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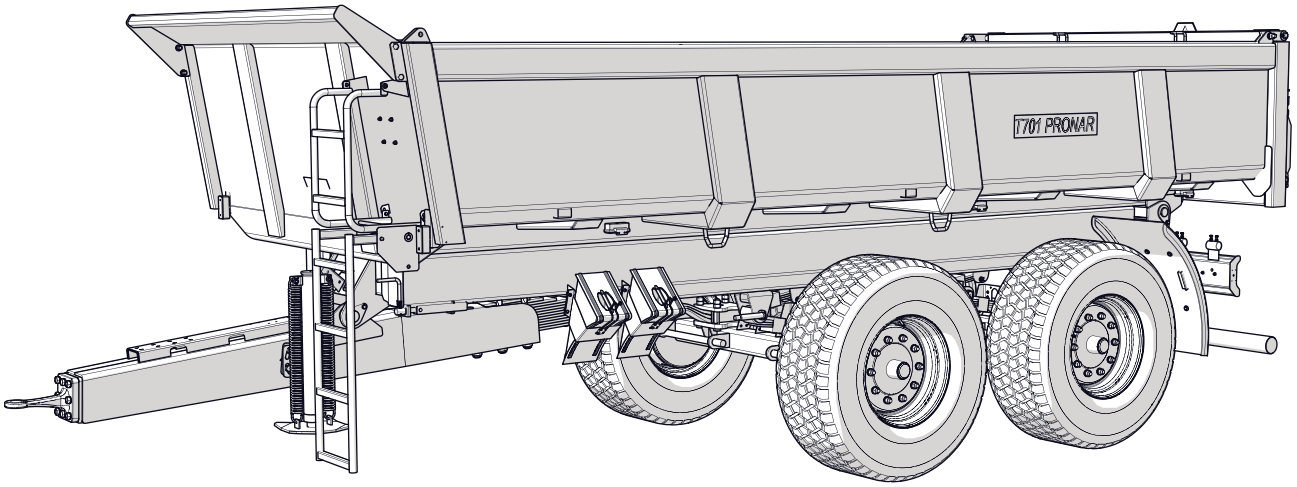
USER MANUAL

AGRICULTURAL TRAILER

PRONAR T701

TRANSLATION OF THE ORIGINAL DOCUMENT



KEEP FOR FUTURE USE

ISSUE: 2B-10-2021

EDITION NO. 103N-00000000UM

EN

Thank you for purchasing our trailer. In the interests of your safety and care for the reliability and durability of the machine, we ask that you familiarise yourself with the content of this manual.

Remember!!!

Before using the trailer for the first time, check if the wheels are properly tightened!!! Regularly check the technical condition of the machine in accordance with the attached schedule.

INTRODUCTION

INTRODUCTION

The information contained in the publication is current at the date of publication. As a result of improvements, some sizes and illustrations contained in this publication may not correspond with the actual state of the machine delivered to the user. The manufacturer reserves the right to introduce constructional changes in the machines manufactured to facilitate operation and improve the quality of their work, without making any current changes to this publication.

The User Manual is the basic part of the machine.

Read the contents of this manual and follow all the recommendations contained therein before using the machine.

This will guarantee safe operation and ensure trouble-free operation of the machine.

The machine was constructed in accordance with applicable standards, documents and current legal regulations.

If the information contained in the User Manual is incomprehensible, please contact the sales department where the machine was purchased or directly to the Manufacturer.

After purchasing the machine, we recommend to enter the machine serial number in the fields below.

Machine serial number

This manual contains important safety and operating instructions for the machine.
The manual should be kept near the machine so that it is accessible to authorized persons.
Keep this manual for future reference.
If the manual is lost or damaged, contact the seller or the manufacturer for a duplicate.
The User Manual is intended for the end user.
For this reason, some required maintenance is listed in the inspection tables but the procedure is not described in this publication.
To perform the above, call the manufacturer's authorized service centre.

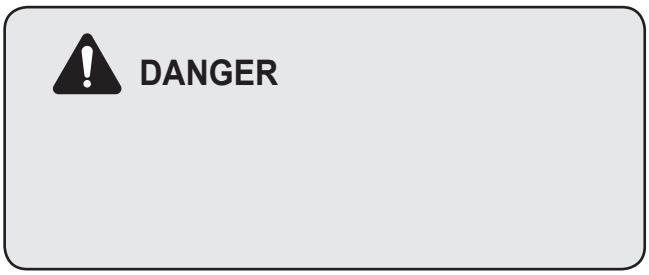
U.10.1.EN

SYMBOLS USED IN USER MANUAL

DANGER

Information, descriptions of hazards and precautions as well as instructions and orders related to the safety of use in the content of the manual are marked with a frame and word ***DANGER***.

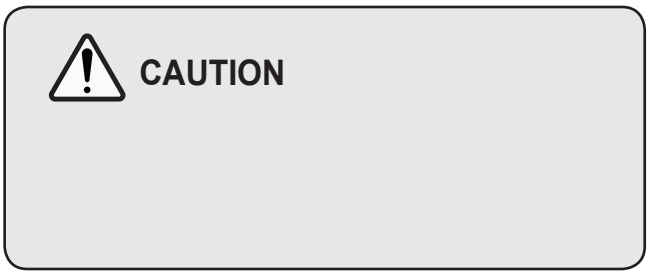
Non-compliance with the recommendations described will endanger the health or life of persons using the machine or bystanders.



CAUTION

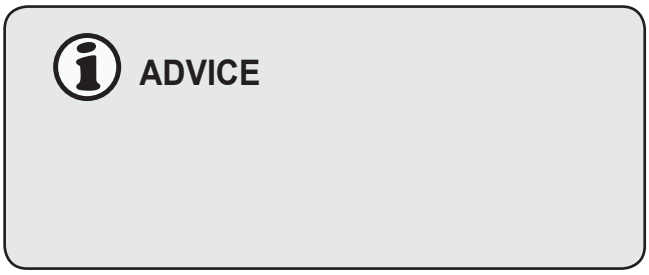
Particularly important information and recommendations, the observance of which is absolutely necessary, are highlighted in the text with a frame saying ***CAUTION***.

Failure to comply with these recommendations creates the risk of damage to the machine as a result of incorrect handling, adjustment or use.



ADVICE

Additional instructions contained in the manual describe useful information on the operation of the machine and are marked with a frame with the word ***ADVICE***.



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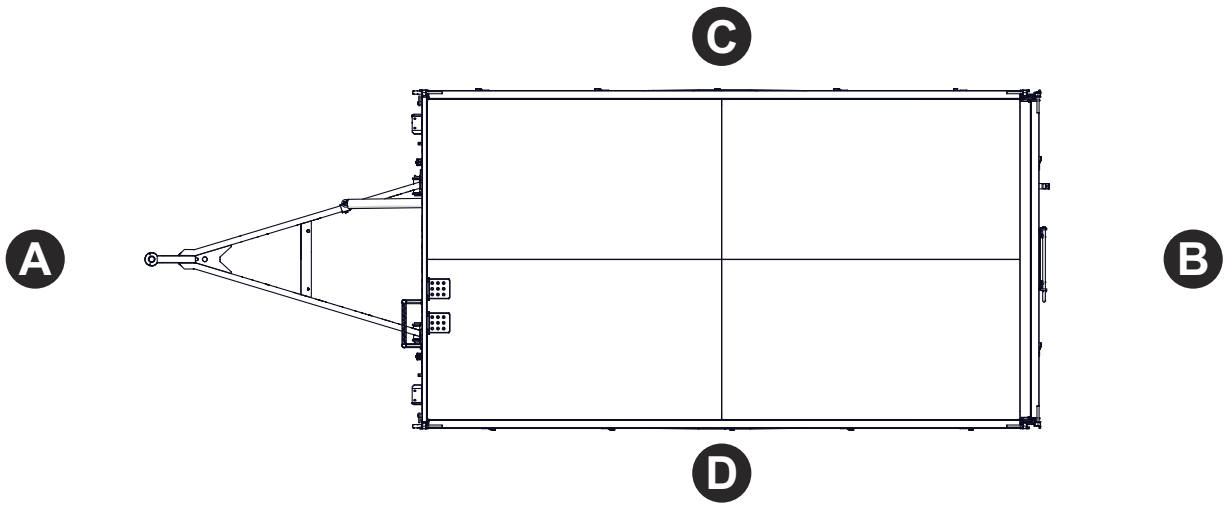
DETERMINATION OF DIRECTIONS IN THE USER MANUAL



Rysunek 1.1 Designation of the directions on the machine
(A) - front (B) rear (C) right side (D) left side

Left side - the side on the left hand of the observer facing the machine in the forward direction of travel.

Right side - the side on the right hand of the observer facing the machine in the forward direction of travel.

Turn clockwise - turn the mechanism clockwise (operator facing the mechanism).

Turn left - turn the mechanism counter-clockwise (operator facing the mechanism).

U.03.1.EN

CHECKING THE TRAILER AFTER DELIVERY

The manufacturer ensures that the trailer is fully functional, has been checked in accordance with control procedures and is approved for use.

However, this does not release the user from the obligation to check the vehicle after delivery and before first use.

The machine is delivered to the user completely assembled.

THE SCOPE OF CONTROL ACTIVITIES

- Check that the completion of the delivered machine matches your order.
- Check the condition of the paint coating.
- Visually inspect the trailer's components for mechanical damage resulting, e.g., from incorrect machine transportation.
- Check the condition of the tires on the road wheels and the air pressure in the tires.
- Check the technical condition of the flexible hydraulic hoses.
- Check the technical condition of the pneumatic hoses.
- Make sure there are no hydraulic oil leaks.
- Check the trailer's lighting lamps.

ADVICE

The delivery of the trailer includes a detailed inspection and check of the operation of the machine, as well as instructing the buyer on the basic principles of use.
The first start takes place in the presence of the seller.

U.04.1.EN

START-UP OF THE TRAILER

- Read the contents of this User Manual and follow the recommendations contained therein.
- Adjust the height of the drawbar to the hitch on your agricultural tractor.
- Perform a daily review of the trailer according to the guidelines in the schedule.
- Connect the machine to the tractor.
- By activating individual lights, check the correct operation of the electrical system.
- Perform a test drive.
- While driving, check the braking effect of the trailer.
- Stop the tractor and turn off the engine, immobilize the tractor and the trailer with the parking brake.

If during the test run, alarming symptoms appear, such as:

- excessive noise and unnatural noises from rubbing moving parts,
- brake system leak,
- incorrect operation of the brake cylinders,
- other faults,
- the trailer should be stopped until the failure is removed.
- If the fault cannot be rectified or remedied, you will void the warranty, contact the place of purchase for clarification of the problem or for reporting the repair.

CAUTION

The first start-up involves checking the trailer in the presence of the seller.
The seller is obliged to conduct training in the safe and proper operation of the machine

U.12.1.EN

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EC DECLARATION OF CONFORMITY OF THE MACHINERY

PRONAR Sp. z o.o. declares with full responsibility, that the machine:

Description and identification of the machinery	
Generic denomination and function:	**TRAILER**
Type:	**T701**
Model:	- - - - -
Serial number:	
Commercial name:	**TRAILER PRONAR T701**

to which this declaration relates, fulfills all the relevant provisions of the Directive **2006/42/EC** of The European Parliament and of The Council of 17 May 2006 on machinery, and amending Directive 95/16/EC (Official Journal of the EU, L 157/24 of 09.06.2006).

The person authorized to compile the technical file is the Head of Research and Development Department at PRONAR Sp. z o.o., 17-210 Narew, ul. Mickiewicza 101A, Poland.

This declaration relates exclusively to the machinery in the state in which it was placed on the market, and excludes components which are added and/or operations carried out subsequently by the final user.

Z-CA DYREKTORA
d/s technicznych
członek zarządu
Roman Omelianiuk

Narew, the _____

Place and date

Full name of the empowered person position, signature

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TECHNICAL SERVICE

TIRE ASSEMBLY

GENERAL INFORMATION

CHAPTER 1

1.1 TRAILER IDENTIFICATION

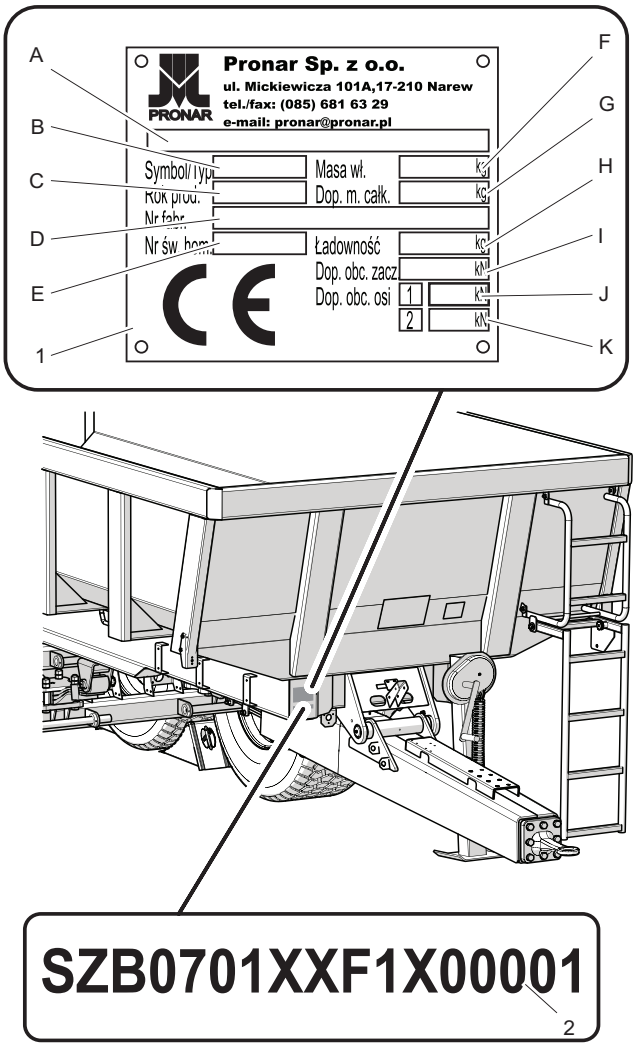

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Figure 1.1 Trailer designation
(1) nameplate (2) serial number

The trailer has been marked with a name plate (1) and a serial number (2). Additional information on dimensions, weights and axle loads of the trailer is provided on the plate (1).

All the plates and serial number are located on the right side member of the support frame of the trailer. When buying the trailer check the compatibility of serial numbers on the machine with the number written in the *Warranty Card*, in the sales documents and in the *User Manual*.

Table 1.1. Name plate markings

Item	Meaning
A	General term and function
B	Trailer symbol/type
C	Year of production
D	VIN number
E	Certificate approval number
F	Curb weight
G	Permissible gross weight
H	Capacity
I	Permissible load on coupling
J	Permissible axle load 1
K	Permissible axle load 2

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1.2 IDENTIFICATION OF DRIVING AXIS

The serial number of the driving axle and axle type are stamped on the nameplate (2) attached to the driving axle beam (1) - figure (1.2).

After purchasing the machine, we recommend to enter the driving axle serial number in the fields below.

ADVICE

Contact with the service department requires providing the factory number of the trailer and often the number of axle, so we recommend that you write these numbers in the manual and have access to them.

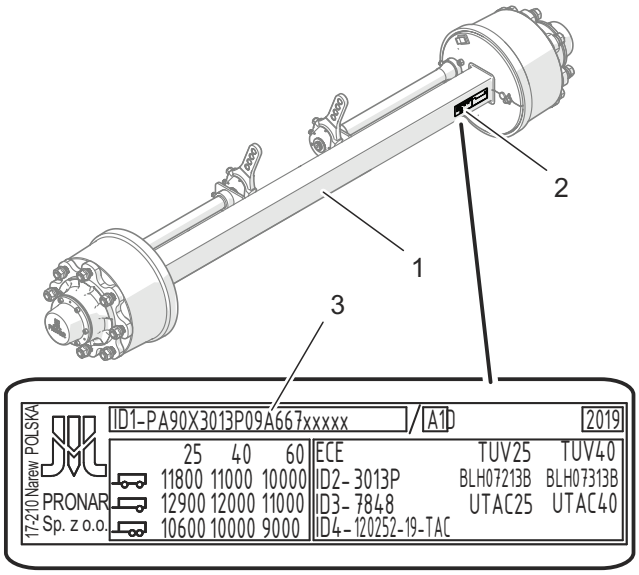

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Figure 1.2 Axis identification
(1) Driving axle
(2) Nameplate
(3) Axle serial number

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1.3 INTENDED USE

The trailer is intended for the transport and unloading of crops and agricultural products as well as heavy materials such as: rubble, stones, crushed stone, gravel used during construction works, earth-works, during demolition works, within the farm and on public roads. The permissible design speed of the trailer is 40 km/h.

The braking system as well as the lighting and signalling system meet the require-ments arising from traffic regulations.

When operating the machine, follow the road traffic regulations and transport regu-lations in force in a given country, and any violation of these regulations is treated by the Manufacturer as using the trailer con-trary to its intended use.

Intended use includes all activities related to proper and safe operation and mainte-nance of the machine. Therefore, the user is obliged to:

- become familiar with the content of the *User's Manual* and use of the T701 trailer, the trailer *Warranty card* and the content of the technical doc-umentation, terms and conditions of the sub-suppliers' warranty and follow the recommendations contained in these studies,
- understand the principle of trailer operation and the safe and proper operation of the machine,
- compliance with the agreed periodic technical inspections,
- act in compliance with general safety regulations during work,
- accident prevention,
- comply with road traffic regulations and transport regulations in force in the country in which the trailer is used,
- get acquainted with the contents of the farm tractor instruction manual and comply with its recommendations.
- couple the machine only with such an agricultural tractor that meets all the requirements set by the Manufacturer.

The trailer may not be used for purposes other than those for which it is intended in particular:

- transport people and animals,
- for transporting loads that are unse-cured or ineffectively secured against shifting or falling out,
- carry loads that affect uneven loading

CAUTION

The trailer may not be used for purposes other than those for which it was intended.

and/or overloading of the driving axles and suspension components. It is forbidden to overload the trailer beyond the maximum load capacity

- for transport of any materials other than those provided for in the instructions.

CAUTION

If a second trailer is connected to the trailer, it must meet the requirements specified in table (1.3).

Table 1.2. Agricultural tractor requirements

Content	Unit	Requirements
Braking system- sockets		
Pneumatic 1 - line	—	in accordance with A DIN 74 294
Pneumatic 2 - lines	—	in accordance with ISO 1728
Hydraulic	—	in accordance with ISO - 7421- 1
Nominal pressure of the installation		
Pneumatic 1 - line	bar	5.8 – 6.5
Pneumatic2-lines	bar	6.5
Hydraulic	bar	150
The hydraulic system		
Hydraulic oil	—	L HL 32 Lotos (1)
Maximum system pressure	bar	200
Oil demand	l	36
Electrical system		
Supply voltage	V	12
Connection socket	—	7 poles in accordance with ISO 1724
Coupling device		
Type of hitch	—	upper or lower transport hitch
Other requirements		
Min. tractor power	KM/kW	124.8 / 91.7
Minimum vertical load capacity of the hitch	kg	3,000

(1) – a different oil may be used, provided it can be mixed with oil in the trailer. Detailed information can be found in the product information card.

Table 1.3. Second trailer requirements

Content	Unit	Requirements
Braking system- sockets		
Pneumatic 1 - line	-	in accordance with A DIN 74 294
Pneumatic 2 - lines	-	in accordance with ISO 1728
Hydraulic	-	in accordance with ISO - 7421- 1
Nominal pressure of the installation		
Pneumatic 1 - line	bar	5.8 – 6.5
Pneumatic2-lines	bar	6.5
Hydraulic	bar	150
The hydraulic system		
Hydraulic oil	-	L HL 32 Lotos (1)
Maximum system pressure	bar	200
Electrical system		
Supply voltage	V	12
Connection socket	-	7 poles in accordance with ISO 1724
Coupling device		
Type of hitch	mm	40

(1) – a different oil may be used, provided it can be mixed with oil in the trailer. Detailed information can be found in the product information card.

E.3.2.103.03.1.EN

1.4 ACCESSORIES

STANDARD EQUIPMENT

- *User Manual*.
- *Warranty Card*.
- Electrical installation connection cable.
- Wheel chocks.

ADDITIONAL AND OPTIONAL EQUIPMENT

- Plate for slow-moving vehicles.
- Spare wheel.
- Parking brake with crank.
- Folding rear underrun protection approved according to Directive 70/221/EEC (according to 2006/20/EC).
- Plastic fenders protecting the rear and front wheels.
- Electrical installation with side marker lamps and exit to the rear.
- Rear outlets for hydraulics, brakes, for the second trailer.

LOAD BOX

- Single-shell loading box made of ordinary quality sheet metal.
- Load box, internal width 2410mm, made of wear-resistant steel, 8mm (floor) and 6mm (walls) thick.
- Trapezoidal loading box 2196mm/2300mm made of ordinary quality steel.

ADVICE

You should require the seller to carefully fill out the *Warranty Card* and complaint coupons. The lack of e.g. date of sale or point of sale stamp exposes the user to not accept any complaints.

- Trapezoidal loading box 2196mm/2300mm made of wear-resistant steel, 8mm (floor) and 6mm (walls) thick.
- 800mm extensions made of sheet metal with th. 2.5 mm, increasing the load capacity of the trailer to 21.3m^3, with a plexiglass window, a swinging rear wall, a seal, a central crossbar, a ladder and internal steps.

REAR FLAPS

- Hydraulic rear flap, 370mm high, tilted downwards;
- Swinging flap - for a box 2410 mm wide;
- Hydraulic rear flap lifted up with the door opening like a gate equipped with a chute opening - only for trapezoidal loading box with an internal width 2196mm/2300mm.

SUSPENSION

- Tandem suspension on 4 parabolic springs, with equalizing arms, with a wheelbase of 1500mm, with rigid axles equipped with drum brakes

with dimensions of Ø400x120 mm.

- Leaf spring boogie suspension with hydraulic rear axle lock.

AXES

- Rigid with brakes Ø 406x140.
- Passively steered rear axle with a hydraulic turning lock system.

DRAWBAR HITCH

- Rotary with an eye Ø50mm.
- Rigid with an eye Ø40mm for connecting to the upper hitch of the tractor.
- Rigid with an eye Ø50mm for connecting to the lower hitch of the tractor.
- Rigid, ball K80mm for connecting to the lower hitch of the tractor.

DRAWBAR SUPPORT

- Drawbar support: telescopic with two-stage gear.
- Drawbar support: hydraulic straight support with cut-off ball valve.
- Hydraulic, folding.

ADVICE

For tire information, see APPENDIX A at the end of the User Manual .

REAR HITCH

- Rear hitch, manual, amortized.
- Automatic rear hitch.

MAIN BRAKE INSTALLATION

- Braking system: single line, pneumatic with manual braking force regulator.
- Braking system: single line, pneumatic with output to the rear.
- Braking system: double line, pneumatic with ALB.
- Braking system: double line, pneumatic with ALB with output to the rear.
- Braking system: double line, pneumatic with manual braking force regulator.
- The hydraulic braking system.
- Hydraulic braking system with output to the rear.

E.3.2.103.04.1.EN

1.5 TERMS OF WARRANTY

ADVICE

You should require the seller to carefully fill out the *Warranty Card* and complaint coupons. The lack of e.g. date of sale or point of sale stamp exposes the user to not accept any complaints.

PRONAR Sp. z o.o. in Narew guarantees smooth operation of the machine when it is used in accordance with the technical and operational conditions described in the *USER MANUAL*. Deadline for completion of repairs is specified in the *Warranty Card*.

The warranty does not apply to parts and sub-assemblies of the machine, which are subject to wear in normal operating conditions, regardless of the warranty period.

The warranty services only apply to such cases as: mechanical damage not caused by the fault of the user, factory defects of parts, etc.

In the event that damage occurs as a result of:

- mechanical damage caused by the user's fault, road accident,
- from improper operation, adjustment and maintenance, misuse,
- use of a damaged machine,
- repairs carried out by unauthorized persons, improper repairs,
- making arbitrary changes in the machine design,

the user loses the warranty.

Modifications to the machine without the written consent of the Manufacturer are prohibited. In particular, welding, reaming, cutting and heating of the main machine components that directly affect safety during use are not permitted.

Detailed warranty conditions are given in the *Warranty Card* attached to the newly purchased machine.

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1.6 TRANSPORT

The machine is ready for sale completely assembled and does not require packing. Only the machine's technical documentation and possibly some elements of additional equipment are packed. Delivery to the user is carried out by road or independent transport (towing a trailer with an agricultural tractor).

CAR TRANSPORT

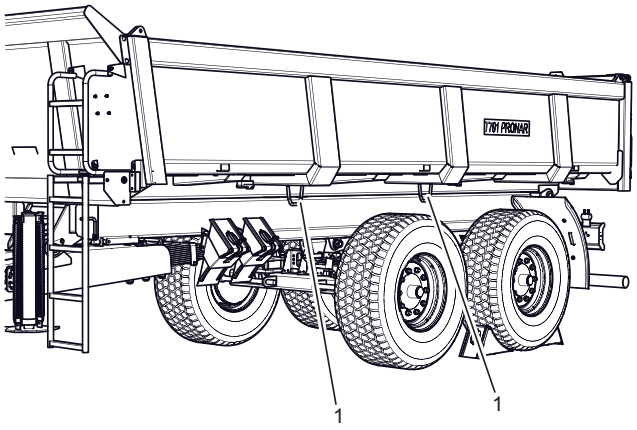
Loading and unloading a trailer from a car should be carried out using a loading ramp using a farm tractor. During work act

DANGER

During road transport, the trailer must be mounted on the platform of the vehicle in accordance with safety requirements and regulations.
While driving, the car driver should exercise extreme caution. This is due to the vehicle's centre of gravity shifting upwards with the machine loaded.
Use only approved and technically reliable securing measures. Read the operating instructions of the securing measures manufacturer.

in compliance with the general principles of workplace health and safety for reloading work. Persons operating reloading equipment must have the required permissions to use these devices. The trailer must be correctly connected to the tractor in accordance with the requirements contained in this manual. The trailer braking system must be activated and checked before going down or onto the ramp.

The trailer should be attached firmly to



103.E.02.1

Figure 1.3 Arrangement of transport handles
(1) transport handle

the platform of the vehicle with straps, chains, lashings or other fastening devices equipped with a tensioning mechanism. Fasteners should be attached to the transport retainers provided for this purpose. Transport retainers are welded to the bottom frame longitudinal members. Use approved and technically reliable securing measures. Wiping belts, cracked fasteners, bent or corroded hooks or other damage may disqualify the product from being used. Please refer to the instructions in the manual of the manufacturer of the securing material used. Chocks or other elements without sharp edges should be placed under the trailer wheels

to protect the machine against rolling. The trailer wheel lock must be secured to the vehicle loading platform in such a way that it cannot move. The number of fastening

DANGER

Incorrect use of securing measures can cause an accident.

elements (ropes, belts, chains, lashings, etc.) and the force needed for their tension depends, among others, on the weight of the trailer, the construction of the car carrying the trailer, the speed of travel and other conditions. A properly attached trailer will not change its position relative to the transporting vehicle. The fastening means must be selected according to the manufacturer's instructions. In case of doubt, a larger number of attachment and securing points for the trailer should be used. If necessary, protect sharp edges of the trailer, thus securing the securing means against damage during transport. During reloading work, particular attention should be paid so as not to damage the machine equipment components and the paint coating. The kerb weight of the trailer in running order is given in table (3.1).

USER'S TRANSPORT

In the case of independent transport by the user after purchasing the trailer, read the trailer*User Manual* and follow its recommendations. Own transport involves towing a trailer with your own agricultural tractor to its destination. Adjust the speed to the prevailing road conditions during driving, but it must not be greater than the maximum design speed.

CAUTION

It is forbidden to fasten slings and all kinds of load fastening elements to the elements of the hydraulic and electric installation as well as the slender elements of the machine (e.g. covers, wires)

E.3.1.526.05.1.EN

1.7 THREAT TO THE ENVIRONMENT

A hydraulic oil leak constitutes a direct threat to the natural environment owing to the limited biodegradability of the substance. When carrying out maintenance and repair work where there is a risk of leakage of oil, this work should be carried out in rooms with an oil resistant surface. In the event of oil leaking into the environment, first of all contain the source of the leak, and then collect the leaked oil using available means. Collect oil residue with sorbents or mix the oil with sand, sawdust or other absorbent materials. Collected oil contaminants should be stored in an airtight and marked container, resistant to hydrocarbons, and then transferred to an oil waste disposal point. The container should be kept away from heat sources, flammable materials and food.

DANGER

Do not store oil waste in food containers.
Store used oil in containers resistant to hydrocarbons.

