METAL-FACH

FARMING TRUCK TRAILER
T739A & T958 UE

INSTRUCTIONS MANUAL

TRANSLATION OF THE ORIGINAL INSTRUCTIONS MANUAL

REV. II

JUNE 2022

UE

Instructions Manual No. T739A_T958-02-167/2013

EC DECLARATION OF CONFORMITY

The undersigned,	Jacek Kucharewicz, President of the Board,	
hereby declares, with full responsibility, that the complete machine:		
Farming trailer		
1.1.	Brand (the trading name of the manufacturer)	Metal-Fach
1.2.	Type:	T217
1.2.1.	Variant:	
1.2.2.	Version:	
1.2.3.	Trade name(s) (if any):	T739A
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 manufacturer's authorised representative (if applicable)	N/A
1.5.1.	The location of the manufacturer's rating plate	
1.5.2.	The method used to fix the rating plate of the manufacturer:	Glued, riveted
1.6.1.	The location of the vehicle-identification number on the chassis	
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 4254-1 :2016-02, PN-EN 1853+AC:2019-07, PN-EN ISO 12100:2012, PN-EN ISO 13857:2020-03

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)

Safety Testing Report No.: LBC/30/21

Sokółka
(Place)

12/05/2022
(date)

Jacek Kucharewicz
(Signature)

President of the Board
(position)

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	T217
1.2.1.	Variant	
1.2.2.	Version	
1.2.3.	Trade name(s) (if any)	T958
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	
1.5.2.	The method used to fix the rating plate of the manufacturer	Bonded, riveted
1.6.1.	The location of the vehicle-identification number on the chassis	
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 4254-1: 2016-02, PN-EN ISO 13857: 2010, PN-EN ISO 12100: 2012

and the following standards: PN-ISO 3600:1998, PN-ISO 11684:1998, and Regulation of the Minister of Infrastructure dated 31 December 2002 on technical conditions of vehicles and the range of their necessary equipment (Journal of Laws of 2003, No. 32, item 262, as amended).

Safety Testing Report No. XXX/ XX /XX

This EC declaration of conformity shall cease to be valid if the machinery is altered or rebuilt without the manufacturer's approval.

Sokółka
(Place)

xx.xx.xxxx
(Date)

Jacek Kucharewicz
(Signature)

President of the Board
(Position)

Machine data

Type of machine		_____
Type designation		_____
Serial Number[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 the right to introduce design changes to the machines, in connection with which some values or illustrations may not correspond to the actual state of the machine supplied to the user. The manufacturer reserves the right to introduce design changes without making any changes to this manual. 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 Instructions Manual defines the basic safety and operation principles regarding the agricultural Trailer manufactured by Metal-Fach.

The manufacturer's relevant obligations are set out in the warranty certificate which contains complete and binding regulations of warranty services.

If the information included in the Instructions Manual prove to be incomprehensible, you should address the distributor office, where 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 during the machine purchase, and is also available on the Manufacturer's website: www.metalfach.com.pl.

The Guarantee Certificate, together with the warranty terms, is attached to this Instructions Manual as a separate document.

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. Indicates a potentially hazardous situation, which, if not avoided, may lead to death or disability. 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 a potentially hazardous situation, which, if not avoided, may lead to death or disability. 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 which should be performed periodically.

1. General description

1.1 Introduction

THE INSTRUCTIONS MANUAL IS PROVIDED WITH THE BASIC EQUIPMENT OF THE TRAILER

To operate the Trailer in a safe manner, read and adhere to all the instructions set out in this Instructions Manual. Observance of the instructions in the Instructions Manual guarantees safe operation for the User, and also extends the service life of the machine.

1.2 Machine identification

The identification of the Trailer can be found on a plate on the front cross member, on the right-hand side of the Trailer. The serial number of the Trailer is stamped on the rating plate and underneath the rating plate on the machine frame.

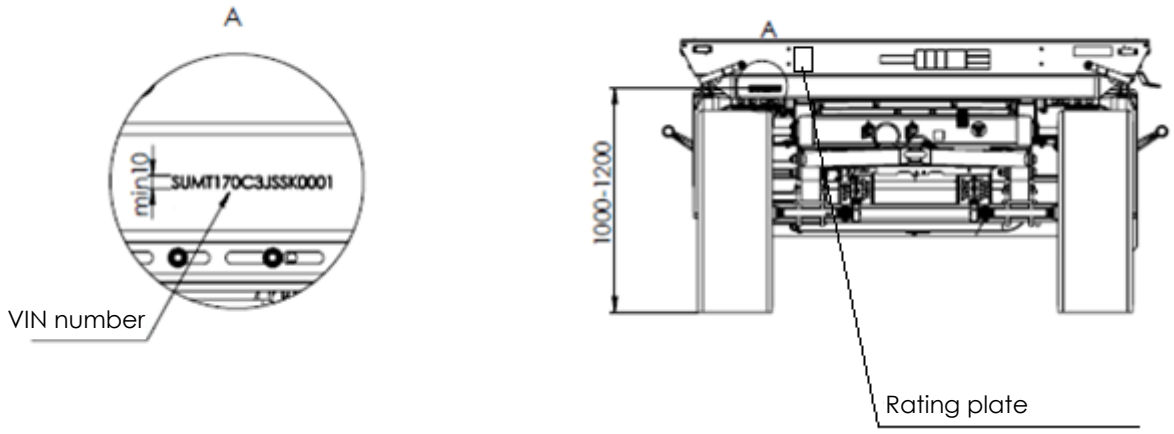


Fig. 1 Location of the rating plates and the VIN number on the machine

CAUTION

Entering public roads and operating the Trailer without a rating plate or with an illegible rating plate is prohibited.

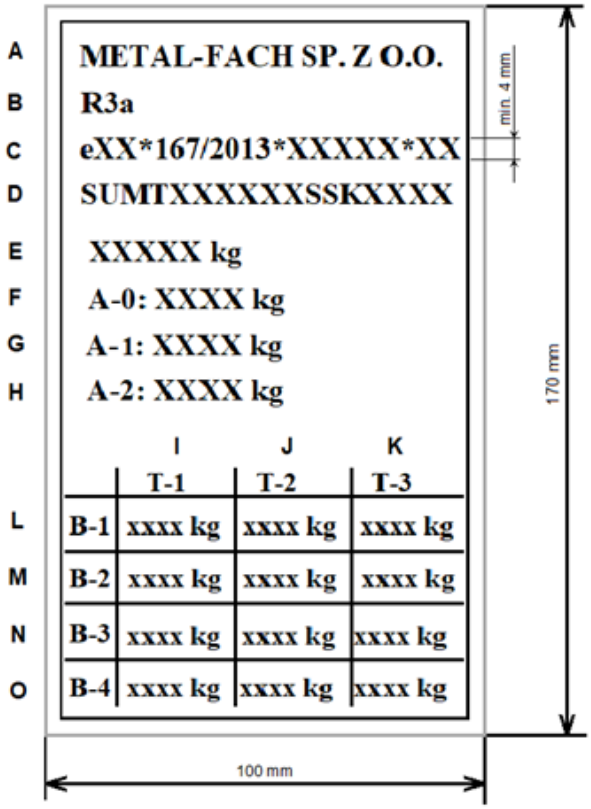


Fig. 2 EU-approved trailer rating plate

Key to the fields on the rating plate

A – Manufacturer's name

B – Category, Subcategory and Vehicle Speed Indicator

C – EU Type Approval Number

D – VIN

E – Permissible total design weight of the vehicle

F – Vertical load at coupling point

G – Permissible design weight per axle

H – Permissible design weight per axle

I – Permissible towable design weight with drawbar

J – Permissible towable design weight with rigid drawbar

K – Permissible towable design weight with central axle

L – Permissible towable design weight without brake

M – Permissible towable design weight with overrun braking

N – Permissible towable design weight with overrun braking

O – Permissible towable design weight with overrun braking

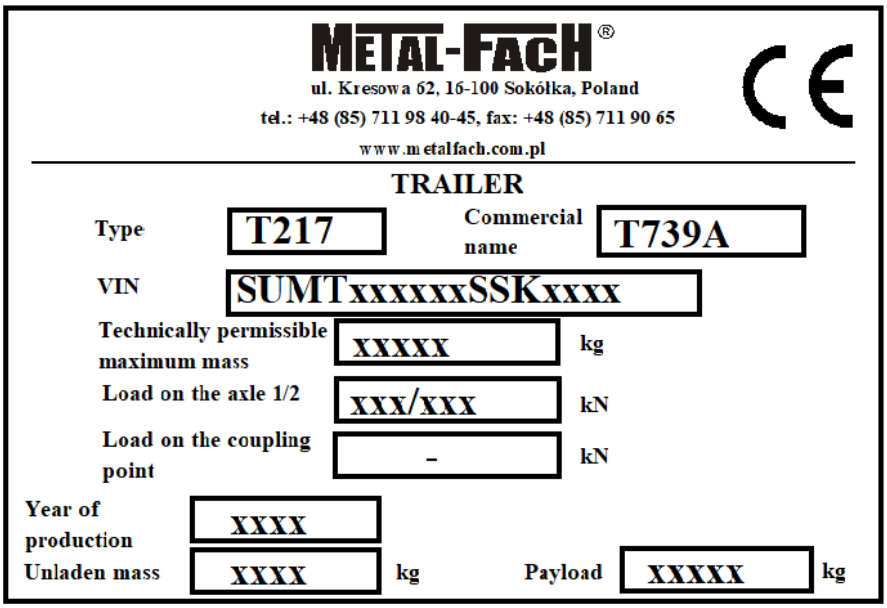


Fig. 3 The rating plate of the trailer in accordance with CE marking

Properly marked T739A and T958 trailers should have two rating plates affixed (see Fig. 2 and Fig. 3).

