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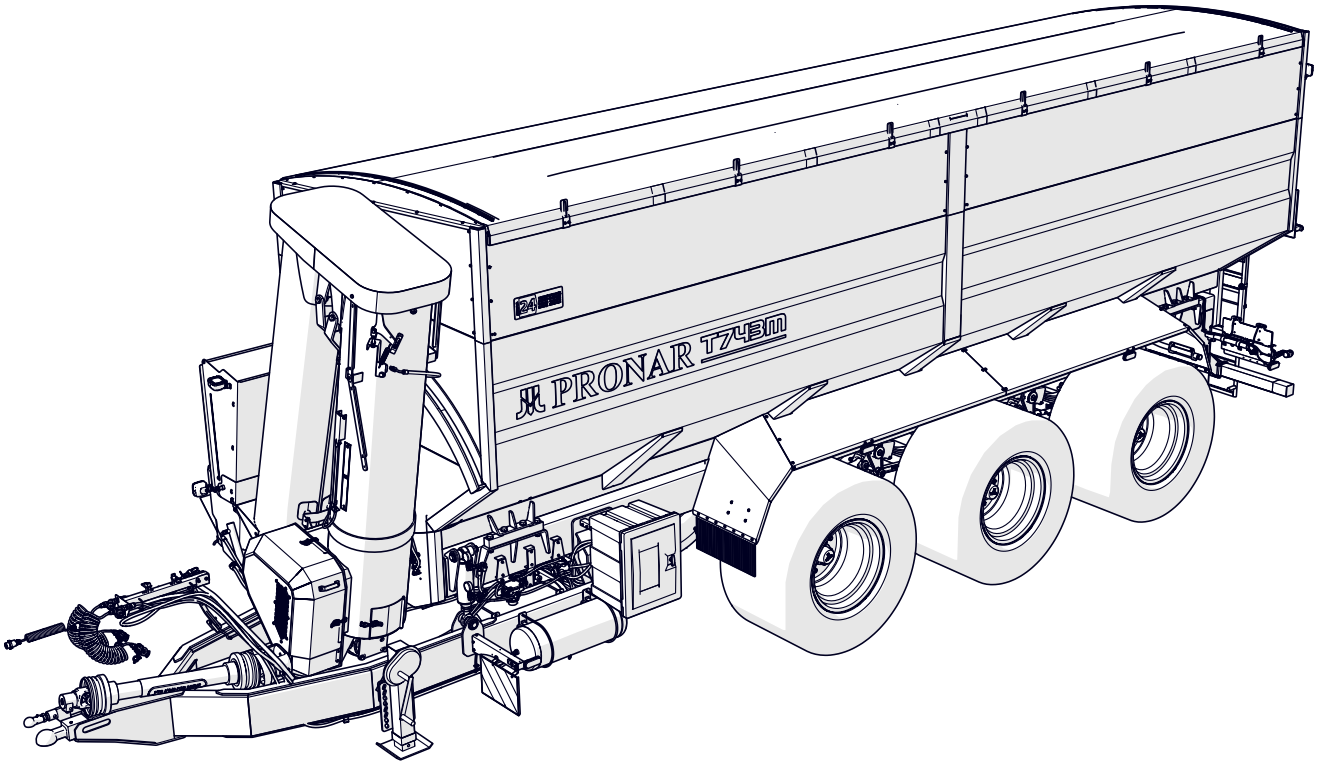
OPERATOR MANUAL

AGRICULTURAL TRAILER

PRONAR T743M

TRANSLATION OF THE ORIGINAL COPY OF THE MANUAL



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This Operator Manual contains important safety and operating instructions for the machine. The Operator Manual should be kept near the machine so that it is accessible to authorized operators.

Keep this manual for future reference. If the Operator Manual is lost or damaged, contact the seller or the manufacturer for a copy.

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.

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EC Declaration of Conformity

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

Machine description and identification data	
General description and purpose:	**CHASER BIN**
Type:	**WP01**
Model:	**T743M**
VIN number:	
Commercial name:	**CHASER BIN PRONAR T743M or CHASER BIN T743M or PRONAR T743M or TRAILER PRONAR T743M or T743M**

referred to in this declaration meets the requirements of the Directive **2006/42/EC** of The European Parliament and of The Council of 17 May 2006 on machinery.

The machine has been designed for and meets the requirements of the following standards:

PN-EN ISO 12100, PN-EN 1853

This declaration applies exclusively to the machine in the condition, in which it was sold and does not include components or parts added or subsequent modifications made by the final user.

The operator's manual is an integral part of the machine.

The Implementation Department Manager of PRONAR Sp. z o.o., 17-210 Narew, ul. Mickiewicza 101A is authorised to provide the technical documentation.

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Narew, on 2022-07-01
Date and place issued

Full name of the authorised person, position, signature

Chapter 1

Introduction

PRONAR T743M

1.1 DEAR USER

The manual instruction 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 them, call the manufacturer's authorized service center.

Before starting the machine, you will be familiarized with its construction, principle of operation, available equipment and operation, and above all safety rules. The operator and qualified personnel should be trained during final reception.

Remember!!! You can run the machine only when you have read the content of this "User Manual", you have been trained and you can handle it safely. In case of any doubts, contact the seller to clarify the problem.

The most important thing during operation is your safety, therefore, regardless of everything, all recommendations contained in the "User's Manual" should be observed and guided by reasonable procedure. Remember that the correct service, in accordance with the manufacturer's instructions, reduces the risk of an accident to a minimum, and working with the machine is more efficient and less emergency.

When buying machines, check the compatibility of serial numbers placed on the machine with the number entered in the "Warranty card" and in the sales documents. For information on identifying the machine, see "Basic information" chapter. We recommend that you have the most important serial numbers entered the field below.

Machine serial number:

WST.3.B-001.01.EN

1.2 RULES FOR USING THE USER'S MANUAL

The information contained in the publication is current as at the date of publication. As a result of improvement, some sizes and illustrations contained in this publication may not correspond to the actual state of the machine delivered to the user.

The drawings contained in this publication are aimed at clarifying the principle of machine operation and may differ from the facts. This can not be a reason for any claims for this. The manufacturer reserves the right to introduce constructional changes in the manufactured machines to facilitate operation and improve the quality of their work, without making any current changes to this publication.

The operating instruction is the basic equipment of the machine. If the information contained in this study prove not fully understandable to ask for aid to the point of sale in which the machine has been purchased or directly to the manufacturer.

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

Separate studies can be attached to this manual that can be found in the chapter "*Attachments and additional materials*".

WST.3.B-002.01.EN

1.3 TARGET GROUP

The User Manual is intended for staff operating the machine called end users, and qualified persons (electrician, mechanic, plumber). Detailed information on the competences and liability of end users and qualified personnel can be found later in this chapter.

1.3.1 End user (User, Authorized User, Operator)

Who is the end user?

An end user, otherwise known as the user or operator, call the person authorized to operate the machine. The user can be authorized to handle the machine if the following conditions have been met.

- The user has familiarized with the content of the "User's Manual".
- He gets acquainted with the contents of the farm tractor instruction manual and observes its recommendations.
- He has been trained in terms of compliance with established maintenance and regulation plans.
- He has authorizations to drive vehicles (vehicle assemblies) required in the country of use.

Responsibilities and permissions

The user acquired by the user allows for safe handling of the machine. In unforeseen cases, the user should follow a reasonable procedure and take care of their safety, people located near a working machine and other traffic users.

The knowledge and skills are entitled to the end user to handle the machine, carry out maintenance and repair or adjustment procedures in the scope specified by the manufacturer. The activities that can be performed by the operator are marked with the pictogram:

1.3.2 Qualified person (qualified personnel)

Who is a qualified person?

We call a qualified person any person admitted to perform some maintenance, repair or regulatory work in the scope specified by the machine manufacturer and who gained appropriate technical education in a specific profession and confirmed by the relevant document, completed the training carried out by the authorized manufacturer's or seller staff, can see threats and counteract them. Professional experience and professional skills entitle a qualified person to carry out some repairs of the machine and perform basic maintenance procedures in the scope provided by the manufacturer. A qualified person in addition to the necessary knowledge has the skills to use the specialized accessories necessary to perform the obligations. The following persons include qualified persons:

- qualified mechanic,
- qualified electrician,
- qualified plumber.

Activities that can be performed by a qualified mechanic are marked with a pictogram:

Activities that can be performed by a qualified electrician are marked with a pictogram:

Activities that can be performed by a qualified plumber are marked with a pictogram:

1.3.3 Service personnel

Who is the service personnel?

Service personnel, otherwise known as the manufacturer's service or service, is a person or a group of qualified persons who have a much greater experience and knowledge to perform certain corrective and maintenance activities than qualified personnel. It has the right tools necessary to carry out work. The manufacturer's service has the required permissions and is a representative of a machine manufacturer or other equipment.

1.3.4 Unauthorized user

Who is an unauthorized user?

An unauthorized user also known as a bystander is a person who has not been trained by the manufacturer or an authorized seller, has not been familiarized with the basic issues of security, knowledge of the machine, did not familiarize with the entire content of the operating instructions, and therefore there are no authorizations to operate the machine. A bystander can not be admitted to work with the machine.

WST.3.C-002.02.EN

1.4 SYMBOLS AND TAGS USED IN THE MANUAL

1.4.1 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 with the word **DANGER**. Failure to comply with these recommendations may endanger the health or life of persons operating the machine or bystanders.

1.4.2 Caution

Particularly important information and recommendations, the observance of which is absolutely necessary, are highlighted in the text with a frame and word **CAUTION.** Failure to comply with these recommendations creates the risk of damage to the machine due to improper handling, adjustment or use.

1.4.3 Advice

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

1.4.4 Personal protective equipment pictograms

	Work shoes
	reflective vest
	industrial helmet
	working clothes
	respiratory protection
	safety goggles
	protective gloves
	hearing protectors

1.4.5 Qualification pictograms

	operator
	qualified mechanic
	qualified plumber
	qualified electrician

1.4.6 Typography of the User Manual

Bulleted list

The bulleted list presents actions to perform whose order is not relevant.

Example of using a bulleted list

- ....
- Check the condition of connections and hydraulic and pneumatic hoses. Hydraulic oil leaks and air defects from a leaky installation are unacceptable.
- In the event of a hydraulic or pneumatic installation failure, the trailer should be turned off from operation until the failure is removed.
- .....

Comment on the text

Comment is most often a supplement and additional explanation to order a specific activity. Additional information can also be included in the comment.

An example of a comment

The required air pressure is described on the sticker placed on the machine frame, over the wheel.

Defined list

List shows the to-do, which execution order is important.

Example of using a defined list

1. .....
2. Unscrew the handles (2) securing the crank (1).
3. Insert the crank into a square shaft of the gear and turning the clock clockwise on the direction of the clock.
4. ....

References to pages

Reference to chapter (place in the manual) related thematically

An example of a reference application

📖 *page 9.4*

WST.3.B-004.02.EN

1.5 GLOSSARY

agricultural tractor

A motor vehicle constructed for use in conjunction with equipment for agricultural, forestry or horticultural work; such a tractor may also be adapted for pulling trailers and for earthworks.

truck tractor

A motor vehicle designed exclusively for towing a trailer; the term includes a semi-trailer tractor and a ballast tractor.

Load capacity

A motor vehicle made in a special way so that it not only pulls the tools but also carries them on itself, it can work with attachable or hanging tools at the rear or front of the vehicle.

Final acceptance

The set of activities involved in the preparation and actual handover of the finished product for use. The final acceptance includes the handover of documentation, basic training, acceptance under transport and the first commissioning of the machine.

bystander

see - unauthorised user

qualified person

A person who is authorised to carry out certain maintenance, repair or adjustment work within the scope defined by the manufacturer of the machine and who has acquired the relevant technical training in the specified profession and confirmed by a relevant document, has completed training provided

by authorised personnel of the manufacturer or the dealer, and is able to recognise and prevent risks.

truck

A motor vehicle designed for the carriage of goods; the term also includes a lorry designed for the carriage of goods and passengers between 4 and 9 including the driver.

Danger zone

A danger zone is a designated area around a machine in which people are at risk of losing their health or life.

TPL

TPL - Three-point linkage - a lever system used on agricultural tractors for the aggregation of machinery and equipment suspended from a hydraulic linkage.

end user

Otherwise known as the user, authorised user or operator is the person permitted to operate the machine.

Unauthorised user

Also referred to as a bystander, this is a person who has not been trained and allowed to operate the machine.

PTO

PTO - Power take-off - the shaft that transmits drive from the vehicle to the machine being moved.

ALB

Automatic load-dependent brake force regulator, or ALB. (Automatischer Lastabhangiger Bremskraftregle).

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1.6 DEFINITION OF DIRECTIONS IN THE MANUAL

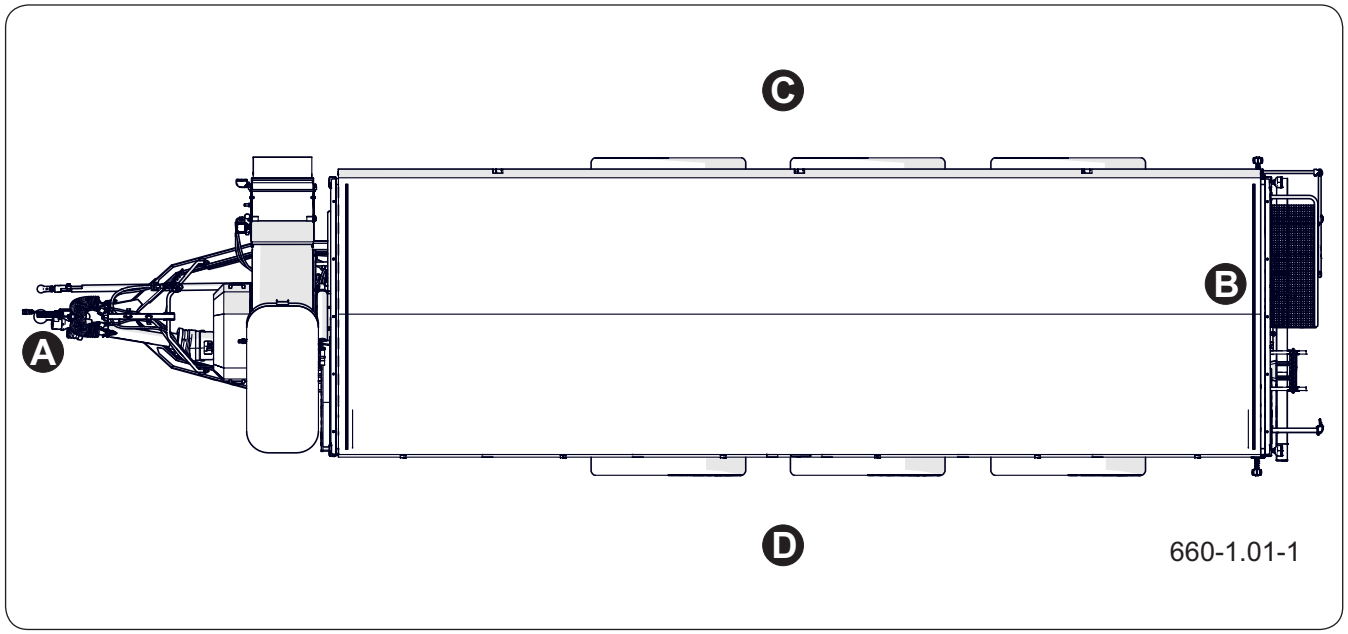

Figure 1.1 Definition of directions on the machine

(A) front *(B) rear* *(C) right side*

(D) left side

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

Right side - the side to the right of the observer facing the forward direction of the machine.

Right-hand rotation - clockwise rotation of the mechanism (operator facing the mechanism).

Left-hand rotation - counterclockwise rotation of the mechanism (operator facing the mechanism).

WST.3.B-006.21.EN

1.7 FINAL ACCEPTANCE

1.7.1 Preliminary information

Final acceptance takes place after the machine has been delivered. The acceptance covers the following issues:

- providing the required documents, including the “User Manual", “Warranty Card" and others,
- information from the seller about the method of use, hazards resulting from using the machine contrary to its intended use and about aggregating the machine with a tractor and working with it.
- checking the machine after delivery,
- first start-up of the machine and discussion of machine operation.

1.7.2 Checking the machine after delivery

The scope of control

- Check the completion of the machine in accordance with the order.
- Check technical condition of guards.
- Check the condition of the paint coating, check for any signs of corrosion.
- Check the machine for missing parts or damage resulting from incorrect transport of the machine to its destination point (dents, punctures, bends or broken parts, etc.).
- Check the condition of the tires on the road wheels and the air pressure in the tires. Check the correct tightening of the wheels.
- Check the technical condition of flexible conduits of the hydraulic and pneumatic systems. Make sure the layouts are tight.
- Inspect the hydraulic and/or pneumatic

cylinders for leaks and leaks.

1.7.3 The first start of the machine

The start-up must be preceded by training conducted by the Seller or authorized employees of the Seller.

The scope of activities for the first start-up

- Make sure that the pneumatic, hydraulic and electrical connections on the agricultural tractor comply with the manufacturer's requirements.
- Check all lubrication points, re lubricate if necessary.
- Drain the air reservoir the brake system.

If the condition of the machine does not raise any objections, go to the test drive:

- Connect the machine to the tractor hitch.
- Connect the pneumatic, hydraulic and electrical conduits.
- By activating the individual lights, check the correct operation of the electrical system.
- Control the correct operation of the hydraulic system by controlling the appropriate circuits of the tractor's hydraulic distributor.

  Optionally, start the PTO and check the operation of the hydraulic system of the machine driven by the tractor's PTO shaft.
- Apply the brake.
- While moving off, check the operation of the main brake system.
- Release the tractor parking brake.

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

- Noise and unnatural sounds coming from the rubbing of moving parts against the machine structure,
- Leaking braking system,
- hydraulic oil leaks,

- Incorrect operation of hydraulic and/or pneumatic actuators,

or other faults, diagnose the problem. If the fault cannot be repaired or repairing it may void the warranty, contact the point of sale to explain the problem or make repairs.

After completing the test run, check the tightness of the wheel nuts.

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1.8 ENVIRONMENTAL HAZARD

DANGER

Used oil or collected residues mixed with absorbent material should be stored in an accurately marked container. Do not use food packaging for this purpose.

CAUTION

Oil waste may only be delivered to a point dealing with the utilization or regeneration of oils. Under no circumstances should oils be poured into drains or water bodies.

A leakage of hydraulic, lubricating or diesel oil is a direct threat to the natural environment due to the limited biodegradability of the substance.

When carrying out maintenance and repair works where there is a risk of leakage, perform these works in rooms with an oil-resistant surface. In the event of a substance leak into the environment, first secure the source of the leak, and then collect the spilled substance using available means. Collect the remaining oil with sorbents or mix with sand, sawdust or other absorbent materials. The collected contaminants should be stored in a sealed and marked container, resistant to hydrocarbons, and then transferred to a disposal point. The container should be kept away from heat sources, flammable materials and food.

Used oils or oils that cannot be reused due to the loss of their properties are recommended to be stored in their original packaging in the same conditions as described above.

WST.3.B-008.01.EN

1.9 PERSONAL PROTECTIVE EQUIPMENT

1.9.1 General

CAUTION

Personal protective equipment should be used in accordance with the recommendations of the security manufacturer.

Follow local regulations regarding personal protective equipment.

The personal protective equipment listed below is a minimum protection for the operator against the effects of unfavourable external factors and is only a recommendation for use.

We recommend carrying out a risk assessment at the machine's workplace and adjusting the personal protective equipment of operator depending on the actual working conditions.

1.9.2 Work clothing

Work clothing should fit the operator's body correctly. The material from which the clothing is made should be characterized by high tear strength. Clothing must not have any protruding elements that may be accidentally caught by the mechanisms of the machine.

1.9.3 Hearing protectors

It is recommended to use of ear muffs for use with a protective industrial helmet for hearing protection. The selection of the damping value should be selected individually depending on the noise level at the location of the machine, which is the result of various sources (e.g. tractor, loader, belt conveyors, etc.).

Remember to properly store and maintain your hearing protectors. Poorly stored and maintained hearing protectors lose their protective properties over time. Periodically replace the soundproofing cushions according to the manufacturer's recommendations.

1.9.4 Work shoes

Work shoes should have the following properties:

- non-slip sole,
- sole material made of a material resistant to oils, gasoline and other organic solvents.
- toe cap resistant to impact with an energy of 200 J,
- insert securing the foot against piercing of the sole.

The above properties correspond to the S3 shoe category according to PN-EN ISO 20345.

1.9.5 Warning vest

The warning (reflective) vest is designed to increase the operator's visibility to other users. Instead of a reflective vest, you may wear work clothes that meet the requirements of EN471. It is recommended that the warning vest (or work clothing) be class 2.

1.9.6 Protective gloves

Protective gloves should be selected depending on the currently performed work.

Strong protective gloves

Strong protective gloves for hand protection are used for protection during heavy work such as cleaning the machine, removing clogs and the like, where there is a risk of damaging the hands. Protective gloves should protect the hands from cuts, scratches,

abrasions, punctures and similar injuries to the skin and against light burns in contact with hot surfaces.

Light protective gloves

For light work (general operation, minor maintenance etc.), we recommend using light protective gloves for work in a dry or slightly oily environment. The working surface of the gloves (internal part should be covered with an impermeable material, e.g. nitrile.

Nitrile gloves

Nitrile gloves designed for working with urea, fuel or lubricants. They are designed for light work where there is a risk of skin contact with lubricants, fuel, urea, gear oil and hydraulic oil.

1.9.7 Safety glasses with side shields

Safety glasses to protect the eyes against contact with hazardous substances, splashing liquids or dust and airborne of the machine dust. Safety glasses with side shields increase the level of protection.

1.9.8 Industrial protective helmet

The industrial safety helmet is designed to protect the head against injuries related to the fall of thrown objects, parts or materials. The design of the helmet should be in accordance with the EN397 standard. During normal machine operation, wearing lightweight industrial helmets will not protect the user from injury and is therefore not recommended.

The protective helmet must fit correctly to the anatomical shape of the skull. There are adjustment straps for this purpose. The helmet has a limited shelf life.,

CAUTION

Remember that personal protective equipment should be regularly maintained and used in accordance with the recommendations of the product manufacturer. Following these guidelines will ensure safe use and the best protection.

After this date, the material from which it was made loses its properties and does not fulfil the assumed task. The helmet must be replaced.

1.9.9 Anti-dust respirator

Dust can become airborne when operating the machine. It is recommended to use disposable respirators with an exhalation valve to protect the respiratory tract.

The size of the mask should match the operator's face. The mask should fit snugly against the skin. The nasal part should be adjusted using the adjustment plate. Remember that facial hair can make it difficult to seal the face mask.

Minimum half mask recommendations:

- type FFP1, in accordance with EN-149: 2001 + A1: 2009, protection against non-toxic liquid or solid aerosols,
- P1 class.

WST.3.C-004.01.EN

Chapter 2

Basic information

PRONAR T743M

2.1 IDENTIFICATION

2.1.1 Machine identification

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.