It is recommended to store the oil which has been used up or is unsuitable for further use due to the loss of its properties in its original packaging in the same conditions as described above. Waste code 13 01 10 (hydraulic oil). Detailed information on oils can be found in the product safety data sheets.

CAUTION

Oil waste can only be delivered to a point dealing with the utilization or regeneration of oils. It is prohibited to throw or pour oil into the sewage system or water reservoirs.

E.3.1.526.06.1.EN

1.8 WITHDRAWAL FROM USE

If the user decides to withdraw the machine from use, comply with the provisions in force in the given country regarding withdrawal from use and recycling of machines withdrawn from use.

Before dismantling the machine, the oil must be completely removed from the hydraulic system.

In the event of parts being replaced, worn or damaged parts should be taken to a recycling centre. Used oil as well as rubber or plastic elements should be taken to plants dealing with the utilization of this type of waste.

DANGER

During disassembly, use appropriate tools, devices (overhead cranes, cranes, hoists, etc.), use personal protective equipment, i.e. protective clothing, shoes, gloves, glasses, etc.

E.3.1.526.07.1.EN

SAFETY OF USE

CHAPTER 2

2.1 BASIC SAFETY RULES

- Use of the trailer for any other purpose is prohibited. Everyone who uses the trailer in a manner contrary to its intended use, thus takes full responsibility for all consequences arising from its use. Using the trailer in a manner not in accordance with the manufacturer's instructions may void the warranty.
- Before using the trailer, the user should carefully read the content of this publication and the *Warranty Card*. During their operation, all recommendations contained therein must be observed.
- The trailer may only be used and operated by persons authorized to drive agricultural tractors with a trailer.
- Familiarize yourself with all machine controls before starting work. It will be too late to do this during operation. Do not use the machine without knowing its function.
- Familiarize yourself with the construction, operation and principles of safe operation of the machine.
- Before each start-up of the trailer, check that it is properly prepared for work, first of all in terms of safety.
- If the information contained in the User's Manual is difficult to understand, contact a seller who runs an authorized technical service on behalf of the manufacturer, or contact the manufacturer directly.
- Access to the trailer is possible only with the machine absolutely still. Stop the agricultural tractor, remove the ignition key of the tractor, secure the trailer and tractor against rolling by placing wedges. Immobilize the trailer and tractor with parking brake. Use the appropriate height and strength of the platform or ladder to climb.
- Careless and improper use and operation of the trailer, as well as non-compliance with the instructions contained in the User Manual, can pose a risk to health and life.
- The trailer may only be used when all the covers and other protective elements are functional and properly fastened.
- Pronar sp.z o.o. warns of the existence of a residual risk, therefore the application of the principles of safe and wise use should be the basic principle for using the trailer. Remember that your safety is the most important thing.

- Do not allow the machine to be used by unauthorized persons and who are not able to operate the trailer, in particular children, intoxicated persons, persons under the influence of drugs or other intoxicants etc.
- Any modification of the trailer prohibited and exempts Pronar from liability for any damage or injury.

F.3.1.526.01.1.EN

2.2 SAFETY DURING MACHINE COUPLING

- Take special care when connecting the machine.
- When connecting, nobody may be between the trailer and the tractor.
- Do not aggregate the trailer if the agricultural tractor does not meet the minimum requirements set by the manufacturer.
- Before connecting the trailer, make sure that the oil in the tractor's external hydraulic system can be mixed with the trailer's hydraulic oil.
- Before coupling the trailer, make sure that both machines are technically sound.
- When coupling of the trailer use the appropriate tractor hitch. After coupling the machines, check the the hitch safety device. If necessary read the tractor operating instructions.
- If the tractor is equipped with an automatic hitch, make sure that the coupling operation is completed.
- Hitching and unhitching of the trailer may only take place when the machine is immobilized by means of the parking brake.

F.3.1.526.02.1.EN

2.3 SAFETY RULES FOR OPERATING HYDRAULIC AND PNEUMATIC SYSTEMS

- The hydraulic and pneumatic systems are under high pressure during operation.
- Check the technical condition of connections and hydraulic and pneumatic hoses. The trailer's operation with leaking installations is not allowed.
- In the event of a failure of the hydraulic or pneumatic system, the trailer should be decommissioned until the failure is removed.
- When connecting the hydraulic conduits to the tractor, sure that the tractor and the trailer hydraulic systems are not under pressure. If necessary, reduce the residual pressure of the system.
- In the event of injuries being caused by pressurized hydraulic oil, contact a doctor immediately. Hydraulic oil can penetrate the skin and cause infection. If the oil gets into the eyes, rinse with plenty of water and if irritation occurs, contact a doctor. In the event of contact of oil with skin the area of contact with water and soap. Do not use organic solvents (petrol, kerosene).
- Use hydraulic oil recommended by the manufacturer.
- Rubber hydraulic conduits must be replaced every 4 years regardless of their technical condition.
- Dispose of used oil. Used oil or oil which has lost its properties should be stored in original containers or replacement packaging resistant to hydrocarbons. Replacement containers must be accurately described and properly stored.
- Rubber hydraulic conduits must be replaced every 4 years regardless of their technical condition.

CAUTION

It is forbidden to store hydraulic oil in packaging intended for food storage.

F.3.1.526.03.1.EN

2.4 RULES OF SAFE TECHNICAL SERVICE

- During the warranty period, any repairs may only be carried out by a Warranty Service authorized by the manufacturer. After the end of the warranty period, it is recommended that any repairs to the trailer shall be carried out by specialized workshops.
- In the event of any faults or damage, the trailer should be decommissioned until repaired.
- During maintenance work, use appropriate, close-fitting protective clothing, gloves, shoes, glasses and the right tools.
- Any modification of the trailer exempts the trailer's manufacturer from any liability for damage or injury.
- Regularly check the technical condition of the safety devices and the correct tightening of bolted connections (in particular the tendons and wheels). Checking the tightening of the nuts is described in the chapter *Technical Support*.
- Inspect the trailer in accordance with the frequency specified in this User Manual.
- Before starting repair work on hydraulic or pneumatic systems, the residual oil or air pressure must be completely reduced.
- Perform maintenance and repair activities applying the general principles of health and safety at work. In case of injury, wash and disinfect the wound immediately. In case of serious injuries consult a physician.
- Repair, maintenance and cleaning work should only be carried out with the tractor engine switched off and the ignition key removed. Always secure the tractor and trailer with the parking brake and wedges under the trailer wheel. Close the tractor cab and secure it against access by unauthorized persons.
- During maintenance or repair work the trailer may be disconnected from the tractor, but it must be secured with the use of wedges and parking brake.
- Should it be necessary to replace individual parts, use only parts recommended by the manufacturer. Failure to comply with these requirements may endanger the health or life of bystanders or persons operating the trailer, cause damage to the machine and constitute the basis for loss of warranty.

- Before welding or electrical work, the trailer should be disconnected from the power supply. Clean the paint coating. The fumes of burning paint are poisonous to humans and animals. Welding work should be carried out in a well-lit and ventilated room.
- During welding work pay attention to flammable or fusible elements (elements of pneumatic, electrical, hydraulic systems, elements made of plastic). If there is a risk of ignition or damage, they must be or covered with non-flammable material before welding. Before starting work, prepare a CO2 or powder extinguisher.
- In the event of work requiring the trailer to be raised, use properly certified hydraulic or mechanical lifts for this purpose. After lifting the machine use stable and durable supports. It is forbidden to work under a trailer raised only with a jack.
- It is forbidden to support the trailer with fragile elements (bricks, hollow bricks, concrete blocks).
- After completing work associated with lubrication, remove excess grease or oil. The trailer should be kept clean.
- It is forbidden to carry out independent repairs of hydraulic or pneumatic system components, i.e. control valves, actuators and regulators. In case of damage to these elements, the repair should be entrusted to authorized repair centres or replace the elements with new ones.
- It is forbidden to install additional devices or accessories that do not comply with the specification specified by the Manufacturer.
- The trailer may only be towed if the running gear, lighting and braking systems are functional.
- Repair of the drawbar and rod (welding, surfacing, straightening, etc.) is prohibited and requires replacement of parts with new ones.

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2.5 SAFE DRIVING RULES

- When driving on public roads, comply with traffic regulations and transport regulations in force in the country where the trailer is used.
- When driving on public roads, comply with the road traffic regulations and transport regulations in force in the country where the machine is used. Excessive speed may cause the lose of control, damage the trailer and/ or tractor, and reduce the braking effectiveness.
- The trailer disconnected from the tractor must be immobilized with the parking brake. If the machine is standing on a slope or an elevation, it must be absolutely secured against rolling by placing chocks under the wheels of the rigid axle.
- It is forbidden to leave the machine unsecured. The trailer disconnected from the tractor must be absolutely secured against rolling away using the parking brake and wedges under the wheel of the rigid axle of the vehicle. Wedges should be placed on one axle, at the front and rear of the wheel.
- Before driving, make sure that the machine is correctly connected to the tractor.
- Before travelling with the trailer, make sure, that trailer is technically sound.
- Before driving off, make sure that the parking brake is released and the brake force regulator is in the correct position.
- Prolonged driving on sloping ground creates a risk of loss of braking efficiency.
- Reckless driving and excessive speed can cause an accident.
- Load protruding beyond the outline of the trailer should be marked in accordance with traffic regulations. It is forbidden to transport loads not allowed by the manufacturer.
- If possible, avoid driving over uneven

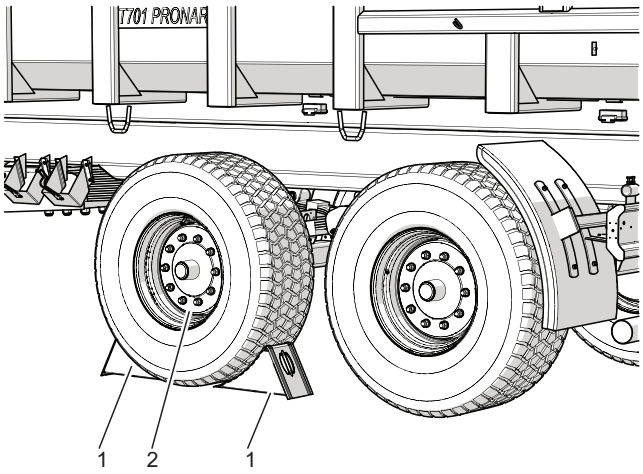

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Figure 2.1 How to set the wedges under wheel

(1) locking wedges (2) rigid wheel axle

terrain and unexpected turns.

- It is forbidden to get on the trailer while driving.
- When driving on public roads, the tractor operator must ensure, that the machine and tractor are equipped with an approved or homologated warning reflective triangle.
- Mount triangular sign for slow moving vehicles in the rear wall, if the trailer is the last vehicle in the set. The distinguishing plate (1) must be placed in a holder specially prepared for this purpose.
- Do not exceed the maximum load capacity of the trailer, as this may damage the machine, loss of stability while driving, scattering of the load and causing a hazard while driving.
- The braking system of the machine has been adapted to the total weight of the trailer, exceeding of which will drastically reduce the operation of the service brake.
- When reversing (especially if visibility is limited), it is recommended to use the assistance of another person. During manoeuvres, the helping person must keep a safe distance from danger zones and be visible to the tractor operator at all times.
- Keep bystanders away from the work area.
- Use extreme caution when passing near overhead power lines.
- Driving the trailer with open rear flap doors is prohibited.

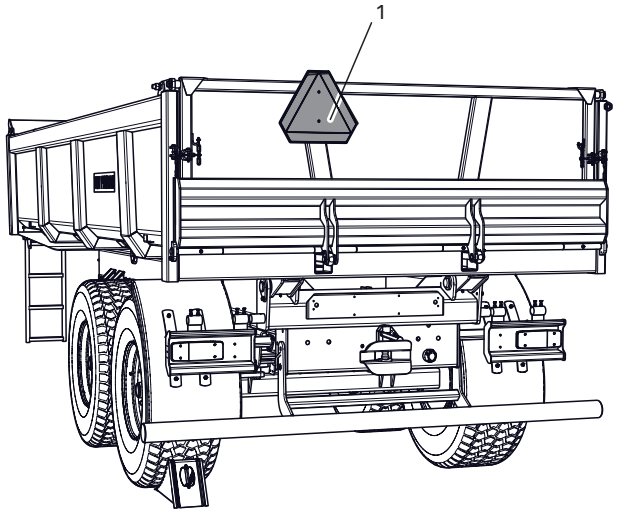

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Figure 2.2 Location of the board
(1) distinguishing sign

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2.6 LOADING AND UNLOADING OF A TRAILER

- Loading and unloading work should be carried out by a person experienced in this type of work.
- The load must be arranged in such a way that it does not threaten the stability of the trailer and does not hinder driving.
- The load must be secured against shifting by means of straps, chains, tapes or other approved securing means with a tensioning mechanism.
- The arrangement of the load must not overload the chassis and the trailer drawbar.
- Incorrectly selected load distribution and overloading the machine may cause the trailer to overturn or damage its components.
- It is forbidden to stay in the load box during loading and unloading.
- Unloading and loading of the trailer can only be carried out when the machine is placed on hard and level surface and connected to the tractor. Tractor and trailer must be placed for straight-ahead driving.
- Make sure that there are no bystanders in the unloading/loading area.
- Before tipping the load box make sure that it is visible and make sure there are no bystanders nearby.
- Be careful when opening and closing the rear flap locks as there is a risk of pinching your fingers.

CAUTION

The trailer is not intended for transporting people, animals and hazardous materials.

F.3.2.103.06.1.EN

2.7 TIRES

- When working with tires, the trailer should be secured against rolling by placing axle wedges or other elements without sharp edges under the wheels. The wheel can be dismantled only when the trailer is not loaded.
- Repair work on wheels or tires should be carried out by persons trained and authorized to do so. These works should be carried out using appropriately selected tools.
- Check the correct tightening of the wheel nuts according to the assumed schedule.
- Avoid damaged surfaces, sudden and variable manoeuvres, and high speeds when turning.
- Check tire pressure regularly. Tire pressure should also be checked during all-day intensive work. It should be taken into account that an increase in tire temperature can increase the pressure inside the tire. With such a rise in temperature and pressure, reduce the load or speed. Never reduce pressure by venting if it increases due to temperature.
- Tire valves should be protected with suitable caps to avoid penetration of dirt.

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2.8 DESCRIPTION OF RESIDUAL RISK

Pronar Sp z o. o. in Narew made every effort to eliminate the risk of an accident. However, there is some residual risk that can lead to an accident and is primarily associated with the following activities:

- using the trailer contrary to its purpose,
- being between the tractor and the trailer during engine operation and when connecting the machine,
- being on the machine during engine work,
- operation of the machine with the covers removed or inoperative,
- failure to maintain a safe distance from hazardous areas or occupying a place in these zones during machine operation,
- trailer operation by unauthorized persons or persons under the influence of alcohol or other intoxicants,
- cleaning, maintenance and technical inspection of the trailer.

Residual risk can be reduced to a minimum by following these recommendations:

- prudent and unhurried operation of the trailer,
- sensible application of the remarks and recommendations contained in the operating instructions,
- performing maintenance and repair work in accordance with the principles of operating safety,
- carrying out maintenance and repair work by trained persons,
- using appropriate, fitted protective clothing,
- securing the machine against access by unauthorized persons, especially children.
- maintaining a safe distance from prohibited and dangerous places,
- a ban on being on the machine while it is operating.

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2.9 INFORMATION AND WARNING STICKERS

The machine is marked with information and warning decals mentioned in table 2.1. The machine user is obliged to ensure that the inscriptions, warning and information symbols placed on the machine are legible throughout the entire period of use. In the event of their destruction, they must be replaced. Labels with inscriptions and symbols are available from the Manufacturer or in the place where the machine was purchased. New assemblies replaced during repair must be marked again with the appropriate safety signs. When cleaning the machine, do not use solvents that may damage the label coating and do not direct a strong water jet.

Table 2.1. INFORMATION AND WARNING Stickers

Item	Description	Catalogue number
1,2,3	Machine type sticker.	
4	Sticker 40km/h	204N-00000008
6	Before starting repair, maintenance or other servicing activities, switch off the engine and remove the key from the ignition.	70RPN-00000005
7	Regularly check the tightness of wheel nuts and other bolted connections.	104N-00000006
8	Regularly carry out trailer lubrication activities according to the schedule.	104N-00000004
9	Caution. Before starting work, read the User's Manual.	70RPN-00000004
10	Wires functions	58RPN-0000041
11	The place of the transport fastening	58RPN-0000019
12	Permissible drawbar load of 30 kN	103N-00000002
13	Caution. Danger of electric shock. When unloading the trailer keep a safe distance from power lines.	58RPN-0000020

Item	Description	Catalogue number
14	Danger of being crushed. It is forbidden to carry out repair or maintenance works under a loaded and/or unsupported load box.	58RPN-0000012
15	Danger of being crushed. Keep a safe distance when closing and opening the rear flap.	58RPN-0000013
16	Danger of being crushed. Keep a safe distance when tipping, closing and opening the rear flap.	96RPN-00000006
17	The air pressure in the wheels*	
18	Switching over the hydraulic circuits of the tipping system of the 1st and 2nd trailer	

** - The air pressure in the wheels depends on the used tires.*

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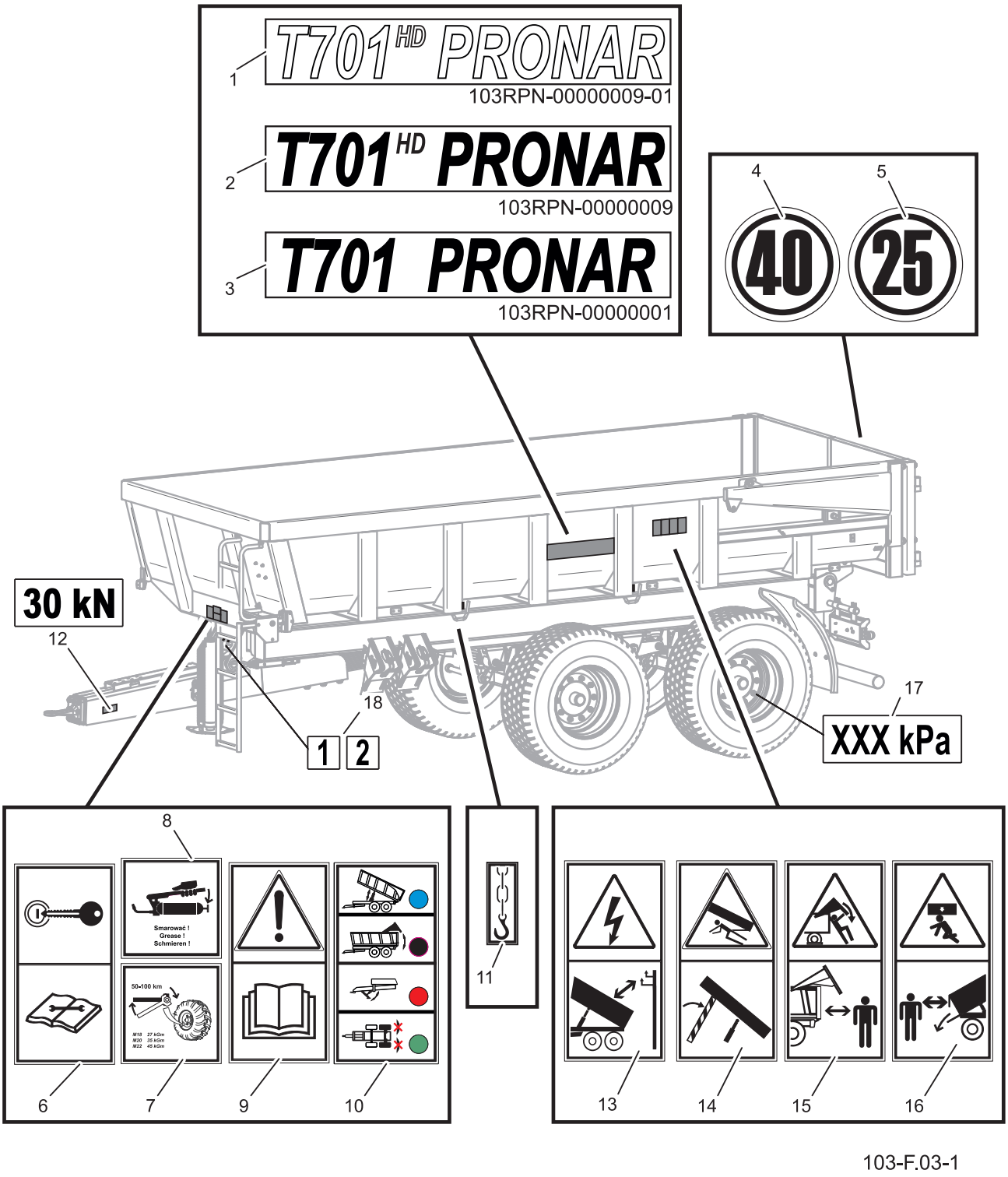

Figure 2.3 Arrangement of information and warning stickers

CONSTRUCTION AND OPERATION

CHAPTER 3

3.1 TECHNICAL CHARACTERISTICS

Table 3.1. Basic technical data

Content	Unit	T701
Dimensions		
length width height	mm	7360 2550 2330
Specification of the loading box		
The height of the walls of the box Internal length of load box Width of loading box inside Floor/wall sheet thickness Tipping angle (backwards)	mm mm mm mm ^{O}(deg)	800 5600 2410 10/8 60
Performance parameters		
Capacity Permissible gross weight Curb weight Platform height from the ground Load capacity Loading area	kg kg kg mm m^3 m^2	14840 21000 6160 1475 10.6 13.5
Other information		
Permissible design speed: Wheel track Loading of the drawbar hitch Min. tractor power	km/h mm kg KM/kW	40 2060 3000 124.8/91.7
Telescopic cylinder		
Stroke Oil demand Pressure Tipping system	mm L bar	1980 36 200 2 cylinders, one-sided tipping

ADVICE

Depending on the additional equipment of the trailer, some technical parameters may change

3.2 OVERALL DIMENSIONS

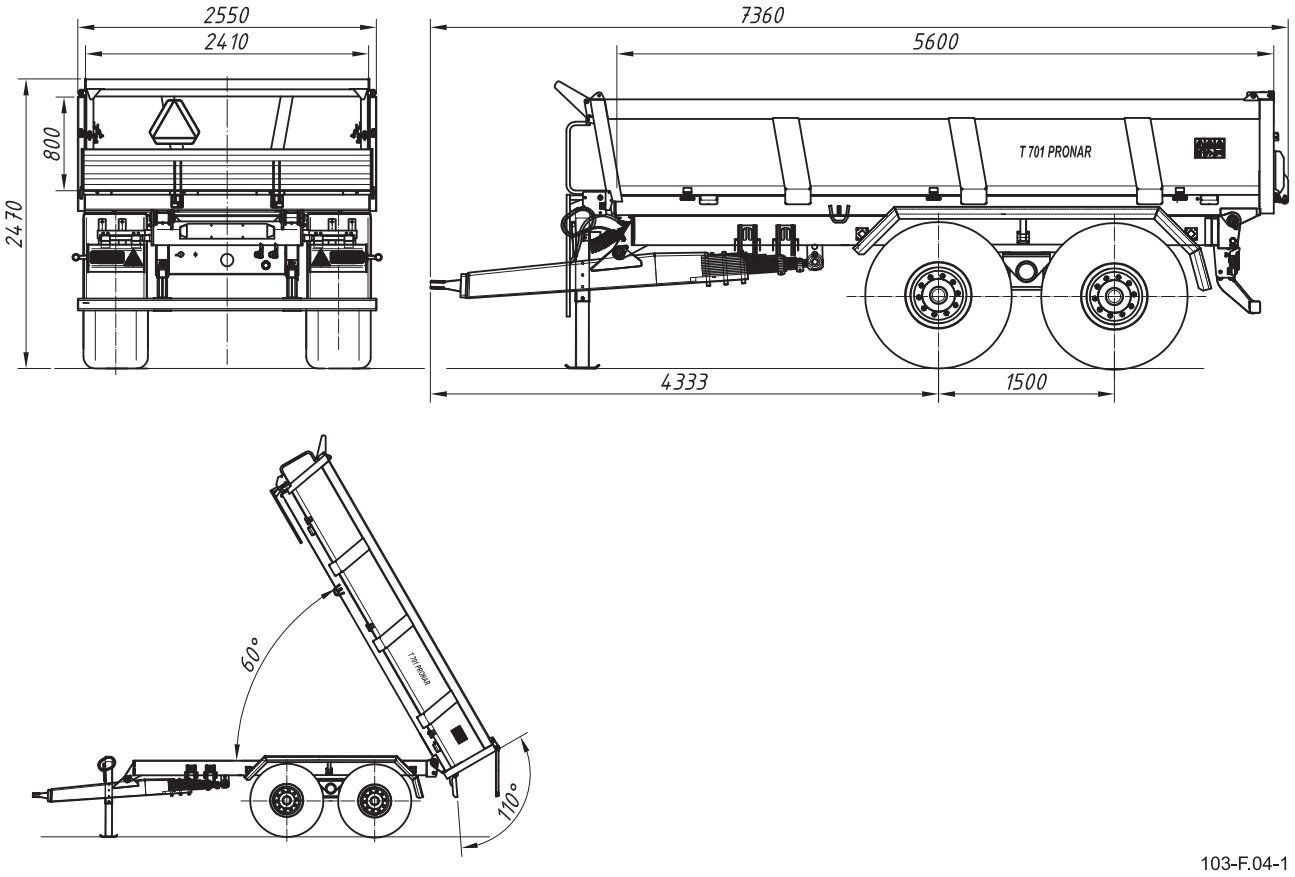

Figure 3.1 Basic dimensions of the trailer

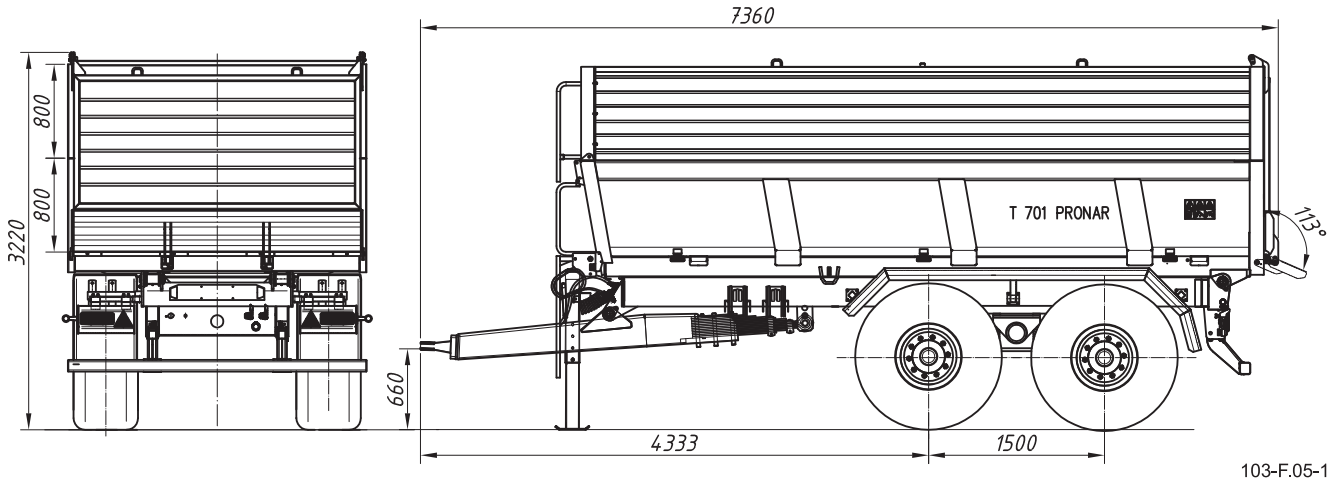

Figure 3.2 Basic dimensions of the trailer - version with extensions

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3.3 CHASSIS

The chassis of the T701 trailer can be made in two versions - with tandem suspension - figure (3.1) and with boogie suspension - figure (3.2). The lower frame (1) is a welded structure made of steel sections. The basic load-bearing element are two longitudinal members connected with crossbars. In the central part there is a socket for mounting of 2 hydraulic cylinders (9) for tipping the load box.

In the rear part of the frame there is a tandem type wheelset - figure (3.3), item (4)) or boogie type wheelset (figure (3.4), item (4)), and elements of the rear lighting unit (11).