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 record of the Instructions Manual receipt confirmation by the purchaser, submitted with the machine to the new user.

Please read the Instructions Manual carefully.

Ensure the VIN matches the number entered in the GUARANTEE CERTIFICATE, sale documents, and INSTRUCTIONS MANUAL, before you purchase the Trailer.

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!

The use of the Trailer by persons who have not read this Instructions Manual is forbidden.

1.3 Intended Use 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.

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, both signal and warning and brake system sockets, and a transport hitch.

The Trailers must not be used for the transportation of fuel, gas cylinders or similar loads because of the obligation to comply with the additional technical conditions for the carriage of dangerous goods.

The Trailer must not be used for the transportation of fuel, gas cylinders or other toxic material which may cause environmental contamination or other hazardous substances. The manufacturer is not responsible for the resulting damage – this risk is borne by the owner.

The Trailer may only be used by persons who have read the Instructions Manual, trained in the scope of the hazards it can create and capable of providing pre-medical assistance to victims of accidents.

Observe all relevant accident prevention regulations as well as other applicable safety, occupational medicine and road safety regulations.

DANGER

DANGER!

The Trailer must not be used contrary to its intended purpose, in particular to carry

- People and animals
- Unsecured toxic materials, when there is a possibility of causing environmental pollution
- Machinery and equipment, in which the location of their centre of gravity can have an adverse effect on the stability of the Trailer
- Loads which cause non-uniform loading of and overloading of the axles
- 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.

- Instructions Manual
- Warranty Certificate with warranty terms and conditions
- A bracket for fixing a slow-vehicle marking plate
- Two-line pneumatic brakes with adjustable braking force
- Parking brake
- Lighting system
- Sprung suspension on parabolic springs

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 must be protected from direct sun, rain etc., parked on a solid ground on its ground wheels, secured with chocks under the wheel axles (reduce tyre pressure and cover the tyres if there is a likelihood of exposure to sunlight).

If the Trailer is exposed to weather conditions, check if no rainfall is accumulated in the Trailer body on a regular basis. Make sure the paint coating is intact. The damaged areas should be cleaned, degreased and then covered with paint, maintaining a uniform colour and even thickness of the protective coating.

Long-term storage is permitted only in enclosed areas.

1.5.2 Sale

The buyer shall collect the Trailer at the manufacturer or from the point of sale, or agrees on the terms of delivery with the manufacturer.

The Trailer is sold as fully assembled, ready for operation, with the basic equipment as specified in Section 1.4 of this Instruction 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 basic components
- The data stamped on the rating plate and on the frame correspond to the data in the Warranty Certificate
- The warranty is completed correctly according to the identification data on the rating plate and identification data stamped on the frame

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 on a low-loading platform, couple it to the tractor's hitch and connect the brake and electric system lines. Use unfolded ramps to drive the Trailer on to the low-loading platform. Once on the low-loading platform, secure the Trailer wheels with chocks. Having done this, uncouple the brake lines and uncouple the Trailer from the tractor. Then, secure the Trailer with special straps designed

for securing loads in transport. Before unloading the Trailer, unfold the ramps, and then unlock the straps which secured the Trailer against possible sliding down during transport. Next, drive the tractor near and connect the brake and electric 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.

1.5.4 Transport of the Trailer by the User

The user can transport the Trailer by towing it to its destination with their agricultural tractor.

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

CAUTION

CAUTION!

Before you start operating the machine, read this Instructions Manual and adhere to the guidance herein.

DANGER

DANGER!

Check the components which the tractor and Trailer are coupled with, as their improper use may cause an accident.

1.6 Cleaning the Trailer

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

Clean the machine before each long period of disuse, after carrying loads which may 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 which has been carried. 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, please read their application specifications and assess whether they can be used to clean the Trailer.

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

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

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

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

When using various types of detergents and organic agents, remember that they may affect the machine components, especially seals and flexible hoses. Some substances can accelerate the ageing of the material. Use only special cleaning and maintenance products designed for the 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 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 longer period of time, ensure the machine is protected from the harmful effects of weather. Preparing the Trailer for a long-term disuse involves, among other things, thorough cleaning and drying all machine components, including tyres and rims, in accordance with the instructions in Section 1.6. “Trailer Cleaning”.

Ensure that there are no corrosive environments. To this end, apply 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, reinflate 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 variable during extended periods of disuse.

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

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.

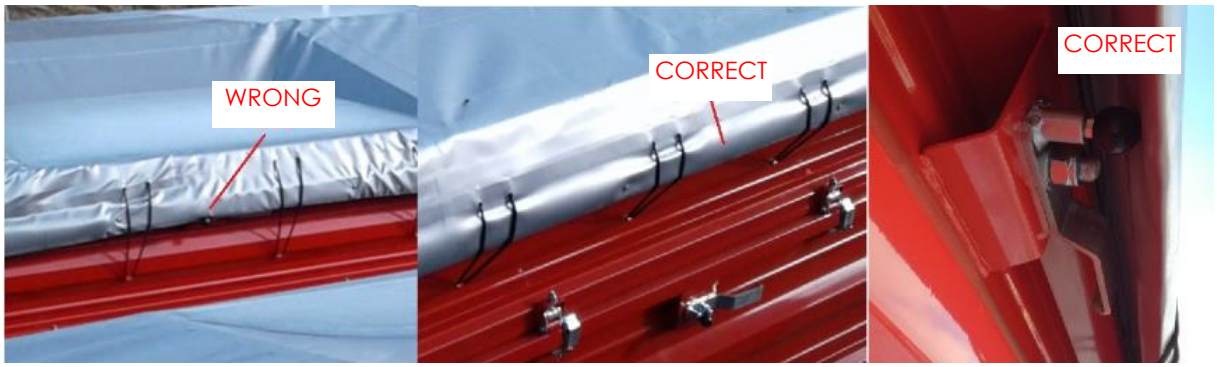


Fig. 4 Correct tensioning of the canvas cover

2. Safety of use

2

2.1 Obligation to provide information

CAUTION

CAUTION!

When the Trailer is sold to further users, attach the Instructions Manual with it, while the buyer of the Trailer must undergo training as indicated in the Manual.

2.2 General principles regarding user safety

Each time you start the Trailer, check it for safe operation.

1. Observe the generally applicable safety and accident prevention regulations and follow the information in this Instructions Manual.
2. Observe all the safety symbols, warning and information inscriptions attached on the Trailer which provide important guidelines for safe operation.
3. Operate the Trailer only if all required devices are connected and protected against unintentional disconnection or opening, e.g. hitch and drawbar, couplings.
4. Before starting work, learn how to operate all devices and controls, and their functions – it will be too late to do this, when operating the machine.
5. Persons under the influence of alcohol or other stimulants, and those who are not trained and do not hold proper driving licences are forbidden to operate the Trailer.

2.3 Safety of operation

1. Before using the machine, the user must read and understand the content of this Instructions 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 during a ride, 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. Entering the Trailer is only possible with the Trailer stationary and 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 observed 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. Meet the acceptable axle loads, total weight and transport dimensions.
16. Check the transport equipment like the brakes and lights, the marking plate and other protective devices for connection and functioning.
17. Before driving, check the correct functioning of the lights and brakes, and prepare the Trailer following the instructions provided in Section “Driving on public roads”.
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
    - 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 power lines
    - there are no strong gusts of wind.
22. If you need to unload carried load backwards on an incline, stop the tractor and Trailer to face uphill. With side unloading on a slope, the load-carrying body should be tilted to the side opposite the inclination of the Trailer.
23. For all work with the load-carrying body raised, the body must be secured against falling down by means of the Trailer's support. Switch off the tractor's engine and remove the key from the ignition switch.
24. Take care to avoid crushing fingers and hands when opening and closing the Trailer body sideboards.
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, and 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 2), according to PN-ISO 11684:1998, located on the front board of the Trailer.
30. For repair and maintenance work which requires the body to be lifted, empty it and apply a mechanical support to secure it against unintentional drop.