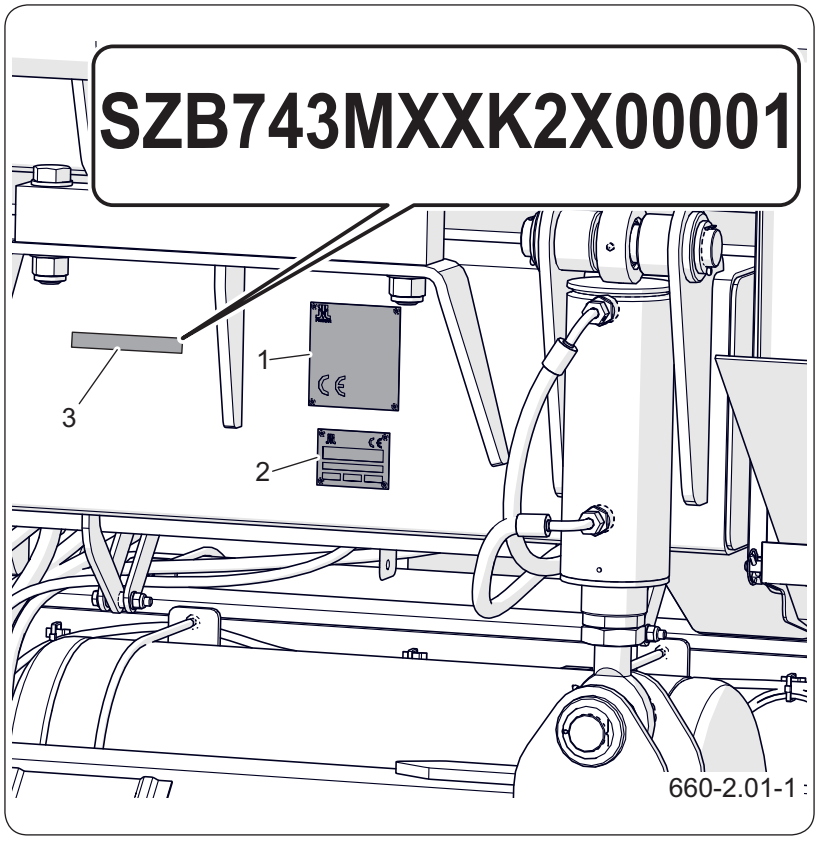


Figure 2.1 Identification of the trailer
(1) nameplate *(2) CE plate*
(3) location of trailer VIN number

The trailer was marked with a nameplate (1), and a factory number (2) located on a highlighted rectangular field on the trailer frame. The factory number and nameplate can be found as shown in Figure (2.1). When purchasing the trailer, check the conformity of the factory numbers on the machine with the number entered on the *Warranty Card*, on the sales documents and in the *Operating Instructions*. The meaning of the individual fields on the nameplate is shown in the table.
Record the factory number of the trailer in the top field.

2.1.2 Identification of the driving axle

Table 2.1 Nameplate markings

ITEM	Meaning
A	General definition and function
B	Symbol / type of trailer
C	Year of production
D	VIN number
E	Approval number
F	Permissible total weight
G	Curb weight
H	Technically permissible mass
I	Permissible load per coupling
J	Permissible axle load per axle
K	Technical permissible axle loads

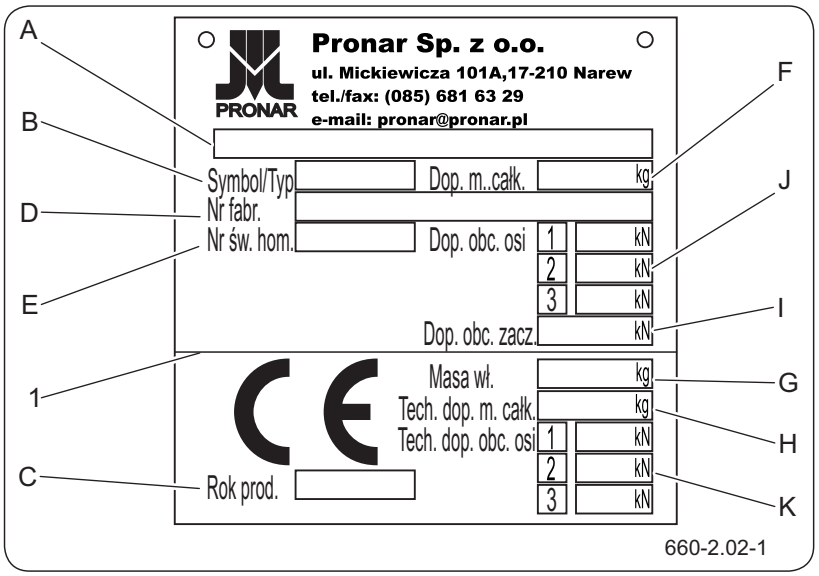


Figure 2.2 Nameplate

Table 2.2 CE nameplate markings

ITEM	Meaning
A	Product trade name or generic designation and function
B	Product VIN number
C	Product type (granted in the EU type-approval process)
D	Year of production
E	Product model

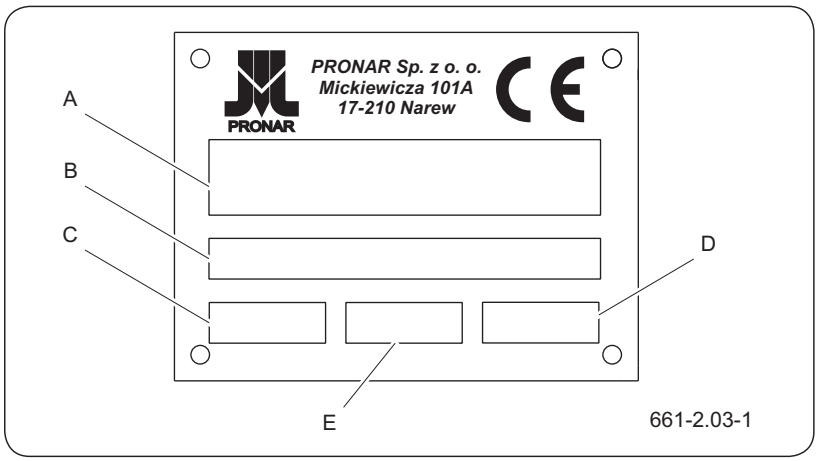


Figure 2.4 CE Nameplate

The factory number of the travel axle and its type are stamped on the rating plate (2) attached to the travel axle profile - figure Identification of the axle. After purchasing the trailer, it is advisable to enter the individual factory numbers in the fields below.

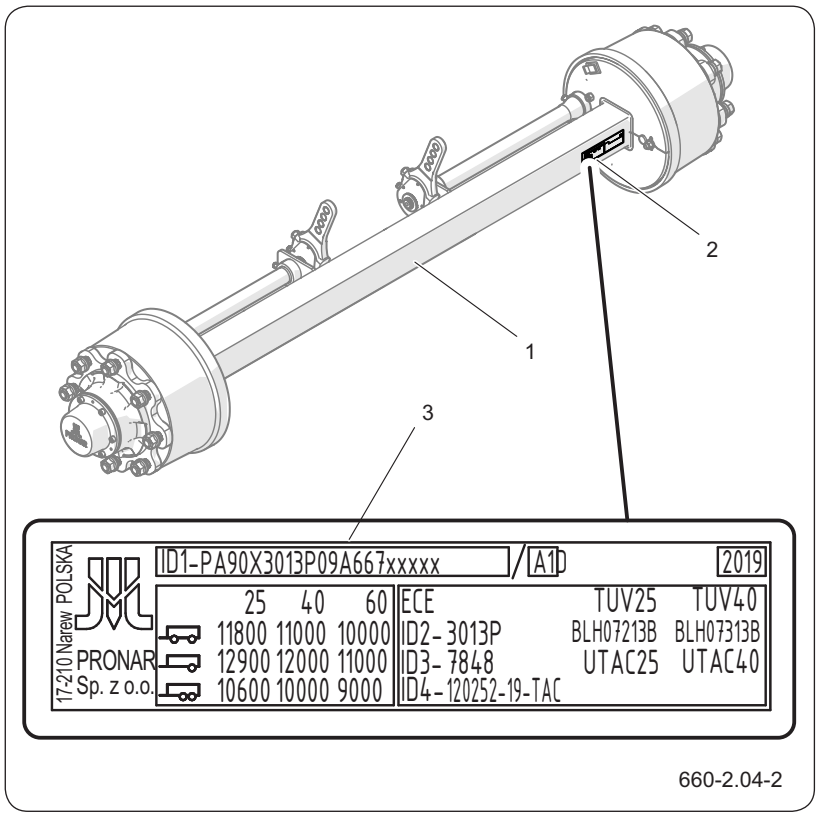
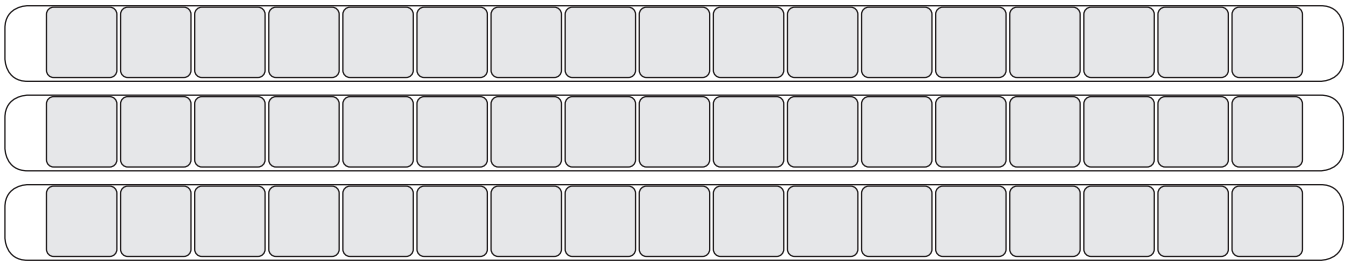


Figure 2.3 Identification of axes

(1) running axle *(2) rating plate*

(3) axle serial number



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2.2 INTENDED USE OF THE MACHINE

2.2.1 Intended use

DANGER

The machine must not be used improperly.

The machine is designed for the transport and handling of grain, maize, seed from combine harvesters to transport vehicles. Failure to comply with the recommendations for the transport and loading of goods specified by the manufacturer and with the road transport regulations in force in the country in which the loading trolley is being used will invalidate the warranty benefits and is considered as misuse of the machine.

The trailer is not adapted and designed for the transport of people, animals and goods classified as hazardous materials.

The braking system, as well as the lighting and signalling system meet the requirements of the road traffic regulations.

In the countries in which the machine is operated, the restrictions of the country's traffic laws must be observed.

The speed of the loading wagon must not exceed the permitted design speed.

Intended use also includes all activities related to the correct and safe operation and maintenance of the machine. Therefore, the user is obliged to:

- read the "*Operating instructions*" of the trailer and the "*Warranty card*" and follow the instructions in these documents,
- Understand how the machine works and how to operate the trailer safely and correctly,
- work in compliance with established maintenance and adjustment plans,
- work in compliance with general safety regulations,
- accident prevention,
- to comply with the traffic and transport rules in

force in the country in which the trailer is being used,

- to acquaint themselves with the contents of the instruction manual of the agricultural tractor and to follow its recommendations,
- to aggregate the vehicle only with an agricultural tractor that meets all the requirements of the trailer manufacturer.

The loading trolley may only be used by persons who:

- familiarise themselves with the contents of the publications and documents accompanying the trailer and with the contents of the instruction manual for the agricultural tractor,
- have been trained in trailer operation and work safety,
- have the required driving licence and are familiar with road traffic and transport regulations.

2.2.2 Anticipated inappropriate use

Anticipated inappropriate use of the machine primarily involves the transport of materials that do not comply with the manufacturer's recommendations, for example:

- transporting people, animals,
- hazardous materials, loads that have an aggressive chemical reaction on the trailer's structural components (corrosive to steel, damaging to paint, dissolving plastic parts, damaging rubber parts, etc.),
- carrying an improperly secured load that could pollute the road and the environment during the journey,
- carrying a load whose position of centre of gravity adversely affects the stability of the trailer,
- carrying a load that causes not-balanced loading and/or overloading of the driving axles

and suspension components.

An employee who has not been trained in operation and safety, is not qualified and has the required skills must not be allowed to operate the machine.

When operating the machine, it is strictly prohibited to:

- stay in the danger zone,
- climb on the machine while it is running,
- make arbitrary structural changes,
- repair and servicing by unauthorized and unqualified personnel.

INF.3.H-002.01.EN

2.3 REQUIREMENTS FOR AGRICULTURAL TRACTOR

Table 2.3 Requirements for agricultural tractor

Contents	Unit	Requirements
		T8724 / T8724/1
Brake system - sockets		
Pneumatic	-	according to ISO 1728
Hydraulic system	-	according to ISO 7421-1
Hydraulic system		
Hydraulic oil	-	L HL 32 Lotos (1)
Electrical system		
Electrical system voltage	V	12
Lighting socket	-	7-pole compliant with ISO 1724
Wired controller power supply socket		3-pole
Required tractor hitch		
Type of hitch	-	lower ball transport hitch K80
Minimum vertical load capacity of hitch	kg	4 000
Rear power take-off shaft (PTO)		
Type	-	Type 1 (1 3/4”) acc. to ISO 730-1
Rotation speed	rpm	1 000
Number of splines on PTO shaft	pc.	20
Rotation direction	-	clockwise
Other requirements		
Minimum tractor power demand	HP	250 - 300

(1) – use of other oil is permitted on condition that it may be mixed with the oil in the trailer. Detailed information can be found on the product information card.

2.3.1 Minimum tractor front axle load

ATTENTION

The front axle load of the tractor must be at least 20% of its own weight - this also applies to towing the loaded trailer. If this condition is not met, the front axle must be additionally loaded.

DANGER

Inadequate load on the front axle of the tractor may result in damage, insufficient stability and insufficient steering and braking ability of the tractor.

The tractor's front axle must be always loaded with at least 20% of the tractor's weight.

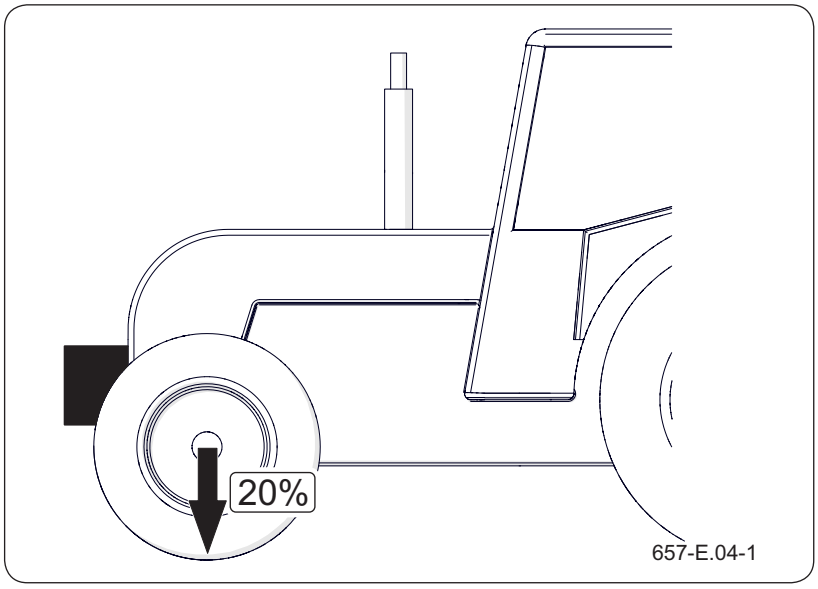

Figure 2.5 Minimum tractor front axle load

INF.3.H-003.01.EN

2.4 TRAILER EQUIPMENT

Table 2.4 Trailer equipment

Content	STANDARD	ADDITIONAL	OPTIONAL
User Manual	●		
Warranty Card	●		
Electrical connection cable for lighting	●		
Electrical control installation including remote control	●		
Wheel chocks	●		
Rear ladder with balcony	●		
Parking stand	●		
Hydraulically sprung drawbar	●		
Pneumatic parking brake	●		
Mechanic parking brake			●
Wheel mudguards	●		
Torsion axle steering installation	●		
Hydraulic installation of a floor conveyor slide	●		
Vertical conveyor hydraulic system	●		
Mechanically adjustable discharge angle	●		
Hydraulically adjustable discharge angle			●
Pneumatic brake system with manual brake force regulator	●		
Pneumatic brake system with automatic brake force regulator			●
Hydraulic brake system			●
Load box extensions		●	
6 point weighing system with scales			●
Tarpaulin with frame	●		
Toolbox		●	
Warning signs	●		

(1) - Some items of standard equipment, which are listed in the table, may not be present in the

trailer supplied. This is due to the possibility of ordering a new machine with a different set - optional equipment, replacing standard equipment.
Information on tyres is included at the end of the publication in ANNEX A.

INF.3.H-004.01.EN

2.5 TRANSPORT

The machine is prepared for sale fully assembled and requires no packaging. Only the machine's technical and operating documentation and possibly some accessories are packaged. Delivery to the user is by truck or self-transport (towing a trailer with an agricultural tractor).

2.5.1 Trucking

DANGER

During road transport, the trailer must be secured on the platform of the means of transport in accordance with safety requirements and regulations.

When driving, the driver of the car should exercise extreme caution. This is due to the fact that the centre of gravity of the vehicle with the loaded machine has been shifted upwards.

Use only approved and technically reliable securing measures. Familiarise yourself with the contents of the attachment manufacturer's Operating Instructions.

Improper use of restraints can cause an accident.

Load and unload the trailer from the vehicle using the loading ramp with the help of an agricultural tractor. Follow the general health and safety rules for handling work when working. Persons operating handling equipment must have the required authorisation to use the equipment. The machine must be correctly connected to the tractor in accordance with the requirements in this manual. The trailer braking system must be applied and checked before driving down or up the ramp.

The machine should be attached firmly to the platform of the vehicle using straps, chains, lashings or other fastening devices equipped with a tensioning

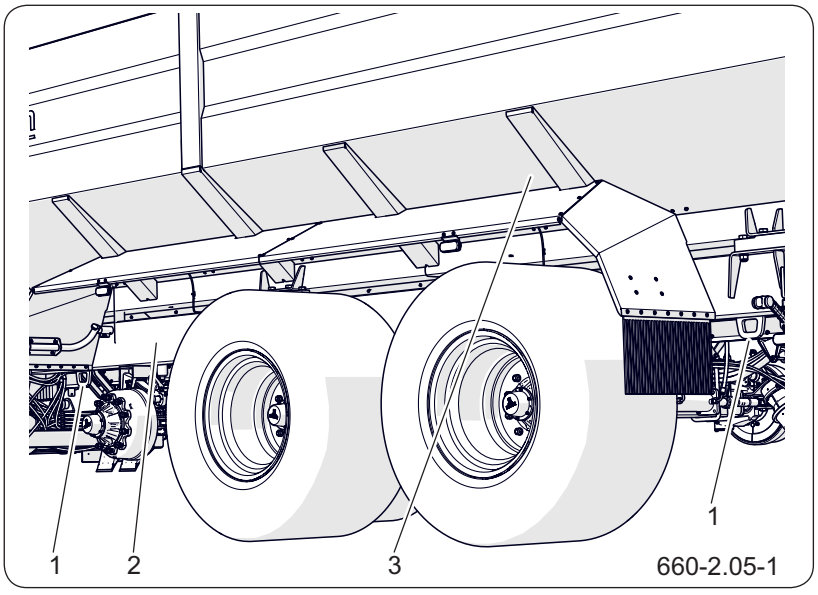

Figure 2.6 Fixing points

(1) handle *(2) bottom frame*

(3) load box

CAUTION

It is forbidden to attach slings and fastenings of any kind to hydraulic, electrical or flaccid machine components (e.g. guards, cables).

mechanism. Secure the fastening elements in the transport fixtures (1) intended for this purpose.

Place chocks or other items without sharp edges under the wheels of the trailer, protecting the machine from rolling. Wheel locks must be fixed to the vehicle's load platform in such a way that they cannot move.

Use approved and technically sound means of fastening. Wear on the straps, cracked fixing lugs, bent or corroded hooks or other damage may disqualify a measure for use. Refer to the manufacturer's instructions for the fixing agent used. The number of fastening 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 machine, the speed of travel and other conditions. For this reason, it is not possible to define the attachment plan in detail.

For optimum attachment of the trailer to the load platform, support the drawbar with a wooden block underneath. A correctly secured trailer will not change its position in relation to the carrying vehicle. The fixing means must be selected according to the guidelines of the manufacturer of these components. If in doubt, use more attachment points and secure the trailer. If necessary, protect the sharp edges of the trailer, thus protecting the lashing means from damage during transport.

When handling, take special care not to damage the machine's fittings and paintwork.

2.5.2 Own transport

If you decide to transport the trailer yourself after you have purchased it, read the *"Operating Instructions"* of the trailer and follow its recommendations. Self-transport involves towing the trailer with its own agricultural tractor to its destination. When driving, adapt

your speed to the prevailing road conditions, but do not exceed the permitted design speed.

INF.3.B-005.21.EN

CAUTION

When transporting yourself as an operator, read and follow the contents of this Operating Manual.

2.6 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, using the machine contrary to its purpose,
- use of a damaged machine,
- repairs carried out by unauthorized persons, improper repairs,
- execution of user changes in 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 major structural components of the machine that directly affect safety during use is not permitted.

Detailed warranty conditions are given in the *WARRANTY CARD* attached to the newly purchased machine.

INF.3.B-006.02.EN

2.7 ENVIRONMENTAL RISK

DANGER

Do not store oil waste in containers for food.

Store used oil in hydrocarbon -resistant containers.

ATTENTION

Waste oil should only be taken to the appropriate facility dealing with the re-use of this type of waste. Do NOT dispose of or pour oil into sewerage drains or water reservoirs.

A hydraulic oil leak constitutes a direct threat to the natural environment owing to its limited biodegradability. Maintenance and repair work which involves the risk of an oil leak should be performed in the rooms with 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. Remaining oil should be collected using sorbents, or by mixing the oil with sand, sawdust or other absorbent materials. The oil contaminations, once gathered up, should be kept in a sealed, marked, hydrocarbon resistant container, and then passed on to the appropriate oil waste recycling centre. The container should be kept away from heat sources, flammable materials and food.

Oil which has been used up or is unsuitable for further use owing to loss of its properties should be stored in its original packaging in the conditions described above. Detailed information on hydraulic oils can be found in the Material Safety Data Sheets.

INF.3.B-007.02.EN

2.8 WITHDRAWAL FROM USE

DANGER

Reduce the residual pressure in the hydraulic system before dismantling.

DANGER

During dismantling, use appropriate tools and equipment (overhead cranes, elevators, lifts, etc.) and use personal protective equipment, i.e. protective clothing, footwear, gloves, glasses, etc.

Avoid oil contact with skin. Do not allow oil to leak.

If the user decides to withdraw the machine from use, follow the disposal and recycling regulations of the end-of-life machines in your country.

Reduce the residual pressure in the hydraulic system before dismantling, completely remove the oil.

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

Table 2.5 The codes for the waste arising from disassembly machines

Item	Code	Meaning
1	07 02 13	Plastic waste
2	13 01 10	Other hydraulic oils
3	13 02 04*	Mineral engine, transmission and lubricating oils containing organochlorines
4	13 02 06*	Synthetic engine, transmission and lubricating oils
5	13 02 08*	Other engine, transmission and lubricating oils
6	13 05 02*	Sludges from oil drainage in separators
7	13 05 08*	A mixture of wastes from sandblasting and oil drainage in separators
8	15 01 10*	Packaging containing or contaminated with residues of dangerous substances
9	15 02 02*	Sorbents, filter materials and protective clothing contaminated with hazardous substances
10	16 01 03	Worn tires
11	16 01 17	Ferrous metals
12	16 01 22	Other items not listed

INF.1.1-008.01.EN

Chapter 3

Safety of use

PRONAR T743M

3.1 BASIC SAFETY RULES

CAUTION

The trailer may only be used and operated by **persons qualified** to drive agricultural tractors with a trailer.

