



METAL-FACH



**REPAIR AND MAINTENANCE BOOK
FARMING TRUCK TRAILER
T739A & T958**

REVISION I
MAY 2020

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The information included in this Repair and Maintenance Book is valid as of the date of its drawing up. The manufacturer reserves its right to make design changes to machines, and due to this, some values or illustrations might not correspond to the actual state of the machine supplied to the user. The manufacturer reserves its right to make design changes without amending this Repair and Maintenance Book.



CAUTION

CAUTION

When repairing and maintaining the machine, use the Repair and Maintenance Book and the Instruction Manual written for this machine model.

1 Machine identification

The identification of the Trailer can be found on a plate on the front cross member of the body frame, on the right. The VIN identification number of the Trailer is stamped on the right-hand side of the front crossmember on the chassis frame, and on the rating plate.

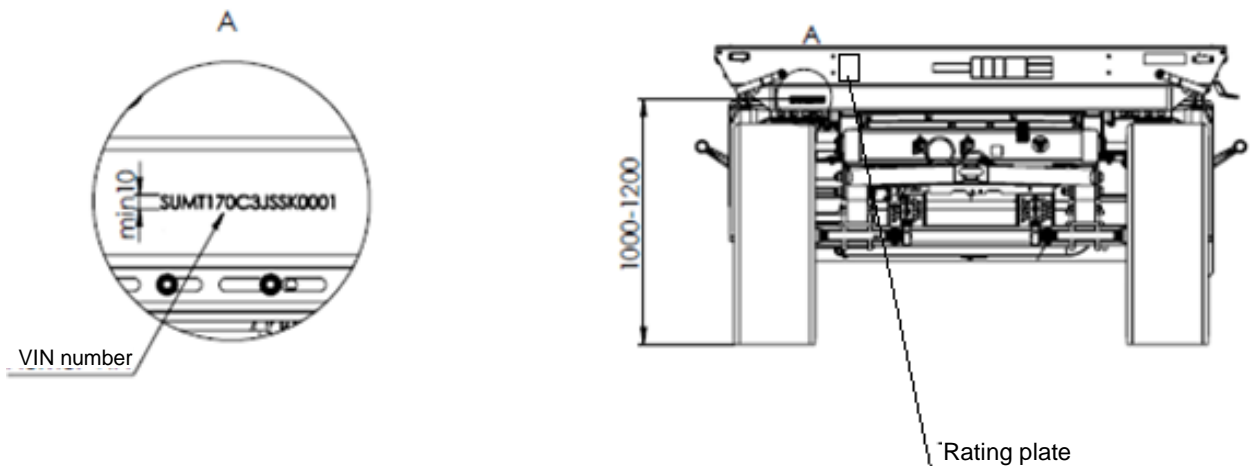
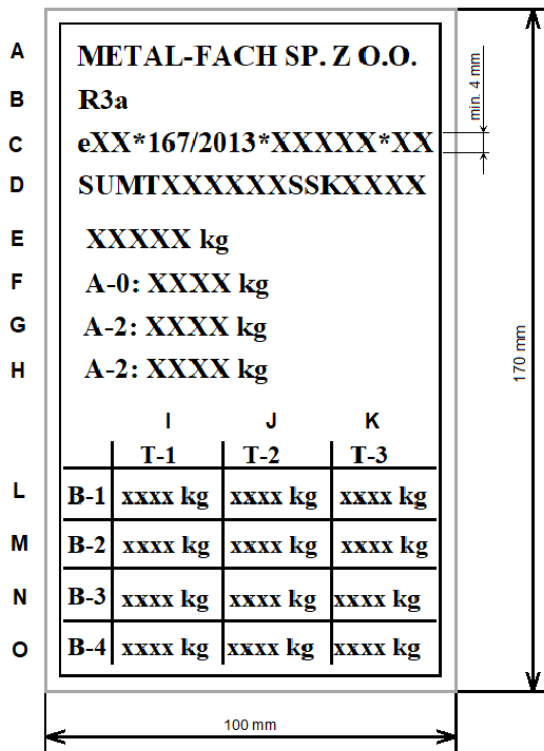


Figure 1. Location of the rating plate and the VIN number on the machine



Key to the fields on the rating plate:

- A** – Manufacturer’s name;
- B** – Category, Subcategory, and Vehicle-Speed Indicator;
- C** – EU-Type Approval Number;
- D** – VIN;
- E** – Permissible total design weight of the vehicle;
- F** – Vertical load at coupling point;
- G** – Permissible design weight per front axle;
- H** – Permissible design weight per rear axle;
- I** – Permissible towable design weight with drawbar;
- J** – Permissible towable design weight with rigid drawbar;
- K** – Permissible towable design weight with central axle;
- L** – Permissible towable design weight without brake;
- M** – Permissible towable design weight with overrun braking;
- N** – Permissible towable design weight with hydraulic braking;
- O** – Permissible towable design weight with overrun braking.

Figure 2. Rating plate



CAUTION

CAUTION!

Entering public roads without the nameplate or with an illegible nameplate is prohibited.

2 Storage

The Trailer must be protected from direct weather conditions (e.g. sun, rain), parked on solid ground on its ground wheels, secured with chocks. Reduce tyre pressure and cover the tyres if there is a likelihood of prolonged exposure to sunlight.

If the Trailer is exposed to weather conditions, inspect it from time to time to make sure that no rainwater has accumulated inside it. Make sure the paint coating is intact. These areas should be cleaned, degreased, and then covered with paint, to maintain a uniform colour and even thickness of the protective coating.

Long-term storage is permitted only in enclosed areas.

3 Cleaning the Trailer

After the work is finished, the Trailer should be thoroughly cleaned and washed with a stream of running water.

Clean the machine before each long period of non-use, after carrying loads that can cause corrosion, and whenever necessary. Clean the Trailer according to the following guidelines.