Two rigid road axles (2) and (3) are attached to the suspension. Road axles are made of a square bar ended with pivots, on which road wheel hubs are mounted on conical bearings. These are single wheels equipped with calliper brakes actuated by mechanical cam expanders. Depending on

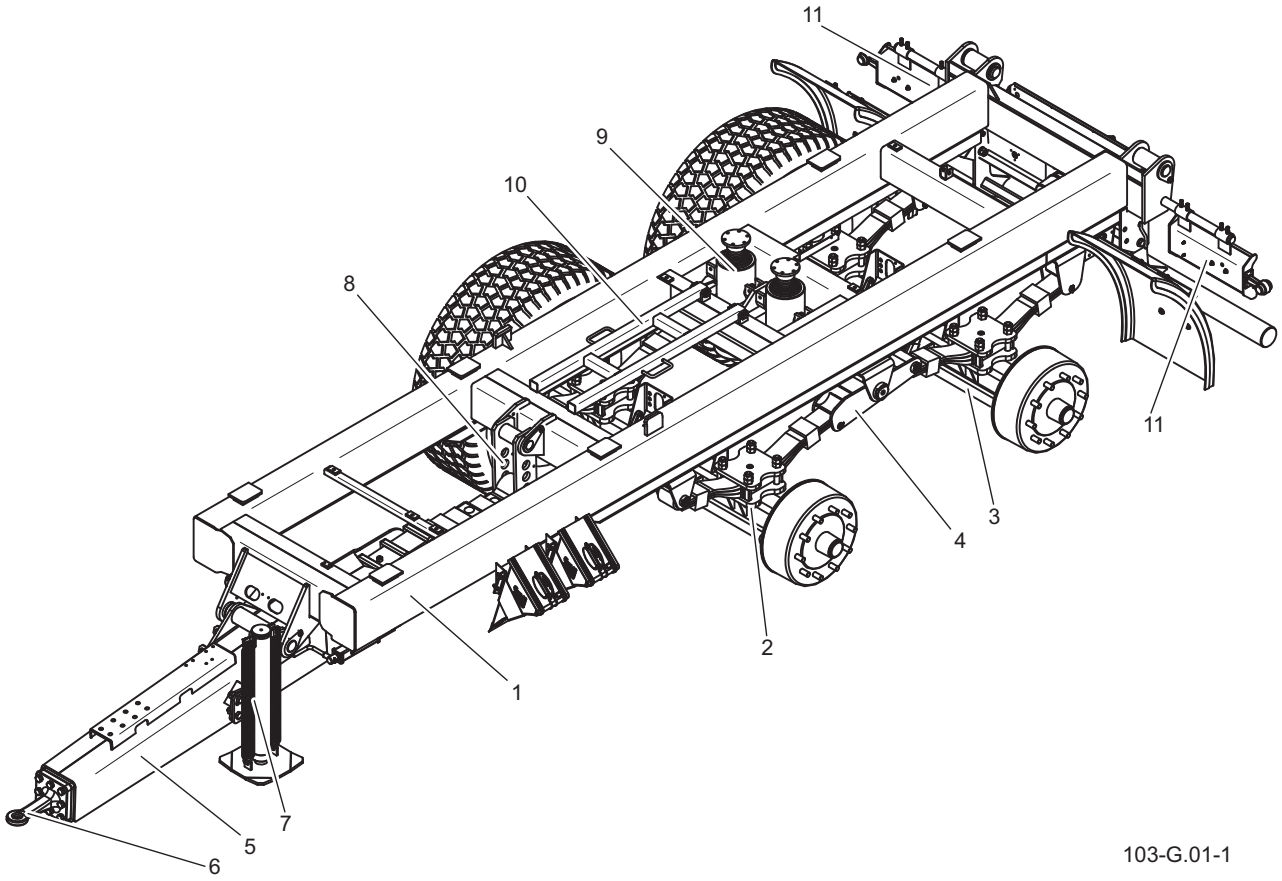

Figure 3.3 Chassis with tandem suspension

(1) lower frame, (2) front axle, (3) rear axle,
(4) tandem suspension, (5) drawbar, (6) drawbar eye, (7) hydraulic support,
(8) drawbar swing arm, (9) hydraulic cylinder, (10) load box support,
(11) lighting beam (left/right)

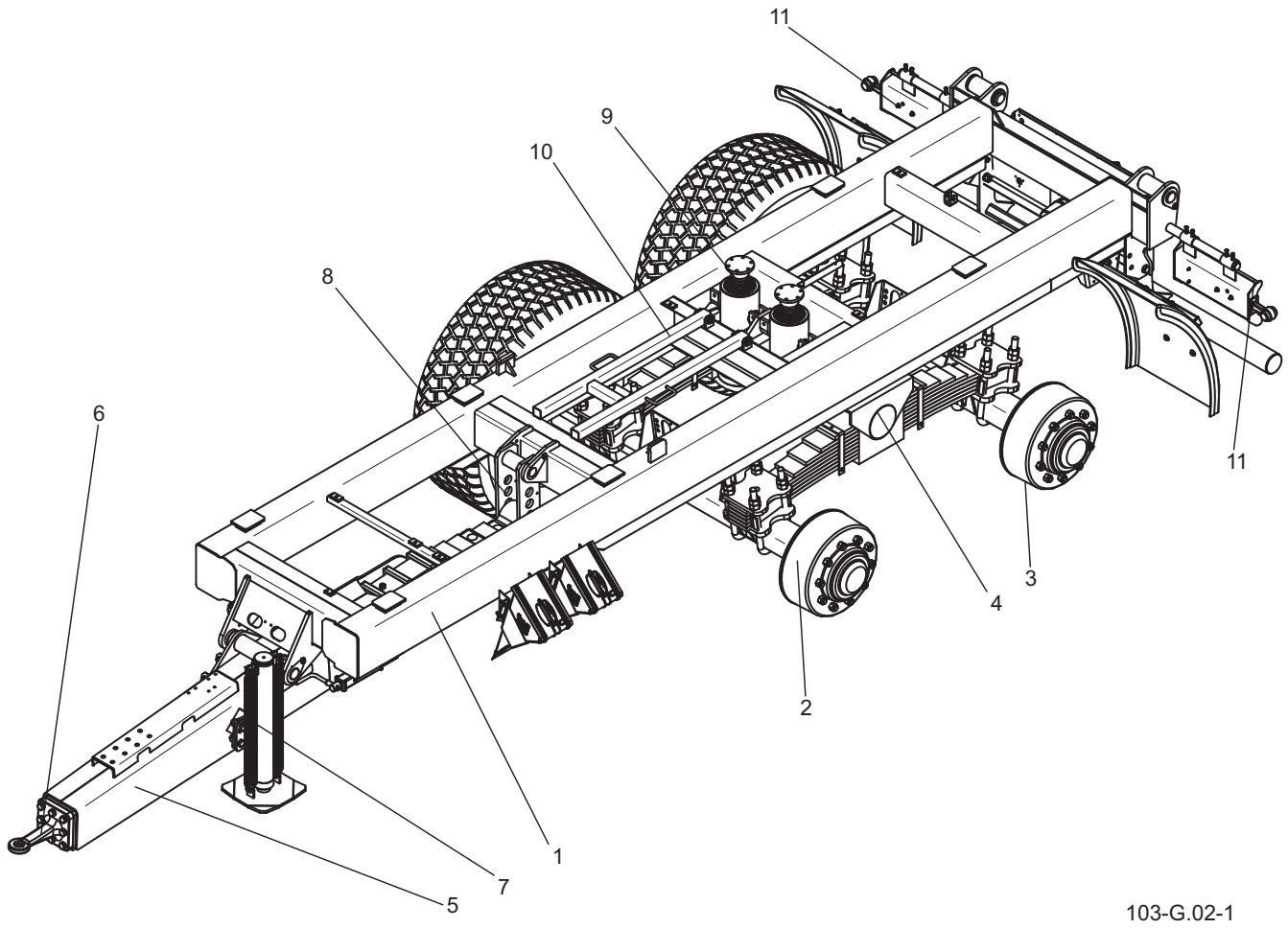

Figure 3.4 Chassis with boogie suspension

(1) lower frame, *(2) front axle,* *(3) rear axle,*
(4) boogie type suspension, *(5) drawbar,* *(6) drawbar eye,*
(7) hydraulic support, *(8) drawbar swingarm,* *(9) hydraulic cylinder,*
(10) load box support, *(11) lighting beam (left/right)*

the equipment, the rigid rear axle may be replaced with a passively steered steering axle (tag wheels).

The tandem spring suspension consists of two parabolic springs (1) (figure (3.3)), connected by a rocker arm (2), the whole is connected by pins (4), (5) and (6). Two wheel axles are attached to the suspension by means of fastening bolts (3) and spring plates.

The boogie spring suspension consists of a leaf spring (1) (figure (3.4)) mounted in the rocker arm (2) with a pin. The front (3) and rear (4) axles are bolted to the spring by means of fastening bolts and spring plates.

In the front part of the chassis (figure (3.1), (3.2)) there is a sprung drawbar (5) to which the drawbar eye is mounted (optional) (figure (3.6)): rotary drawbar eye ø50 (1), ball drawbar K80 (3), rigid rod ø40 (2), or rigid rod ø50 (4)). The drawbar (figure

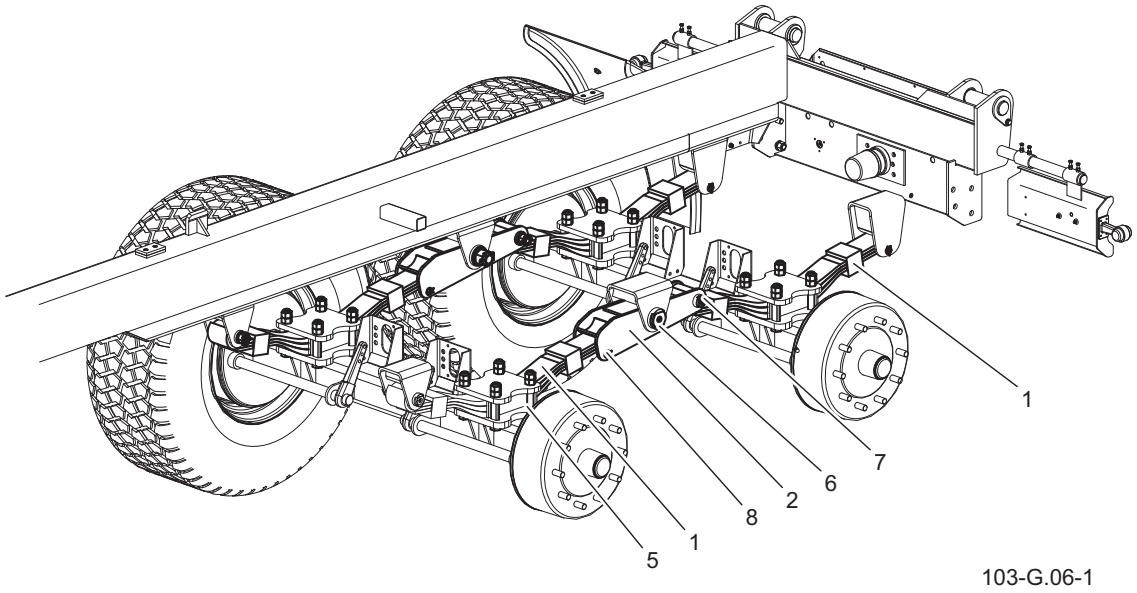

Figure 3.5 Tandem spring suspension

(1) parabolic spring, (2) spring swing arm, (3) mounting bolts, (4) rocker arm pin, (5) spring pin I, (6) spring pin II, (7) front axle, (8) rear axle

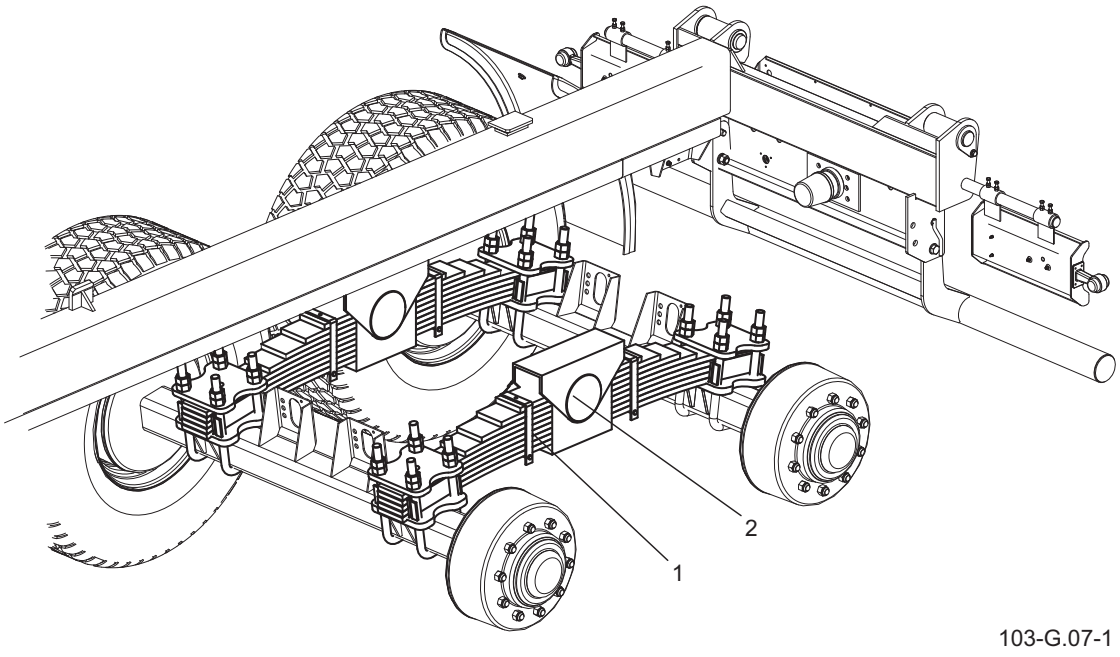

Figure 3.6 Boogie spring suspension

(1) parabolic spring, (2) spring swing arm, (3) front axle, (4) rear axle

(3.5)) is attached to the lower frame with bolts (4), (5) and (6). A hydraulic parking stand or a mechanical support is mounted to the side of the drawbar. Depending on the order, the trailer can be equipped with a straight hydraulic support or a mechanical support.

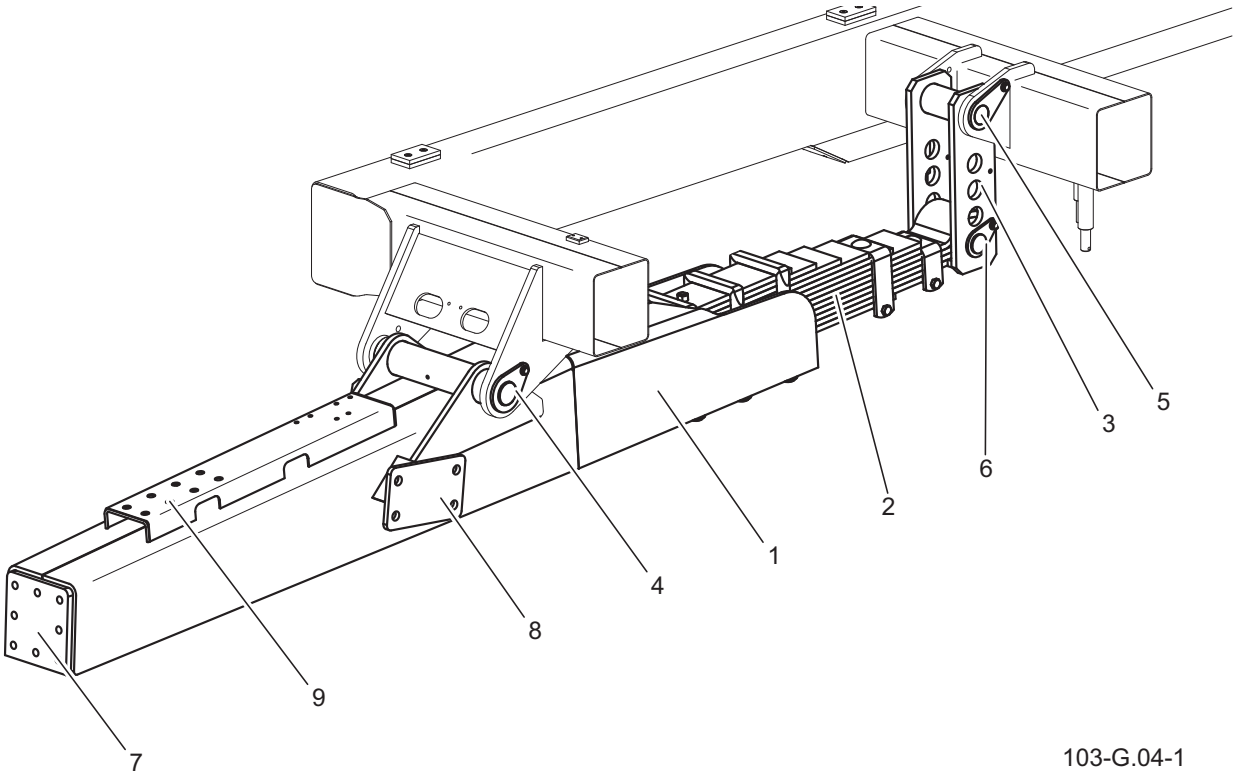

Figure 3.7 Sprung drawbar

(1) drawbar body, (2) leaf spring, (3) drawbar swing arm,
(4) drawbar pin, (5) rocker arm I pin, (6) rocker arm II pin,
(7) front plate for fastening the tie rod, (8) plate for support fastening, (9) channel section

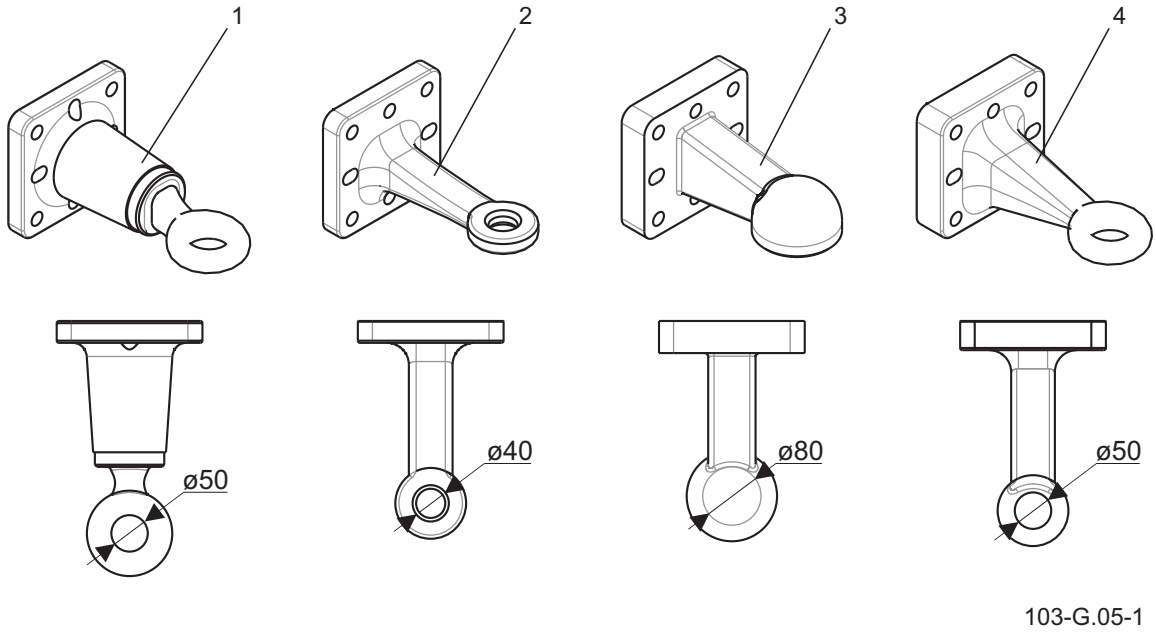

Figure 3.8 Drawbar eyes

(1) rotary drawbar eye ø50, *(2) drawbar eye ø40,* *(3) spherical drawbar eye ø80,*
(4) drawbar eye ø50,

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3.4 LOAD BOX

LOAD BOX - STANDARD EQUIPMENT

The trailer load box (1) is a shell structure. It is made of steel sheets and steel sections - figure (3.7). In the rear part of the box there is a rear flap (2), opened by hydraulic cylinders. The flap is opened up and down, which allows easy loading and unloading. As an additional equipment, the trailer can be equipped with a hinged flap (4), which allows to obtain the required layer thickness when unloading loose materials. In the front part of the box there is a front wall extension (3), which serves as a protective element.

PRONAR, meeting the expectations of customers, offers the production of a load

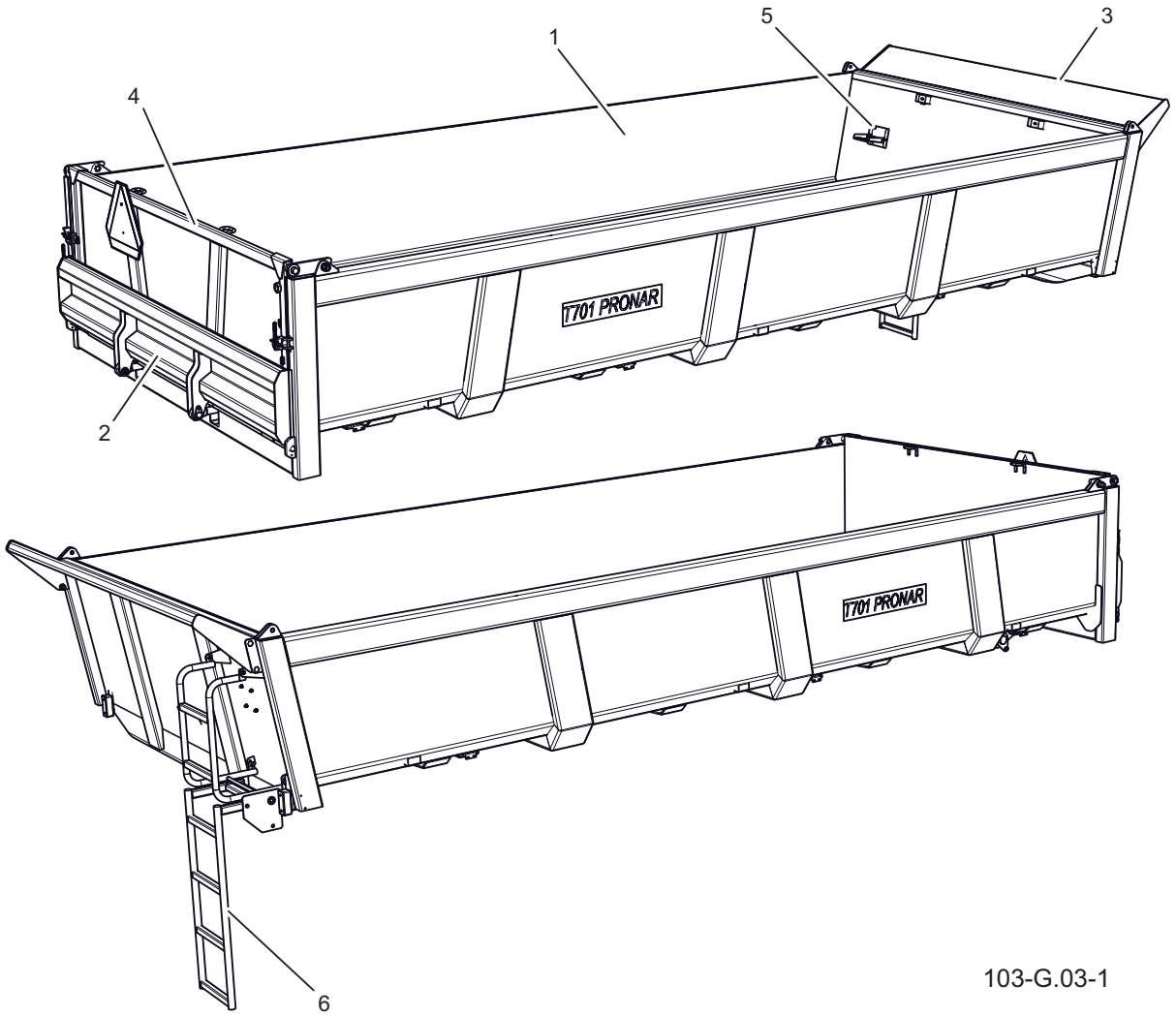

Figure 3.9 Load box - standard equipment

(1) Load box *(2) Rear flap* *(3) Front extension*
(4) Swinging flap (optional equipment) *(5) Side step*
(5) Ladder

box and a rear flap of the following steel grades: 235 alloy steel S235 and 400 wear-resistant steel with a hardness of 400 HB.

LOAD BOX - OPTIONAL EQUIPMENT

The load box (figure 3.8) is a welded, shell structure. A foldable ladder (7) and a side step (8) inside the box are mounted on the front wall. In the rear part there is a flap (11) which is opened by means of hydraulic cylinders (10). The rear flap is equipped with left (4) and right (5) side-opening doors. A chute (6) for unloading

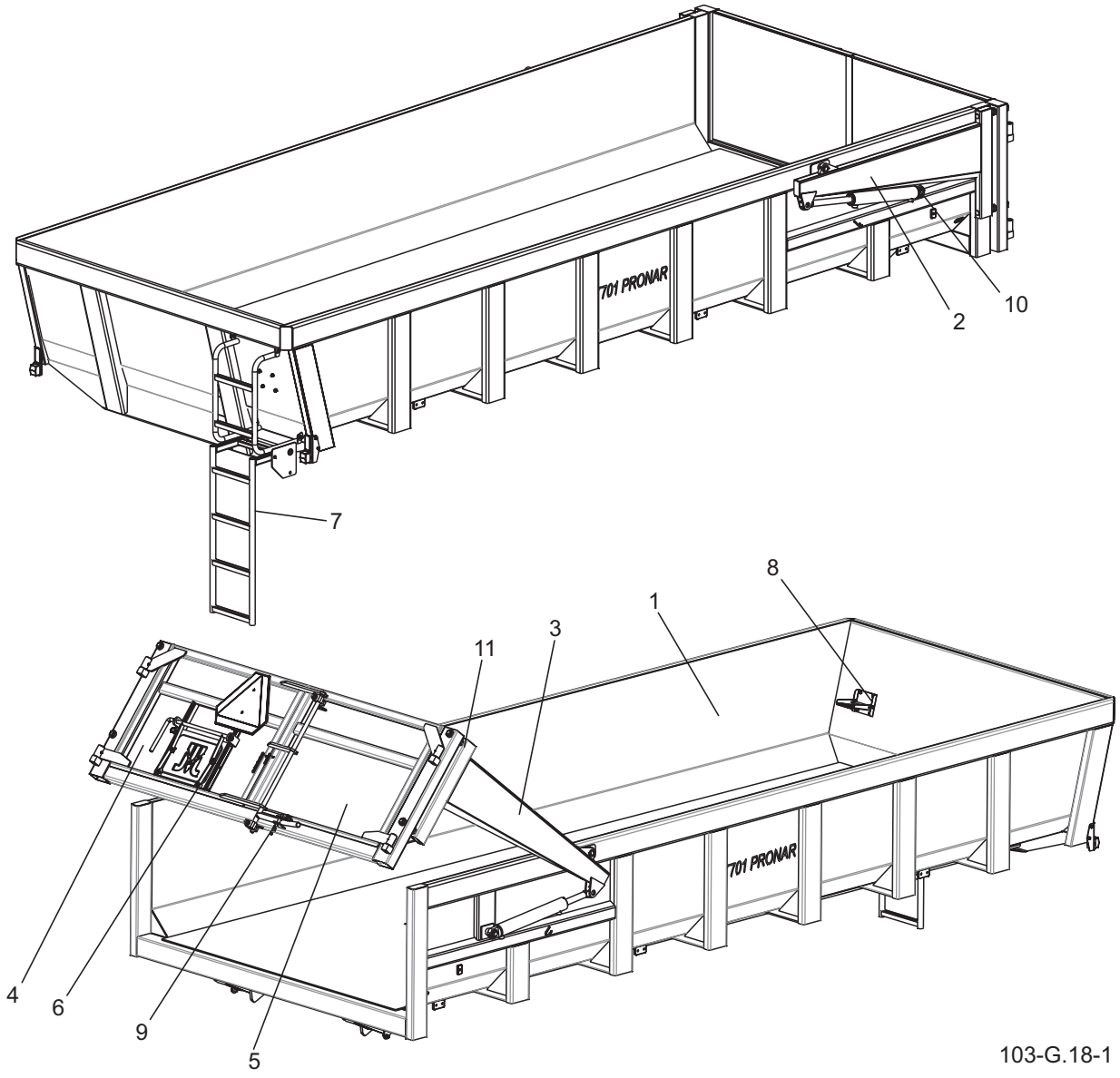

Figure 3.10 Load box - optional equipment

(1) Load box (2) Left leaf (3) Right leaf
(4) Left door (5) Right door (6) Rear chute
(8) Side step (7) Ladder (8) Side step
(9) Rear flap lock (10) Rear flap actuator (11) Lifted flap

loose materials is installed in the left door. The manufacturer offers the box made of standard sheets of S235 alloy steel and Hardox steel with a hardness of HB450.