- Before using the trailer, carefully read the content of this publication and the „*Warranty Card*". During operation, follow all recommendations.
- The user manual should be available to the operator for all the time. Protect the manual from damage.
- 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.
- If you ignore the recommendations contained in these document, you create a threat to the health and life of bystanders and/or the machine operator.
- Use and operate the trailer carefully! By a careless work, you create a threat to the health and life of bystanders and/or the machine operator.
- You are obliged to familiarize yourself with the construction, operation principles and safe operation of the trailer.
- Familiarize yourself with all machine controls before starting work. Do not use the machine without knowing its function.
- Before each start-up of the trailer, check that it is properly prepared for work, first of all in terms of safety.
- There is a residual risk of threats, therefore the basic principle of using the trailer should be the application of the principles of safe use and sensible behaviour. Remember that your safety is the most important thing.
- It is forbidden to use the machine by persons

who are not authorized to drive tractors, including children, people under the influence of alcohol, drugs or other intoxicating substances, etc.

- The trailer may not be used for purposes other than those for which it was intended. Everyone who uses the trailer in a manner contrary to its intended use, thus takes full responsibility for all consequences arising from its use.
- Use of the machine for purposes other than envisaged by the Manufacturer is inconsistent with the intended use and may void the warranty.

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3.2 SAFETY WHEN THE MACHINE AGGREGATING

- Do not connect the trailer to the tractor, if it does not meet the requirements set by the Manufacturer (minimum power demand of the tractor, inadequate connections, etc.) - see the section "*Tractor requirements*".
- 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

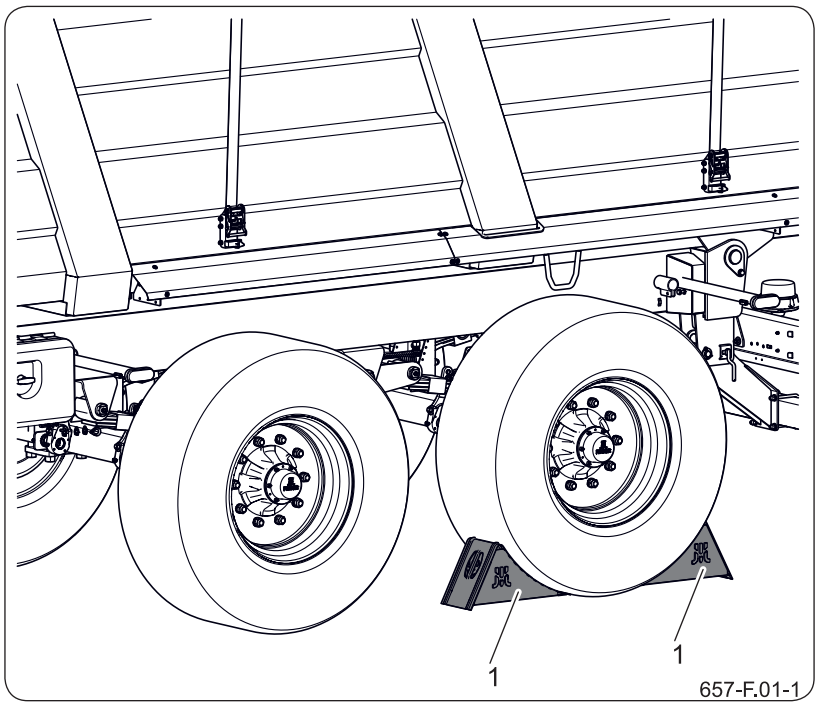

Figure 3.1 Arrangement of locking wedges
(1) support wedge

tractor hitch. After coupling the machines, check the the hitch safety device. Read the tractor operating instructions. If the tractor is equipped with an automatic hitch, make sure that the coupling operation is completed.

CAUTION

Place the wedges only under the wheels of the rigid axle.

- Take special care when connecting the machine.
- When connecting, nobody may be between the trailer and the tractor.
- Hitching and unhitching of the trailer may only take place when the machine is blocked with the parking brake. If the trailer stands on a slope, it must be additionally secured against rolling by placing wedges or other elements without sharp edges under the wheels. Make sure that the the trailer is equipped with wedges.
- Do not move the trailer when the support is extended and rests on the ground. While the machine is in motion, there is a risk of the support damage.

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3.3 SAFETY WHEN OPERATING THE HYDRAULIC SYSTEM

DANGER

The hydraulic system is under high pressure during operation of the machine.

- Regularly check the condition of connections and hydraulic hoses. Operation of the trailer with a leaking system is not permitted.
- In the event of failure of the hydraulic system, the trailer must be decommissioned until the failure is remedied.
- When connecting the hydraulic lines to the tractor, ensure that the tractor and trailer hydraulic system is not under pressure. If necessary, reduce the residual pressure in the system. See section "*Hydraulic system operation...*".
- Use hydraulic oil recommended by the manufacturer.
- After changing the hydraulic oil, the used oil must be disposed. Used oil or oil that has lost its properties. Store it in the original containers or in hydrocarbon-resistant replacement packaging. Replacement containers must be accurately described and properly stored.
- Do not store hydraulic oil in food storage containers.
- Replace the hydraulic hoses every 4 years regardless of their condition.

Handling of accidents

- 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, wash

the area of contact with water and soap. Do not use organic solvents (petrol, kerosene).

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3.4 RULES OF SAFE TECHNICAL SERVICE

- The trailer should be kept clean.
- The load must be evenly distributed.
- You cannot transport people or animals on the trailer.
- Keep a safe distance during loading and unloading. Keep bystanders away from the work area of machine.
- During the warranty period, any repairs should 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 be carried out by specialized workshops.
- In the event of any faults or damages on trailer, it shouldn't be in use until repair.
- During maintenance work, use appropriate, close-fitting protective clothing, gloves, shoes, glasses and the right tools.
- Any modification of the trailer releases PRONAR Narew from any liability for damage or injury.
- You can enter the trailer only when the trailer is absolutely stationary and the tractor engine is switched off. Secure the set with the parking brake. Secure the tractor cab against unauthorized access.
- Regularly check the technical condition of the safety devices and the correct tightening of bolt connections (in particular the drawbar eyes and wheels).
- Inspect the trailer according to the frequency specified in this manual.
- Before starting repair work on hydraulic or pneumatic systems, the residual oil or air pressure must be completely reduced. For

the procedure see section: „*Hydraulic system operation*" , „*Pneumatic system operation*"

- Repair, maintenance and cleaning work should only be carried out with the tractor engine switched off and the ignition key removed. Tractor and trailer should be secured with parking brake and wedges should be placed under trailer wheels. Secure the tractor cab against unauthorized access.
- Before commencing maintenance or repair work, secure the trailer with wedges and parking brake. Only a stationary trailer may be disconnected from the tractor.
- If it is 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 withdrawing the warranty.
- Before welding or electrical work, disconnect the trailer from the power supply. Clean the paint coating. The fumes of burning paint are poisonous to humans and animals. Perform welding work in a well-lit and ventilated room.
- During welding work pay attention to flammable or fusible elements (elements of pneumatic, electric and 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, it is recommended to prepare a CO_2 or foam 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, be sure to use additional, stable and

durable supports. You cannot perform any work under the trailer, which has only been lifted with the 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. The trailer should be kept clean.
- It is forbidden to carry out independent repairs of elements of the hydraulic or pneumatic system, 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.
- You may not install additional devices or accessories that do not comply with the specifications defined by the Manufacturer.
- You may tow the trailer only when the axle, lighting and braking systems are functional.

Procedure in the event of an accident

- 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.

BHP.3.B-004.01.EN

3.5 DESCRIPTION OF RESIDUAL RISK

Pronar Sp. z o. 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 for purposes other than described in the manual,
- being between the tractor and the trailer when the engine is running and when connecting the machine,
- operation of trailer made by unauthorized persons under the influence of alcohol or drugs,
- operation of the trailer by unauthorized persons,
- being on the machine during work,
- trailer cleaning, maintenance and technical inspection.

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

- prudent and leisurely machine operation,
- reasonable use of the notes contained in the User Manual,
- keeping a safe distance from prohibited and dangerous places,
- a ban on being on the machine while it is operating.
- carrying out maintenance and repair work by trained persons,
- using appropriate protective clothing,
- securing the machine against access by unauthorized persons, especially children.

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3.6 RULES FOR DRIVING ON PUBLIC ROADS

- When driving on public roads, you must ensure that an approved or homologated warning reflective triangle is fitted to your trailer and tractor.

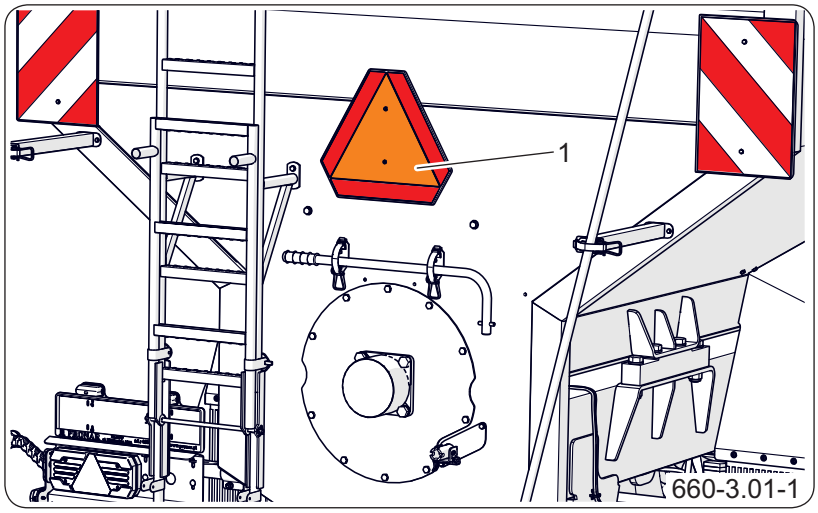

Figure 3.2 Warning triangle
(1) plate of slow-moving vehicles

- Place a distinguishing triangular plate *"slow-moving vehicles"* on the rear wall (if the trailer is the last vehicle in the set);
- Remove the taillight covers before driving on the road.
- When driving on public roads, comply with the traffic and transport regulations of the country in which the trailer is being operated.
- Do not exceed the permissible design speed of 40 km/h. The driving speed must be adapted to the ambient conditions and the impact of the load. If possible, avoid rough terrain and unexpected turns.
- Never leave a machine unsecured. The trailer, when uncoupled from the tractor, must be restrained by the parking brake and secured against rolling using chocks or other items without sharp edges placed under the wheel

of the vehicle.

- Ensure that the trailer is correctly connected to the tractor before starting to drive, especially that the hitch pins are secure.
- The vertical load transmitted by the trailer linkage affects the steering of the agricultural tractor.
- Check the technical condition of the trailer before each use, especially with regard to safety. In particular, check the condition of the hitching system, running gear, braking system and traffic lights, as well as the connection parts of the hydraulic, pneumatic and electrical systems.
- Before starting to drive, check that the parking brake is released and the brake force regulator is set to the correct position (applies to pneumatic systems with manual, three-position regulator).
- The trailer is suitable for gradients of up to 8^0. Moving the trailer over terrain with great slopes may cause the trailer to tip over due to loss of stability.
- Periodically drain the air tank of the pneumatic system. In frosty weather, freezing water can cause damage to pneumatic system components.
- Brash driving and excessive speed can cause accidents.
- Cargo protruding beyond the outline of the trailer shall be marked in accordance with road traffic regulations. It is forbidden to carry loads not authorised by the manufacturer.
- Do not exceed the permissible load capacity of the trailer. Exceeding the payload may result in damage to the machine, loss of stability and cause hazards when driving. The machine's

braking system has been adapted to the total weight of the trailer, which, if exceeded, will drastically reduce the action of the service brake.

- Prolonged movement on sloping terrain poses the risk of losing braking effectiveness.
- Use the assistance of a second person when reversing. When manoeuvring, the helper must keep a safe distance from danger zones and be visible to the tractor operator at all times.
- It is forbidden to climb onto the trailer while driving.
- It is prohibited to park the trailer on a slope.
- If your trailer has hydraulic suspension, you may only proceed if the trailer is fully raised. You cannot move the trailer if the suspension is even minimally lowered.

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3.7 WORKING WITH THE MACHINE WITH THE POWER TAKE-OFF (PTO)

CAUTION

Before starting work, read the operator's manual of the drive shaft provided by the shaft's manufacturer.

- Before starting work, familiarize yourself with the propeller shaft operating instructions provided by the shaft manufacturer and follow the recommendations contained therein.
- if necessary, adjust the length of the articulated-telescopic shaft to the cooperating tractor in accordance with the shaft's instruction manual.
- The trailer may only be connected to the tractor with the use of a properly selected articulated telescopic shaft, recommended by the Manufacturer.
- The drive shaft must be equipped with covers. It is forbidden to use the shaft with damaged or missing safety elements.
- Some parts of the PTO shaft (especially the clutch) can become very hot. Do not touch hot parts.
- After installing the shaft, make sure that it is correctly and securely connected to the tractor and trailer.
- It is forbidden to wear loose clothing, loose belts or anything that could get caught in the rotating shaft. Contact with rotating PTO shaft may cause serious injury.
- Before disconnecting the shaft, turn off the tractor engine and remove the key from the ignition switch.
- When working in poor visibility, illuminate the articulated telescopic shaft and its surroundings using the tractor's working lights.
- During transport, the shaft should be stored in a horizontal position to avoid damage to guards and other safety devices.
- When using the shaft and trailer, do not use

PTO shaft speed other than 540 rpm. Do not overload the shaft and the machine, do not engage the clutch suddenly. Before starting PTO shaft make sure that the PTO rotation direction is correct.

- It is forbidden to walk over and under the shaft and stand on it both during work and when the trailer is at a standstill.
- The PTO shaft has markings on the housing indicating which end of the shaft should be connected to the tractor.
- Never use a damaged PTO shaft as it may cause an accident. A damaged shaft should be repaired or replaced for new one.
- do not use drive shaft extensions/adapters.
- Disconnect the shaft drive each time when there is no need to drive the machine, or when the tractor and trailer are in an unfavourable angular position with respect to each other.
- Protect chain securing the shaft cover against turning while the shaft is working, attach it to a fixed structural element of the trailer.
- It is forbidden to use safety chains to support the shaft during standstill or transporting the trailer.

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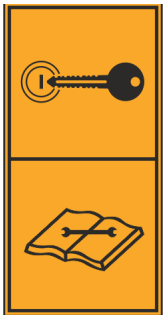
3.8 INFORMATION AND WARNING STICKERS

- The trailer is marked with the information and warning stickers listed in table (3.1).
- The layout of the symbols is shown in Figure (3.3). The user is obliged to take care of the legibility of inscriptions, warning and information symbols placed on the trailer during the entire period of use.
- If they are damaged, they should be replaced with new ones. Information and warning stickers can be purchased directly from the Manufacturer or from the place where the machine was purchased.
- The part numbers of the stickers can be found in table (3.1) and in the Spare Parts Catalogue. New assemblies replaced during repair must be marked again with the appropriate safety signs. When cleaning the trailer, do not use solvents that may damage the label coating and do not direct a strong jet of water at it.

Table 3.1 Information and warning stickers

ITEM	Sticker	Meaning
1		Lubricate the machine according to the schedule in the USER MANUAL. **104N-00000004**
2		Regularly check the tightness of the running wheel nuts and other bolted connections. **104N-00000006**

ITEM	Sticker	Meaning
3		Read the contents of the operating instructions before use. **70N-00000004**
4		Before carrying out any maintenance or repair work, switch off the tractor engine and remove the keys from the ignition. **70N-00000005**
5		Danger of your hand being drawn in by the auger feeder. Do not open or remove safety guards if the engine is running. Do not reach into the area of rotating machine components. **123N-00000003**
6		Risk of crushing fingers or hands. Do not reach into the crush area when unfolding the conveyor. **123N-00000004**
7		Before climbing into the load bed or onto the platform, switch off the tractor engine and remove the ignition key. **29N-0000030**

ITEM	Sticker	Meaning
8		Maximum speed of the power take-off shaft. **153N-00000009**
9		Danger of being screwed in by rotating trailer mechanisms. **78N-00000005**
10		Danger of crushing limbs. Be careful around rotating machine parts. **129N-00000003**
11		Danger. Do not stand on screw conveyors. **70N-00000008**
12	PRONAR T743M	Machine type. **661N-00000001**
13	pronar.pl	Company sticker. **566N-97000003-03**
14		Warning sticker, left. (282x423)
15		Warning sticker, right. (282x423)

ITEM	Sticker	Meaning
16	0 1/2 1	Slider sticker. 660N-00000002

Figure 3.3 Positioning of information and warning stickers

BHP.3.H-001.01.EN

Chapter 4

Design and operation

PRONAR T743M

4.1 TECHNICAL SPECIFICATIONS

Table 4.1 Basic technical data

Content	Unit	T743M
Dimensions		
Overall length	mm	11,670
Overall width	mm	2,550
Overall height	mm	3,920
Load box parameters		
Length inside	mm	8,530
Internal width	mm	2,530
Floor/wall thickness	mm	4 / 4
Loading height	mm	3,610
Performance parameters		
Permissible total weight	kg	40,000
Payload	kg	29,400
Curb weight	kg	10,600
Load capacity	m^3	43
Unloading capacity	m^3	700
Loading height	mm	3,610
The hydraulic system		
Hydraulic oil	-	L-HL32 Lotus
Other information		
Construction speed	km/h	40
PTO shaft revolutions	rpm	1000
Wheel base	mm	2,000
Drawbar eye load	kg	4,000
Power demand	hpm	250-300
Electrical system voltage	V	12

**- depending on the legal restrictions in the country of sale and on the completion of the trailer, the above data may differ.*

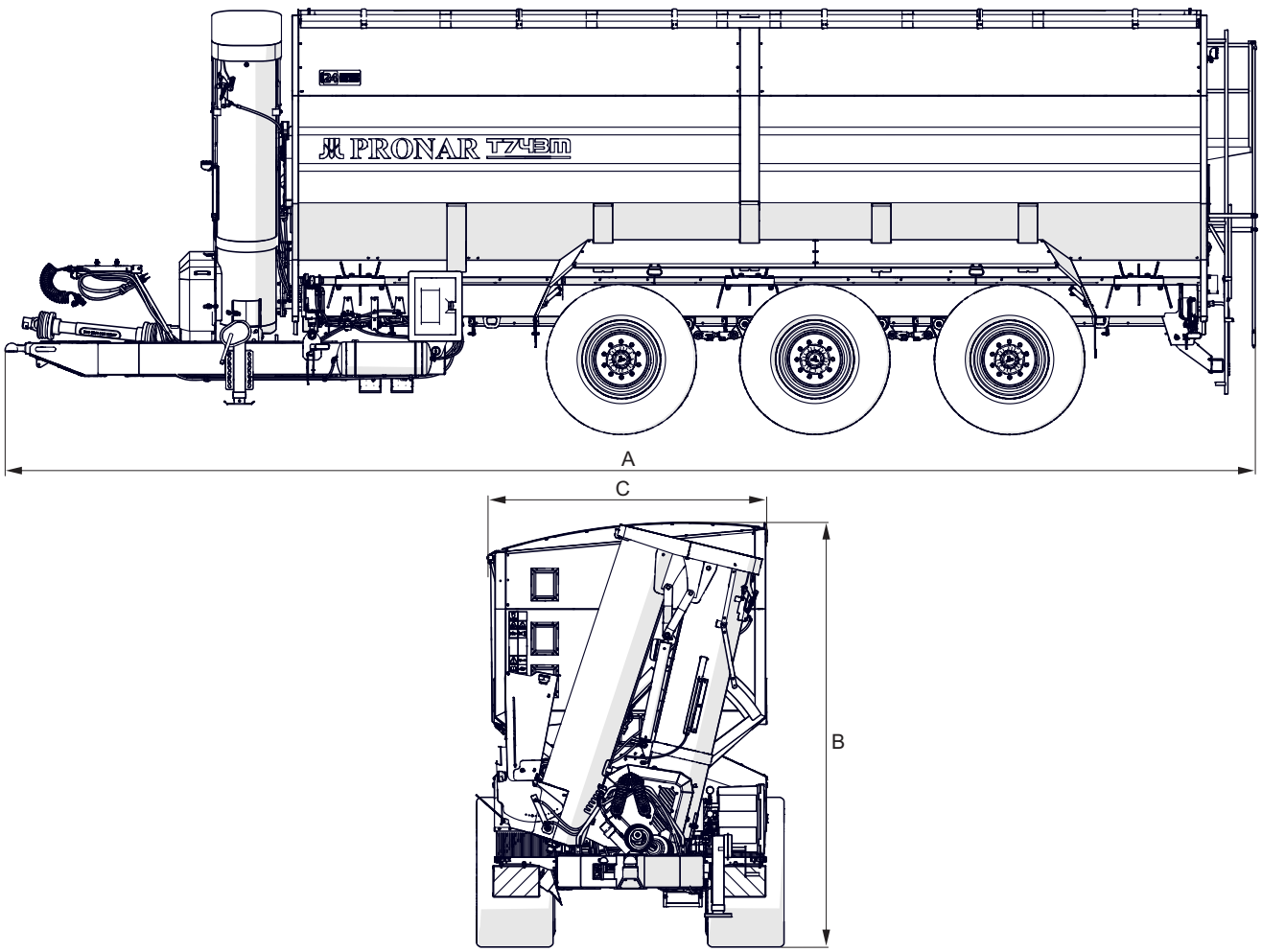


Figure 4.1 Basic trailer dimensions

Table 4.2 Main dimensions of the trailer

Content	Unit	T743M
Overall length A	mm	11,670
Overall height B	mm	3,920
Width C	mm	2,550

CAUTION

Depending on the trailer's accessories, some technical parameters may change.

