



METAL-FACH



FARMING TRUCK TRAILER T730

OPERATING INSTRUCTIONS
TRANSLATION OF THE ORIGINAL OPERATING INSTRUCTIONS
REVISION I
JUNE 2022



UE



EC DECLARATION OF CONFORMITY

The undersigned,	Jacek Kucharewicz, President of the Board,	
hereby declares, with full responsibility, that the complete machine:		
Farming trailer		
1.1.	Brand (the trading name of the manufacturer)	Metal-Fach
1.2.	Type:	T730
1.2.1.	Variant:	
1.2.2.	Version:	
1.2.3.	Trade name(s) (if any):	
1.3.	Category, subcategory, and vehicle speed indicator	R _{3a}
1.4.	Company name and manufacturer's address:	Metal-Fach Sp. z o.o. ul. Kresowa 62 16-100 Sokółka, Poland
1.4.2.	Name and address of the manufacturer's authorised representative (if applicable)	
1.5.1.	The location of the manufacturer's rating plate	Front cross member of the top frame of the trailer
1.5.2.	The method used to fix the rating plate of the manufacturer:	Adhesive bonding
1.6.1.	The location of the vehicle-identification number on the chassis	Transverse front cross member of the trailer, on the right hand side
2.	Machine-identification number:	
<p>Complies with all the appropriate regulations of Directive 2006/42/EC and the Regulation of the Minister of the Economy dated 21 October 2008 on the principal requirements for machines (Journal of Laws of 2008, No. 199, item 1228, as amended)</p> <p>The following harmonised standards were applied to assess the compliance. <u>PN-EN ISO 4254-1 :2016-02, PN-EN 1853+AC:2019-07, PN-EN ISO 12100:2012, PN-EN ISO 13857:2020-03</u></p> <p>and standards: ISO 3600:2015, PN-ISO 11684:1998 and the Notice of the Minister of Infrastructure and Construction of 15.12.2016 on the announcement of the consolidated text of the Regulation of the Minister of Infrastructure on technical conditions of vehicles and the scope of their necessary equipment, (Journal of Laws item 2022 of 15.12.2016)</p> <p style="text-align: center;">Safety Testing Report No.: LBC/85/21</p> <p>This EC Declaration of Conformity shall become null and void if the machine is modified or reconstructed without the Manufacturer's consent.</p>		

Sokółka
(Place)

12/05/2022
(date)

Jacek Kucharewicz
(Signature)

President of the Board
(position)

Machine data

Machine type:	Farming trailer
Type designation:	T730/1, T730/2, T730/3*
Serial number/ VIN ⁽¹⁾	_____
Machine manufacturer:	METAL-FACH Sp. z o.o. 16-100 Sokółka, Poland ul. Kresowa 62 Phone: +48 85 711 98 40 Fax: +48 85 711 90 65
Reseller:	_____
Address:	_____ _____
Phone/Fax.:	_____ _____
Delivery date:	_____
Owner or User:	Last Name: _____
Address:	_____ _____
Phone/Fax.:	_____

*Delete as applicable

⁽¹⁾The data is located on the machine's rating plate located on the front part of the machine's main frame

INTRODUCTION

The information included in the Instruction Manual 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 modify the constructional design without amending this Operating Manual. The Instruction Manual is part of the basic equipment of the machine. Before using the machine, its user shall read the contents of this Operating Manual and comply with its instructions. This will ensure the safe operation and reliable performance of the machine.

The machine has been built in compliance with the standards in force and current regulations of the law. This Manual describes the basic safety and operation principles of the Metal-Fach T730 trailer.

The essential obligations of the manufacturer are shown in the Warranty Certificate, which includes the complete and currently prevailing regulations on commercial warranty services.

If you do not understand the information in the Operating Manual, consult the original reseller of this machine or the Manufacturer directly.

The spare-parts catalogue functions as a separate list. It is attached in the form of a CD as part of the machine purchase. It is also available on the Manufacturer's web site: www.metalfach.com.pl

This Instruction Manual, according to the Act of 4 February 1994 on copyrights and related Laws Journal of Laws of 2018, item 1191 is protected by copyright. It is prohibited to copy and distribute the contents and figures herein without the consent of the proprietor of the copyright.

The Warranty Card, including the terms and conditions of warranty, is attached to this Instruction Manual as a separate document.

Manufacturer's address:

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ul. Kresowa 62
16-100 Sokółka, Poland

Contact:

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Safety symbols used in the Manual:



DANGER

A hazard warning symbol: indicates a severe hazard which, if not avoided, may result in death or serious injury. This symbol warns of extremely dangerous situations.



CAUTION

This symbol indicates very important information and instructions. Non-compliance can lead to serious damage to the machine, resulting from its incorrect operation.



WARNING

This symbol indicates potential hazards which, if not avoided, can result in death or serious injury. This symbol indicates a lower level of risk of injury than the DANGER symbol.



The symbol indicating useful information.



This symbol indicates maintenance activities that should be performed periodically.

1 General description

1.1 Introduction

THE INSTRUCTION MANUAL IS PROVIDED WITH THE TRAILER'S BASIC EQUIPMENT

The trailer is intended for transport of agricultural produce and other bulk and loose materials on farms and public roads.

To operate the trailer in a safe manner, read and adhere to all the instructions set out in this Instruction Manual. Abiding by the guidelines provided in the Instruction Manual ensures safe operation for the User, and also prolongs the machine's service.

1.2 Machine identification

Identify the trailer based on the rating plate and VIN number. The rating plates are fixed on the right-hand side of the front cross member of the trailer's load body frame. The VIN number is stamped on the right-hand side of the front cross member on the trailer's chassis frame, and on the rating plate.

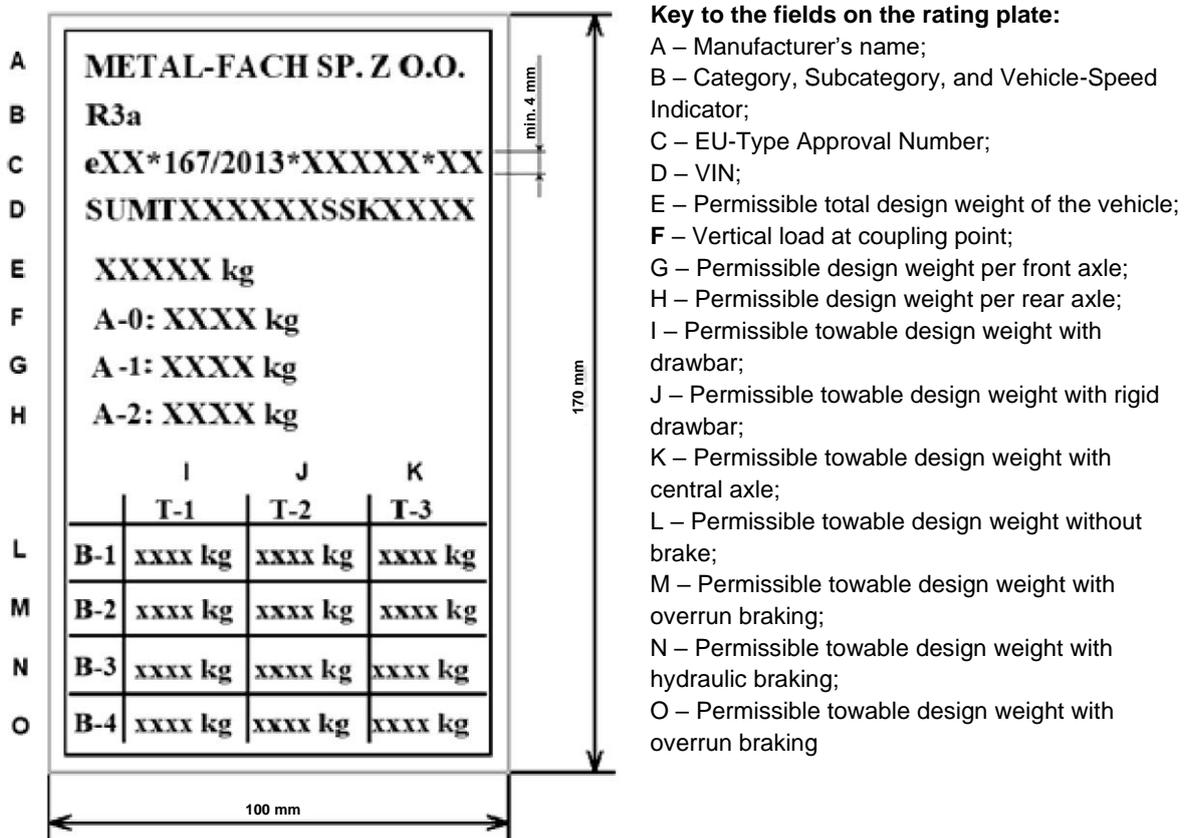


Fig. 1. The EU-approved rating plate of the trailer



CAUTION

CAUTION!

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

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TRAILER

Type **T730** Commercial name **T730/3**

VIN **SUMT14XXXXXXXXXXXX**

Technically permissible maximum mass kg

Load on the axle 1/2 kN

Load on the coupling point kN

Year of production

Unladen mass kg Payload kg

Fig. 2. The rating plate of the trailer in accordance with CE marking

A properly marked T730trailer should be have two rating plates affixed (see Fig.2 and Fig.3).

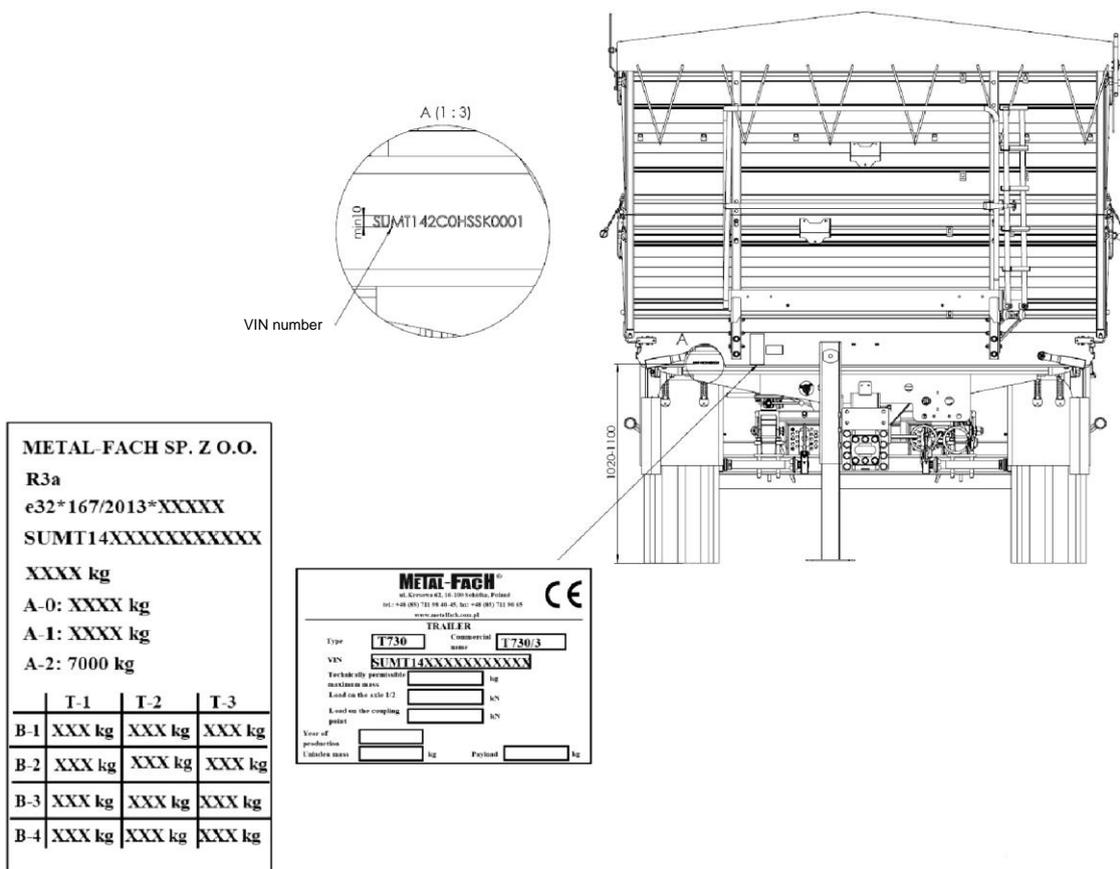


Fig. 3. The location of the rating plate and the VIN number on the machine

Upon purchase, check the compliance of the VIN number located on the trailer rating plate with the number specified in the Instructions Manual and the Warranty Certificate.



It is often necessary to provide the trailer's VIN number to identify the trailer unambiguously when ordering spare parts, or if any other problems arise, so it is advisable to write this number down below.

VIN number of the trailer:

S	U	M							S	S	K				
---	---	---	--	--	--	--	--	--	---	---	---	--	--	--	--

In the event of selling the machine to another user, it is obligatory to provide the Instructions Manual. It is recommended for the trailer supplier to keep a record of the Instruction Manual's receipt confirmation by the purchaser, submitted with the machine to the new user.

Please read the Instruction Manual carefully!

If you follow its recommendations, it will be possible to avoid hazards, operate the machine efficiently and productively, and maintain the warranty for the duration granted by the Manufacturer.



CAUTION!

The use of the trailer by those who have not read this Instruction Manual is forbidden.

CAUTION

1.3 Intended use

The trailer is intended for transporting agricultural produce, other bulk, and loose materials or for carrying loads on box pallets or Europallets within the farm area and on public roads. The transportation of building materials, mineral fertilisers, and other loads is also permitted, provided the appropriate requirements described in Section 4.3 Loading the trailer body, have been met.