DANGER

Take particular care when loading a trailer with extensions due to the possibility of shifting the vehicle's centre of gravity. Driving with an unevenly loaded or overloaded trailer can cause the trailer rocking and overturning of the set.

EXTENSIONS

The space of a standard load box (shown in Fig. 3.7) can be enlarged by means of extensions 80 cm high - Fig. 3.9. Extensions (1) are mounted on the walls of the box, the front wall extension is equipped with

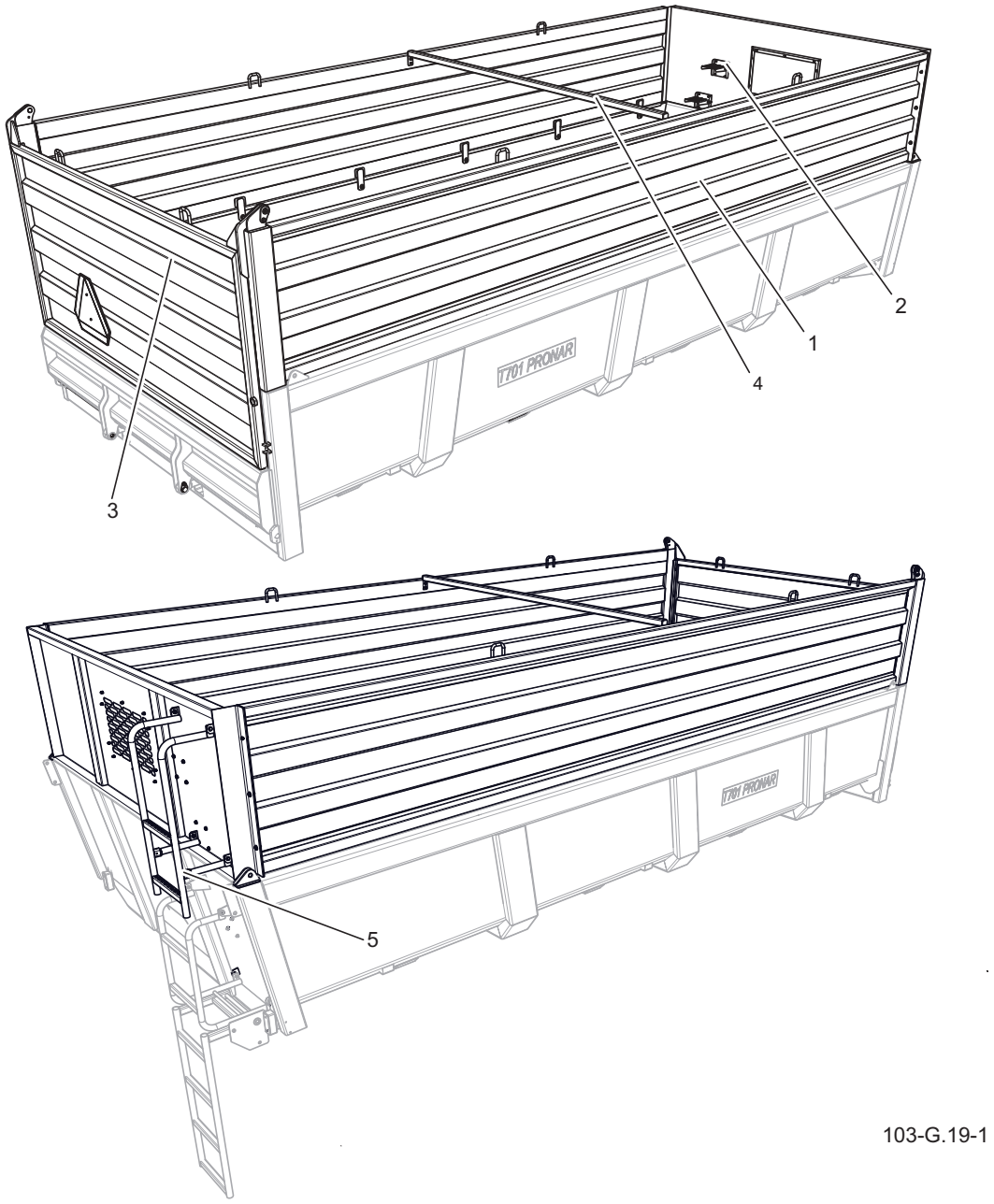

Figure 3.11 Extensions for the standard box

(1) set of extensions (2) side step (3) tilting flap extensions (4) crossbar (brace) extensions (5) extension ladder

steps (2) inside and a ladder (5) outside the trailer. The hinged rear flap (3) reaches the hydraulic body of the box and is locked by it during transport.

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3.5 SERVICE BRAKE

Depending on the version of the trailer, the machine is equipped with one of three types of service brake:

- double conduit pneumatic system with manual regulator, figure (3.8),
- double conduit pneumatic system with automatic regulator, figure (3.9),
- hydraulic braking system - figure (3.10).

The service brake (pneumatic or hydraulic) is activated from the driver's cab by pressing the tractor brake pedal. The task

ADVICE

The trailer hydraulic braking system was filled with L-HL32 Lotos hydraulic oil.

Table 3.2. List of symbols used in the schemes

Symbol	Description
	Pneumatic connection, plug
	Pneumatic connection, socket
	Drainage valve
	Main control valve
	Relay valve
	Automatic braking force regulator
	Manual braking force regulator
	Wire connection
	Air tank
	Brake cylinder
	Control valve (connector)
	Air filter

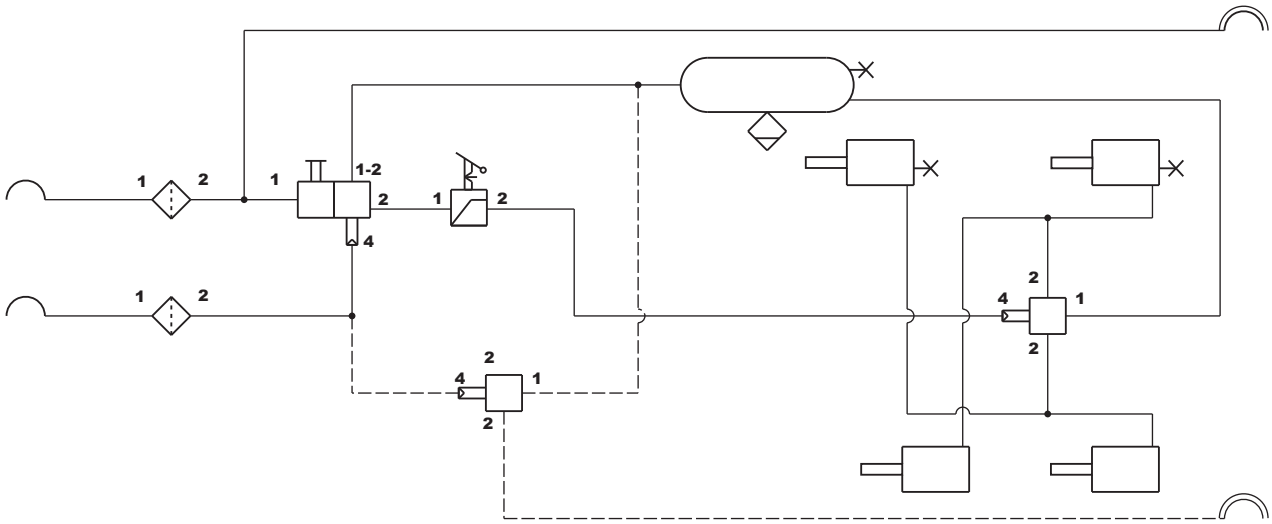

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Figure 3.12 Diagram of the double wire pneumatic system with a manual regulator

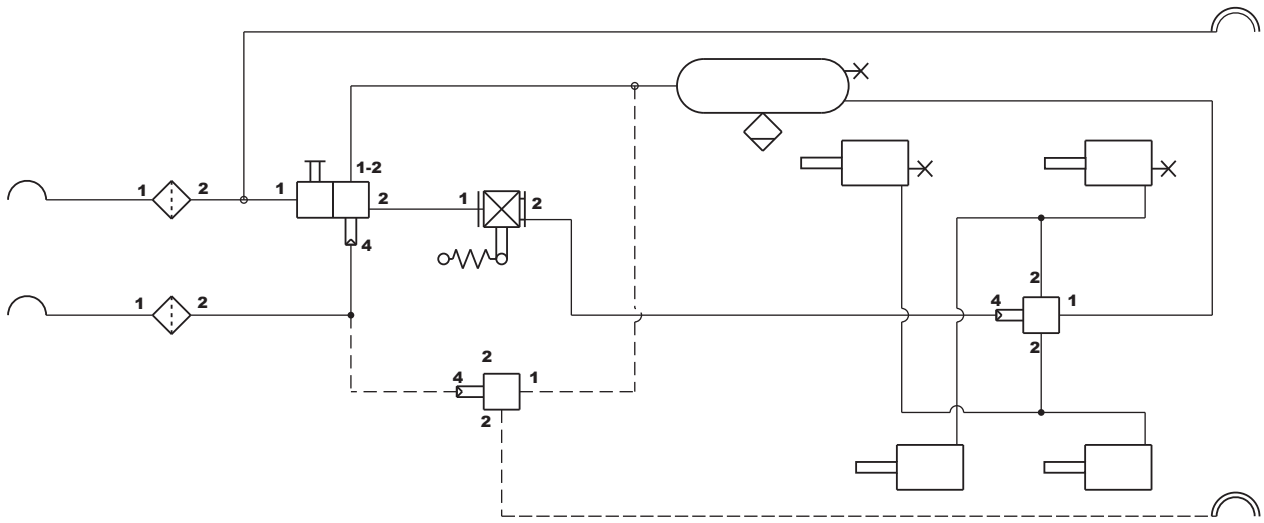

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Figure 3.13 Diagram of the double wire pneumatic system with an automatic regulator

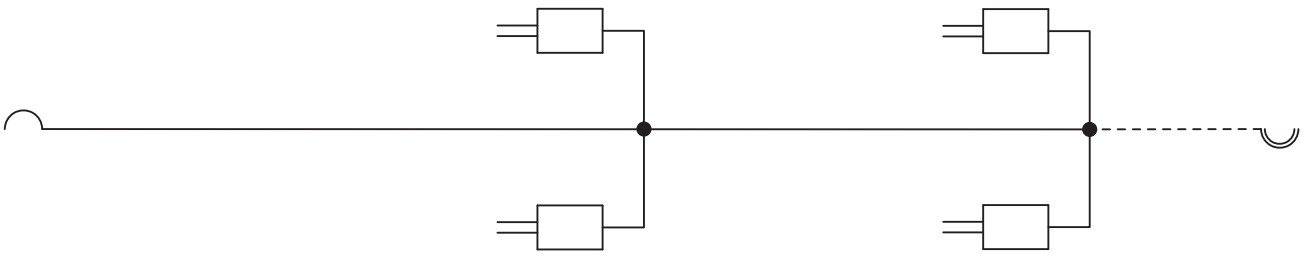

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Figure 3.14 Diagram of the braking hydraulic system

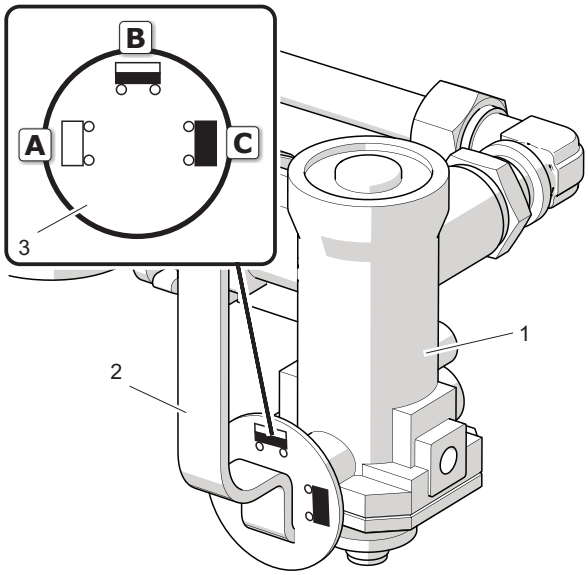

Figure 3.15 Tri-band braking force regulator
(1) regulator (2) lever
(3) disc settings (A) (B) (C)

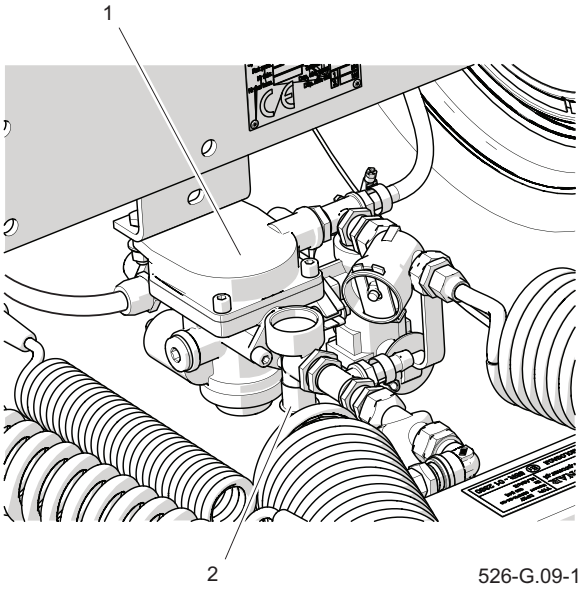

Figure 3.16 Control valve
(1) control valve (2) brake release button

of the control valve is to activate the trailer brakes simultaneously with the tractor brake applied. In addition, in the event of an unforeseen disconnection of the hose between the trailer and the tractor, the control valve automatically applies the machine's brake (applies only to pneumatic systems). The three-range braking force regulator used in pneumatic systems adjusts the braking force depending on the setting. Switching to the appropriate operating mode is done manually by the machine operator before starting the journey using the lever (2). Three work positions are available:

- A - "Without load”
- B - „Half-load”
- C - „Full load”.

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3.6 PARKING BRAKE

The parking brake is used to immobilize the trailer during parking. The brake crank mechanism, located in the front on the left side of the frame, is connected by a steel cable to the expander levers of the driving axle. The steel cable is tightened by turning the crank of the mechanism. Expander arms exerting pressure on the brake shoes, causing the axle to become immobilized. The parking brake must be released before driving - the steel cable must hang loosely.

In the version of the trailer with overrun brake, the crank mechanism is replaced by a lever brake located on the overrun drawbar. Before driving, make sure that the parking brake is unlocked.

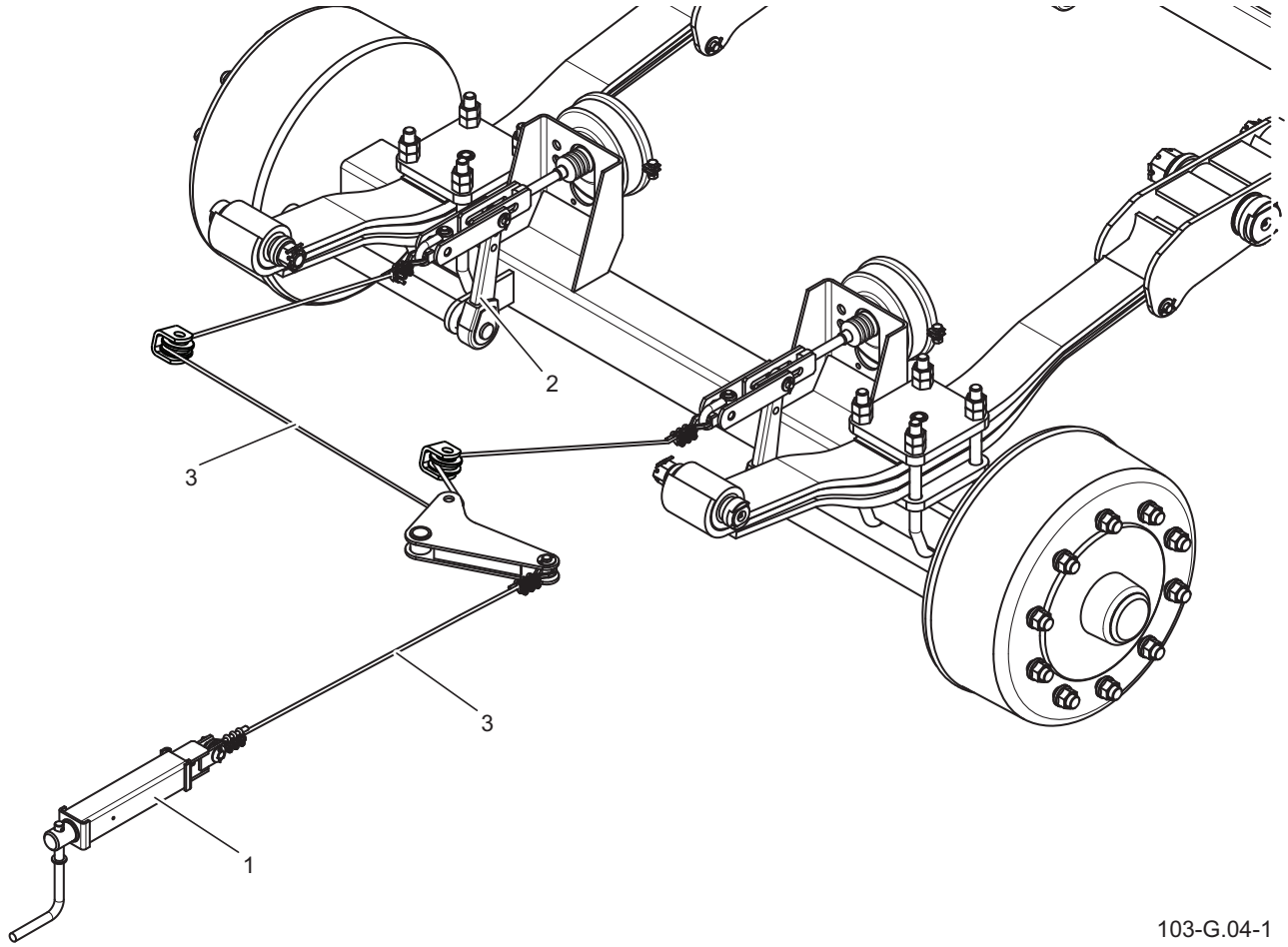

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Figure 3.17 Parking brake construction

(1) brake mechanism, (2) expander lever, (3) brake cable

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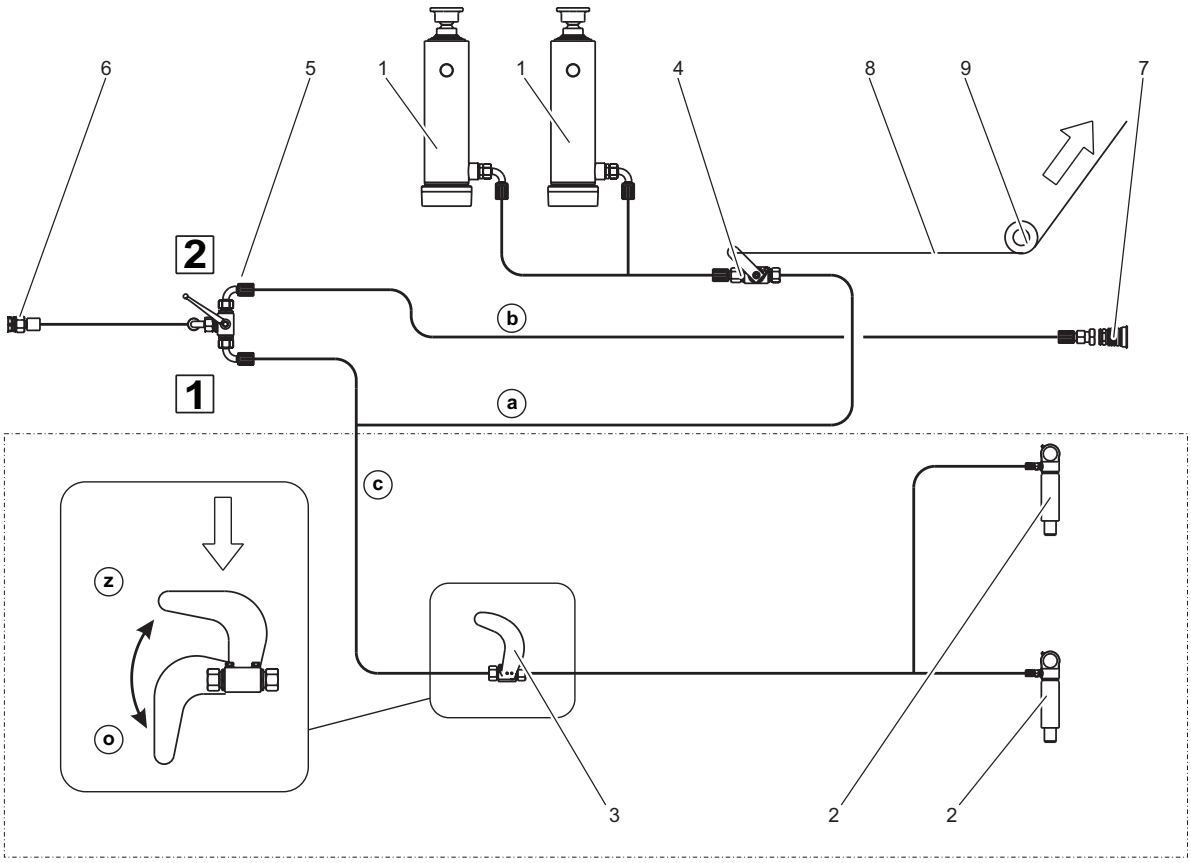
3.7 HYDRAULIC TIPPING SYSTEM



103-G.12-1

Figure 3.18 Diagram of the tipping system

(1) hydraulic cylinder of the tipping, (2) hydraulic cylinder of the suspension interlock, (3) cut-off valve with a control cam, (4) cut-off valve, (5) control valve, (6) connector valve plug, (7) connector valve seat, (8) line controlling the cut-off valve, (9) roller

The hydraulic tipping system is used for automatic unloading of the trailer by tilting the load box backwards. The hydraulic system of the unloading mechanism is supplied with oil from the tractor's hydraulic system. The tractor's external hydraulic oil distributor is used to control the lifting of the load box.

In the trailer, the system consists of two independent circuits:

- circuit [a] - for supplying the hydraulic cylinder of the first trailer,
- circuit [b] - to supply the second trailer hydraulic cylinder in case of connecting two trailers to the tractor.

The control valve (5) is used to switch these circuits. The lever on this valve can be in 2 positions:

- [1] - the first trailer's tipping circuit is open

- [2] - the second trailer's tipping circuit is open

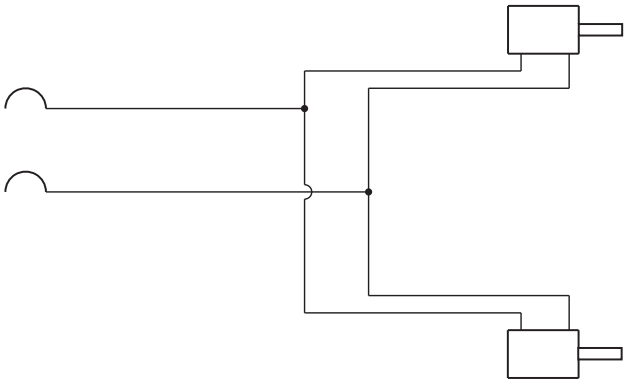
In a trailer equipped with boogie type suspension, the system has an additional circuit [c], used for automatic suspension locking with the use of hydraulic cylinders (2) (this circuit is not available in the standard version).

ADVICE

The trailer hydraulic tipping system was filled with L-HL32 Lotos hydraulic oil.

G.3.2.103.07.1.EN

3.8 HYDRAULIC SYSTEM OF THE REAR FLAP



103-G.17-1

Figure 3.19 Diagram of the hydraulic system of the rear flap

The hydraulic system of the rear flap is used to open and close the rear flap, the rear flap can be stopped in any position using the tractor's hydraulic distributor lever. The hydraulic cylinder is connected by hydraulic hoses terminated with quick couplings. The plugs should be placed in appropriate sockets of the hydraulic distributor of the agricultural tractor. The system is supplied with oil from the tractor's hydraulic system. The tractor's external hydraulic oil distributor is used to control the rear flaps box.

ADVICE

The trailer rear flap hydraulic system was filled with L-HL32 Lotos hydraulic oil.

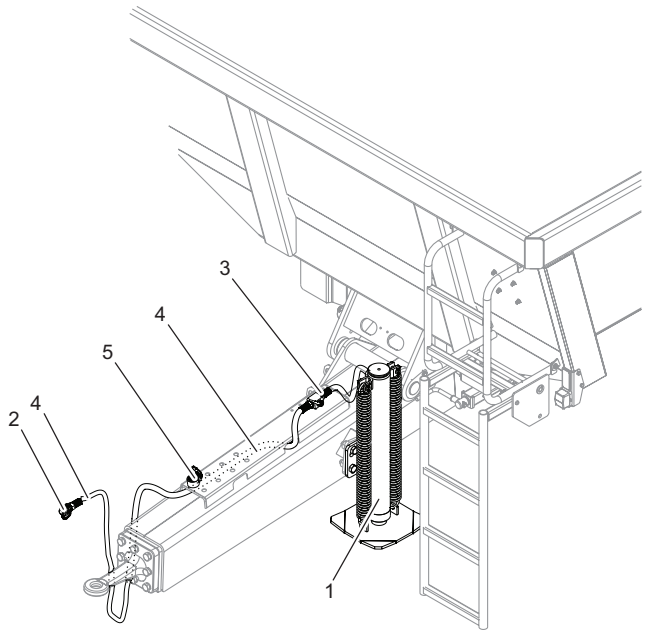
G.3.2.103.08.1.EN

3.9 HYDRAULIC SYSTEM OF THE STRAIGHT SUPPORT

The hydraulic system of the straight support is used to adjust the extension of the support when the trailer is parked or when hitching the trailer to the tractor. The hydraulic cylinder is connected by hydraulic hoses terminated with quick couplings. The plugs should be placed in appropriate sockets of the hydraulic distributor of the agricultural tractor. The system is supplied with oil from the tractor's hydraulic system. The hydraulic oil distributor of the tractor's external hydraulic system is used to control the lifting of the support.

ADVICE

The trailer support hydraulic system was filled with L-HL32 Lotos hydraulic oil.



103-G.08-1

Figure 3.20 Hydraulic system of the straight support

(1) straight hydraulic support, (2) plug, (3) cut-off valve, (4) hydraulic conduits, (5) plug socket

G.3.2.103.09.1.EN

3.10 ELECTRICAL LIGHTING INSTALLATION

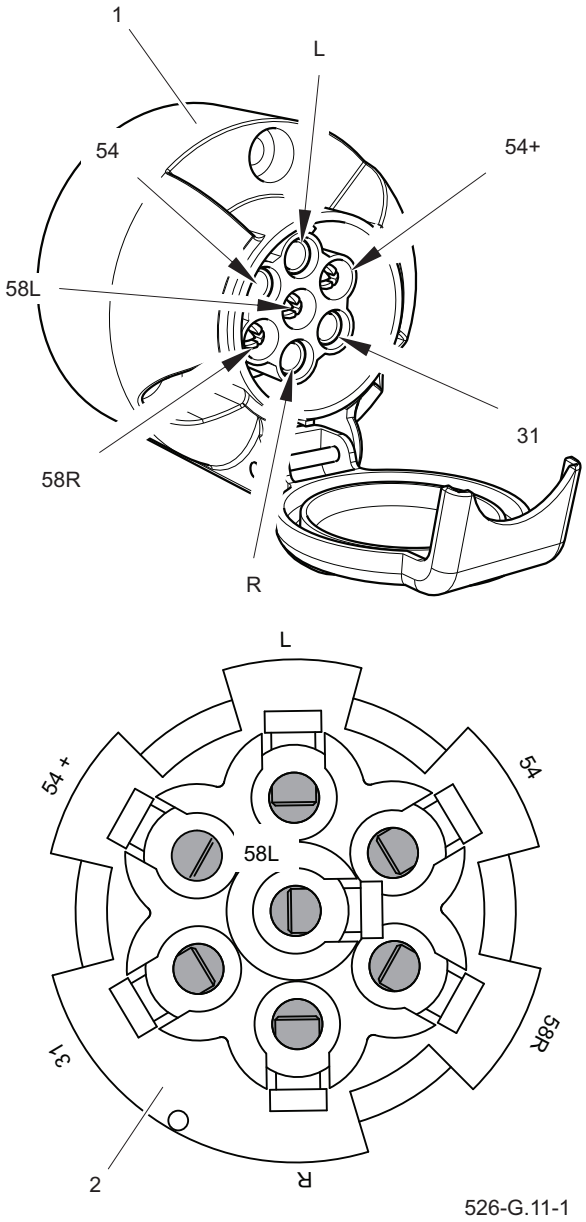


Figure 3.21 Connection socket
(1) socket(2) beam side view

Table 3.3. Markings of connection socket

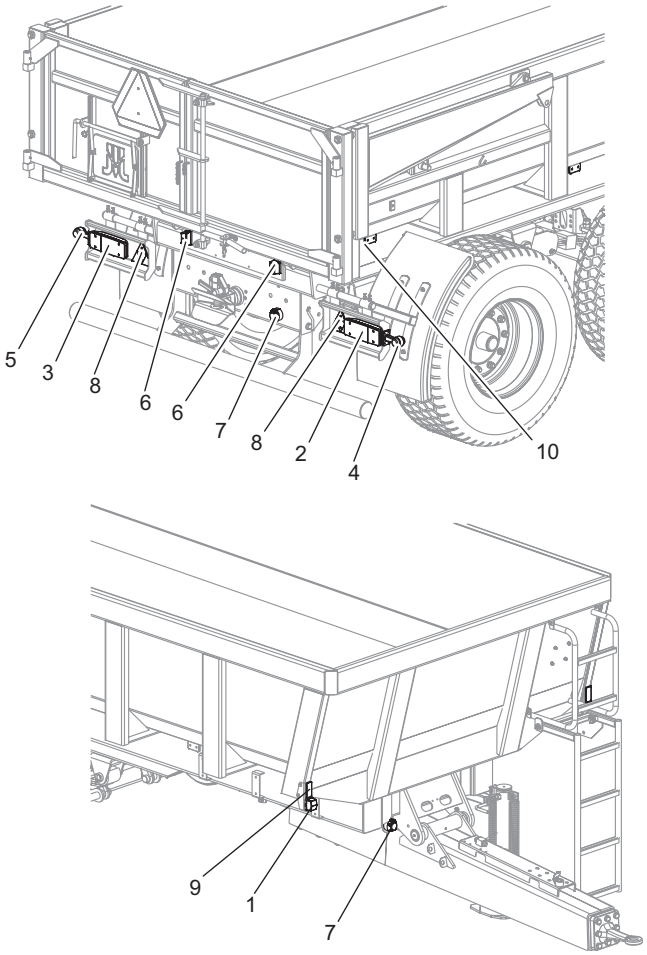
Marking	Function
31	Weight
54+	+ 12V power supply
L	Left direction indicator
R	Right direction indicator
54	STOP light
58L	Rear left position light
58R	Rear right position light
R	Right direction indicator

The trailer's electrical installation is adapted to be supplied from a 12 V DC source. The trailer's electrical installation should be connected with the tractor with the appropriate connection cable, which is included in the machine's equipment.

