METAL-FACH

FARMING TRUCK TRAILER
T755A

INSTRUCTION MANUAL

TRANSLATION OF THE ORIGINAL INSTRUCTIONS MANUAL

REV. II

AUGUST 2019

Instructions Manual No. T755A-02-167/2013

EC DECLARATION OF CONFORMITY

The undersigned,	Jacek Kucharewicz, President of the Board,	
hereby declares, with full responsibility, that the complete machine:		
FARMING TRUCK TRAILER		
1.1.	Brand (the trading name of the manufacturer)	Metal-Fach
1.2.	Type	T755A
1.2.1.	Variant	
1.2.2.	Version	
1.2.3.	Trade name(s) (if any)	
1.3.	Category, Subcategory and Vehicle-Speed Indicator	R3a
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 authorised representative of the manufacturer (if applicable)	N/A
1.5.1.	The location of the rating plate of the manufacturer	Right-hand side of the front crossmember on the trailer body
1.5.2.	The method used to fix the rating plate of the manufacturer	Bonded
1.6.1.	The location of the vehicle-identification number on the chassis	Right-hand side of the front crossmember of the chassis frame
2.	Machine-identification number	

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)

The following harmonised standards were applied to assess the compliance.

PN-EN ISO 1853+AC: 2019-07, PN-EN ISO 13857: 2010, PN-EN ISO 4254 -1: 2016-02, PN-EN ISO 12100: 2012

and the following standards: PN-ISO 3600:1998, PN-ISO 11684:1998, and Ordinance of the Minister of Infrastructure dated 31 December 2002 on the technical conditions of vehicles and the range of their necessary accessories (Journal of Laws 2016, item 2022).

Safety Testing Report No. LBC/54/13

This EC Declaration of Conformity shall become null and void if the machine is modified or reconstructed without the Manufacturer's consent.

Sokółka
(Place)

22/01/2013
(Date)

Jacek Kucharewicz
(Signature)

President of the Board
(Position)

Machine data

Type of machine		Farming Truck Trailer
Trade name		T755A
Serial number/ VIN [1]		_____
Machine manufacturer		METAL-FACH Sp. z o.o. 16-100 Sokółka ul. Kresowa 62 Phone (0-85) 711 98 40 Fax (0-85) 711 90 65
Seller		_____
	Address	_____
		_____
	Phone/Fax	_____
		_____
Delivery date		_____
Owner or user:	Name:	_____
	Address	_____
		_____
	Phone/Fax	_____

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

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INTRODUCTION

The information included in the Instructions Manual is valid as on the date of its drawing up. The manufacturer reserves its right to make design changes to machines, and due to this some values or illustrations might not correspond to the actual state of the machine supplied to the user. The manufacturer reserves its right to make design changes without amending these instructions. The Instructions Manual is part of the basic equipment of the machine. The User is obliged to read the contents of this Instructions Manual and comply with the recommendations included in it, before using the machine. It will ensure safe operation and trouble-free machine operation.

The machine has been built in compliance with the standards in force and the current legal provisions. This Instruction Manual defines the basic safety and operation principles regarding the agricultural trailer manufactured by Metal-Fach.

The main obligations of the manufacturer are presented in the guarantee card, which includes the complete and currently-in-force regulations on the guarantee coverage.

If the information included in the Instructions Manual proves to be incomprehensible, you should address the seller from whom the machine was purchased, or the manufacturer directly, for assistance.

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

Manufacturer's address

Metal-Fach Sp. z o.o.

ul. Kresowa 62

16-100 Sokółka

Telephone

Phone (0-85) 711 98 40

Fax (0-85) 711 90 65

The symbols used in these Instructions

DANGER

Hazard-warning symbol. This indicates the occurrence of a serious hazard condition, which, if not avoided, can result in death or serious injury. This symbol warns against the most-dangerous situations.

CAUTION

This symbol points to especially important information and recommendations. Non-compliance with the described recommendations risks serious damage to the machine due to its incorrect operation.

WARNING

This symbol indicates the possibility of the occurrence of a hazard, which, if not avoided, can result in death or serious injury. This symbol indicates a lower level of risk of injury than the symbol including the word “DANGER”.

This symbol indicates useful information.

This symbol indicates maintenance activities that should be performed periodically.

1. General description

1.1 Introduction

THIS INSTRUCTION MANUAL CONSTITUTES ONE OF THE BASIC ACCESSORIES OF THE TRAILER.

The trailer is intended for the transporting of agricultural produce and other bulk and loose materials, within the farm area and on public roads.

To operate the trailer in a safe manner, read and adhere to all the INSTRUCTIONS set out in this Instructions Manual. Abiding by the guidelines provided in the Instructions Manual ensures safe operation for the User, and also prolongs the service life of the machine.

1.2 Machine identification

Identify the trailer on the basis of the rating plate and VIN number. The rating plate is fixed on the right-hand side of the front crossmember of the trailer body frame. The VIN number is stamped on the right-hand side of the front crossmember on the trailer's chassis frame, and on the rating plate (see Fig. 1).

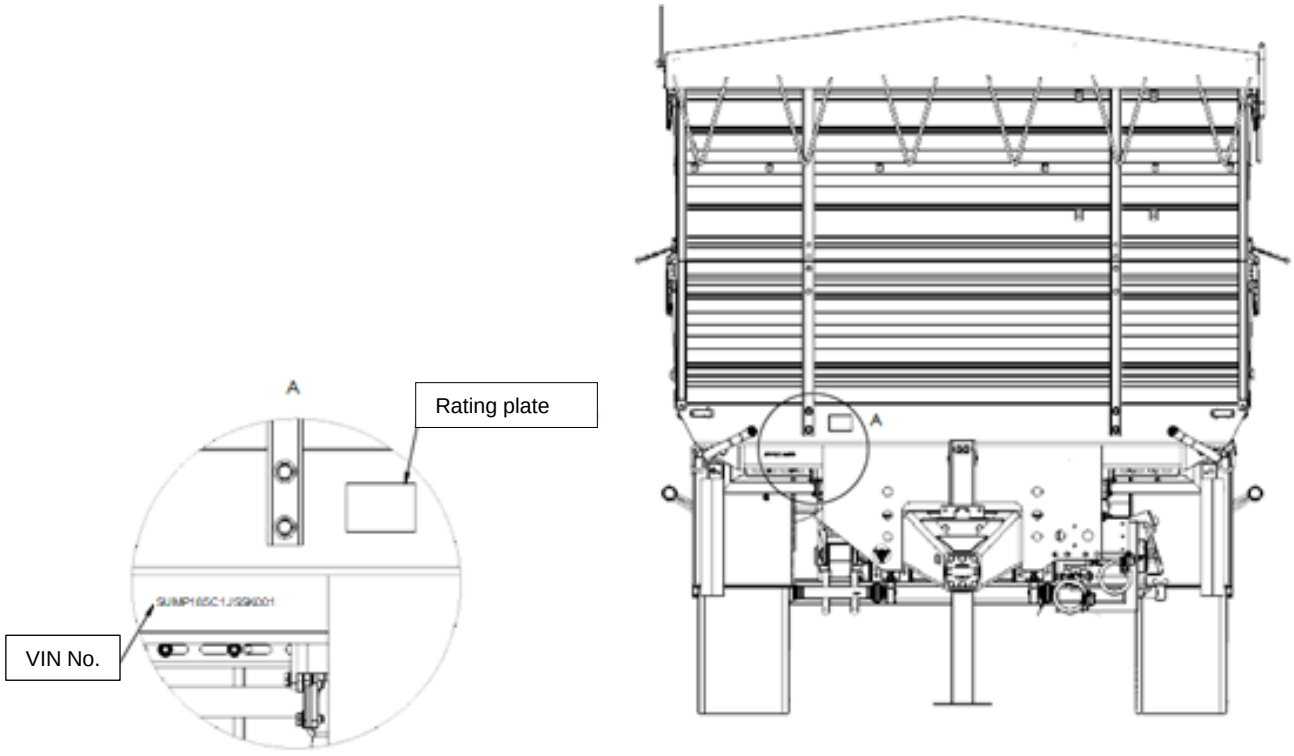


Figure 1. The location of the rating plate and the VIN number on the machine

CAUTION

WARNING!

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

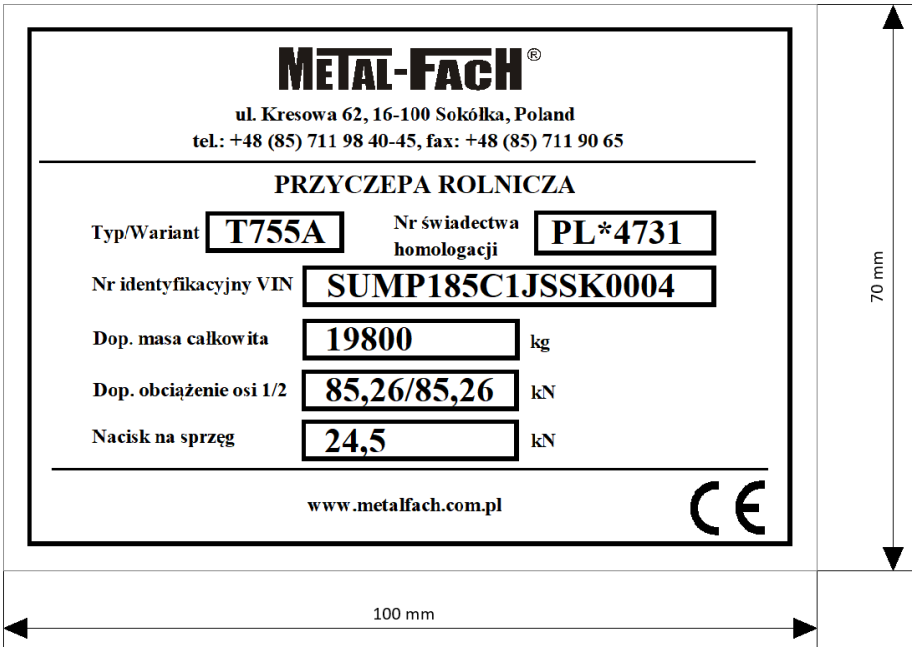


Figure 2. Example of a rating plate

Please read the Instruction Manual carefully!

Upon purchase, make sure that serial number / VIN number located on the rating plate of the machine complies with the number provided in the Instruction Manual and the warranty card.

It is often necessary to provide the VIN number of the trailer 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.

Trailer VIN number:

S	**U**	**M**								**S**	**S**	**K**				

CAUTION

CAUTION!

Persons who have not read this instruction manual are prohibited from using the trailer.

1.3 Intended Use of the Trailer

The trailer is intended for the transporting of agricultural produce and other bulk and loose materials, or for carrying loads on box pallets or Euro-pallets within the farm area and on public roads. It is also possible to use it to transport of building materials, mineral fertilisers and other loads, provided that the appropriate requirements defined in section 4.3 have been met. Loading the trailer body.

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 an external hydraulic system, sockets for signal and warning systems, a brake system and a transport hitch.

The trailer must not be used for the transporting of fuel, gas cylinders or toxic materials, as it requires complying with additional technical requirements, regarding the carrying of hazardous loads. Transporting of such materials may cause contamination of the environment or other hazardous consequences. 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 Instruction Manual, trained in the scope of the hazards it can create and capable of providing pre-medical assistance to 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 of the country in which the trailer is being used.