The trailer is unloaded either manually or by tilting the body to the rear or to the sides. The trailer is designed to work with agricultural tractors equipped with external hydraulic systems - signal-, warning-, and brake-system sockets - and a transporting hitch.

The trailers must not be used for transporting fuel, gas cylinders, or toxic materials, as it will be required to comply with additional technical requirements regarding the carrying of hazardous loads. Transporting such materials can cause contamination of the environment. The manufacturer is not responsible for the resulting damage – this risk is borne by the owner.

The trailer cannot be used to carry people, animals, or goods classified as hazardous materials.

The trailer may only be used by persons who have read the INSTRUCTIONS Manual, and who are trained in the risks and provision of pre-medical assistance to the victims of accidents.

In order to use the trailer in accordance with its intended use, you must also perform all the operations associated with the correct and safe operation and maintenance of the machine. Therefore, the user must:

1. Read and follow the guidelines contained in the Instruction Manual,
2. Observe the instructions for maintenance and routine adjustments,
3. Follow the safety principles,
4. Comply with the road traffic regulations within a particular country where the trailer is being used.



DANGER!

The trailer must not be used contrary to its intended purpose, in particular, it is prohibited to carry:

- People and animals;
- Unsecured toxic materials, since there is a possibility of causing environmental pollution;
- Machinery and equipment where the location of their centre of gravity can have an adverse effect on the trailer's stability;
- Loads which cause non-uniform loading of and overloading of the axles;
- Unsecured loads that can change their position on the load-carrying body while driving;
- People and animals.

DANGER

Table 1. Requirements for agricultural tractors

Description	Requirements	UoM
Braking system Two-line pneumatic system System rated pressure	Sockets acc. to PN-ISO-1728:2007 min. 650	kPa
Hydraulic system Hydraulic oil Nominal pressure Oil purity	HL 46 18 20/18/15 acc. to ISO 4406-1996	MPa
Electrical system Electrical system voltage Connection socket	12 7-pole acc. to ISO 1724	V
Tractor hitch Minimum vertical load-bearing capacity of the hitch	2000	Kg
Minimum power demand of the tractor	T730/1 – 58 T730/2 – 66 T730/3 – 73	KW
Minimum turning radius	6	m

1.4 Basic components

The basic components of each trailer include the following.

- Operating instructions;
- Warranty Certificate with warranty terms and conditions;
- A bracket for fixing a slow-vehicle marking plate
- Braking system;
- A parking brake;
- Lights;
- sprung suspension;
- rear anti-shock bar

On request (at an additional fee), the trailer can be equipped with a slow-vehicle marking plate and a reflective warning triangle.

1.5 Storage, sale, and transport

1.5.1 Storage

The trailer should be protected against direct sunlight and rain, positioned on a paved surface on its running wheels with support wedges under the wheel axles (reduce tyre pressure and protect them if exposed to sunlight). Prolonged storage is permitted inside of shelters only.

If the trailer is exposed to the weather, check regularly that rainwater does not collect in the load body. Inspect the paint coating for damage. Clean and degrease damaged areas of the paint coat and recoat with the same colour and to the same coating film thickness.

If the trailer is equipped with a tarpaulin, regularly check to ensure that no water has accumulated on its surface. Too much water accumulating on the surface of the tarpaulin may damage both the cover and its supporting frame.

1.5.2 Sale

The buyer shall collect the trailer from the manufacturer or the dealership or coordinate for other delivery conditions.

The trailer is sold as fully assembled, ready for operation, with the basic accessories, as specified in Section 1.4 of this Manual. Optional equipment can be purchased for an extra fee.

The dealership team is required to introduce the buyer into the structure and operation of the trailer, its safety requirements, and the warranty terms and conditions.

The buyer shall verify the following:

- The trailer is complete, undamaged, and provided with its essential equipment components;
- The data on the rating plate and the VIN number stamped are compliant with the data entered in the warranty.

1.5.3 Transport to the user

The trailer must be transported on its wheels, coupled with a tractor, or on a low-loading platform from the point of sale or from the manufacturer. Before loading on a low-bed trailer, couple the trailer to the transport hitch of the tractor and connect the trailer brake system lines. Drive the trailer onto the low-bed trailer using ramps. With the trailer on the low-bed platform, chock the wheels.

Next, disconnect the brake system lines and uncouple the trailer from the tractor. Then, secure the trailer with special straps designed for securing loads when transporting (transport belts, ropes, chains, guy ropes, etc.). Make a visual check to ensure the fastening items are fully functional, i.e. they are not broken, worn, or the hooks are unbent. Install the wheel chocks in such a way as to prevent the trailer from moving. Secure the trailer in such a way as to prevent its movement during transportation.

Before unloading the trailer, deploy the ramps and release the cargo straps. Next, drive the tractor close enough to connect the brake lines. Finally, remove the chocks from under the wheels of the trailer. Next, you can proceed to drive the trailer off the low bed platform.



CAUTION

CAUTION!

General health and safety regulations must be observed when loading and unloading the trailer. Those operating the loading and unloading equipment must have the required authorisation to use it.



CAUTION

CAUTION!

Pay particular attention to the angle of inclination of the ramps on the low loader. It may not exceed 10°. Excessive inclination of the ramps can lead to damage to both the agricultural trailer and the transportation trailer.

1.5.4 Transporting the Trailer by the User

The User may transport the trailer by towing it to its destination with their own agricultural tractor.

Before transporting the trailer by yourself, it is absolutely essential to read this Instruction Manual and to follow the guidelines in it.



CAUTION

CAUTION!

The operator of the tractor must read this Instruction Manual and adhere to the guidelines in it.



CAUTION

CAUTION!

When driving a trailer-towing vehicle, particular caution must be exercised as the vehicle's centre of gravity shifts upwards.

Use only technically sound and certified fastening accessories. Before selecting the fastening accessories, read the operating instructions provided by the manufacturer of the particular accessory.



DANGER

DANGER!

Check the components that the tractor and trailer are coupled with, as their improper use can cause an accident.

1.6 Cleaning the Trailer

After finishing work, thoroughly clean the trailer and wash it with a jet of 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 can only be cleaned in designated areas, when the ambient 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.

It is forbidden to use any kind of organic solvents or other substances, which could damage varnished surfaces, or rubber and plastic components.

A pressure washer may be used to clean the trailer. Before using a washer, read its Instruction Manual. 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 point the water jet directly at any component of the electric, hydraulic, or pneumatic systems, i.e. hoses, valves, cylinders, plugs, electrical connections, etc., or at the lubricating points on the trailer, information and warning signs or its rating plates.

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 cleaning, 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.

Wash down the trailer with clean water or water with detergent. When using various types of detergents and organic agents, remember that they can affect the machine's components, especially the 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.

1.7 Storage

The trailer should be stored in roofed areas (preferably on a level and hard surface) and in such a way as to prevent 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 and it should be checked periodically to ensure that no rainwater collects on it. Inspect the paint coating for damage. Clean and degrease every damaged area of the paint coat and recoat with the same colour and to the same coating film thickness. 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 1.6. Cleaning the Trailer.

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.

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

2 Safety of use

2.1 Mandatory disclosure of information



CAUTION

CAUTION!

When the trailer is sold on to further users, attach the Instruction Manual with it. The buyer of the trailer must undergo training as indicated in the Manual.

2.2 General principles for work safety and use

Each time before using the trailer, conduct a pre-operational safety check in the following ways:

1. Observe the generally applicable safety and accident prevention regulations, in addition to the information provided in this Instruction Manual.
2. Observe all safety symbols, warnings, and information inscriptions on the trailer that provide important guidelines for safe operating.
3. Operate the trailer only if all the required equipment are connected and secured against unintentional detachment, uncoupling or opening (e.g. the hitch, the drawbar, and the couplings).
4. Before operating, understand all the controls and their functions. It will be too late to do this at work!
5. This trailer shall never be used by any personnel under the influence of alcohol or other stimulants, and/or untrained, and/or without the correct license for the operation of motor vehicles.

The improper use of the machine will result in the risk of voiding the warranty. The user who fails to operate the trailer, according to its intended use, assumes full responsibility for all the consequences resulting from such use.

2.3 Operating safety

- 1) Before using the machine, the user must read and understand the content of this Instruction Manual. Observe all instructions in this Manual during operation.
- 2) If the information contained in this Manual is unclear, please contact the distributor running an authorised technical service on behalf of the Manufacturer or contact the Manufacturer directly.
- 3) Careless and improper use and operation of the trailer, as well as the failure to observe the recommendations contained in this Manual pose a risk to health.
- 4) Failure to observe the safety rules poses a threat to the health and life of the operators, and third parties.
- 5) Please note that there are residual risks, so exercising the safety rules must be a priority when operating the trailer.
- 6) Provide all safety-relevant information to all users of this trailer.
- 7) Before operating the machine, inspect the direct vicinity (for any children and bystanders). Extreme attention is required if visibility is poor.
- 8) When unloading is complete, lower the load body all the way down. Never leave the trailer unattended with the load body raised/tipped back.

- 9) Enter the trailer only when it is stationary and the engine of the coupled tractor is stopped.
- 10) Always operate the load body tipping and lowering from the tractor operator's seat.
- 11) Couple the trailer according to prevailing regulations of law, connect it only to the recommended equipment, and secure the drawbar eye to the tractor's transport (pick-up) hitch.
- 12) Extreme caution is required when coupling/decoupling the trailer.
- 13) When installing and removing any support and safety devices and ladders, always place them in a position that ensures safe operation.
- 14) Do not exceed the maximum axle load, the gross weight, and the transport clearances.
- 15) Check the transport equipment by inspecting the connections and operation of the light and brake systems, the Slow Vehicle warning plate, and other protective devices and equipment.
- 16) Before driving, check the correct functioning of the lights and brakes, and prepare the trailer following the instructions provided in the "Driving on public roads" section.
- 17) Take account of changes in vehicle behaviour, steering and braking performance resulting from the trailer coupled and its load.
- 18) When driving with a trailer, the distribution of the load and/or inertia forces should be taken into account, especially if the load is asymmetrical.
- 19) Do not stay within the range of the load to be discharged.
- 20) The hydraulic lifting (tilting) of the load-carrying body may only be started if:
 - the trailer is coupled to the tractor,
 - it is standing on a hard and flat surface,
 - there is no one in the unloading area,
 - the tractor is aligned with the axle of the trailer,
 - keeping a safe distance from the power lines,
 - there are no strong gusts of wind.
- 21) If you need to unload the trailer from the rear down a slope, the tractor and trailer should be parked uphill. When unloading from the side down a slope, tip the load body to the side opposite to the roll of the trailer.
- 22) The trailer's body must be secured against falling down, by means of the trailer's support, when carrying out any work with the body raised. Turn off the tractor's engine and remove the key from the ignition switch.
- 23) Be careful to avoid crushing fingers and hands when opening and closing the sides of the load-carrying body.
- 24) Mind the crush and shear hazard points when operating the trailer. Coupling and uncoupling the trailer to and from the tractor is a hazard and may cause injury. Do not enter between the trailer and the tractor when coupling and uncoupling and do not stand behind the trailer if it is not secured with wheel chocks or its parking brake.
- 25) No one may stand between the tractor and the trailer unless the vehicle is protected against rolling by the parking brake or wheel chocks.
- 26) Secure the trailer and the tractor against rolling away from its parking location.
- 27) Never drive with a tipped load body.
- 28) Keep a safe distance from overhead power lines when tipping the load body. On the front wall of the trailer there is a pictogram, as per PN-ISO 11684:1998, warning of overhead power lines".

- 29) For repair and maintenance work that requires the body to be lifted, empty it and apply a mechanical support to secure it against unintentional drop.
- 30) The driving speed must always be adapted to the ambient conditions. Avoid sudden up or downhill turns on sloping terrain.
- 31) Maintain a sufficient safe distance when turning back with the coupled trailer.
- 32) When reversing, ensure that you have sufficient visibility (if possible, have someone to assist you with guidance).
- 33) When cornering, consider the inertia of the trailer.
- 34) Observe a minimum turning radius of approx. 9 m when turning and reversing.
- 35) Before installing any additional protection on the load to be carried with the trailer, e.g. chains, tarpaulins, plastic sheet, nets etc., turn off the tractor engine and remove the ignition key.
- 36) Remove any functional faults of the attached devices only when the engine is switched off and the ignition key removed.
- 37) Should any failure occur in the braking system, remove the trailer from service until the failure has been rectified.
- 38) It is forbidden to carry out maintenance or repair work with a load-bearing or raised, unsupported load-carrying body.
- 39) Before carrying out repair work on the braking system, the oil or air pressure must be reduced.
- 40) In the event of an injury sustained from a strong hydraulic oil jet, consult a physician immediately. Hydraulic oil can penetrate under the skin or into the eye, and cause infections.
- 41) Use the hydraulic oil recommended by the Manufacturer. Never mix two different types of oil.
- 42) Do not enter the load body without turning off the power take-off and the engine first. Remove the ignition key.
- 43) Switch off the engine and remove the ignition key before leaving the tractor. Engage the parking brake and secure the trailer with wheel chocks.
- 44) When driving on public roads, do not exceed the maximum permissible axle load exerted by the trailer as stated on the rating plate.
- 45) The maximum permissible pressure in a double-line system is 0.85 kPa.
- 46) Carry out trailer preparation with the tractor engine stopped and the ignition key removed.
- 47) The Manufacturer delivers the trailer fully assembled.
- 48) Hydraulic lines must be replaced every 5 years.
- 49) Noise – the equivalent A-weighted emission sound pressure level (LpA) is not above 70 dB.
- 50) Keep the trailer clean.
- 51) Regularly check that the rear coupling used for connection to another trailer is correctly tightened.