The machine may be cleaned only in designated areas when the air temperature is above zero.

First, before you start the cleaning, open the sideboards and extensions of the Trailer to remove any residual material that has been carried there. Once that has been completed, start cleaning the Trailer.

Wash down the Trailer with clean water or water with detergent. When using different types of detergents, please read their application specifications and assess whether they may be used to clean the Trailer.

The use of any organic solvents or other substances that could damage coated surfaces and rubber or plastic components is not allowed.

A pressure washer may be used to clean the Trailer. Read the operating INSTRUCTIONS attached with the washer beforehand. When using a pressure washer, keep a safe distance between the device's nozzle and the surface of the Trailer. The minimum distance is 50 cm. When washing the Trailer using a pressure washer, never direct the water jet directly onto the hydraulic and pneumatic system components, i.e. hoses, valves, cylinders, plugs, electrical connections etc., or onto the Trailer lubricating points, information and warning signs and the rating plate.

The Trailer comes with plastic parts that are recommended to be washed with clean water or water with a special detergent dedicated for this type of surface.

Surfaces contaminated with oil or grease must be cleaned with agents intended for this type of contamination. Other degreasing agents designed for cleaning this type of contamination may be used. Before using them, it is recommended that you read the information on how to use them to clean a particular surface. After degreasing a contaminated surface, wash it with water and a detergent that is intended for this purpose.

When using various types of detergents and organic agents, remember that they can affect the machine components, especially seals and flexible hoses. Some substances can accelerate the ageing of the material. Only use special cleaning and maintenance products designed for surfaces. Always read and follow the information provided with the cleaning and maintenance products.

The spray-suppression skirts must be cleaned on a regular basis.



CAUTION

CAUTION!

After cleaning and drying the machine, grease all the lubrication points.

4 Storage

The Trailer must be stored in roofed areas (preferably on a level and hard surface) and in such a way as to prevent any injury to people and animals.

If the Trailer is not to be used for a long period of time, ensure the machine is protected from the harmful effects of the weather. Preparing the Trailer for long-term non-use involves, among other things, the thorough cleaning and drying of all machine components, including tyres and rims, in accordance with the instructions in **Section 3. Cleaning the Trailer**.

Ensure that there are no corrosive environments. To do this, apply primer coat and topcoat on the susceptible places, after having prepared them properly. Follow the recommendations of the paint manufacturers.

When preparing the Trailer for long periods of non-use, lubricate the machine parts, regardless of the date of the last lubrication.

Check the tyre pressure from time to time during long-term non-use of the machine. If the pressures are too low, re-inflate the tyres.

Changing the position of the wheel is recommended every 14 days so that the contact area between the tyre and the ground is varied during extended periods of non-use.

Wash the tarpaulin cover and dry it before you store it for a long period of time. Ensure the tarpaulin is stored either in the unfolded or rolled-up position so as not to cause folds in the material.

5 Dismantling and Disposal

If the user decides to scrap the machine, they must comply with the national regulations for the scrapping and recycling of end-of-life machines. The certificate issued by a scrap-metal yard designated by the responsible authorities, shall be the basis for the deregistration of the Trailer.

The first step in dismantling the Trailer is to drain all the oil from the hydraulic system. Then, air pressure in the air-braking system must be depressurised completely.

Hand over any useless, worn, non-repairable or non-recoverable components to an appropriate facility that collects recyclable materials. For environmental reasons, it is obligatory to hand hydraulic oil over to a plant where such waste is disposed of.

6 Preparing the machine for operation

Check the technical condition of the Trailer each time before you start the machine. Make sure you have read this Instruction Manual and follow the guidelines contained herein. For safe operation of the machine, it is essential that you know its components and understand how it works. Use this Book for repairs and maintenance.



CAUTION

CAUTION!

The user is obliged to check the Trailer after delivery and before start-up, as well as to read the Instruction Manual.

Check-list

- Completeness of the Trailer (standard and optional equipment)
- Condition of the coating
- Condition of the ground wheels and tyre pressure
- Technical condition of the hydraulic hoses
- Technical condition of the pneumatic hoses
- Lighting components

Before coupling the Trailer for the first time, carry out preparation work. This involves checking the tightness of the wheel nuts, and draining the air tank in the air-braking system.

6.1 Coupling and uncoupling the Trailer to/from the tractor

Before coupling the Trailer, make sure both the Trailer and tractor are fully operational. To couple the Trailer, only use the tractor's upper transporting hitch. Carefully check the hitch securing device. If the tractor is equipped with an automatic hitch, make sure the coupling operation has been completed. Use special caution when connecting the machines.

The T739A and T958 Trailers may only be used with fully operational tractors with a minimum power of 100 kW, equipped with two external hydraulic sockets and a hitch (the upper transporting hitch).

To connect the tractor with the T739A or T958 farming truck Trailer, proceed as follows.

- Drive up to the Trailer so that its drawbar eye is between the fork of the tractor's transporting hitch
- Stop the tractor's engine, take the key out and engage the parking brake.
- Use the pin to connect the drawbar eye with the hitch and secure it with the cotter pin
- Connect the electrical wiring and hydraulic hoses to the external sockets of the tractor
- Connect the trailer's brake line to the tractor's brake socket.

Carry out the following steps to uncouple the Trailer from the tractor:

- After you pull over to where the Trailer is to be parked, apply the parking brake of the tractor
- Engage the parking brake of the Trailer
- If the Trailer is parked on an uneven or sloping ground, put a chock under its wheels to secure it against rolling
- Disconnect the electrical, hydraulic, and pneumatic lines from the tractor
- Unlock and remove the pin of the drawbar, thereby uncoupling the drawbar from the hitch, drive the tractor away and insert the pin into the drawbar.