DANGER

DANGER!

The trailer must not be used contrary to its intended purpose, in particular:

- to transport people and animals;
- to transport unprotected toxic materials in bulk where there is a potential for environmental contamination;
- to carry machinery and equipment, in which the location of their centre of gravity can have an adverse effect on the stability of the trailer;
- to transport loads, which cause non-uniform loading of and overloading of the axles;
- to transport unsecured loads, which may change their position on the load-carrying body while driving.

1.4 Basic components

The basic components of each trailer include the following:

- An Instruction Manual;
- A Warranty Card with warranty terms and conditions;
- A bracket for fixing a slow-vehicle marking plate;
- Pneumatic or hydraulic brakes;
- A parking brake;
- A lighting system;
- Sprung suspension.

If requested by the client (subject to an additional fee), the manufacturer can equip the trailer 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 exposure to weather conditions (e.g. sunlight and rain), positioned on its ground wheels on a paved surface, with support chocks placed under the wheels (reduce pressure in the tyres and protect them, if exposed to sunlight). Long-term storage is permitted only in enclosed areas.

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

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

1.5.2 Sale

The buyer shall collect the trailer from the manufacturer or from a point of sale, by themselves, or negotiate the terms of delivery with the manufacturer.

The trailer is sold as fully assembled, ready for operation, with the basic accessories, as specified in section 1.4 of this manual. Additional equipment may be purchased for an additional fee.

Staff at the point of sale are obliged to make sure that the buyer is acquainted with the principles of construction and operation of the trailer, safety requirements, and warranty conditions.

The Buyer is obliged to check whether:

- the trailer is complete, undamaged, and equipped with the basic accessories;
- the data stamped on the nameplate and on the frame correspond to the data in the warranty card;
- the warranty card is filled in correctly, according to the identification data provided on the rating plate.

1.5.3 Transport to the User

The trailer must be transported on its wheels, coupled to a tractor, or on a low-loading platform, from the point of sale or from the manufacturer. Before it is loaded onto a low-loading platform, couple it to the tractor's hitch and connect the brake-system's lines. Use unfolded ramps to drive the trailer onto the low-loading platform. Once on the low-loading platform, secure the trailer wheels with chocks.

When done, disconnect the brake lines and uncouple the trailer from the tractor. Then, secure the trailer with special straps designed for securing loads in transport (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 straightened. 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 transport.

Before unloading the trailer, unfold the ramps, and then unlock the straps securing the trailer against possible sliding down in transport. Next, drive the tractor close enough to connect the brake lines. Finally, pull out the chocks from under the wheels of the trailer. When all of the above steps have been completed, proceed with driving the trailer down from the platform.

CAUTION

CAUTION!

General health and safety regulations must be observed when loading and unloading the trailer. Persons 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 both to the agricultural trailer and the transport trailer.

1.5.4 Transport of the Trailer by the User

The user can transport the trailer by towing it to its destination, using their own agricultural tractor.

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

CAUTION

CAUTION!

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

CAUTION

CAUTION!

When driving, the driver of a trailer-towing vehicle must exercise particular caution, as the centre of gravity of the vehicle shifts upwards.

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

DANGER

DANGER!

Check the elements coupling the tractor with the trailer, as their incorrect use may lead to accidents.

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 which can cause corrosion, and whenever necessary. Clean the trailer following the guidelines below.

The machine can only be cleaned in designated areas, when the ambient temperature is above zero.

Before proceeding with cleaning, first open the sideboards and extensions of the trailer, to remove any residual material carried on it. When prepared this way, start cleaning the trailer.

Clean the trailer with clean water or water and a detergent. When using different types of detergents read their specifications to assess whether they can be used to clean the trailer.

It is not allowed 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 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.

The trailer comes with plastic parts and it is recommended to wash them with clean water or water with a special detergent dedicated to this type of surface.

Surfaces contaminated with oil or grease must be cleaned with agents intended for this type of contamination. Other degreasing agents designed for cleaning this type of

contamination may be used. Before using them, it is recommended that you read the information on using a particular agent to clean a given surface. After degreasing a contaminated surface, wash it with water and a detergent that is intended for this purpose.

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

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

CAUTION

CAUTION!

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

1.7 Storage

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

If the trailer is not to be used for a long period of time, ensure the machine is protected from harmful weather conditions. Preparing the trailer for long-term non-use involves, among other things, thorough cleaning and drying of all machine components, including its tyres and rims, in accordance with the guidelines defined in section 1.6. “Cleaning the Trailer.”

Take care of all the points subject to corrosion. To this end, apply a primer coat and topcoat on the susceptible places having prepared them properly. Follow the recommendations of paint manufacturers.

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

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

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

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

CAUTION

CAUTION!

In order to achieve the correct tensioning of the canvas cover, its reel must be fastened to the knob of the locking mechanism of the lever releasing the rope clamping both sides of the trailer. If the reel of the canvas cover is supported on the knob, it prevents the canvas cover from stretching properly.

Poor tension of the canvas cover causes water to accumulate on its surface, etc. As a result, the canvas cover will deform and fail to fulfil its purpose.

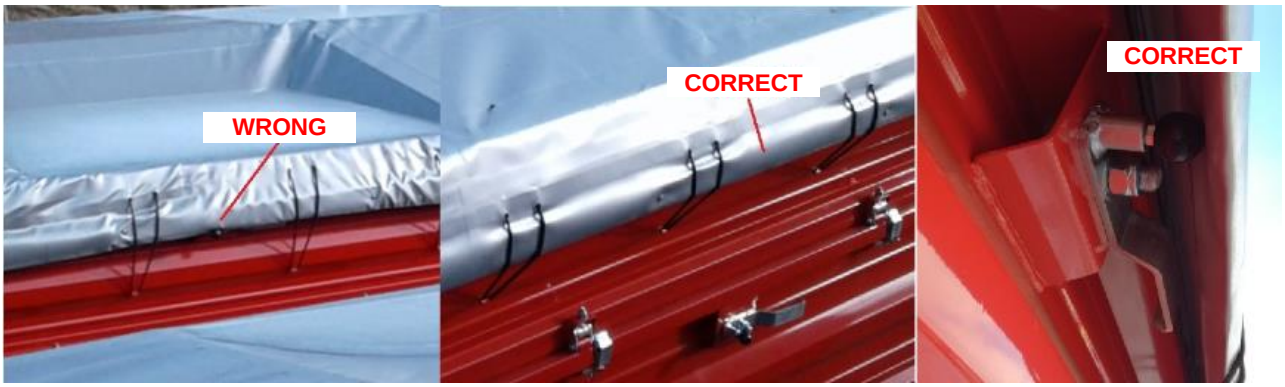


Figure 3. Correct tensioning of the canvas cover

2. Safety of use

2.1 Obligation to provide information

CAUTION

CAUTION!

When the trailer is handed over to another user, include the Instruction Manual with it. The new user must undergo training, as indicated in the Manual.

2.2 General principles regarding user safety

Before each use, check the trailer for safe operation, i.e.:

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, warning and information inscriptions on the trailer providing important guidelines for safe operation.
3. Only operate the trailer if all the required devices are connected and protected against unintentional disconnection or opening (e.g. hitch and drawbar, couplings, etc.).
4. Before you start work, learn the functions of and the ways of operating all the devices and controls. It will be too late to do this during the operation.
5. It is forbidden for people under the influence of alcohol or other stimulants, who are untrained, or do not have the proper authorisation to drive motor vehicles to operate the trailer.

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 Safety of operation

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 authorized 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. All safety-related information must also be passed on to all other trailer users.
7. Before starting, check the immediate vicinity (for the presence of children or bystanders). Pay particular attention if visibility is reduced.
8. It is forbidden to stand on the trailer while driving, when coupling the trailer to the tractor, and during loading and unloading.
9. When unloading is complete, the load-carrying body must be completely lowered. Never leave the trailer unattended with the load-carrying body raised.

10. It is only possible to enter the trailer if it is in complete standstill and with the tractor engine switched off.
11. The raising and lowering of the load-carrying body should always be controlled from the driver's seat.
12. Couple the trailer as prescribed and only connect it to the recommended equipment and secure the drawbar eye with the tractor's transport hitch.
13. Special care must be taken when coupling and uncoupling the trailer to and from the tractor.
14. When installing and removing, any support and safety devices and ladders shall always be placed in a position that ensures safe operation.
15. Follow the acceptable axle loads, total mass and transport dimensions.
16. Check for the transport equipment: connection and inspection of brakes and lights, a vehicle marking plate and other protective devices.
17. 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.
18. Observe the changes in vehicle behaviour, and its steering and braking performance, resulting from the coupled trailer and its load.
19. When driving with a trailer, take into account the distribution of its load and/or inertia forces, especially if the load is asymmetrical.
20. Do not stay within the range of the load to be discharged.
21. The hydraulic lifting (tilting) of the load-carrying body may only be started if:
    - the trailer is coupled to the tractor,
    - the trailer is standing on a hard, 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 power lines,
    - there are no strong gusts of wind.
22. If it is necessary to unload to the rear on a slope, the tractor and trailer should be positioned in the uphill direction. With side unloading on a slope, the load-carrying body should be tilted to the side opposite the inclination of the trailer.
23. The body must be secured against falling down, by means of the trailer's support, when carrying out all work with the body raised. Switch off the tractor's engine and remove the key from the ignition.
24. Take care to avoid crushing fingers and hands when opening and closing the sides of the load-carrying body.
25. Observe the warnings against crushing and shear points when starting the trailer. There is a risk of injury when coupling and uncoupling the trailer to the tractor. For this reason, do not step between the trailer and the tractor, when coupling and uncoupling the trailer. Do not stand behind the trailer, if it is not secured with wheel chocks or its parking brake.
26. No person may stand between the tractor and the trailer unless the vehicle is protected against rolling by the parking brake and/or wheel chocks.
27. Secure the trailer and the tractor against rolling when stationary.
28. It is forbidden to drive with the load-carrying body raised.
29. Keep a safe distance from electrical lines when lifting the load-carrying body. There is a pictogram warning about electrical cables (pictogram No. 3 in Table 1), according to PN-ISO 11684:1998, located on the front board of the trailer.

30. When carrying out repairs and maintenance work, which requires lifting the load-carrying body, it must be empty and secured against unintentional lowering, by a mechanical support.
31. The driving speed must always be adapted to the ambient conditions. Avoid sudden up or downhill turns on sloping terrain.
32. Maintain a sufficient safety clearance within the turning area of the unit.
33. When reversing, ensure that you have sufficient visibility (if possible, have another person to assist you).
34. When cornering, take into account the inertia of the trailer.
35. Observe a minimum turning radius of approx. 6 m when turning and reversing.
36. When connecting additional safety devices to the load transported on the trailer (a chain, a canvas cover, a film, a net, etc.), make sure that the tractor engine is switched off and the ignition key removed.
37. Remove any functional faults of the attached devices only when the engine is switched off and the ignition key removed.
38. In the event of a failure of the hydraulic or pneumatic system, the trailer must be taken out of service until the failure has been resolved.
39. It is forbidden to carry out maintenance or repair work if the load-carrying body is under load, raised and unsupported.
40. Before carrying out any repair work on the hydraulic or pneumatic systems, reduce oil or air pressure.
41. In the event of injuries 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.
42. Use the hydraulic oil recommended by the Manufacturer. Never mix two different types of oil.
43. Entering the loading area is only permitted when the drive and the engine are switched off. Remove the key from the ignition.
44. Switch off the engine and remove the ignition key before leaving the tractor. Engage the parking brake and secure the trailer with chocks.
45. When driving on public roads, do not exceed the maximum permissible axle load exerted by the trailer as stated on the rating plate.
46. The maximum permissible pressure in a double-line pneumatic system is 800kPa.
47. The Manufacturer provides the trailer as fully assembled.
48. Preparations of the trailer for use (connecting hydraulic hoses, pneumatic system, etc.) should be made with the tractor engine switched off and the ignition key removed.
49. Hydraulic lines must be replaced every 5 years.
50. Noise – the equivalent A-weighted emission sound pressure level (LpA) is not above 70 dB.
51. Keep the trailer clean.