WARNING

WARNING!

There is a risk of a lightning strike when working with the trailer during a storm.

	<p>WARNING! There is a risk of the machine tipping over when driving on sloping or uneven ground.</p>
<p>WARNING</p>	
	<p>WARNING! Risk of forces exerted on the drawbar upward or downward when coupling or uncoupling the trailer.</p>
<p>WARNING</p>	
	<p>CAUTION! The operating pressure of the hydraulic system is 18 MPa. Lower pressure may not be sufficient to ensure the adequate lifting of the load body and thus may prevent the load from sliding off the trailer.</p>
<p>CAUTION</p>	

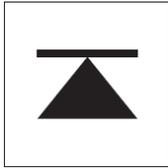
2.4 Warning/information signs and notices on the trailer

Do not remove any warning signs or notices displayed on the trailer. They are intended for the safe handling of the trailer. If an information notice sticker is damaged or removed, reorder a duplicate. You can purchase the warning and notice stickers from service points or the trailer manufacturer.

Table 2. Safety signs

No.	Pictograms	Meaning
1.		<p>Caution. Before you start operating the machine, read the Instruction Manual.</p>

2.		<p>Caution. Before carrying out any maintenance or repair work, switch off the tractor's engine and remove the keys.</p>
3.		<p>Caution. Risk of electric shock. Keep a safe distance from overhead power lines.</p>
4.		<p>Caution. Finger crushing hazard. Do not reach into the crushing area, if elements are moving.</p>
5.		<p>Caution. Danger of crushing. It is forbidden to carry out maintenance or repair work if the load-carrying body is unsupported.</p>
6.		<p>Caution. Danger of being run over. Travelling on the machine is only permitted on the passenger seat, provided that the driver's visibility is not obstructed.</p>
7.		<p>Caution. Body crushing hazard. Keep a safe distance from the machine.</p>
8.		<p>Caution. A fall from height. Do not ride on platforms or ladders.</p>

9.		<p>Caution. Torso crushing hazard. Do not stand near the motion zone of the articulated coupling joints when the engine is running.</p>
10.		<p>Caution. Tilting the trailer's body on an inclined surface is prohibited. Bodily injury can occur as a result of the machine tipping over and crushing.</p>
11.		<p>Sling attachment/Lifting point.</p>
12.		<p>Jacking point.</p>
13.	<p>Caution! It is forbidden to carry out check and maintenance work with a loaded, tipped, or unsupported load body.</p>	<p>Warning pictogram.</p>
14.	<p>CAUTION! Connecting drawbar with pivot eye only with rigid tractor transport hitch</p>	<p>Warning pictogram.</p>
15.	<p>CAUTION! Keep clear of the discharged load It is forbidden to climb onto the trailer while it is being driven.</p>	<p>Warning pictogram.</p>
16.	<p>CAUTION! Couple the trailer with the tractor's top hitch only.</p>	<p>Warning pictogram.</p>
17.		<p>Pictogram indicating the maximum height of the body during unloading.</p>
18.	<p>CAUTION! Incorrect tensioning of the chains (cables) bracing the sides of the trailer will result in leakage of the load body.</p>	<p>Information pictogram.</p>
19.	<p>Tighten the wheel nuts after a few kilometres and retighten periodically</p>	<p>Information pictogram.</p>

20.	<table border="1"> <tr> <td style="text-align: center;">Load capacity 12</td> </tr> <tr> <td style="text-align: center;">Operating pressure in the hydraulic system 18 MPa</td> </tr> <tr> <td style="text-align: center;">Maximum pressure in the pneumatic system: 0.6 MPa single-line 0.8 MPa dual-line</td> </tr> </table>	Load capacity 12	Operating pressure in the hydraulic system 18 MPa	Maximum pressure in the pneumatic system: 0.6 MPa single-line 0.8 MPa dual-line	<p>Information pictogram.</p> <p>Depending on the trailer variant (load capacity 8 t - T730/1 - Y2RPRA; load capacity 10 t - T730/2 - Z2RPRA; load capacity 12 t - T730/3 - M2RPRA)</p>															
Load capacity 12																				
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Maximum pressure in the pneumatic system: 0.6 MPa single-line 0.8 MPa dual-line																				
21.		<p>Information pictogram.</p>																		
22.	<table border="1"> <tr> <th colspan="2">Approximate weights of selected goods 1 m³ into kg</th> </tr> <tr> <td>Soil</td> <td style="text-align: right;">1600 - 1800</td> </tr> <tr> <td>Wheat</td> <td style="text-align: right;">710 - 820</td> </tr> <tr> <td>Potatoes</td> <td style="text-align: right;">625 - 725</td> </tr> <tr> <td>White beet</td> <td style="text-align: right;">650 - 700</td> </tr> <tr> <td>Legumes</td> <td style="text-align: right;">740 - 820</td> </tr> <tr> <td>Construction aggregates</td> <td style="text-align: right;">1400 - 1850</td> </tr> <tr> <td>Lime</td> <td style="text-align: right;">900 - 1500</td> </tr> <tr> <td>Hard coal</td> <td style="text-align: right;">1200 - 1600</td> </tr> </table>	Approximate weights of selected goods 1 m ³ into kg		Soil	1600 - 1800	Wheat	710 - 820	Potatoes	625 - 725	White beet	650 - 700	Legumes	740 - 820	Construction aggregates	1400 - 1850	Lime	900 - 1500	Hard coal	1200 - 1600	<p>Information pictogram.</p>
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Legumes	740 - 820																			
Construction aggregates	1400 - 1850																			
Lime	900 - 1500																			
Hard coal	1200 - 1600																			
23.		<p>Information pictogram.</p>																		

<p style="text-align: center;">CAUTION</p>	<p>CAUTION!</p> <p>The trailer's user must make sure that all warning inscriptions and signs affixed to the trailer remain legible for the entire life of the trailer. If they are damaged or destroyed, replace them with new ones.</p>
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2.4.1 The arrangement of pictograms on the machine

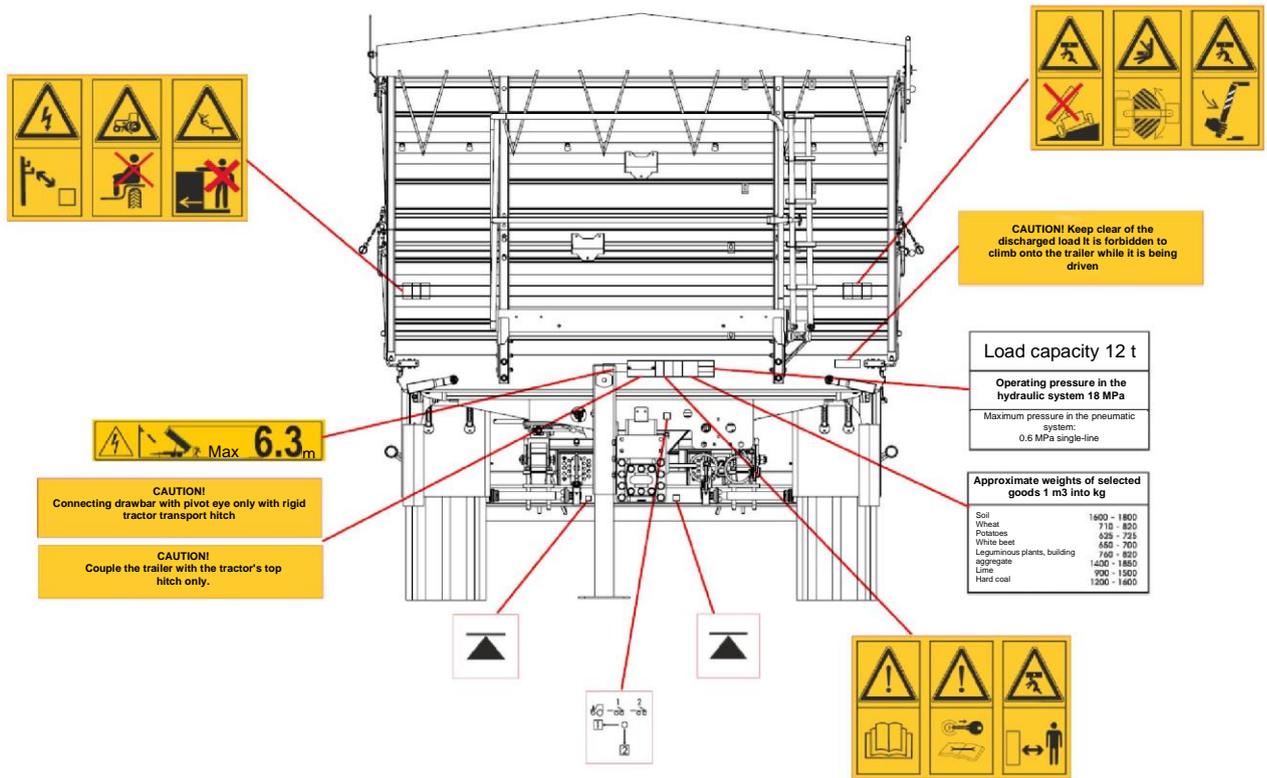


Fig. 4. The arrangement of the pictograms on the boards of the trailer - front

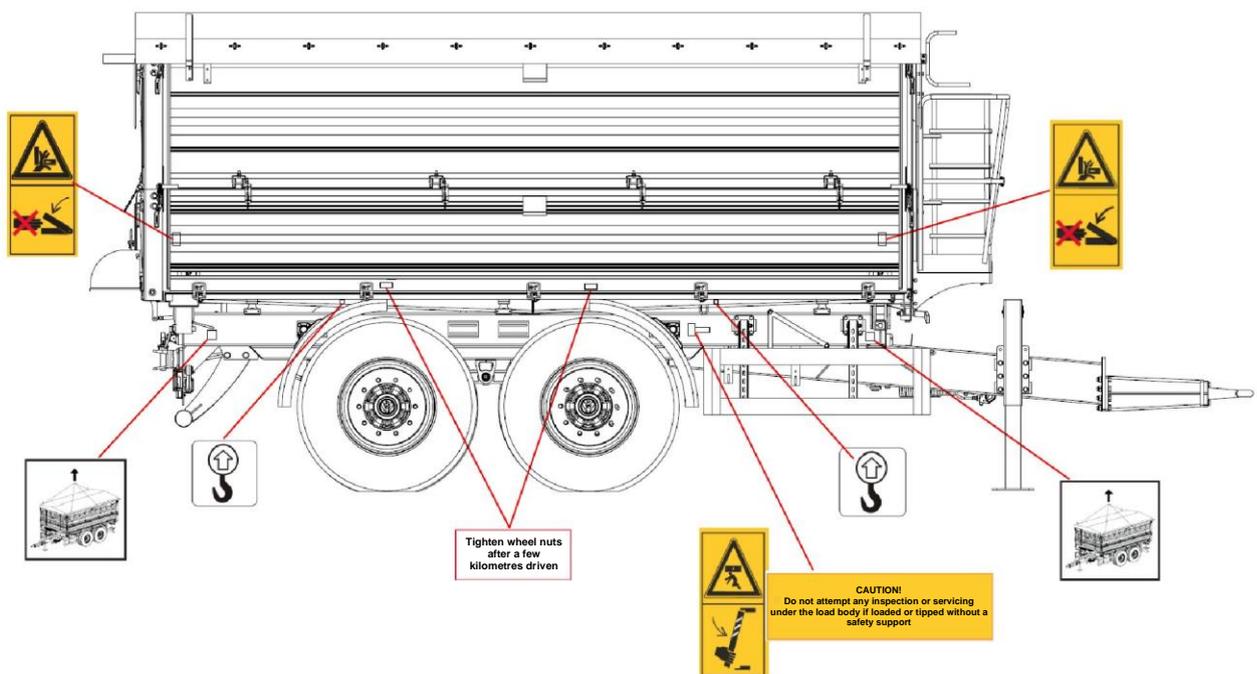


Fig. 5. The arrangement of the pictograms on the boards of the trailer – right side