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. Before you fit any additional protection on the load to be carried on the Trailer, like chains, tarpaulins, films, nets etc., switch the tractor engine off and remove the ignition key.
37. Remove any functional faults of the attached devices only when the engine is switched off and the ignition key removed.
38. Should any failure occur in the hydraulic or pneumatic system, remove the Trailer from service until the failure has been rectified.
39. It is forbidden to carry out maintenance or repair work with a load-bearing or raised, unsupported load-carrying body.
40. Before carrying out repair work on the hydraulic or pneumatic systems, the oil or air pressure must be reduced.
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, the maximum permissible axle load exerted by the Trailer may not exceed 2,400 kg on the front axle, and 2,400 kg on the rear axle.
46. The maximum permissible pressure in a double-line pneumatic system is 800 kPa.
47. When preparing the Trailer for operation like connecting the hydraulic and air hoses etc., switch the tractor engine off and remove the ignition key.
48. The Manufacturer provides the Trailer as fully assembled.
49. Hydraulic lines must be replaced every 4 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.

UWAGA

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.

2.4 Warning and information pictograms

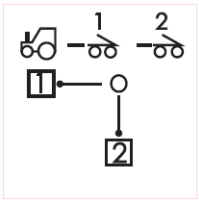
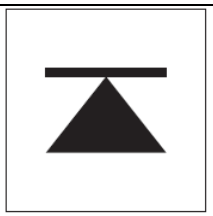
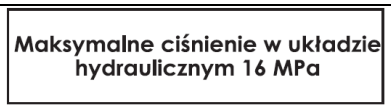
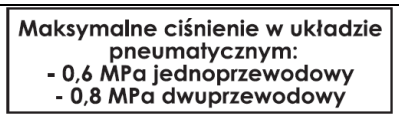
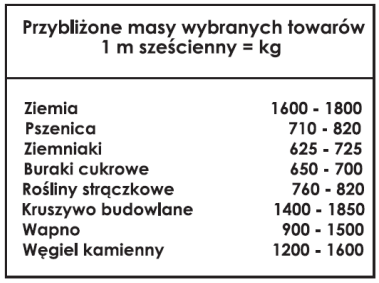
2.4.1 Hazard-warning symbols

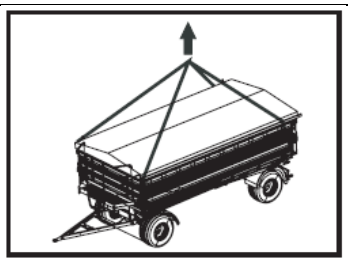
Do not remove any warning signs and inscriptions located on the Trailer. They are intended for the safe handling of the Trailer. If the information sticker has been damaged or removed, it must be reordered. Stickers with phrases and symbols can be purchased at service points or from the Trailer manufacturer.

Table 1. Safety signs

No.	Safety symbol (sign)	Meaning of the sign (mark) 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. Travel on the machine is only permitted on the passenger seat, provided that 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. The tilting of the Trailer body on an inclined surface is prohibited. Bodily injury can be caused by the machine tipping over and crushing.
11.		Setting the distributor lever of the body between the first or second coupled Trailer.
12.		Sling attachment/Lifting point.
13.		Lift placement points.
14.		Information pictogram.
15.		Information pictogram.
16.		Information pictogram.
17.		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.
	UWAGA! Nieprawidłowe napięcie łańcuchów (linek) usztywniających borty przyczepy skutkuje rozszczelnieniem skrzyni ładunkowej.	Information pictogram.
		Pictogram indicating the maximum height of the body during unloading.
		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