It is forbidden to stand between the Trailer and the tractor while coupling. It is forbidden to uncouple the Trailer if its body is raised. When coupling and uncoupling the Trailer, apply the parking brake of the machine.

Any improper use or non-observance of the guidelines in this Instruction Manual poses a health hazard to Trailer operators and bystanders.

6.2 Start-up



CAUTION

CAUTION!

The tractor operator must read the Instruction Manual and follow the guidelines contained therein.

The Trailer must be coupled only with a tractor that is in good working order and that is fitted with an operational transporting hitch, operational air system, and signalling and warning system.

The use and operation of the Trailer may only be carried out by persons authorised to drive Trailer-towing agricultural tractors.

If any information in the Instruction Manual or this Repair and Maintenance Book is not fully understood, please contact the manufacturer.

Follow the procedure below before start-up.

- 1) Learn the names and locations of the individual Trailer units/components
- 2) Check pressure in the tyres of the trailer,
- 3) Couple the Trailer with the tractor
 - Set the drawbar eye of the Trailer at the height of the tractor's hitch
 - Couple the drawbar eye with the tractor hitch
 - Secure the hitch pin against falling out
 - Switch off the tractor's engine
 - Engage the tractor's parking brake
 - Connect the pneumatic and electrical systems to the appropriate sockets on the tractor
 - Check the operation and tightness of the pneumatic and electrical systems of the Trailer and tractor
 - Check all the devices, their connections, and protection against undesired disconnection or displacement

- 4) Disengage the Trailer's parking brake
Repeat these actions every time you start the trailer.

6.3 Tarpaulin cover

The Trailer can be equipped with a tarpaulin cover as an option. The tarpaulin is used as required for the protection of the Trailer against weather conditions and against spilling loose loads during transportation. Make sure that no precipitation accumulates on the tarpaulin, as this can cause deformation. The tarpaulin cover is not suitable for use in freezing temperatures. Low temperatures cause the tarpaulin material to deteriorate visible as cracks.


	<p>CAUTION!</p> <p>In order to achieve the correct tensioning of the tarpaulin cover, its reel must be fastened to the knob of the locking mechanism of the lever that releases the rope clamp on both sides of the Trailer. If the reel of the tarpaulin cover is supported by the knob, it prevents the tarpaulin cover from stretching properly.</p> <p>Poor tensioning of the tarpaulin cover causes water to accumulate on its surface, etc. As a result, the tarpaulin cover will deform and fail to fulfil its purpose.</p>
<p>CAUTION</p>	



Figure 3. Correct tensioning of the tarpaulin cover

6.4 Coupling and uncoupling an additional trailer

It is possible to couple the trailer with a second trailer. Before coupling an additional trailer, read this Instruction Manual and follow its guidelines. When connecting an additional trailer, bear in mind that:

- The permissible towed-Trailer weight depends on the Trailer variant and must not exceed the weight of the first Trailer.
- Before coupling the additional trailer, make sure that both trailers are fully operational;
- People are not allowed to stand between both machines, when they are being coupled; The person assisting in the coupling of the machines must stay outside the danger zone and be clearly visible to the operator.

To couple an additional trailer, follow the following procedure:

- 1) Stop the tractor coupled with the first trailer in front of the drawbar of the second trailer.
- 2) The parking brake in the second trailer must be engaged.
- 3) Remove the pin from the rear hitch in the first trailer.

- 4) Set the drawbar of the second trailer in a position that enables coupling.
- 5) When reversing the tractor, drive the rear hitch of the first trailer onto the drawbar of the second trailer.
- 6) Lock the connection with a pin secured with the cotter pin.
- 7) Connect the pneumatic or hydraulic hoses and electrical lines, according to the guidelines in the Instruction Manual and this Repair and Maintenance Book.

6.5 Pneumatic and hydraulic systems

The pneumatic system is under high pressure. When connecting the pneumatic lines to the tractor's pneumatic system, make sure that the valves on the side of the tractor and the Trailer are not pressurised. Check the pneumatic connection on a regular basis and change damaged and ageing parts. Check the hoses for leaks, as no air leakage is allowed. The replacement of lines must comply with the manufacturer's technical requirements. Replace flexible lines every four years, unless damage has been found earlier.

Before starting repair work, de-pressurise the air system and switch off the tractor's engine. Only an authorised representative of the Trailer's manufacturer can make repairs to the pneumatic system.

The Trailer's hydraulic system is also under high pressure. Check the condition of the hydraulic lines on a regular basis. Oil leaks are not permitted. There is a shut-off valve in the hydraulic system, which limits the tilting angle of the Trailer's body. The user is not permitted to adjust the length of the control rope.

When connecting the hydraulic hoses to the tractor, make sure that the tractor's and Trailer's hydraulic systems are not under pressure. If necessary, reduce the residual pressure of the system.

Risk of injury from a strong jet of hydraulic fluid. If injured, see a doctor immediately. If oil gets into your eyes, rinse with plenty of water. If your eyes are irritated, see a doctor. Use soap and water to wash away oil after its contact with the skin. Do not use organic solvents such as kerosene or benzine.

Dispose of used oil after replenishing. Storing used oil in their original containers or in hydrocarbon-resistant replacement containers is recommended. Replacement containers may be used provided that they are properly marked and stored. Storing oil in food storage containers is prohibited.

Replace rubber hydraulic hoses every four years regardless of their technical condition, unless a fault is found earlier.

If any failure occurs in the pneumatic or hydraulic system, shut down the Trailer immediately.



Replace flexible pneumatic lines every five years, unless damage is found earlier.

Replace rubber hydraulic hoses every four years regardless of their technical condition, unless a fault is found earlier.



CAUTION

CAUTION!

Required cleanliness of the 20/18/15 hydraulic oil according to ISO 4406-1998.