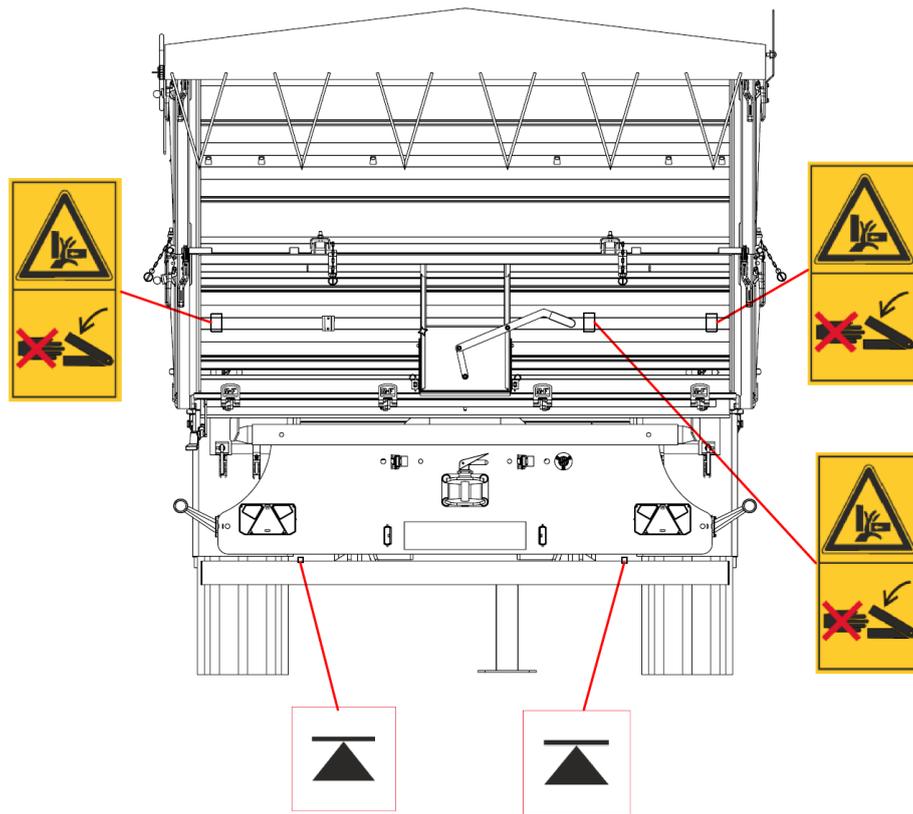


Fig. 6. The arrangement of the pictograms on the boards of the trailer – rear

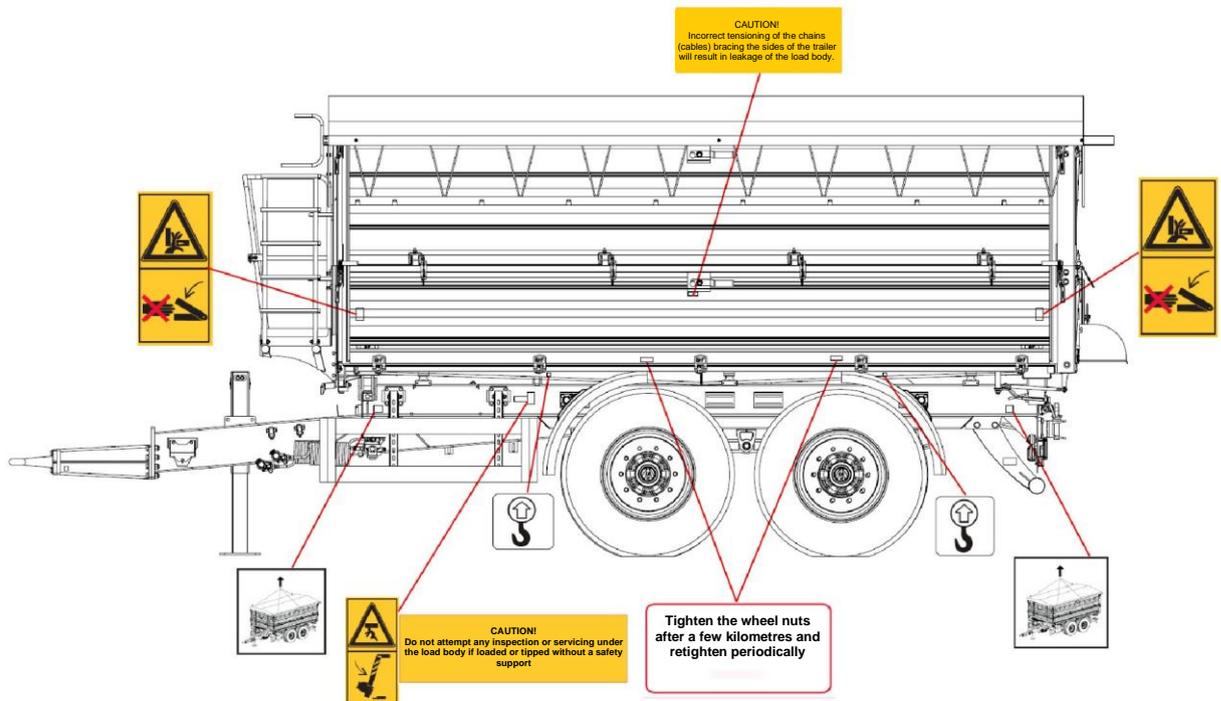


Fig. 7. The arrangement of the pictograms on the boards of the trailer – left side

3 Technical data

3.1 Basic technical data

Table 3. Specifications of the T730 agricultural trailer

No.	General data			
1.	Vehicle type	Agricultural trailer		
2.	Manufacturer	METAL-FACH Sp. z o.o., 16-100 Sokółka, ul. Kresowa 62		
3.	Trade name	T730/1	T730/2	T730/3
4.	Variant	Y2RPRA/Y2RPRC	Z2RPRA/Z2RPRC	M2RPRA/M2RPRC
5.	Body type	box		
6.	Rating plate location	Right-hand side of the front crossmember on the trailer body		
7.	Number stamp location	on the rating plate and on the right-hand side of the front crossmember of the chassis frame		
Dimensions and weights				
		Y2RPRA/ Y2RPRC	Z2RPRA/ Z2RPRC	M2RPRA/ M2RPRC
8.	Length, mm	max.6955	max.6955	max.6955
9.	Width, mm	max.2550	max.2550	max.2550
10.	Height, mm	1200–4000	1200–4000	1200–4000
11.	Number of axles, pcs.	2	2	2
12.	Wheel base, mm	1185–1215	1185–1215	1185–1215
13.	Wheel track, mm	1900	1900	1900
14.	Dimensions of the cargo space:			
	- length, mm	Max 4550	Max 4550	Max 4550
	- width, mm	Max 2430	Max 2430	Max 2430
	- height (with extension), mm	400–2800	400–2800	400–2800
15.	Load surface lift, mm**	1250	1250	1250
16.	Elevation of the drawbar's swinging axles, mm	420–850	420–850	420–850
17.	Diameter of the drawbar eye, mm	40, 50, or K80	40, 50, or K80	40, 50, or K80
18.	Vehicle ground clearance, mm	430–450	430–450	430–450
19.	Vehicle kerb weight, kg*:			
	- weight per axle, kg	3100–3550	3100–3550	3100–3550
	- weight per coupling, kg	300–550	300–550	300–550
20.	Maximum weight:			
	- weight per axle, kg	10900	12700	14000
	- weight per coupling, kg	1200	1400	1600

21.	Maximum permissible vertical load on the coupling point	V. Orlandi MH31H – 2500 kg V. Orlandi AH31H – 2500 kg Rockinger 865 B50 – 2500 kg Rockinger 810 B50 – 2000 kg Scharmuller 1123 – 2500 kg Scharmuller 516010 – 2000 kg		
22.	Permissible load capacity of the vehicle, kg*	8700–8000	10700–10000	12200–11500
Suspension				
23.	Suspension type	dependent, sprung		
24.	Type of spring elements	longitudinal parabolic springs		
Wheels and tyres				
25.	Number of wheels, pcs.	4		
26.	Tyre size and load index	385/65 R22.5 min 152 A8		
27.	Tyre pressure, bar	5–9		
Brake system				
28.	Service brake			
	- type	mechanical drum brake		
	- control	pneumatic, positive pressure, dual-line system		
	- braked wheels (number of wheels)	4		
29.	Parking brake			
	- control	with spring actuator or manual tensioning		
	- braked wheels	2 front axle wheels		
Electrical system				
30.	Rated voltage, V	12 V, from coupled tractor		
Operating data				
31.	Maximum transport speed, km/h	40		
32.	Maximum driving speed, km/h	40		
Additional information				
33.	Other information:			
	- tractor to work with	min. 58 kW	min. 66 kW	min. 73 kW
	Minimum turning diameter	min. 9705 mm – depending on the coupled tractor		

*Depending on the vehicle configuration

3.2 Dimensions of trailers

The drawings below demonstrate overall dimensions of trailers in their transporting position.

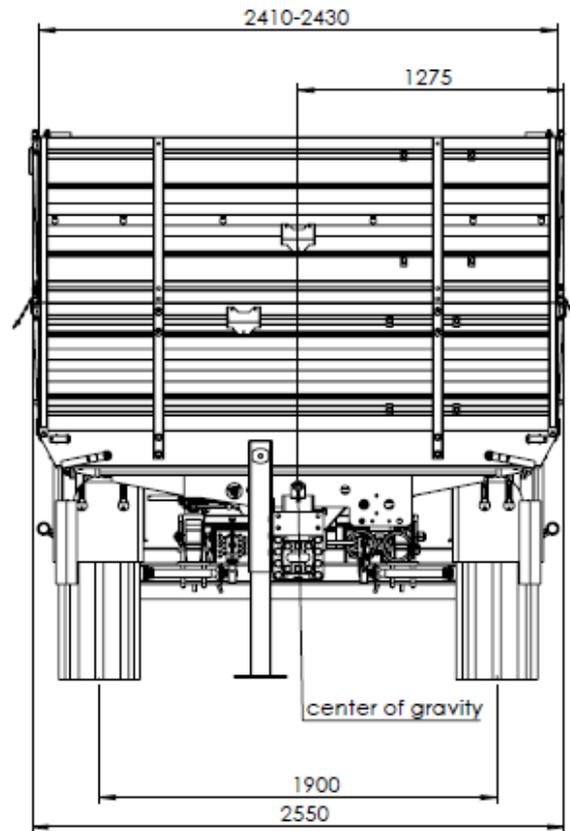


Fig. 8. Dimensions of the trailer – front view

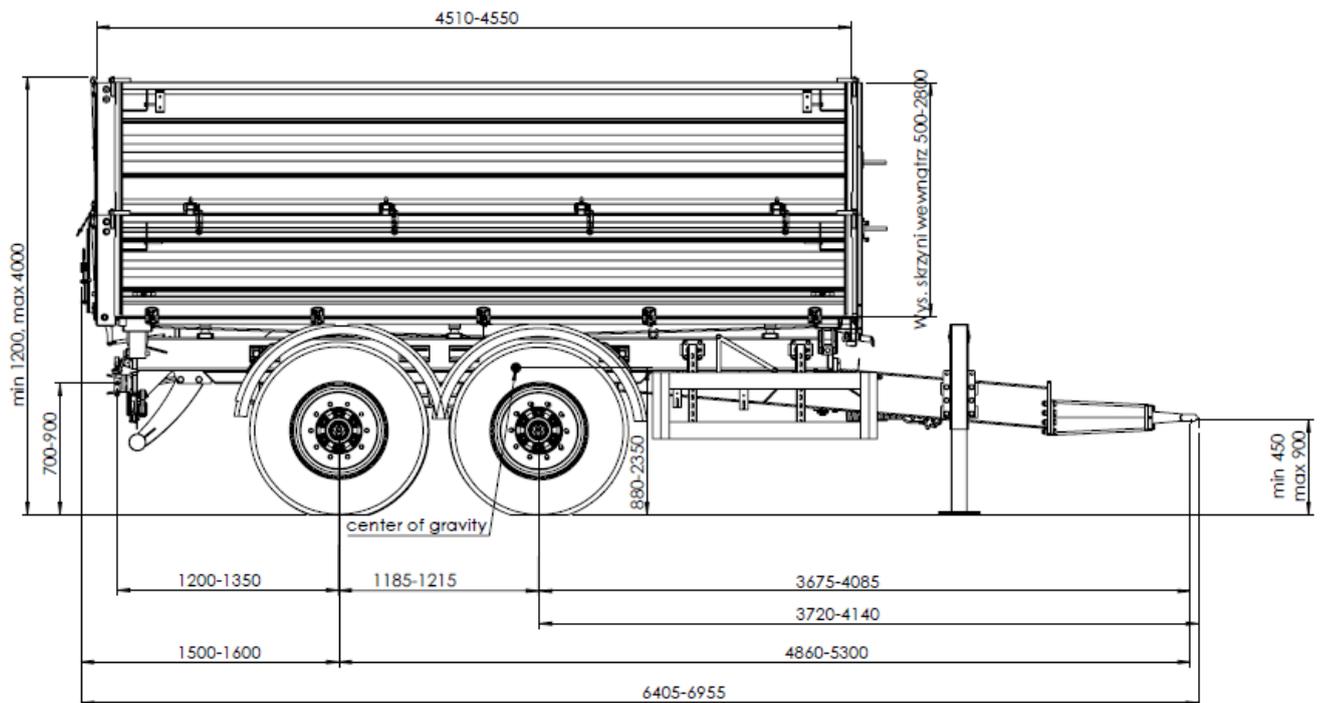


Fig. 9. Dimensions of the trailer – side view

3.3 General design and principles of operation

The T730 trailer is a metal structure with an open load area. The trailer is equipped with a pneumatic service brake and a parking brake controlled by a spring-loaded actuator operated by a push button or by the tension of a helical gear.

The trailer has a complete signalling and warning system (electrical installation and reflectors).

The trailer can also be used for transporting on public roads.

The trailer is manufactured in compliance with Directive 2006/42/EC and the standards specified in the EC Declaration of Conformity.

3.3.1 Chassis

The trailer chassis consists of the following units: bottom frame, drawbar, wheel sets and suspension elements. The bottom frame and the drawbar are made as a welded construction of steel sheets and sections.

The trailer wheel sets consist of the following components: axles (tandem), running wheels, drum brakes with shoes actuated by mechanical cam expanders.

The suspension of the trailer axles is made up of semi-elliptical steel springs attached to the lower frame by means of bolts and sliders. The wheel sets are fixed to the springs with screws.

3.3.2 Hitch, rear

The manufacturer has developed two types of the rear hitch, automatic or manual. The permissible loads for the rear hitch, depending on the rear hitch's manufacturer, are shown in table 4.