BIZ.3.H-001.01.EN

4.2 CONSTRUCTION OF THE TRAILER

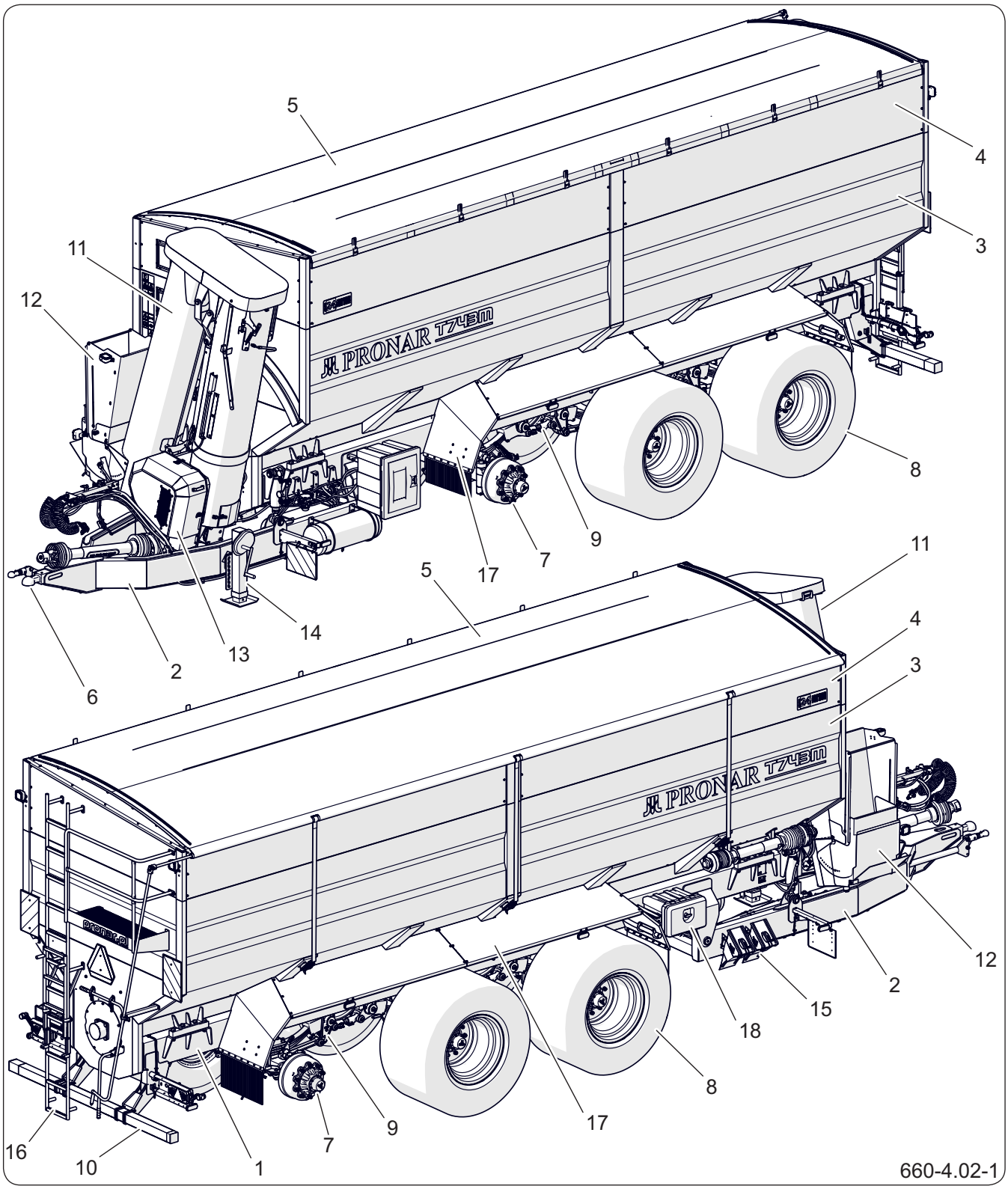


Figure 4.2 Construction of the loading truck

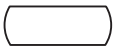
(1) base frame (2) drawbar (3) load box (4) extensions (5) frame with tarpaulin (6) drawbar linkage(7) running axle (8) road wheel (9) suspension (10) buffer (11) front conveyor (12) chute (13) gearbox (14) parking support (15) support wedges (16) ladder (17) mudguard (18) toolbox

The machine's running gear is formed by wheels (8) mounted on axles (7), which in turn are attached to the suspension system (9). The running gear was attached to the downframe. A load box (3) is seated on the frame (1), which has the possibility of being unloaded by means of a vertical conveyor (11) and a floor conveyor. The manually or hydraulically adjustable chute (12) facilitates the unloading of transported materials. The load bed is topped off with a rolling tarpaulin (5).

BIZ.3.H-002.01.EN

4.3 PNEUMATIC BRAKE SYSTEM

Table 4.3 List of symbols used in the diagrams

Symbol	Description
	Pneumatic connection, plug
	Pneumatic connection, socket
	Drainage valve
	Main control valve
	Relay valve
	Automatic brake force regulator
	Manual brake force regulator
	Connection of cables
	Air reservoir
	Brake actuator
	Control valve (connector)
	Air filter
	Three-way valve

Depending on the version, the machine can be fitted with one of two types of air service brake:

- 2-wire pneumatic system with manual brake force regulator,
- 2-wire pneumatic system with automatic brake force regulator,

The pneumatic service brake is operated from the operator's cab by pressing the tractor's brake pedal. In the event of an unforeseen disconnection of the

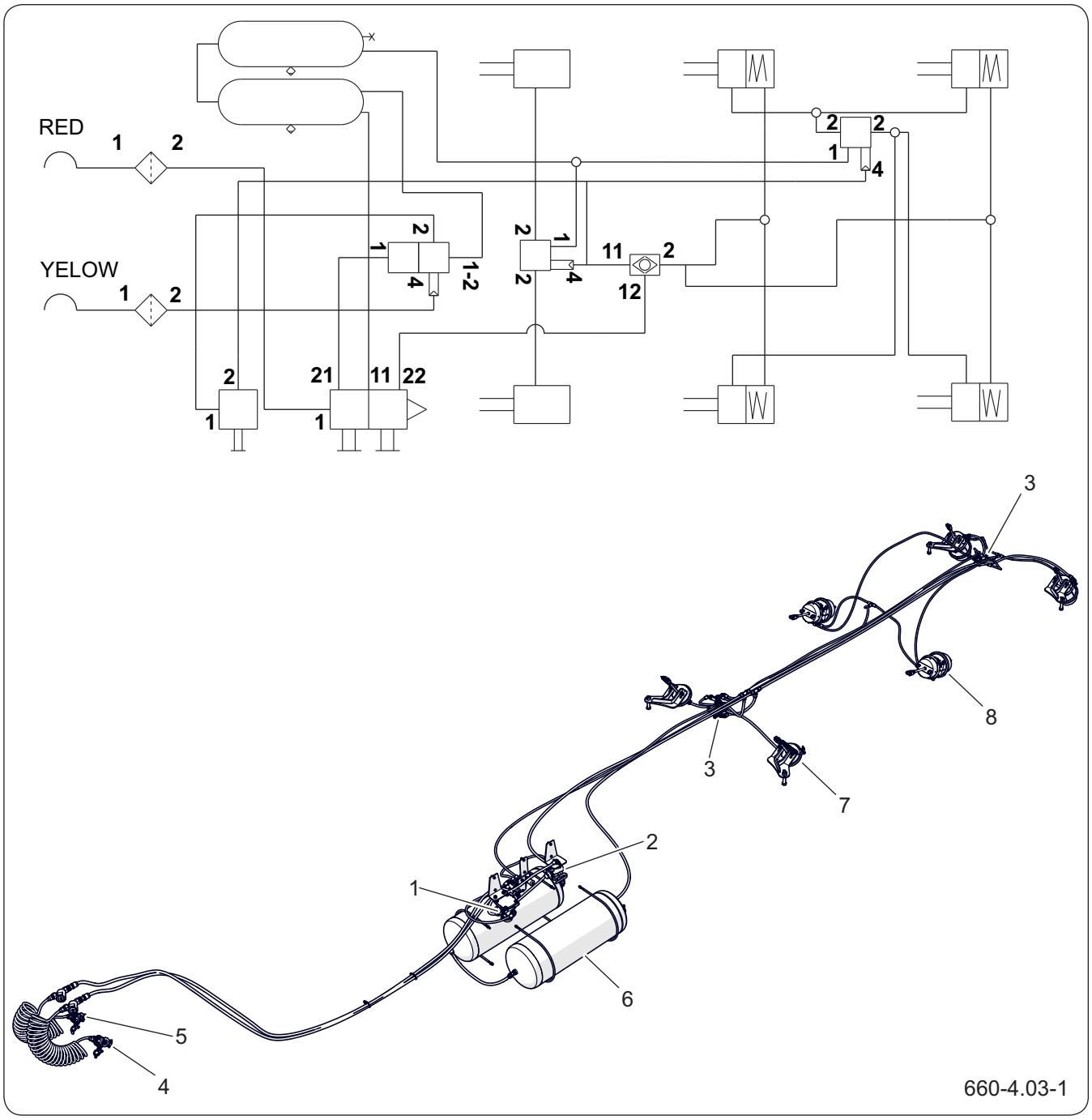


Figure 4.3 Diagram and construction of pneumatic brake system with manual brake force regulator

(1) brake valve *(2) manual regulator* *(3) relay valve*
(4) yellow connector *(5) red connector* *(6) air reservoir*
(7) diaphragm actuator *(8) diaphragm-spring actuator*

brake line between the machine and the tractor, the control valve (1) automatically operates the machine brake.

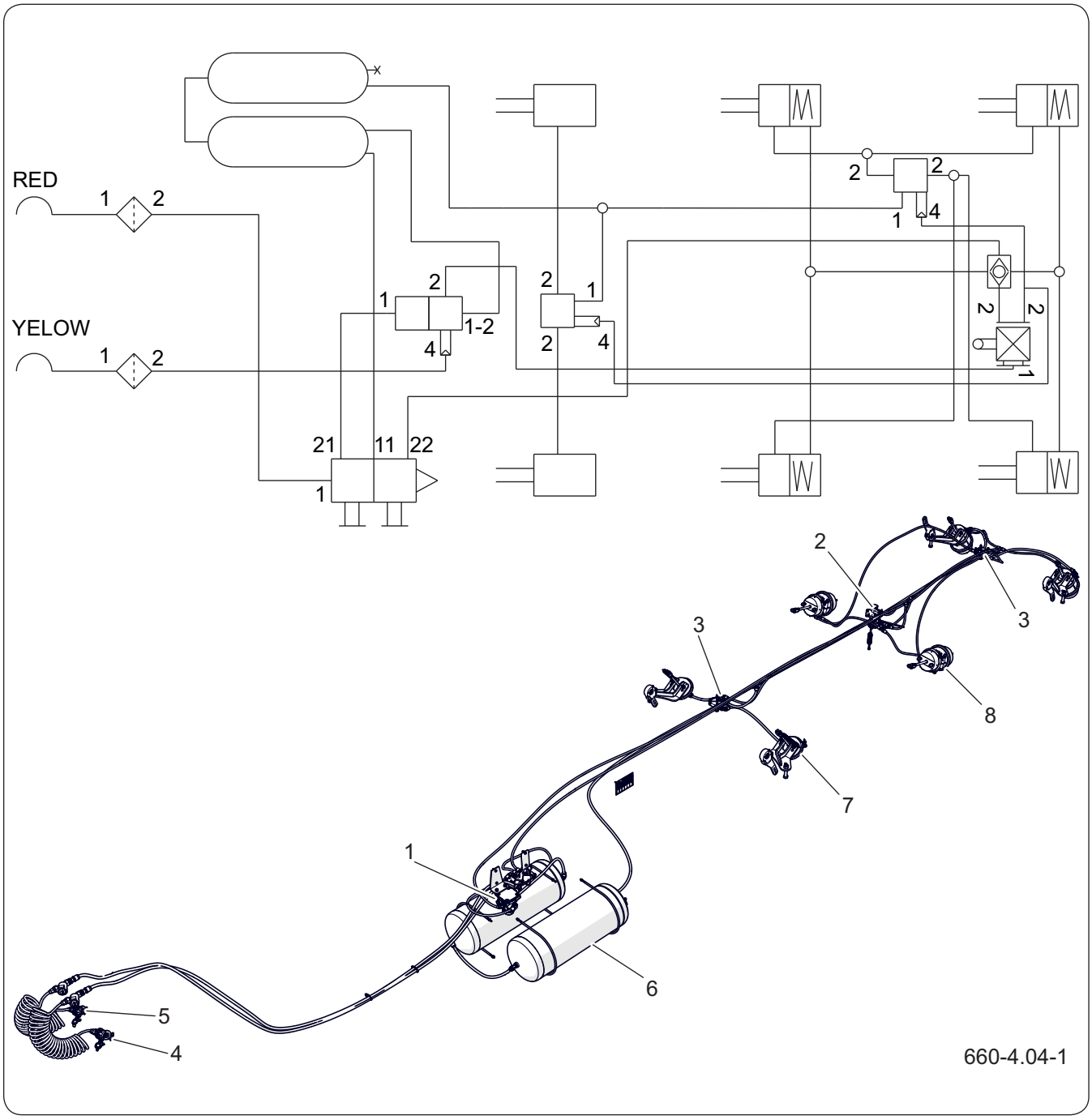


Figure 4.4 Diagram and construction of an air brake system with automatic brake force controller

(1) brake valve *(2) automatic controller* *(3) relay valve*
(4) yellow connector *(5) red connector* *(6) air reservoir*
(7) diaphragm actuator *(8) diaphragm-spring actuator*

The three-range brake force regulator (1), adjusts the brake force depending on the setting. Switching to the appropriate operating mode is done manually by the machine operator before starting to drive using the lever (2). Three operating positions are available: A - 'No load', B - 'Half load' and C - 'Full load'.

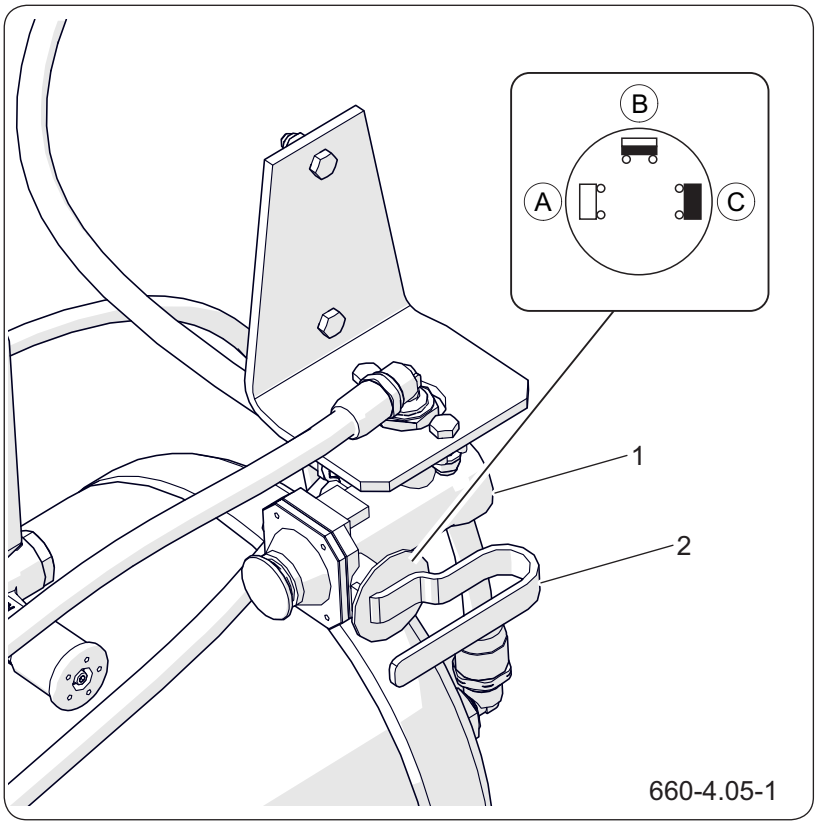


Figure 4.5 Manual brake force regulator

(1) brake force regulator (2) lever

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4.4 HYDRAULIC BRAKE SYSTEM

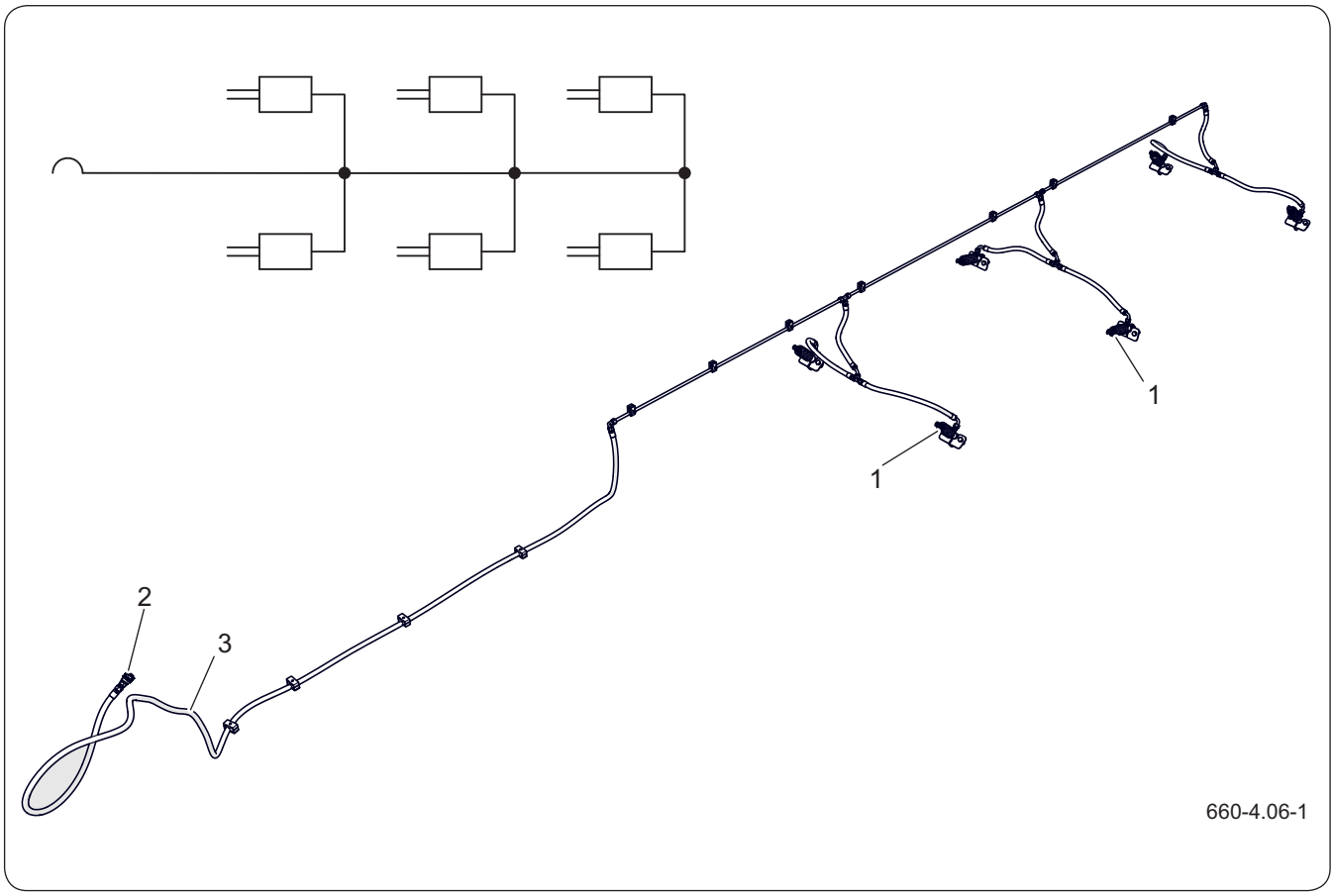

Figure 4.6 Design and diagram of hydraulic brake system

(1) hydraulic cylinder *(2) quick coupler socket* *(3) connection wire*

TIP

The hydraulic brake system of the machine is filled with L-HL32 Lotos hydraulic oil.

The main hydraulic brake is activated from the tractor driver's cab by depressing the brake pedal.

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4.5 PNEUMATIC PARKING BRAKE

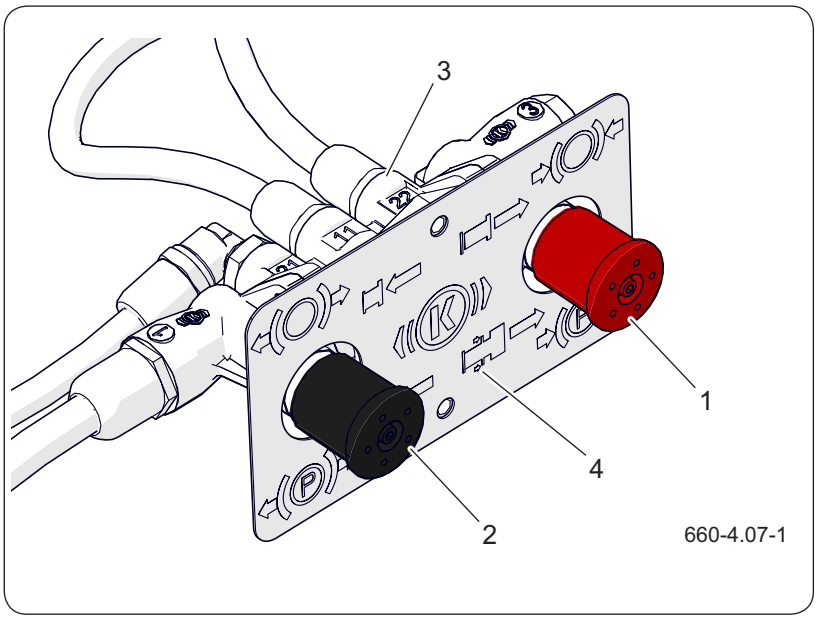


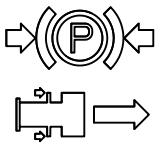
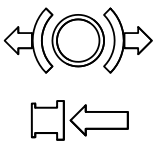
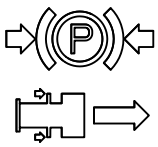
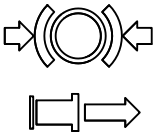
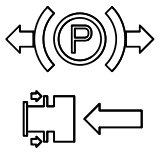
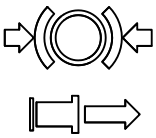
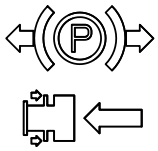
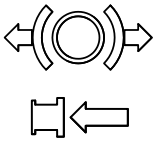
Figure 4.7 Parking break release valve
(1) red button *(2) black button*
(3) valve *(4) nameplate*

The parking brake is used to immobilise the trailer while parking. The parking brake is activated by parking break release valve (3). Black button (2) controls the loosening valve, that is designed for releasing or engaging the brake if the trailer is unhitched from the tractor. There is no possibility of pressing this button if pneumatic connections are connected to tractor.

Red button (1) controls operation of parking valve. In the trailer that is correctly hitched to the tractor by means of connections (red and yellow), the black button of the loosening valve should be pulled out. Braking of the trailer wheels is carried out by pulling out the red button (3).

The parking break release valve is equipped with the emergency brake function which is activated in the event of pressure drop in the supply conduit (as a result of conduit disconnection or damage).

Table 4.4 Working modes of the loosening-parking valve

Option	Button Red	Button Black	Description
A	RELEASED 	DEPRESSED 	The machine is braked with parking brake. If the red button is released, the trailer is immobilized with parking brake regardless of the black button position.
B	RELEASED 	RELEASED 	
C	DEPRESSED 	RELEASED 	Machine is prepared for travel. Pneumatic lines are connected to the trailer. Black button cannot be depressed. Machine is braked Pneumatic lines are not connected. If the black button is depressed, the brake will be released.
D	DEPRESSED 	DEPRESSED 	Parking brake is released, manoeuvre position The trailer brake is completely released. Pneumatic lines are not connected.

