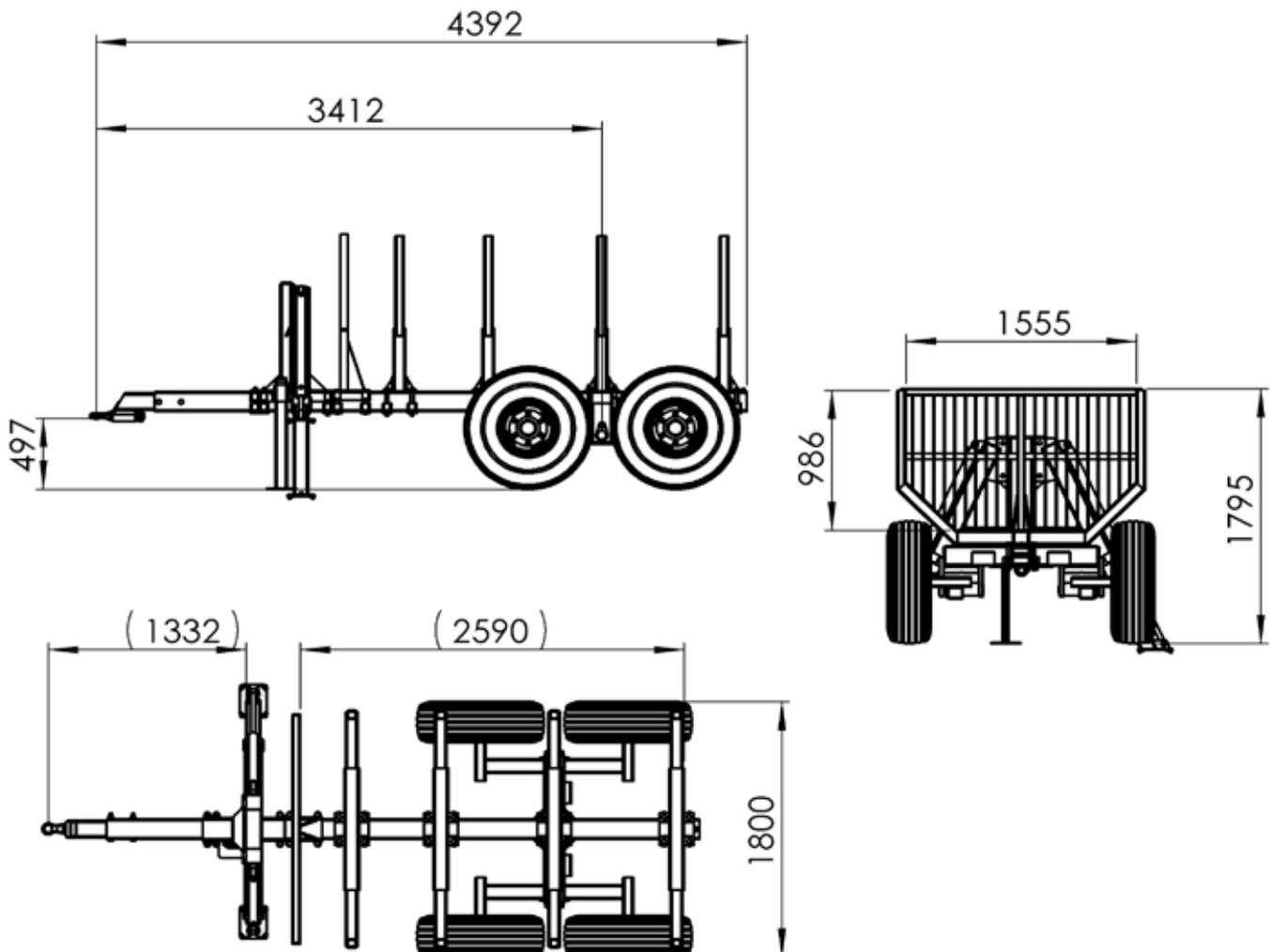
# FARMI 2740 + FARMI 70

## FARMI 70 TECHNICAL DATA

|                                    |              |
|------------------------------------|--------------|
| Load capacity $\leq 40$ km/h       | 7000 kg      |
| Axles                              | 60x60-6      |
| Chassis                            | 160x160      |
| Loading area, m <sup>2</sup>       | 1,6          |
| Length of loading area, mm         | 3150         |
| Total length, mm                   | 4392         |
| Clearance                          |              |
| Brakes                             |              |
| Width with standard wheels, mm     | 1940         |
| Standard wheels                    | 11,5/80-11,3 |
| Net weight, kg                     |              |
| Max torque of installed crane, kNm | 27           |

Manufacturer reserves the right to change specifications without prior notice.

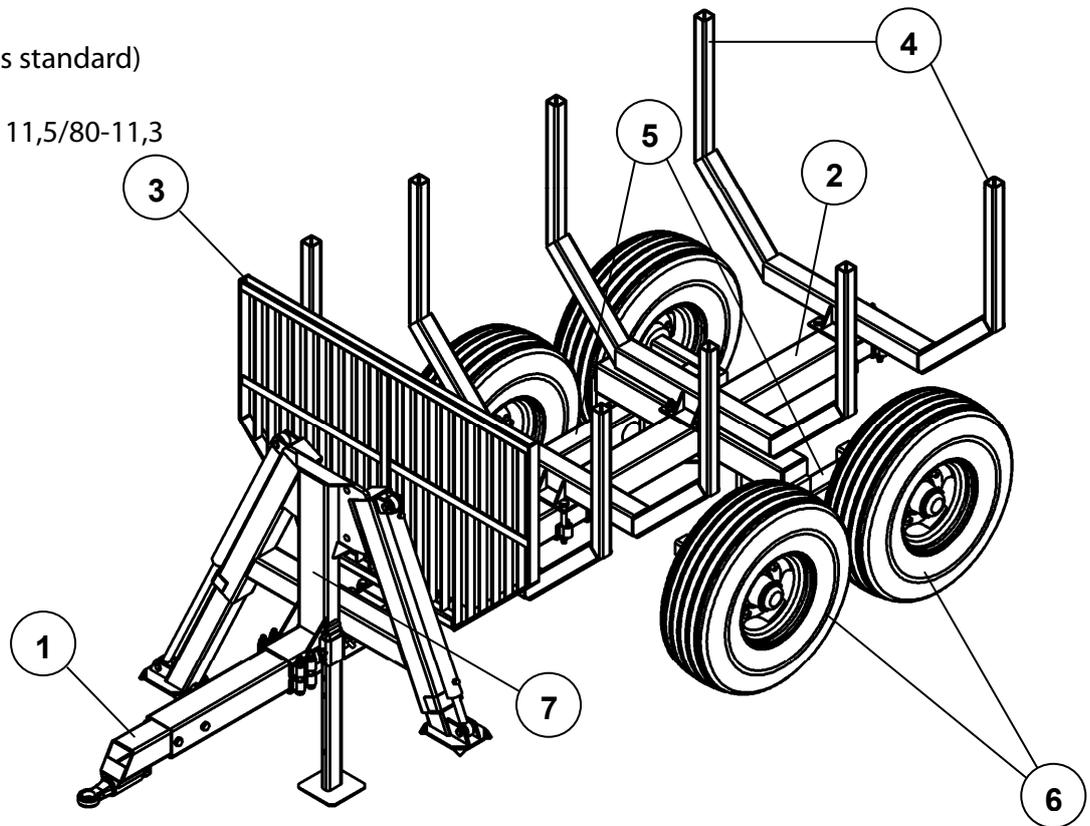
## FARMI 70 DIMENSIONS



# FARMI 2740 + FARMI 70

## FARMI 70 BASIC COMPONENTS

1. Drawbar
2. Chassis
3. Safety screen
4. Bolsters (2 pairs as standard)
5. Boggie
6. Wheels, standard 11,5/80-11,3
7. Support legs