Table 4. Approved vertical hitch loads

Brand	V.Orlandi	Rockinger	V.Orlandi	Rockinger	Scharmuller	Scharmuller
Type designation by the manufacturer	MH31H	810 B50	AH31H	865 B50	1123	516010
Towable weight (t):	14 tonnes	14 tonnes	14 tonnes	14 tonnes	28 tonnes	26 tonnes
Maximum permissible vertical load on the coupling point:	2500 kg	2000 kg	2500 kg	2500 kg	2500 kg	2000 kg

3.3.3 Load area

The cargo space of the trailer

- The upper frame (frame of the load-carrying body) is mounted on the lower frame (chassis frame) by articulated sockets secured with pins, which are pivot points when tilting the upper frame (Trailer load-carrying body)
- The side boards and side extensions are individual elements; each of the elements features a separate set of locks, which allows the closing and opening of individual parts of the boards and top extensions, independently of each other and in any order; this design increases the functionality of the trailer and facilitates its operation;
- Both the sideboard and extension locks are protected against unauthorised opening.

3.4 Hydraulic tilting mechanism of the load-carrying body

The hydraulic mechanism is used for automatic unloading of the trailer by tilting the load-carrying body backwards or to the sides. The hydraulic system of the tilting mechanism is supplied with oil from the tractor's hydraulic system.

The hydraulic system contains the following:

- A plug of the connecting valve,
- Hydraulic hoses,
- Single-acting hydraulic cylinder,
- Cut-off valve,
- Connectors and fasteners.

See Fig. 10 for a diagram of the hydraulic system installed in the trailer's body-tilting mechanism. A valve block in the tractor's hydraulic system is used to control the raising and lowering of the trailer's body.

The bottom frame of the trailer is fitted with a structure protecting the load-carrying body against dropping, when carrying out maintenance and repair work.

It is essential to use the support structure, as it protects the user against injuries.

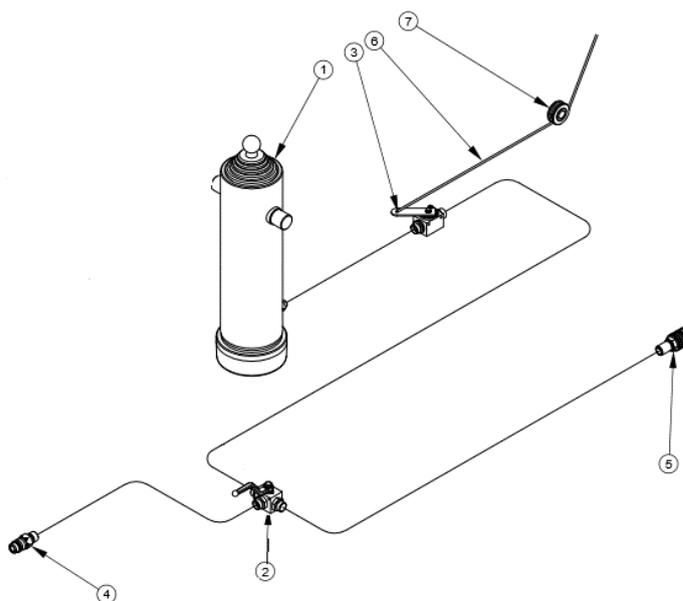


Fig. 10. The hydraulic system of the load body tilting mechanism 1 – telescopic actuator, 2 – three-way valve, 3 – shut-off valve, 4 – quick-coupling plug, 5 – quick-coupling socket, 6 – steel cord, 7 – roller



CAUTION

CAUTION!

The shut-off valve limits the tilting angle of the load-carrying body when tilting it sideways. This valve is adjusted by the trailer's manufacturer. It is forbidden for the user to change the settings. Improper adjustment may cause the trailer to tip over.



CAUTION

CAUTION!

It is forbidden to carry out maintenance and repair work if the trailer's body is not secured with a support!

3.4.1 Lighting system

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.

The diagram of the electrical system and positioning of the trailer lights is shown in Fig. 11. The T730 trailer is fitted with a lighting system including side marker lights.

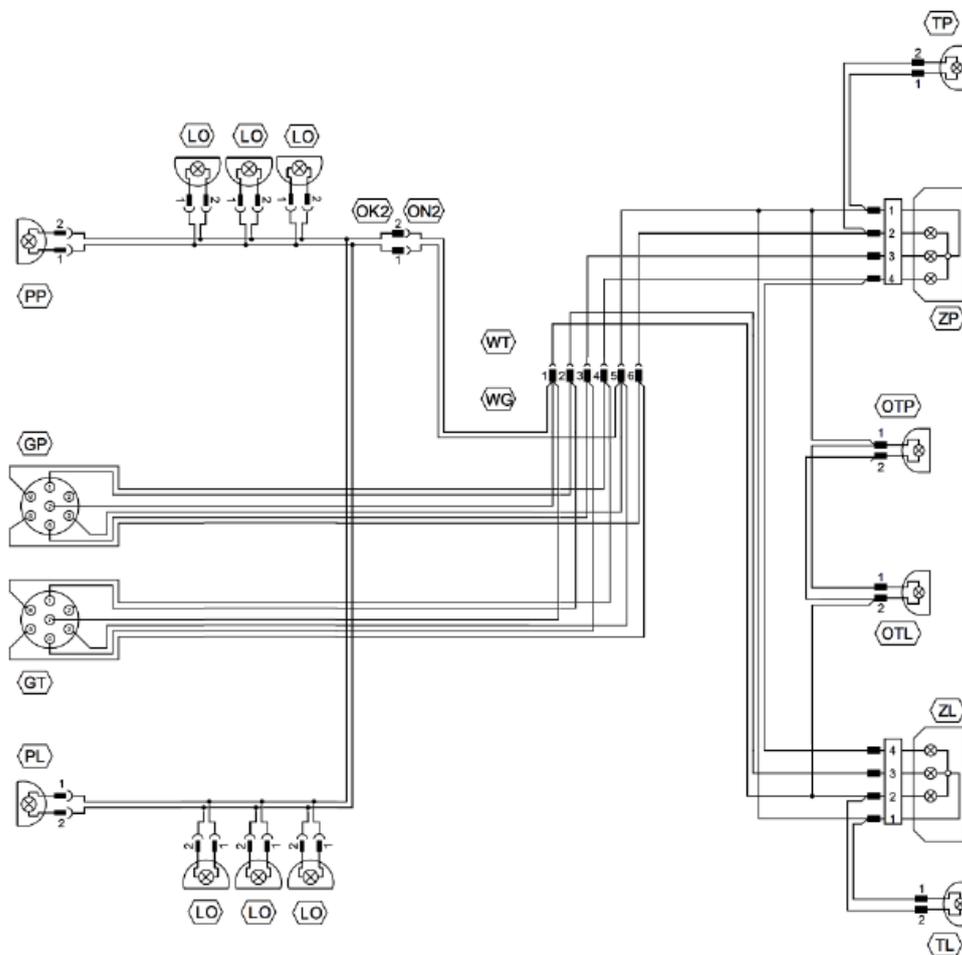


Fig. 11. Wiring diagram of the trailer

ZP – rear lamp cluster, right side, ZL – rear lamp cluster, left side, GP – front seven-pin socket, GT – rear seven-pin socket, OTP – license plate light, right side, OTL – licence plate light, left side, PP – front position lamp, right side, PL – front position lamp, left side, TP – rear position lamp, right side, TL – rear position lamp, left side LO – position/marker side lamp.

GP and GT sockets connection marks: 31 – ground + power supply, L – left turn signal, 54 – STOP lamp, 58L – rear left position lamp, 58R – rear right position lamp, R – right turn signal



CAUTION!

If the trailer is operated during a storm, there is a risk of a lightning strike

CAUTION

3.5 Pneumatic brake system

The trailer comes with a pneumatic two-line single-circuit brake system.

Both brake lines that link the pulled vehicle with the towing vehicle are fitted with filters. The red brake hose supplies the trailer's brake system with compressed air. The yellow brake hose is a line that controls the brake force of the trailer. The higher the pressure in the control hose, the stronger the performance of the trailer brakes. The pressure in the control hose rises along with the rising pressure applied to the brake pedal in the towing vehicle. If the red brake hose is disconnected from the towing vehicle, the emergency brakes of the trailer are enabled. Reduce and control the braking force of the unloaded trailer by means of the trailer's automatic brake force controller. The automatic brake force controller – ALB is rigidly mounted on the frame, while its adjusting rod is connected to the axle. Depending on the load and suspension deflection at the same time, the ALB valve controls the braking force by adjusting the pressure reaching the brake cylinders.

Depending on the trailer variant, there can be various types of brake system, as shown in the following diagrams.

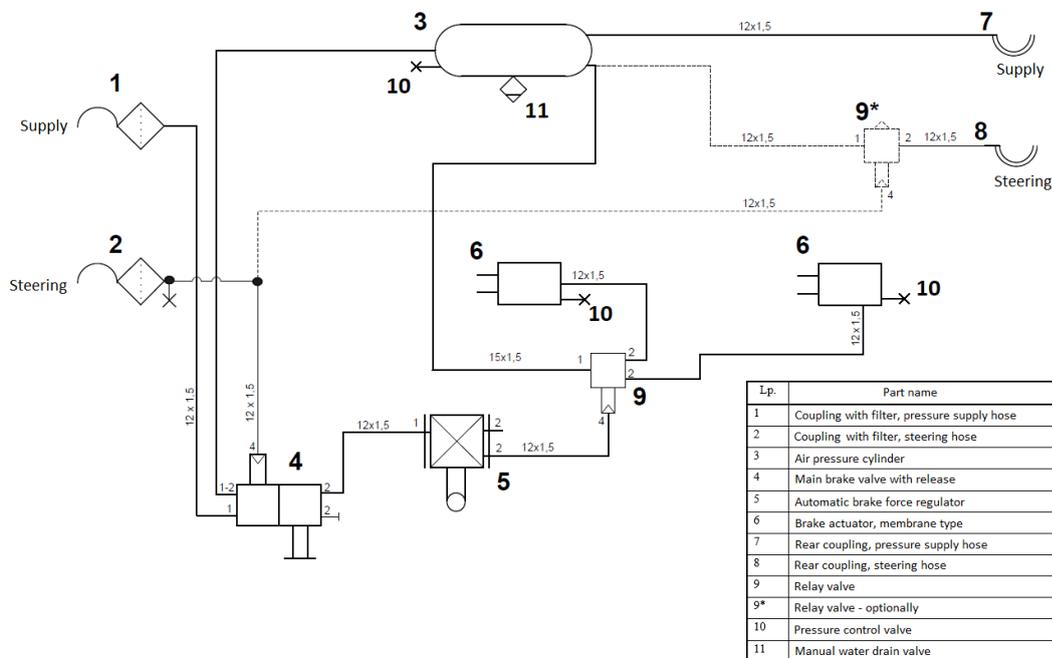


Fig. 12. Diagram of the pneumatic dual-line system with diaphragm actuators and automatic brake force controller

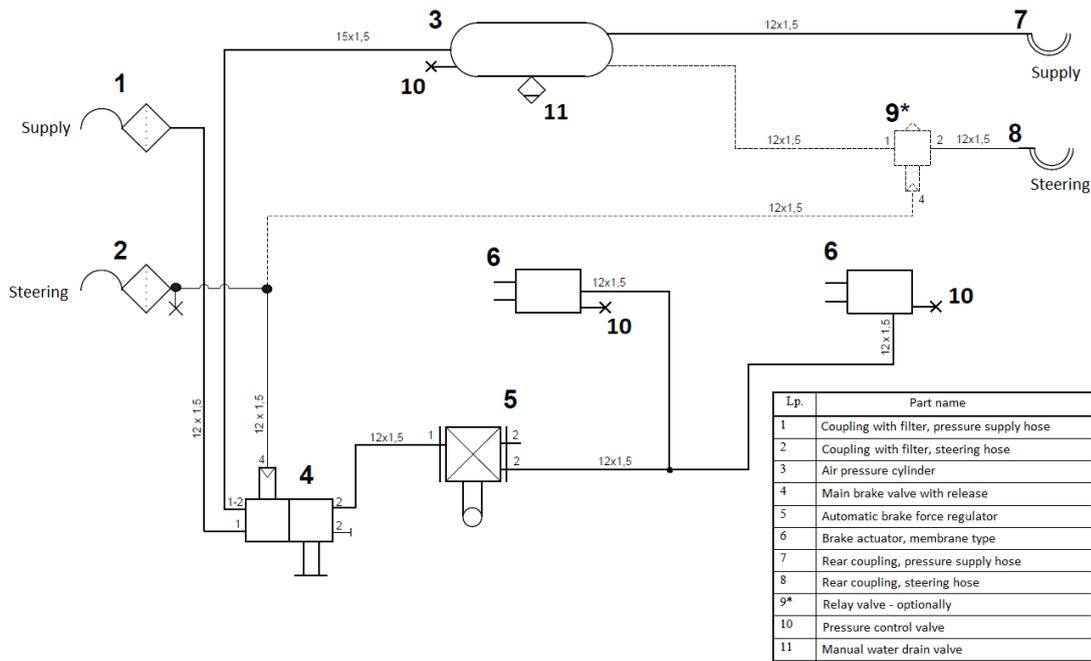


Fig. 13. Diagram of the pneumatic dual-line system with diaphragm actuators and automatic brake force controller