WARNING

WARNING!

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

WARNING

WARNING!

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

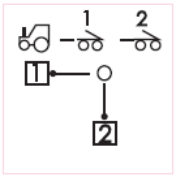
2.4 Warning and information pictograms

2.4.1 Hazard-warning symbols

Do not remove any warning signs and inscriptions located on the trailer. They are intended for the safe handling of the trailer. If the information sticker has been damaged or removed, it must be reordered. Stickers with inscriptions and symbols can be purchased at service points or from the trailer's manufacturer.

Table 1. Safety signs

No.	Safety symbol (sign)	Meaning of the symbol (sign) or content of the inscription
1.		Attention. Before you start operating the machine, read the Instructions Manual.
2.		Attention. Before carrying out any maintenance or repair work, switch off the tractor's engine and remove the keys.
3.		Attention. Risk of electric shock. Keep a safe distance from overhead power lines.
4.		Attention. Finger crushing hazard. Do not reach into the crushing area if the parts are moving.

5.		Attention. Danger of crushing It is forbidden to carry out maintenance or repair work if the load-carrying body is unsupported.
6.		Attention. Danger of being run over. Travelling on the machine is only permitted on the passenger seat if the driver's visibility is not obstructed.
7.		Attention. Body crushing hazard. Keep a safe distance from the machine.
8.		Attention. A fall from height Do not ride on platforms or ladders.
9.		Attention. Torso crushing hazard. Do not stand near the motion zone of the articulated coupling joints when the engine is running.
10.		Attention. It is prohibited to dump loads from the trailer’s body, when it is standing on an inclined surface. It could cause the machine to overturn and crush limbs of the operator or other people.
11.		Setting the distributor lever.

12.		Sling attachment/Lifting point.
13.		Lift placement points.
14.	Ładowność 14 t	Information pictogram.
15.	Maksymalne ciśnienie w układzie hydraulicznym 16 MPa	Information pictogram.
16.	Maksymalne ciśnienie w układzie pneumatycznym: - 0,6 MPa jednoprzewodowy - 0,8 MPa dwuprzewodowy	Information pictogram.
17.	Przybliżone masy wybranych towarów 1 m sześcienny = kg Ziemia 1600 - 1800 Pszenica 710 - 820 Ziemniaki 625 - 725 Buraki cukrowe 650 - 700 Rośliny strączkowe 760 - 820 Kruszywo budowlane 1400 - 1850 Wapno 900 - 1500 Węgiel kamienny 1200 - 1600	Information pictogram.
18.	Nakrętki kół dokręcić po kilku kilometrach a następnie robić to okresowo	Information pictogram.
19.	UWAGA ! Łączenie dyszla z okiem obrotowym tylko ze sztywnym zaczepem transportowym ciągnika	Information pictogram.
20.	UWAGA ! Łączenie tylko z górnym zaczepem transportowym ciągnika	Information pictogram.
21.	UWAGA ! Zabrania się przebywania w zasięgu zsypującego się ładunku. Zabrania się wchodzenia na przyczepę podczas jazdy.	Information pictogram.
22.	Uwaga! Zabrania się wykonywania czynności kontrolno - obsługowych pod obciążoną lub przechyloną, a nie podpartą skrzynią ładunkową	Information pictogram.

CAUTION

CAUTION!

The user of the trailer 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, change them for new ones.

