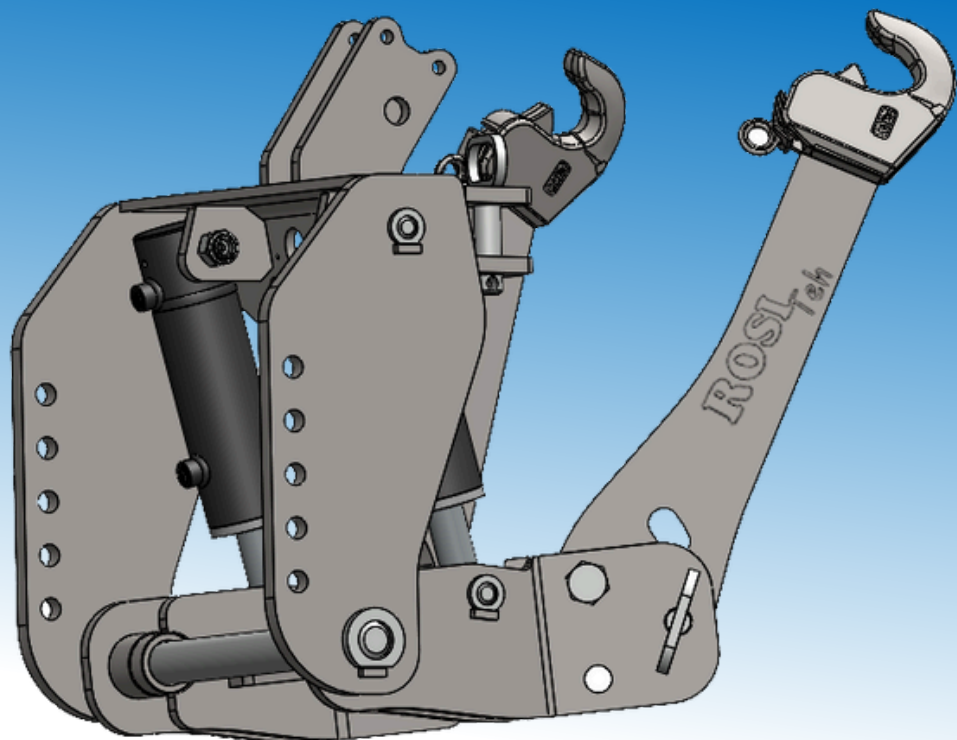


# FRONT HYDRAULICS



[www.rositeh.com](http://www.rositeh.com)

## GENERAL INFORMATION

Dear Customer,

Please read the following instructions carefully before use to ensure maximum efficiency of the front hydraulics on your tractor and to fully meet your expectations and needs.

### 1. PURPOSE OF USING FRONT HYDRAULICS

Before using the equipment, please read these instructions carefully and familiarize yourself with all components and their functions.

Front hydraulics are intended exclusively for normal agricultural use or similar applications, such as municipal work. Any other use is considered improper and must be checked in advance. The manufacturer is not responsible for any damage resulting from improper use — in such cases, all risks are borne by the user. Proper use also includes compliance with all operating, maintenance, and servicing instructions provided by the manufacturer.

The manufacturer is not responsible for issues resulting from:

- The use of unapproved parts or attachments,
- any modifications or interventions not approved by the manufacturer.

Installation and repairs must be carried out exclusively by professionally trained personnel. Use only original spare parts or those approved by the manufacturer.

ROSI Teh front hydraulics are designed to be mounted on the front of tractors and allow the attachment, lifting, and lowering of various tools (e.g., snow ploughs, front mowers, forestry winches).

---

### 2. WARRANTY

Professional installation and regular maintenance can significantly reduce the likelihood of malfunctions of the front hydraulics.

If problems still occur during the warranty period, proceed as follows:

- Notify the authorized manufacturer immediately.
- Provide the serial number of the front hydraulics.
- Submit as much information about the issue as possible.