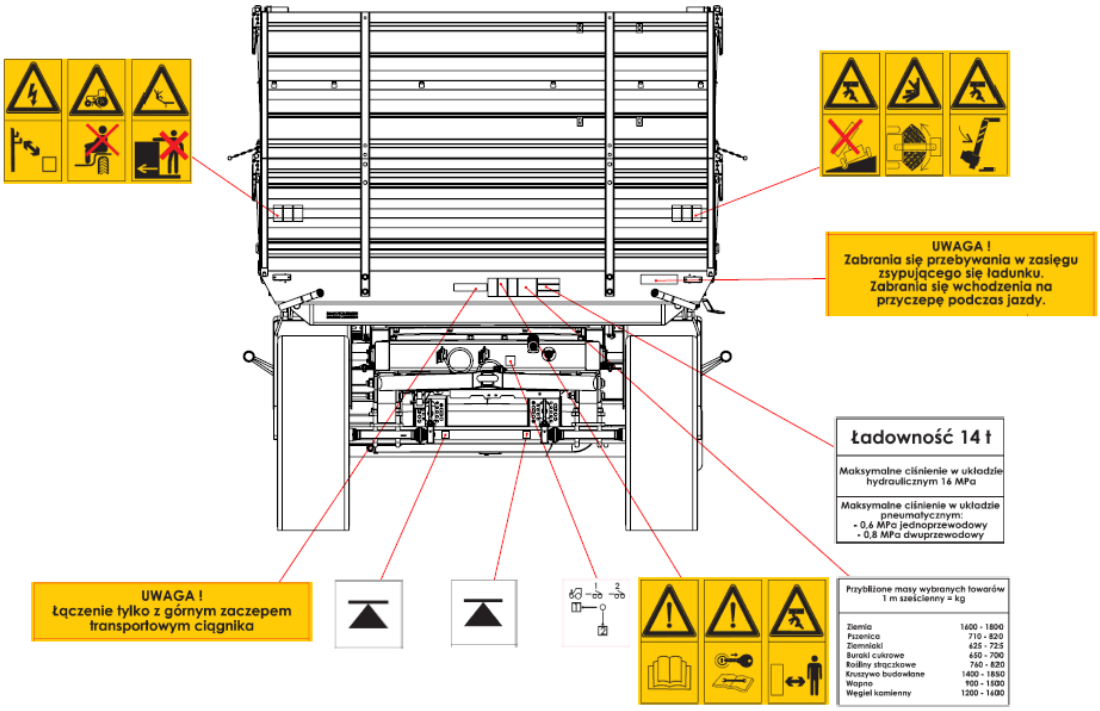


Fig. 5 The arrangement of the pictograms on the boards of the trailer - front

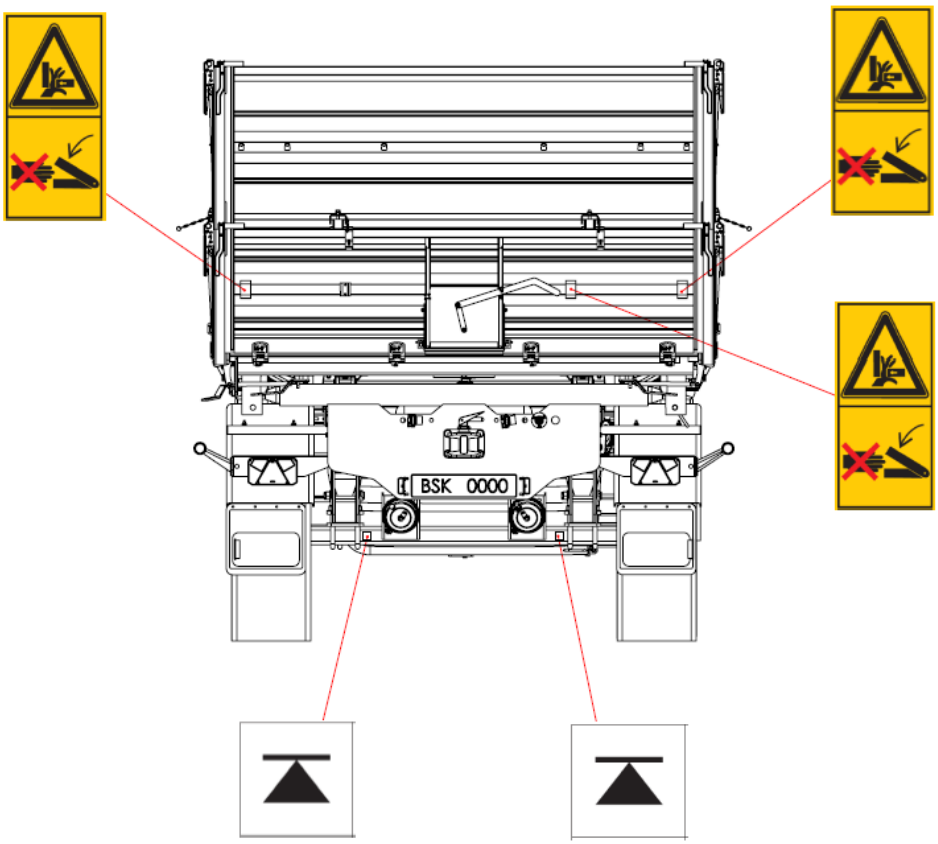


Fig. 6 The arrangement of the pictograms on the boards of the Trailer - rear

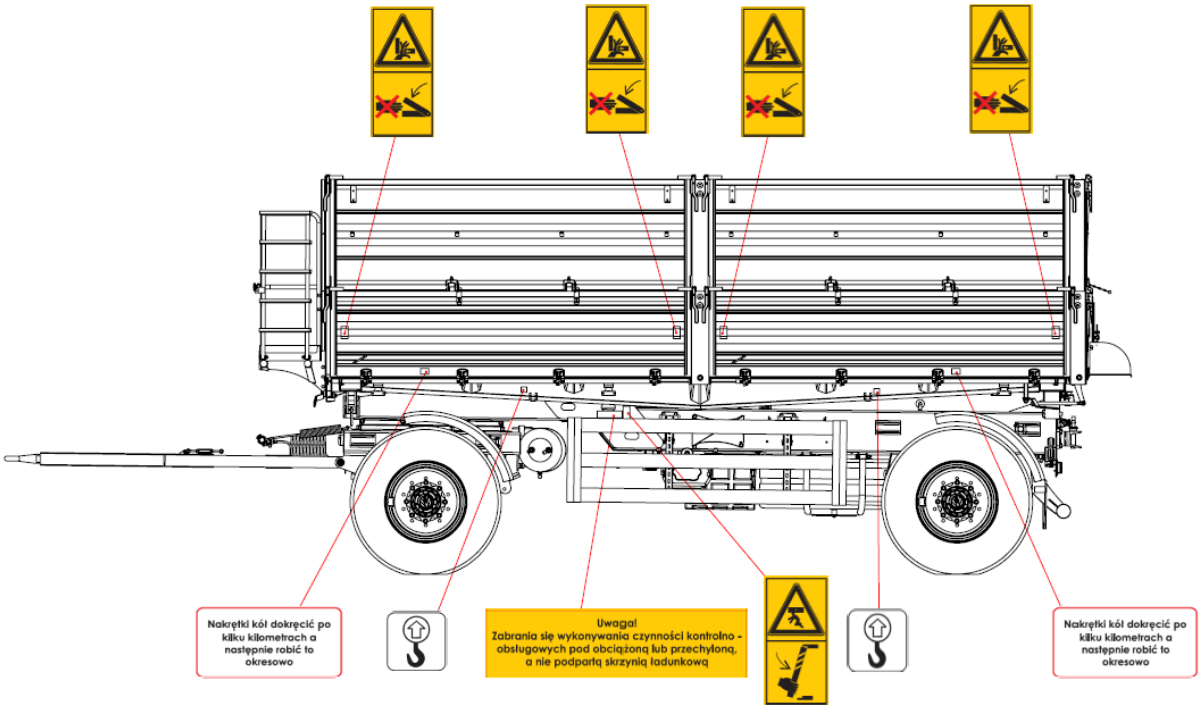


Fig. 7 The arrangement of the pictograms on the boards of the trailer – right side

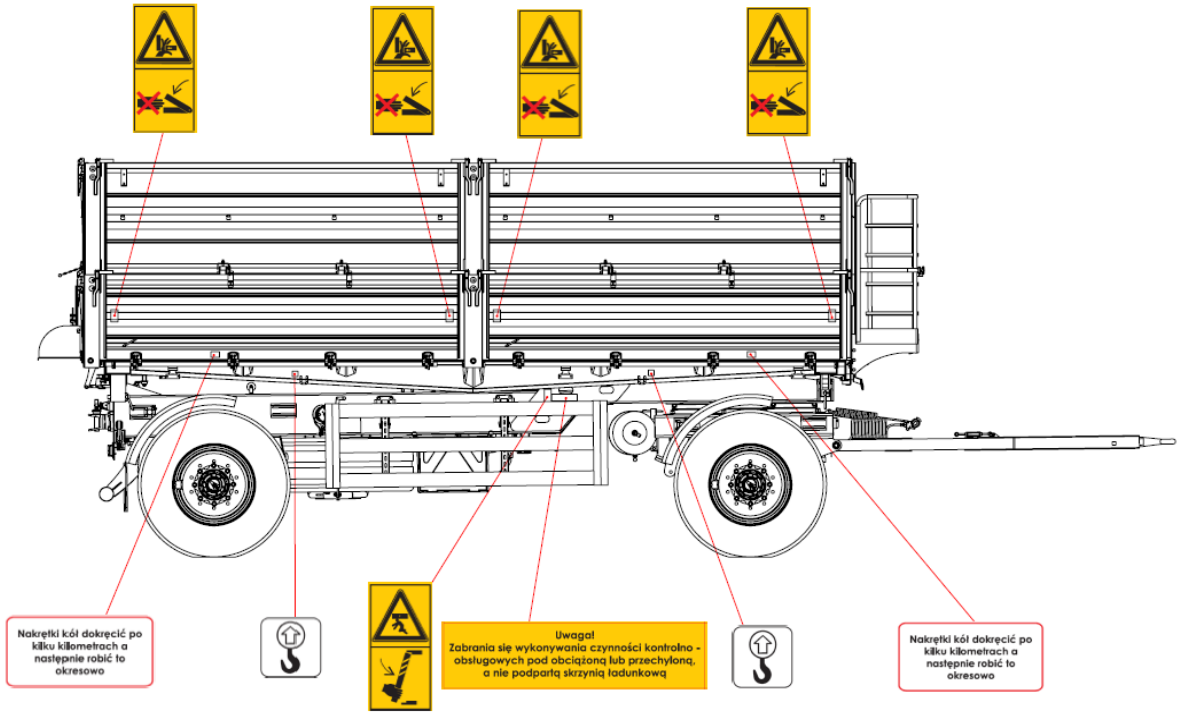


Fig. 8 The arrangement of the pictograms on the boards of the trailer – left side

2.5 Driving on public roads

During transport, you must comply with the traffic regulations of the country in which the Trailer is operated. 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 transport pass, 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 body are properly closed.

Before each use of the machine, it is necessary to check the technical condition of the machine for safety. This in particular includes the drawbar, chassis, brake system and light signalling, as well as the hydraulic and pneumatic systems. Release the parking brake before driving.

Do not operate the Trailer on a slope with an ratio of more than 8°. Using the Trailer on a steeper gradient may 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 cause danger while driving. Overloading the Trailer will reduce the braking system's performance.

When driving on public roads, you must comply with the road traffic regulations of the Community Member State in which the Trailer is operated. Amongst other things, the Trailer must be fitted with an approved triangle marking slow-moving vehicles, if required.

3. Technical data

3

3.1 Basic technical data

Table 2. Trailer specification

No.	General data		
1.	Type of vehicle	Agricultural Trailer	
2.	Manufacturer	METAL-FACH Sp. z o.o. 16-100 Sokółka, ul. Kresowa 62	
3.	Trade name	**T739A**	**T958**
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 rating plate and underneath	
Dimensions and weights			
7.	Length, mm	min. 7340 max. 7920	min. 7030 max. 7610
8.	Width mm	min. 2450 max. 2550	
9.	Height, mm	min. 1100 (depending on wheels and tyre pressure) max. 4000	
10.	No. of axles, pcs.	2	
11.	Wheel base mm	min. 3790 max. 3810	min. 3480 max. 3500
12.	Wheel track mm	1900	
13.	Elevation of the loading surface, mm	Depending on tyres	Depending on tyres
14.	Drawbar eye diameter, mm	40 or 50	40 or 50
15.	Vehicle kerb weight, mm	min. 3900 max. 5000	
16.	Permissible total weight of the vehicle, kg	18000	18000
	per axle, kg	9000	9000
17.	Maximum load per axle, kN	88.29	
18.	Load capacity, kg	min. 13000 max. 14100	
Suspension			
19.	Type of suspension	Nonindependent, sprung	
20.	Type of spring elements	Longitudinal parabolic springs 2	
Wheels and tyres			

21.	Number of wheels, pcs.	4
22.	Wheel disc size	11.75x22.5
23.	Tyre size and PR number	385/65 R22.5 400/60-22.5
	- Tyre pressure [bar]	From 4 to 9, depending on the tyre manufacturer
Brake system		
24.	Service brake	
	- type	mechanical, drum brake
	- control system	pneumatic, positive pressure, two-line system
	- acts on (number of wheels)	4 wheels
25.	Parking brake	
	- type	mechanical, drum brake
	- control system	Manual, via worm gear or push-button operated by a pneumatic spring actuator
	- number of braked wheels	2 rear axle wheels
Electrical system		
26.	Rated voltage, V	12V, from the tractor to work with
Operating data		
27.	Max speed, km/h	40
Additional information		
28.	Tractor working with the Trailer	min. 100kW
29.	Hydraulic oil purity class	Not less than 9 acc. to WAS 1638 (category 20/18/15 acc. to ISO 4406-1996)

3.2 Dimensions of the Trailers

The drawings below demonstrate overall dimensions of Trailers in their transport position.