Arrangement of elements of the electrical installation and signalling reflectors of the trailer is shown in Figure 3.19.

Table 3.4. Electrical scheme markings

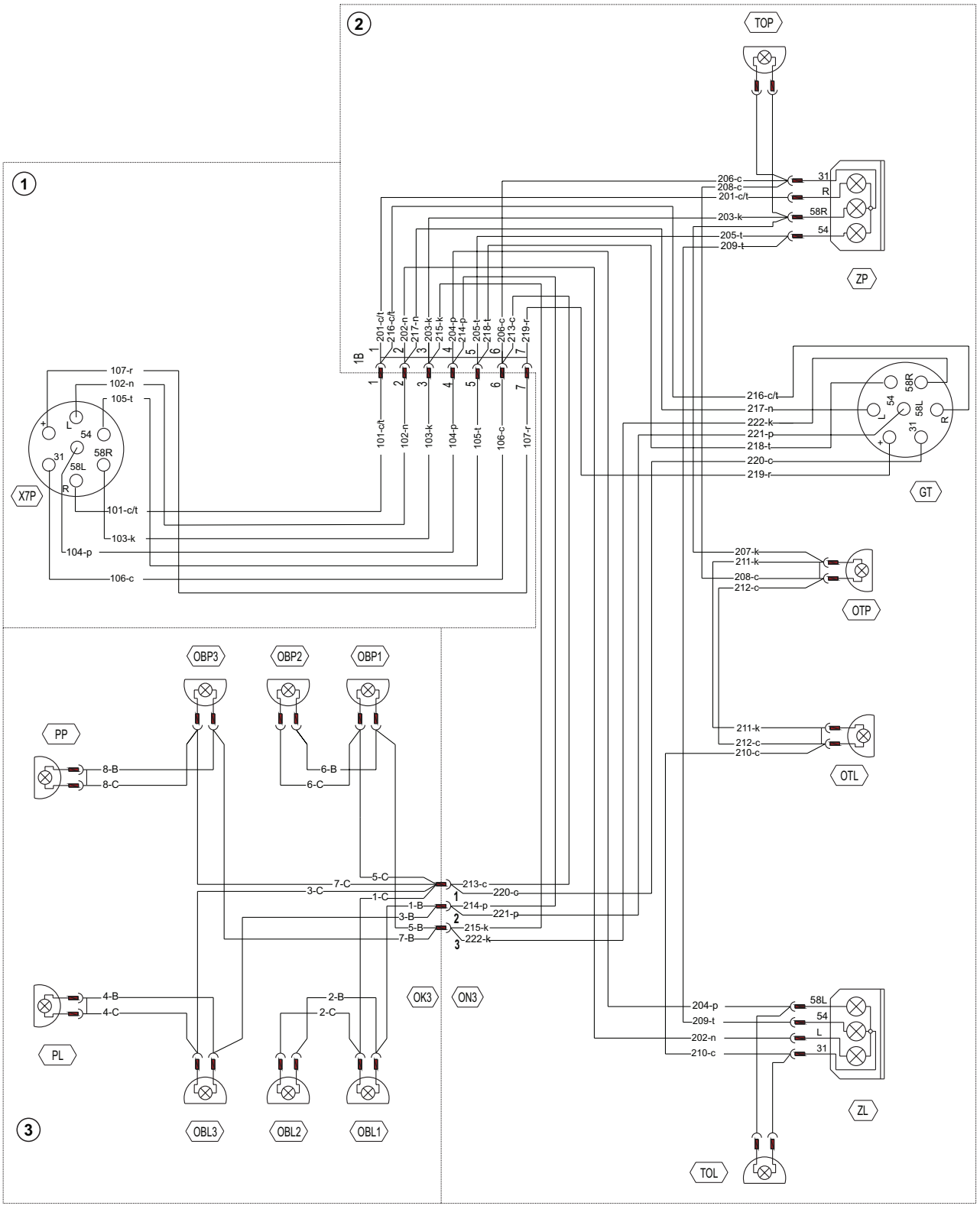
Symbol	Function
ZP	Multifunctional rear right lamp
ZL	Multifunctional rear left lamp
GP	Front 7-pin socket
GT	Rear 7 poles socket
PP	Right front position lamp
PL	Left front position lamp
OBP1...4	Multifunctional right side lamp
OBL1...4	Multifunctional left side lamp
OT1...2	Plate light
OBP1...3	Right clearance lamp
OBL1...3	Left clearance lamp



103-G.10-1

Figure 3.22 Arrangement of electric installation elements and reflective elements

(1) Left front position lamp,
(2) right rear multifunctional lamp, (3) left rear multifunctional lamp, (4) right rear end-outline lamp, (5) left rear end-outline lamp, (6) license plate lamp, (7) seven-pin socket, (8) reflective triangle, (9) white reflective lamp, (10) orange side marker lamp



103-G.11-1

Figure 3.23 Diagram of the trailer electrical system

PP, (PL) - right front position lamp (left); ZP, (ZL) - rear right (left) rear multifunctional lamp; X7P, (GT) front (rear) seven-pin socket ; OTP, (OTL) - right (left) license plate lamp; TOP, (TOL) - right (left) rear end-outline lamp; OBP (OBL) - right (left) side outline lamp

G.3.2.103.10.1.EN

RULES OF USE

CHAPTER 4

4.1 DRAWBAR MOUNTING ADJUSTMENT

The T701 single-shell trailer has an oscillating drawbar, mounted with a pin (3) under the front beam of the lower frame drawbar) or the left and right side member of the lower frame, using brackets of appropriate height

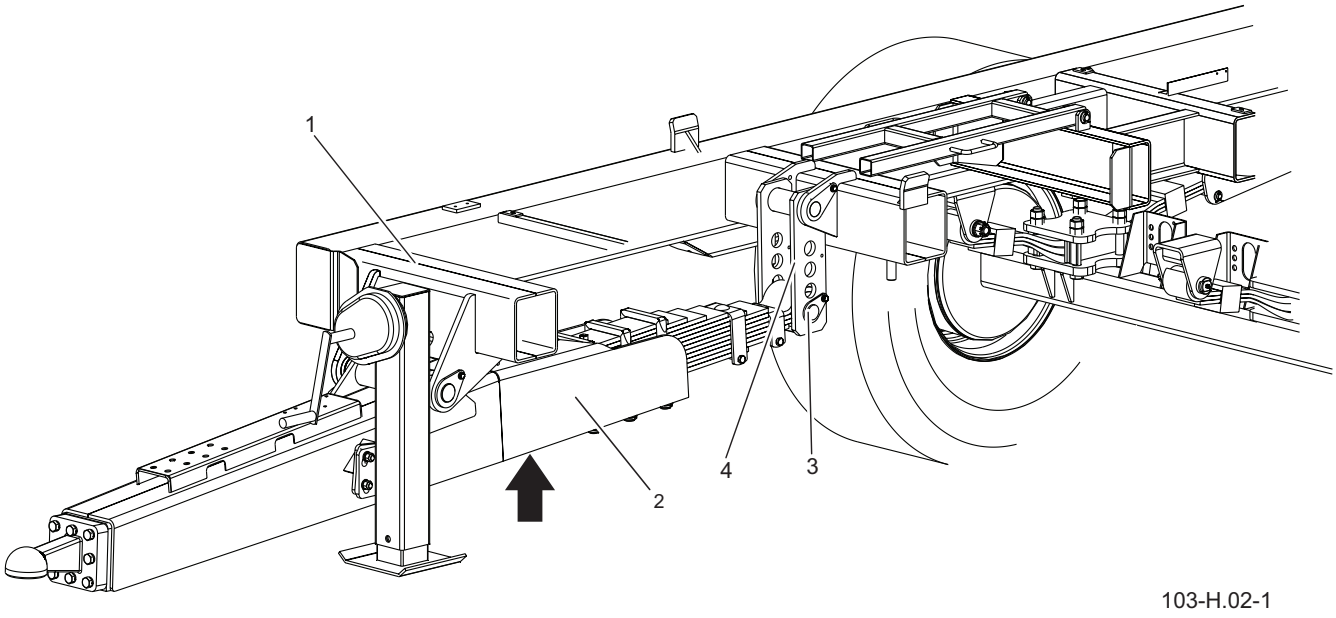


Figure 4.1 Drawbar height setting
(1) Lower frame front beam *(2) Oscillating drawbar* *(3) Rocker pin*
(4) Swing arm

(1) and the rocker arm (4). If it is necessary to adjust the drawbar position, perform the following actions:

- immobilize the trailer with parking brake.
- secure the trailer against rolling by placing chocks under the wheels,
- support the trailer under the front beam (1) (on both sides of the
- support the drawbar with a jack in the place marked with the arrow in figure (4.1)
- remove the pin (3) by adjusting the height of the hoist set the new position of the drawbar in relation to the rocker arm
- refit the pin (3), check the protection.

H.3.2.103.01.1.EN

4.2 CONNECTING AND DISCONNECTING OF THE TRAILER

The trailer may be connected to an agricultural tractor, if all connections (electrical and hydraulic) and the hitch on the agricultural tractor are in accordance with the of the machine manufacturer's requirements. In order to connect the trailer with the tractor, perform the following actions in order.

DANGER

During hitching, unauthorized persons must not be between the trailer and the tractor. The agricultural tractor operator when connecting the machine should take particular care during work and make sure that unauthorized persons are not in the danger zone during coupling.
When connecting the hydraulic or pneumatic conduits to the tractor, make sure that the tractor and the trailer installations are not under pressure.
Ensure good visibility during coupling.
After completing the coupling check the safety of the coupling bolt.

CONNECTION THE TRAILER TO THE TRACTOR'S HITCH

- Make sure the trailer is immobilized with the parking brake.

  Turn the brake mechanism clockwise as far as it will go. Immobilize the trailer with the parking brake.

- Position the agricultural tractor directly in front of the trailer eye.
- Set the drawbar eye at the correct height. Precise adjustment of the height of the drawbar eye is achieved by means of a support. In case of a hydraulic support, reverse the tractor and connect the support hydraulic conduit to it, then release the support securing valve and set the drawbar eye to the appropriate height. If the trailer is equipped with a support with a gear, the height of the drawbar is adjusted using the gear crank.
- Reverse the tractor, connect the trailer to the the appropriate hitch tractor, check the coupling safety device protecting the machine against accidental unhitching.
- If an automatic coupling is used in the agricultural tractor, make sure that the aggregation operation is completed and the drawbar eye is secured.

CONNECTING THE BRAKING SYSTEM

- Switch off the tractor engine and remove the ignition key. Secure the tractor with the parking brake.
- Depending on the completion of the trailer, connect the brake system connections to the appropriate sockets of the tractor. If the trailer is equipped with an electro-hydraulic brake valve with electric protection, the cable with

CAUTION

When connecting pneumatic conduits of a double conduit system, first connect the pneumatic conduit marked yellow, and then the conduit marked red.

a 3-pin plug (3) must also be connected to the tractor - figure (4.2).

CONNECTION OF THE LIGHTING ELECTRICAL INSTALLATION

- Connect the electrical system connection cable to the 7-pin socket on the trailer and to the 7-pin socket on the tractor.

ADDITIONAL INFORMATION

DANGER

The use of defective trailers is forbidden.

- After completing the connection of all cables make sure that they will not get entangled in moving parts of the tractor or trailer during operation. Secure the cables as necessary.
- Perform a daily inspection of the trailer.

CAUTION

In the event of a longer standstill of the trailer, it may turn out that the air pressure in the pneumatic braking system is insufficient to release the brake shoes. In this case, after starting the tractor and the air compressor, wait until the air in the pneumatic tank is topped up.

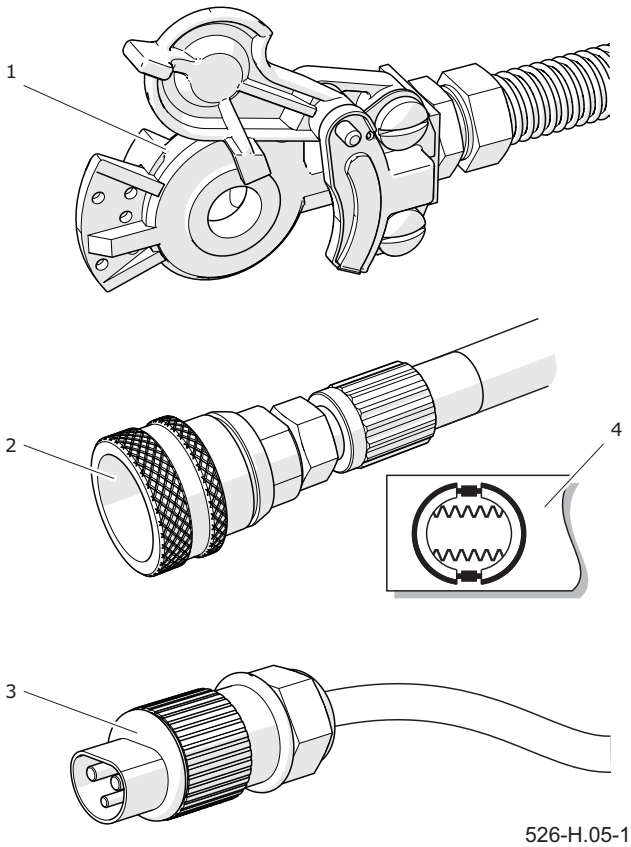


Figure 4.2 Brake connections
(1) pneumatic plug in 2-wire systems (2) hydraulic plug (3) electric plug

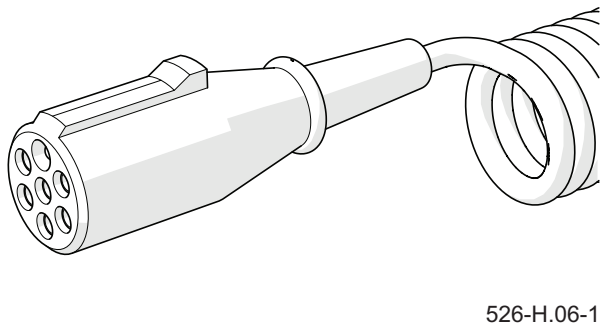


Figure 4.3 It is forbidden to use an inefficient trailer.

CAUTION

The machine may be connected to an agricultural tractor, provided that all connections (electric, hydraulic and pneumatic) and the hitch on the agricultural tractor comply with the requirements of the manufacturer of the machine.

- If the trailer is functional, you can start working.
- Immediately before driving, remove the wheel chocks and release the machine parking brake.

Turn the crank handle anti-clockwise as far as it will go.

H.3.1.526.03.1.EN

4.3 DISCONNECTING

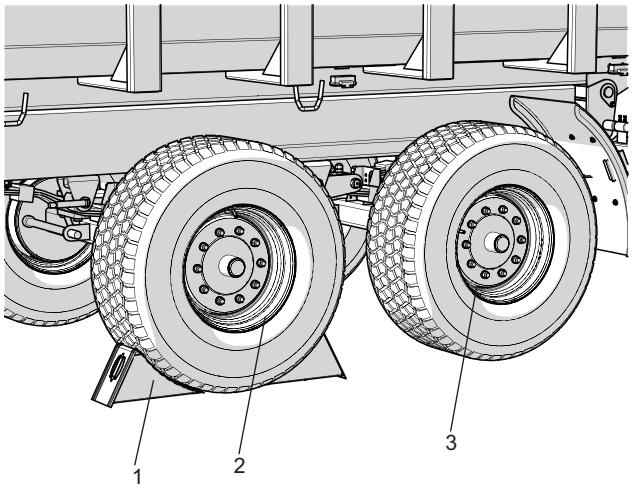
In order to disconnect the trailer from the tractor, perform the following actions, observing their sequence.

- Place the trailer on a hard and flat surface.

DANGER

When disconnecting the trailer from the tractor, take particular care. Ensure good visibility. Unless it is necessary, do not stay between the machine and the tractor.
Before disconnecting wires and drawbar eye, close tractor cab and secure it against unauthorized access. The tractor engine must be turned off.

- Immobilize tractor with parking brake, turn off tractor engine.
- Close the tractor cabin and secure it against unauthorized access.
- Place chocks under the trailer wheel to secure the machine against rolling away.
- Immobilize the tractor with parking brake, turn off the tractor engine.
- Disconnect the electric wire.
- Disconnect the braking system lines.



103-H.01-1

Figure 4.4 Correct wedge setting
(1) blocking wedges (2) near the fixed axle
(3) steering axle wheel

- Secure the cable ends with covers. Insert the plugs into their respective sockets.
- Unlock tractor hitch, drive tractor away.

CAUTION

In the case of a double conduit pneumatic system, first disconnect the conduit marked red and then the conduit marked yellow.
It is forbidden to disconnect the trailer when the machine is loaded

H.3.2.103.04.1.EN

4.4 CONNECTING AND DISCONNECTING OF A SECOND TRAILER

A second trailer may only be connected if it is a machine built on a two-axle chassis

DANGER

When connecting, no one must be between the trailers. The person who helps aggregate the machine should stand in a place outside the hazardous area and be visible at all times by the tractor operator.

and if it meets all the requirements of Chapter 1. Aggregating a second trailer with a set requires experience in steering with an agricultural tractor. It is recommended that when coupling the second trailer use the help of another person who will inform the tractor operator about the course of the operation.

DANGER

Only a two-axle trailer may be connected to the trailer.

CONNECTING OF THE SECOND TRAILER

- Position the tractor with the first trailer attached straight ahead of the second trailer's drawbar.
- Immobilize the second trailer with the parking brake.
- Remove the pin from the rear hitch on the first trailer.

If the automatic rear hitch is used in the trailer, the bolt should be lifted up using the handle.

- Adjust the height of the drawbar of the second trailer so that the machines can be coupled.
- When reversing the tractor, drive the rear hitch of the first trailer onto the drawbar of the second trailer.

If the trailer is fitted with an automatic rear hitch, make sure that the hitching operation is completed and that the drawbar eye of the second trailer is secured.

- Install the pin and the securing cotter pin.

Connect the hydraulic, pneumatic and electric system conduits in accordance with the recommendations contained in section *(4.2).*

DISCONNECTING OF THE SECOND TRAILER

- Block the tractor and trailer with parking brake.
- Switch off the tractor engine. Close the tractor cabin and secure it against unauthorized access.
- Disconnecting the hydraulic, pneumatic and electric system conduits in

accordance with the recommendations contained in section *(4.2).*

If the automatic rear hitch is used in the trailer, the bolt should be lifted up using the handle.

- Unlock the coupling bolt on the first trailer. Remove the bolt and drive the tractor away.

H.3.2.103.05.1.EN

4.5 LOADING AND SECURING OF THE LOAD

GENERAL LOADING INFORMATION

The trailer is designed for transporting and unloading heavy materials such as debris, stones, crushed stone, gravel used during construction works, earthworks and demolition works. Transport can take place either within the farm or on public roads. The construction of the load box enables the loading and transport of machines and construction vehicles.

CAUTION

Manure spreader overloading, inefficient loading and securing of loads are the most common causes of accidents during transport.
It is forbidden to transport people and animals.
Keep a safe distance from overhead power lines during operation.
When loading or unloading, bystanders must be careful and keep a safe distance from hazardous areas.

The trailer must be placed for straight ahead and connected to the tractor. Loading should take place only when the trailer is placed on level and stable ground. Before starting loading, check the technical condition of the hydraulic rear flap or tilt and turn flap, as well as the correctness of their protection. Check the technical condition of the hydraulic and pneumatic systems, pay particular attention to the tightness of the brake cylinders. Loading and driving a trailer with damaged rear cover system, braking system or hydraulic tipping system is prohibited. Keep a safe distance during unloading and loading. Keep bystanders away from the work area.

The load should be evenly distributed over the length and width of the box to ensure the correct distribution of axle load and the proper stability of the trailer. The load cannot protrude beyond the outline of the load box. The permissible height specified in road traffic regulations and the permissible structural capacity of the trailer may not be exceeded.

When loading goods in pallets or on pallets, pay attention to their arrangement in the load box. The pallets must be secured so that they cannot move freely on the platform. Laying pallets in layers is prohibited.

CAUTION

The trailer's maximum carrying capacity must not be exceeded.
The load on the loading platform must be evenly distributed and properly secured.
Transported goods must be secured against movement by means of suitable and good condition belts, using transport handles.
When driving on public roads, the hydraulic rear flap or the tilt and turn rear flap must be folded.
The load must be arranged in such a way that it does not threaten the stability of the trailer and does not hinder driving.

Loading should be performed by a person with appropriate authorization to operate the equipment (if required).

TABLE 4.1 *Approximate volumetric weights of selected loads*

Type of material	Volumetric weight kg/m³
Building Materials:	
cement	1,200 – 1,300
dry sand	1,350 – 1,650
wet sand	1,700 – 2,050
solid bricks	1,500 – 2,100
brick blocks	1,000 – 1,200
stone	1,500 – 2,200
soft wood	300 - 450
hardwood timber	500 - 600
impregnated timber	600 - 800
steel structures	700 – 7,000
ground quicklime	700 - 800
slag	650 - 750
gravel	1,600 – 1,800
rubble	1,050 – 1,200
Root Crops:	
raw potatoes	700 - 820
steamed mashed potatoes	850 - 950
dried potatoes	130 - 150
sugar beets - roots	560 - 720
fodder beets - roots	500 - 700
Mineral fertilizers:	
ammonium sulphate	800 - 850
potassium salt	1,100 – 1,200
super phosphate	850 – 1,440
basic slag	2,000 – 2,300
potassium sulphate	1,200 – 1,300
ground lime fertilizer	1,250 - 1,300
Concentrated feed and compound feed:	
stored chaff	200 - 225
oil cake	880 - 1,000
dried mince	170 - 185
compound feed	450 - 650
mineral mixtures	1,100 - 1,300
oat middlings	380 - 410
wet beet pulp	830 - 1,000

Type of material	Volumetric weight kg/m^3
expeller pressed beet	750 - 800
dry beet pulp	350 - 400
bran	320 - 600
bone meal	700 - 1,000
fodder salt	1,100 - 1,200
molasses	1,350 - 1,450
silage (underground silo)	650 -1050
silage (tower silo)	550 - 750
Seeds:	
broad bean	750 - 850
mustard	600 - 700
pea	650 - 750
lentil	750 - 860
bean	780 - 870
barley	600 - 750
shamrock	700 - 800
grass	360 - 500
corn	700 - 850
wheat	720 - 830
rape	600 - 750
flax	640 - 750
lupine	700 - 800
oat	400 - 530
lucerne	760 - 800
rye	640 - 760
Other:	
dry soil	1,300 – 1,400
wet soil	1 900 – 2 100
fresh peat	700 - 850
compost soil	250 - 350

Source: „Technologia prac maszynowych w rolnictwie”, PWN, Warsaw 1985

H.3.2.103.05.1.EN

4.6 SECURING OF THE LOAD

The load (aggregates, construction machinery, pallets or box-pallets) should be properly secured against displacement by means of belts with a tensioning mechanism. Belts can be attached to the transport lugs welded to the crosspieces of the box,

The number of safeguards used depends on the method of loading, type of load and size of the load. If the transport will take place on slopes and/or with strong gusts of wind, the height of the load should be limited depending on the situation.

Before travelling on a public road, clean the horizontal elements of the trailer, such as the drawbar, edges of the walls from accidentally poured material (aggregate). Regardless of the type of transported load, the user is obliged to secure it in such a way that the load cannot move freely and cause contamination of the road. Before driving, check the correct closing of the rear flap cover.

Due to the variety of materials, tools, methods of securing and securing loads, it is not possible to describe all methods of loading. When working, be guided by reason and your own experience. The trailer user is obliged to read the regulations regarding road transport and comply with their recommendations.

Due different density of materials, the use of the total capacity of the load box may exceed the allowable capacity of the trailer. Approximate specific weight of selected materials is presented in table(*4.1*). Therefore, pay special attention not to overload the trailer.

H.3.2.103.06.1.EN

4.7 LOAD TRANSPORTATION

When driving comply with traffic regulations, be prudent and considerate. The most important guidelines for steering a tractor with a trailer attached are presented below.

- Before moving off make sure that there are no bystanders, especially children, near the trailer and tractor. Ensure proper visibility.
- Make sure that the trailer is correctly connected to the tractor and tractor's hitch is properly secured.
- Set the appropriate braking force regulator operating mode (figure 3.13)
- The vertical load carried by the trailer drawbar eye affects the steering of the agricultural tractor.
- The trailer must not be overloaded, the load must be distributed evenly in such a way that it does not exceed the permissible pressure on the trailer's running gear. Exceeding the permissible load capacity of the vehicle is forbidden and may cause damage to the machine, and may also pose a threat during road travel for the tractor and trailer operator or other road users.
- The permissible design speed and speed resulting from restrictions on road traffic regulations must not be exceeded. The travel speed should be adjusted to the prevailing road conditions, trailer load condition, type of load carried and other conditions.
- The trailer disconnected from the tractor must be secured by immobilizing it with the parking brake and placing it under the wheel chocks. Leaving an unsecured trailer is prohibited. In the event of a machine breakdown, stop at the side of the road without endangering other road users and mark the stopping place in accordance with traffic regulations.
- When travelling on public roads, the trailer must be marked with a slow-moving vehicle warning sign located on the rear wall of the load box, if the trailer is the last vehicle in the set.
- The tractor operator is required to equip the trailer with an approved or approved warning reflective triangle.
- While driving, obey the rules of the

DANGER

Trailer overloading, inefficient loading and securing of loads are the most common causes of accidents during transport.
Uneven distribution of the load may cause overloading of the trailer's chassis.
It is forbidden to transport people and animals.

road, signal the change of direction by means of direction indicators, keep clean and take care of the technical condition of the lighting and signalling installation. Damaged or lost lighting and signalling components must be repaired or replaced immediately.

- Avoid ruts, depressions, ditches, or driving along roadside slopes. Driving across such obstacles can cause the trailer and tractor to tilt suddenly. This is particularly important because the centre of gravity of the trailer with load (and especially with volumetric load) adversely affects driving safety. Driving near the edges of ditches or canals is dangerous due to the risk of landslides under the wheels of a trailer or tractor.
- The travel speed should be reduced sufficiently in advance of approaching bends, when driving on uneven or sloping terrain.
- When driving, avoid sharp turns, especially on slopes.
- When driving on public roads, the hydraulic flap and the tilt and turn flap must be closed and secured.
- It should be remembered that the braking distance of the set increases significantly with the increase in the weight of the transported load and the increase in speed.
- Control the behaviour of the trailer when driving on uneven terrain and adjust the speed to terrain and road conditions.
- Prolonged driving on sloping ground creates a risk of loss of braking efficiency.
- The trailer is adapted for driving on slopes up to a maximum of 8°. Moving the trailer over slopes may cause the trailer to overturn as a result of loss of stability.