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4.6 PARKING BRAKE

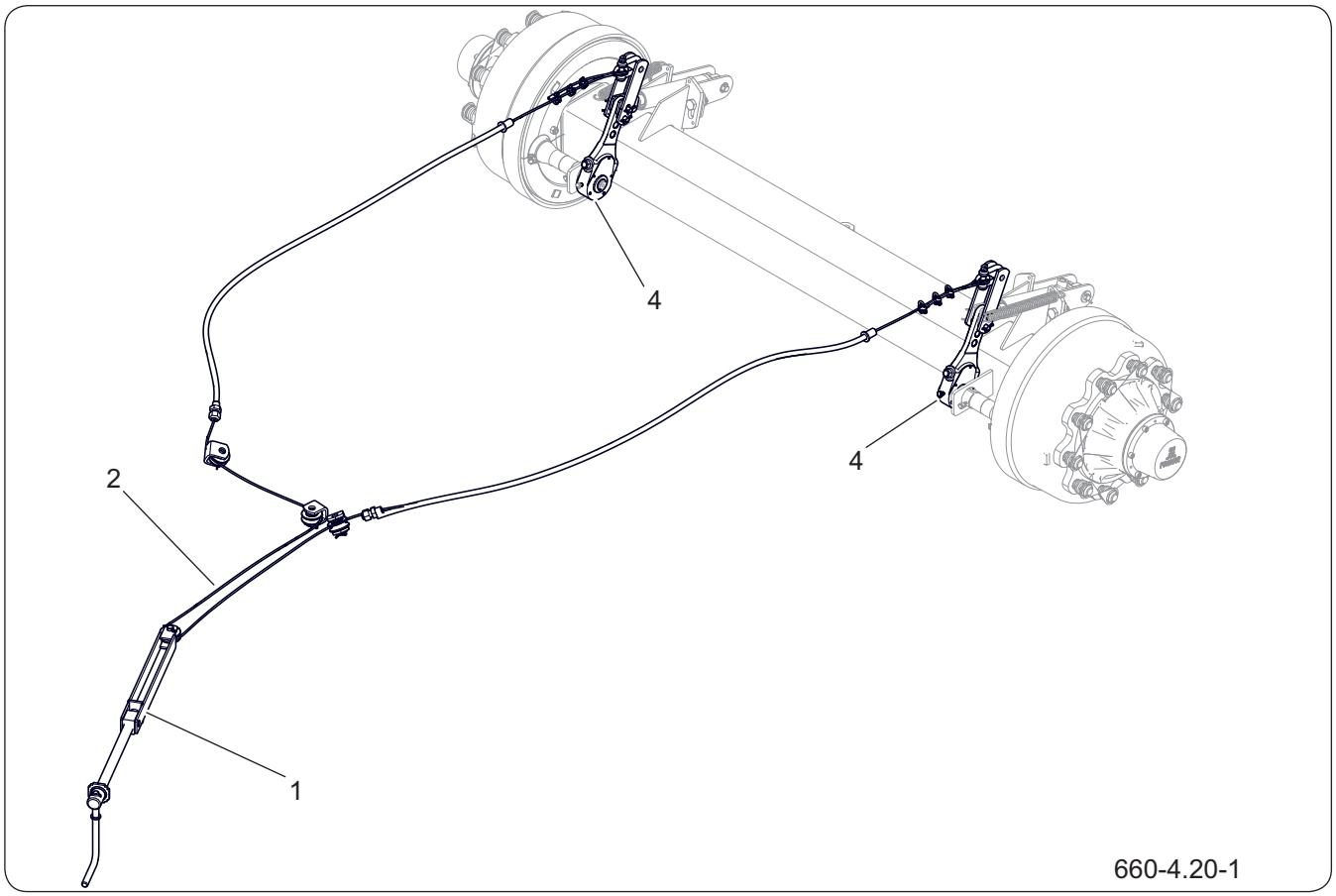

Figure 4.8 Construction of the parking brake

(1) brake mechanism *(2) cable* *(3) lever*

(4) spreader lever

CAUTION

Make sure the parking brake is unlocked before starting to drive.

The parking brake is used to immobilise the trailer when stationary. The brake crank mechanism (1), is connected by steel cables to the spreader levers (4) of the driving axles. By turning the mechanism crank handle (1) clockwise, the steel cable tightens, causing the brake spreader levers to pivot, which, by spreading the brake shoes, immobilise the trailer. Release the parking brake before driving - the steel cable must hang loosely.

BIZ.3.8-005.21.EN

4.7 LOAD BOX

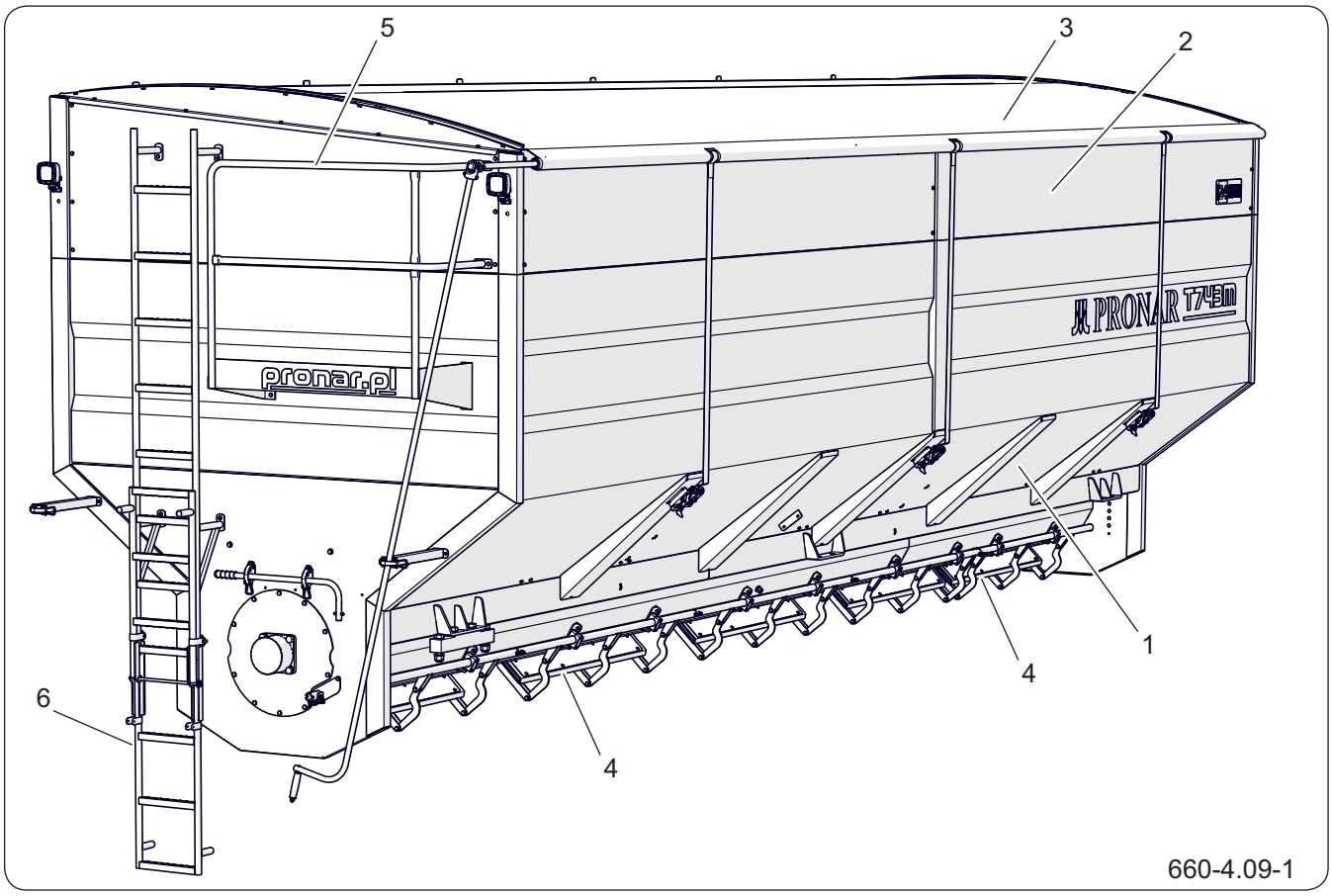

Figure 4.9 Load box

(1) load box *(2) extensions* *(3) tarpaulin*
(4) bottom discharge flaps *(5) balcony* *(6) ladder*

The box is seated on the subframe using weight simulators or load cells. A set of extensions (2) with a tarpaulin (3) is installed in the upper part of the box. A platform (5) and a folding ladder (6) were placed on the back wall of the box. At the bottom of the tank there are openings for unloading, which are closed with flaps (4).

By varying the opening width of the slot, the discharge speed of the grain into the auger, floor feeder located in the lowest part of the hopper is adjusted. Opening of the sliders (3) is carried out by the actuator (5). The opening status of the sliders is shown on an opening indicator located on the vertical conveyor.

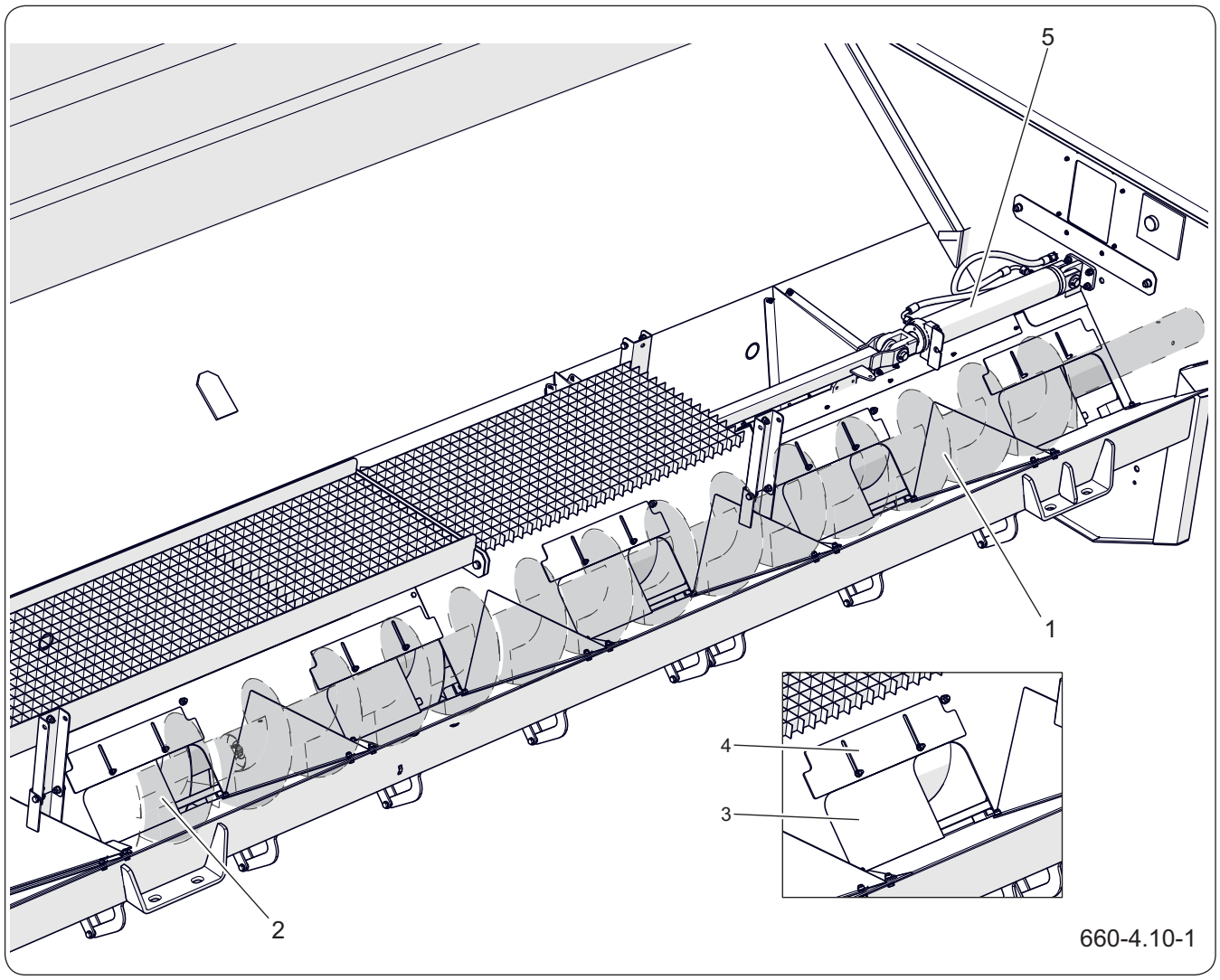

Figure 4.10 Floor conveyor

(1) front auger *(2) rear auger* *(3) slider*

(4) shutter *(5) hydraulic cylinder*

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4.8 VERTICAL CONVEYOR

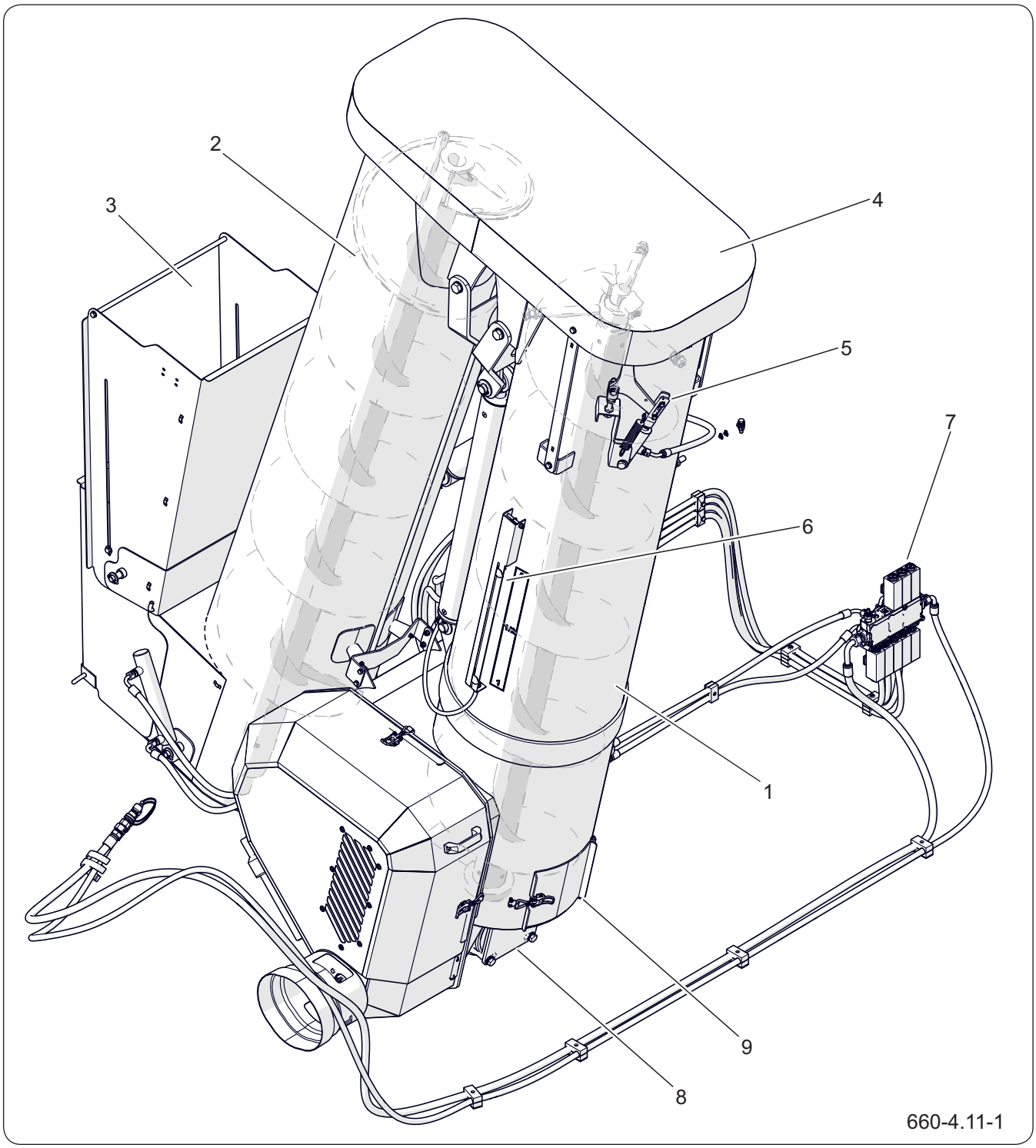

Figure 4.11 Front conveyor

(1) vertical conveyor *(2) vertical discharge conveyor* *(3) hydraulic chute*
(4) cover *(5) bolt* *(6) slider indicator*
(7) hydraulic system *(8) bevel gearbox* *(9) revision*

ADVICE

The hydraulic system of the vertical conveyor was filled with L-HL32 Lotos hydraulic oil.

The tilting part of the vertical conveyor (1) connects to the stacker conveyor (2). Both components are locked in the unloading state by a latch (5). Precise unloading is facilitated by a mechanically or hydraulically adjustable chute (3). At the bottom of the conveyor there are revisions (9) to facilitate cleaning of the conveyor.

BIZ.3.H-007.01.EN

4.9 MAIN GEARBOX

ADVICE

The gearbox is designed to operate at a PTO shaft speed of 1,000rpm in a clockwise direction.

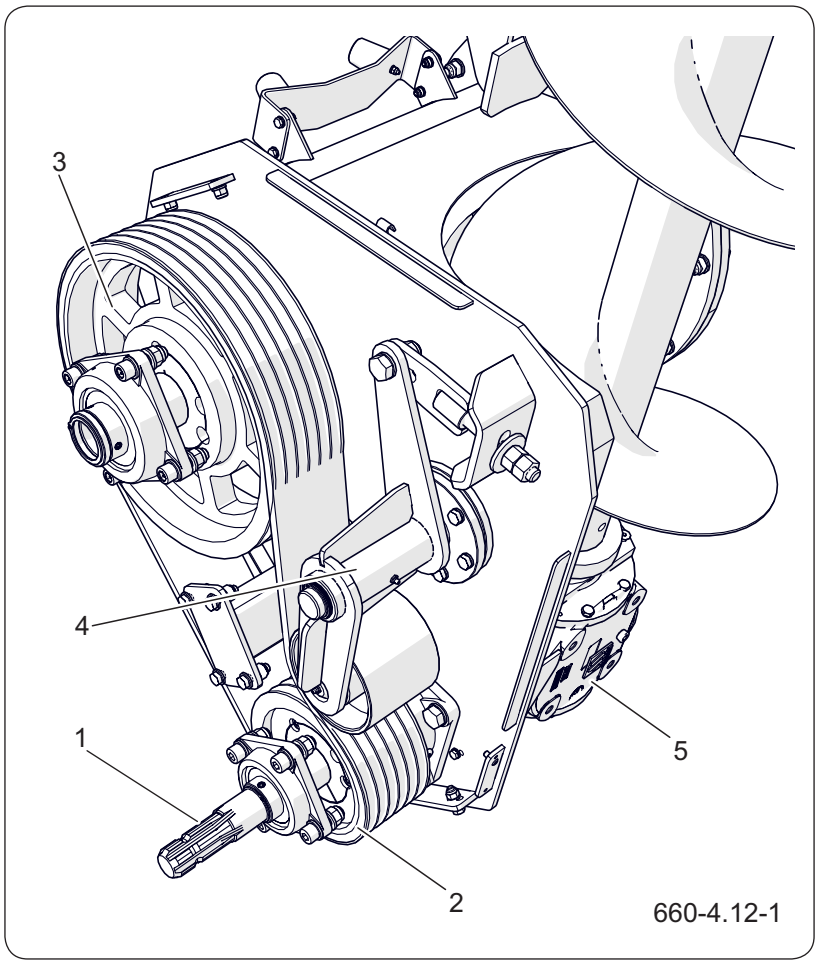

Figure 4.12 Main gearbox

(1) Drive shaft *(2) Drive wheel*
(3) Floor conveyor wheel *(4) Tensioner*
(5) Vertical conveyor gearbox

Via the tractor's PTO drive, torque is transmitted to the shaft (1), which drives the vertical conveyor angle gear (5). At the same time, a wheel (2) and a belt transmission drive the wheel (3), from which torque is transmitted to the floor conveyor.

BIZ.3.H-008.01.EN

4.10 HYDRAULIC DRAWBAR SYSTEM

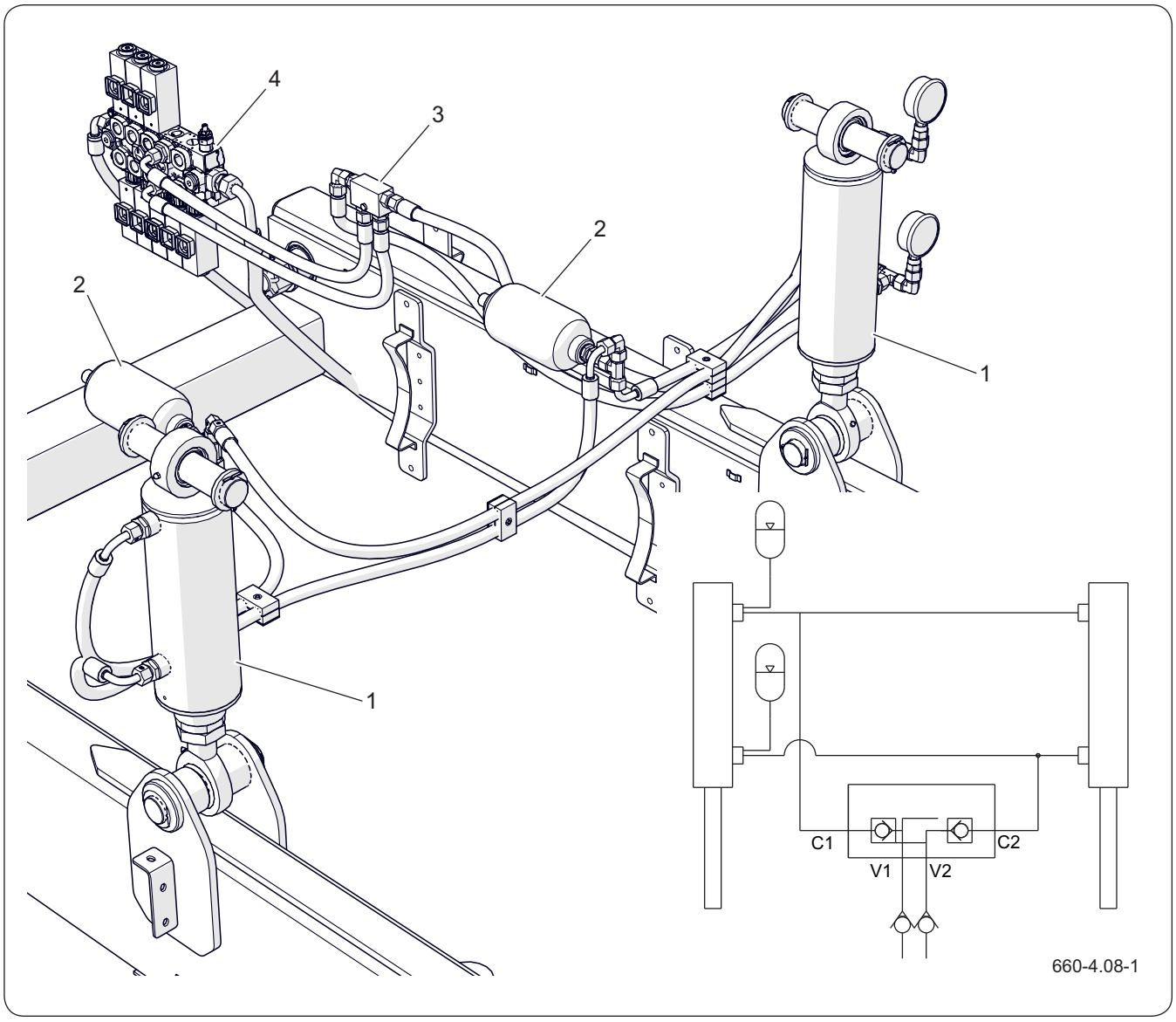

Figure 4.13 Structure and diagram of drawbar hydraulic system

(1) hydraulic cylinder *(2) hydraulic accumulator* *(3) non-return valve*

4) hydraulic distributor

ADVICE

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

The hydraulic system for height adjustment and drawbar damping is made up of two hydraulic cylinders (1) connected to hydraulic accumulators (2). The system's hydraulic lines are connected to a non -return valve (3).