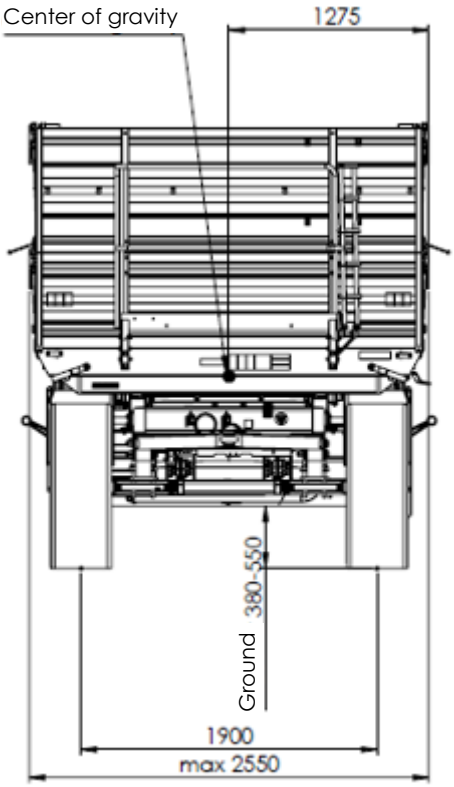


Fig. 9 Dimensions of the T739A trailer – front view

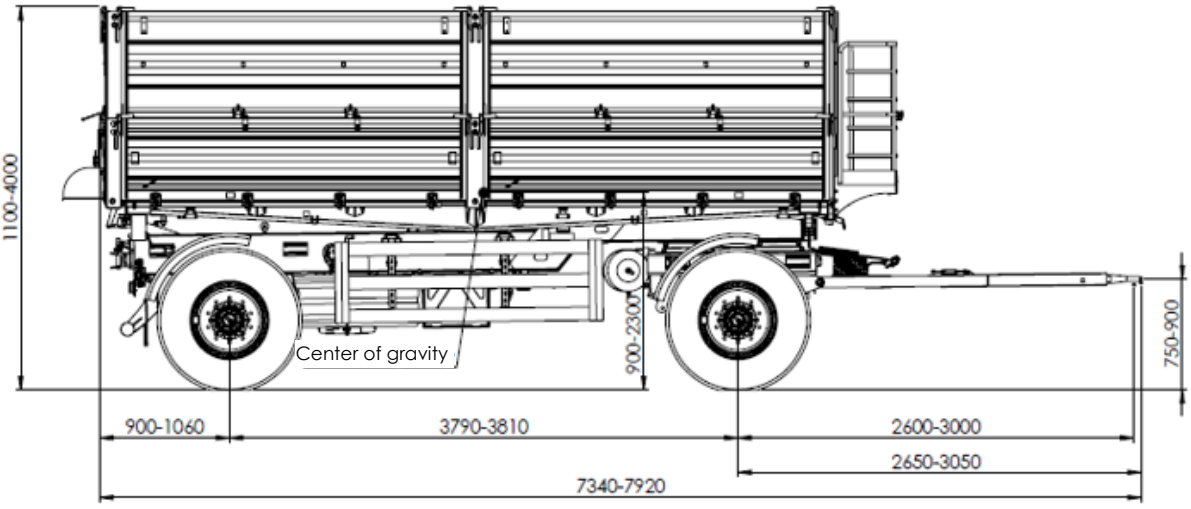


Fig. 10 Dimensions of the T739A trailer – side view

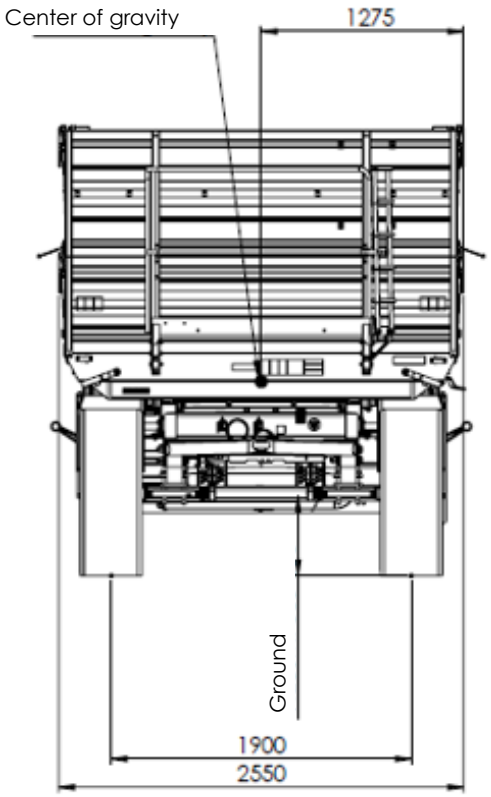


Fig. 11 Dimensions of the T958 trailer – front view

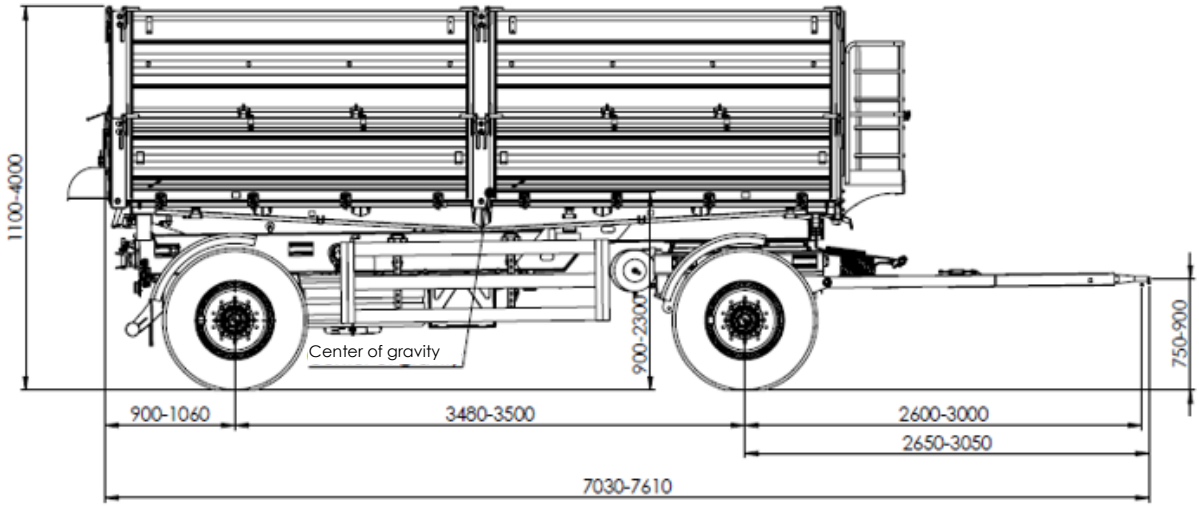


Fig. 12 Dimensions of the T958 trailer – side view

3.3 General design and principles of operation

The T739A and T958 Trailers consist of a metal structure with an open load space. The Trailer is equipped with a pneumatic service brake and a parking brake controlled manually by means of a helical gear and a steel wire or using a spring cylinder acting on the friction elements of the service brake of the rear axle.

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 accordance with Directive 2006/42/EC and the standards named below.

- PN-EN ISO 4254-1:2013
- PN-EN 1853+A1:2009
- PN-EN ISO 13857:2010
- PN-EN ISO 12100:2012

3.3.1 Chassis

The Trailer chassis consists of the following assemblies

- bottom frame
- drawbar
- trolley with turntable
- wheelsets
- suspension components

The bottom frame, drawbar and the trolley are made as a welded construction of steel sheets and sections.

The Trailer wheelsets consist of the following components.

- Axles
- Ground wheels
- Ground wheel brakes

The axles consist of square bars with spigots at the ends, which bear the ground wheel hubs. 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 trolley frame and 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 (frame of the load-carrying body) is mounted on the lower frame (chassis frame) in articulated sockets secured with pins, which are pivot points when tilting the upper frame (Trailer load-carrying body)
- Side walls and side extension are individual elements
  Each of the elements has a separate set of locks, which allows closing and opening individual parts of walls and extensions independently of each other and in any order. This design increases the functionality of Trailers and makes them easier to operate
- 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
- Single-acting hydraulic cylinder
- 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.