**Note:** Routine service tasks and consumable items (e.g., oil changes, oil filters) are not covered by the warranty. If you require spare parts, you can contact us directly — we will be happy to help you.

---



### 3. SAFETY REGULATIONS

Users of the front hydraulics must not be under the influence of alcohol, drugs, or any other substances that impair attention or coordination.

-  **Always read the instructions before use!**
-  **Do not use the equipment if you notice any damage!**
-  **Perform all maintenance work only when the tractor is switched off and the hydraulic system is depressurized!**
-  **Do not remove safety pins during operation!**
-  **Use personal protective equipment (gloves, safety shoes with steel toe cap, helmet)!**

Additional safety instructions:

- The appliance must only be operated by a qualified person.
- Check all joints, bolts and hydraulic connections before use.
- Do not exceed the permitted load capacity (indicated on the item).
- Do not stand under a lifted load.
- Before transport, ensure that all attachments and loads are properly secured.

If maintenance must be carried out under a raised attachment, it is **MANDATORY** to:

- Switch off the engine.
- Protect the attachment against falling!

No one — especially children, the elderly, or persons with reduced mobility — may stand between the tractor and the attachment during coupling or uncoupling.

Before you start riding with the connector:

- Make sure that all screws are properly fastened.
- Make sure the connector is securely locked in the three-point connection or triangle.
- Be sure to insert a safety pin!

When driving without an attachment

- The lower arms must be raised.
- The check valve must be in the locked (closed) position.

**Prohibited:**

- Allowing unauthorized persons to enter or remain in the danger area.
- Careless use by children - extreme caution is required!

**When working with the front hydraulics:**

- Never enter the danger zone — there is a high risk of crushing or impact due to moving parts.
- Wear appropriate protective clothing and safety footwear.

**Before maintenance work on the front hydraulics:**

- Switch off the tractor engine and protect it against accidental restart.
- Release the pressure in the hydraulic lines (close the check valve).
- Secure the attachment mounted on the front hydraulics to prevent it from falling.

**While driving:**

- Always drive at a speed that allows full control of the tractor and the attachment mounted on the front hydraulics.
  - Do not overload the system — drive carefully and adjust your speed to ensure safe operation.
- 

## **4. TRAFFIC REGULATIONS**

Always comply with the traffic regulations applicable in your country.

If an attachment mounted on the front hydraulics is exposed or extends beyond the tractor, the following rules must be observed when driving on public roads:

**Driving attachments with the front hydraulics**

Carrying attachments on the front hydraulics is permitted only if the distance between the center of the steering wheel and the front edge of the attachment does not exceed 3,5 m. If this distance is greater than 3,5 m, the driver must be assisted by another person responsible for ensuring road safety.

**Additional headlights**

If the front hydraulics or the mounted attachment obstructs the tractor's main headlights, additional headlights must be installed to ensure adequate visibility and compliance with traffic regulations.

**Driving without an attachment on the front hydraulics**

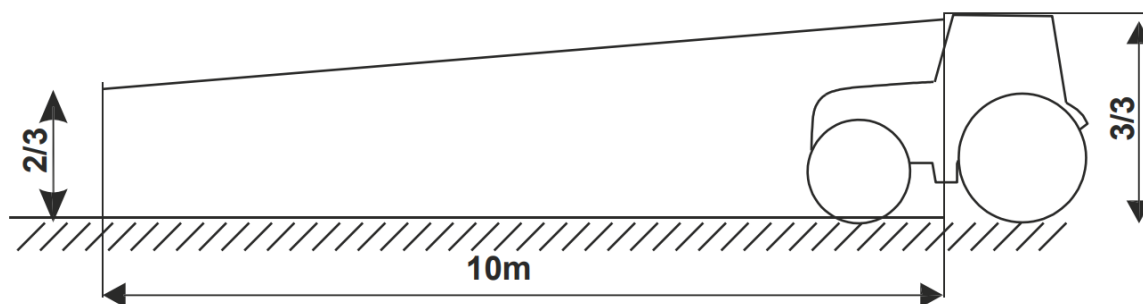
To avoid danger to other road users, fold the lower arms or install a warning triangle on the front edge.