BIZ.3.H-009.01.EN

4.11 VERTICAL CONVEYOR HYDRAULIC SYSTEM

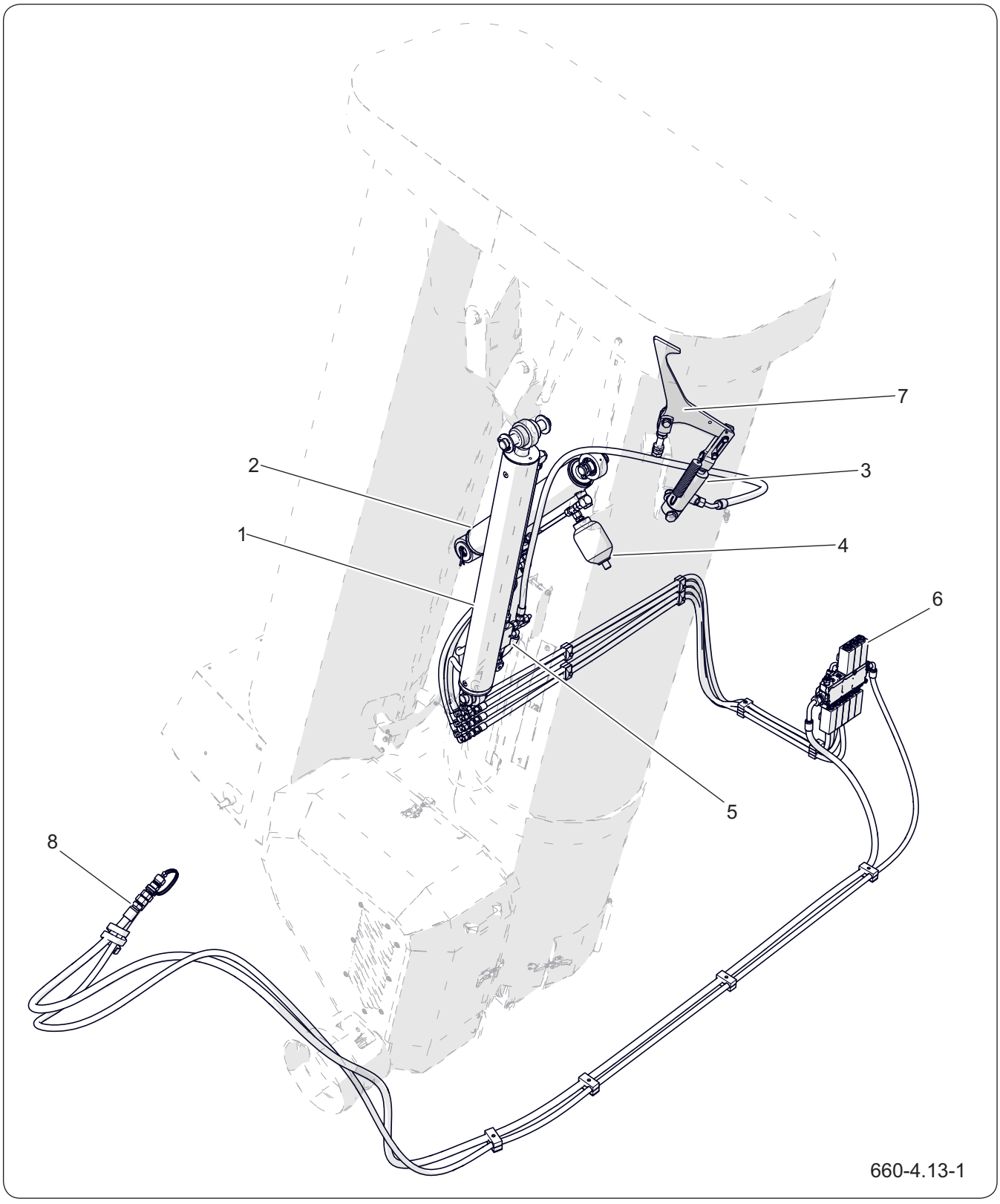

Figure 4.14 Construction of a hydraulic system for a vertical conveyor

(1) unfolding cylinder *(2) conveyor tilt cylinder* *(3) locking cylinder*
(4) hydraulic accumulator *(5) hydraulic lock* *(6) hydraulic distributor*
(7) locking device *(8) hydraulic lines*

ADVICE

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

The hydraulic installation of the vertical conveyor performs the following functions:

- folding/unfolding of the put-down conveyor by means of the actuator (1),
- changing the angle of inclination of the vertical conveyor by means of an actuator (2),
- locking/unlocking of the folded conveyor by means of the lock (7) and its actuator (3).

Control of the individual circuits is carried out by remote control.

BIZ.3.H-010.01.EN

4.12 HYDRAULIC CHUTE INSTALLATION

ADVICE

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

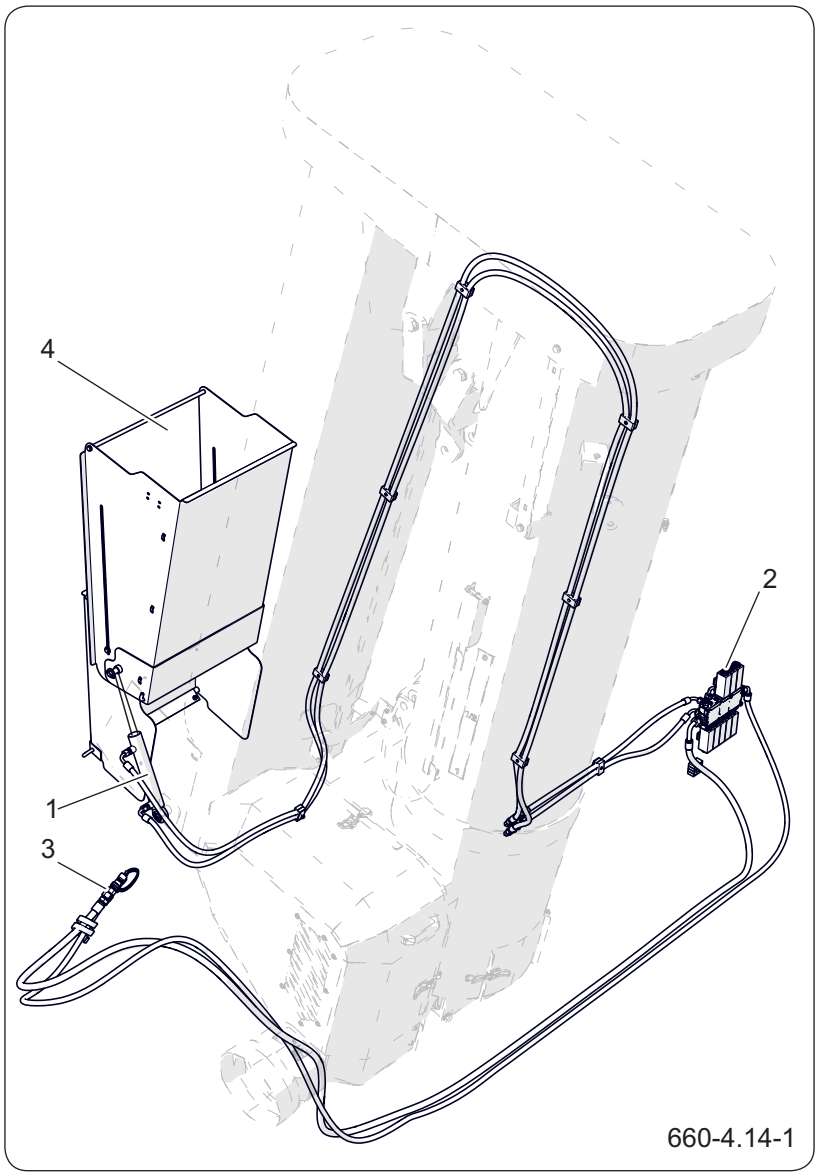

Figure 4.15 Hydraulic chute installation

(1) hydraulic cylinder *(2) distributor*

(3) hydraulic lines *(4) chute*

Changing the discharge angle of the material from the vertical feeder is achieved by means of a chute, controlled by means of a remote control.

BIZ.3.H-011.01.EN

4.13 HYDRAULIC INSTALLATION OF THE BOTTOM SLIDER

ADVICE

The gate valve hydraulic system was filled with L-HL32 Lotos hydraulic oil.

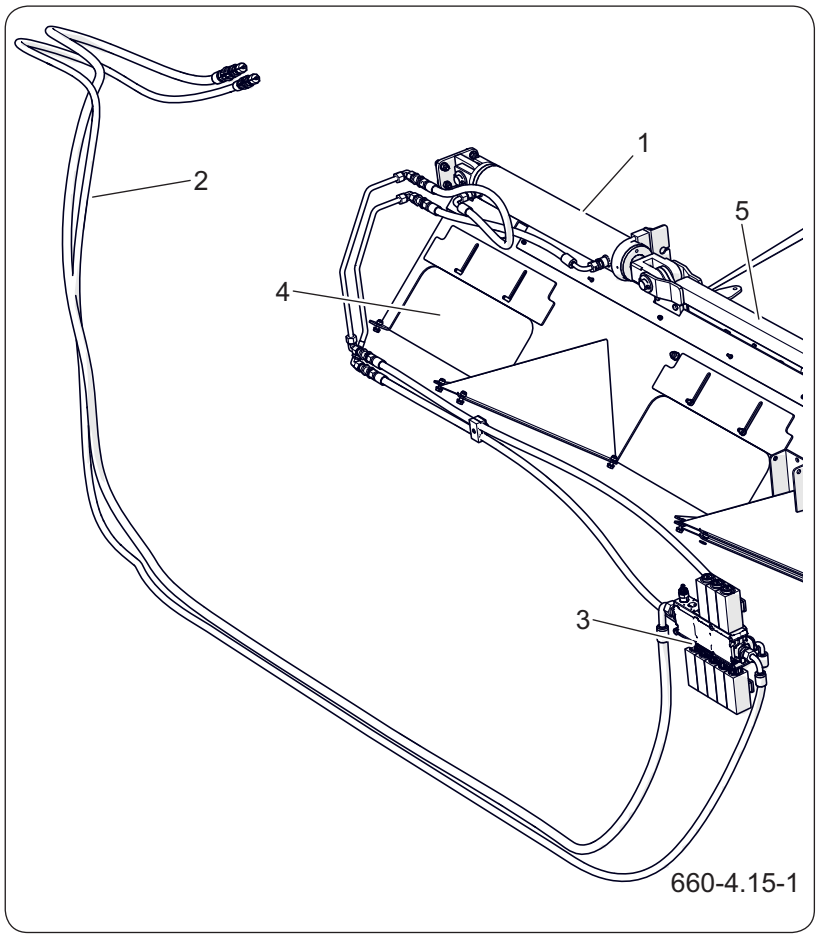

Figure 4.16 Hydraulic installation of the slider

(1) hydraulic cylinder *(2) hydraulic lines*
(3) distributor *(4) chute gate*
(5) linkage

The actuator (1) moves the gates (4) opening or closing the windows for unloading the material via the floor conveyor. The amount of window opening is indicated on an indicator on the vertical conveyor. The system is controlled by a remote control.

BIZ.3.H-012.01.EN

4.14 HYDRAULIC STEERING SYSTEM

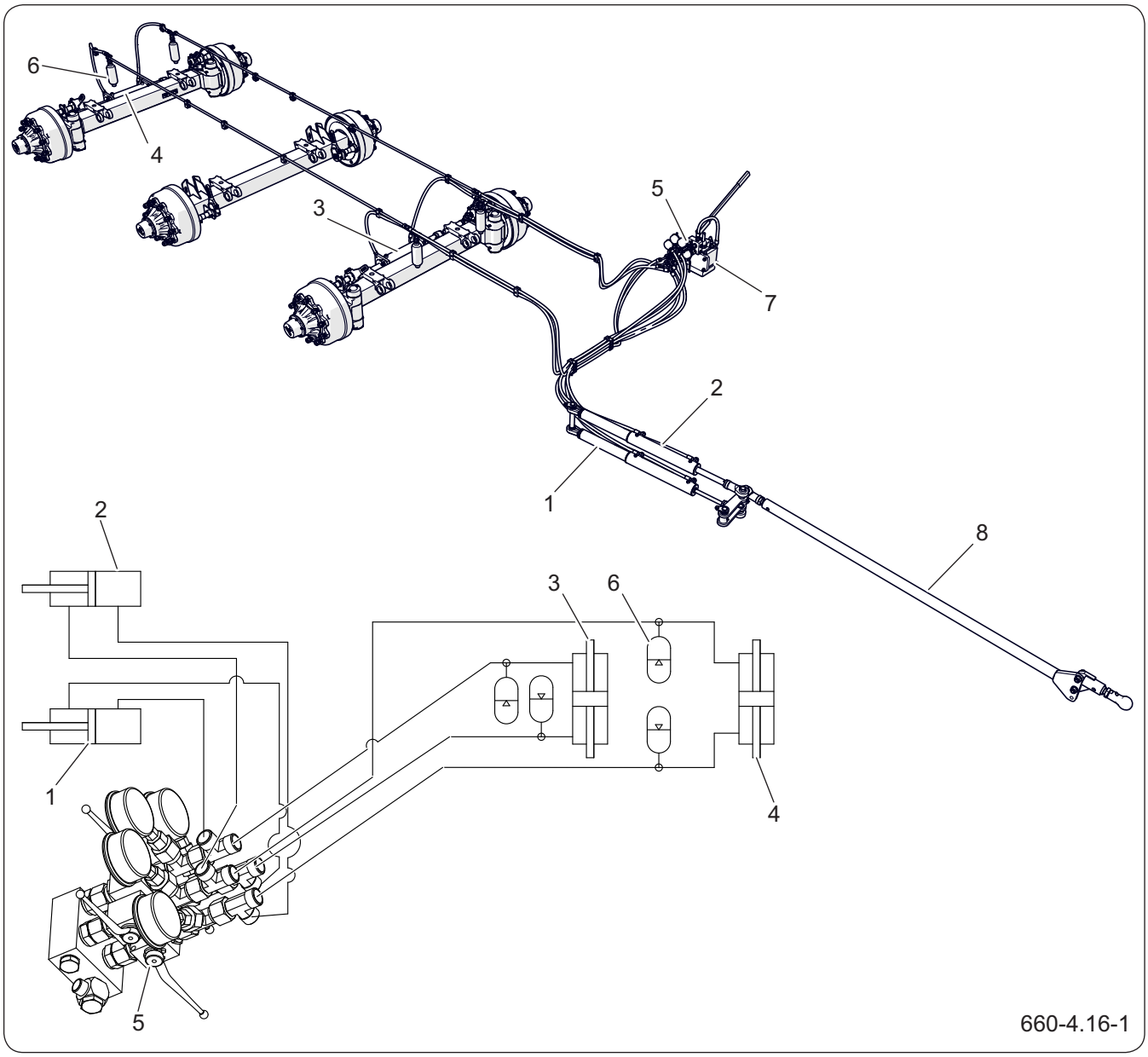

Figure 4.17 Structure and diagram of the hydraulic steering system

(1) Front axle steering cylinder *(2) Rear axle steering cylinder* *(3) Front axle cylinder*
(4) rear axle cylinder *(5) hydraulic valves* *(6) hydraulic accumulator*
(7) hand pump *(8) linkage*

ADVICE

The hydraulic steering lock system was filled with L-HL32 Lotos hydraulic oil.

The trailer is equipped with a hydraulic steering system for controlling the wheels of the first and third axles of the trailer.

The steering axles are equipped with cylinders (3) and (4) connected by means of hydraulic hoses and tubes to the double-acting cylinders (1) and (2) located on the right-hand side of the drawbar to form

a closed system. The drawbar cylinders are connected to the linkage (8) via a lever. The drawbar (8) connects to the ball end of the tractor hitch, which meets the requirements of ISO 26402.

The system is filled with approximately 8 litres of oil. As the piston rods of the cylinders (2) and (1) move, oil flows into the steering cylinders (3) and (4) located on the outer axles, causing the trailer to turn. The movement of the piston rod of cylinders (1) and (2) is achieved by changing the angle of the trailer drawbar in relation to the hitch of the tractor during shunting.

Torsion accumulators (6) were used to eliminate minimum backlash on the axle steering cylinders, and to reduce the load on the installation during manoeuvring. A hydraulic hand pump (7) is located under the load bed on the left side for filling and setting the pressure of the system.

BIZ.3.8-006.11.EN

4.15 ELECTRICAL INSTALLATION OF THE LIGHTING

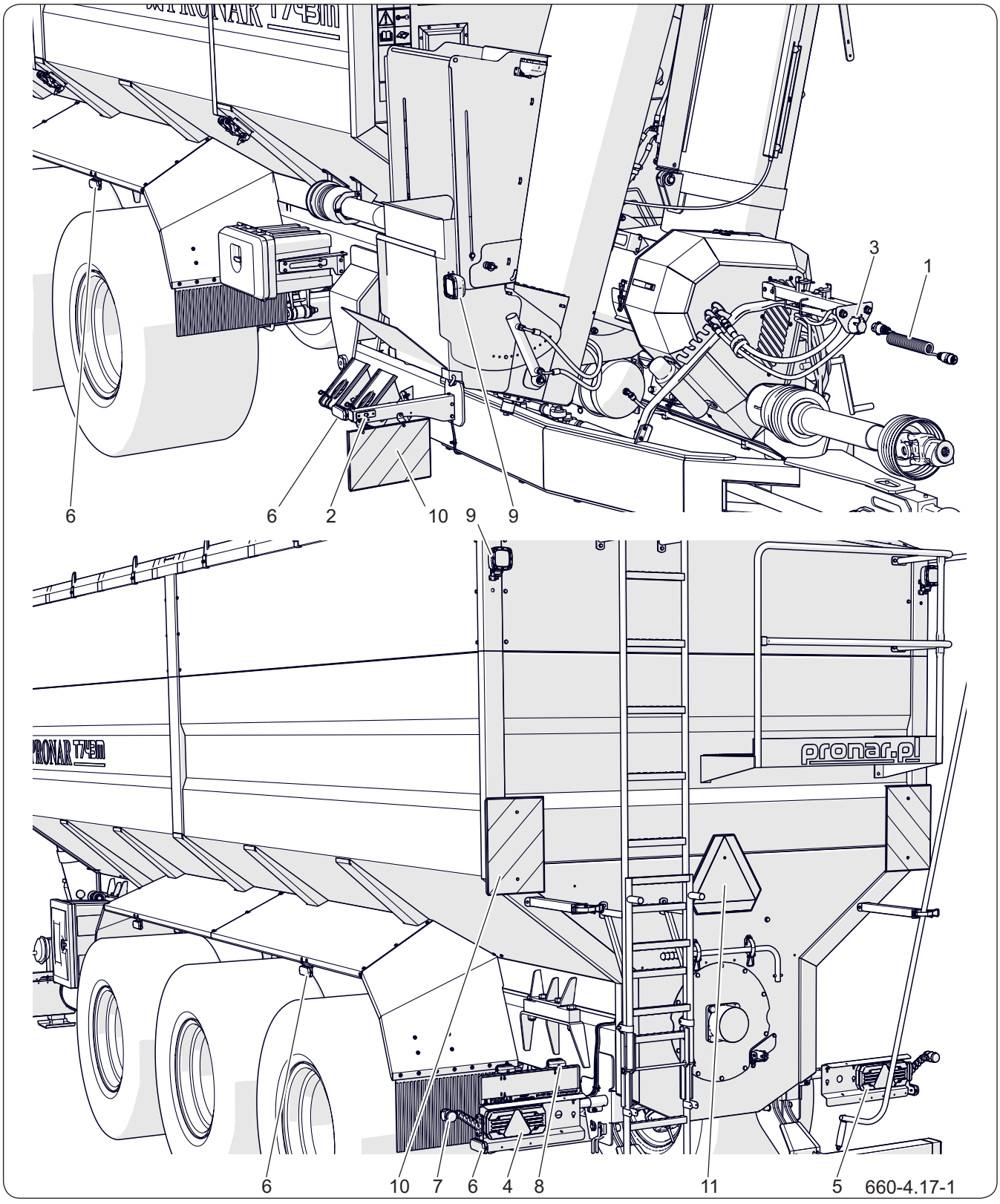

Figure 4.18 Arrangement of electrical components and reflectors

(1) 7-pin connection cable *(2) front position lamp* *(3) 7-pin socket*
(4) left rear lamp *(5) right rear lamp* *(6) side-marker lamp*
(7) rear marker lamp *(8) registration plate lamp* *(9) work lamp*
(10) distinguishing sign *(11) rear reflector triangle*

CAUTION

Check the operation and completeness of the electrical system before driving.

It is forbidden to operate the trailer with a defective lighting system.

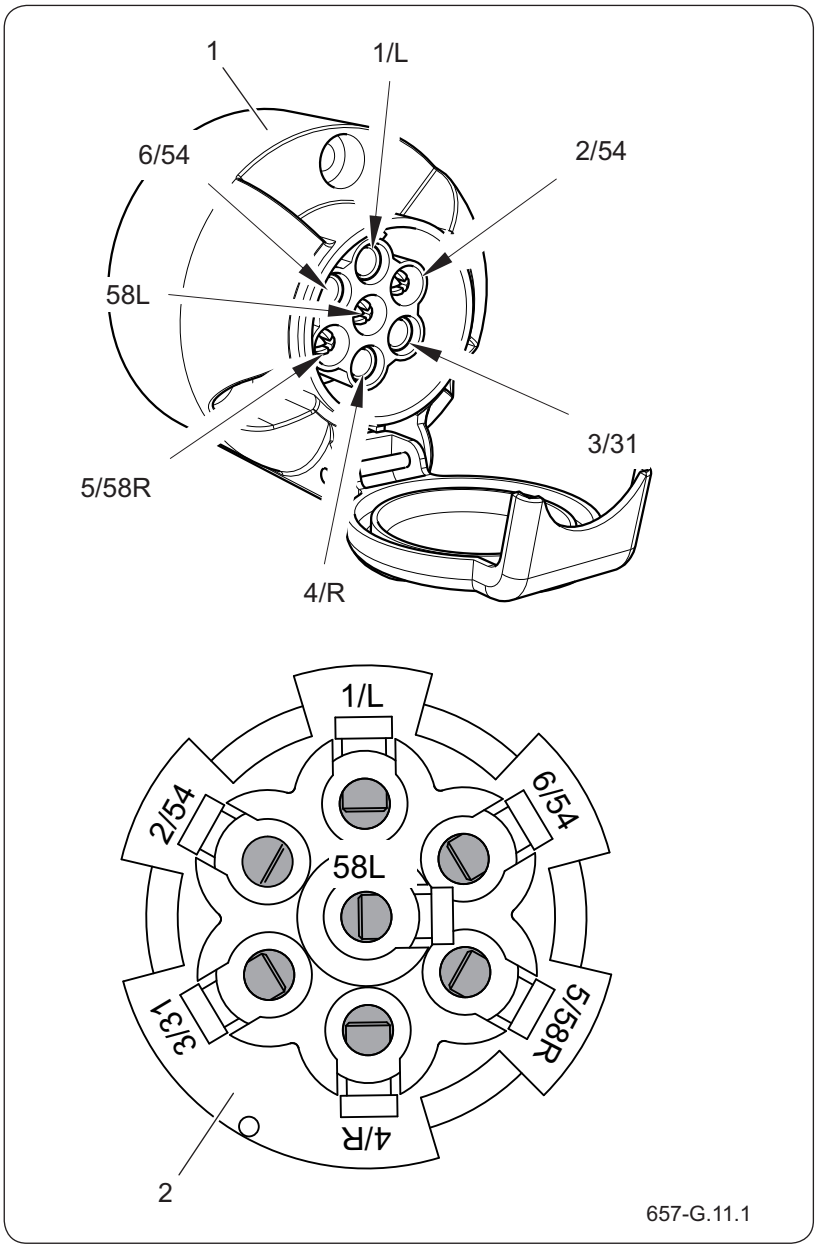

Figure 4.19 7 pin socket

(1) socket *(2) view from the harness side*

The trailer's electrical lighting system is designed to be powered from a 12V DC source.

Connect the electrical system of the machine to the tractor using the connection cable (1) supplied with the trailer.