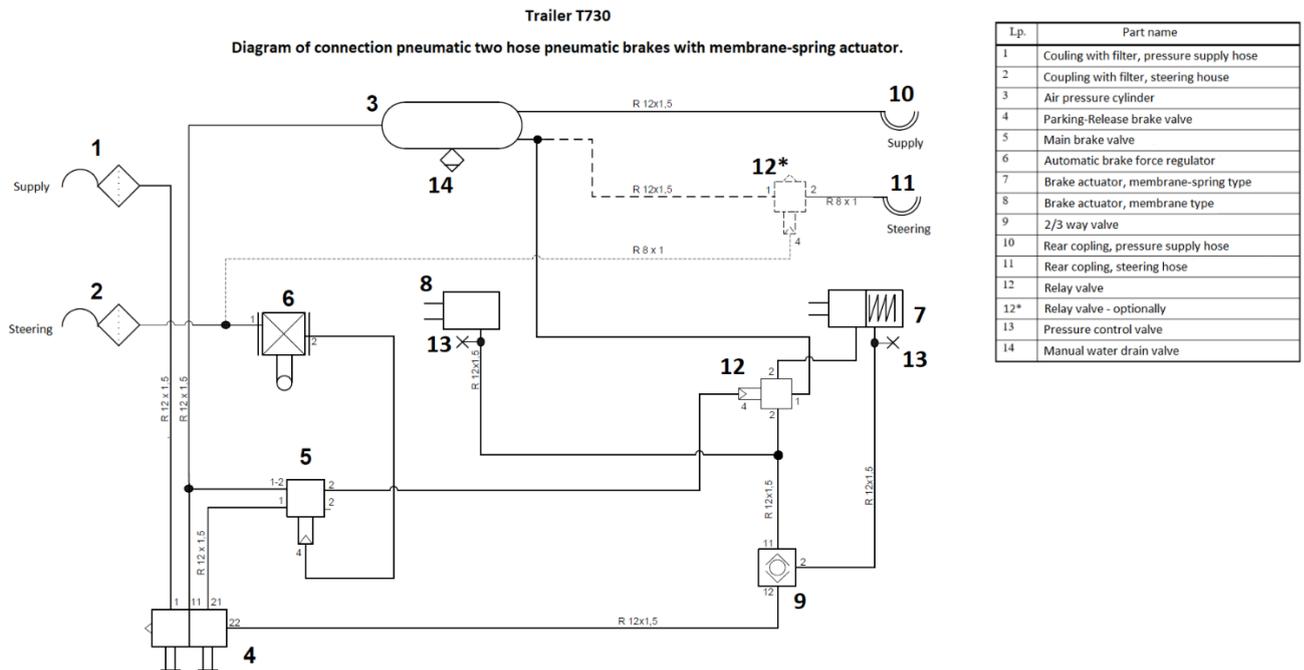
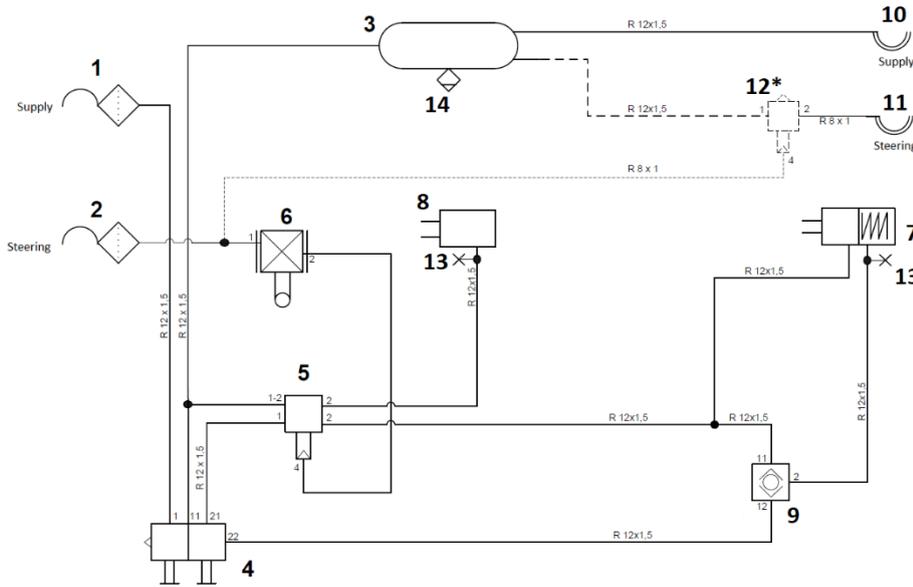


Fig. 14. Diagram of the pneumatic dual-line system with diaphragm and spring actuators with automatic brake force controller

Trailer T730

Diagram of connection pneumatic two hose pneumatic brakes with membrane-spring actuator.



Lp.	Part name
1	Coupling with filter, pressure supply hose
2	Coupling with filter, steering hose
3	Air pressure cylinder
4	Parking-Release brake valve
5	Main brake valve
6	Automatic brake force regulator
7	Brake actuator, membrane-spring type
8	Brake actuator, membrane type
9	2/3 way valve
10	Rear copling, pressure supply hose
11	Rear copling, steering hose
12	Relay valve
12*	Relay valve - optionally
13	Pressure control valve
14	Manual water drain valve

Fig. 15. Diagram of the pneumatic dual-line system with diaphragm and spring actuators with automatic brake force controller

3.6 The pneumatic system



CAUTION

CAUTION!

The pneumatic system is under high pressure.

Before starting work on the system, depressurise the system and switch off the tractor's engine.

When connecting pneumatic lines to the tractor's pneumatic system, ensure that the valves on the tractor and trailer sides are not under pressure.

Check the pneumatic connections on a routine basis and replace all damaged and worn parts. Replace the lines as required by the manufacturer's specifications. Replace flexible lines every five years, unless damage has been found earlier.

Repairs of the pneumatic system shall only be carried out by an authorised representative of the trailer manufacturer.

4 Information on use

4.1 Use with a tractor

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 therein. For safe operation of the machine, it is essential that you know its components and understand how it works.



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.

4.1.1 Coupling the trailer with the tractor

The T730 trailer may only be operated with an efficient tractor (see section 3.1, table 3) with two external hydraulic sockets and hitch (upper transport position). Before coupling the trailer, make sure that oil in the tractor's external hydraulic system can be mixed with the hydraulic oil used in the trailer.

If the tractor is equipped with an automatic rear hitch, make sure that the coupling operation has been completed and that both machines are coupled safely.

To connect the tractor with the T730 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.



CAUTION

CAUTION!

Exercise particular caution when coupling the trailer.
No one can stay between the tractor and trailer while coupling.



CAUTION

CAUTION!

The maximum angle between the longitudinal axis of the tractor and the longitudinal axis of the coupled trailer must not exceed 45 degrees°.



CAUTION

CAUTION!

Exercise particular caution when coupling the trailer.



CAUTION

CAUTION!

Only aggregate the trailer with a tractor equipped with a drawbar that transmits a vertical load of at least 20 kN (2000 kg).

4.1.2 Uncoupling the trailer from the tractor

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

- after stopping the tractor and the trailer at the point where the trailer is to be left, engage the tractor's parking brake and place wheel chocks;
- Engage the parking brake of the trailer;
- if the trailer is on uneven or sloping ground, it must be additionally secured against rolling;
- disconnect the electrical and pneumatic lines from the tractor;
- using the hydraulic support foot, set the eye of the trailer's drawbar in such a position that it is not supported by the tractor's hitch and its position allows the trailer to be uncoupled later without the use of the support foot;
- with drawbar eye at the correct height, close the shut-off valve (pos. 4);
- 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.

The trailer is equipped with a hydraulic support foot. When coupling the trailer, connect the supply line (pos. 2 in Fig. 16) and the return line (pos. 3) to the tractor's external hydraulic system.

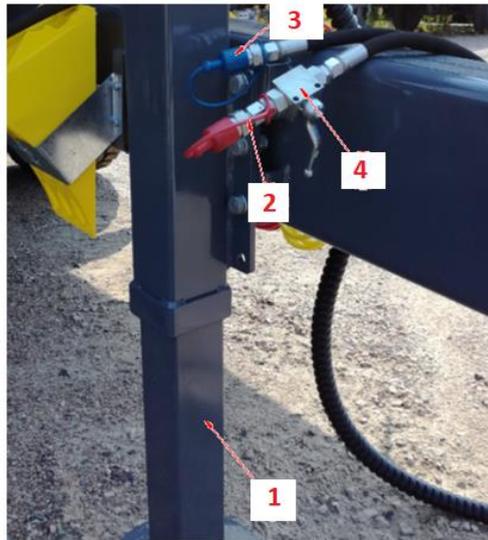


Fig. 16. Hydraulic foot. 1- foot, 2 - supply line, 3 - oil return line, 4 - shut-off valve



CAUTION

CAUTION!

When uncoupling a loaded trailer, in addition to the hydraulic foot, support the trailer on an additional support.

Do not use materials that may crack under load (brittle materials, etc.) to support the trailer.



CAUTION

CAUTION!

The trailer left on the hydraulic foot only may change its position.



CAUTION

CAUTION!

Do not uncouple the trailer from the tractor:

- if the load-carrying body is raised;
- if the trailer is not secured from rolling;



CAUTION

CAUTION!

Before uncoupling the trailer from the tractor, close valve No. 4 (see fig. 16)

4.2 Commissioning



CAUTION

CAUTION!

The operator of the tractor must read this Instruction Manual and adhere to the guidelines in it.

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 is not fully understood, please contact your dealer or technical service department.

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
- 4) Check the operation and tightness of the pneumatic and electrical systems of the trailer and tractor
- 5) Check all the devices, their connections, and protection against undesired disconnection or displacement
- 6) Disengage the trailer's parking brake

Repeat these actions every time you start the trailer.

4.3 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 body shall only be loaded when the trailer is coupled to the tractor, parked on a level ground, and with the drawbar in dead centre. Preferably use power loading machines (cranes, loaders, or conveyors). Before loading, check that both side wall and top extension locks are engaged. Load the trailer by spreading the load evenly over the entire load body floor. 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 distribute the point loads over the load body floor and prevent damage. 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.

The load body contents can be unloaded by hand (tools), with power machines, or by operating the hydraulic tilting system.

Unloading the trailer by tilting the load body shall follow this procedure, exactly in the order of steps as listed:

- Align the tractor and trailer on the longitudinal axis;

- Engage the tractor’s parking brake.
- remove the pin connecting the load-carrying body to the chassis frame (Fig. 17)
 - when unloading to the rear – the pins (Fig. 17) must remain in the rear sockets of the body;
 - when unloading to the left side – the pins must remain in the left-side sockets;
 - when unloading to the right – the pins must remain in the right sockets;
- check that the pins on the unloading side of the trailer are correctly fitted;
- Check the condition of the tipping pin and the correct fixing of the spring pin which prevents it from extending;
- open the load-carrying body wall locks on the unloading side, release the connecting wire of the sides;
- 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.

The table below shows approximate weights of selected goods.

Table 5. Approximate weights of goods

Approximate weights of selected goods 1m³ in kg	
Soil	1600 – 1800
Wheat	710 – 820
Rape	700 – 750
Potatoes	625 – 725
White beet	650 – 700
Legumes	760 – 820
Construction aggregates	1400 – 1850
Lime	900 – 1500
Hard coal	1200 – 1600



CAUTION

CAUTION!

It is forbidden to unload the trailer to the front.



CAUTION

CAUTION!

- 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 pins on the correct side of the trailer's body have been removed. Failure to remove the pins can damage the trailer.
- It is forbidden to place the pins on the slant of the load body.
- When tilting the load-carrying body make sure it is stable.



CAUTION

CAUTION!

It is forbidden to unload the trailer to the front.



CAUTION

CAUTION!

Do not uncouple the trailer from the tractor when the load carrying-body is raised.



CAUTION

CAUTION!

Maintain the correct tension of the chains (cables) stiffening the sides of the trailer – the pressure of 15 kg causes a maximum of 50 mm deformation of the cable.

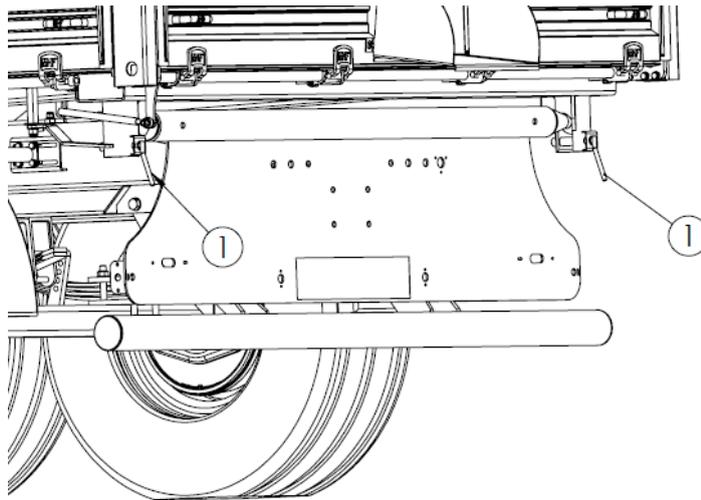


Fig. 17. Tipping safety pins

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.

After the load has been unloaded from the trailer, it is necessary to:

- lower the load-carrying body and remove any residual material;
- fit and secure the pins connecting the load-carrying body with the chassis frame;
- lock the wall(s) and prevent it/them from opening automatically;
- close the sides with the cable and tighten accordingly.

4.4 Driving on public roads

When travelling, you must comply with the traffic regulations of the country in which the trailer is being operated. Amongst other things, the trailer must be fitted with an approved triangle indicating slow-moving vehicles, if required, as shown in Fig. 18.

The speed must be adjusted to the road conditions and the loading level of the trailer. It is prohibited to exceed the permissible design speed.

Check that the machine is correctly coupled before you start the transporting, especially the safety devices of the hitch pin. Before you start driving, it is essential to check that all pins are secured against falling out. Check that the rear sideboard gate is secured and make sure that all the sideboards of the trailer load body are properly closed.