## FARMI 70 ACCESSORY

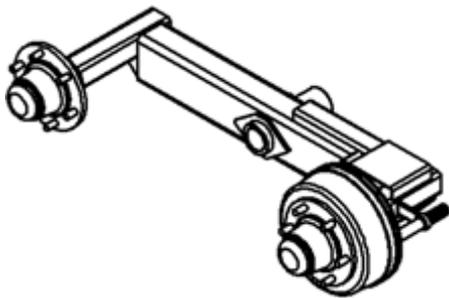


Figure 5. Brakes on one axle

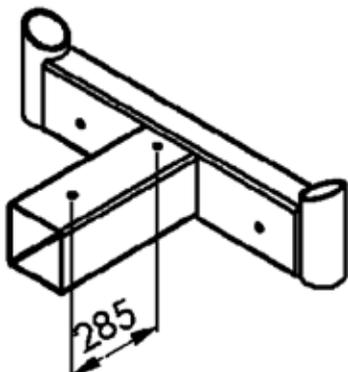


Figure 6. Frame extension

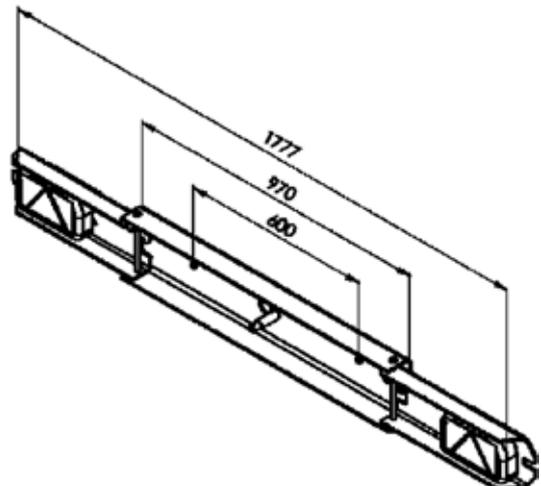
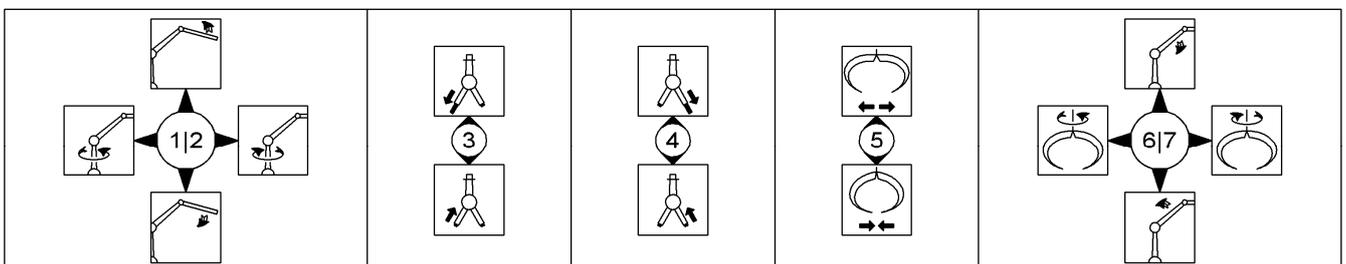
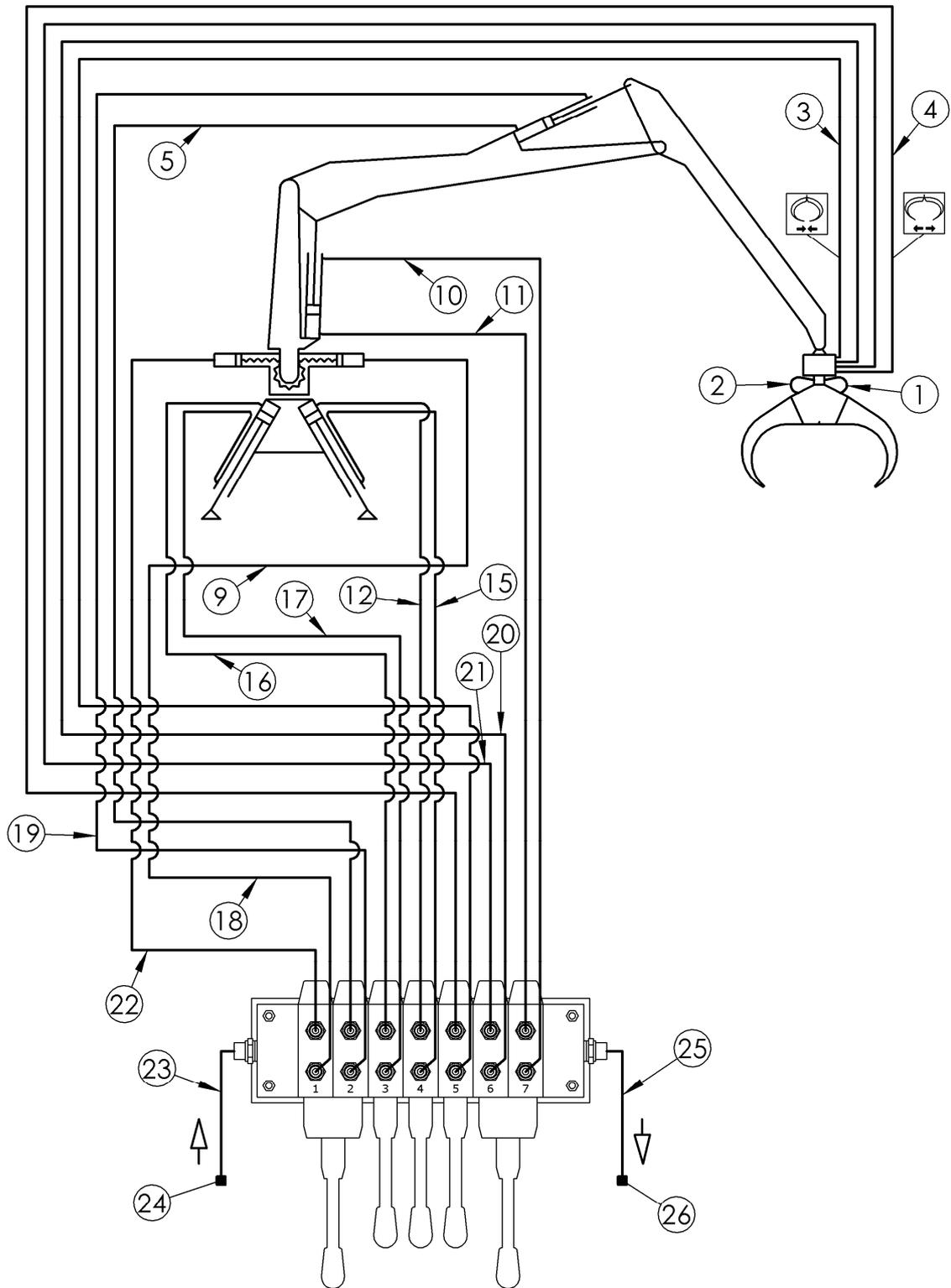


Figure 7. Signal lights

# FARMI 2740 + FARMI 70

## FARMI 2740 HYDRAULIC SYSTEM



# FARMI 2740 + FARMI 70

## FARMI 2740 HYDRAULIC SYSTEM

### CONNECTION

Before connecting forest crane to the tractor's hydraulic system, make sure that the oils are compatible. Forest crane has been tested using Addinol HVLP 32 hydraulic oil, that meets DIN 51524-3 requirements. Check the hydraulic oil level. We recommend connecting the pressure hose to the single-acting hydraulic outlet and the return hose to the tank via the return filter. The filter's intended minimum flow rate is 50 l/min and the filtering density is 10-50 µm. Make sure you connect the return hose always first and disconnect it last. Make sure the connection has made properly.



Ensure, that the control valve's pressure line (P) has been connected properly and that the return line (T) is unobstructed. In case there is obstruction in return line (quick couplings are not

connected or are not locked properly) the pressure might rise over 10 bar and cause malfunction of control valve.

Forest crane can also be connected to the double-acting hydraulics outlet. If this option will be used make sure, that the lever of the double-acting valve is in the right position and the pressure is directed to the pressure connection of the crane's control valve. Check also vehicle's operating manual for hydraulic system connecting instructions.



FARMI 2740 forest crane control valves are fitted with the one-way flow valve, which protects control valve in case return line is by mistake connected to pressure line. If pump is directly connected to cranes control valve return line, there will

be danger of breaking pump or hoses from over-pressure, because one-way flow valve will block oil flow in wrong direction.