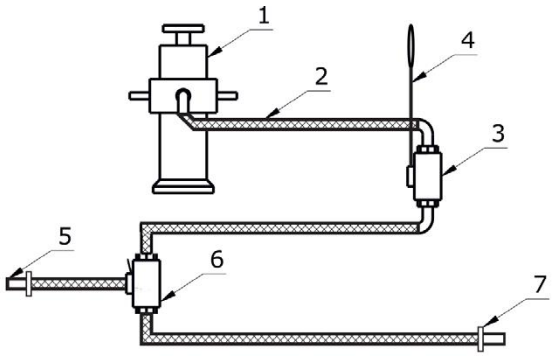


Fig. 13 Diagram of the hydraulic system of the Trailer body tilting mechanism
1 – hydraulic cylinder; 2 – hydraulic hoses; 3 – cut-off valve;
4 – cable for the shut-off valve control; 5 – plug of the connecting valve;
6 – control valve between first and second Trailer; 7 – outlet to second Trailer

CAUTION

CAUTION!

The shut-off valve limits the tilting angle of the load-carrying body when tilting it sideways or backwards. This valve is adjusted by the Trailer manufacturer and it is forbidden for the user to change the settings.

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 the figure below.

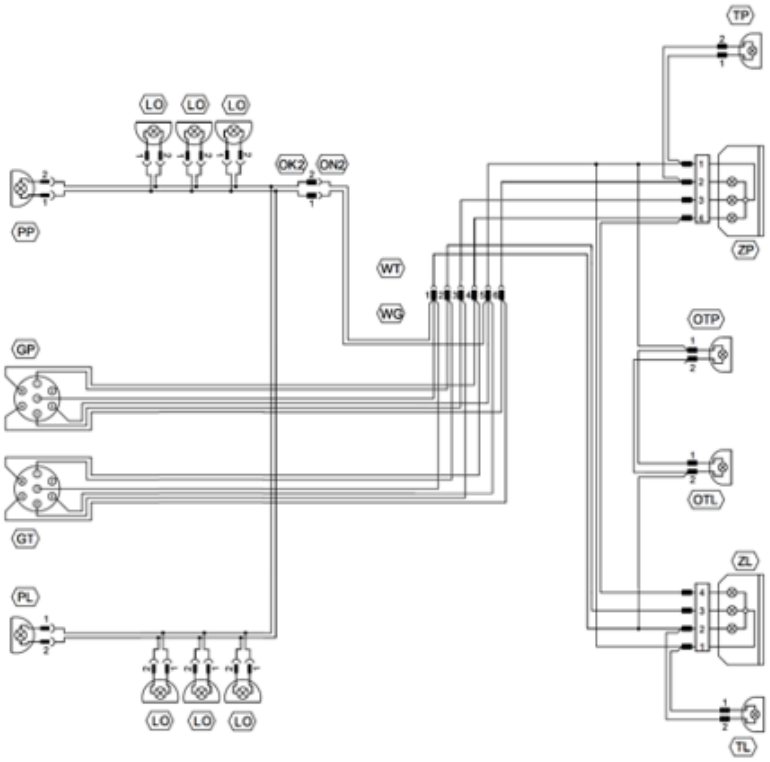


Fig. 14 Wiring diagram of the trailer

ZP – right rear combination lamp, ZL – left rear combination lamp,
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.

GT and GP 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

3.3.5 Brake system

The T739A and T958 Trailers are equipped with the brake systems shown below.

- Service brake – pneumatically controlled, dual-line, is activated from the driver's seat by pressing the brake pedal of the tractor
- Parking brake – mechanically controlled by hand via a crank mechanism and a helical gear located on the left side of the Trailer or pneumatically activated with a button by means of a brake spring cylinder, acting on the wheels of the rear axle

The design of the service brake ensures automatic braking of the Trailer wheels should the Trailer pneumatic system detach from the tractor spontaneously.

The diagram of the pneumatic dual-line brake system is shown in the following drawing.

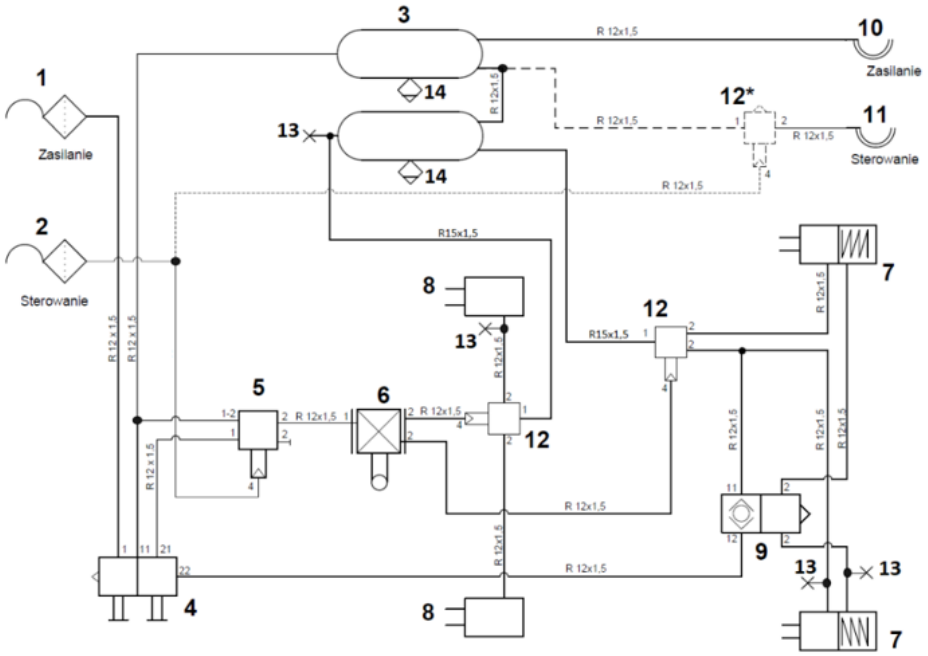


Fig. 15 Brake connection diagram – diaphragm spring actuators
1 – Hose coupling with filter – supply; 2 – Hose coupling with filter – control; 3 – Air tank; 4 – Breakaway parking valve; 5 – Trailer brake valve; 6 – Automatic braking force control; 7 – Diaphragm spring brake cylinder; 8 – Diaphragm brake cylinder; 9 – 3/2-way valve; 10 – Rear hose coupling with valve – supply; 11 – Rear hose coupling with valve – control; 12 – Quick exhaust valve; 12* – Optional quick exhaust valve; 13 – Check valve; 14 – Drain valve;

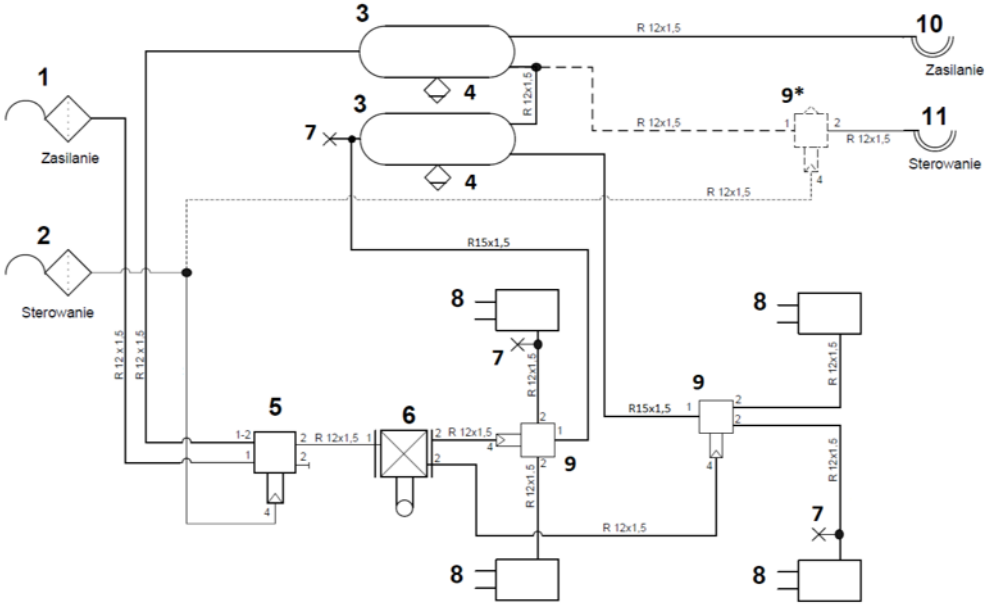


Fig. 16 Brake connection diagram – diaphragm actuators
1 – Hose coupling with filter – supply; 2 – Hose coupling with filter – control; 3 – Air tank; 4 – Drain valve; 5 – Trailer brake valve; 6 – Automatic braking force control; 7 – Check valve; 8 – Diaphragm brake cylinder; 9 – Quick exhaust valve; 9* – Optional quick exhaust valve; 10 – Rear hose coupling with valve – supply; 11 – Rear hose coupling with valve – control;

3.3.6 Tyres

1. Be careful when handling the tyres and prevent the Trailer from moving automatically.
2. The repair work of tyres and wheels should be carried out by skilled persons who are equipped with suitable tools.
3. Regularly check the air pressure. Maintain the recommended air pressure.
4. Tyres must be protected from sunlight over longer Trailer stoppages.
5. If possible, change the wheels only when the Trailer is empty.