## Axle loads

- Ensure that the rear axle is sufficiently loaded when transporting front-mounted attachments — if necessary, use additional ballast weight.
- Never exceed the following limits:
  - permissible loads on the front axle of the tractor,
  - the maximum permissible total weight of the tractor,
  - the maximum permitted speed specified by the tractor manufacturer.

## Setting additional headlights

(Refer to the tractor manufacturer's instructions for exact adjustment.)



## Control unit

The hydraulic cylinders of the front hydraulics are connected to the tractor's double-acting (two-way) control unit.

Always operate the control unit according to the instructions provided by the tractor manufacturer.

Instructions:

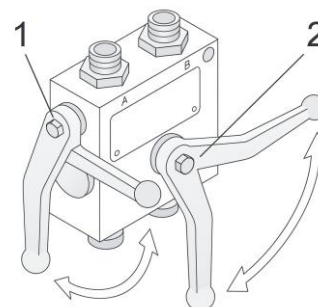
- Operate the hydraulic lever carefully and smoothly.
- Before leaving the driver's seat, ensure that all hydraulic functions are fully completed (lifted/lowered, fixed or floating position).
- Always return the control unit to the neutral position before leaving the tractor.

## Check valve

The check valve is installed between the control unit and the hydraulic cylinders. It is operated by two levers, which allow the selection of three different operating functions.



- Always move the levers fully into their end positions, as intermediate positions may cause damage to the valve.
- Lever 2 is used to switch between single-acting and double-acting operation – this adjustment must only be made when the hydraulic system is not under pressure (unloaded).



## Hydraulic accumulator (optional)

The hydraulic accumulator serves as a shock absorber when driving with front-mounted attachments. It improves comfort, reduces shocks, and protects both the attachment and the tractor. Its use is especially recommended when operating heavier attachments.

Connection instructions:

- Connect the accumulator to the hydraulic hose of the front hydraulics.
- Set the check valve to the locked (closed) position.
- After lifting the attachment, lower the front hydraulics slightly to allow the accumulator to work optimally.



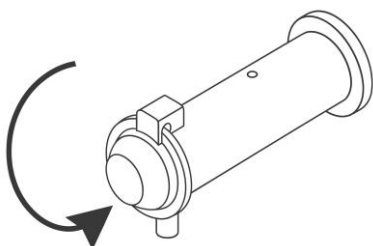
## Hydraulic outputs

The front hydraulics are operated through the appropriate hydraulic control unit in the tractor cab.

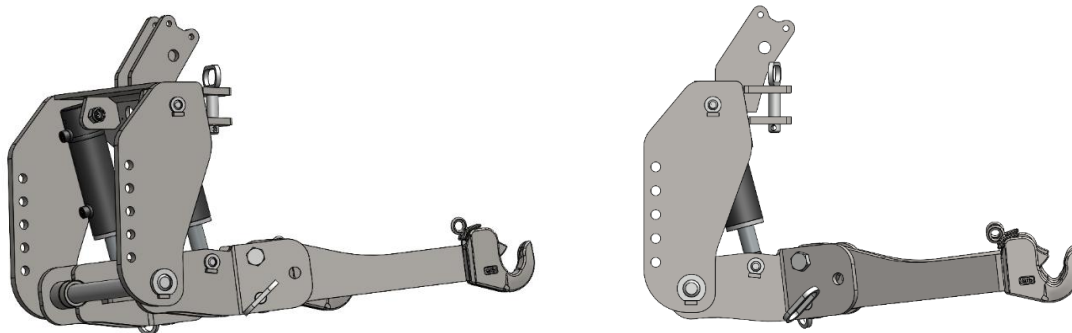
When using the front hydraulic outlets, you must not use the rear hydraulic outlets connected to the same control unit at the same time, as this may cause improper operation or pressure loss.