6.5.1 Maintaining the pneumatic system of the brakes

When operating the Trailer, check for leaks and the condition of the brake system components and connections, and periodically remove water condensate from the air tank.

Check the air-tightness of the system for the rated air pressure of 800 kPa, if using a double-line system. In places where compressed air will penetrate to the outside, a characteristic hissing is heard, or air bubbles will appear when flooded with soapy water, indicating leakage. If defective seals, hoses or other components, e.g. valves, cylinders etc. cause the leakage, replace such parts.

To drain water from the tank, use its pressure in the tank when tilting the drain valve stem to the side; in addition, once a year before the winter period, remove the drain valve and clean off any accumulated dirt.

6.5.2 Adjustment of the brake system components

When operating the trailer, check the condition of the brake system components and connections, and lubricate the controls periodically.

Adjust the brakes, when:

- due to wearing out of the brake shoes, excessive play forms between the brake lining and drum, and the brake performance is reduced;
- the wheel brakes' action is not simultaneous and not equal.

If the brakes are adjusted correctly, the braking force (the sum of braking forces at the periphery of the braked wheels) should be a min. 50% of the trailer's permissible total weight when braking with the service brake, and the braking force (sum of braking forces at the periphery of the braked wheels) when braking with the parking brake should be a min. 16% of the permissible total weight of the trailer. Both wheels on the same axle must stop uniformly, and the difference in braking forces between the left and right wheels of each axle of the trailer must not exceed 30% (taking into account that 100% corresponds to the greatest force).

The play is adjusted on the spreader lever automatically or by means of adjustment screw 5. You can also adjust the play by means of the activator push rod 4.

For the manual adjustment of the brakes, put the Trailer in a position that allows the manual adjustment of the play by turning screw 5. Repeat for the other wheel.

If the friction parts are adjusted correctly, the wheel should rotate freely, without stoppage or evident resistance caused by the friction of the brake shoes against the drum. Slight friction of the shoes against the drum, particularly in a new Trailer, or after their replacement, is a typical occurrence.

Having made the adjustment as specified above, check and adjust the parking brake as required. Adjust the parking brake by adjusting the length of the cord connecting the lever of the expander roller with the activating mechanism. The required sum of the braking forces must be obtained by exerting the maximum force on the manual crank of the device equal to 40 daN (while maintaining the right angle between the cord and the lever of the expander roller).



CAUTION

CAUTION!

Before starting to drive, check the brake system on a regular basis for functioning, tightness and play – adjust or repair, if necessary.



Check the brake shoes at least once a year, and replace worn linings with new ones. If friction elements have been replaced, they need to be run in (by driving with frequent braking) and adjusted, in order to achieve the required efficiency of their operation.



CAUTION

CAUTION!

Observe the following when lifting the wheel of the Trailer:

- Couple the Trailer to the tractor, position on flat ground, and engage the tractor's parking brake;
- Place the safety chocks underneath the wheel that is not intended for lifting;
- Place a jack under the axle close to the raised wheel and lift the wheel so that it does not touch the ground;
- Secure the wheel against lowering by placing a stand of appropriate height under the axle.

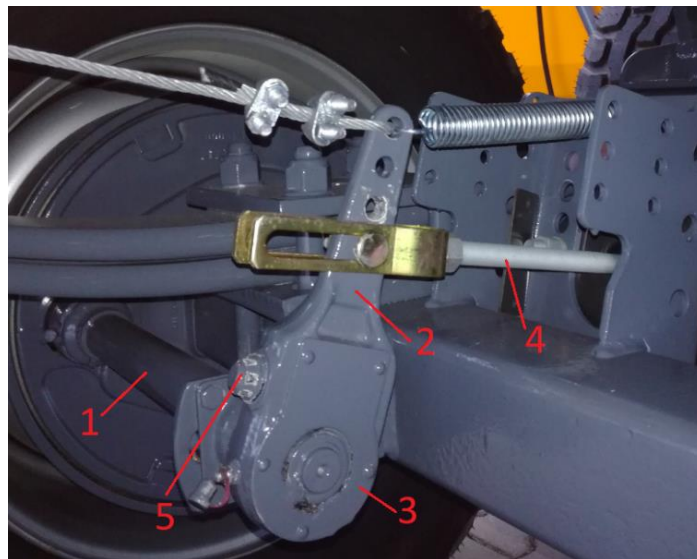


Figure 4. The components of the brake system:

- 1 – shoe-spreader shaft, 2 – lever-arm spreader shaft, 3 – gear on the spreader roller, 4 – tie (push) rod connecting the piston rod of the pneumatic activator with the lever-arm spreader shaft, 5 –adjusting bolt

6.6 Tyre guidelines

Secure the machine with the parking brake and the wheels with chocks, when maintaining the tyres.

Changing the wheel is only permitted if the Trailer's body has been emptied. Use suitable tools for repairing the wheels. Due to the risks associated with the maintenance and repair works of tyres, the repairer should be trained for this purpose. It is advisable to check the tightening of the nuts after the first use, after the first laden drive, and then after each intensive use of the machine, or every 100 kilometres. Repeat these checks each time after you dismantle the wheels.

Regularly check the tyre pressures. Tyre pressures can change during a day's operation. Adjust your speed and load capacity to suit your tyre pressures. The recommended tyre pressure is 4.0 to 9.0 bar, depending on the tyre manufacturer.



CAUTION

CAUTION!

Regularly check tyre pressures.

Tyre over-inflation can cause a blow-out.

The jacking points for the jack are shown by means of pictogram  on the Trailer.

6.7 Checking driving axle bearings for play

Regular checks of the driving axle bearings for play are recommended. Carry out such checks on a newly purchased Trailer after the first 100 km. From then on recheck after driving about 1,500-2,000 km during operation and adjust, if necessary.

To adjust the bearing play, follow the procedure below.