## FARMI 2740 SHOCK VALVES

| FUNCTION          | HC 5/7 XY |                   |     |
|-------------------|-----------|-------------------|-----|
|                   | BLOCK     | SHOCK VALVE (bar) |     |
|                   |           | A                 | B   |
| SLEWING           | 1         | 180               | 180 |
| EXT. BOOM         | 2         | -                 | 120 |
| SUPP. LEG L       | 3         | -                 | -   |
| SUPP. LEG R       | 4         |                   | -   |
| GRAPPLE           | 5         | -                 | -   |
| GRAPPLE SLEWING   | 6         | -                 | -   |
| LIFTING           | 7         | 80                | -   |
| MAIN SAFETY VALVE |           | 180               |     |

Table 1. Shock valve pressures for HC 5/7 XY control valve

## FARMI 70 HYDRAULIC SYSTEM

### CONNECTION

Connect trailer's hydraulic hoses to one of available sections of tractor's control valve. Be sure all connections are properly locked. Using lever of control valve section, where you connected forest trailer's hydraulic hoses, pressurize trailer's hydraulic system and make sure, there is no leaks.

# FARMI 2740 + FARMI 70

## FARMI 2740 ASSEMBLY AND MOUNTING

Read these instructions before starting any assembly or mounting work. Improper mounting can cause hazards during use of the forest crane. Mounting, carried out in a manner other than specified in this manual, can expose the user to danger and will void the manufacturer's warranty.

### MOUNTING FOREST CRANE TO FARMI 70 FOREST TRAILER

Mounting of forest crane should be performed at the dealer service center or by person authorized by the manufacturer or dealer. Mounting/detaching the crane can also be made by end user, if professional equipment is used, all safety regulations are followed and at least one qualified mechanic is in present during all the mounting/detaching process. Strength class for mounting bolts of slewing device-support legs (pos. 1, fig.5) has to be 12.9 (DIN912). Use self-locking nuts M24. The tightening torque for the mounting bolts of the crane(pos. 1, fig. 5) is 1220 Nm.



**Retighten bolts after the test run and after first 8 hours of use! Check after 40 working hours, tighten if needed. Later on do visual check.**

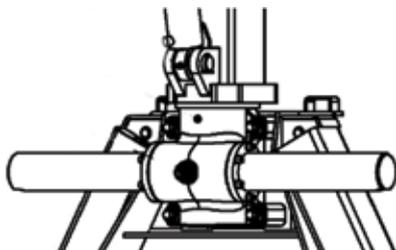


Figure 9. Upper connection junction on FARMI 2740/70 support legs

## FARMI 2740 MOUNTING CONTROL VALVE



**The valve must be installed in the way that levers cannot be used inadvertently!**

Install the valve at desired location using the included bracket. Leave enough space for hoses to avoid risk of abrasion or clamping while working with forest crane.



**Hoses in the operator's cabin must be covered in the way that the user is protected from the direct oil jets in case of hose breakage!**

# FARMI 2740 + FARMI 70

## FARMI 70 ASSEMBLY AND MOUNTING

Read these instructions before starting any assembly or mounting work. Improper mounting can cause hazards during use of the forest trailer. Mounting, carried out in a manner other than specified in this manual, can expose the user to danger and will void the manufacturer's warranty.

### MOUNTING FOREST CRANE TO FARMI TRAILER

Mounting of forest crane should be performed at the dealer service center or by person authorized by the manufacturer or dealer. Mounting/detaching the crane can also be made by end user, if professional equipment is used, all safety regulations are followed and at least one qualified mechanic is in present during all the mounting/detaching process.

Strength class for mounting bolts of turning device - support leg (fig. 7, pos.1) is 12.9 (DIN912). Use self-locking nuts M24. Tightening torque for the mounting bolts is 1220 Nm.



**Retighten bolts after test run and after first 8 hours of use! Check after 40 working hours, tighten if needed. Later on do visual check.**

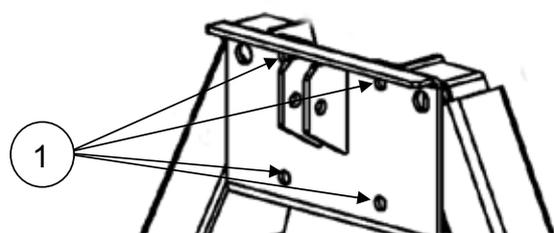


Figure 10. Connection junction on support leg of FARMI 70

## FARMI 2740 OPERATING INSTRUCTIONS

### TESTING

Ensure that the control valve's levers are in the middle position. Switch on the pump and let oil flow through the valve for a while. Lower support legs.



**Ensure that there are no people or obstacles in the operating area. The danger zone is 20 m!**

Carefully drive crane movements one by one in the way, that all cylinders reach their extreme positions and repeat this until all movements are smooth.



**Be careful when getting air out of system. If you drive cylinder to its extreme position at full force, the air pressure in the cylinder will damage the seals! Be extremely careful, when there is air in the cylinders!**

After testing forest crane, inspect connections and repair leaks if any appeared. Check the mounting bolts of the crane and support leg, tighten them if necessary. Check the hydraulic oil level, and fill up if necessary.

### PRACTICE RUNS



**Forest crane should not be operated if temperature is below  $-25^{\circ}\text{C}$ . Note that the hydraulic seals, hoses and steel structures are prone to damage at low temperature. When starting work at cold temperature, first let the oil flow freely through the valve for a couple of minutes. The maximum operating temperature for hydraulic oil is  $+75^{\circ}\text{C}$ .**

Drive through every movement with an unloaded crane, paying attention to the positions in which the crane might hit surrounding obstacles.



**Never move the boom to its extreme position at full speed!**

Move the control levers smoothly and stoutly, avoiding quick and jerky movements. Learn to use several functions simultaneously. Start at low engine speed to avoid sudden movements. After you have become accustomed to the crane's movements, choose appropriate engine speed so, that operation is smooth and efficient, but you still have the movements under control. Loading big and heavy logs from distance, keep load close to the ground. When reaching the trailer, lift it up to load. When unloading do vice versa.

Working on inclined surface, do not operate with the full lifting torque and be extremely careful. Loading uphill note, that turning crane with too much load might cause the oil pressure in slewing device cylinders to reach critical point, where shock valve has to intervene. This could make slewing device uncontrollable and crane might turn back to downhill direction in a way, that it might fall over. In such case lower the load as close to ground as possible, but not too rapidly.



**Use the support legs only for purpose to provide additional support for the vehicle! Don't forget to lift the support legs UP before moving to another place!**

Support legs are equipped with extra valves, which will keep them in working position in case feeding hoses of support leg cylinder break.



**Do not exceed the speed limit when driving! Adjust speed according to the road and weather conditions. Be especially careful on turns! For driving always attach crane by grapple to trailers frame. When driving with load, leave one log sticking out from pile and attach crane by grapple to it. Keep crane boom as low as possible.**

## DETACHING FOREST CRANE

Choose sufficiently hard and level ground for detaching forest crane. Ensure, that no unauthorized persons are around during detaching and storing process. When storing control valve, make sure it is out of the reach of children.

- Lower the support legs to support crane properly
- Fix crane firmly by proper hoist
- Make sure that crane cannot lean over
- Detach quick couplings and put covers on them



**Always switch the pump off before disconnecting quick couplings!**

- Detach crane from the vehicle

# FARMI 2740 + FARMI 70

## FARMI 70 OPERATING INSTRUCTIONS

### CONNECTING FOREST TRAILER TO TRACTOR

Before you hook up trailer to tractor ensure, that:

- tractor is enough powerful for this trailer
- tractor's hitch is in working condition
- trailer is on even ground and fixed with wheel chocks
- trailer is in perfect working condition
- all hydraulic hoses on trailer are properly connected

Before you start transport forest trailer ensure, that:

- forest trailer is hooked up and locked to tractor properly
- hydraulic hoses between trailer and tractor are connected properly
- trailer's brakes are released
- wheel chocks have been removed
- there is right air pressure in trailer's tyres
- cable of signal lights is connected to the tractor and lights are working properly



**Adjust speed according to the road and weather conditions. Do not exceed the speed limit! Driving with the load be especially careful on turns!**

## FARMI 2740 STORAGE INSTRUCTIONS

- Clean forest crane and if necessary, touch up any points, where paint has peeled off
- Lubricate forest crane thoroughly (see lubricating instructions)
- Release pressure from the cylinders
- Protect the cylinder piston rods and exposed parts of the control valve with grease
- Store forest crane in a sheltered area (under the roof), avoid direct contact with the ground.