2.4.2 The arrangement of the pictograms on the machine

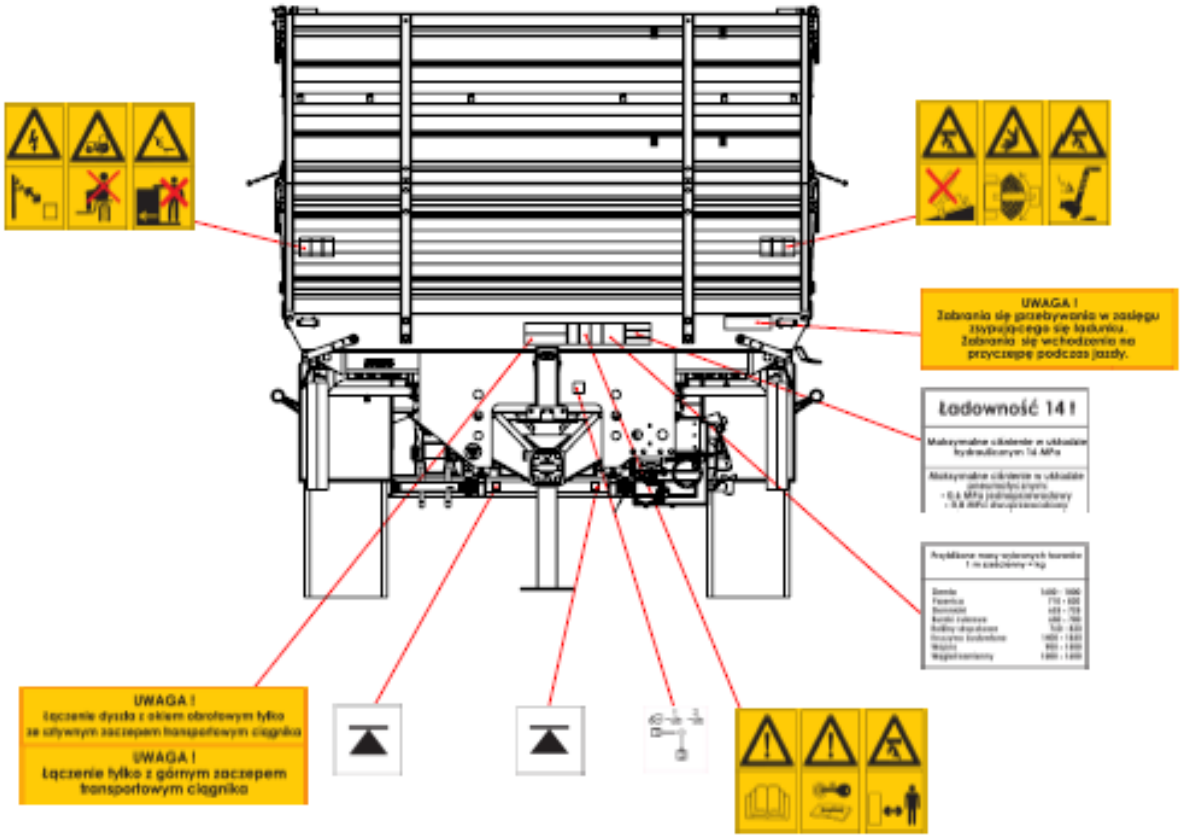


Figure 4. The arrangement of the pictograms on the boards of the trailer - front

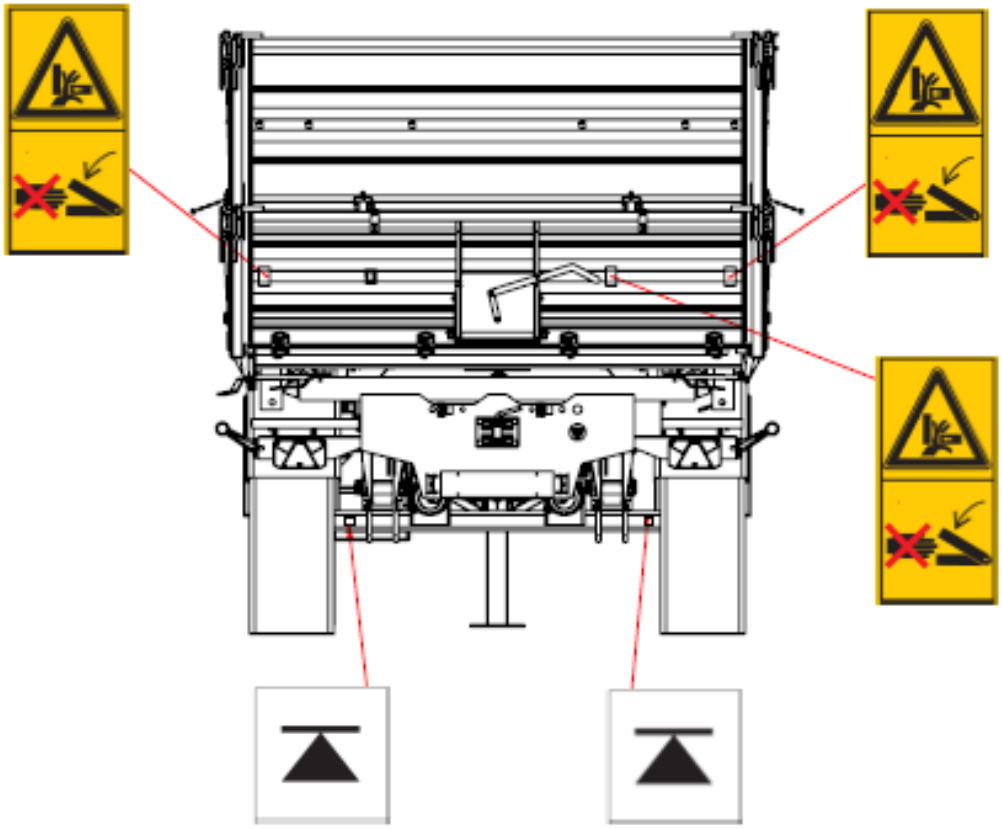


Figure 5. The arrangement of the pictograms on the boards of the trailer - rear

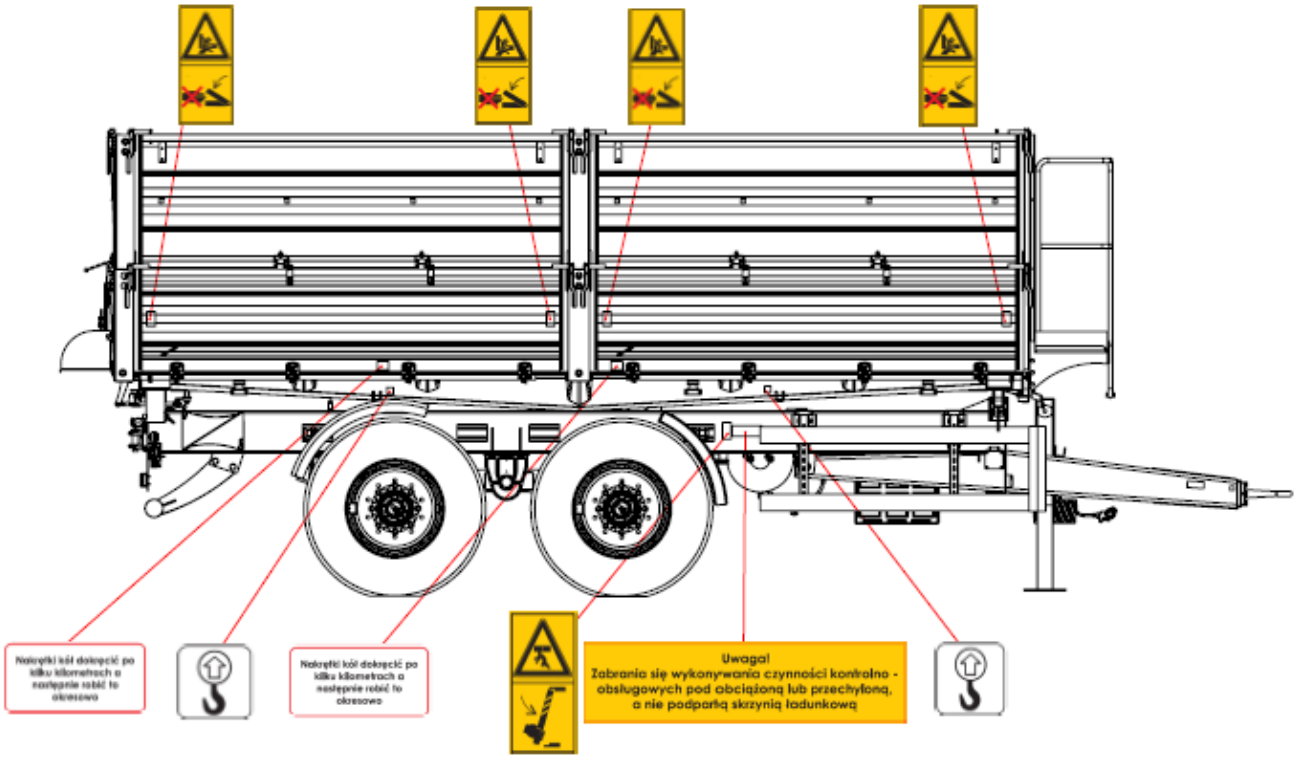


Figure 6. The arrangement of the pictograms on the boards of the trailer – right side

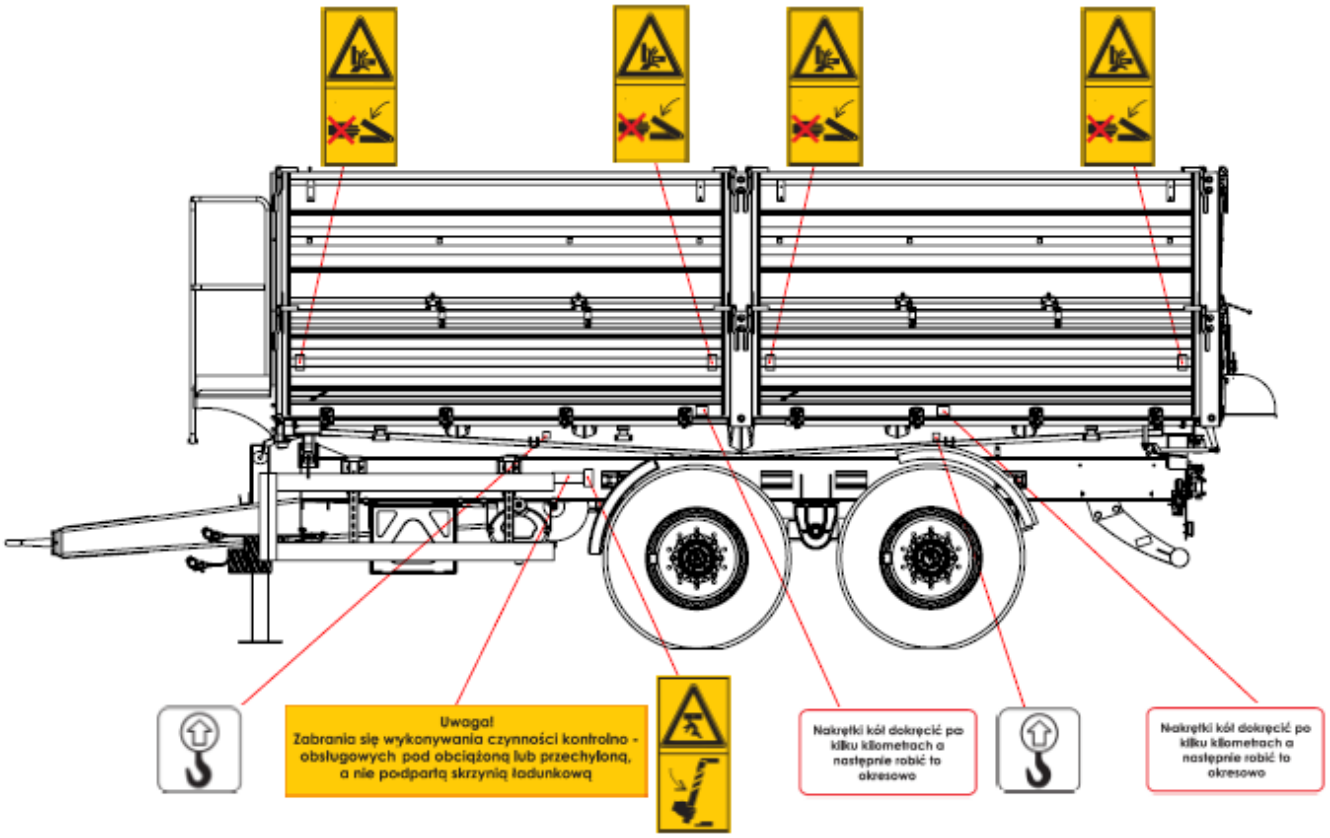


Figure 7. The arrangement of the pictograms on the boards of the trailer – left side

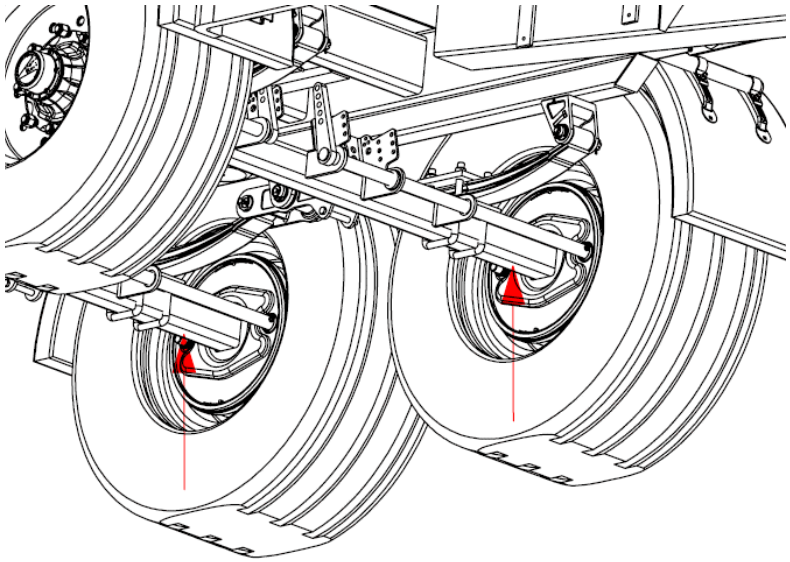


Figure 8. Jacking points

3. Technical data

3.1 Basic technical data

Table 2. Trailer specification

No.	General data	T755A
1.	Type of vehicle	Agricultural trailer
2.	Manufacturer	METAL-FACH Sp. z o.o. 16-100 Sokółka, ul. Kresowa 62
3.	Trade name	T755A
4.	Type of bodywork	Box
5.	The location of the rating plate	Right-hand side of the front crossmember on the chassis frame
6.	Number Stamp Location	on the nameplate and underneath
Dimensions and weights		
7.	Length, mm	7065
8.	Width, mm	2550
9.	Height (with a top extension), mm	Max 4,000 – depending on the tyres in use
10.	No. of axes:	2
11.	Wheel base, mm	1340-1360
12.	Wheel track, mm	1900-2100
13.	Dimensions of the cargo space	
	- length, mm	5385
	- width, mm	2410
	- height (with a top extension), mm	500-2400
14.	Elevation of the loading surface, mm	1230-1430
15.	Elevation of the drawbar's swinging axles, mm	450-750
16.	Drawbar eye diameter, mm	40, 50, or K80
17.	Vehicle ground clearance, mm	376-480
18.	Vehicle kerb weight, kg	3900-5800
19.	Permissible total weight of the vehicle, kg	19800
	- on the axle unit, kg	17400
20.	Maximum load, kN - on the axle unit, kN	 170,52
21.	Load capacity, kg	14000-15900

Suspension		
22.	Type of suspension	Tandem suspension with a parabolic spring
23.	Type of spring elements	longitudinal parabolic springs
Wheels and tyres		
24.	Number of wheels, pcs.	4
25.	Wheel disc size	11.75x22.5 13.00x22.5 14.00x22.5 16.00x22.5
26.	Tyre size and PR number	385/65 R22.5 445/65 R22.5 455/40 R22.5 500/45 R22.5 550/45-22.5 550/60-22.5
	- Tyre pressure [bar]	From 2.8 to 9, depending on the manufacturer
Braking system		
27.	Service brake:	
	- type	mechanical, drum brake
	- control system	hydraulic or pneumatic, positive gauge pressure, single- or double-line system
	- acts on (number of wheels)	4 wheels
28.	Parking brake	
	- type	mechanical, drum brake
	- control system	manual, by means of a screw transmission or a spring actuator
	- acts on (number of wheels)	2 wheels on the front axle and on the rear axle, in the case of a spring actuator
Electrical system		
29.	Rated voltage, V	12V, from the tractor to work with
Operating data		
30.	Maximum driving speed, km/h	40
Additional information		
31.	Tractor working with the trailer	min. 108 kW
32.	Oil purity class	not less than 8, acc. to NAS 1638 (category 20/18/15, acc. to ISO 4406-1996)

3.2 Dimensions of the trailer

The drawings demonstrate overall dimensions of trailers in their transport position:

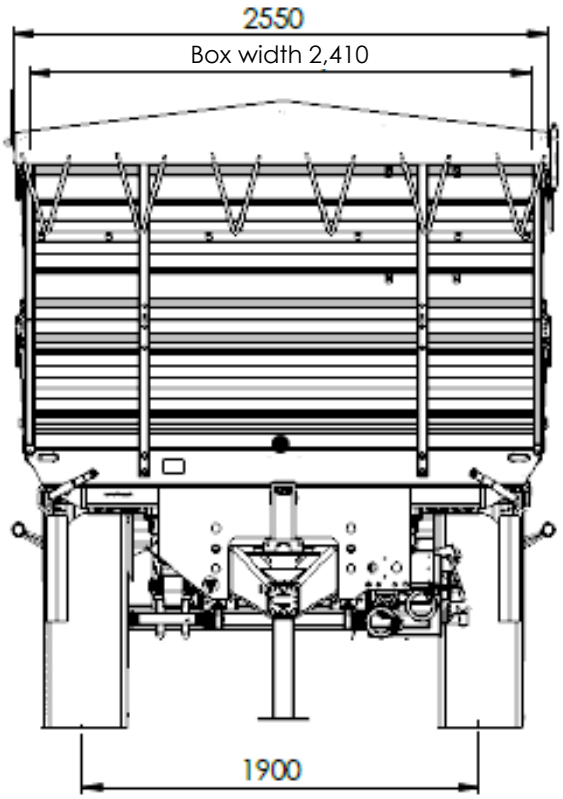


Figure 9. Dimensions of the trailer – front view

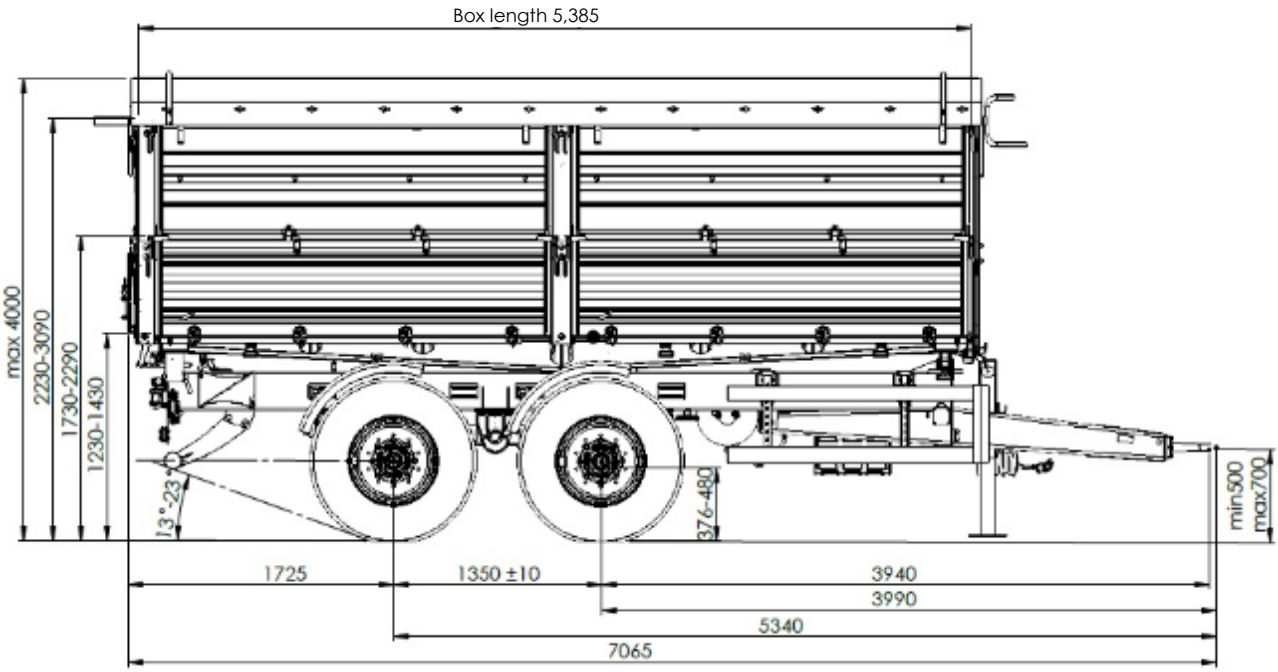


Figure 10. Dimensions of the trailer – side view

3.3 General design and principles of operation

The T755A trailer consists of a metal structure with an open cargo space. The trailer is equipped with a pneumatic or hydraulic service brake and a parking brake, controlled manually by means of a screw transmission acting on the friction elements of the service brake of the rear axle, or by using a spring actuator activated by a button.

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

The trailer can also be used for transport 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's wheel units consist of the following elements: axles (tandem), running wheels, and brakes of running wheels.

The axles are made of square bars with pivots at their ends, the latter of which are used to fix wheel hubs with cone bearings. These are single wheels equipped with drum brakes the jaws of which are controlled by mechanical cam expanders.

The trailer axles are suspended on semi-elliptical steel leaf springs connected to the lower frame, by means of pins and spring bearing plates. The wheel sets are fixed to the springs with screws.

3.3.2 Cargo space

The cargo space of the trailer consists of:

- The upper frame (the body frame) is mounted on the lower frame (the chassis frame), in articulated sockets secured with pins, which become pivot points when tilting the upper frame (the load-carrying body);
- The sideboards and side top extensions constitute single 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; such a design increases the functionality of the trailer and facilitates its operation;
- The locks on both the boards and the top extensions are protected against unintentional automatic opening.

3.3.3 Hydraulic tilting mechanism of the load-carrying platform

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:

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

See Fig. 10 for a diagram of the hydraulic system installed in the tilting mechanism of the trailer body. The raising and lowering of the trailer body is controlled by a distributor installed in the tractor's hydraulic system.

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.

CAUTION

CAUTION!

The shut-off valve limits the tilting angle of the load-carrying body when tilting it sideways. This valve is factory-adjusted by the trailer manufacturer and the user must not change the settings.

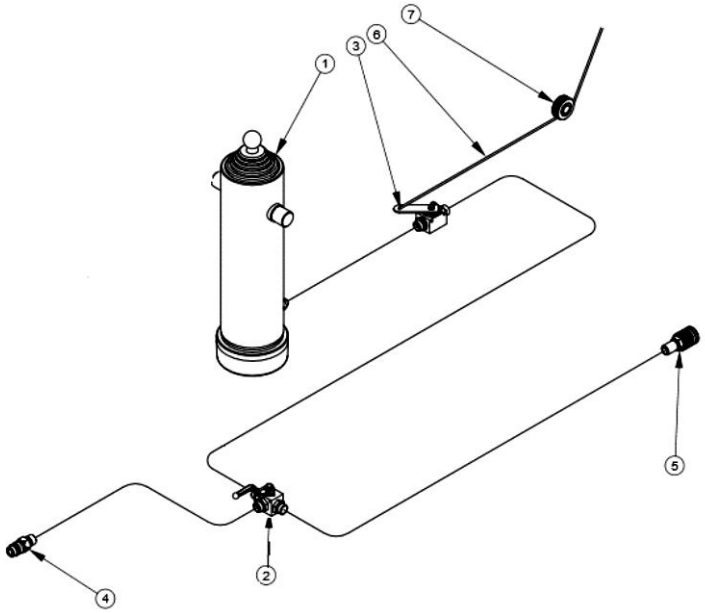


Figure 11. A diagram of the hydraulic system in the tilting mechanism of the load-carrying body:
1 - actuator, 2 - switching valve, 3 - shut-off valve, 4 - plug of the connecting valve,
5 - seat of the connecting valve, 6 - control cord for the shut-off valve, 7 - cord reel

CAUTION

CAUTION!

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

CAUTION

CAUTION!

Exercise particular caution when entering the load-carrying body. Use the ladder or the platform located on the front board of the trailer to climb on top. It is forbidden to climb on top of the trailer using other components not intended for this purpose.

3.3.4 Electrical system (signalling and warning)

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

A diagram of the electrical system and arrangement of the trailer lights is shown in Figure 12.

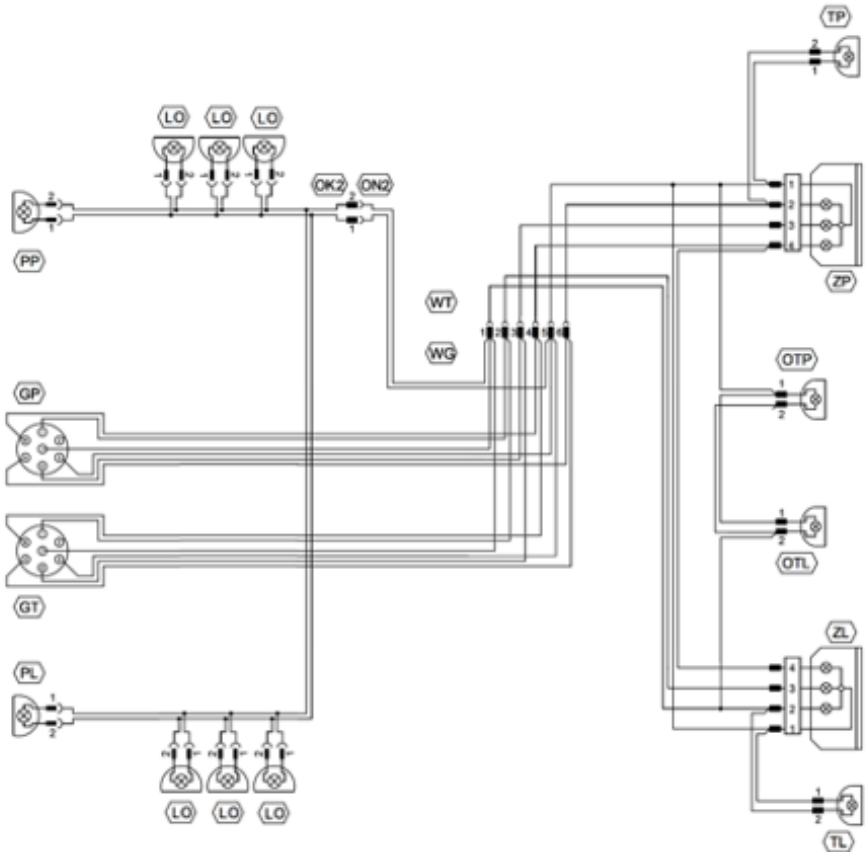


Figure 12. Lighting system diagram

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

3.3.5 Braking system

The T755A trailer is equipped with the following brake systems:

- service brake - pneumatically controlled, double-line (optionally single-line), operated from the driver's seat by pressing the tractor's brake pedal, or hydraulically controlled;
- parking brake - mechanically controlled via a crank mechanism and a screw transmission located on the left side of the trailer, by acting on the wheels of the rear multiple axle, or pneumatically controlled with spring actuators.

The design of the service brake ensures the automatic braking of the trailer running wheels in the event of the unforeseen disconnection of the trailer's and tractor's pneumatic system.

See the drawings on the following pages of this manual for diagrams of the braking system.