3.3.7 Pneumatic system

1. The pneumatic system is under high pressure.
2. When connecting pneumatic lines to the tractor's pneumatic system, ensure that the valves on the tractor and Trailer side are not under pressure.
3. Check the pneumatic connection on a regular basis and change damaged and ageing parts. The replacement of lines must comply with the manufacturer's technical requirements. Replace flexible lines every five years unless damage has been found earlier.
4. Before starting work, depressurise the air system and switch off the tractor engine.
5. Repair work on the pneumatic system may only be carried out by an authorised representative of the Trailer manufacturer.

4. Information on use

4

4.1 Use with a tractor

4.1.1 Coupling the Trailer with the tractor

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

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

- Drive up to the Trailer so that its drawbar eye is between the fork of the tractor's transport hitch
- switch off the tractor's engine, Remove the ignition key and apply the parking brake
- Use the pin to connect the drawbar eye with the hitch and secure it with a cotter pin
- Connect the electrical wiring and hydraulic hoses to the external sockets of the tractor
- Connect the Trailer brake line to the tractor's brake socket

4.1.2 Uncoupling the Trailer from the tractor

To uncouple the Trailer from the tractor, perform the following steps.

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

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

4.2 Start-up

Before starting-up the Trailer, follow the procedure below.

1. Learn the names and locations of the individual Trailer units/components
2. Check Trailer’s tyre pressure
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 electric systems to the corresponding system sockets in the tractor

4. Check the operation and tightness of the pneumatic, hydraulic and the electric system of the Trailer and tractor
5. Check all the devices, their connection and protection against undesired disconnection or displacement
6. Disengage the Trailer's parking brake

Carry out these activities every time you start the Trailer.

CAUTION

CAUTION!

Use a tractor in good working order only which is fitted with a functional transport hitch, functional pneumatic, hydraulic and signalling-warning systems.

4.3 Loading the Trailer body

The load-carrying body may only be loaded when the Trailer is coupled to a tractor, positioned on horizontal ground and with the drawbar in the straight ahead position.

Preferably use mechanical loading devices like cranes, loaders, conveyors etc. for loading. Before loading, check that both sideboard and extension locks are closed.

When loading the Trailer, distribute the load evenly over the entire surface of the Trailer 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 for 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 this threatens road safety and may cause damage to the Trailer. The load to be carried must be protected against displacement, 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

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.

4.4 Unloading the Trailer body

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

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 from the opening
    a) when unloading to the rear – the pins shall remain in the rear cups 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
- Check that the pins on the side of the Trailer, where the unloading will take place, are fitted securely
- Check the condition of the tipping pin and the correct fixing of the spring pin which prevents it from extending;
- 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

WARNING

WARNING!

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

When tilting the load-carrying body make sure it is stable.

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

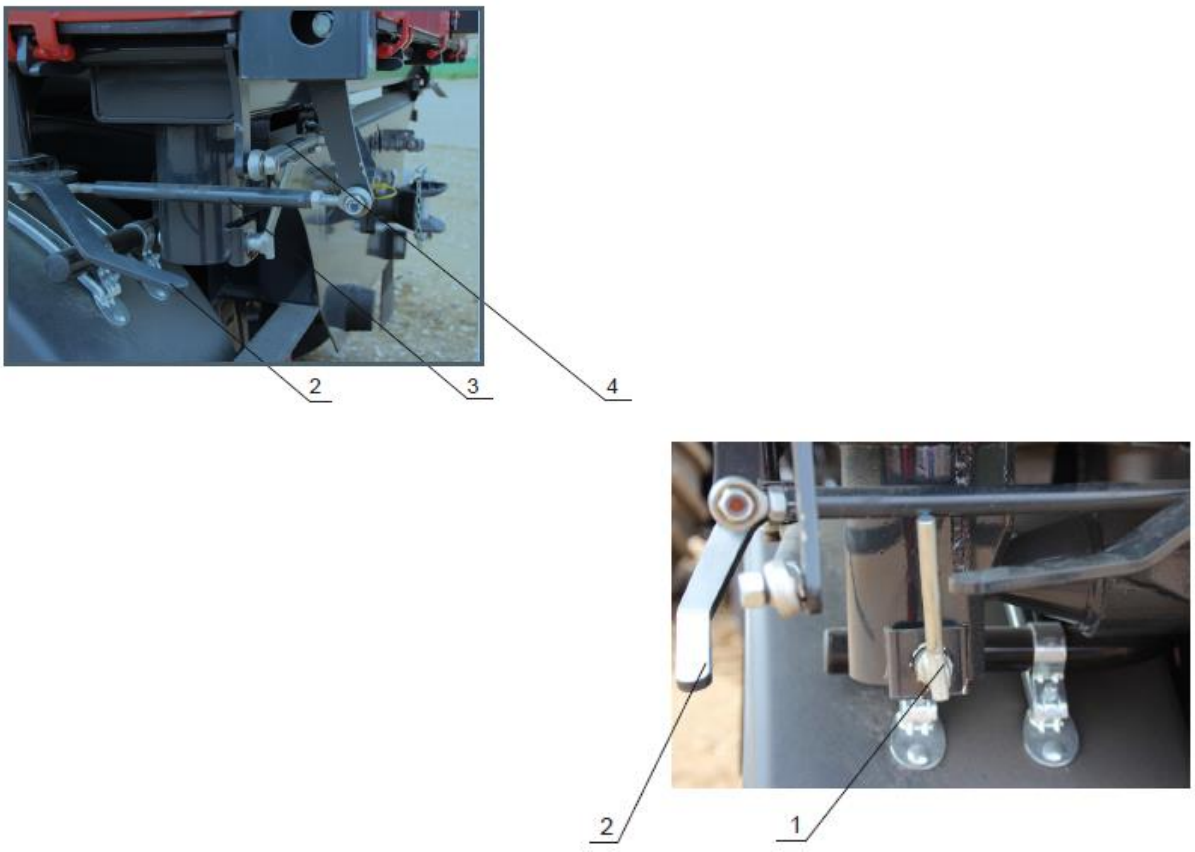


Fig. 17 The locks on the sideboards of the body.
1 – locking and securing pin of the lever; 2 – central lever of the lower locks;
3 – lock adjustment mechanism; 4 – central lock shaft

4.5 Hydraulic system

4.5.1 Using the hydraulic system tilting the load-carrying body

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.

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 a leakage of oil outside the coupling, replace the leaking components in the hydraulic system. 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. When connecting the Trailer and tractor hydraulic systems, observe the required cleanliness of the connectors.

4.5.2 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 cable connecting the body frame to the shut-off valve, or breaking it, may cause damage to and tip over 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.

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 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, and engage the tractor's parking brake;
- engage the parking brake of both trailers;
- if the trailer is parked on uneven or sloping ground, put a chock under its wheels to secure it from rolling;
- 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 and insert the pin into the rear hitch of the trailer

5. Elements requiring on-going adjustments

In order to function efficiently, the T739A and T958 Trailers require the following adjustments.

- Adjustment of wheel bearing play
- Tyre maintenance
- Hydraulic system maintenance
- Adjustment of the brake system components

5

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.

To do so, follow the procedure below.

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

If the bearing play is adjusted correctly, the wheel should rotate freely, without stoppage or evident resistance (other than friction of the brake shoes against the drum). Slight friction of the shoes against the drum, particularly in a new Trailer, or after their replacement, is a typical occurrence. Drive a few kilometres to finally check the correctness of the bearing-play adjustment, by checking the degree to which the wheel hubs have heated up by hand. In addition to the improper adjustment of the bearing play, considerable resistance to wheel rotation and hub heating may be caused by impurities in the lubricant or bearing damage. The above symptoms require the disassembly of the wheel hub and removal of the malfunction.

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 after each intensive use of the machine, and/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.

With the Trailer parked for a long time, it is necessary to protect the tyres against sunlight. Avoid damaged road surfaces, sudden and changeable manoeuvres and high speeds when turning.

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 tightening before each use of the Trailer, and tighten, if necessary.

CAUTION

CAUTION!