## FARMI 70 STORAGE INSTRUCTIONS



**Always switch the pump off before disconnecting hydraulic hoses from tractor's hydraulic system!**

- Clean forest trailer and if necessary, touch up any points, where paint has peeled off
- Lubricate forest trailer thoroughly (see lubricating instructions)
- Release pressure from the cylinders
- Protect draw bar turning cylinder's piston rods with grease
- Store forest trailer in a sheltered area (under the roof), avoid direct contact with ground

# FARMI 2740 + FARMI 70

## FARMI 2740 MAINTENANCE

### FARMI 2740 MAINTENANCE TABLE

| OBJECT            | ACTION                                 |   |  |
|-------------------|--|---|--|
|                   | Maintenance interval, working hours    |   |  |
|                   | 8 h or after working shift             | 40 h or after working week  | 250 h  |
| 1. Crane          | Check cylinders and hoses for leakages | Check pins and lockings, tighten mounting bolts                         | Check the condition of primary structures                  |
| 2. Slewing device | Grease bearings                        | Check mounting bolts, tighten if needed(after 1st week of exploitation) | Check mounting bolts, tighten if needed. Adjust the racks. |
| 3. Booms          | Grease joints                          |   |  |
| 4. Cylinders      | Grease eyelets                         |   | Check cylinders for a leak                                 |
| 5. Grapple        | Grease joints                          |   | Check grapple-rotator junction                             |

### ADJUSTING GEAR RACK

Check the racks at least once per year or after 250 working hours

- Turn the boom to the side ~90°
- Release the lock nut (pos. 1 fig. 11)
- Screw the bolt (pos. 4, fig. 11) up to contact with the rack and tighten 15 – 30 degrees
- Screw up lock nut (pos. 1 fig. 11)

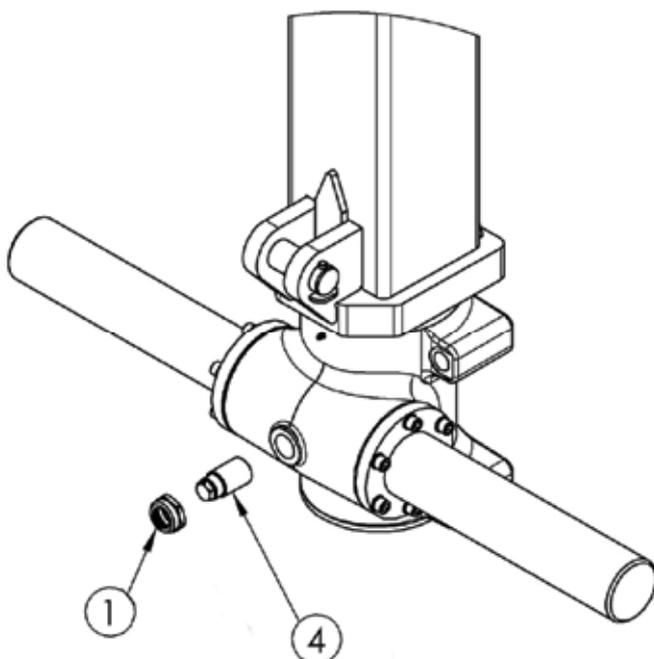


Figure 11. Adjusting gear rack

### CHANGING OIL IN SLEWING DEVICE

There is Addinol STOU SAE 10W40 oil in slewing device by manufacturer.

- Ensure that the slewing device is in horizontal position
- Release the lock nut (pos. 1, fig.11)
- Remove the bolt (pos. 4, fig. 11)
- Pump the oil out with appropriate pump
- Fill up the slewing device with appropriate oil



Oil level has to be up to the bolt hole lower edge!

- Screw the bolt (pos. 4, fig. 11) up to contact with the rack and tighten 15 – 30 degrees
- Screw up the lock nut (pos. 1, fig.11).

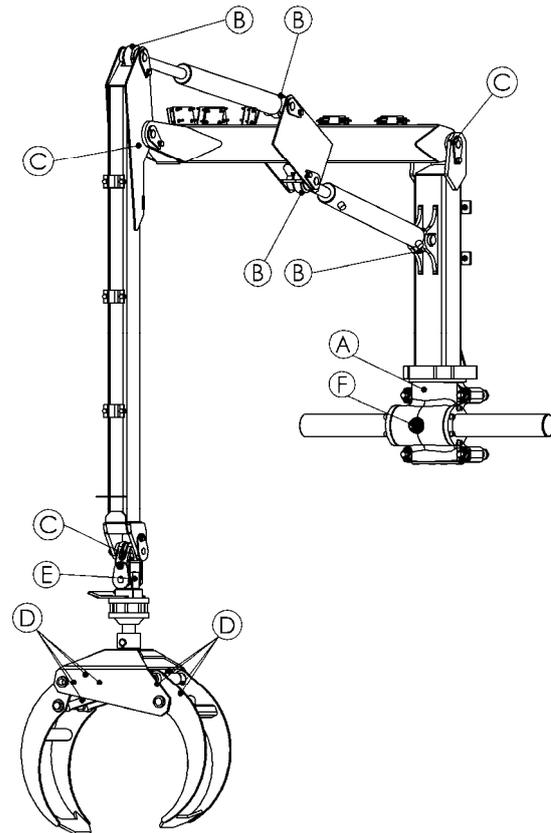


Follow environmental conditions. Collect wasted oil in a container. Hydraulic oil is recommended to be changed once in 2 years.

# FARMI 2740 + FARMI 70

## FARMI 2740 LUBRICATION

Using the appropriate lubricants like Beacon EP2, Multipurpose GR Moly, Mobilux EP2, Mobil Grease MP Special, Energrease LS-EP2 or similar. Right lubricants guarantee troublefree operation of the machine



| Lubrication point     | Qty | Action   | Interval, h | Notes                  |
|-----------------------|-----|----------|-------------|------------------------|
| Slewing device        |     |          |             |                        |
| 1. Bearings, A        | 1   | Greasing | 8           | 2% molybdensulfide     |
| 2. Slewing device, F  | 1   | Oil      | 2000        | Addinol STOU SAE 10W40 |
| Booms                 |     |          |             |                        |
| 3. Joint, C           | 3   | Greasing | 8           | 2% molybdensulfide     |
| 4. Cylinder eyelet, B | 4   | Greasing | 8           |                        |
| Grapple               |     |          |             |                        |
| 5. Joint, D           | 8   | Greasing | 8           |                        |
| Rotator               |     |          |             |                        |
| 7. Joint, E           | 1   |          | 8           |                        |

Table 2. Oil and lubricant grade table of FARMI 2740

## FARMI 2740 CHANGING THE HYDRAULIC OIL

Change the oil according to the vehicle's maintenance recommendations. Forest crane hydraulic system has been filled with Addinol HVL 32 hydraulic oil at the factory. If the oil temperature does not exceed 75°C in summer, winter oil can be used all year round.