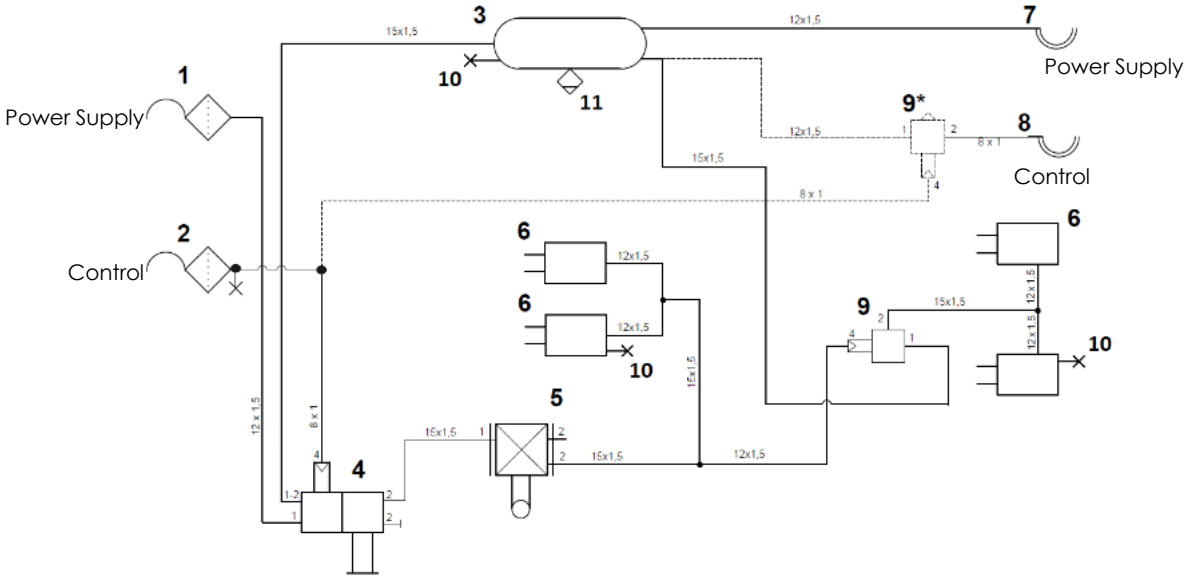


Figure 13. A diagram of a double-line pneumatic braking system - automatic control (ALB):
1 - hose connection with a filter, power supply; 2 - hose connection with a filter, control; 3 - air tank; 4 - braking valve with a release; 5 - automatic braking force regulator; 6 - diaphragm braking actuator; 7 - rear hose connection with a valve, power supply; 8 - rear hose connection with a valve, control; 9 - relay valve; 9* - optional relay valve; 10 - control valve; 11 - steam trap

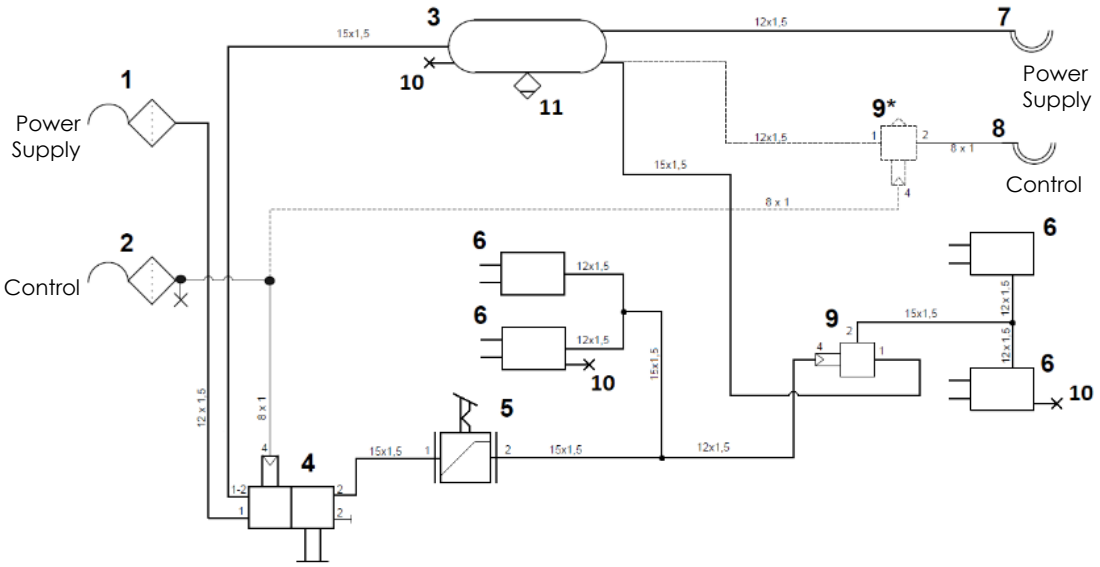


Figure 14. A diagram of a double-line pneumatic braking system - manual control:
1 - hose connection with a filter, power supply; 2 - hose connection with a filter, control;
3 - air tank; 4 - braking valve with a release; 5 - manual braking force regulator; 6 - diaphragm braking actuator; 7 - rear hose connection with a valve, power supply;
8 – rear hose connection with a valve, control; 9 – relay valve;
9* - optional relay valve; 10 - control valve; 11 - steam trap

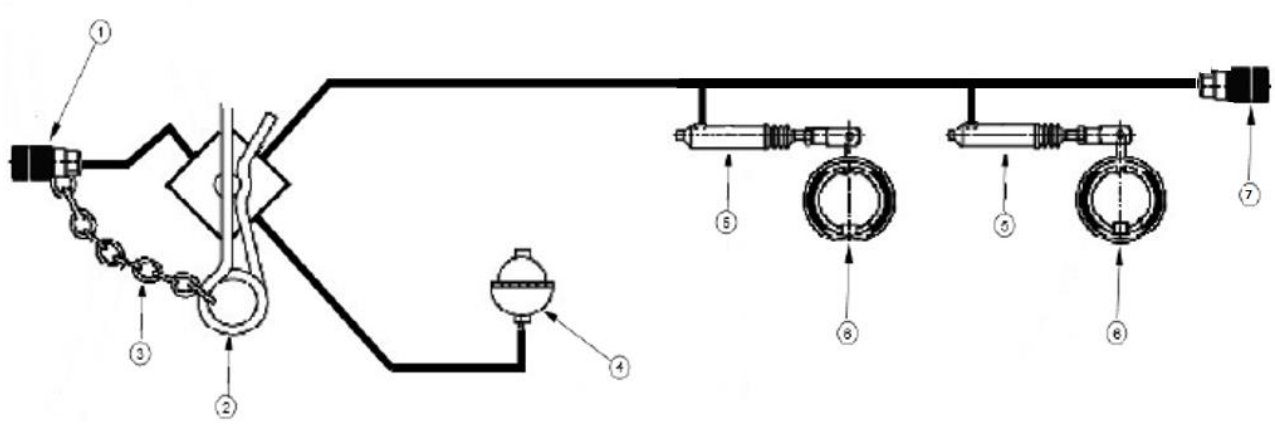


Figure 15. A diagram of a hydraulic braking system:
1 – brake connector, 2 – safety valve, 3 – chain of the safety valve;
4 – hydraulic accumulator; 5 – hydraulic braking actuator; 6 – brake drum,
7 - rear brake connector

3.4 Pneumatic and hydraulic systems

The pneumatic system is under high pressure. When connecting pneumatic lines to the tractor's pneumatic system, make sure that the valves on the side of the tractor and the trailer are not pressurised. Check the pneumatic connection on a regular basis, and replace damaged components and ageing parts. Check the tightness of the hoses. Air leakage is not permitted. The replacement of lines must comply with the manufacturer's technical requirements. Replace flexible lines every five years, unless damage is found earlier.

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

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

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

4. Information on use

4.1 Use with a tractor

4.1.1 Coupling the trailer with the tractor

The T755A trailer can only be used with fully operational tractors with a minimum power of 108 kW, equipped with two external hydraulic sockets and a hitch (the upper transport hitch). 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 hitch, make sure that the coupling operation has been completed and that both machines are coupled safely.

CAUTION

CAUTION!

Exercise particular attention, when coupling the trailer. It is not allowed for any person to be present between the trailer and the tractor, during the coupling process.

To connect the tractor with the T755A farming truck trailer, proceed as follows:

- Set the drawbar eye of the trailer at the height of the tractor's hitch;
- Couple the drawbar eye with the tractor’s hitch;
- Secure the hitch pin against falling out;
- Switch off the tractor's engine;
- Engage the tractor’s parking brake;
- Connect the pneumatic, hydraulic, and electric systems to the corresponding system sockets in the tractor.

CAUTION

CAUTION!

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

4.1.2 Uncoupling the trailer from the tractor

To uncouple the trailer from the tractor, perform the following steps:

- Stop the tractor and the trailer at the location where the trailer is to be uncoupled, and engage the tractor's parking brake;
- Engage the parking brake of the trailer;
- If the trailer is standing on uneven or sloping ground, use wheel chocks to additionally secure it against rolling away;
- disconnect the electrical, hydraulic and pneumatic lines from the tractor;
- Unlock and remove the pin of the hitch to uncouple the drawbar from the hitch; then, drive the tractor away and insert the pin into the hitch.

CAUTION

CAUTION!

Do not uncouple the trailer from the tractor:

- if the load-carrying body is raised;
- if the trailer is not secured against rolling away;
- if the trailer is loaded.

4.2 First use of the trailer

CAUTION

CAUTION!

Use only a fully operational tractor (with its transport hitch, and pneumatic, hydraulic, signalling and warning systems fully operational).

Before starting the trailer for the first time:

1. Learn the names and locations of all individual units/components of the trailer.
2. Check tyre pressure on the trailer.
3. Connect the trailer to the tractor (see section 4.1.1).
4. Check the operation and air-tightness of the pneumatic, hydraulic, and electrical systems of both the trailer and the tractor.
5. Check all the devices, their connection 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 the trailer body

The trailer body can only be loaded when the trailer is coupled to a tractor, positioned on horizontal ground, with its drawbar in the straight-ahead position.

Preferably use mechanical loading devices like cranes, loaders, conveyors, etc. for loading.

Before loading the trailer, make sure that the locks on all boards and top extensions are locked.

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

For the transporting of bulk materials, use top extensions on the boards of the trailer body. When transporting materials protruding beyond the trailer's contour, mark the protruding load in compliance with the traffic regulations.

CAUTION

CAUTION!

It is forbidden to exceed the permissible load capacity of the trailer and the permissible axle loads, as it is hazardous to traffic safety and can damage 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.

Table 3. Approximate weights of selected materials

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

4.4 Unloading the trailer body

The load-carrying body may be unloaded manually, mechanically or by means of a hydraulic tilting mechanism.

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

- Align the tractor with the longitudinal axis of the trailer;
- engage the parking brake of the tractor;
- remove the pin connecting the load-carrying body to the chassis frame (Figure 16):
  a) when unloading to the rear – the pins (Fig. 16) must remain in the rear sockets of the body;
  b) when unloading to the left side – the pins must remain in the left sockets;

c) when unloading to the right side – the pins must remain in the right sockets;

- make sure that the pins at the rear of the trailer, or on the unloading side of the trailer, are installed correctly;
- open the locks on the board of the trailer body at the side intended for unloading;
- tilt the load-carrying body using the cylinder of the hydraulic system;
- after the load has slid off, lower the body and close the sideboard(s) using locks.