## Lower arms of the front hydraulics

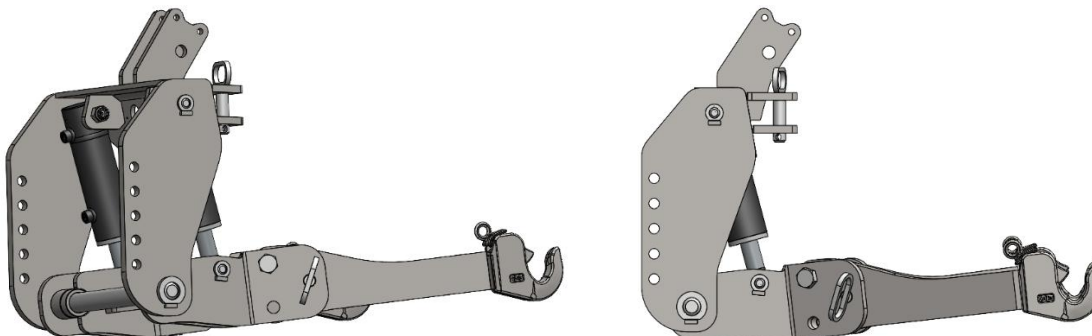
The lower arms can be secured with a bolt and locking pin in three different positions. The lower pins can be removed without tools if necessary (e.g., when using a front loader). Always secure the pins with a safety clip after installation!



**Position 1:** The arms are firmly fixed with no vertical movement.

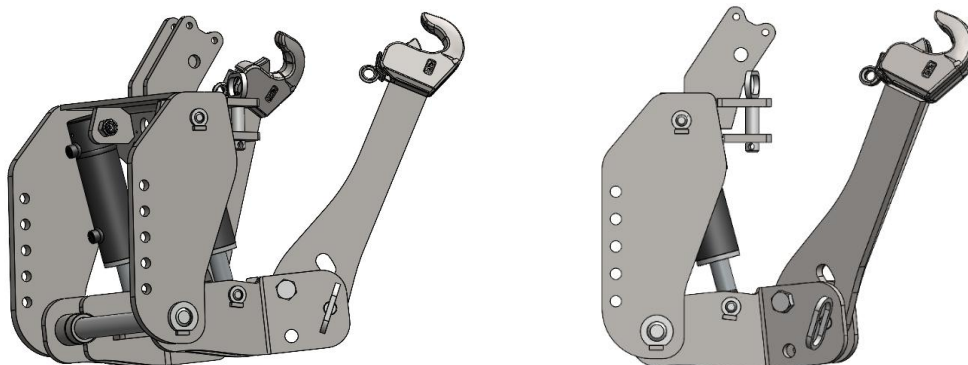


**Position 2:** Swing position - Allows approx. 90 mm of vertical movement (up and down) to compensate for terrain irregularities and ensure smoother operation of the attachment.