Table 4.5 Connector socket connection markings

Designation	Function (cable colour)
1/L	Left indicator (yellow)
2/54	Not used
3/31	Mass (white)
4/R	Right indicator (green)
5/58R	Rear position light, right (brown)
6/54	STOP light (red)
58L	Rear position lamp left (black)

BIZ.3.H-013.01.EN

4.16 ELECTRICAL INSTALLATION OF THE DISTRIBUTOR

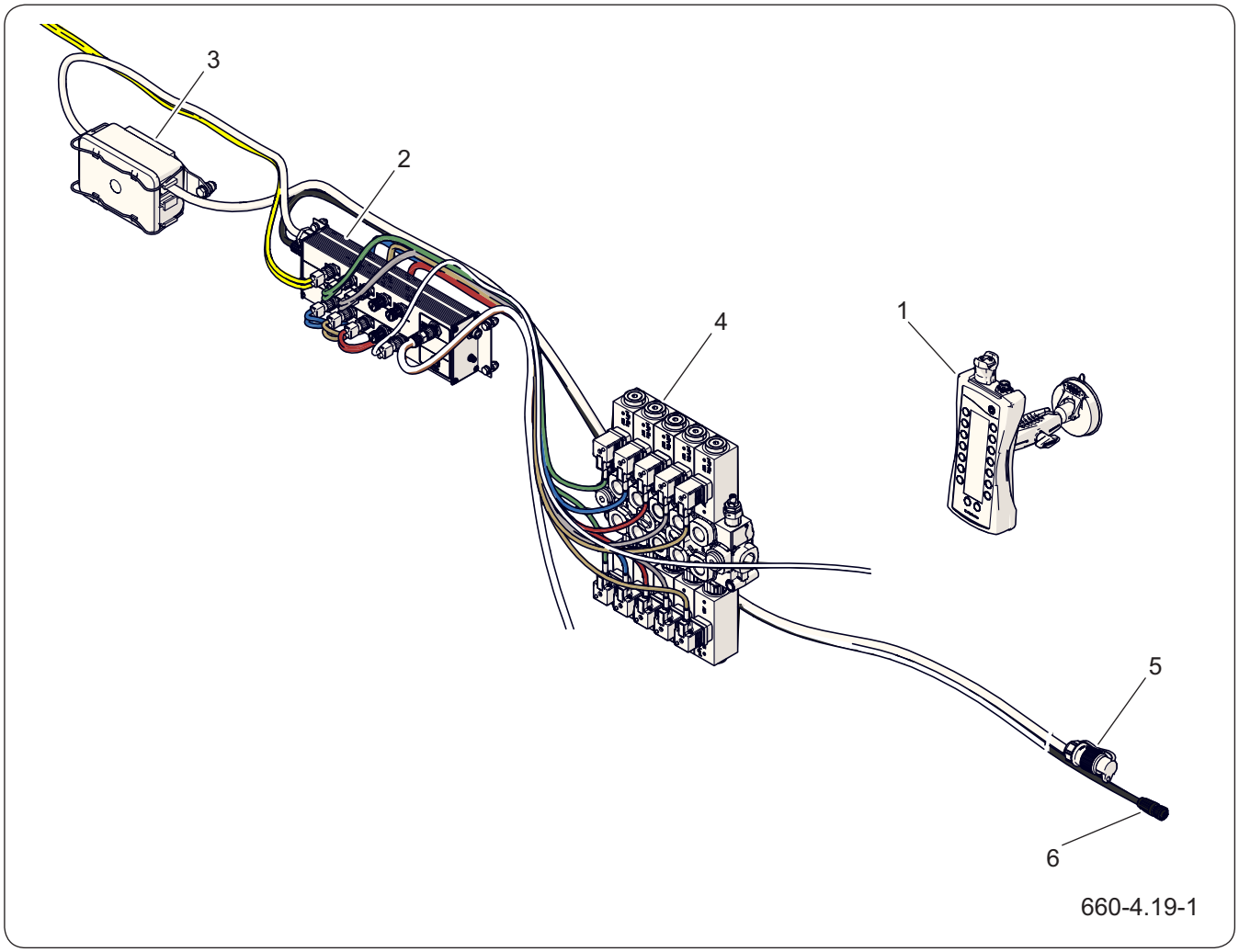

Figure 4.20 Electrical components of the distributor

(1) control unit *(2) control module* *(3) junction box*
(4) hydraulic distributor *(5) supply line* *(6) pilot control line*

The remote control (1) is connected to the control module (2) via a cable (6). The corresponding control outputs of the module are connected to the distributor coils (4) responsible for performing specific trailer functions. The power supply of the system is realised by cable (6).

BIZ.3.H-014.01.EN

4.17 WEIGHING SYSTEM AND PRINTER

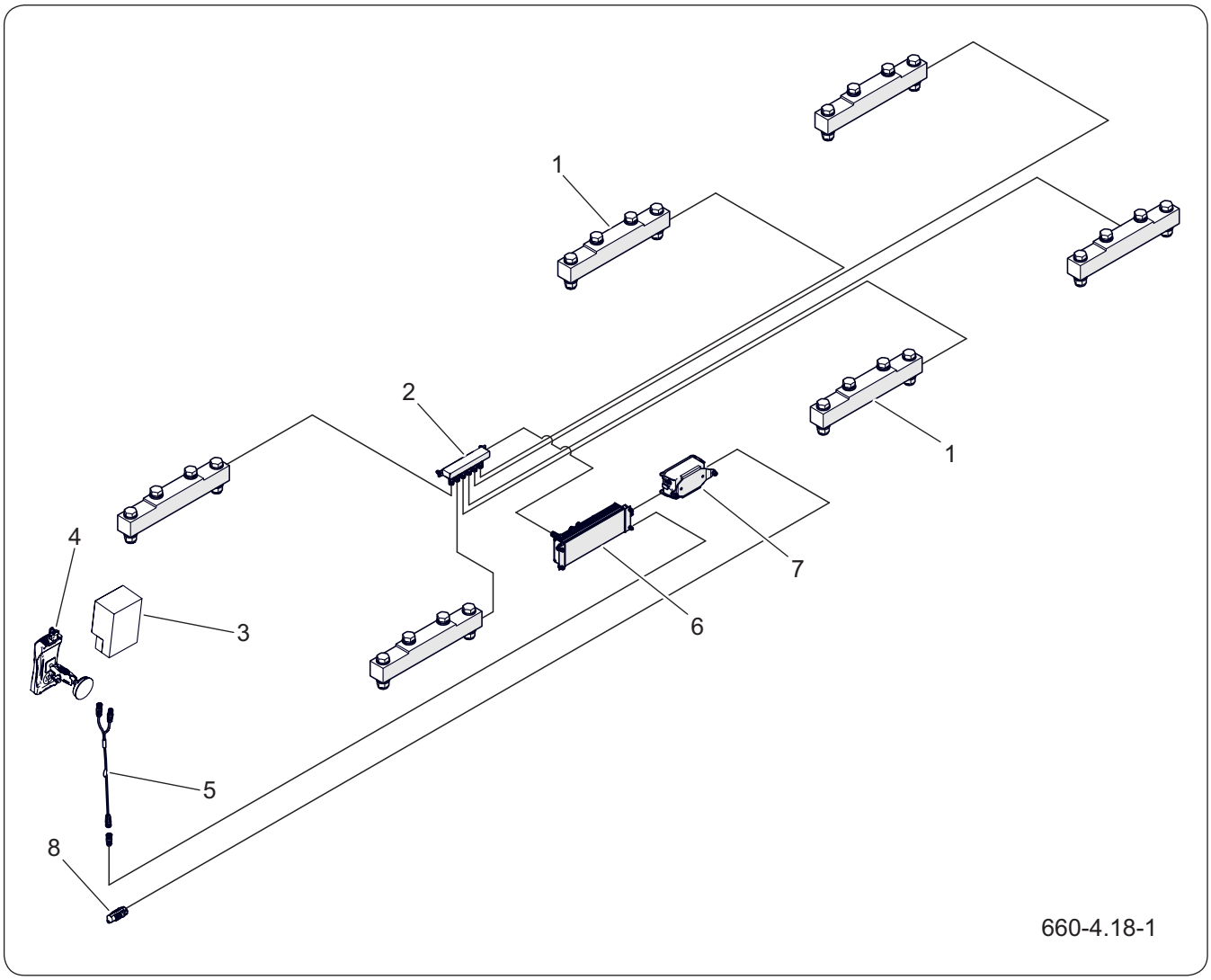

Figure 4.21 Scales with printer

(1) load cell *(2) combiner* *(3) printer*
(4) remote control *(5) connecting cable* *(6) control unit*
(7) junction box *(8) 3-pin power plug*

The trailer can be equipped with a system for measuring the weight of the load being carried. The system used consists of six load cells located in the bottom frame brackets. A trailer tank is set on the links. Where the machine does not have a measuring system, load cells are replaced by weight simulators. The cells (1) are connected via a signal combiner (2) to the control module (6). The weight of the load being carried is displayed on the screen of the control unit (4). From the remote control menu, it is possible

CAUTION

Electrical welding of trailer components can damage load cells, so dismantle these components before carrying out this type of work.

to print the scale readings on the printer (3).

BIZ.3.H-015.01.EN

Chapter 5

Correct use

PRONAR T743M

5.1 HEIGHT ADJUSTMENT OF THE DRAWBAR

DANGER

Use extreme caution when making adjustments due to the possibility of crushing limbs.

CAUTION

Regularly check the condition of the hitch pins and their protection. Pay attention to the condition of the drawbar linkage and its bolted connections. Lubricate the recommended lubrication points.

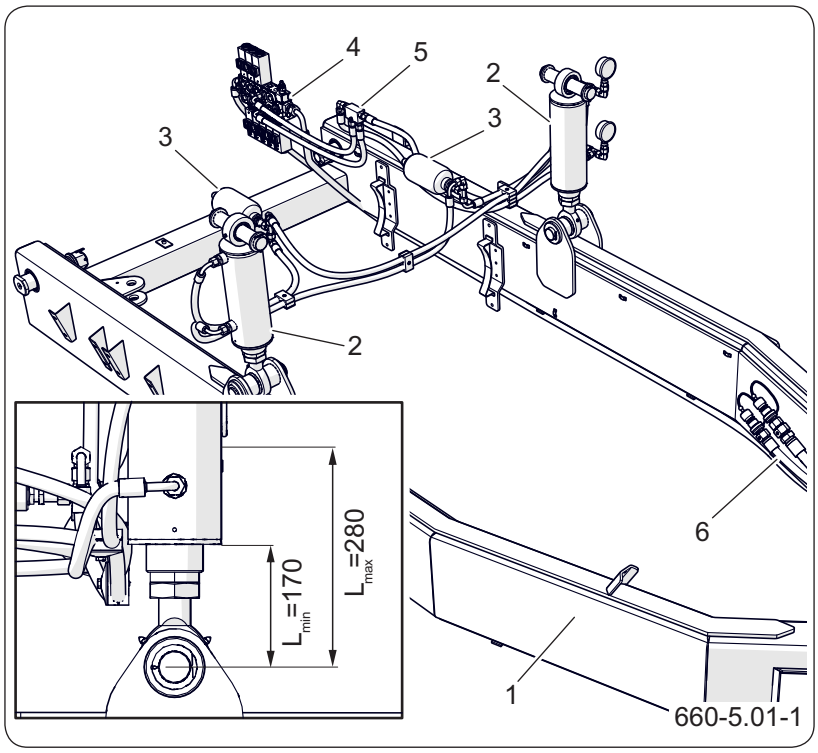

Figure 5.1 Height adjustment of the drawbar

(1) drawbar *(2) cylinder*
(3) hydraulic accumulator *(4) distributor*
(5) hydraulic lock *(6) hoses*

Select the position of the drawbar individually according to the size of the machine's tyres, and according to the type and height of the hitch of the agricultural tractor with which the machine will be coupled. Adjust the height so that the machine is level when coupled to the tractor, which ensures that the weight of the machine is evenly distributed over the running axles.

Before making adjustments, lock the machine with the parking brake and place the support wedges under the rigid axle wheel. Support the front of the machine frame so that the machine stands firmly. Fold the parking support into the transport position.

CAUTION

Minimum piston rod extension of the hydraulic cylinder (having cushioning capability) L_{min}>170mm.

Maximum extension of the hydraulic cylinder piston rod L_{max}>170mm.

Exceeding the specified permissible adjustment range of the cylinders risks damaging the drawbar hydraulic system.

ADVICE

Remember that the hydroaccumulator is filled with nitrogen. This gas reacts to changes in temperature, which is why the pressure gauge readings can change their values as the operating temperature drops or rises.

Adjusting the drawbar height

- Connect the hoses (6) to the appropriate section of the tractor's external hydraulic manifold.
- Connect the remote control cables.
- Use the buttons on the remote control to set the desired drawbar height.
- Check the distance between the piston rod eye and its housing.

  Hydraulic damping of the hitching system requires a distance setting between L_{min}>170 mm and L_{max}>280 mm.
- Read the pressure value on the hydroaccumulator nameplate.
- Check the indication of the pressure gauges.

  A displayed pressure value above the value on the hydro-accumulator plate indicates the action of the drawbar cushioning.

  The pressure readings on the pressure gauges change as the trailer load increases.

OBS.3.H-001.01.EN

5.2 PARKING SUPPORT OPERATION

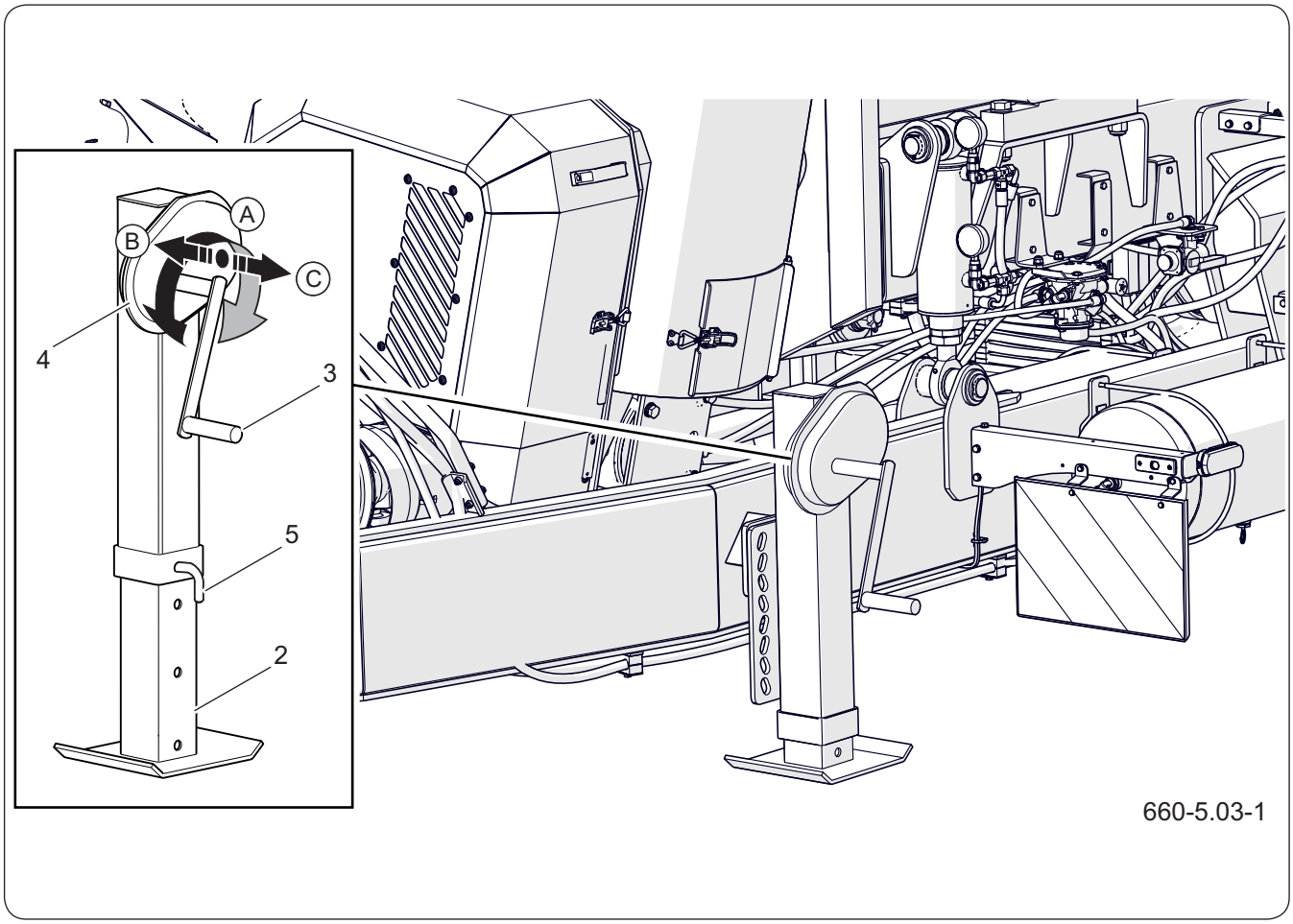

Figure 5.2 Telescopic support

(1) support *(2) foot* *(3) crank*
(4) gearbox *(5) safety pin* *(A) neutral position*
(B) 1st gear (slow) *(C) 2nd gear (fast)*

DANGER

Exercise extreme caution when handling the support - this includes bystanders or helpers.

Determining the correct height of the drawbar linkage in relation to the tractor hitch can be achieved using a telescopic stand with mechanical transmission.
Use position (C) to quickly lower and raise the supporting foot. Position (C) is for lowering and raising the unloaded machine. In position (B), the support foot (2) extends more slowly and you do not need to apply much force to lift the machine.

CAUTION

It is forbidden to start or drive with the support lowered.

Make sure the support is raised to the maximum and the crank is moved to the neutral (A) position before starting to ride. Absolutely secure the support foot with a safety pin.

Support lift

- Remove the pin (5).
- Move the crank (3) of the support from the neutral position (A) to position (B) - slowly.
- Turn the crank counterclockwise to raise the support foot (2) as high as possible.
- Fit the safety pin (5), move the crank to the neutral position (A).

Lowering the support

- Remove the pin (5).
- Move the crank (3) of the support from neutral position (A) to position (B) - slow or (C) fast.
- Turn the crank handle clockwise to lower the support to the ground, or adjust the height of the linkage in relation to the hitch (if the machine is to be coupled to a tractor).
- Fit the safety pin (5), move the crank to the neutral position (A).

OBS.3.G-002.11.EN

5.3 COUPLING AND UNCOUPLING OF THE MACHINE

5.3.1 Coupling of the trailer

CAUTION

After connecting the machine but before starting to drive, carry out a daily inspection of the machine.

An external inspection of the machine without connecting it to the tractor will not make it possible to verify its technical condition.

You will find detailed information on the reviews later in this paper.

You can connect the machine to an agricultural tractor if all the connections (electric, pneumatic, hydraulic) on the tractor comply with the machine manufacturer's requirements as indicated in the Agricultural Tractor Requirements table.

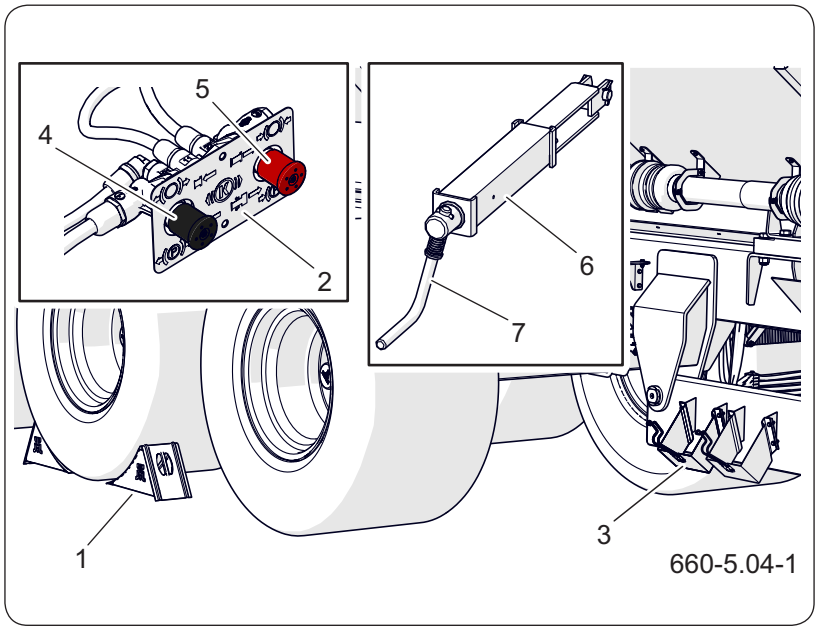

Figure 5.3 Parking brake

(1) support wedges *(2) parking brake*
(3) wedge pocket *(4) black button*
(5) red button *(6) mechanism*
(7) crank

Preparation

- Make sure the machine is immobilised with the parking brake.

  For air parking brake; red button (5) pulled out. Black button (4) depressed.

  For the mechanical parking brake; the brake cable is taut.
- Make sure you place the locking chocks (1) under the trailer wheel.
- Position the agricultural tractor in front of the drawbar linkage.

DANGER

No bystanders are allowed between the machine and the tractor during coupling. The operator of the agricultural tractor, when coupling the machine, should ensure that no bystanders are in the danger zone during coupling.

Take special care when connecting the machine.

Ensure adequate visibility when coupling.

Once the coupling is complete, check the pin hitch protection.

CAUTION

If the machine is parked for a long time, the air pressure in the air brake system may not be sufficient to release the brake shoes. In this case, after starting the tractor and air compressor, wait until the air in the air system tank has been replenished.

Height adjustment of the trailer drawbar

- Use the parking stand to set the correct height of the drawbar linkage in relation to the hitch of the aggregated agricultural tractor.
- Set the drawbar to the correct position using the drawbar hydraulic system.

Connecting the machine to the tractor hitch

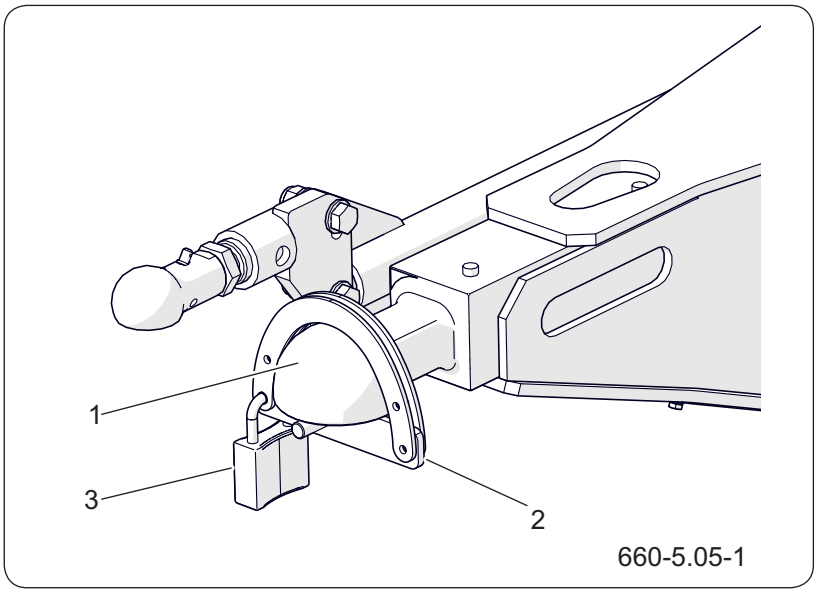

Figure 5.4 Drawbar linkage protection
(1) ball link *(2) safety device*
(3) padlock

- Dismantle the linkage protection.
  Unfasten the padlock (3) and remove the safety catch (2).
- Reverse the tractor and connect the machine to the appropriate hitch.
- Check the coupling protection protecting the machine from accidental disconnection.
- If an automatic coupling is used on the tractor, make sure that the aggregation operation is completed and the drawbar linkage is secured.
- Move the parking support to the transport position.
- Turn off the tractor engine and remove the

ignition key. Secure the tractor with the parking brake. Secure the tractor cab against unauthorised access.