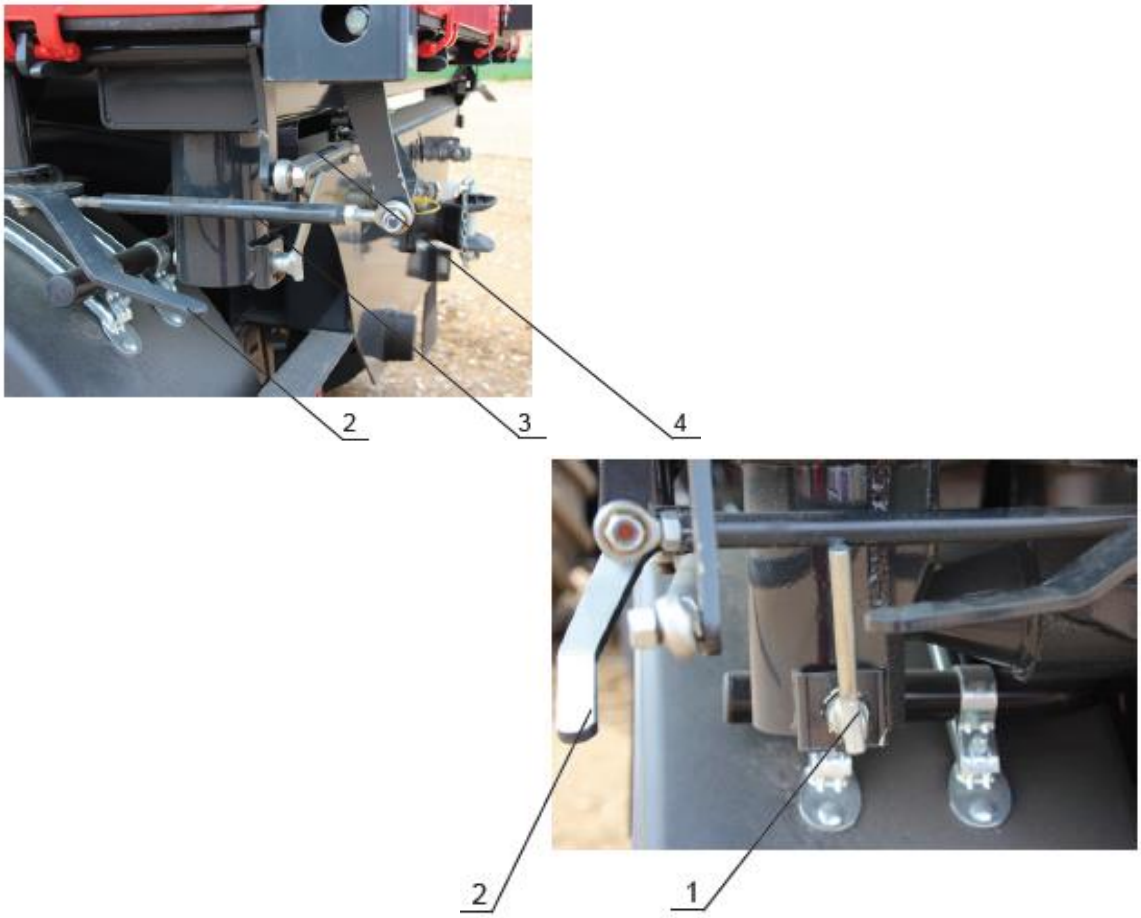


Figure 16. The locks on the boards of the load-carrying body:
1 - dump pin, 2 - central lever of the lower locks,
3 - side tension member of the locks, 4 - rear tension member of the locks.

Opening the upper lock on any board of the load-carrying body requires moving the handle upwards and simultaneous pressing 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;
- lock the board(s) and prevent it/them from opening automatically.

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).
- It is forbidden to unload the trailer to the front.
- No one may be in the vicinity of the tilting load-carrying body or within the range of the load slipping down.
- Do not uncouple the tractor from the trailer if the load carrying-body is raised.
- Before starting to unload the trailer by tilting the load-carrying body, it is essential to check that the pins on the correct side of the trailer body have been removed. Failure to remove the pins may damage the trailer.
- It is forbidden to transport people on the trailer.
- When tilting the load-carrying body make sure it is stable.

4.5 Driving on public roads

Before starting to drive, check the correct functioning of the lighting and make sure it has all the necessary signs.

Adhere to traffic regulations when driving on public roads.

1. Exceeding the permissible load capacity of the trailer may cause damage to the trailer and pose danger to road safety.
2. Do not exceed the permissible speed of 40 km/h.
3. The trailer is suitable for working on a surface with an inclination that does not exceed 10°.
4. When driving on public roads, the trailer must be equipped with a reflective warning triangle, and a plate indicating slow-moving vehicles must be installed in the bracket located on the rear board of the trailer (the plate is an accessory of the tractor).
5. It is forbidden to leave the loaded trailer on a slope or unsecured against unintentional movement. The protection consists of engaging the parking brake, placing wheel chocks and fastening the transported load with transport belts.
6. Transport speed max. 40 km/h.

CAUTION

CAUTION!

Observe the applicable road traffic regulations. The drum shoes adapt to the brake drums during the first hours of operation. The total braking effect is achieved after the elements reach the friction phase.

4.6 Hydraulic system

4.6.1 Using the hydraulic system tilting 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 consists of a plug for the coupling valve, hydraulic hoses, a single-acting hydraulic cylinder, and a shut-off valve, as well as fastening and fixing components. The raising and lowering of the trailer body is controlled by a distributor installed in the tractor's hydraulic system.

CAUTION

CAUTION!

Observe that the oil in the hydraulic system of the trailer and oil of the tractor's external hydraulic system are of the same type and grade. The use of different oil grades is not permitted.

CAUTION

CAUTION!

Hydraulic oil can heat up to high temperatures during operation.

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

The condition of the hydraulic system should be monitored on an ongoing basis while the trailer is in use. Observe the required cleanliness of the connecting fittings when connecting the hydraulic systems of the trailer and tractor.

CAUTION

CAUTION!

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

Replace hydraulic hoses every 5 years, even if undamaged.

4.6.2 Adjusting the hydraulic mechanism tilting the load-carrying body

The hydraulic system is equipped with a safety cord (load-carrying body tilt angle limiter) and an oil shut-off valve to the hydraulic cylinder when tilting the load-carrying body. For safety reasons, it is forbidden for unauthorized persons to make adjustments or to remove the limiters.

The purpose of the shut-off valve is to cut off the oil supply to the cylinder before reaching the maximum (permissible) tilt angle of the load-carrying body. Changing the length of the cord connecting the frame of the body with the shut-off valve or its breakage may result in damage and cause the trailer to overturn.

CAUTION

CAUTION!

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

It is forbidden for unauthorized persons to adjust the shut-off valve.

4.7 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 weight of a towed trailer depends on the version of a trailer, and it must not exceed the weight of the first trailer;
- Before coupling the additional trailer, make sure that both trailers are fully operational;
- It is not allowed for any people 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 in the Instruction Manual.

5. Elements requiring on-going adjustments

For proper operation, the T755A trailer requires the following adjustments:

- adjustment of wheel bearing play;
- tyre maintenance;
- maintenance of the hydraulic system;
- adjustment of brake system components.

5.1 Wheels – bearing play adjustment

In the case of a newly purchased trailer, check play on the wheel bearings, first after driving approx. 100 km, and then in the course of operation, after driving 1,500-2,000 km – if necessary, adjust the play.

Procedure:

- Couple the trailer with the tractor and engage the parking brake of the tractor;
- Lift one side of the trailer, so that its wheel does not touch the ground, and secure it against dropping;
- If the wheel shows excessive play, remove the hub cap and the securing pin, to prevent the castellated nut from unintentional unscrewing;
- while turning the wheel, simultaneously tighten the castellated nut, until the wheel has stopped completely;
- Loosen the nut by 1/6÷1/3 of a turn, until the nearest pin groove overlaps with the hole on the hub spigot;
- secure the nut with a new pin, replace and fasten the hub cover.

If the bearing play is adjusted correctly, the wheel should rotate freely, without stoppage or evident resistance (other than friction of the brake shoes against the drum). It is normal to experience slight friction of the shoes against the drum, particularly in a new trailer, or after their replacement. The correct adjustment of the bearing play must ultimately be verified after a few kilometres by hand to check the degree of heating of the hubs. Significant resistance during wheel rotation and excessive heating of the hubs may result from incorrect adjustment of the bearing play, contaminated grease or bearing damage. The above symptoms require the disassembly of the wheel hub and removal of the malfunction.

CAUTION

CAUTION!

Observe the following when lifting the wheel of the trailer:

- couple the trailer to the tractor, position them on a flat surface, and engage the parking brake in the tractor;
- place safety chocks under the wheel that is not lifted;
- place a jack under the axle close to the raised wheel and lift the wheel so that it does not touch the ground;
- secure the wheel against lowering by placing a stand of appropriate height under the axle.

5.2 Wheels – tyres

Servicing the tyres consists of checking the condition by visual inspection and checking the internal pressure. It is also important that the tyres do not have visible cracks that expose or damage their carcass and that the hubs, wheel discs and their attachment are in a good condition.

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 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 disassemble the wheels. The tyre valves must be secured with suitable caps, to prevent dirt penetration.

When the trailer is parked for a long period of time, it is necessary to protect the tyres against sunlight. When cornering, avoid damaged road surfaces, sudden and alternating manoeuvres, and high speed.

Regularly check the tyre pressures. Tyre pressures can change during a day's operation. Adjust your speed and load capacity to suit your tyre pressures.

CAUTION

CAUTION!

Check the wheel nuts on a regular basis for their condition and tightness, before each use of the trailer. Tighten them, if necessary.

Tightening torque of threaded nuts:

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

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

Check tyre pressures. The tyre pressure specified in the pictogram located near the wheels of the trailer corresponds to the maximum load-bearing capacity, when driving at the maximum permissible speed.

CAUTION

CAUTION!

Regularly check pressure in the tyres.

Tyre over-inflation can cause a blow-out.

CAUTION

CAUTION!

When working on 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 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.

5.3 Brakes

5.3.1 Maintaining the pneumatic system of the brakes

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

Check the air-tightness of the system for the rated air pressure of 800 kPa, if using a double-line system. Leakage is identified by the characteristic hissing or appearance of air bubbles (when using water and soap to detect leaks), in places, where compressed air penetrates the outside. If leaks are caused by damaged seals, lines or other components (e.g. valves, actuators, etc.), replace them with new ones.

The removal of water from the tank consists of tilting the stem of the drainage valve sideways with pressure in the tank. In addition, once a year before winter, the drainage valve should be unscrewed and cleaned of any dirt that has accumulated on it.

5.3.2 Adjustment of the braking system components

When maintaining the trailer, check the condition of the components and connections in the braking system and periodically lubricate the controls.

Adjust the brakes, when:

- there is excessive play between the brake lining and the drum, and the braking efficiency is reduced, resulting from wearing of the brake shoes;
- The wheel brakes action is not simultaneous and not equal.

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

The play is adjusted automatically or by means of the adjustment screw 5 (Fig. 17).

For manual adjustment of the brakes, position the trailer in such a way that the play is adjusted only by turning the screw 5 (Fig. 17). Repeat for the second wheel.

If the adjustment of friction components is carried out correctly, the wheel should rotate freely, without stoppage or evident resistance resulting from friction of the brake shoes against the drum. Slight friction of the shoes against the drum, particularly in a new trailer or after brake replacement, is a typical occurrence.

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

CAUTION

CAUTION!

Check the braking system on a regular basis, and before starting to drive, in terms of:

- its operation,
- air-tightness,
- play – adjust or repair, if necessary.

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

If friction elements have been replaced, they need to be run in (by driving with frequent braking) and adjusted, in order to achieve the required efficiency of their operation.

CAUTION

CAUTION!

Observe the following when lifting the wheel of the trailer:

- couple the trailer to the tractor, position them on a flat surface, and engage the parking brake in the tractor;
- place safety chocks under the wheel that is not lifted;
- place a jack under the axle close to the raised wheel and lift the wheel so that it does not touch the ground;
- secure the wheel against lowering by placing a stand of appropriate height under the axle.