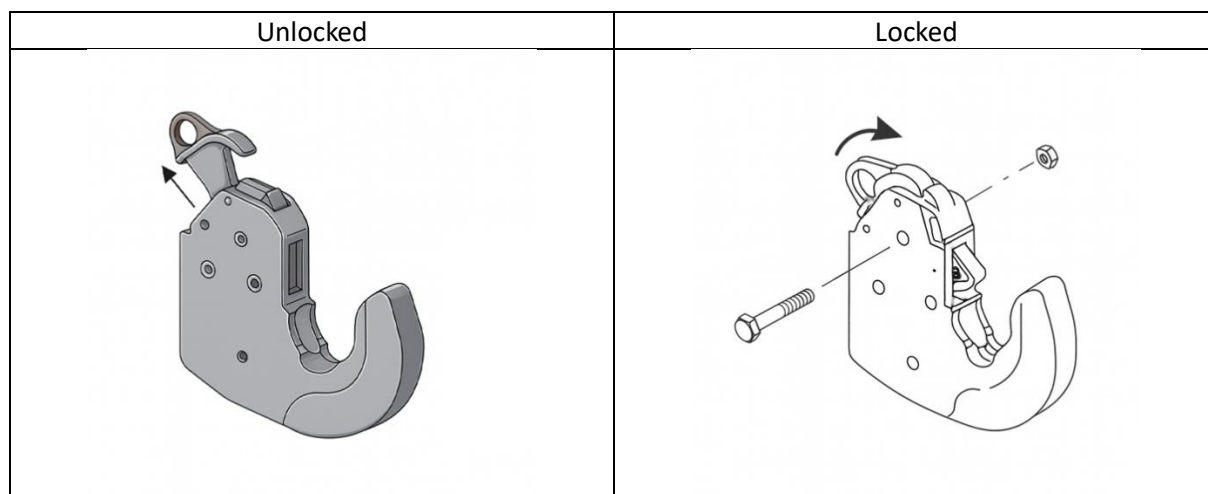


**Position 3:** Transport position - use this position when driving without an attachment:

- Fully raise the hydraulic cylinders.
- Fold the lower arms upward.
- Insert the locking pin into the transport hole.



## Lower Linkage Hooks (CBM)



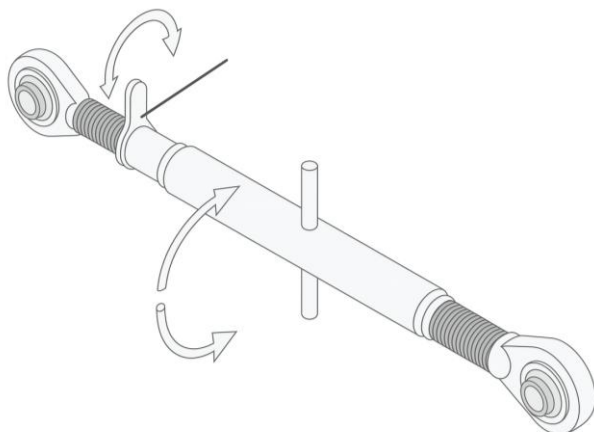
### Important:

- The category indicated on the hook must correspond to the ball size on the attachment.
- When driving with the attachment connected, the hooks must always be properly and securely locked.
- In particularly demanding working conditions (e.g., forestry work), additional protection against accidental opening is recommended — insert a bolt through the safety hole and secure it with a nut.

## Upper linkage

### Threaded top links

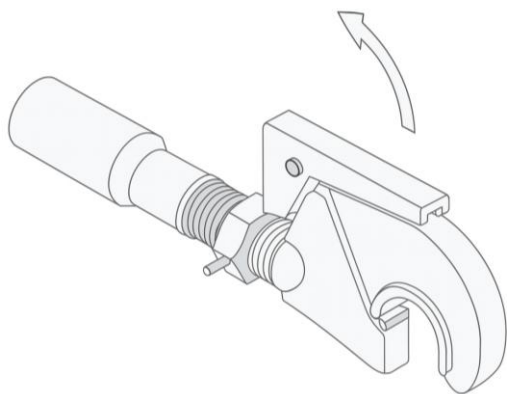
- Turn the top link body until the desired length or angle is achieved.
- Tighten the locking lever/nut to prevent movement.
- Attach the top link to the attachment using the appropriate locking pin.





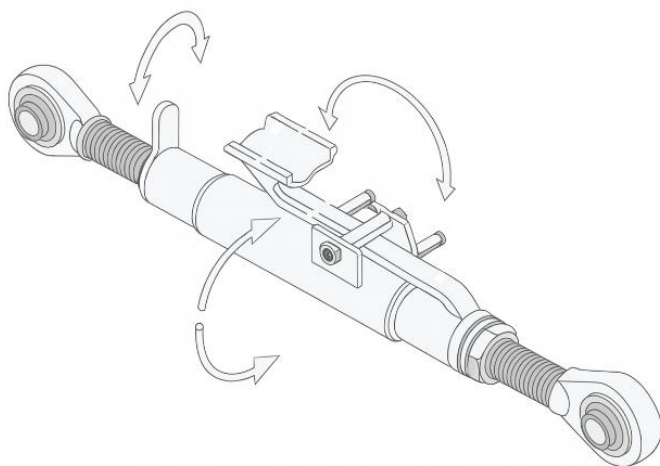
## Threaded top links with automatic hook

- The category marking on the hook must match the ball size on the attachment.
- Always check that the automatic hook is fully closed and locked before operation.