- 1) Couple the Trailer with the tractor and engage the parking brake of the tractor.
- 2) Lift one side of the Trailer so that the wheel does not touch the ground, and secure it against dropping
- 3) If the wheel shows excessive play, remove the hub cap and the securing pin to prevent the castellated nut from spontaneous unscrewing
- 4) Turn the wheel while simultaneously tightening the castellated nut, until the wheel has stopped completely.
- 5) Loosen the nut by $1/6 \div 1/3$ of a turn, until the nearest pin groove overlaps with the hole on the hub spigot
- 6) Secure the nut with a new pin, replace, and fasten the hub cap

If the bearing play is adjusted correctly, the wheel should rotate smoothly, without stopping or apparent resistance (other than friction of the brake shoes against the drum). Slight friction of the shoes against the drum, particularly in a new Trailer, or after their replacement, is a typical occurrence. After driving for a few kilometres observe how the wheel hubs heat up, to check finally if the bearing-play adjustment is correct. In addition to the improper adjustment of the bearing play, considerable resistance to wheel rotation and hub heating can be caused by impurities in the lubricant or bearing damage. The above symptoms require the dismantling of the wheel hub and the removal of the malfunction.

6.8 Lubrication

Proper lubrication is one of the most-important factors that determine the efficient operation of individual Trailer assemblies and mechanisms.

Complying with the lubrication recommendations of the Manufacturer will significantly reduce the possibility of damage or premature wear and tear to individual parts.

The following rules must be observed for lubrication:

- The grease nipple must be cleaned before pumping grease into it,
- The grease should be pumped until fresh grease appears in the slots (through which the used grease is squeezed out during pumping);
- After lubricating, leave some grease on the grease nipple head;
- Threaded connections, lever connections, and similar elements of the Trailer, should be lubricated with oil;
- Regularly check wheel hub bearing lubrication, refill or replace the bearing grease;
- When replacing the grease, remove the hub, remove the used grease, evaluate the condition of the bearings (replace if necessary), and after applying fresh grease and assembling the hub, adjust the bearing play.



CAUTION

CAUTION!

Only use high quality bearing grease.

Never drive without the hub cover, otherwise penetrating dirt (sand) will damage the wheel bearings.

Table 1. Lubrication points

Lubrication point	Lubricant grade	Lubrication interval
Wheel hub bearings	LT 43	Every 6 months
Head socket of the hydraulic cylinder	Graphite grease	Once per year
Components of the Trailer's body-tilting system	LT 43	Every 6 months
Ring hitch	LT 43	Every 6 months

Other components that require routine lubrication.

- Lubricate the moving parts of locks, hinges and articulated joints on a regular basis;
- To press the grease into the cleaned grease nipples;
- Lubricate moving brake parts (levers and pins) on a regular basis;
- The brake shoe axle bearing should be lubricated with a very small amount of grease, if necessary

6.9 Loading and unloading of the Trailer body

Have the loading and unloading of the Trailer body carried out by a person experienced in this type of work.

The load-carrying body may only be loaded when the Trailer is coupled with a tractor, positioned on horizontal ground, and with the drawbar in the straight-ahead position. Preferably use mechanical loading devices like cranes, loaders, conveyors etc. for loading. Before loading, check that both sideboard and extension locks are closed.

When loading the Trailer, distribute the load evenly over the entire surface of the Trailer's body. When transporting materials exerting point pressure on the floor of the body (concentrated loads, e.g. large stones), place thick boards on the floor before loading. This will mean a smaller surface load on the floor and protection against damage.

The hydraulic tilting mechanism, which is supplied with oil from the tractor hydraulic system, tilts the body to unload to the rear or to the sides. A valve block in the tractor's hydraulic system is used to control the raising and lowering of the Trailer's body. See Figure below for a diagram of the hydraulic system installed in the Trailer's body-tilting mechanism.

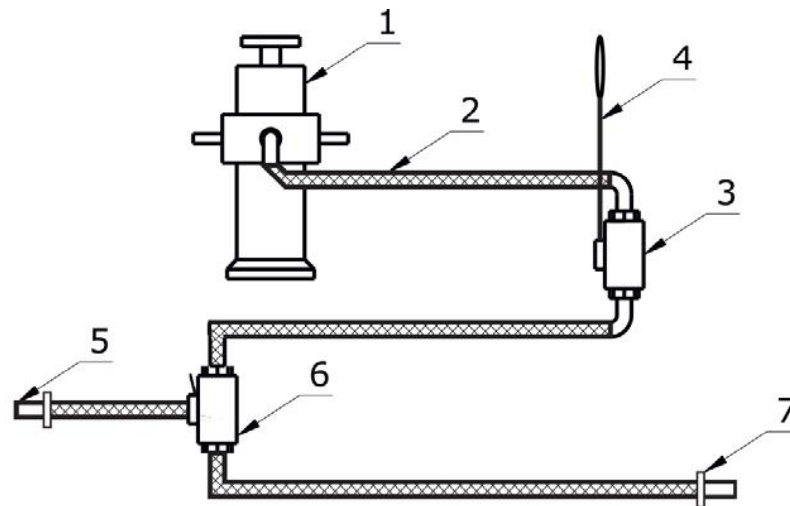


Figure 5. The diagram of the hydraulic system in the tilting mechanism of the Trailer's body

1 – hydraulic cylinder, 2 – hydraulic hoses, 3 – cut-off valve, 4 – control line for the cut-off valve, 5 – coupling valve plug, 6 – control valve between the first or second trailer, 7 – outlet to the second trailer

When transporting materials protruding beyond the Trailer's contour planes, road-traffic regulations must be observed and the protruding load must be marked accordingly. Keep a safe distance from overhead power lines when lifting the Trailer body. Exercise special care when operating the Trailer body to avoid crushing the fingers.