Before each use of the machine, it is necessary to check the technical condition of the machine for safety. This applies in particular to the hitch system, running gear, brake system and traffic lights. Release the parking brake before driving.

Do not operate the trailer on a slope with a ratio of more than 10°. Using the trailer on a steeper gradient can cause the trailer to tip over as a result of loss of stability.

It is forbidden to exceed the trailer's gross weight. Exceeding this weight can cause damage to the machine and create danger while driving. Overloading the trailer will reduce the braking system's performance.

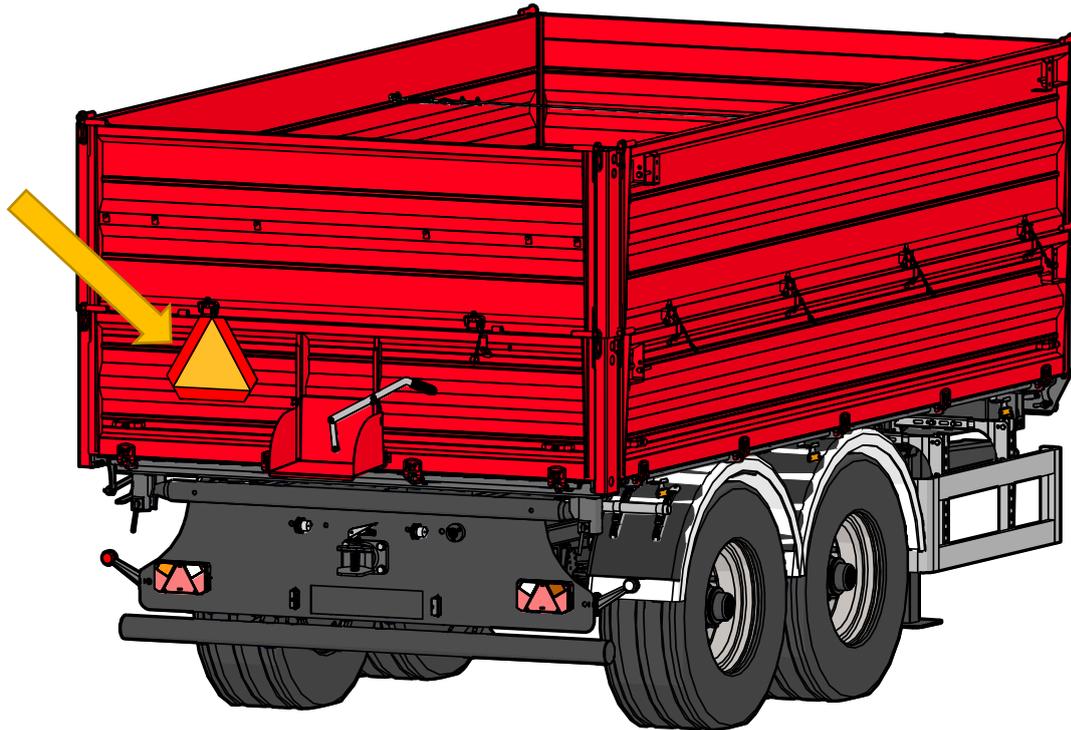


Fig. 18. The location of the triangle indicating slow-moving vehicles

During transporting, the load must be distributed evenly and secured in such a way that it cannot move or tip over.

It is forbidden to climb onto and stand on the trailer while it is moving.

It is forbidden to park the trailer on an incline.

There is a risk of the machine tipping over when driving on sloping or uneven ground.



CAUTION

NOTE!

Before each use of the machine, it is necessary to check the technical condition of the machine for safety.

When driving on public roads, you must provide the trailer with an approved triangle to indicate slow-moving vehicles, if required by the regulations of the country in which the trailer is being used.

It is forbidden to climb onto the trailer while it is being driven.

It is forbidden to park the trailer on an incline.

4.5 Hydraulic system

4.5.1 Servicing the hydraulic tipping system of the load body

The hydraulic mechanism is used for automatic unloading of the trailer by tilting the load-carrying body backwards or to the sides. The hydraulic system of the tilting mechanism is supplied with oil from the tractor's hydraulic system.



CAUTION

CAUTION!

Make sure that the hydraulic fluid in the trailer's hydraulic system is of the same type and grade as the hydraulic fluid of the connected tractor. Never use different fluid grades.



CAUTION

CAUTION!

Hydraulic oil can heat up to high temperatures during operation.

The hydraulic system of the trailer must be completely leak-free. Test the hydraulic system for leaks by overloading it with pressure for several seconds, by forcing the load body tilt once it meets the tilt stop. Retighten the couplings if there is an oil leak from the hydraulic hose lines. If the problem persists, replace the entire affected line or its failed coupling components with new parts. If the fluid leak is not from a coupling, replace the leaking component of the hydraulic system. Any mechanical damage to any hydraulic component means it must immediately be replaced with a new counterpart.

Routinely monitor the condition of the hydraulic system when operating the trailer. When connecting the trailer's and the tractor's hydraulic systems, keep all couplings clean.

There is a risk of tipping when the pressure in the hydraulic system is less than 18 Mpa



CAUTION

CAUTION!

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

Replace hydraulic hoses every 5 years, even if undamaged.



CAUTION

CAUTION!

The operating pressure of the hydraulic system is 18 MPa. Lower pressure may not be sufficient to ensure the adequate lifting of the load body and thus may prevent the load from sliding off the trailer.



CAUTION

CAUTION!

The operating pressure of the hydraulic system is 18 MPa.

Lower pressure may not be sufficient to ensure the adequate lifting of the load body and thus may prevent the load from sliding off the trailer.

4.5.2 Adjusting the hydraulic mechanism tilting the load-carrying body

The hydraulic system features a safety cable (which is the load body tilt angle limit) and a hydraulic fluid stop valve upstream of the hydraulic tilt actuator, which isolates the pressure at a predetermined tilt angle. For safety reasons, unauthorised personnel shall never attempt to adjust the components or remove the limits.

The purpose of the stop valve is to isolate the pressurised fluid supply from the hydraulic cylinder before the maximum (permitted) tilt angle of the load body is achieved. Modifying the length or breaking of the safety cable that connects the load body frame to the stop valve may cause damage and result in overturning of the trailer.



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.

4.6 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:

- stop the tractor coupled with the first trailer in front of the drawbar of the second trailer;
- the parking brake in the second trailer must be engaged;
- remove the pin from the rear hitch in the first trailer;
- set the drawbar of the second trailer in a position that enables coupling;
- when reversing the tractor, drive the rear hitch of the first trailer onto the drawbar of the second trailer;
- lock the connection with a pin secured with the cotter pin;

- connect the pneumatic or hydraulic hoses and electrical lines, according to the guidelines listed in the Instruction Manual;

To uncouple an additional trailer, follow the following procedure:

- stop the tractor and the trailers at the location where the second trailer is to be uncoupled, engage the tractor's parking brake, turn off the engine;
- engage the parking brake of both trailers;
- additionally secure the trailer against rolling away by placing a wedge under the wheels;
- disconnect the electrical, hydraulic and pneumatic lines;
- unlock and remove the rear hitch pin, thus disconnecting the drawbar from the hitch, drive the tractor with the trailer away and insert the pin into the rear hitch of the trailer.

5 Elements requiring ongoing adjustments

For proper operation, the T730 trailer requires the following adjustments:

- The adjustment of the wheel bearing play;
- Tyre maintenance;
- Hydraulic system maintenance;
- Adjustment of the brake system components.

5.1 Wheels – bearing play adjustment

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) Jack up one side of the trailer so that the wheel does not touch the ground and secure the trailer in position.
- 3) If the wheel shows excessive play, remove the hub cap and the safety pin that prevents the castellated nut from becoming loose.
- 4) Turn the wheel while simultaneously tightening the castellated nut, until the wheel has stopped completely.
- 5) Release the castellated nut by 1/6 to 1/3 of a turn, until the nearest safety pin groove is aligned with the hole on the hub pivot.
- 6) Secure the nut with a new safety pin; replace and fasten the hub cap.

If the bearing play is adjusted correctly, the wheel should rotate smoothly, without hesitation or evident resistance (other than 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. After driving for a few kilometres observe how the wheel hubs heat up, to check finally if the bearing-play adjustment is correct. Significant turning resistance of the wheels and overheating of the wheel hubs are caused by incorrect bearing play adjustment and dirt in the bearing grease or bearing failure. These symptoms require the removal of the wheel hub and troubleshooting.



CAUTION

CAUTION!

Follow these principles for jacking trailer wheel:

- couple the trailer to the tractor, park it on flat ground, and engage the tractor's parking brake;
- chock the wheel that is not to be jacked;
- place a jack under the axle, close to the wheel to be jacked, and jack until the wheel is clear off the ground;
- secure the wheel with a stand or a support tall enough to be placed under the same side under the axle.



CAUTION

CAUTION!

It is essential to check the play and condition of the running axle bearings, after the first month of use, and then regularly, at least every 6 months.



CAUTION

CAUTION!

Use high quality bearing grease only.

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

5.2 Wheels – tyres

Servicing of the tyres includes visual inspection of their condition and checking the inflation pressure. It is critical that the tyres do not show any cracks that expose or compromise the carcass, and that the wheel hubs, wheel rims, and their fastening is in good repair.



CAUTION

CAUTION!

After the first journey with a load and every 100 km, check the tightness of the wheel nuts and tighten, if necessary.

M18 x 1.5 = 270 Nm, M20 x 1.5 = 350 Nm, M22 x 1.5 = 475 Nm.



CAUTION

CAUTION!

When driving along a bend and reversing, the angle between the longitudinal axle of the tractor and the longitudinal axle of the trailer must not exceed 45°. Failure to observe this may result in damage to the wheels and axles.

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.



CAUTION

CAUTION!

When driving along a bend and reversing, the angle between the longitudinal axle of the tractor and the longitudinal axle of the trailer must not exceed 45°. Failure to observe this may result in damage to the wheels and axles.



The spray suppression valances must be cleaned on a regular basis.



CAUTION

CAUTION!

When operating the tyres, it is essential that the trailer is secured against unintentional displacement by means of the parking brake and wheel chocks. The wheels can only be dismantled when the trailer is not loaded.



CAUTION

CAUTION!

When cornering, avoid damaged road surfaces, sudden and alternating manoeuvres, and high speed.

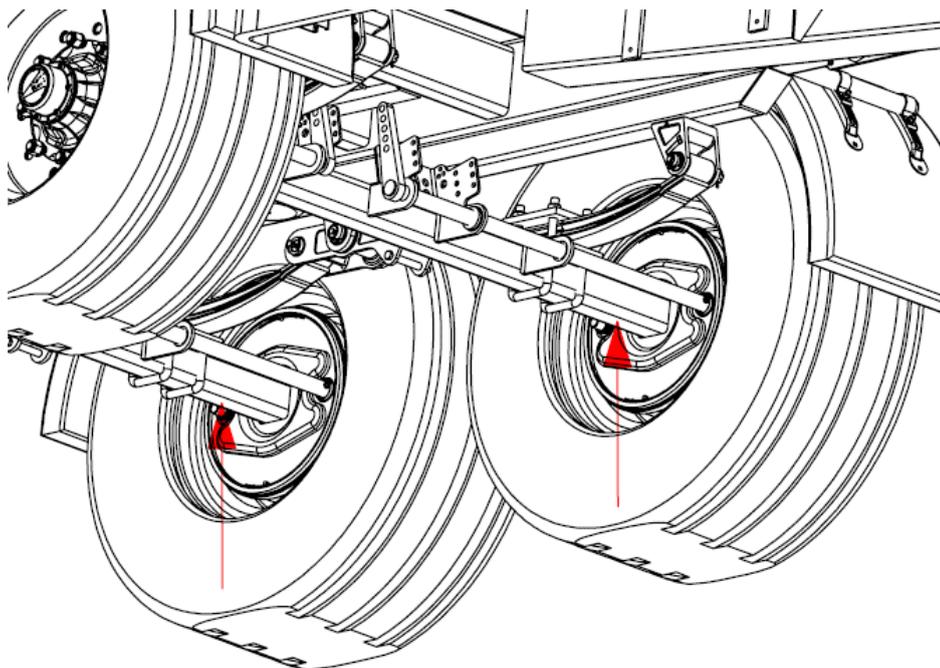


Fig. 19. Jacking points

5.3 Brakes

5.3.1 Brakes – servicing the pneumatic brake system

When servicing the trailer, check for leaks and the condition of the brake system components and connections, and periodically drain the water condensate from the air tank.

Check that the system is airtight at the nominal double-line brake system pressure of 850 kPa. Leakage is identified by the characteristic hissing or appearance of air bubbles (after covering with water and soap), in places where compressed air will penetrate outside. If failed seals, hoses or other components, e.g. valves, actuators, etc. cause a leak, replace these parts.

Drain water condensate from the air tank when pressurized by tilting the drain valve stem sideways. Each year before winter, remove and clean the drain valve.

5.3.2 Brakes – adjustment of pneumatic brake system components

When servicing the trailer, inspect the condition of the brake system components and connections, and periodically relubricate the system controls.

Adjust the brakes, when:

- Excessive play is achieved between the brake shoe lining and the drum, and the braking performance is reduced by the wear of the brake shoe lining;
- The brake performance is uneven and not synchronised between the wheels.

If the brakes are adjusted correctly, the braking force (the sum of the braking forces on the circumference of the braked wheels) shall be at least 50% of the trailer GVWR when operating the service brake, and the braking force (the sum of the braking forces on the circumference of the braked wheels) when operating the parking brake shall be at least 16% of the trailer GVWR. Both wheels on the same axle should brake evenly, the difference in braking forces between the left and right side of the trailer must not be greater than 30%, taking into account that 100% is the greater force.