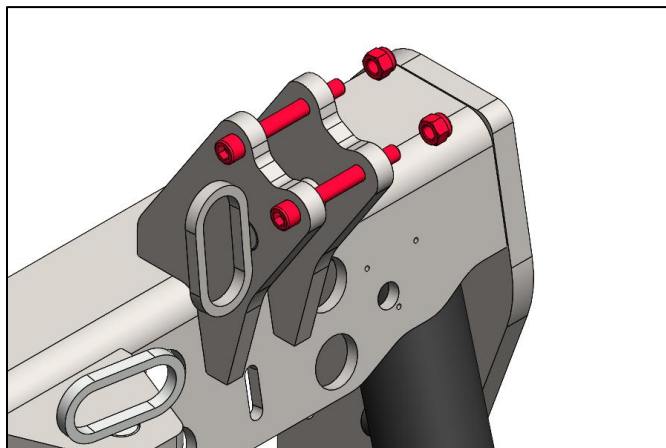
## Telescopic top link (lockable)

- Open the lock cover.
- Loosen the locking lever.
- Rotate the top link to achieve approx. 10 mm stroke.
- Tighten the lever with the nut to the desired working length.
- Attach the top link to the attachment with the pin and secure it with a safety clip.



## Bracket/holder for the top link

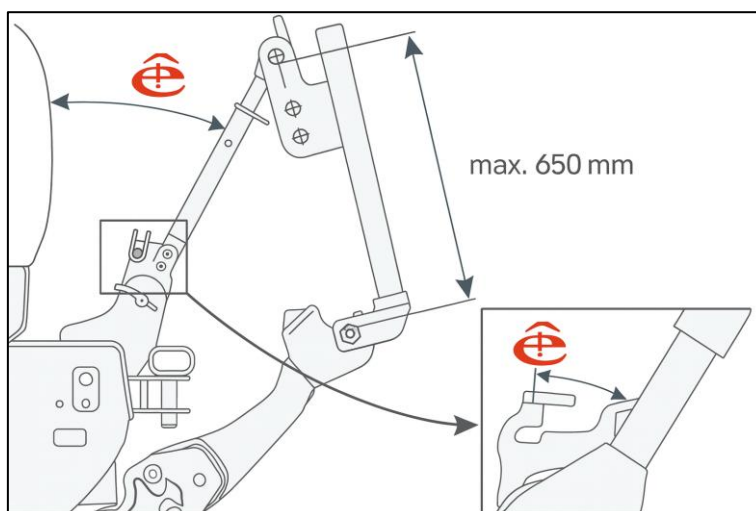
When the top link is not in use, lift it upwards, insert the red locking bolts into the designated holes (as shown in the illustration), and tighten the bolts with the nuts.



Always ensure that the top link is securely fastened to prevent accidental movement or damage.

## Instructions for use of attachments on the front hydraulics

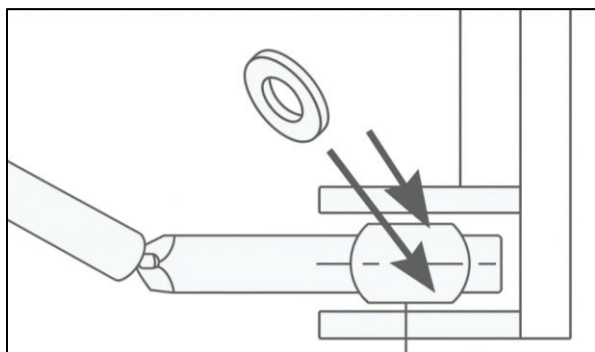
- Before installing the attachment, verify that the tractor, front hydraulics, linkage, PTO shaft, and the attachment itself have sufficient clearance in all directions — particularly around the top link area (see illustration below).
- If the tractor is equipped with a front loader, ensure that there is enough space for safe operation and no interference with the attachment or the hydraulics.