## FARMI 2740 HYDRAULIC OIL REQUIREMENTS



- Freezing point must be below -50°C
- Viscosity must not be lower than 1.5 E°, +50°C for piston pumps and 2.5 E°, + 50°C for gear pumps
- Hydraulic oil must contain the necessary additives for lubrication, rust protection and defoaming

# FARMI 2740 + FARMI 70

## FARMI 2740 TROUBLESHOOTING

| TROUBLE                                 | POSSIBLE CAUSE                                       | REMEDY  |
|---|--|---|
| CRANE'S WORKING MOVEMENTS ARE SLOW      | PUMP RUNNING TOO SLOWLY                              | CHECK PUMP ROTATING SPEED                                   |
|   | NOT ENOUGH OIL                                       | ADD OIL (AIR-BLEEDING)                                      |
|   | FAULTY PUMP  | CHANGE OR GET THE PUMP FIXED                                |
|   | LEAKS OR OBSTRUCTIONS IN OIL LINES                   | INSPECT AND CLEAN OIL LINES                                 |
|   | OIL TOO THICK  | CHANGE TO A THINNER (PROPER) OIL GRADE                      |
| CRANE'S DESCENDING MOVEMENTS ARE SLOW   | OBSTRUCTIONS IN THE OIL LINES                        | CHECK THE LINES AND THE CHOKES                              |
|   | CLOGGED-UP (RETURN) FILTER                           | CLEAN OR RENEW FILTER                                       |
|   | OIL TOO THICK  | CHANGE TO A THINNER (PROPER) OIL GRADE                      |
| CRANE'S MOVEMENTS ARE TOO FAST          | ROTATION SPEED TOO HIGH OR PUMP IS TOO POWERFUL      | CHOOSE A CORRECT PUMP/ SPEED OF ROTATION                    |
|   | INCORRECT OPERATION                                  | LEARN TO OPEN THE CONTROL VALVE TO A SUITABLE DEGREE        |
| CRANE'S WORKING MOVEMENTS ARE POWERLESS | NOT ENOUGH OIL                                       | ADD OIL (ALSO AIR BLEEDING)                                 |
|   | FAULTY PUMP  | CHANGE OR GET THE PUMP FIXED                                |
|   | FAULTY OF RELIEF OR SHOCK VALVES OR WRONG ADJUSTMENT | CHANGE THE RELIEF OR SHOCK VALVES OR ADJUST IN RIGHT WAY    |
|   | FAULTY CONTROL VALVE                                 | CHANGE OR GET THE VALVE FIXED                               |
|   | FAULTY CYLINDERS OR SEALS                            | CHECK THE CYLINDERS AND CHANGE THE SEALS                    |
| CRANE'S MOVEMENTS ARE JERKY             | AIR IN HYDRAULIC SYSTEM                              | CHECK OIL LEVEL, BLEED AIR FROM SYSTEM                      |
|   |  | CHECK FOR OBSTRUCTIONS OR LEAKS ON THE INLET SIDE           |
|   | FAULTY PUMP  | INSPECT THE PUMP AND GET IT FIXED                           |
| BOOMS DESCEND BY THEMSELVES             | FAULTY CONTROL VALVE                                 | REPLACE/FIX THE VALVE                                       |
|   | FAULTY CYLINDERS OR HOSES                            | FIX THE LEAKAGE POINT, CHECK CYLINDER SEALS                 |
| CONTROL VALVE STEMS STICKING            | VALVE'S FIXING SCREWS TOO TIGHT                      | CHECK SCREWS TIGHTENING TORQUE (50 Nm (5 kPm, 37 ftXlb))    |
|   | VALVE NOT ON LEVEL MOUNTING BASE                     | MOUNT THE VALVE ON A LEVEL BASE                             |
|   | VALVES' TIE BOLTS TOO TIGHT                          | CHECK SCREWS TIGHTENING TORQUE 27,5 Nm (2,75 kPm, 20 ftXlb) |
| GRAPPLE'S OPENING BY ITSELF             | FAULTY VALVE   | FIX THE VALVE   |
|   | FAULTY CILINDER OF THE GRAPPLE                       | FIX OR CHANGE THE CILINDER                                  |
|   | FAULTY ROTATOR                                       | FIX OR CHANGE THE ROTATOR                                   |

# FARMI 2740 + FARMI 70

## FARMI 70 MAINTENANCE

### FARMI 70 LUBRICATION

Using the appropriate lubricants like Beacon EP2, Multipurpose GR Moly, Mobilux EP2, Mobil Grease MP Special, Energrease LS-EP2 or similar. Right lubricants guarantee troublefree operation of the machine.

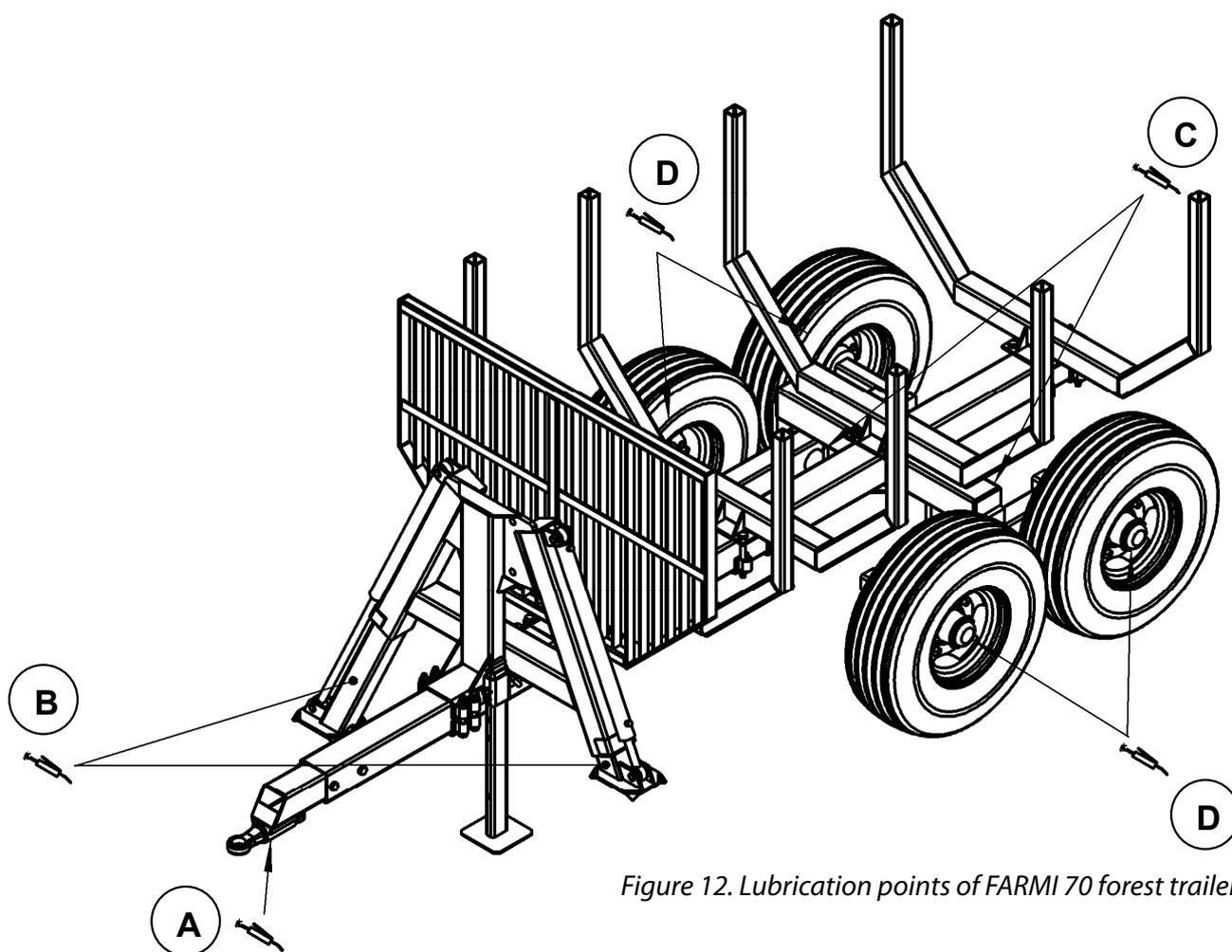


Figure 12. Lubrication points of FARMI 70 forest trailer

| Lubrication point                     | Pcs | Lubricant | Interval, working hour | Additional information |
|---------------------------------------|-----|-----------|------------------------|------------------------|
| 1. Drawbar eyelet, A                  | 1   | Grease    | 8                      | 2% molybdensulfide     |
| 2. Sliding surfaces of support leg, B | 1   | Grease    | 8                      |                        |
| 3. Shaft of the bogie, C              | 2   | Grease    | 8                      |                        |
| 4. Rollerbearings of wheels, D        | 4   | Grease    | Once a year            |                        |