Check the wheel nuts on a regular basis for their condition and tightening before each use of the Trailer, and tighten, 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.

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.

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. In places where compressed air will penetrate to the outside, a characteristic hissing is heard or air bubbles appear when flooded with soapy water indicates leakage. If a defective seal, hoses or other components, e.g. valves, cylinders etc. cause the leakage, replace such parts.

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

5.3.2 Adjustment of the brake system components

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

Adjust the brakes, when

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

If the brakes are adjusted correctly, the braking force (sum of braking forces at the periphery of the braked wheels) shall be a min. 50% of the Trailer's permissible total weight when braking with the service brake, and the braking force (sum of braking forces at the periphery of the braked wheels) when braking with the parking brake 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 wheel of every Trailer axle must not be exceed 30% (taking into account that 100% corresponds to the greatest force).

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

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

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

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

CAUTION

CAUTION!

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

Check the brake shoes at least once a year and replace worn linings with new ones. If friction elements have been replaced, break them in by driving with frequent braking and adjust them to achieve the required performance.

CAUTION

CAUTION!

Observe the following when lifting the wheel of the Trailer.

- Couple the Trailer to the tractor, position on flat ground and engage the parking brake of the tractor
- Place the safety chocks underneath the wheel which 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

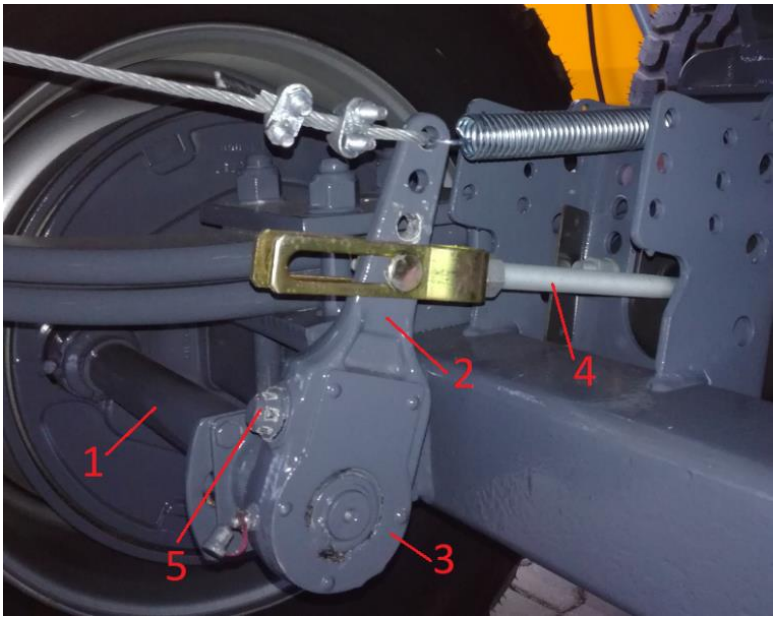


Fig. 18 The components of the brake system
1 – shoe shaft slack adjuster; 2 – slack adjuster shaft lever (arm);
3 – gear on the slack adjuster shaft; 4 – link (push rod) connecting the piston rod of the pneumatic cylinder with the slack adjuster arm; 5 – adjusting bolt

6. Scheduled inspections

6

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. Timely discovery of a defect ensures its easy rectification at minimum cost and effort, and with maximum effect. Trailer faults can be discovered quickly only if you maintain its periodical cleaning and careful checks. Therefore, wash the Trailer often to spot possible damage and malfunctions.

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 area, in order to protect the Trailer from weather conditions and its destructive effects.

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

The daily maintenance (before starting work) of the Trailer requires a minimum of work to be done, 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 air-tightness of the pneumatic system
- Check the proper functioning of mechanisms
- Check and carry out lubrication, as instructed in the Instructions Manual
- Check pressure in tyres
- Check the locks on the sideboards for correct locking and safety
- When working with sideboard extensions, check if they operate properly and do not pose a threat to traffic and operator safety
- 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 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 raised and tilted but unloaded Trailer body, always secure the body against dropping using a support which 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 remainder load carried on the Trailer 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. Use only the spare parts recommended by “METAL-FACH” Sp. z o.o. in Sokółka
10. The Trailer must be stored in roofed areas on a level and hard surface and in such a way as to prevent 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 faults, maintain proper cleanliness, and when making required adjustments, necessary for the proper functioning of the Trailer, ensure all parts are correctly mounted in their places.

Minor repairs during operation (in the field) must be carried out on site by the operator. Store parts disassembled during repair and protect against dust and other contaminants. Special attention must be paid to the protection and cleanliness of the bearings.

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

A series of technical rules for disassembly and assembly of parts and subassemblies must be observed during current and comprehensive repairs, thus ensuring quality and efficiency of work.

After each repair of the Trailer subassemblies, check that they are working properly.

6.4 Lubrication

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

Complying with the lubrication recommendations of the Manufacturer will significantly reduce the possibility of damage or premature wear and tear 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
- Check the lubrication of wheel hub bearings, replenish or replace the bearing grease annually
- When replacing the grease, remove the hub, remove used grease, evaluate the condition of the bearings (replace if necessary) and after applying fresh grease and assembling the hub, adjust the bearing play

CAUTION

CAUTION!

Use only high quality bearing grease.

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

Table 4. Lubrication points

Lubrication points	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 components which require routine lubrication.

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

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 metric bolts

Bolt-tightening torques – metric bolts in Nm							
Size ∅ mm	**Pitch mm**	**Bolt version – strength classes**					**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

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, 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 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 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 damaged components.

8. Authorised service

8.6 Guarantee service

The manufacturer provides a guarantee for the machine on the terms and conditions stipulated in the Guarantee Certificate. In the warranty period, the repairs must be performed by the authorised service centres of the dealers or the manufacturer.

8.7 Routine service

After the warranty period, periodic inspections, adjustments and repairs of the machine are carried out by authorised dealer service centres.

8.8 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 also include the name, symbol, serial number, year of manufacture, part name, part number, drawing or standard number in the catalogue and the number of ordered pieces. Then, specify payment terms.

9. Disassembly, disposal and environment 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 noticed malfunction of the hydraulic system, i.e. oil leaks, must be remedied without delay and without causing environmental pollution. 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. Due to high component weight (over 20 kg), use lifting equipment during disassembly.

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 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 and persons who are not authorised to drive a tractor, as well as persons who are not familiar with the Instructions Manual.
2. Operation of the Trailer by persons who are sick or 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. Tampering with the tractor drive train and Trailer moving parts during operation.
8. Checking the technical condition of the Trailer during operation.

When specifying the residual risks, the Trailer is interpreted as a machine which 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 instructions:

a) Adhere to the safety rules described in the Instructions Manual
b) Read the Instructions Manual carefully
c) Reaching into dangerous and prohibited places with your hands forbidden
d) Operating the Trailer in the presence of bystanders, children in particular, is forbidden
e) The Trailer can only be maintained and repaired by properly trained personnel
f) The Trailer can only be operated by persons who underwent training and know the Instructions Manual
g) Protect the Trailer against the access by 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 provided herein may result in residual risks.

INDEX OF NAMES AND ABBREVIATIONS

bar – unit of pressure

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 unit of time equal to 60 seconds

mm – millimetre, an auxiliary length unit equal to 0.001 m

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

Pictogram – a notice plate

T – tonne, unit of weight

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

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

V – Volt, voltage unit

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

Hitch, lower transport hitch – hitch components of a farm tractor (see a tractor instruction manual)

ALPHABETICAL INDEX

NOTES

Metal-Fach Sp. z o.o. is constantly improving its products and adjusting its offer to the needs of customers, thus it reserves the right to make changes to the products without notice. Therefore, before making your purchase decision, please contact an authorised dealer or sales representative of Metal-Fach Sp. z o.o. Metal-Fach Sp. z o.o. will not accept any complaints, regarding the data and pictures contained in the catalogue, as the presented offer shall not constitute an offer, within the meaning 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.

TECHNICAL SERVICE

16-100 Sokółka, ul. Kresowa 62
Tel.: +48 85 711 07 80; Fax: +48 85 711 07 93
serwis@metalfach.com.pl

SALES

16-100 Sokółka, ul. Kresowa 62
Tel.: +48 85 711 07 78; Fax: +48 85 711 07 89
handel@metalfach.com.pl

SPARE PARTS WHOLESALE STORE

16-100 Sokółka, ul. Kresowa 62

Wholesale:
Tel.: +48 85 711 07 81; Fax: +48 85 711 07 93
serwis@metalfach.com.pl

Retail

24/7 PHONE: +48 533 111 477
Tel.: +48 85 711 07 90

YOU CAN FIND UPDATED INFORMATION ABOUT OUR PRODUCTS ON WWW.METALFACH.COM.PL