## Clearance of the lower balls

If the clearance of the lower balls on the attachment is too large, force-related damage may occur.

**Solution:** Reduce the backlash or secure the hooks on the lower arms with both fixing screws to ensure a tighter and safer connection.



## Cylinder operation:

- The front hydraulics are equipped with two double-acting hydraulic cylinders.
- If you are using an attachment that requires no downward pressure, set the check valve to the single-acting position. This prevents the attachment from being unintentionally pushed into the ground due to misuse.

## Design and limitations:

The front hydraulics are designed for standard agricultural work. Use of attachments such as:

- devices lifted to high positions (e.g., forklift platforms),
- attachments with a wide working range (e.g., cultivators),
- tools with a large overhang (e.g., lawn mowers),
- equipment used at high speeds (e.g., snow ploughs),

may cause unexpected loads on the front hydraulics or the tractor.

The manufacturer assumes no liability for damage resulting from overloading or improper use.

For guidance on additional reinforcements or structural upgrades, consult ROSI Teh d.o.o. or the tractor manufacturer.

## 5. MOUNTING ON THE TRACTOR

1. Park the tractor on a level and stable surface, switch off the engine, and secure the wheels to prevent movement.
2. Using a crane or forklift, carefully bring the front hydraulics to the front side of the tractor.
3. Connect all mechanical mounting points (bolts, nuts, lower arms, top link) and tighten them according to the tractor manufacturer's specifications.
4. Connect the hydraulic hoses to the ports on the tractor (identified by color marks).
5. Check all joints for proper tightness and verify that the hydraulic system operates correctly.

**Warning:** During installation, ensure that the hydraulic hoses and structural components are not under tension. Incorrect installation may cause leaks, damage, or malfunction.

## 6. APPLICATION

- The lifting and lowering of the attachment is controlled with the hydraulic control unit located in the tractor cab.
- Maximum permissible dynamic load – 1500 kg for CAT and 2500 kg for CAT 3.
- During transport, the front hydraulics should be lowered into a stable transport position.
- After completing the work, always lower the attachment to the ground and release the pressure from the hydraulic system.

## 7. MAINTENANCE

 Periodic inspections should include:

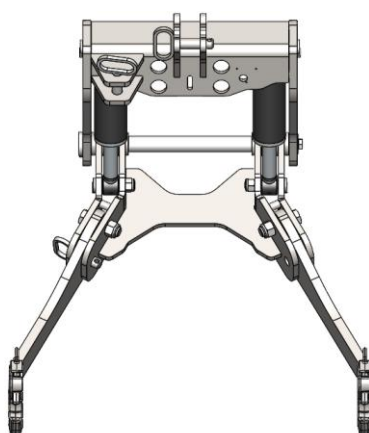
| Interval | Inspection/Maintenance                                 |
|----------|--------------------------------------------------------|
| Daily    | Visual inspection of hoses, joints, pins               |
| Monthly  | Lubrication of moving parts                            |
| 6 months | Inspection of hydraulic components for wear            |
| 1 year   | Comprehensive service and replacement of hydraulic oil |

Use only original ROSI Teh spare parts.

Recommendation: All maintenance work should preferably be carried out by an authorised service technician to ensure safe and reliable operation.

Service schedule and instructions:

- After the first 10 working hours, tighten all fixing screws, and repeat this check at every subsequent inspection.
- At every inspection, check the tightness of hydraulic connections (hoses and fittings). The hydraulic system must be without pressure - set the control lever to the floating position.
- Inspect all hydraulic hoses for leaks, damage, cracks, or wear, and replace them immediately if any defects are detected.
- Regularly clean and lubricate all moving parts to ensure performance and minimize wear.