Carrying persons, animals and hazardous materials is prohibited. Lifting the laden Trailer body with closed sideboards is prohibited. Jerking the Trailer forward to move unloaded volume loads, or other loads that are difficult to discharge, is prohibited. When unloading has been completed, make sure that the Trailer body is empty. It is absolutely forbidden to drive with the Trailer body lifted. It is forbidden to enter or reach between open sideboards and the Trailer body. Bystanders are prohibited from standing in the unloading/loading zone. The

operator must ensure there is adequate visibility and that there are no bystanders in the unloading/loading zone.

When remedying a defect in the Trailer body, lower the body or, if it is necessary to lift the body, it must be secured with a support. The Trailer body must be empty, and the Trailer immobilised with the parking brake and wheel chocks.



CAUTION

CAUTION!

It is forbidden to exceed the permissible load capacity of the trailer and the permissible axle loads, as this threatens road safety and can cause damage to the trailer.

The load to be carried must be protected against displacement, the generation of excessive noise, and road spillage.



CAUTION

CAUTION!

It is forbidden to transport people on the Trailer.

Unloading the body may be done manually, mechanically, or by means of the hydraulic tilting mechanism of the body.



WARNING

WARNING!

- If it is necessary to unload the Trailer on sloping terrain, it is permissible to tilt the load-carrying body upwards (tractor with the Trailer facing upwards).
- No one is allowed to be present in the vicinity of the tilting load-carrying body, or within the range of the load being dumped.
- Do not uncouple the Trailer from the tractor, when the Trailer's body is raised.
- Before unloading the Trailer by tilting its body, ensure that the bolts on the correct side of the Trailer's body have been removed. Failure to remove the pins can damage the Trailer.
- When tilting the load-carrying body make sure it is stable.

Unloading the Trailer by tilting the load-carrying body must be performed in the following order:

- Align the tractor with the longitudinal axis of the trailer;
- engage the tractor's parking brake;
- remove the pin connecting the load-carrying body to the chassis frame:
 - a) when unloading to the rear – the pins must remain in the rear sockets of the load-carrying body;
 - b) when unloading to the left side – the pins must remain in the left-side sockets;
 - c) when unloading to the right side – the pins must remain in the right-side sockets
- check that the pins on the unloading side of the Trailer are correctly fitted;
- open the locks on the board of the Trailer's body at the side intended for unloading;
- tilt the load-carrying body using the cylinder of the hydraulic system;
- after the load has slid off, lower the body and close the sideboard(s) using the locks.

To open the top lock of the body sideboard, move the handle upwards and simultaneously press the button located under the handle. Opening the lower locks on any board requires moving the central lever:

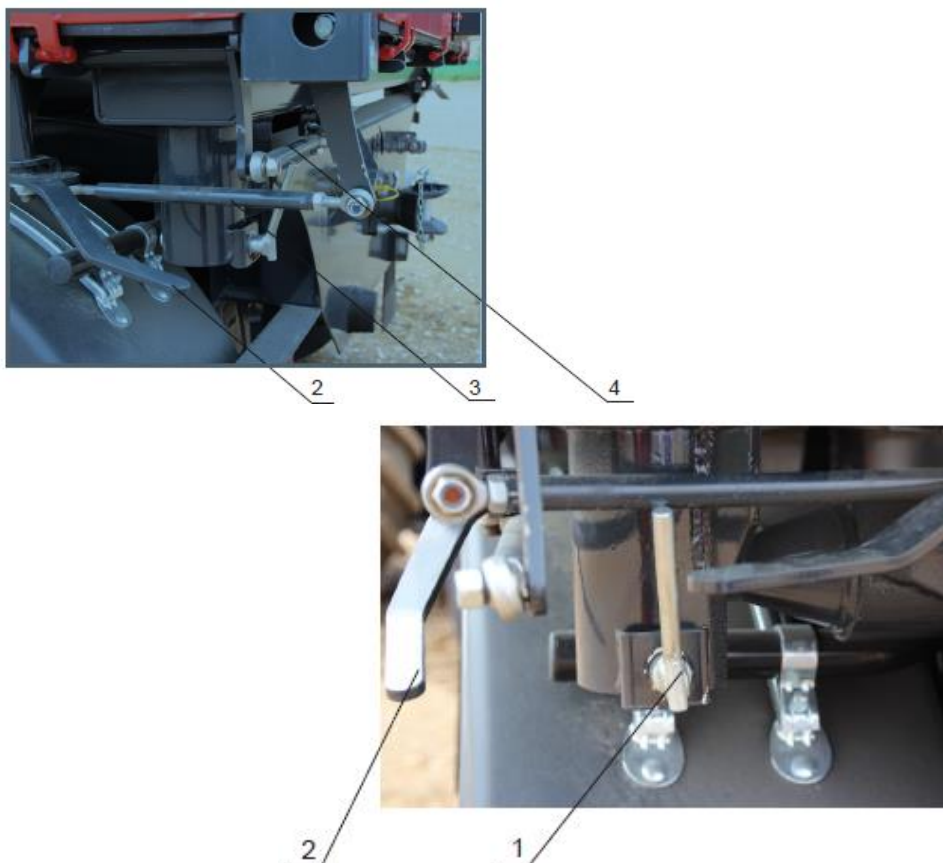


Figure 6. The locks on the sideboards of the load-carrying body:
 1 – locking and retaining pin on the lever, 2 – central lever of the lower locks,
 3 – lock-adjustment mechanism, 4 – central lock shaft

7 Periodic maintenance

7.1 Technical maintenance

The transporting capacity and the long service life of agricultural trailers can only be achieved, if they are used correctly and in a reasonable manner, observing the limits of the structural and functional parameters.

Minor negligence in the operation of the Trailer can have serious consequences. If detected on time, defects can be eliminated effortlessly, at minimum cost and effort, but with maximum efficiency.