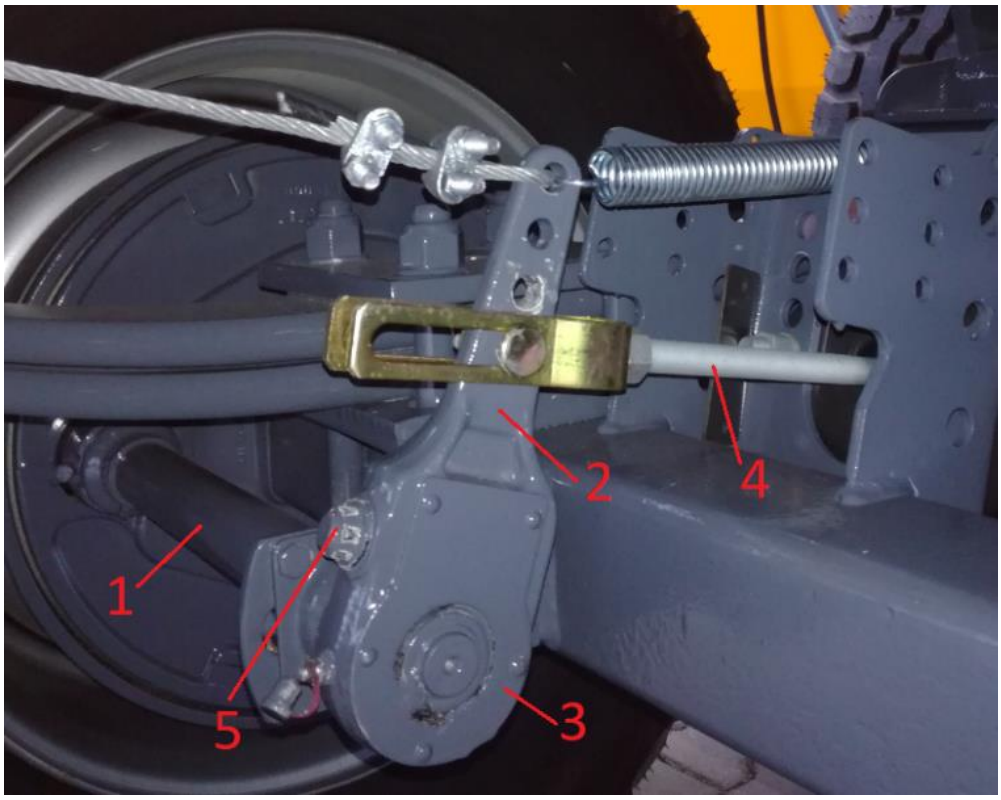


Figure 17. The components of the braking system:
1- expander roller of the jaws, 2 - lever (arm) of the expander roller,
3 - gear on the expander roller, 4 - tension member (push rod) connecting the piston rod of the pneumatic actuator with the arm of the expander roller, 5 - adjustment screw

6. Scheduled inspections

6.1 Technical maintenance

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

Minor negligence in the operation of the trailer may have serious consequences. A fault found in time can be removed easily with minimal cost and effort, and with maximum results. Faults of the trailer can be detected quickly only if there is continuous periodic cleaning and careful observation. It is therefore necessary to frequently wash the trailer, to notice possible damage and faults.

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

It is advisable to store the trailer in a roofed place, in order to protect it against changing weather conditions and their destructive effects.

In order for the trailer to operate correctly, it must be maintained and repaired on an ongoing basis, as well as carefully monitored during operation.

The daily maintenance (before starting work) of the trailer requires a minimum of work to be done, i.e:

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

CAUTION

CAUTION!

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

6.2 Periodic maintenance

1. Carry out any repair, maintenance, and cleaning work, as well as eliminate any functional faults with both 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 operating underneath a raised and tilted, but unloaded load-carrying body, always secure the body against dropping with the support provided with the trailer.
4. When replacing parts, use suitable tools and protective gloves.
5. When the work is complete, the trailer must be thoroughly cleaned without leaving any residue on the trailer body.
6. Disconnect the continuous power supply before welding and working on the electrical system.
7. Protective equipment is subject to wear and tear. Therefore, it should be adjusted, inspected and replaced in good time, on a regular basis.
8. The spray-suppression skirts must be cleaned on a regular basis.
9. Use only the spare parts recommended by “METAL-FACH” Sp. z o.o. in Sokółka
10. The trailer must be stored in roofed areas (preferably on a level and hard surface) and in such a way as to prevent any injury to people and animals.
11. Used parts must be handed over to relevant recycling points while respecting environmental requirements.

6.3 Repair instructions

When carrying out minor repairs resulting from accidental faults, pay attention to cleanliness, correct installation of all parts, and making the necessary adjustments required for the proper operation of the trailer.

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

Parts dismantled during repair shall be stored and protected against dust or other contamination. Special attention must be paid to the protection and cleanliness of the bearings.

During repair in field conditions, cleanliness should be maintained when assembling parts (in particular, parts that have fallen to the ground should be washed or at least cleaned of impurities to an extent that allows proper operation).

There is a number of technical principles for the disassembly and assembly of parts and components that must be observed during ongoing repairs and overhauls, in order to ensure the quality and efficiency of the work.

After each repair of the trailer mechanisms, the operation should be checked.

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 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 CO_2 or foam extinguisher ready at hand.

6.4 Lubrication

Proper lubrication is one of the most-important factors that determines the efficient operation of all individual components and mechanisms of the trailer.

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

Carry out lubrication according to the following rules:

- the grease must be cleaned before being pumped into the grease nipple;
- the grease should be pumped until fresh grease appears in the slots (through which the used grease is squeezed out during pumping);
- after lubrication, leave some grease on the grease nipple head;
- threaded connections, lever connections and similar trailer elements should be lubricated with oil;
- annually check the lubrication of the bearings in wheel hubs – refill or change the bearing grease;
- when replacing the grease, remove the hub, remove the worn grease, evaluate the condition of the bearings (replace, if necessary), and finally adjust the bearing play after applying new grease and installing the hub.

Use only high quality bearing grease.

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

Table 4. Location, frequency of lubrication, and grease grade.

Lubrication point	**Lubricant grade**	**Lubrication interval**
Wheel hub bearings	LT 43	Every 6 months
Head sockets of the hydraulic cylinder	Graphite grease	Once per year
Components of the tilting mechanism of the trailer body	LT 43	Every 6 months
Ring hitch	LT 43	Every 6 months

Other lubrication points:

- The mobile parts of locks, hinges, and articulated joints (regularly);
- Use a lubricator to press the grease into the cleaned grease nipples;
- The mobile components of brakes: levers and pins (regularly);
- The 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 tightening torque values for bolts or screws and nuts [Nm] are shown in Table 5.

Table 5. Tightening torque values for bolts

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

7. Defects and troubleshooting

Table 6. Defects and troubleshooting

No.	Type of defect	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, change the worn or damaged seal, and install the new one correctly. Remove the grease from the shoes and the drum, wash the friction elements using extraction naphtha, re-install the hub, and adjust the bearings as above.
4.	The wheels brake unevenly.	Dirty, worn-out shoe linings, or incorrectly adjusted brake shoes.	Check the condition of the brake shoes, remove any dirt, replace and adjust the worn brake shoes, according to section 5.3.2.
5.	Insufficient braking performance of the wheels.	Incorrect adjustment of brake shoes and brake controls.	Adjust brake shoes and controls according to section 5.3.2.
6.	Leakage of oil on 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.	Leakage of oil 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 box does not enter the socket.	A bent pin or dirt between the pin and the housing.	Replace or clean the pin and the housing, apply a thin layer of solid grease to the pin, insert it 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 damaged components.

8. Authorised service

8.1 Guarantee service

The manufacturer provides a guarantee for the machine on the terms and conditions stipulated in the Guarantee Certificate.

All repairs must be carried out by the authorised service points of the dealers, or the technical service point of the manufacturer, during the warranty period.

8.2 Routine service

After the warranty period, periodic inspections, adjustments and repairs of the machine will be carried out by the authorised service points of the dealers.

8.3 Ordering spare parts

Spare parts must be purchased from the authorised dealers or ordered from the manufacturer. When ordering, provide your name and surname, or the company name, and address of the ordering party. When ordering, please state the name, symbol, serial number, year of manufacture, part name, part number, drawing or standard number, and the number of ordered items. Then, specify payment terms.

9. Disassembly, utilisation, and environment protection

If the product is going to be repaired, deliver the worn parts to a scrap yard. All the activities related to the repairing and changing of worn-out components must be performed in compliance with the principles of OHP. If the entire product is to be disposed of, deliver it to a buy-back recycle centre.

Immediately remove any detected malfunction of the hydraulic system, i.e. oil leakage, preventing any contamination of the environment. When changing oil, make sure it does not spill on the ground. Used oil must be stored in sealed containers (e.g. kept after fresh oil) and periodically delivered to a petrol station or a waste processing facility.

CAUTION

CAUTION!

The disassembly of the machine must be carried out by persons familiar with its design and operation. When disassembling (repairing), the general safety precautions for workshop work on agricultural equipment must be observed. During disassembly, use lifting equipment, because of the weight of the components (over 20 kg).

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 deals in the disassembly 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 risk

10.1 Residual-risk description

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

The residual risk is due to the incorrect behaviour of the trailer operator, e.g. due to 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 persons who are sick, under the influence of alcohol or other intoxicating substances.
3. Using the trailer for purposes other than those described in the Instruction 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. Tampering with the tractor’s power unit and the mobile parts of the trailer, during operation.
8. Checking the technical condition of the trailer during operation.

When specifying the residual risks, the trailer is interpreted as a machine that was designed and made in accordance with the state of art in the year of its manufacture.

10.2 Assessing residual risk

By observing the following recommendations:

- Adhering to the safety rules described in the Instruction Manual;
- Reading the operation manual carefully;
- Not reaching into dangerous and/or restricted places with your hands;
- It is forbidden to operate the unit in the presence of bystanders, children in particular;.
- The trailer can only be maintained and repaired by properly trained personnel;
- The trailer can only be operated by persons who underwent training and know the Instruction Manual;
- Protect the trailer against the access of children;

it is possible to eliminate the residual risk associated with trailer operation, without any hazard to people and the environment.

CAUTION

CAUTION!

Failure to comply with the instructions and guidance above can result in the occurrence of residual risks.

INDEX OF NAMES AND ABBREVIATIONS

bar – a unit of pressure;

kg – kilogram, a unit of weight;

km/h – kilometre per hour, a unit of linear velocity;

kPa – kilo-Pascal, a unit of pressure;

kW - kilowatt, a unit of power;

m- metre, a unit of length;

min - minute, an auxiliary unit of time equal to 60 seconds;

Mm - millimetre, an auxiliary length unit corresponding to a length of 0.001 m;

Nm - newton-metre – a unit for the moment of force in the SI system;

Pictogram - an information plaque;

T – tonne, a unit of weight;

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

UV – ultraviolet radiation; invisible electromagnetic radiation with negative effects on human health; the UV radiation has a negative effect on the rubber parts;

V - Volt, a unit of voltage;

VIN (Vehicle Identification Number) – a vehicle identification number assigned and placed by the manufacturer;

Hitch, the lower transport hitch – hitch components of a farm tractor (see the Instructions Manual of a tractor).

ALPHABETICAL INDEX

NOTES

Since Metal-Fach Sp. z o.o. is continuously improving its products, and adapting its product range to fit the customers' needs, we reserve the right to modify our products without prior notice. Therefore, we advise contacting an authorised dealer or sales representative of Metal-Fach Sp. z o.o., prior to making your decision about a purchase. Metal-Fach Sp. z o.o. will not accept any complaints regarding the data and pictures contained in the catalogue, as the presented range of products does not constitute an offer within the meaning of the provisions of the Civil Code.

The pictures do not necessarily show standard accessories.

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

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