## 8. STORAGE

- Store hydraulics in a dry, covered area.
- Before prolonged storage, protect metal parts from corrosion.

## 9. TECHNICAL CHARACTERISTICS

| Property                       | Category 2   | Category 3   |
|--------------------------------|--------------|--------------|
| Load capacity (dynamic/static) | 1500/2500 kg | 2500/3250 kg |
| Working pressure               | 190 bar      | 190 bar      |
| Weight (without oil)           | 135 kg       | 155 kg       |
| Connection                     | CAT. 2       | CAT. 3       |
| Material                       | S355         | S355         |



## **10. WASTE DISPOSAL AND MANAGEMENT**

The product is manufactured using recyclable materials. Dispose of used hydraulic oil in accordance with local environmental and waste-oil regulations.

At the end of the product's service life, dispose of all metal components separately from hydraulic oils and other fluids, following the local waste management and recycling legislation.

Proper disposal helps protect the environment and ensures compliance with applicable regulations.

---

## **11. EU CONFORMITY AND STANDARDS**

This product complies with Directive 2006/42/EC (Machinery Directive) and all relevant ISO standards.

The product has been designed and manufactured in accordance with the applicable EU safety, health, and environmental requirements.

Any modification of the design without the manufacturer's approval voids both the warranty and the CE conformity.

---

## **12. RISK ASSESSMENT**

Based on the risk assessment, the following key hazards have been identified:

- Mechanical hazards caused by moving parts.
- Hydraulic hazards resulting from potential failure of hydraulic components.
- Slip and fall hazards due to leaking hydraulic fluids.
- Hazards due to improper use, incorrect installation, or insufficient training.

To minimise these risks, the following measures have been implemented:

- Installation of mechanical safety elements (safety pins, locking valves).
- Placement of pictograms and warning labels at critical locations.
- Clear and comprehensive instructions for use, installation, and maintenance.
- Regular inspection and pressure-testing recommendations.
- Use of certified components and assembly performed by trained personnel.

Residual risks are assessed as low to medium and are addressed through:

- user instructions,
- safety warnings,
- organisational procedures,
- mandatory adherence to proper operation and maintenance guidelines.



A detailed description can be found in the table below.

| Application phase | Hazard identified                 | Possible damage                  | Probability | Severity of the injury | Risk level  | Risk mitigation measures                              |
|-------------------|-----------------------------------|----------------------------------|-------------|------------------------|-------------|-------------------------------------------------------|
| Installation      | Pinch hands between the couplings | Hand injury (cuts, crumples)     | Medium      | Medium                 | Medium-high | Instructions for safe installation, protective gloves |
| Lifting the load  | Sudden lowering of the load       | Injuries, bone fracture          | Low         | High                   | Medium-high | Valve check, warnings, routine maintenance            |
| Transport         | Incorrect pinning                 | Tipping, crushing injuries       | Low         | High                   | Medium      | Markings for proper fastening, instructions           |
| Maintenance       | Slipping due to oil               | Fall Injury                      | Medium      | Low                    | Low         | Stain cleaning, warning stickers                      |
| Improper use      | System overload                   | Structural damage, body injuries | Low         | Medium                 | Low         | Permissible load markings, warnings in instructions   |

### 13. MANUFACTURER AND SUPPORT CONTACT

Manufacturer's name: ROSI Teh d.o.o.

Address: Bistriška cesta 11, 2319 Poljčane, Slovenia

Registration number: 7190549000

Tax number (VAT ID): SI42791375

IBAN: SI56 0443 0000 3103 435

BIC / SWIFT: KBMASI2X

Email: [info@rositeh.si](mailto:info@rositeh.si)

Website: [www.rositeh.com](http://www.rositeh.com)



# ROSI Teh