Trailer defects can be discovered quickly only if you maintain its periodical cleaning and careful checks.

Therefore, wash the trailer often to spot possible damages and malfunctions.

The Trailer shall also be subject to periodic technical inspections. Lubricate the Trailer in accordance with the lubrication instructions.

It is advisable to store the Trailer in a roofed area, in order to protect the Trailer from rain, hail and other adverse weather conditions.

For the proper functioning of the Trailer, it must be maintained, repaired on time, and monitored with great care during operation.

The daily maintenance (before starting work) of the Trailer requires a minimum of work to be done, such as:

- Check the tightness of the bolted parts and protect them against undesired loosening
- control play of mechanisms and articulated connections;
- check the tightness of the hydraulic system and remove any leaks;
- check the tightness of the pneumatic system;
- check the proper operation of mechanisms;
- check and perform lubrication according to specifications;
- check tyre pressures;
- check the locks on the boards for correct locking and safety;
- when working with board extensions - check, if they work properly and ensure the safety of road traffic and the operator;
- Check the functioning of the brake and signalling systems

7.2 Periodic maintenance

1. Carry out any repair, maintenance, and cleaning work, as well as the removal of any functional faults, with the tractor's drive and engine switched off. Remove the key from the ignition.
2. Check nuts and bolts on a regular basis at their fixed positions, and tighten. Replace ordinary screws only with screws of the same quality and strength as the original ones.
3. When performing service works under the raised and tilted but unloaded Trailer's body, always secure the body against dropping using the support that is included as an accessory with the Trailer.
4. When replacing parts, use suitable tools and protective gloves.
5. Clean the Trailer thoroughly after you finish work, and do not leave any residual load carried on the Trailer's body.

6. Disconnect the continuous power supply before welding and working on the electrical system.
7. Protective devices are subject to wear and tear, therefore it is necessary to adjust, check and replace them on a regular basis in due time.
8. The spray-suppression skirts must be cleaned on a regular basis.
9. Only use the spare parts recommended by "METAL-FACH" Sp. z o.o. in Sokółka.
10. The Trailer must be stored in roofed areas on a level and hard surface and in such a way as to prevent any injury to people and animals.
11. Used parts must be handed over to the appropriate recycling centres subject to the environmental requirements.

7.3 Repair instructions

When carrying out minor repairs caused by accidental faults, maintain the proper cleanness, and when making the required adjustments necessary for the proper functioning of the Trailer, ensure all parts are correctly mounted in their places.

Minor repairs during operation (in the field) must be carried out on site by the operator.

Store parts dismantled during repair and protect them against dust and other contaminants. Special attention must be paid to the protection and cleanness of the bearings.

During any field repairs, maintain the proper cleanness of the parts to be fitted, especially any parts that you drop to the ground, which should be washed or at least cleaned of any dirt to a degree that ensures proper functioning.

A series of technical rules for the dismantling and assembly of parts and sub-assemblies must be observed during current and comprehensive repairs, thus ensuring the quality and efficiency of work.

After each repair of the Trailer's sub-assemblies, check that they are working properly.

8 Electrical system (signalling and warning)

The electrical system of the Trailer is adapted to supply power from a 12 V DC power source – from the system of the cooperating tractor.

A diagram of the electrical system and the arrangement of the Trailer lights are shown in Figure below.

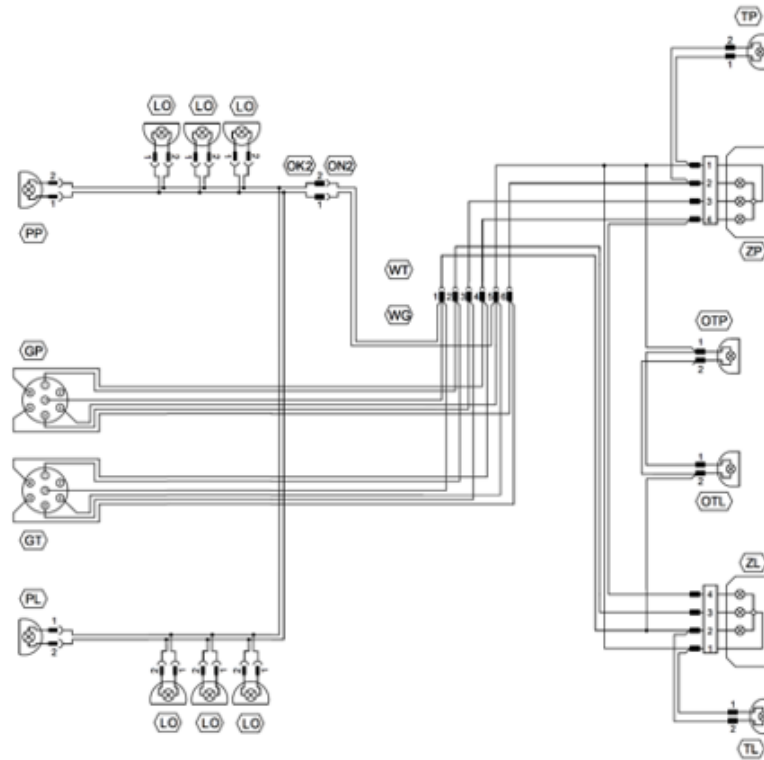


Figure 7. Wiring diagram of the Trailer

- ZP - rear right-side lamp cluster,
- ZL - rear left-side lamp cluster,
- GP - 7-pin front plug,
- GT - 7-pin rear plug,
- OTP - right-side license plate lamp,
- OTL - left-side license plate lamp,
- PP - front running light lamp, right-side,
- PL - front running light lamp, left-side,
- TP - rear marker light lamp, right-side,
- TL - rear marker light lamp, left-side,
- LO - side marker light lamp.