CAUTION

The trailer's maximum carrying capacity must not be exceeded.
The load on the platform must be evenly distributed and properly secured.
While driving on public roads, the extendable frame must be retracted.
The load must be arranged in such a way that it does not threaten the stability of the trailer and does not hinder driving.

H.3.2.103.07.1.EN

4.8 UNLOADING

The trailer is equipped with a hydraulic tipping system, and a suitable frame and load box construction enabling tipping to the rear. Tipping the load box is controlled by means of the distributor of the tractor's external hydraulic system.

CAUTION

Travelling with a volumetric load through ruts, ditches, slopes etc. poses a great risk of tipping over. Take special care

The trailer must be placed for straight ahead and connected to the tractor. Unloading should take place only when the trailer is placed on level and stable ground. In case of goods on pallets or volumetric loads, it is recommended to unload the trailer using a loader, conveyor or forklift. When working, ensure good visibility and extreme caution. The trailer and tractor should be immobilized with the parking brake. Remove all securing means (straps, ropes, etc.) immediately before unloading. Unload the trailer using generally accepted principles of health and safety.

The trailer is unloaded in the following order:

- the tractor and trailer should be positioned for driving straight ahead on flat and hard ground,
- immobilize tractor with parking brake,
- open the hydraulic rear flap by means of actuators by shifting the hydraulic manifold lever in the tractor,

in the case of unloading the box equipped with a hinged flap, set the size of the opening of the slot using chains and secure them with a pin

DANGER

Make sure that nobody is near the unloading area during unloading.
Keep a safe distance from overhead power lines during operation

- using the distributor lever in the operator's cab cause the load box to be tilted using a telescopic cylinder,
- after unloading, lower the load box and clean the edges of the floor,
- close the hydraulic rear hatch by controlling the appropriate hydraulic circuit from the tractor and turn hatch,
- before moving off make sure that the hydraulic rear flap or swinging rear flap is correctly locked

During unloading with the use of a hinged flap or chute window, the load box must be raised slowly and smoothly. Rapid lifting of the load box will cause very high pressure on the rear part of the load box as a result

of the load shifting and may threaten the stability of the machine.

When picking a trailer with a swing hatch, it is possible to load and unload building materials or construction equipment by opening the hatch door to the sides. In this case, remove the pin securing the lever, turn the eccentric lever and open the door. Loading and unloading with the flap door open to the sides is possible only with the trailer's load box fully lowered.

When unloading the second trailer, set the hydraulic tipping system control valve to position 2 - tipping the second trailer.

CAUTION

It is forbidden to pull the trailer forward if the bulk or scattering load has not been unloaded.
It is forbidden to start or drive with the load box raised.
It is forbidden to unload the trailer when a second trailer is connected to it.
It is forbidden to tilt the load box during strong gusts of wind.
Tilting of the load box may only be performed on firm and level ground.
Tilting of the load box may be performed only when the trailer is connected to the tractor

H.3.2.103.08.1.EN

4.9 USE OF TIRES

- When working with tires, the trailer should be secured against rolling by placing chocks under the wheels. The wheel can be dismantled only when the trailer is not loaded.
- Repair work on wheels or tires should be carried out by persons trained and authorized to do so. These works should be carried out using appropriately selected tools.
- Regularly check the correct tightening of the road wheel nuts.
- Tire pressure should also be checked during all-day intensive work. It should be taken into account that an increase in tire temperature can increase the pressure by up to 1 bar. With such a rise in temperature and pressure, reduce the load or speed.
- Never reduce pressure by venting if it increases due to temperature.
- Tire valves should be protected with caps to avoid penetration of dirt.
- Do not exceed the maximum trailer speed.
- Take a break of at least one hour at noon during your full day work cycle.
- Observe breaks in the tire cooling cycle.
- Avoid damaged road surfaces, sudden and variable manoeuvres, and high speeds when turning.

H.3.1.526.09.1.EN

CHAPTER 5

TECHNICAL INSPECTION SCHEDULE

5.1 GENERAL

This chapter describes all activities related to periodic inspections that you as the user are required to carry out in accordance with the assumed schedule. Constant control of the technical condition and the performance of maintenance operations are necessary to keep the machine in good technical condition. Maintenance activities that you can do yourself are described in the *Maintenance* chapter.

Repair of the machine during the warranty period may only be carried out by Authorized Sales and Service Points (APSiO). In the event of unauthorized repairs, changes to factory settings or activities that have not been considered as being possible by the Cause operator (not described in this manual), the user loses the warranty.

The trailer's warranty inspection is only carried out by authorized service centres.

CAUTION

It is forbidden to use a damaged trailer.
The trailer may only be towed when the braking system, lighting, draw bar and running gear are functional.
Repairs during the warranty period may only be carried out by authorized service centres.

I.3.1.526.01.1.EN

5.2 PERIODIC INSPECTIONS OF THE TRAILER

Table 5.1. Review categories

Category	Description	Responsible person	Frequency
A	Daily review	Operator	Every day before first start-up or every 10 hours of continuous shift work.
B	Maintenance	Operator	The inspection is carried out periodically every 1000 kilometres travelled or every month trailer operation, whichever comes first. A daily check must be carried out each time before performing this review,
C	Maintenance	Operator	Inspection carried out periodically every 3 months. Each time before carrying out this inspection, a daily inspection and inspection every 1 month of trailer use should be performed.
D	Maintenance	Operator	Inspection carried out periodically every 6 months. Each time before carrying out this inspection, a daily inspection, inspection every 1 month of trailer use and inspection every 3 months should be performed.
E	Maintenance	Operator	Inspection carried out periodically every 12 months. Each time before carrying out this inspection, a daily inspection, inspection every 1 month of trailer use and inspection every 3 months should be performed.
F	Guarantee	APSiO(1)	Inspection carried out for a fee after the first 12 months of use of the trailer, after reporting the owner.
G	Maintenance	Service (2)	Inspection carried out every 4 years of trailer use

(1) - Authorized Sales and Service Centre

(2) - post-warranty service

Table 5.2. Technical inspection schedule

Description of activities	A	B	C	D	E	F	Page
Air pressure control	•						5.7
Drainage of the air reservoir	•						5.9
Plugs and sockets connection inspection	•						5.10
Guard inspection	•						5.11
Inspection of the the trailer before driving	•						5.12
The measurement of air pressure, inspection of the tires and wheels		•					5.8
Cleaning of the air filters			•				5.13
Brake shoe lining wear inspection				•			5.14
The bearing of axle inspection				•			5.15
Inspection of mechanical brakes				•			5.16
Cleaning of the drain valve				•			5.17
Parking brake cable tension check					•		5.18
Hydraulic system inspection					•		5.20
Pneumatic system inspection					•		5.21
Lubrication	See table: *Trailer lubrication schedule*						5.22
Screw connections inspection	See table: *Tightening schedule for important bolted connections*						5.27
Replacement of hydraulic hoses						•	

Table 5.3. Control parameters and settings

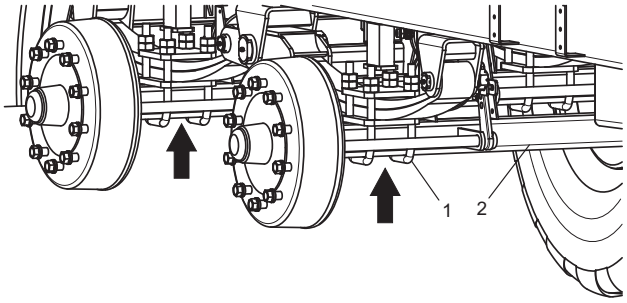
Description	Value	Notes
Braking system		
Piston rod stroke in pneumatic systems	25 - 45 mm	
Piston rod stroke in hydraulic systems	25 - 45 mm	
Piston rod stroke in pneumatic and hydraulic systems	25 - 45 mm	
Minimum brake lining thickness	5 mm	
Angle between the trailer axis and the fork	90°	With the brake depressed
Parking brake		
Permitted parking brake cable clearance	20 mm	

I.3.1.526.02.1.EN

5.3 PREPARATION OF THE TRAILER

DANGER

Secure the tractor cab against unauthorized access.
When working with the lift, the user must read the instructions for this device and follow the manufacturer's instructions. The jack must stand firmly against the ground and the trailer elements
Before starting maintenance and repair work with the trailer raised, make sure that it is properly secured and will not roll during operation.



103-I.01-1

Figure 5.1 Recommended jack positioning points

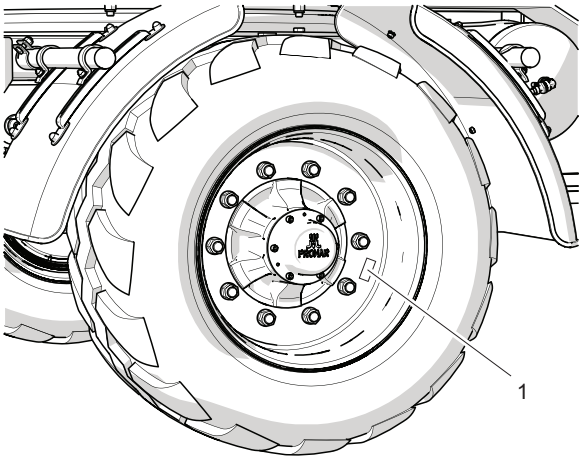
(1) suspension U bolts, (2) wheel axle

- Hitch trailer to tractor.
- Place the tractor and trailer on firm and level ground. Position the tractor for straight-ahead travel.
- Use the tractor parking brake.
- Switch off the tractor engine and remove the ignition key. Close the tractor cabin, thus protecting the tractor against unauthorized access.
- Place blocking wedges under trailer wheel. Make sure the trailer will not roll during the inspection.
- In case when the wheel needs to be raised during the inspection, place the locking wedges under the wheel on the opposite side under the rigid axle. Place the jack in places marked with an arrow. Remember that the jack must rest on a firm and stable surface.
- The jack must be adjusted to the weight of the trailer.
- In exceptional cases, you will have to release the trailer's parking brake, e.g. when measuring the play of the axle shaft bearings. You should be very careful.

I.3.2.103.0.1.EN

5.4 CHECKING THE AIR PRESSURE IN THE WHEELS

- Visually assess the degree of inflation of the road wheels.
- If you think the wheel is low on air, check the air pressure with a pressure gauge. If necessary, inflate the wheel to the required pressure.



526-I.02-1

Figure 5.2 Trailer wheel
(1) Information sticker

CAUTION

Using the trailer in which tires are not properly inflated may lead to permanent damage to the tire as a result of delamination of the material.
Incorrect tire pressure also causes faster tire wear.

ADVICE

The tire air pressure value can be found on the information sticker attached to the rim.

I.3.1.526.04.1.EN

5.5 MEASUREMENT OF AIR PRESSURE, CHECK TIRES AND WHEELS

During pressure measurement the trailer must be unloaded. Checks should be carried out before driving off, when the tires are not warm, or after a longer stand-still of the trailer.

SCOPE OF ACTIONS

- Connect a pressure gauge to the valve.
- Check air pressure.
- If necessary, inflate the wheel to the required pressure.

  The required air pressure is described on a sticker (1) on the rim.

- Check tread depth.
- Check the side wall of the tire.
- Inspect the tire for defects, cuts, deformations, bumps indicating mechanical damage to the tire.
- Check if the tire is correctly positioned on the rim.
- Check the tire age.

When checking the pressure, check the technical condition of the rims and tires. look at the side surfaces of the tires, check the condition of the tread. In the event of mechanical damage, consult your nearest tire service centre and make sure that the tire defect is eligible for replacement. The rims should be checked for deformation, material cracks, weld cracks, corrosion, especially around the welds and at the point of contact with the tire.

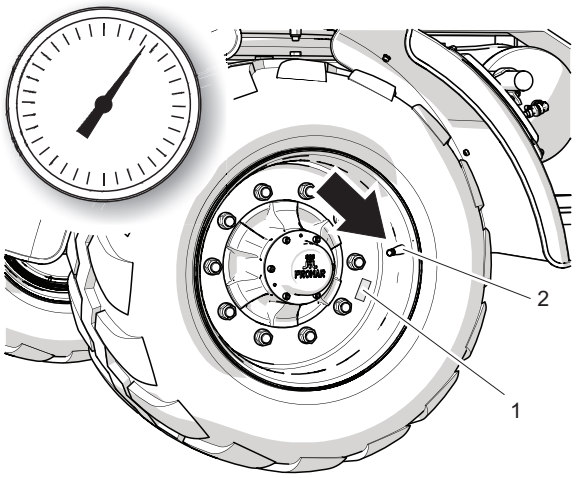


Figure 5.3 Trailer wheel
(1) sticker (2) valve

ADVICE

In the event of intensive use of the trailer, we recommend more frequent pressure checks.

CAUTION

Using the trailer in which tires are not properly inflated may lead to permanent damage to the tire as a result of delamination of the material.
Incorrect tire pressure also causes faster tire wear.

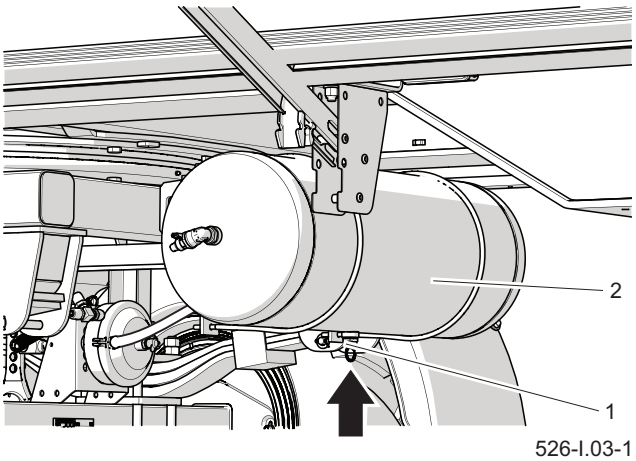
I.3.1.526.09.1.EN

5.6 AIR TANK DRAINAGE

- Press the stem of the drain valve (1) located at the bottom of the tank (2).

  The compressed air from the tank will remove water outside.

- After releasing the stem, the valve should close automatically and stop the outflow of air from the tank.
- If the valve stem does not want to return to its position, wait until the tank empties. Then unscrew and clean or replace the valve with a new one.



526-I.03-1

Figure 5.4 Air tank
(1) drain valve (2) air tank

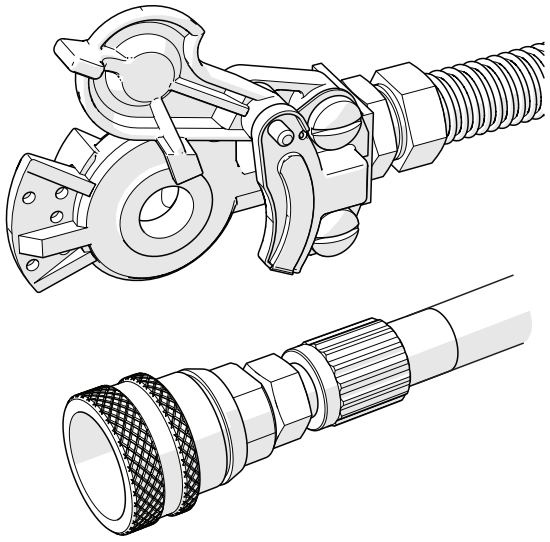
I.3.1.526.05.1.EN

5.7 CHECKING PLUGS AND CONNECTION SOCKETS

Damaged connector body or socket to connecting a second trailer qualifies them for replacement. In the event of damage to the cover or gasket, replace these elements with new, functional ones. Contact of pneumatic connection seals with oils, grease, gasoline etc. may damage them and accelerate the aging process.

If the trailer is disconnected from the tractor, connections should be protected with covers or placed in their designated sockets. Before the winter period, it is recommended to preserve the seal with preparations intended for this purpose (e.g. silicone lubricants for rubber elements).

Each time before connecting the machine, check the technical condition and degree of cleanliness of connections and sockets on the agricultural tractor. If necessary clean or repair tractor sockets.



526-I.04-1

Figure 5.5 Trailer connections

I.3.1.526.06.1.EN

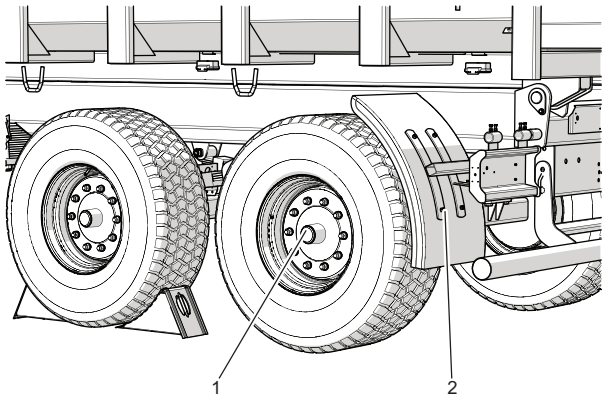
5.8 COVERS INSPECTION

DANGER

The trailer must not be used with damaged or incomplete covers.

Covers protect the trailer user against loss of health or life or constitute a protective element of machine components. Therefore, their technical condition must be checked before commencing work. Damaged or lost components must be repaired or replaced immediately.

- Check the the completeness of the safety guards.
- Check if the covers are properly mounted, assess the condition of the fenders.
- Check the completeness of the hubcaps.
- If necessary, tighten the the screw connections of the covers.



103-I.01-1

Figure 5.6 Trailer covers
(1) wheel axle caps (2) plastic fender

I.3.2.103.08.1.EN

5.9 CHECKING THE TRAILER BEFORE DRIVING OFF

- Before connecting the trailer to the tractor make sure that the hydraulic and pneumatic conduits are not damaged.
- Check the completeness, technical condition and correct functioning of the trailer lighting.
- Check the cleanliness of all electric lamps and reflectors.
- Check the correct mounting of the triangular plate holder for slow moving vehicles and the plate itself.
- Make sure that the tractor has a reflective warning triangle.
- Check that the actuator ventilation openings are not clogged with dirt and that there is no water or ice inside. Check the correct mounting of the actuator.

  Clean the actuator if necessary. In winter, it may be necessary to defrost the actuator and remove accumulated water through unclogged ventilation holes. If any damage is found, replace the actuator. When mounting the actuator, keep its original position relative to the bracket.

- While moving off, check the operation of the main brake system. Remember that for proper operation of the pneumatic system, an appropriate level of air pressure in the trailer air tank is required.

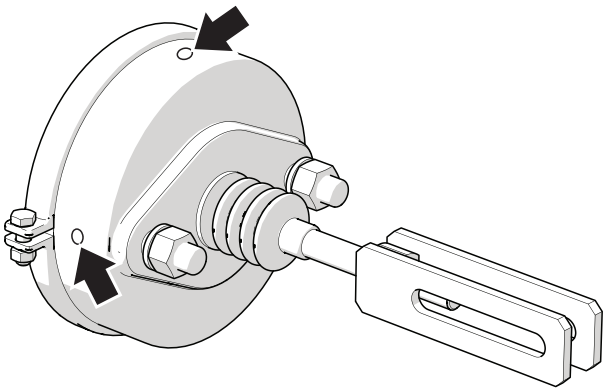


Figure 5.7 Brake cylinder

- Check the correct operation of the other systems on a regular basis while using the trailer.

DANGER

Driving with malfunctioning lighting or braking systems is prohibited.
In the event of damage to the trailer, discontinue use until it is repaired.

I.3.1.526.08.1.EN

5.10 CLEANING THE AIR FILTERS

SCOPE OF ACTIONS

- Reduce pressure in the supply line.

  The pressure in the pipe can be reduced by pushing the plug of the pneumatic connection as far as it will go.

- Slide out the securing lock (1).
- Hold the filter cover (2).
- Hold the filter cover (2) with your other hand. After removing the slide, the cover will be pushed out by the spring located in the filter housing.
- Wash the filter element and filter body thoroughly with water and blow with compressed air. Installation should be in reverse order.

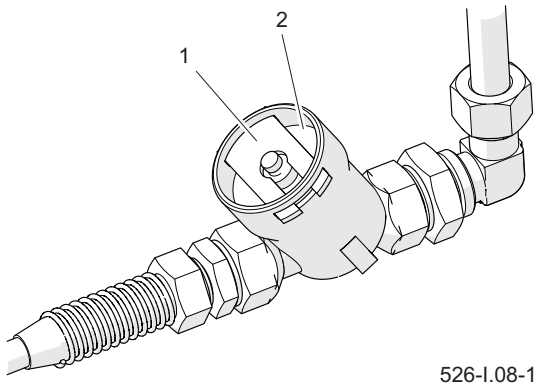
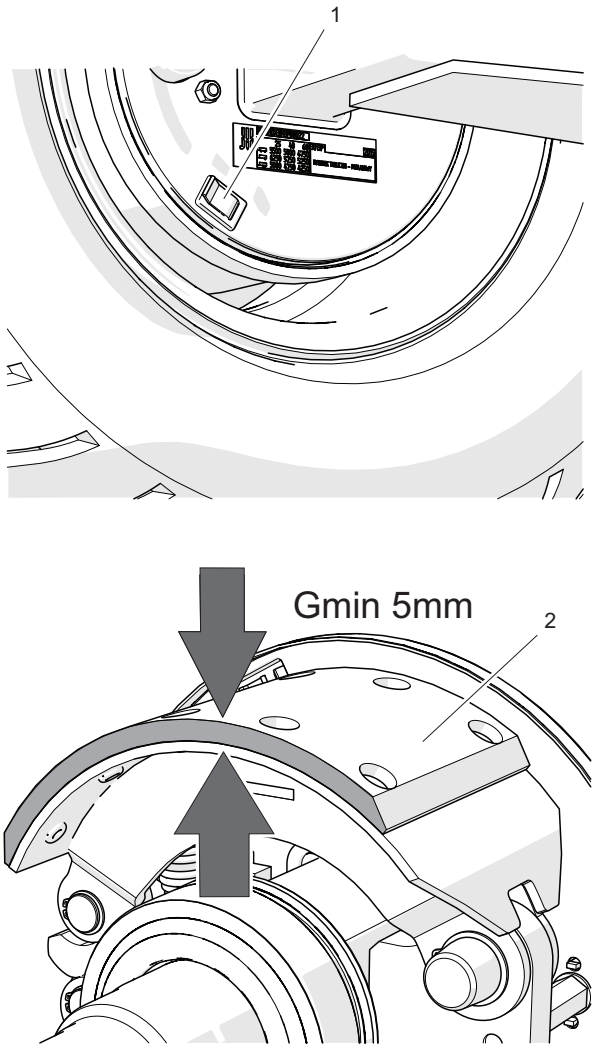


Figure 5.8 Air filter
(1) filter slide (2) cover

I.3.1.526.10.1.EN

5.11 CHECKING BRAKE LINING WEAR

- Find the inspection hole (depending on the version of the road axle, the inspection hole may be located in a different place than the figure shows, but it will always be located on the brake shield).
- Remove the upper and lower plugs and then check the thickness of the lining.
- The brake shoes should be replaced if the thickness of the brake lining is less than 5 mm.
- Inspect the remaining linings for lining wear.



526-I.09-1

Figure 5.9 The brake lining thickness inspection

(1) blanking plug (2) brake lining

I.3.1.526.11.1.EN

5.12 CHECKING THE CLEARANCE OF THE AXLE BEARINGS

- Raise the wheel with a jack.
- Turn the wheel slowly in two directions. Check that the movement is smooth and the wheel rotates without excessive resistance and jams.
- Turn the wheel so that it rotates very quickly, check that the bearing does not make any unusual sounds.
- Try to feel looseness during moving the wheel.
- Repeat this action for each wheel separately, remembering that the jack must be on the opposite side of the wedges.
- If looseness is felt, adjust the bearings. Unnatural sounds coming from the bearing may be symptoms of excessive wear, dirt or damage. In this case, the bearing together with the sealing rings should be replaced or cleaned and regreased. When checking bearings, make sure that any noticeable looseness comes from the bearings, not the suspension system (e.g. looseness on the spring pins, etc.).
- Check the technical condition of the hub cover, replace if necessary.

526-I.10-1

Figure 5.10 Clearance inspection

ADVICE

Damaged hub cover or lack thereof will cause the penetration of dirt and moisture into the hub, which will result in much faster wear of bearings and hub seals.
Bearing life depends on trailer operating conditions, load, vehicle speed and lubrication conditions.

I.3.1.526.12.1.EN

5.13 CHECKING OF MECHANICAL BRAKES

In a correctly adjusted brake, the cylinder piston stroke should be within the range given in Table (5.3) and depends on the type of used cylinder. When the wheel is fully braked, the optimal angle between the expander lever and the piston rod should be approx. 90 °. With this setting, the braking force is optimal. Checking the brakes consists in measuring this angle and the piston rod stroke in each wheel.

THE SCOPE OF CONTROL ACTIVITIES

- Measure the distance X with the tractor brake pedal released.
- Measure the distance Y with the tractor brake pedal pressed.
- Calculate the distance difference.
- Check the angle between the cylinder piston axis and the expander lever.

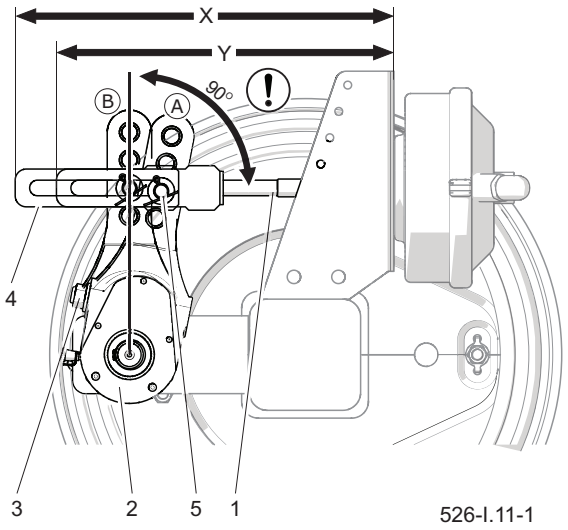


Figure 5.11 Brake check
(1) cylinder piston (2) expander arm
(3) adjustment screw (4) of the cylinder fork
(5) pin position
(A) position of the arm in the released position
(B) arm position in braking position

- If the expander arm angle (2) and piston rod stroke exceed the range given in table (5.3), the brake should be adjusted.

I.3.1.526.13.1.EN

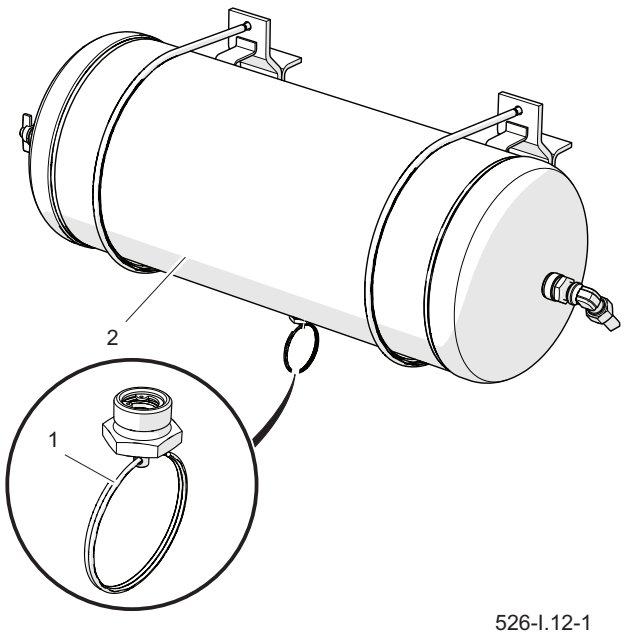
5.14 CLEANING THE DRAINAGE VALVE

THE SCOPE OF SERVICE ACTIVITIES

- Fully reduce the pressure in the air reservoir (2).

  The pressure in the tank can be reduced by swinging the drain valve stem.

- Unscrew the valve (1).
- Clean the valve, blow with compressed air.
- Replace the gasket.
- Screw in the valve, fill the tank with air, check the tank for leaks.