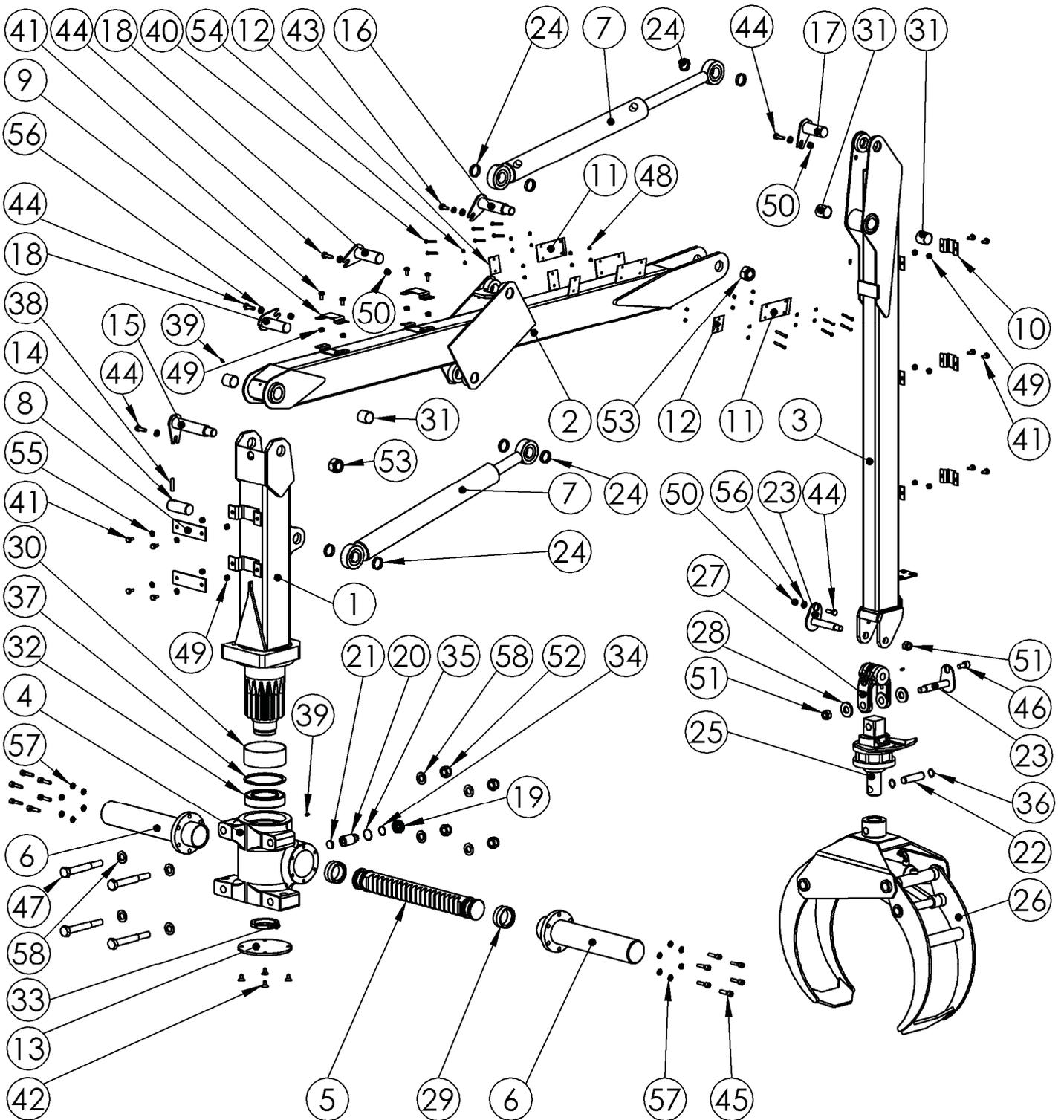
# FARMI 2740 + FARMI 70

## FARMI 2740

| Part | Order no  | Description                                   | Remarks          | Qty |
|------|-----------|---|------------------|-----|
| 1    | 410100001 | Column  |                  | 1   |
| 2    | 410100002 | Main boom                                     |                  | 1   |
| 3    | 410100003 | Ext.boom                                      |                  | 1   |
| 4    | 410100004 | Housing of slewing device                     |                  | 1   |
| 5    | 410100005 | Gear rack                                     |                  | 1   |
| 6    | 410100006 | Hollows                                       | 80 x 390 + 55    | 2   |
| 7    | 410100007 | Cylinder of ext.boom                          |                  | 2   |
| 8    | 410100008 | Clamp of hoses on column                      |                  | 2   |
| 9    | 410100009 | Curved clamp of hoses on main boom            |                  | 2   |
| 10   | 410100010 | Clamp of hoses on ext.boom                    |                  | 3   |
| 11   | 410100011 | Straight clamp(4 holes) of hoses on main boom |                  | 2   |
| 12   | 410100012 | Straight clamp(2 holes) of hoses on main boom |                  | 2   |
| 13   | 410100013 | Cover of slewing device housing               |                  | 1   |
| 14   | 410100014 | Main boom cylinder shaft on column            |                  | 1   |
| 15   | 410100015 | Shaft of column-boom junction                 |                  | 1   |
| 16   | 410100016 | Shaft of main boom-ext.boom                   |                  | 1   |
| 17   | 410100017 | Ext.boom cylinder shaft on ext.boom           |                  | 1   |
| 18   | 410100018 | Cylinder shaft on main boom                   |                  | 2   |
| 19   | 410100019 | Locking nut on slewing device                 |                  | 1   |
| 20   | 410100020 | Support bolt of gear rack                     |                  | 1   |
| 21   | 410100021 | Support slider of gear rack                   |                  | 1   |
| 22   | 410100022 | Shaft of grapple                              | 25 x 93          | 1   |
| 23   | 410100023 | Shaft of hanger                               |                  | 2   |
| 24   | 410100024 | Distance ring of cylinder                     |                  | 8   |
| 25   | 410100025 | Rotator                                       |                  | 1   |
| 26   | 410100026 | Grapple                                       |                  | 1   |
| 27   | 410100027 | Hanger  |                  | 1   |
| 28   | 410100028 | Washer of hanger                              |                  | 2   |
| 29   | 410100029 | Polypac-gasket                                | DBM 275196       | 2   |
| 30   | 410100030 | Bronze slide bearing                          | 150-155x60 WB800 | 1   |
| 31   | 58220160  | Bronze slide bearing                          | 40-44x40 WB800   | 4   |
| 32   | 410100032 | Double-row spherical roller bearing           | 23022E           | 1   |
| 33   | 410100033 | Nut   | M100x2           | 1   |
| 34   | 410100034 | ISC O-ring                                    | 30-2             | 1   |
| 35   | 410100035 | ISC O-ring                                    | 32-2             | 1   |
| 36   | 52230315  | Circlip                                       | ø25x1.2 DIN 471  | 2   |
| 37   | 52231545  | Circlip                                       | ø150x4.0 DIN 472 | 1   |
| 38   | 52840337  | Cotter pin                                    | ø10x50 DIN 1481  | 1   |
| 39   | 52401023  | Lubrication nipple                            | M6               | 4   |
| 40   | 410100040 | Hex head cap bolt                             | M6x50 DIN 631    | 12  |