Place the trailer so that the rear wheels rotate freely. Release the nut (4) so that the arm (2) can be repositioned relative to the shaft (1). Retighten the nut (4) when the shaft (1) is in position relative to the arm (2) where turning the respective wheel gives a palpable rubbing of the brake shoes against the drum. Repeat for the other wheel on the same axle.

If the adjustment of the friction parts is correct, the wheel should rotate smoothly, without hesitation or evident resistance (other than the friction of the brake shoes against the drum). Slight friction of the shoes against the drum, particularly in a new trailer, or after replacement of these parts, is normal.

Having made the adjustment as specified above, check and adjust the parking brake as required. Adjust the parking brake by setting the length of the wheel cylinder-to-actuation gear cable. The required sum of braking forces shall be set with the maximum force of 40 daN applied to the parking brake crank (when the cable and the wheel cylinder lever are in parallel).



CAUTION

CAUTION!

Test and inspect the brake system for the following each time before driving:

- its operation,
- air-tightness,
- play.

If necessary, adjust or repair.



CAUTION

CAUTION!

Check the brake shoes at least once a year, and replace worn linings with new ones.

In order to achieve the required efficiency - after replacing the friction elements - remember to bed in (by driving with frequent braking) and then adjust them.

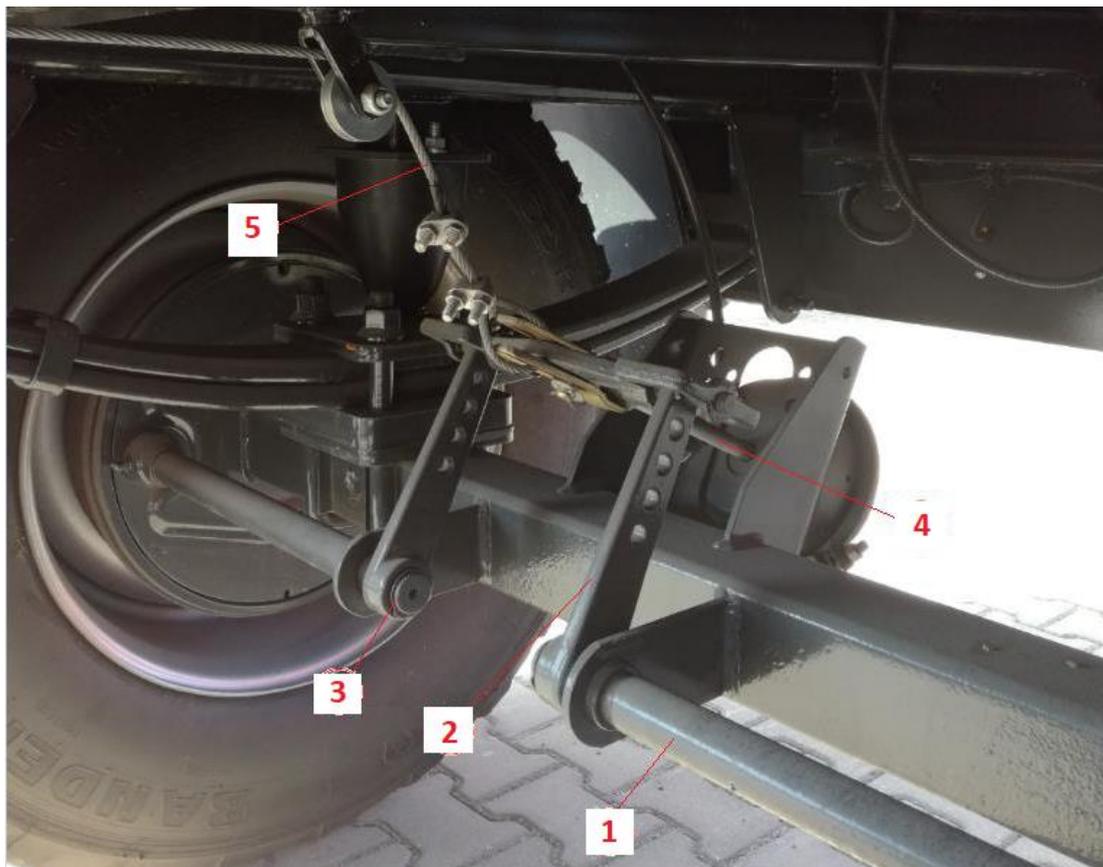


Fig. 20. Brake system components: 1– shoe spreader shaft, 2 – spreader shaft lever (arm), 3 – arm adjustment "comb" on the spreader shaft, 4 – tie (push) rod connecting the piston rod of the pneumatic actuator with the spreader shaft arm, 5 – parking brake line.

6 Periodic maintenance

6.1 Technical service

The transport capacity as well as the long service life of agricultural trailers can only be achieved if it is handled properly and used rationally, within the limits of structural and functional parameters.

Even minor negligence in the operation of the trailer can have serious consequences. A defect found in due time can be easily eliminated with minimum effort and costs, while providing the maximum benefit. Trailer defects can only be found quickly if the machine is routinely and consistently cleaned and carefully inspected.

Have the trailer undergo periodic technical/safety inspection. 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 servicing of the trailer (before each day's work) requires a minimum range of tasks that are specified below:

- Check the tightness of the thread-fastened parts and protect them against accidental release;
- checking the wheel stud bolts;
- Check the play of mechanisms and articulated joints;
- Test and inspect the hydraulic system for leaks and remove if present;
- Test and inspect the pneumatic system for leaks;
- Test the mechanisms for proper operation;
- Check the lubrication and lubricate as specified in the Manual;
- Check the tyre pressure;
- Check the load body wall locks for proper engagement and safety;
- If using top extensions, test their performance and inspect for safety to the operator and the road traffic;
- Test the performance of the brake system and the light and warning system.



CAUTION

CAUTION!

It is forbidden to carry out maintenance and repair work if the trailer's body is not secured with a support!

6.2 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 should be stored in roofed areas (preferably on a level and hard surface) and in such a way as to prevent injury to people and animals.
11. Used parts must be handed over to the appropriate recycling centres subject to the environmental requirements.

6.3 Repair instructions

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

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.

When carrying out maintenance and repair work, wear suitable protective clothing, including gloves, footwear and goggles. It is essential to use the appropriate tools. Observe the generally accepted rules of work health and safety when working. In the event of injury, rinse, and disinfect any wound, and, in the case of serious injuries, seek medical advice.

When carrying out repair work that involves welding, pay special attention to the flammable or fusible components. If they are susceptible to ignition or damage, they must be dismantled or covered with non-combustible material before starting welding. Before starting any work, it is advisable to have a CO₂ or foam extinguisher ready at hand

6.4 Lubrication

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

Compliance with the lubrication requirements of the Manufacturer will significantly reduce the risk of damage or premature wear and tear of individual parts.

Follow the guidelines for lubrication listed below.

- Clean each grease nipple before injecting grease.
- Pump in the grease until fresh grease starts coming out from the slots (through which the used grease is squeezed out when changing the grease).
- After lubricating, leave a dab of grease on the grease nipple head.
- Use oil to lubricate threaded fasteners, lever joints, pivots, and similar parts of the trailer.
- Check the lubrication of the wheel hub bearings and replenish or replace the bearing grease each year.
- When replacing the grease, remove the hub, remove any used grease, evaluate the condition of the bearings (replace if necessary), and after applying fresh grease and reassembling the hub, adjust the bearing play.



CAUTION

CAUTION!

Use high quality bearing grease only.

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

Table 6. Lubrication points

Lubrication point	Lubricant grade	Lubrication interval
Wheel hub bearings	LT 43	At least every 3 months
Hydraulic cylinder head socket	Graphite grease	At least every 3 months
Components of the trailer's body-tilting system	LT 43	At least every 3 months
Ring hitch	LT 43	At least every 3 months

Other components that require routine lubrication.

- The moving parts of locks, hinges and articulated joints on a regular basis;
- cleaned grease nipples – press the grease with a grease pump;
- mobile components of brakes: levers and pins (regularly);
- bearings of the axle of the brake shoes (if necessary, use a very limited amount of grease);
- The bolting system on the boards and hinges (regularly).

When carrying out lubrication work, ensure that no excess grease or oil remains on the machine. Remove any excess lubricant.

6.5 Metric-bolt-tightening torques

Optimised torque values for bolts or screws and nuts [Nm] are shown in Table 7.

Table 7. Bolt tightening torques

Tightening torques – metric bolts, Nm							
Size Ø mm	Pitch, mm	Bolt version – strength class					Wheel nuts / wheel bolts
		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	

7 Defects and troubleshooting

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

Table 8. Defects

No.	Type of	Cause	Method of rectification
1.	Excessive heating of brake drums.	Brake shoes are not adjusted correctly.	Adjust according to Section 5.3.2.
2.	Excessive heating of the wheel hub.	Too little play on bearings. Dirty bearing grease.	Adjust, according to Section 5.1. 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 5.3.2.
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 5.3.2.
6.	Oil leak 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 Leak 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.

8 Authorised service

8.1 Warranty service

The Manufacturer provides a commercial warranty for this machine, on the terms and conditions specified in the Warranty Certificate. During the warranty period, all repairs shall be performed by the authorised service centres at official dealerships or the Manufacturer's technical service.

8.2 Routine service

After the warranty period, periodic inspections, adjustments, and repairs of the machine can be provided by an authorised dealership service.

8.3 Ordering spare parts

Purchase the spare parts from the official dealerships or order them from the manufacturer. When ordering, provide the following: your name and surname, or your company name, and your ordering address. When ordering, please also provide the following: the name, code, serial number, year of manufacture, part name, part number, and the drawing or standard number in the catalogue, and the number of ordered pieces. Specify the terms of payment for the order.

9 Disassembly, disposal, and environmental protection

If the product is going to be repaired, deliver the worn parts to a scrap yard. Adhere to the requirements of OH&S while doing all repair and replacement work performed on worn-out components. If the entire product is to be disposed of, deliver it to a buy-back recycle centre.

Any malfunction of the hydraulic system, i.e. oil leaks, must be remedied without delay and without causing environmental pollution. When changing the oil, make sure it does not spill on the ground. Used oil must be stored in sealed containers (e.g. after fresh oil has been used) and periodically delivered to a petrol station or a waste processing facility.



CAUTION

CAUTION!

The dismantling of the machine must be carried out by those familiar with its design and operation. When dismantling (repairing), the general safety precautions for workshop work on agricultural equipment must be observed. Due to the high component weight (over 20 kg), use lifting equipment during dismantling.

Do not leave any worn-out or damaged parts collected during repairing or dismantling, in the field or within the farmyard area. They must be stored in a separate place (with limited access for people and animals), and periodically delivered to a scrap yard or a waste processing facility.

It is better to have the machine disposed of by a professional centre which operates in the dismantling of equipment and machines. When disposing of the machine on your own, segregate the parts according to the type of material: rubber elements, ferrous, and non-ferrous metals. Hand over the rubber parts for re-use (re-processing or disposal).

10 Residual risks

10.1 Description of residual risks

Although METAL-FACH Sp. z o.o. in Sokółka is liable for the design and structure of the machine to eliminate its hazards, some risks are unavoidable when the trailer is in operation.

These residual risks can be a result of human error by the trailer's operator, caused by carelessness, ignorance or improper behaviour. The following prohibited actions cause the highest level of risk:

- 1) Operation of the trailer by minors or persons who are not authorised to drive a tractor, as well as persons who are not familiar with the Instruction Manual.
- 2) Operation of the trailer by those who are sick, under the influence of alcohol or other intoxicating substances.
- 3) Using the trailer for purposes other than those described in the Instructions Manual.
- 4) Standing between the tractor and the trailer while the tractor engine is running.
- 5) Bystanders, children in particular, standing close to the running trailer.
- 6) Cleaning the trailer during operation.
- 7) Manipulating within the tractor drive train and trailer moving parts during operation.
- 8) Checking the technical condition of the trailer during operation.

In the specification of residual risks, the trailer is interpreted as a machine that has been designed and manufactured in accordance with the state of the art in the year of its production.

10.2 Residual risk assessment

Compliance with the following instructions:

- 1) Adhering to the safety rules described in the Instruction Manual.
- 2) Read the Instructions Manual carefully.
- 3) Do not reach into dangerous and/or restricted areas with your hands;
- 4) Do not operate the trailer in the presence of bystanders, children in particular;
- 5) The trailer shall be maintained and repaired by suitably trained personnel only;
- 6) The trailer shall only be operated by personnel with prior instruction and understanding of the Operating Manual;
- 7) Keep the trailer out of the reach of children;

... facilitates the elimination of the residual risks of trailer operation, to prevent hazards to people and the environment.



CAUTION

CAUTION!

Failure to comply with the instructions and guidance provided herein may result in residual risks!

INDEX OF NAMES AND ABBREVIATIONS

BHP - occupational safety and health;

dB (A) - decibel A, sound pressure unit;

kg – kilogram, weight unit

km/h – kilometre per hour, linear speed unit

kPa – kilopascal, pressure unit

kW – kilowatt, power unit

m – metre, length unit

min – minute, an auxiliary time unit equal to 60 seconds

mm – millimetre - auxiliary length unit equal to 0.001 m

MPa – Megapascal, a pressure unit;

N – newton – SI unit of force

Pictogram – an information plate

t – tonne, a mass unit;

Rating plate – a manufacturer's plate unambiguously identifying the machine

V – Volt, a voltage unit

Transport hitch – hitch components of an agricultural tractor (see a tractor instruction manual).

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