526-I.12-1

Figure 5.12 Air tank
(1) drain valve (2) tank

I.3.1.526.14.1.EN

5.15 CHECKING OF PARKING BRAKE CABLE TENSION

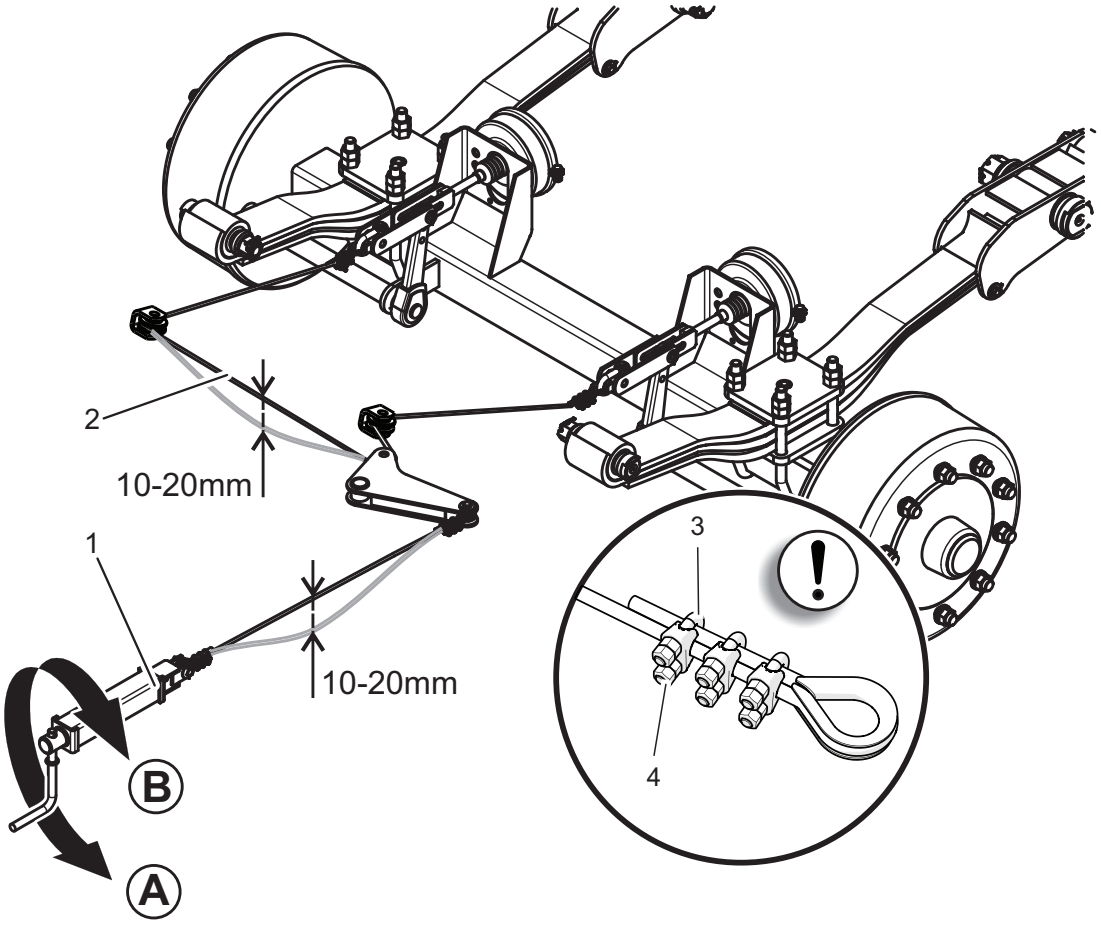


Figure 5.13 Cable tension inspection
(1) cable (2) brake mechanism (3) bow clamp (4) nut of the clamp

TENSION CONTROL

Check the parking brake after checking the mechanical brake of the axle.

- Turn the parking brake crank (2) towards (B) and apply the parking brake.
- Check cable tension (1).
- When the mechanism screw is completely removed, the cable should hang about 10 to 20 mm.

CABLE TENSION ADJUSTMENT

- Unscrew the brake mechanism screw (2) as far as possible by turning the crank in the direction (A).
- Loosen the the nuts (4) of the bow clamps (3) on the handbrake cable (1).
- Tighten the cable (1) and tighten the nuts (4) of the clamps.
- Apply the parking brake and release it again. Check (approximately) cable

slack. When the service and parking brakes are completely released, the cable should hang about 10- 20 mm. The axle trailer levers should be in the rest position.

If it is necessary to change the brake cable, refer to chapter *Replacing the parking brake cable*.

I.3.1.526.15.1.EN

5.16 HYDRAULIC SYSTEM CHECKING

SCOPE OF ACTIONS

- Hitch trailer to tractor.
- Clean hose connections, hydraulic cylinders and couplings.
- Activate all hydraulic systems in turn, extending and retracting the piston rods of the cylinders. Repeat all operations 3- 4 times.
- Leave the hydraulic cylinders fully extended. Turn off the tractor engine, secure the tractor and trailer with parking brake.
- Check all hydraulic circuits for leaks.
- After completing the inspection, put all cylinders to the rest position.

REMOVAL OF LEAKS

If visible moisture appears on the cable connectors tighten the the connectors at the specified torque and retest. If the problem persists replace the leaking element.

In the event of oiling on the hydraulic cylinder body, the nature of the leakage must be checked. When the cylinder is fully extended, check the the seal locations. Slight leaks are permissible with symptoms of "sweating", however in the event of noticing leaks in the form of "droplets" stop using the trailer until the fault is remedied.

If a malfunction has appeared in the brake cylinders, it is forbidden to drive the trailer with a damaged system until the fault is removed.

I.3.1.526.16.1.EN

5.17 PNEUMATIC SYSTEM INSPECTION

SCOPE OF ACTIONS

- Start the tractor to supplement the air in the trailer braking system tank.
- Switch off the tractor engine.
- Check the system components with the tractor brake pedal released.
- Pay special attention to cable connections and brake cylinders.
- Repeat the system check with the tractor brake pedal depressed.

REMOVAL OF LEAKS

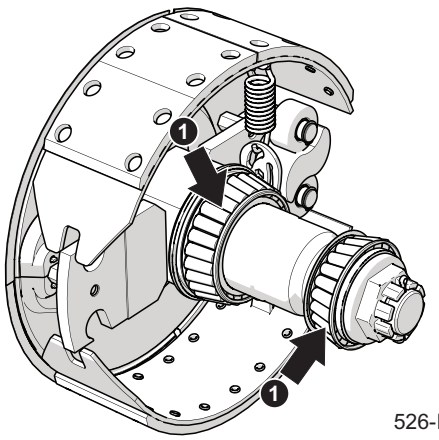
In the event of a leak, the compressed air will leak out in places of damage with a characteristic hissing. The system leak can be detected by coating the checked elements with washing liquid or foaming agent, which will not aggressively affect the elements of the installation. Damaged elements should be replaced or sent for repair. If there is a leak around the connections, tighten the the connector. If air still escapes, replace the joint parts or seal with new ones.

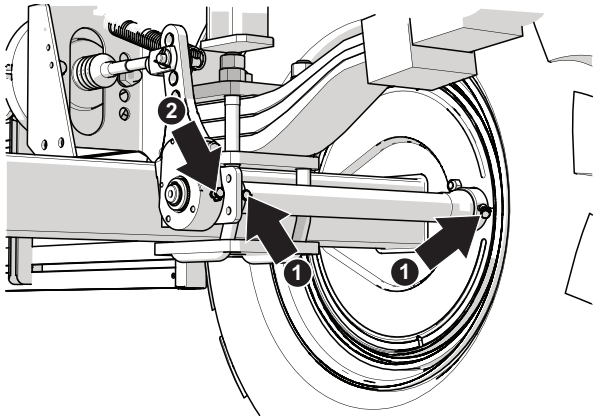
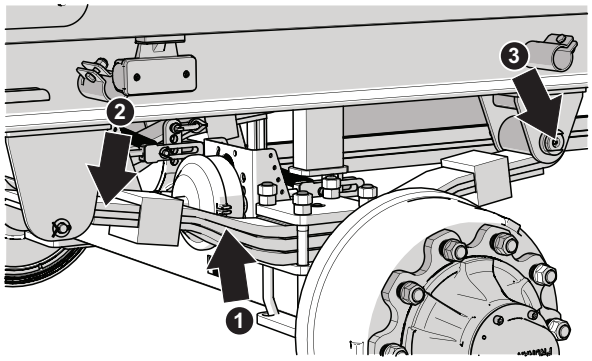
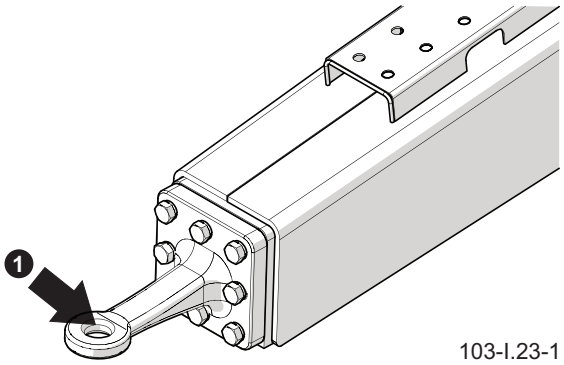
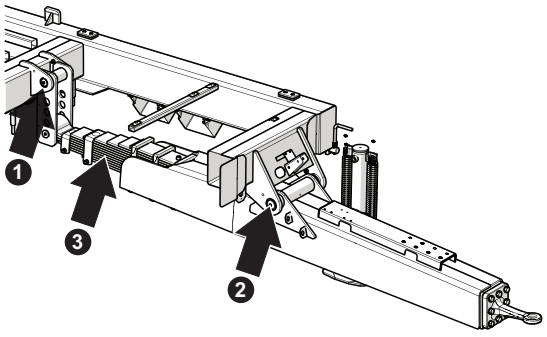
I.3.1.526.17.1.EN

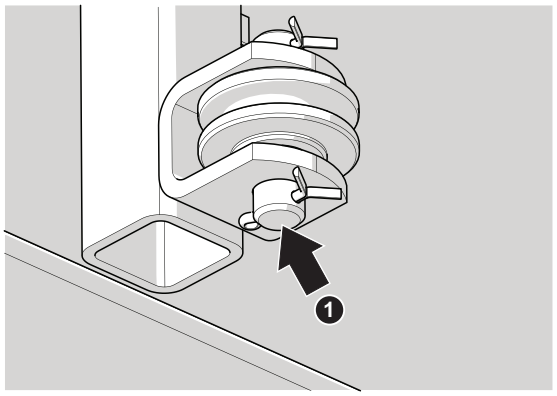
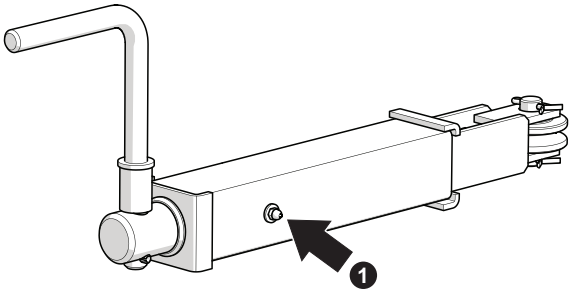
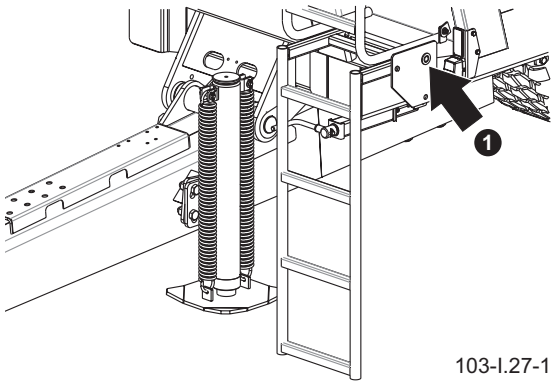
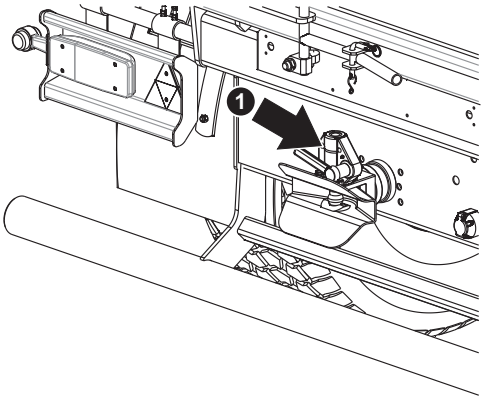
5.18 LUBRICATION

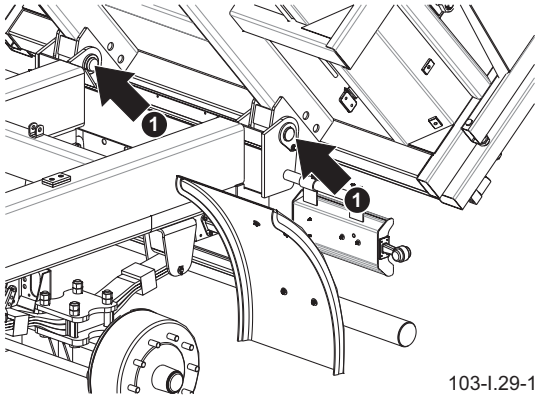
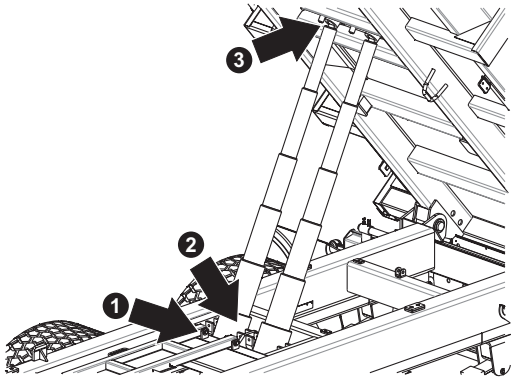
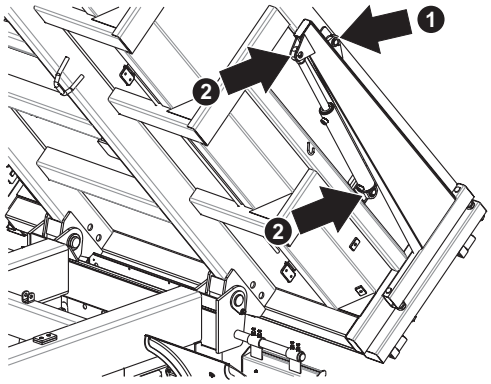
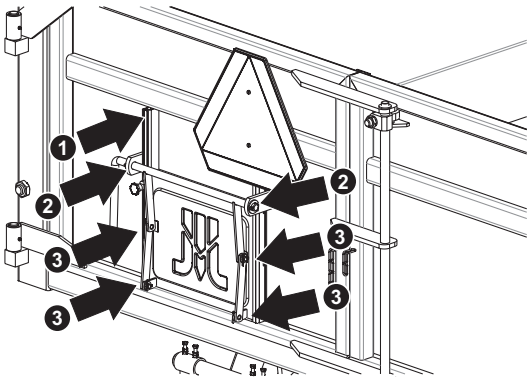
- The trailer should be lubricated with a hand or foot grease gun, filled with the recommended lubricant. If possible, remove old grease and other contaminants before starting work. After finishing work, wipe off excess grease.
- Parts that should be lubricated using machine oil should be wiped with a dry clean cloth. Apply the oil with a brush or oiler. Wipe off excess oil.
- The replacement of grease in wheel hub bearings should be entrusted to specialized service points equipped with the appropriate tools. Dismantle the entire hub, take out the bearings and individual sealing rings. After thorough cleaning and inspection, install lubricated components. If necessary, replace the bearings and seals with new ones.
- Empty containers of grease or oil should be disposed of in accordance with the lubricant manufacturer's instructions.

Table 5.4. Trailer lubrication schedule

Name	Number of points	Type of grease	Frequency	
Hub bearings (1) (2 in each hub)	4	A	24M	

Camshaft sleeves (1)	8	A	3M	 526-I.20-1
Expander arm	4	A	3M	
Spring leaves (1)	4	C	3M	 526-I.22-1
Spring sliding surface (2)	4	B	1M	
Spring pin (4)	4	B	1M	
Draw bar hitching eye (1)	1	A	14D	 103-I.23-1
Control arm pin (1)	2	B	3M	 103-I.24-1
Draw bar bolt (2)	1	B	3M	
Drawbar leaf spring (3)	1	B	3M	

Wheel axle guiding the brake cable	3	A	6M	 526-I.25-1
Parking brake mechanism	1	A	6M	 103-I.26-1
Ladder axis	2	A	3M	 103-I.27-1
Rear hitch	1	B	1M	 103-I.28-1

Tipping pin (1)	2	B	3M	 103-I.29-1
Load box support pin (1)	2	A	6M	 103-I.30-1
Cylinder mounting socket (2)	4	B	6M	
Tipping cylinder ball joints (3)	2	B	6M	
rear flap wing pivot pins (1)	2	B	3M	 103-I.31-1
rear flap actuator bearings (2)	4	B	3M	
Slide guide (1)	2	A	3M	 103-I.32-1
Slide lever (2)	2	A	3M	
Slide rod pins (3)	4	A	6M	

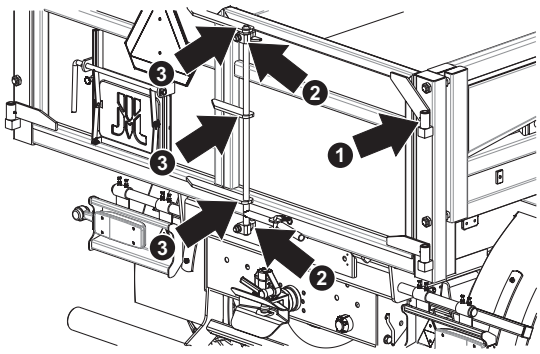
rear flap hinge (1)	4	A	3M	 103-I.32-1
Locking hooks (2)	2	A	1M	
Door bolt routing holes (3)	2	A	6M	

Table 5.5. Lubricants

Item	Symbol	Description
1	A	general purpose machine grease (lithium, calcium),
2	B	solid grease for heavily loaded components with the addition of MoS_2 or graphite
3	C	anti-corrosive spray
4	D	plain machine oil, silicone spray grease

ADVICE

Lubrication schedule (Table -*Trailer lubrication schedule*):
D - working day (8 hours of trailer work),
M - month

I.3.2.103.18.1.EN

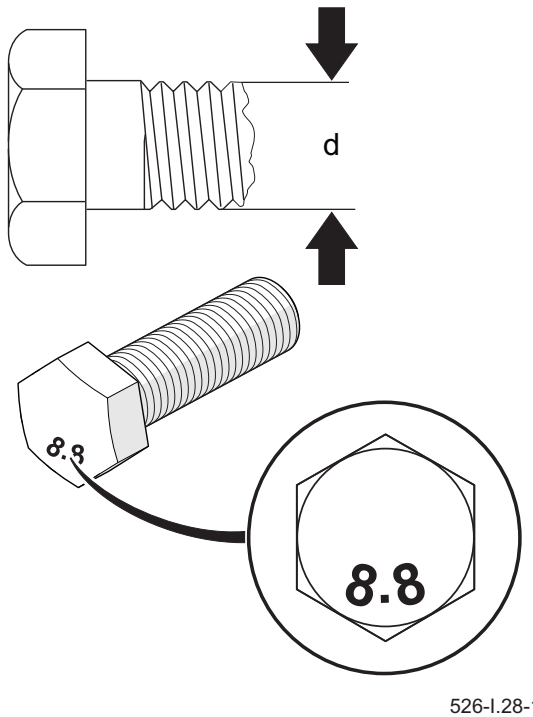
5.19 SCREW CONNECTIONS INSPECTION

TIGHTENING TORQUES FOR SCREW CONNECTIONS

During maintenance and repair work, apply appropriate tightening torques to screw connections, unless other tightening parameters are given. Recommended tightening torques for the most commonly used screw connections are presented in table (5.4). The given values apply to non-lubricated steel bolts.

The hydraulic hoses should be tightened with a torque of 50- 70Nm.

Check the tightening using a torque wrench in accordance with the guidelines contained in sections *Tightening of the road wheels* and *Bolted connections inspection.* During daily trailer inspection pay attention to loose connections and tighten the connector if necessary. Replace lost items with new ones.



526-I.28-1

Figure 5.14 Metric thread screw

Table 5.6. Tightening torque

Thread	Tightening torque		
	5.8	**8.8**	**10.9**
M8	18	25	36
M10	37	49	72
M12	64	85	125
M14	100	135	200
M16	160	210	310
M20	300	425	610
M24	530	730	1050
M27	820	1150	1650
M30	1050	1450	2100

TIGHTENING OF THE WHEEL NUTS.

The wheel nuts should be tightened gradually diagonally (in several stages until the required tightening torque is achieved), using a torque wrench. The recommended order of tightening the nuts and the tightening torque is shown in figure *Kolejność dokręcania nakrętek*.

Wheel nuts must not be tightened with impact wrenches, due to the danger of exceeding the permissible tightening torque,

which may result in breaking the connection thread or breaking the hub pin.
The wheels should be tightened according to the following scheme:

- after the first use of the trailer (one-time inspection),
- every 2- 3 hours of driving during the first month of use,
- every 30 hours of driving.

If the wheel was disassembled, the above steps should be repeated.

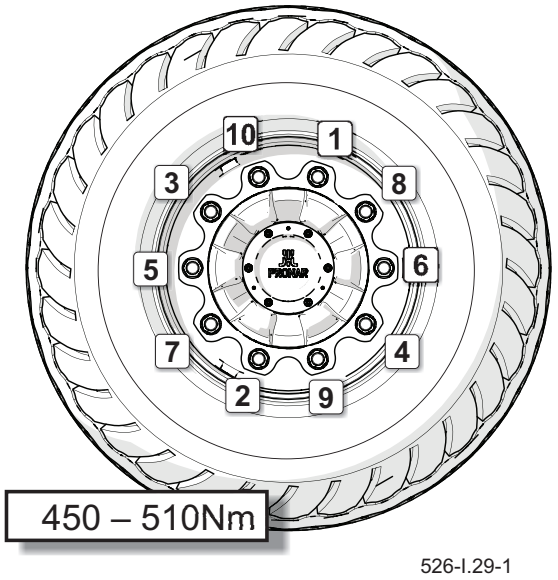
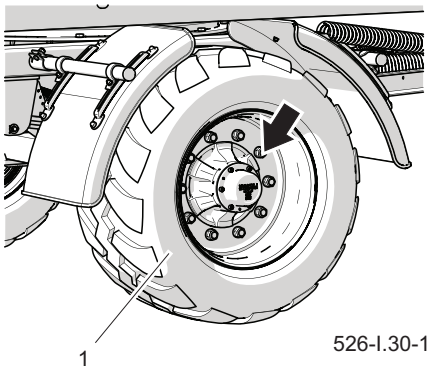
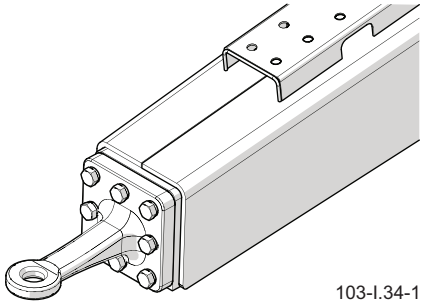
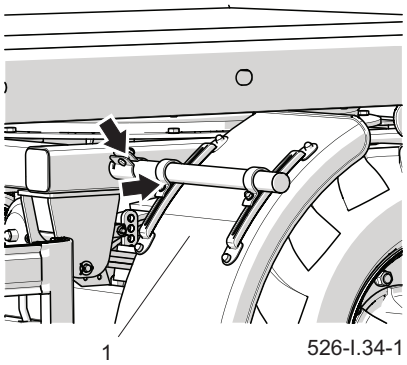
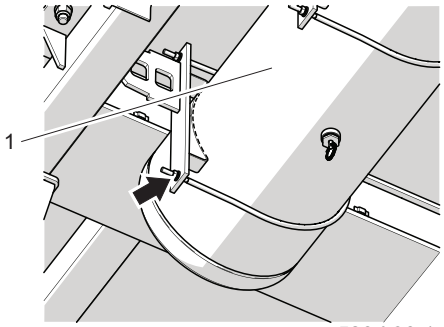
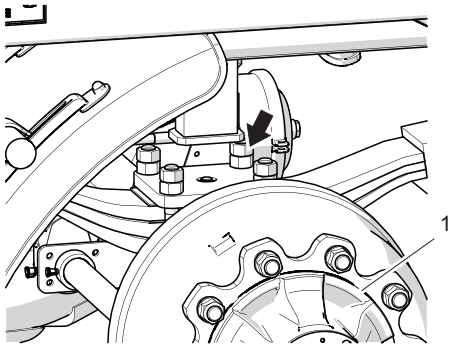
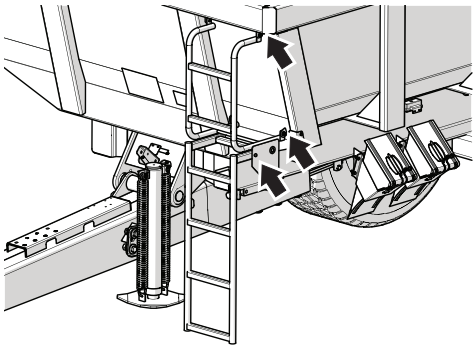


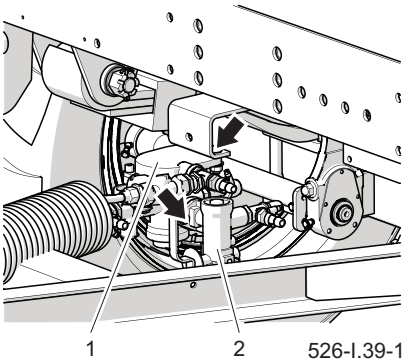
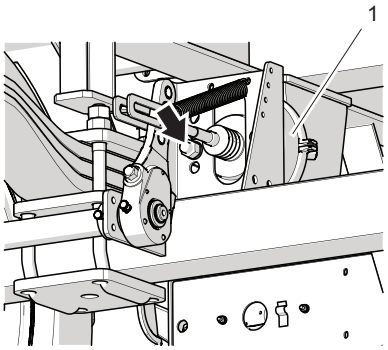
Figure 5.15 The order of the nuts tightening

SCREW CONNECTIONS INSPECTION

Table 5.7. Schedule for checking the tightness of important bolted connections

System / part name	Frequency	
Wheel nut (1)	acc. to chapter *Dokręcanie kół jezdnych na stronie 5.27*	
Connecting the hitch to the drawbar	3M	

System / part name	Frequency	
Fenders (1)	6M	 526-I.34-1
Tank	6M	 526-I.36-1
Driving axle (1), (fixing the driving axle with socket screws)	3M	 526-I.37-1
Front ladder	3M	 103-I.38-1

System / part name	Frequency	
Control valve (1), brake force regulator (2)	6M	 526-I.39-1
Brake cylinder (1)	3M	 526-I.40-1

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TECHNICAL SERVICE

CHAPTER 6

6.1 WHEEL ASSEMBLY AND DISASSEMBLY

WHEEL DISASSEMBLY

- Before lifting the wheel that will be removed, loosen the wheel nuts in the order given in the drawing.
- Place a jack under the rocker arm and lift the wheel.
- Remove the wheel.

WHEEL ASSEMBLY

- Use a wire brush to clean the axle pins and nuts from dirt. If necessary, degrease the thread.

  Do not lubricate the thread of the nut and stud.

- Check the condition of pins and nuts, replace if necessary.
- Mount the wheel on the hub, tighten the nuts so that the rim fits snugly to the hub.
- Lower the trailer, tighten the nuts according to the recommended torque and the given order.