9 Hydraulic system

9.1 Using the hydraulic system tilting the load-carrying body



CAUTION

CAUTION!

Check that the oil in the Trailer's hydraulic system and the oil in the tractor's external hydraulic system are of the same type and grade. The use of different oil grades is not permitted. Hydraulic oil can heat up to high temperatures during operation.

The hydraulic system of the Trailer must be completely leak-proof. The tightness of the hydraulic system must be checked with several-seconds of overloading the system by tilting the load-carrying platform to the rear. Tighten the couplings if there is an oil leakage in the hydraulic hose lines. If this does not remove the fault, the line or coupling elements must be replaced with new ones. If there is an oil leakage outside the coupling, replace the leaking components in the hydraulic system. Any mechanical damage to the component necessitates its replacement with a new one.

The condition of the hydraulic system should be monitored on an ongoing basis while the Trailer is in use. When connecting the Trailer's and tractor's hydraulic systems, observe the required cleanness of the connectors.



CAUTION

CAUTION!

Inspect the hydraulic system on a regular basis every 6 months. Check the condition of the hydraulic lines.

Replace even undamaged hydraulic lines every 4 years.

9.2 Adjusting the hydraulic mechanism tilting the load-carrying body

The hydraulic system is equipped with a safety cord (the load-carrying body tilt angle limiter) and an oil shut-off valve to the hydraulic cylinder when tilting the load-carrying body. For safety reasons, it is forbidden for those who are not authorized to make adjustments or to remove the limiters.

The purpose of the shut-off valve is to cut off the oil supply to the cylinder before reaching the maximum (permissible) tilt angle of the load-carrying body. Changing the length of the cable connecting the body frame to the shut-off valve, or breaking it, can cause damage to, and tip the Trailer over.



CAUTION

CAUTION!

It is forbidden to remove or disconnect the cord that limits the tilting of the load-carrying body.

It is forbidden for those who are unauthorised to adjust the shut-off valve.

10 Metric-bolt-tightening torques

Optimised torque values for bolts or screws and nuts [Nm] are shown in Table 2.

Table 2. Bolt tightening torques

Bolt-tightening torques – metric bolts in Nm							
Size Ø mm	Pitch mm	Bolt version – strength classes					Wheel nuts, wheel screws
		4.8	5.8	8.8	10.9	12.9	
3	0.50	0.9	1.1	1.8	2.6	3.0	
4	0.70	1.6	2.0	3.1	4.5	5.3	
5	0.80	3.2	4.0	6.1	8.9	10.4	
6	1.00	5.5	6.8	10.4	15.3	17.9	
7	1.00	9.3	11.5	17.2	25	30	
8	1.25	13.6	16.8	25	37	44	
8	1.00	14.5	18	27	40	47	
10	1.50	26.6	33	50	73	86	45
10	1.25	28	35	53	78	91	
12	1.75	46	56	86	127	148	
12	1.50						80
12	1.25	50	62	95	139	163	
14	2.00	73	90	137	201	235	
14	1.50	79	96	150	220	257	140
16	2.00	113	141	214	314	369	
16	1.50	121	150	229	336	393	220
18	2.50	157	194	306	435	509	
18	1.50	178	220	345	491	575	300
20	2.50	222	275	432	615	719	
20	1.50	248	307	482	687	804	400
22	2.50	305	376	502	843	987	
22	2.00						450
22	1.50	337	416	654	932	1090	500
24	3.00	383	474	744	1080	1240	
24	2.00	420	519	814	1160	1360	
24	1.50						550
27	3.00	568	703	100	1570	1840	
27	2.00	615	760	1200	1700	1990	
30	3.50	772	995	1500	2130	2500	
30	2.00	850	1060	1670	2370	2380	

11 Defects and troubleshooting

The table below shows the faults, their causes (symptoms) and methods to remove them.

Table 3. Defects and troubleshooting

No.	Type of	Cause	Method of rectification
1.	Excessive heating of brake drums.	Brake shoes are not adjusted correctly.	Adjust according to Section 6.5.2.
2.	Excessive heating of the wheel hub.	Too little play on bearings. Dirty bearing grease.	Adjust, according to Section 6.7. Remove the hub, replace the grease, and adjust the bearings as above.
3.	Lubricant flows out onto the brake shoes.	Hub seal worn, damaged or incorrectly installed.	Remove the hub, replace the worn or damaged seal and install a new one correctly. Remove grease from the shoes and drum, wash the friction elements using benzine, install the hub, and adjust the bearings as above.
4.	The wheels brake unevenly.	Shoe linings or brake shoes are dirty, worn or incorrectly adjusted.	Check the condition of the brake shoe linings, remove the dirt, replace worn-out parts, and adjust according to Section 6.5.2.
5.	Insufficient braking performance of the wheels.	Incorrect adjustment of the brake shoes and brake controls.	Adjust the brake shoes and control, according to Section 6.5.2.
6.	Oil leakage onto hydraulic line joints.	Insufficient tightening on the joints or damage to the seals on the joints.	Tighten and, if necessary, replace the line elements.
7.	Oil Leakage from the shut-off valve or cylinder.	Worn or damaged seals or mechanical damage to these devices.	Replace seals or complete units (assemblies).
8.	The locking pin of the body does not enter the socket.	Bent pin or dirt between pin and housing.	Replace the pin or clean the pin and housing, apply a thin layer of grease on the pin, insert into the socket, and secure.
9.	The seat of the load-bearing platform support does not fit the spigot of the chassis frame.	Bent chassis frame, bent body frame, or mechanical damage to connecting parts.	Contact the manufacturer to replace the damaged components.



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The pictures do not necessarily show standard accessories.

Original spare parts are available from authorised dealers, both in Poland and abroad, and also at the Metal-Fach retail outlet.

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