# FARMI 2740 + FARMI 70

## FARMI 2740



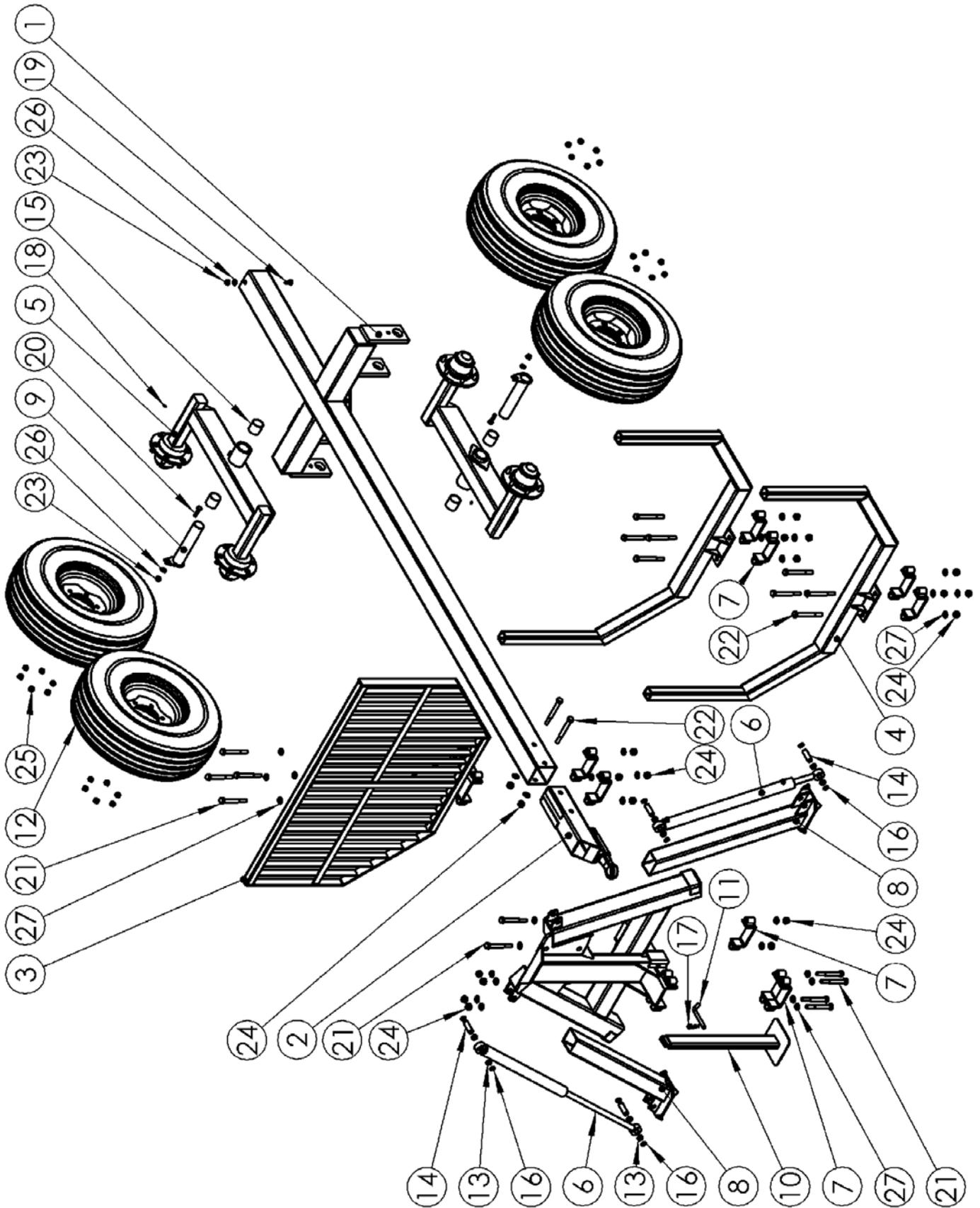
# FARMI 2740 + FARMI 70

## FARMI 2740

| Part | Order no  | Description          | Remarks         | Qty |
|------|-----------|----------------------|-----------------|-----|
| 41   | 52060514  | Hex head cap bolt    | M10x20 DIN 933  | 14  |
| 42   | 410100042 | Flat socket cap bolt | M12x20 DIN 7991 | 4   |
| 43   | 52062973  | Hex head cap bolt    | M12x25 DIN 933  | 1   |
| 44   | 52063591  | Hex head cap bolt    | M12x35 DIN 933  | 5   |
| 45   | 52001211  | Socket head cap bolt | M12x45 DIN 912  | 12  |
| 46   | 52001294  | Socket head cap bolt | M16x30 DIN 912  | 1   |
| 47   | 410100047 | Hex head cap bolt    | M24x180 DIN 931 | 4   |
| 48   | 52117066  | Nylon lock nut       | M6 DIN 985      | 12  |
| 49   | 52117108  | Nylon lock nut       | M10 DIN 985     | 14  |
| 50   | 52117124  | Nylon lock nut       | M12 DIN 985     | 4   |
| 51   | 52117207  | Nylon lock nut       | M20 DIN 985     | 2   |
| 52   | 52117249  | Nylon lock nut       | M24 DIN 985     | 4   |
| 53   | 52117306  | Nylon lock nut       | M30 DIN 985     | 2   |
| 54   | 52200029  | Washer               | M6 DIN 125      | 12  |
| 55   | 52200045  | Washer               | M10 DIN 125     | 4   |
| 56   | 52200466  | Washer               | M12 DIN 125     | 6   |
| 57   | 52211059  | Spring washer        | M12 DIN 127 B   | 13  |
| 58   | 52200102  | Washer               | M24 DIN 125     | 8   |