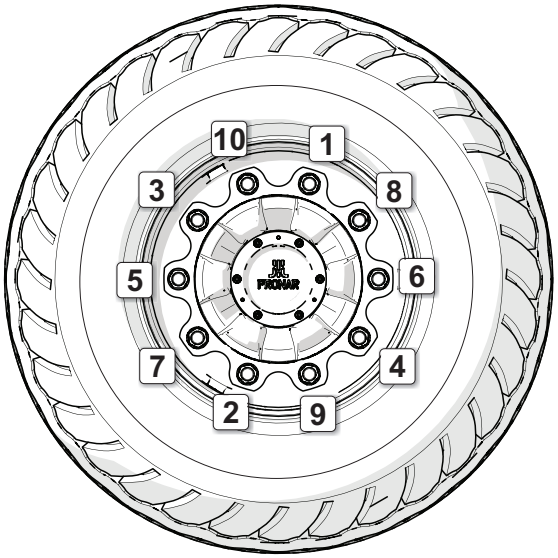

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Figure 6.1 The order of the nuts tightening

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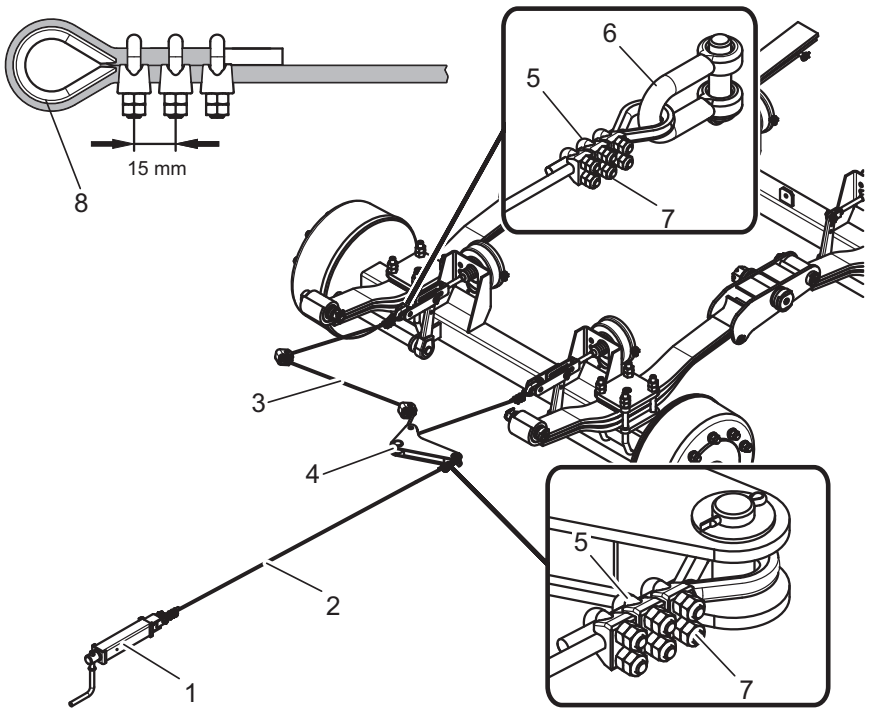
6.2 PARKING BRAKE CABLE REPLACEMENT



103-J.15-1

Figure 6.2 The order of the nuts tightening

(1) brake mechanism *(2) brake cable I* *(3) brake cable II*
(4) lever *(5) clamp* *(6) shackle*
(7) clamp nut *(8) thimble,*

- Secure the trailer with additional wedges.
- Unscrew the brake crank bolt (1) as far as possible.
- Loosen the nuts (7) of the U-clamps (5).
- Remove the shackles, pins, clamps and cable.
- Clean the parking brake components.
- Lubricate the parking brake crank.
- Attach a shackle and bow clamps to one end of the cable. Pay attention to the correct positioning of the terminals - see drawing.
- Mount one end of the cable, attach the pin and secure it with new cotter pins.
- Install the other end of the cable in a similar manner by adjusting the

CAUTION

Clamp jaws must be placed on the load-carrying cable side - see figure.
Secure the ends of the cable with a shrink tube.
The distance between the clamps should be 15mm, with the first clamp placed as close as possible to the thimble.

cable tension.

- Tighten the nuts.
- Tension the cable with the crank mechanism and loosen the again. If necessary, correct the brake cable tension.

J.3.1.526.02.1.EN

6.3 ADJUSTING THE CLEARANCE OF THE AXLE BEARINGS

- Remove the hub cover (1).
- Remove the cotter pin (2) securing the castellated nut (3).
- Tighten the castellated nut to remove slack.

  The wheel should rotate with slight resist.

- Unscrew the nut (3) (not less than 1/3 of a turn) to cover the nearest groove of the nut with a hole in the journal of the axle (the pin's hole is marked with a black arrow in the drawing). The wheel should rotate with slight resist.

  Do not over tighten the nut. Too much pressure is not recommended due to deterioration of bearing operating conditions.

- Secure castellated nut with cotter pin and mount hub cap (1).
- Gently tap the hub with a rubber or wooden hammer.

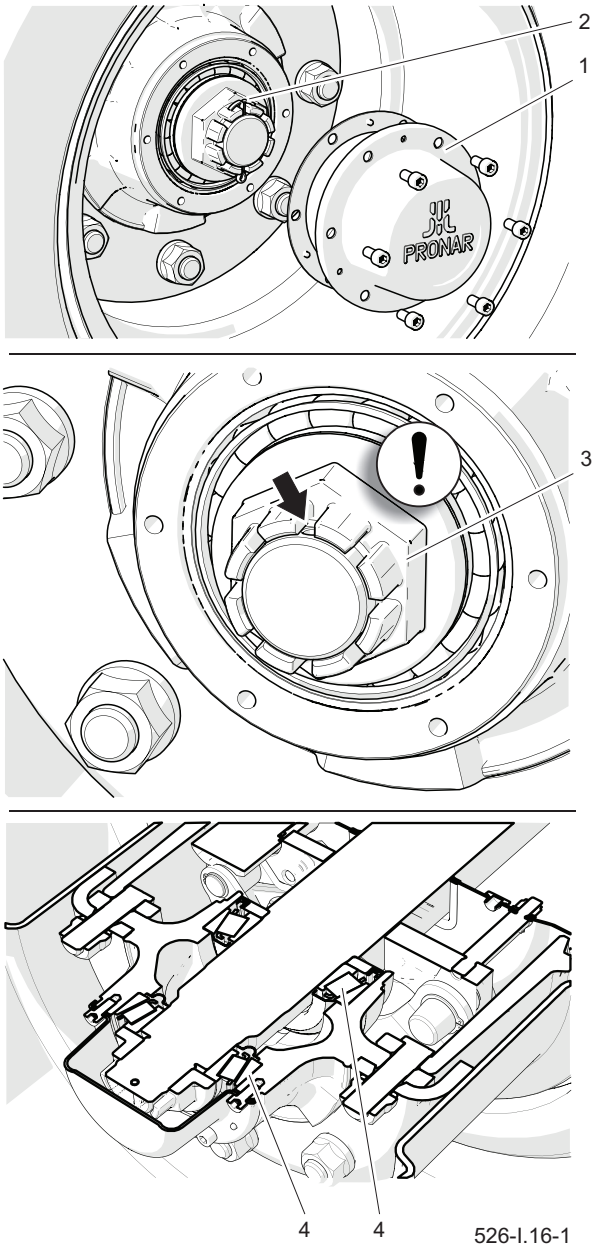


Figure 6.3 The principle of bearing clearance adjustment

(1) hub cap *(2) cotter pin*
(3) nut *(4) tapered roller bearing*

CAUTION

Adjustment of bearing clearance may be performed only when the trailer (without load and container) is connected to the tractor.

J.3.1.526.03.1.EN

6.4 BRAKE ADJUSTMENT

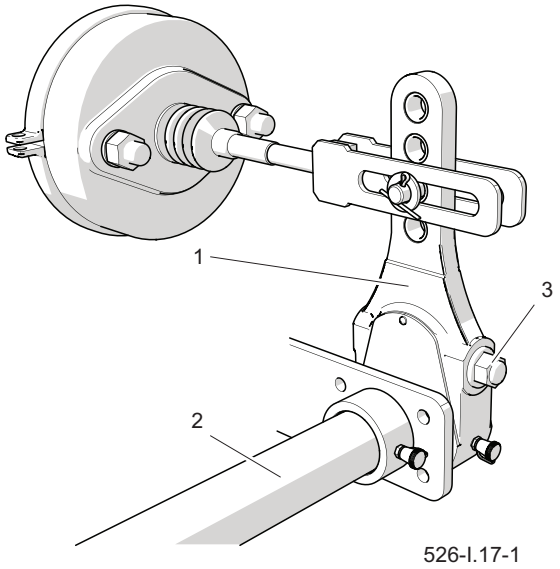


Figure 6.4 Regulations

(1) expander lever *(2) expander shaft*

(3) screw *(2) cover*

- Secure the trailer with additional wedges.
- Release the trailer parking brake.
- Remove the actuator fork pin
- On the cylinder piston rod (1) - figure (5.18) mark with a line the position of the maximum retraction of the piston rod (A).
- Press the brake pedal on the tractor, mark with a line the position of the maximum extension of the piston rod (B).
- Measure the distance between the lines (A) and (B). If the piston rod stroke is not within the correct working range, adjust the expander arm.
- Remember or mark the original position of the pin (6) figure (5.18) in the expander arm bore (3).
- Check that the cylinder piston moves freely and within the full nominal range.
- Check the correct mounting of the actuator.
- Check that the actuator ventilation openings are not clogged with dirt and that there is no water or ice inside.
- Clean the actuator, defrost if

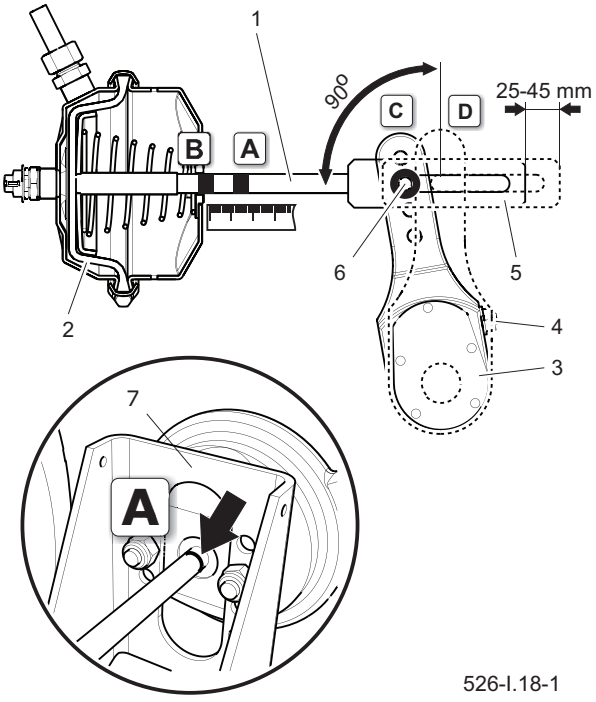


Figure 6.5 Brake adjustment

(1) piston rod *(2) diaphragm*

(3) expander arm *(4) adjusting screw*

(5) cylinder fork *(6) pin position*

(7) cylinder bracket

(A) the mark on the piston rod in the unbraked position

(B) the mark on the piston rod in the braked position

(C) arm position in the break release position

(D) arm in the full brake position

necessary and remove water through the vent holes. If damage is found, replace the actuator with a new one. When mounting the actuator, keep its original position relative to the bracket (7).

- Turn the adjusting screw (4) so that the marked hole of the expander arm coincides with the hole of the cylinder fork.

  During adjustment, the diaphragm (2) must rest on the rear wall of the actuator.

- Install the piston rod fork pin and washers and secure the pin with cotter pins.
- Turn the adjusting screw (4) clockwise to make one or two clicks in the expander arm adjustment mechanism.
- Repeat the adjustment on the other cylinders.
- Apply the brake.
- Wipe previous markings and measure piston rod stroke again.
- If the piston rod stroke is not within the correct operating range, repeat the adjustment.

FUNCTIONAL CHECK

- After completing of the adjustment, carry out a test drive.
- Perform several brakes. Stop the trailer and check the temperature of the brake drums.
- If any drum is too hot, correct the brake adjustment and perform the test drive again.

J.3.1.526.04.1.EN

6.5 ASSEMBLY AND DISASSEMBLY OF EXTENSIONS

CAUTION

Due to the weight of the elements, the assembly of extensions requires the use of a mechanical lift

CAUTION

The lifting slings supporting the extensions should be released only after connecting the elements with bolts.

- Open the hydraulic lower flap (2) - figure (6.6);
- Remove the front wall extension (4) and the rear hinged flap (3);
- Place the front wall extension (2) on the front wall of the box and screw it to the holders (6) on the inside of the box - figure (6.7);

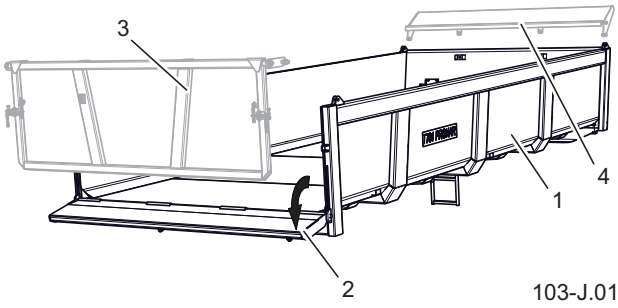


Figure 6.6 Dismantling the gearbox accessories

(1) trailer's box *(2) hydraulic bottom flap*
(3) rear hinged flap, *(4) front wall extension*

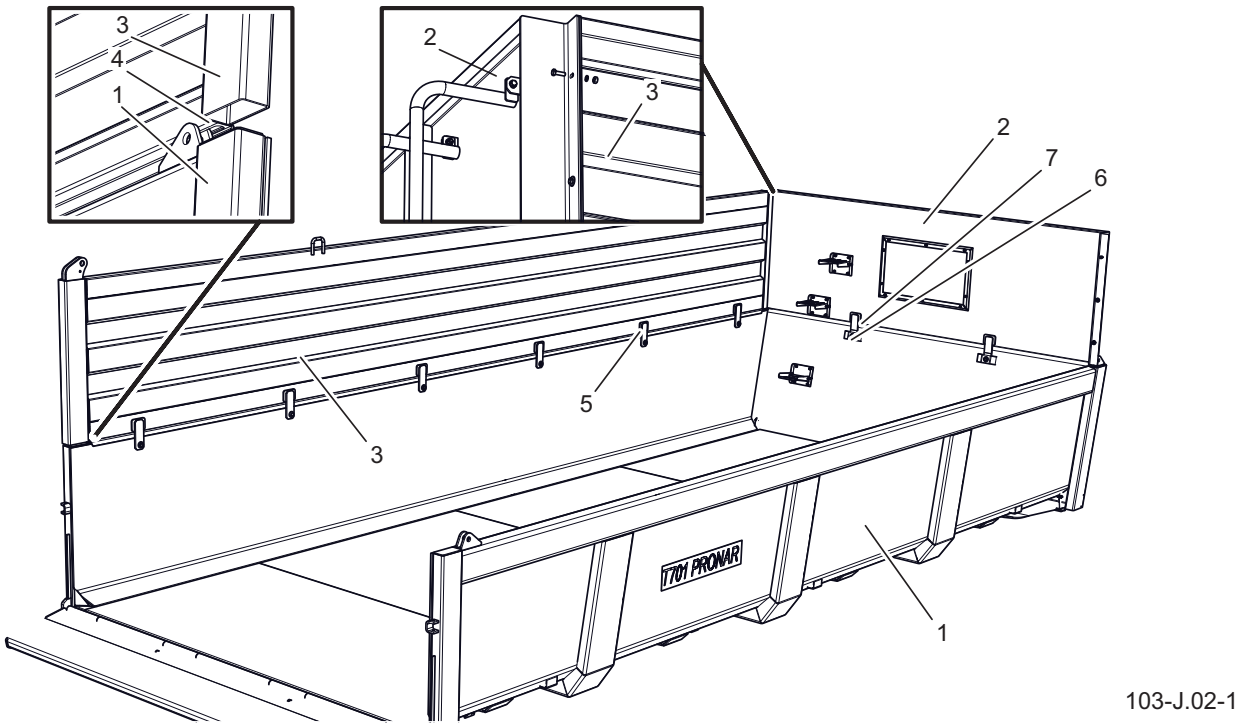


Figure 6.7 Installation of the front and side extensions

(1) load box *(2) front wall extension* *(3) side extension* *(4) flap hinge eye*
(5) side wall extension handle *(6) box handle* *(7) front wall extension handle*

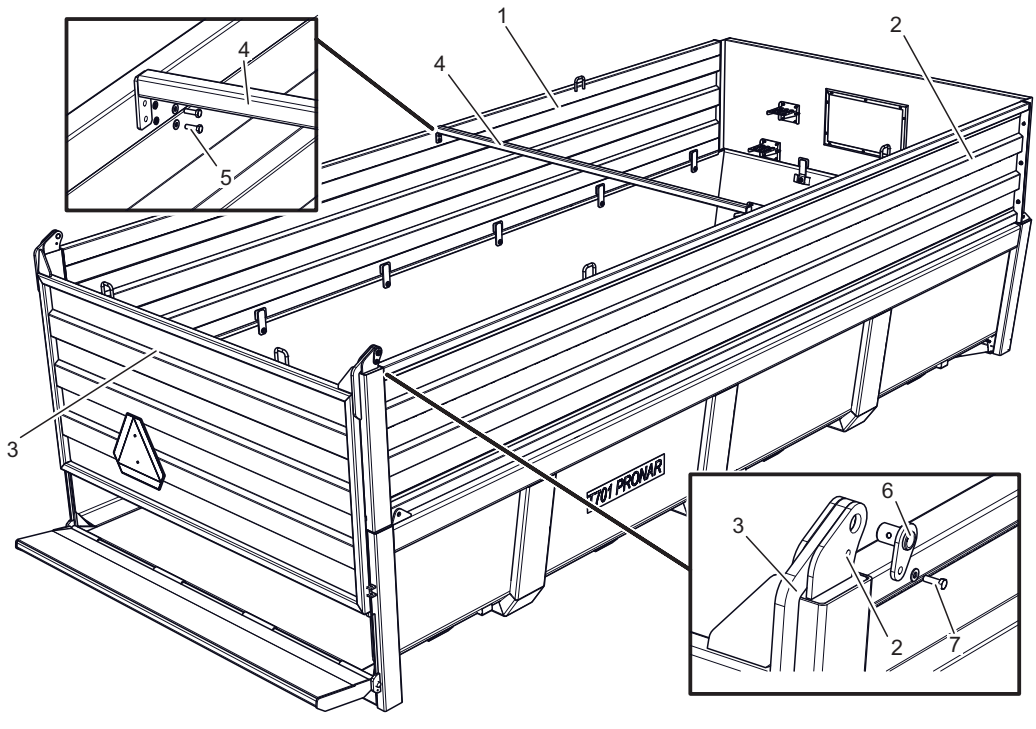


Figure 6.8 Installation of the rear flap and cross-bar

(1) left extension *(2) right extension* *(3) rear flap*
(4) crossbar *(5) fixing bolts* *(6) rear flap hinge pin*
(7) locking bolt

- Turn the side extension (3) so that the handles (5) of the extension are directed towards the inside of the box (1);
- Position the side wall extension (3) on the side wall of the box (1) so that the inner eye of the flap hinge on the box wall (4) fits into the extension hole - fig. (6.7);
- Use bolts to connect the side extension (3) to the front extension (2), and then to the box (1). Do not tighten the screws to leave an installation clearance;
- Repeat the above steps to install the second side wall;
- Place the handles of the rear flap hinges (3) between the appropriate lugs of the side wall extension (2) - fig (6.8);
- Insert the hinge pin (6) from the outer side of the box and screw it with the screw (7) to the extension lug (2). Repeat for the second hinge;

DANGER

During the assembly and disassembly of the extensions, it is forbidden to stay below the load box of the trailer.

- Screw on the crossbar (4) connecting the side walls (1) and (2);

- Tighten all bolted connections of the extensions;

Dismantling should be in the reverse order.

The extensions and the rear flap can be disassembled after attaching them to the lifting slings.

J.3.2.103.05.1.EN

6.6 CONSUMABLES

HYDRAULIC OIL

It is absolutely necessary to observe that the oil in the trailer's hydraulic system and the tractor's hydraulic system must be of the same type. If different types of oil are used, make sure that both hydraulic means can be mixed together. The use of different types of oil may cause damage to the trailer or agricultural tractor. The new machine is filled with L HL32 Lotos hydraulic oil.

If you need to change the hydraulic oil for another oil, read the oil manufacturer's instructions carefully. If he recommends flushing the system with an appropriate preparation, follow these recommendations. It must be ensured that the chemicals used for this purpose do not act aggressively on the materials of the hydraulic system. During normal operation of the trailer, it is not necessary to change the hydraulic oil, however, if necessary, this operation should be entrusted to specialist service centres.

The oil used is not classified as a dangerous substance due to its composition, however, long-term effects on the skin or eyes may cause irritation. In the event of contact of oil with skin, wash the area of contact with water and soap. Do not use organic solvents (petrol, kerosene). Soiled clothing should be removed to prevent oil from getting on your skin. If the oil gets into your eyes, flush them with plenty of water and in case of irritation contact your doctor. Hydraulic oil under normal conditions is not harmful to the respiratory tract. The hazard only occurs when the oil is strongly atomized (oil mist), or in the event of a fire during which toxic compounds

Table 6.1. Characteristics of oil L-HL 32

Item	Name	Unit	
1	Viscosity classification according to ISO 3448VG	-	32
2	Kinematic viscosity at 400C	mm^2/s	28.8 – 35.2
3	Qualitative classification according to ISO 6743/99	-	HL
4	Quality classification according to DIN 51502	-	HL
5	Flash-point	C	230

Table 6.2. Lubricants

Item	Symbol	Description
1	A	general purpose machine grease (lithium, calcium),
2	B	solid grease for heavily loaded components with the addition of MoS_2 or graphite
3	C	anti-corrosive spray
4	D	plain machine oil, silicone spray grease

ADVICE

Lubrication schedule (Table -Trailer lubrication schedule):
D - working day (8 hours of trailer work),
M - month

may be released. Oil should be quenched with carbon dioxide, foam or extinguishing steam. Do not use water to extinguish a fire.

LUBRICANTS

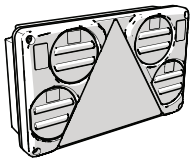
For heavily loaded parts, it is recommended to use lithium grease with the addition of molybdenum disulphide (MOS_2) or graphite. For less loaded components, it is recommended to use general-purpose machine greases that contain anti-corrosive additives and are highly resistant to water washout. Aerosol preparations (silicone greases, anti-corrosive lubricants) should have similar properties.

Before using lubricants, read the information leaflet for the selected product. Particularly important are safety rules and how to handle a given lubricant and how to dispose of waste (used containers, contaminated rags, etc.). The information leaflet (product card) should be kept together with the grease.

J.3.1.526.05.1.EN

6.7 BULBS

Table 6.3. List of bulbs used in the lighting installation

Name	Unit	Bulb	Number of lamps	Number of bulbs
Multifunctional rear right lamp(1)		R10W P21W	1	1 3
Multifunctional rear left lamp(1)		R10W P21W	1	1 3

(1) - does not apply to the version with LED diodes

ADVICE

The source of light in the other lamps, not listed in the table, are LEDs and in the event of damage, they are replaced only as a complete lamp, without the possibility of repair or regeneration.

J.3.1.526.06.1.EN

6.8 FAULTS AND HOW TO REMOVE THEM

Table 6.4. Faults and how to remove them

FAULT	CAUSE	REMOVAL METHOD
Trouble with starting	Brake system lines not connected	Connect the brake lines (applies to pneumatic system).
	Parking brake applied	Release the parking brake.
	Pneumatic connection lines damaged	Replace.
	Connection leakage	Tighten, replace washers or sealing sets, replace hoses.
	Defective control valve or braking force regulator	Check valve, repair or replace.
Noise in the hub of the axle	Excessive bearing looseness	Check the clearance and adjust if necessary
	Damaged bearings	Replace bearings
	Damaged hub components	Replace
Low braking efficiency	System pressure too low	Check the pressure on the pressure gauge on the tractor, wait for the compressor to fill the tank to the required pressure. Damaged tractor air compressor. Repair or replace. Damaged brake valve on the tractor. Repair or replace. System leakage. Check installations for leaks.
Excessive heating of the axle hub	Incorrectly adjusted service or parking brake	Adjust expander arm positions
	Worn brake pads	Replace brake shoes.
Incorrect hydraulic system operation	Incorrect hydraulic oil viscosity	Check the oil quality, make sure that the oils in both machines are of the same grade. If necessary, change the oil in the tractor and/or trailer

Incorrect hydraulic system operation	Insufficient tractor hydraulic pump performance, tractor hydraulic pump defective.	Check the hydraulic pump on the tractor.
	Damaged or dirty actuator	Check the cylinder piston rod (bending, corrosion), check the cylinder for leaks (piston rod seal), repair or replace the cylinder if necessary.
	Actuator load too high	Check and reduce the cylinder load if necessary.
	Damaged hydraulic lines	Check and make sure that the hydraulic hoses are tight, not kinked and properly tightened. Replace or tighten as necessary.
Excessive wear of the left and right shoulder tires on both sides.	Air pressure too low. Too high cornering speed with a loaded trailer. Too fast air loss due to damaged rim, valve, puncture etc.	Check air pressure. Check the road tires for proper air pressure regularly. Too much load on the trailer. Do not exceed the permissible total weight of the machine. Reduce speed when cornering on a hardened surface. Check rim and valve. Replace damaged parts.
Excessive tire wear in the centre.	Air pressure too high.	Check air pressure. Check the road tires for proper air pressure regularly.
Excessive unilateral wear on the left or right shoulder tires	Incorrect convergence. Driving axes incorrectly set.	Damaged spring leaf on one side of the suspension. Replace the springs.
Tread wear.	Damaged suspension system, broken spring. Damaged braking system, brake blocking, incorrectly adjusted braking system. Too frequent and sudden braking.	Check the slack in the suspension system, check the springs. Replace damaged or worn parts. Check the braking system for malfunctions. Adjust the extender levers.

Lateral fracture.	Long-lasting ride on tires with low air pressure. Too much load on the trailer.	Check air pressure regularly. Check the weight of the load during loading.
Abrasions on the lateral outer edge of the tire.	Too frequent climbing over sharp, high obstacles (e.g. curbs).	Control the driving technique.
Rim damage (hardening and cracking around the rim), tire crumbling.	Incorrect braking technique. Too frequent and sudden braking. Braking system damaged.	Check braking system. Control the braking technique. Damage arises due to excessive heating of the hub and the resulting wheel rims.

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TIRE ASSEMBLY

CHAPTER 7

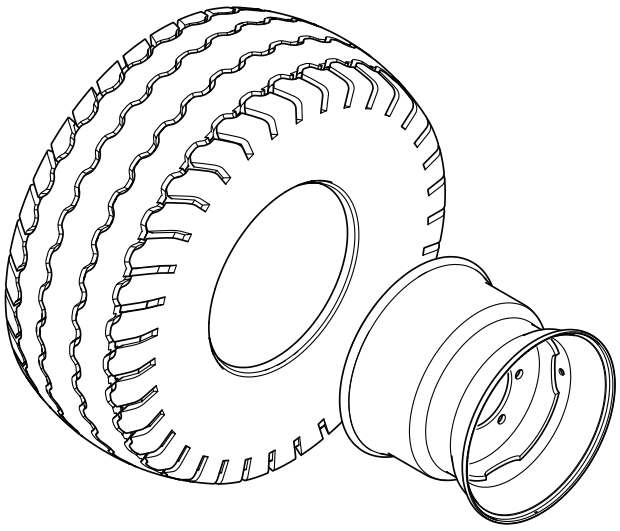

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Table 7.1. Trailer tires

Item	Tire	Rim
1	385/65R22,5; G&H EF27 Farmer TL (regen.)	11.75x22.5 ET=-30
2	385/65R22,5; XY-1 160F (regen.)	11.75x22.5 ET=-30
3	385/65R22,5; 15R22,5 XY1 De Molen (regen.)	11.75x22.5 ET=-30
4	385/65R22,5; Guma Bolechowo (regen.)	11.75x22.5 ET=-30
5	445/65R22,5; 18R22,5 ZA2 Bandenmar (regen.)	13x22.5 ET=0
6	445/65R22,5; 169F AR-01 TL Mitas (regen.)	14x22.5 ET=0
7	445/65R22,5; BARUM BT41 TL (regen.)	13x22.5 ET=0
8	600/50R22,5; FL630 Agrimax TL BKT	20x22.5 ET=-40
9	600/50R22,5; 159D TL COUNTRY KING	20x22.5 ET=-40
10	620/50R22,5; Flot Pro TL Vredestein	20x22.5 ET=-40
11	385/65R22,5; 15R22,5 BU49 BARUM	11.75x22.5 ET=-30
12	385/65R22,5; SAWA CARGO MS TL	11.75x22.5 ET=-30
13	385/65R22,5; SAWA CARGO C4 TL	11.75x22.5 ET=-30
14	385/65R22,5; 164E ADM991 TL LEAO	11.75x22.5 ET=-30
15	385/65R22,5; DSR588 DOUBLE STAR	11.75x22.5 ET=-30
16	385/65R22,5; DSR118 DOUBLE STAR	11.75x22.5 ET=-30
17	445/65R22,5; DSR118 DOUBLE STAR	14x22.5 ET=0
18	445/65R22,5 BARUM BS49 16PR MS TL	14x22.5 ET=0
19	550/60R22,5; 171A8 TR08 16PR TL MIT	16x22,5 ET=0

Item	Tire	Rim
20	700/50-26,5; 16PR 174A8 FL 648 BKT	24x26,5 ET=-50
21	600/55-22,5; 16PR Float.648 TL BKT	20x22,5 ET=-40
22	710/45-26,5; 169A8 T404 Trelleborg	24x26,5 ET=-50
23	425/65R22,5; Bandenmarkt zz 168F TL	13x22,5 ET=0
24	425/65R22,5; WPM 80km/h De Molen	13x22,5 ET=0
25	425/65R22,5; BARUM B44T TL	13x22,5 ET=0