# FARMI 2740 + FARMI 70

## FARMI 70



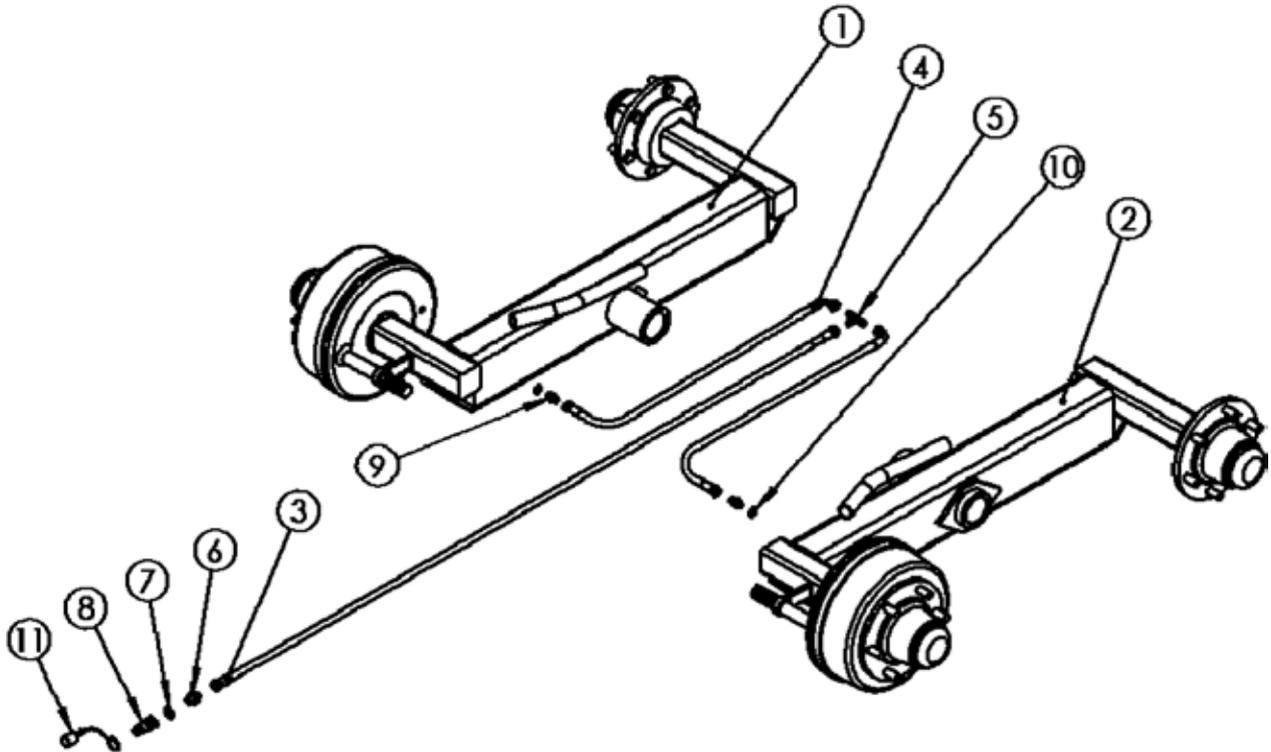
# FARMI 2740 + FARMI 70

## FARMI 70

| Part | Order no | Description               | Remarks        | Qty |
|------|----------|---------------------------|----------------|-----|
| 1    | 70100001 | Chassis                   |                | 1   |
| 2    | 70100002 | Draw bar                  |                | 1   |
| 3    | 70100003 | Safety screen             |                | 1   |
| 4    | 58400460 | Bolster                   |                | 2   |
| 5    | 70100005 | Boggie                    |                | 2   |
| 6    | 70100006 | Cylinder of support leg   |                | 2   |
| 7    | 70100007 | Fetter                    |                | 9   |
| 8    | 70100008 | Telescope of support leg  |                | 2   |
| 9    | 70100009 | Shaft of boggie           |                | 2   |
| 10   | 70100010 | Parking support           |                | 1   |
| 11   | 70100011 | Pin of parking support    |                | 1   |
| 12   | 70100012 | Wheel                     |                | 4   |
| 13   | 70100013 | Distance ring of cylinder |                | 8   |
| 14   | 70100014 | Shaft of cylinder         |                | 4   |
| 15   | 70100015 | Bronze slide bearing      |                | 4   |
| 16   | 70100016 | Locking ring              |                | 8   |
| 17   | 70100017 | Hair pin cotter pin       |                | 1   |
| 18   | 52401023 | Lubrication nipple        | M6             | 2   |
| 19   | 52062106 | Hex head cap bolt         | M16x30 DIN933  | 1   |
| 20   | 70100020 | Hex head cap bolt         | M16x55 DIN933  | 2   |
| 21   | 70100021 | Hex head cap bolt         | M20x160 DIN931 | 10  |
| 22   | 52062076 | Hex head cap bolt         | M20x180 DIN931 | 10  |
| 23   | 52117165 | Nylon lock nut            | M16 DIN 985    | 3   |
| 24   | 52117207 | Nylon lock nut            | M20 DIN 985    | 20  |
| 25   | 70100024 | Wheel nut                 |                | 24  |
| 26   | 52200078 | Washer                    | 16 DIN 125     | 3   |
| 27   | 52200086 | Washer                    | 20 DIN 125     | 30  |

# FARMI 2740 + FARMI 70

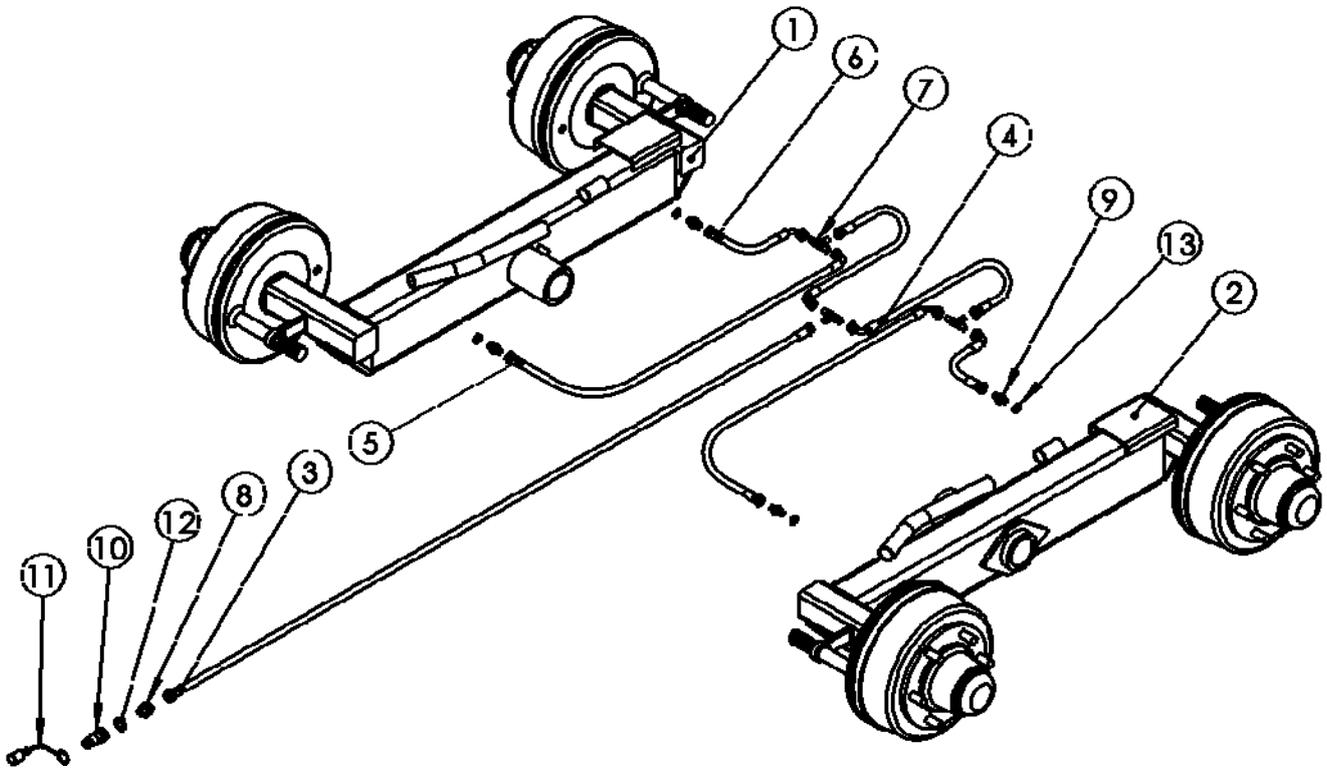
## FARMI 70 HYDRAULIC BRAKES ON ONE(FRONT) AXLE



| Part | Order no | Description    | Remarks          | Qty |
|------|----------|----------------|------------------|-----|
| 1    | 11220101 | Boggie         |                  | 1   |
| 2    | 11220201 | Boggie         |                  | 1   |
| 3    | 11220301 | Hydraulic hose | 1/4 - 1/4 L -    | 1   |
| 4    | 11220401 | Hydraulic hose | 1/4 - 1/4 90 L - | 2   |
| 5    | 11220501 | T-union        | 1/4              | 1   |
| 6    | 11220601 | Nipple         | 1/2 - 1/4        | 1   |
| 7    | 11220701 | Usit-seal      | 1/2              | 1   |
| 8    | 11220801 | Quickcoupling  | 1/2              | 1   |
| 9    | 11220901 | Double nipple  | 1/4              | 2   |
| 10   | 11221001 | Usit-seal      | 1/4              | 2   |
| 11   | 11221101 | Cover          | 1/2              | 1   |

# FARMI 2740 + FARMI 70

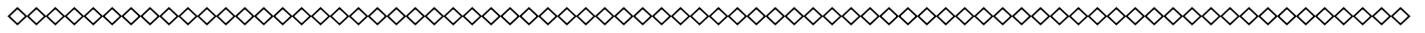
## FARMI 70 HYDRAULIC BRAKES ON TWO(FRONT AND REAR) AXLES



| Part | Order no | Description    | Remarks          | Qty |
|------|----------|----------------|------------------|-----|
| 1    | 11230101 | Bogie          |                  | 1   |
| 2    | 11230201 | Bogie          |                  | 1   |
| 3    | 11230301 | Hydraulic hose | 1/4 - 1/4 L -    | 1   |
| 4    | 11230401 | Hydraulic hose | 1/4 - 1/4 90 L - | 2   |
| 5    | 11230501 | Hydraulic hose | 1/4 - 1/4 90 L - | 2   |
| 6    | 11230601 | Hydraulic hose | 1/4 - 1/4 90 L - | 2   |
| 7    | 11230701 | T-union        | 1/4              | 1   |
| 8    | 11230801 | Nipple         | 1/2 - 1/4        | 1   |
| 9    | 11230901 | Double fitting | 1/4              | 2   |
| 10   | 11231001 | Quickcoupling  | 1/2              | 1   |
| 11   | 11231101 | Cover          | 1/2              | 1   |
| 12   | 11231201 | Usit-seal      | 1/2              | 1   |
| 13   | 11231301 | Usit-seal      | 1/4              | 2   |







## PRODUCT REGISTRATION FORM

Date of delivery: \_\_\_\_/\_\_\_\_ 20\_\_\_\_

Dealer:

Dealer's address:

Dealer's tel:

Product and type:

Serial number:



Return to the manufacturer

Date of delivery: \_\_\_\_/\_\_\_\_ 20\_\_\_\_

Dealer:

Dealer's address:

Dealer's tel:

Customer:

Customer's address:

Customer's tel:

E-mail:

Product and type:

Serial number:







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