Connecting of the brake system.

- Connect the lines of the air brake system.
  First connect the plug marked yellow to the yellow socket on the tractor and then the plug marked red to the red socket on the tractor. When the second line is connected, the brake release system will switch to normal operation (disconnecting or interrupting the air lines causes the machine control valve to automatically switch to the position that activates the machine brakes).
- If the brakes do not respond when the air

CAUTION

When connecting the pneumatic lines of a two-wire system, first connect the line marked yellow and then the line marked red.

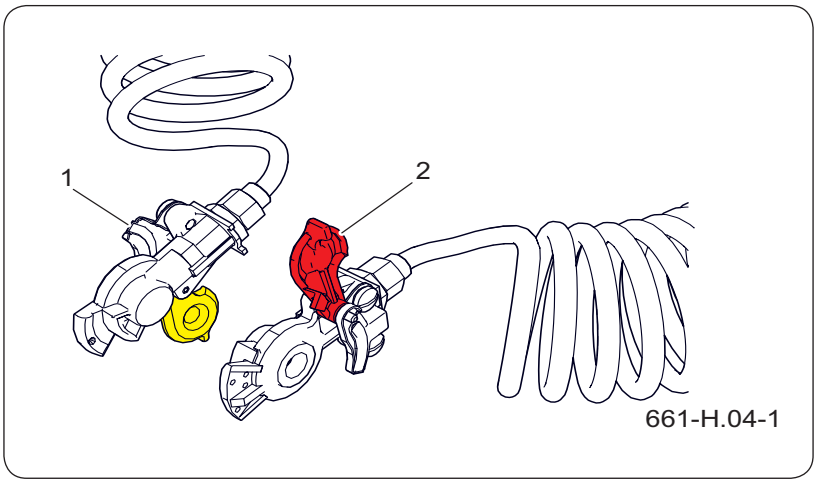

Figure 5.5 Air brake lines
(1) yellow plug (2) red plug

DANGER

Driving with a faulty or defective hydraulic system is prohibited.

Take special care, the hydraulic system may be under high pressure.

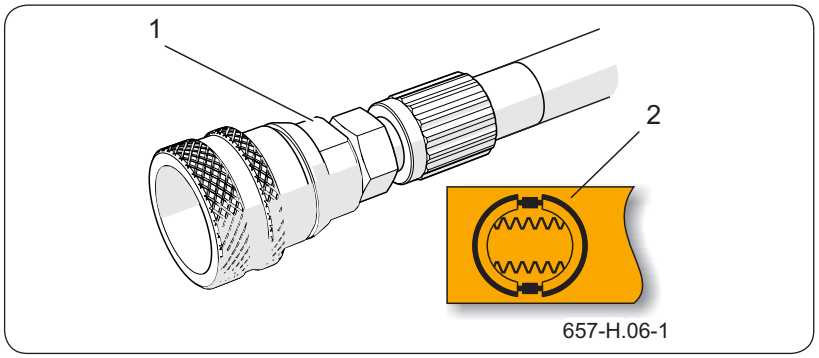

Figure 5.6 Hydraulic brake lines
(1) socket (2) sticker

DANGER

It is forbidden to use a faulty machine.

lines are connected, this may indicate low air pressure in the reservoir. The air in the tank needs to be topped up to the correct pressure for the system to become operational.

- Connect the hydraulic brake line.

Connecting of the hydraulic system

- Reduce the residual pressure in the trailer and tractor hydraulic system.

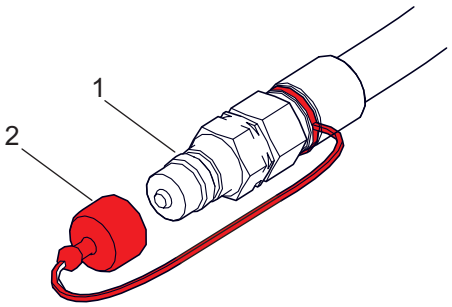

Figure 5.7 Plumbing connection
(1) hydraulic plug *(2) cap*

PTO power take-off connection.

- Connect the pre-matched shaft to the PTO of the agricultural tractor.
- Check the shaft covers and the condition of the fixing chains.

Set the PTO speed of the agricultural tractor to 1,000rpm

CAUTION

The original PTO manufacturer's operating manual is supplied with the PTO, which describes all maintenance operations for the product supplied.

Connection of electrical lighting installation.

- Connect the main cable (1) supplying the lighting wiring (7-pin).
- Connect the power (2) and communication (3) cables of the remote control.
- If the tractor does not have such sockets, or if the sockets are of a different type, have them fitted by qualified persons in accordance with the tractor manufacturer's recommendations.

CAUTION

When coupling is complete, secure the hoses of the hydraulic, brake and electrical systems so that they do not become entangled in moving parts of the agricultural tractor while driving and are not liable to kink or cut when turning.

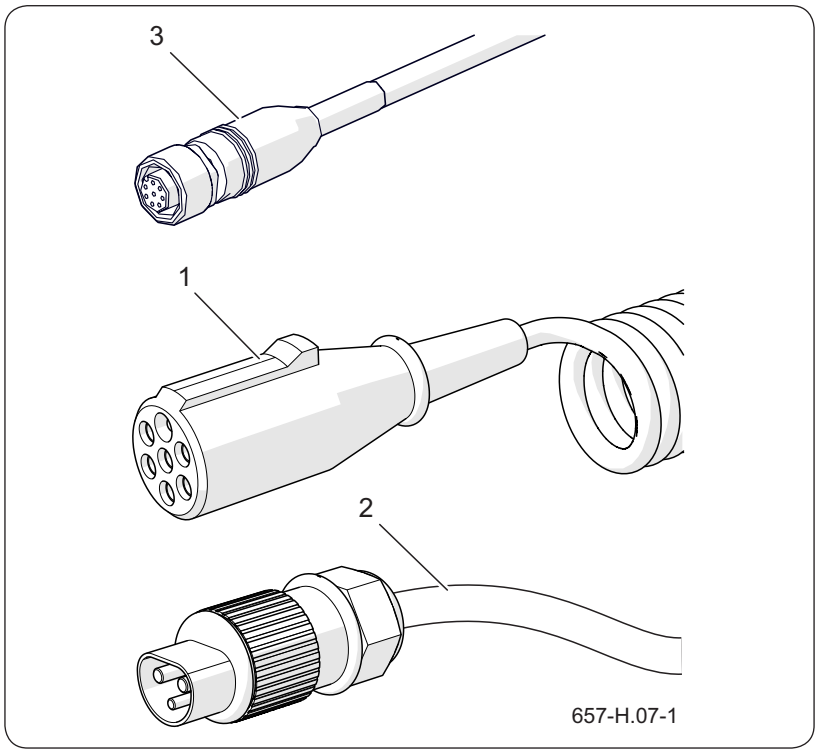

Figure 5.8 Electrical connection

(1) 7-pin cable *(2) 3-pin cable*

(3) remote control cable

Additional information

- Check that connected cables do not become entangled in moving parts of the tractor or machine during operation. If necessary, secure the connection.
- Carry out a daily inspection of the machine.
- If the machine is operational, you can proceed.
- Immediately before starting to drive, remove the wheel chocks and release the parking brake on the machine.

  Red button pressed. Black button pulled out.

CAUTION

When disconnecting the pneumatic hoses of a two-wire system, disconnect the red-coloured hose first and then the yellow-coloured hose.

5.3.2 Disconnecting of the trailer

- Place the machine on a hard and flat surface.
- Switch off the tractor engine and remove the ignition key, secure the tractor with the parking brake.
- Lower the support to the parking position.

CAUTION

Always secure the uncoupled machine against unauthorised use by attaching a linkage protection device.

DANGER

Take extra care when uncoupling the trailer from the tractor.

Ensure good visibility. Ensure that no one is between the trailer and the tractor.

Before disconnecting the cables, shaft and drawbar linkage, close the tractor cab and secure it against unauthorised access. Switch off the tractor engine.

- Immobilise the machine with the parking brake.
- Place locking chocks under one wheel of the machine's rigid axle, one at the rear and one at the front of the wheel.
- Disconnect all the hoses one by one, securing the ends by putting plugs on the hydraulic connectors.
- Place the cables on the cable support.
- Disconnect the power take-off.
- Unhook the linkage hitch, start the tractor and drive it away.
- Fit the drawbar linkage protection.

OBS.3.H-004.01.EN

5.4 LOADING

DANGER

It is forbidden to transport people or animals.

CAUTION

It is forbidden to exceed the permissible trailer load as this compromises driving safety and may cause damage to the machine.

CAUTION

The load in the trailer bed must be distributed evenly and must not impede the driving of the combination. Handling work should be carried out by a person experienced in this type of work.

CAUTION

When loading grain directly from a moving combine, maintain a constant distance between the machines, and adapt your speed to the speed of the combine.

DANGER

The load on the trailer must be prevented from contaminating the road during transit.

Load the trailer when the trailer is connected to the tractor and on level ground. Try to aim for an even distribution of the load in the load carrier. This will ensure that the trailer has the correct stability when driving, the correct pressure on the running axles, and the drawbar linkage.

Before loading, check that the bottom chute flap and the chute gate are closed. Inspect the load bed for people, animals or unnecessary objects.

The trailer is designed for the transport and handling of grain, maize, seed from combine harvesters to transport vehicles. The use of loads other than those stipulated by the manufacturer is prohibited.

Due to the varying densities of materials, using the total capacity of the load bed may result in the trailer's load capacity being exceeded.

If your trailer is equipped with a weighing system, use it to determine the current loading level of the tank.

Bulk cargo

Loading of bulk materials is generally carried out from field harvesters to downstream means of transport. Loading by loaders or conveyors is possible. Bulk materials must not protrude beyond the outline of the trailer walls. When loading is complete, spread the load layer evenly over the entire load bed surface. Loading should be carried out by a person who is experienced in this type of work and has the appropriate equipment licence (if required). Secure loads of this type by covering the load bed using a roll-top tarpaulin. Covering the load prevents it from spilling during the journey, from being blown away by the wind and also protects the load from moisture. This is particularly dangerous in the case of loose materials, which can absorb water significantly, so

DANGER

When the trailer is loaded, the drawbar linkage and hitch of the tractor are subjected to high vertical loads.

ADVICE

Damage to the paintwork inside the load bed caused by normal use of the trailer is normal and cannot be claimed.

DANGER

Ensure that no additional personal protective equipment (masks, protective gloves, etc.) is required during loading work.

DANGER

Ensure that there are no bystanders in the unloading/loading area. Before unloading the crate, ensure that you have adequate visibility and that there are no bystanders in the vicinity.

that the weight of the load can increase during travel.

Dangerous goods

According to the European ADR agreement on the international carriage of dangerous goods by road, the carriage of this type of load (specifically defined by this agreement) is prohibited using agricultural trailers.

Use common sense and your own experience when working. The trailer user is obliged to familiarise himself with the road transport regulations and to comply with their recommendations.

OBS.3.H-005.01.EN

5.5 AXLE STEERING ADJUSTMENT

DANGER

Use caution due to risk of crushing feet

CAUTION

It is prohibited to drive with an improperly adjusted steering system.

For proper operation of the hydraulic steering system and safe use of the trailer, suitable approved tractor hitches in accordance with ISO 26402:2008 must be used.

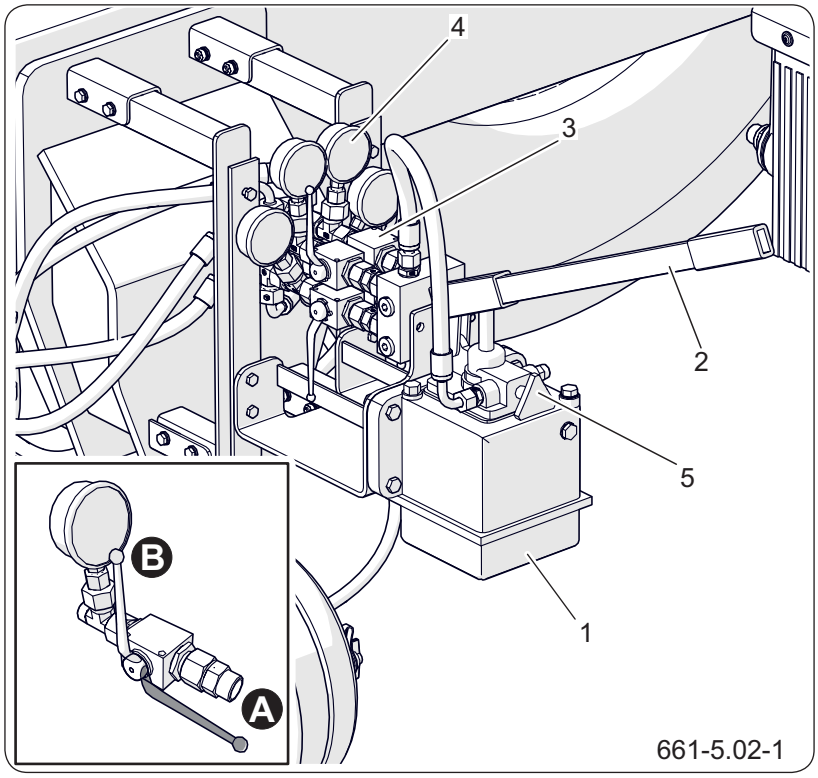

Figure 5.9 Axle steering adjustment

(1) oil tank, *(2) pump lever,*
(3) hydraulic valve, *(4) pressure gauge,*
(5) pump valve knob
(A) open position, *(B) closed position*

When aggregating the trailer with the tractor for the first time, check the correct functioning of the steering system. If you find that the system is not functioning correctly, perform the following steps:

- Connect the tractor to the trailer using the linkage and ball control hitch and secure the linkages,
- Open all the valves of the system (3) located at the hand pump - drawing "Setting up the axle steering",

- Using the knob (5) on the pump, reduce the pressure so that the pressure gauges indicate "0"
- Drive the tractor with the attached trailer a sufficient distance so that the wheels of the trailer are in a straight-ahead position,
- close the valve (5) on the pump,
- Fill the system with the pump using the hand lever (2) until the pressure at each pressure gauge (4) reaches 80 bar,
- do not add oil once pressure has built up,
- close all valves (3) and put down the pump lever (2),
- drive the tractor with the trailer hitched and check that the system is working correctly.

OBS.3.8-004.11.EN

5.6 TRANSPORT

When driving on public roads, comply with traffic regulations, use caution and sensible behaviour. The following are the most important tips for driving a tractor with an attached trailer.

- Before moving off, make sure that there are no bystanders, especially children, near the trailer and the tractor. Ensure adequate visibility.
- Ensure that the trailer is properly connected to the tractor and that the tractor hitch is properly secured.
- You may not drive on public roads with the vertical conveyor unfolded.
- When transporting a load on public roads, secure it with a tarpaulin. It is unacceptable for the road to be contaminated by the spilled load.
- The vertical load transmitted by the trailer linkage affects the steering of the agricultural tractor.
- Do not overload the trailer. The load must be distributed evenly in such a way that it does not exceed the permissible pressures on the trailer running gear. Exceeding the permissible vehicle load is prohibited and may cause damage to the machine. Overloading is a hazard when driving on the road for the tractor and trailer operator or other road users.
- Do not exceed the permitted design speed and the speed limit imposed by traffic law restrictions. Adjust your speed according to the prevailing road conditions, the load condition of the trailer, the type of load being carried and other considerations.
- If you disconnect the trailer from the tractor, you must secure it by locking it with the parking

CAUTION

Leaving a trailer unsecured 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 point according to traffic regulations.

brake and putting chocks under the wheel.

- The tractor operator must equip the trailer with an approved or homologated reflective warning triangle.
- When driving on public roads, mark the trailer with a slow-moving vehicle distinguishing sign, place the sign on the rear of the load bed.
- While driving, obey the rules of the 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.
- Repair or replace damaged or lost lighting and signalling components immediately.
- Avoid ruts, depressions, ditches, or driving along roadside slopes. Driving over such obstacles can cause the trailer and tractor to tilt violently. This is particularly important as the centre of gravity of a laden trailer (and especially a volumetric load), adversely affects driving safety. Passing near the edge of ditches or canals is dangerous due to the risk of landslides under the wheels of the trailer or tractor.
- Reduce speed before approaching bends, when driving on uneven or sloping terrain.
- When driving, avoid sharp turns, especially on slopes.
- Remember that the braking distance of a kit increases significantly as the weight of the load being carried increases and the speed increases.
- Control the behaviour of the trailer when driving over rough terrain. Adapt your speed to the terrain and road conditions.
- When reversing, use a second person to give guidance while standing away from danger

CAUTION

Driving with a volumetric load over ruts, ditches, slopes, etc. poses a high risk of the trailer tipping over. Be especially careful.

zones.

- The trailer is suitable for gradients of up to 8°.

Moving the trailer over terrain with steeper slopes may cause the trailer to tip over due to loss of stability. Prolonged driving on sloping terrain poses the risk of losing braking effectiveness.

OBS.3.H-006.01.EN

5.7 UNLOADING

5.7.1 Unloading with floor flaps.

CAUTION

Unloading through floor flaps involves the load spilling out under its own weight. Do not start the PTO drive.

When discharging with floor flaps, there is no need to unfold the vertical conveyor.

CAUTION

When the unloading is complete with the floor conveyor, close the sliders completely.

Unload the trailer by performing the following steps:

- Position the tractor and trailer to drive straight ahead over the load chute.
- Brake the tractor, and the trailer using the parking brake.
- Open the bottom dump flaps.

  Remove the safety pin (4).

  Insert the crank (1) into the opening mechanism.
- Remove the pin (3). Insert the crank (1) and, turning it clockwise to position (A), open the dump flaps (2).
- Observe the unloading process. If necessary, increase or decrease the opening of the gates (1) - drawing *Floor conveyor gates*.

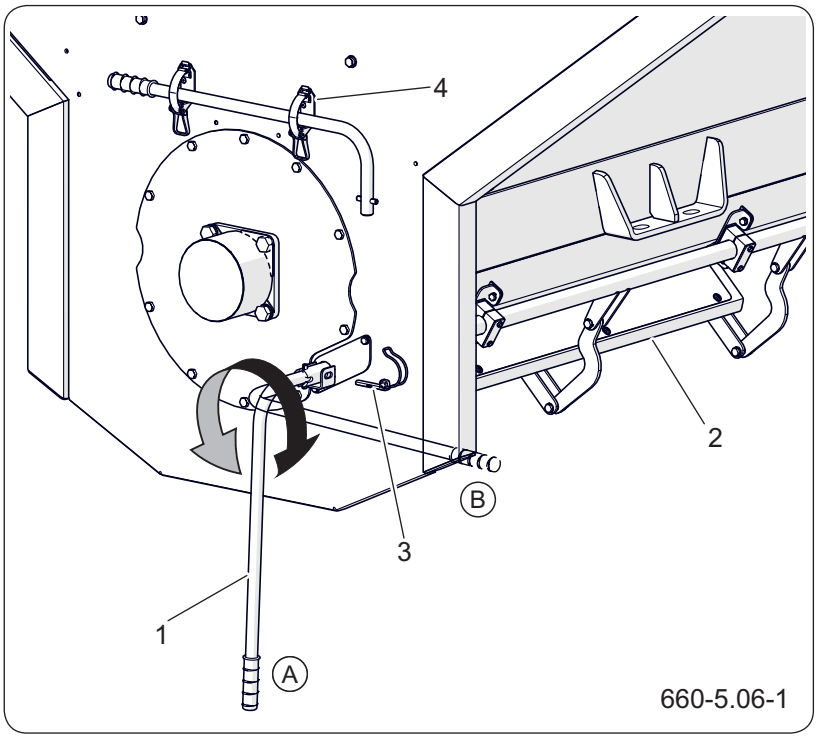

Figure 5.10 Chute flaps

(1) crank *(2) flap*
(3) pin *(4) fastener*
(A) open position *(B) closed position*

ADVICE

The time taken to unload the load bed depends on the positioning of the sliders (1) and curtains (2) placed in the load bed.

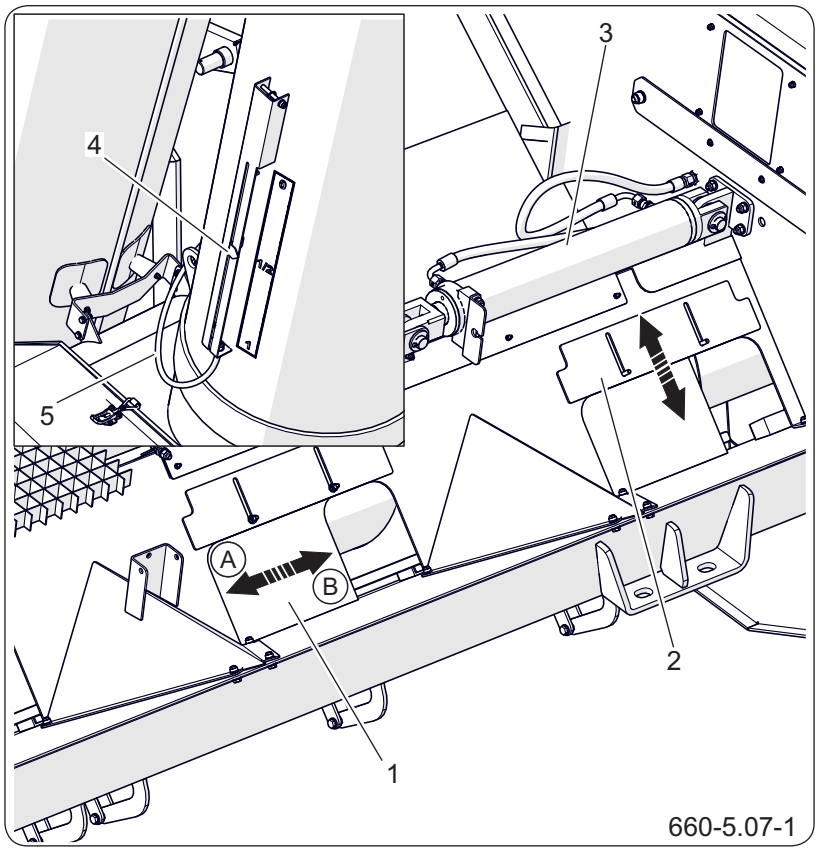

Figure 5.11 Floor conveyor slides

(1) slider *(2) curtain*
(3) actuator *(4) opening indicator*
(5) cable
(A) opening *(B) closing*

You will read the opening value of the gates on an indicator placed on the vertical conveyor where "1" means fully open and "0" means the gates are closed.

You can additionally adjust the size of the unloading slots using the curtains (2).

- When you have finished unloading, close the sliders (1).
- Close the bottom discharge flaps by turning the crank counterclockwise. Put down the crank. Secure the mechanism with a safety pin.
- Clean the trailer of load residue.

5.7.2 Discharge by vertical conveyor

- Set the tractor and trailer to drive straight ahead next to the unloading area.

- Brake the tractor, and the trailer using the parking brake.
- Ensure that there is enough space at the unloading point for the vertical conveyor to unfold.
- Use the remote control to unfold the put-down conveyor (1).
- Check the correct locking of both conveyor sections.
- Change the angle of the conveyor if necessary.
- If necessary, change the angle of discharge of

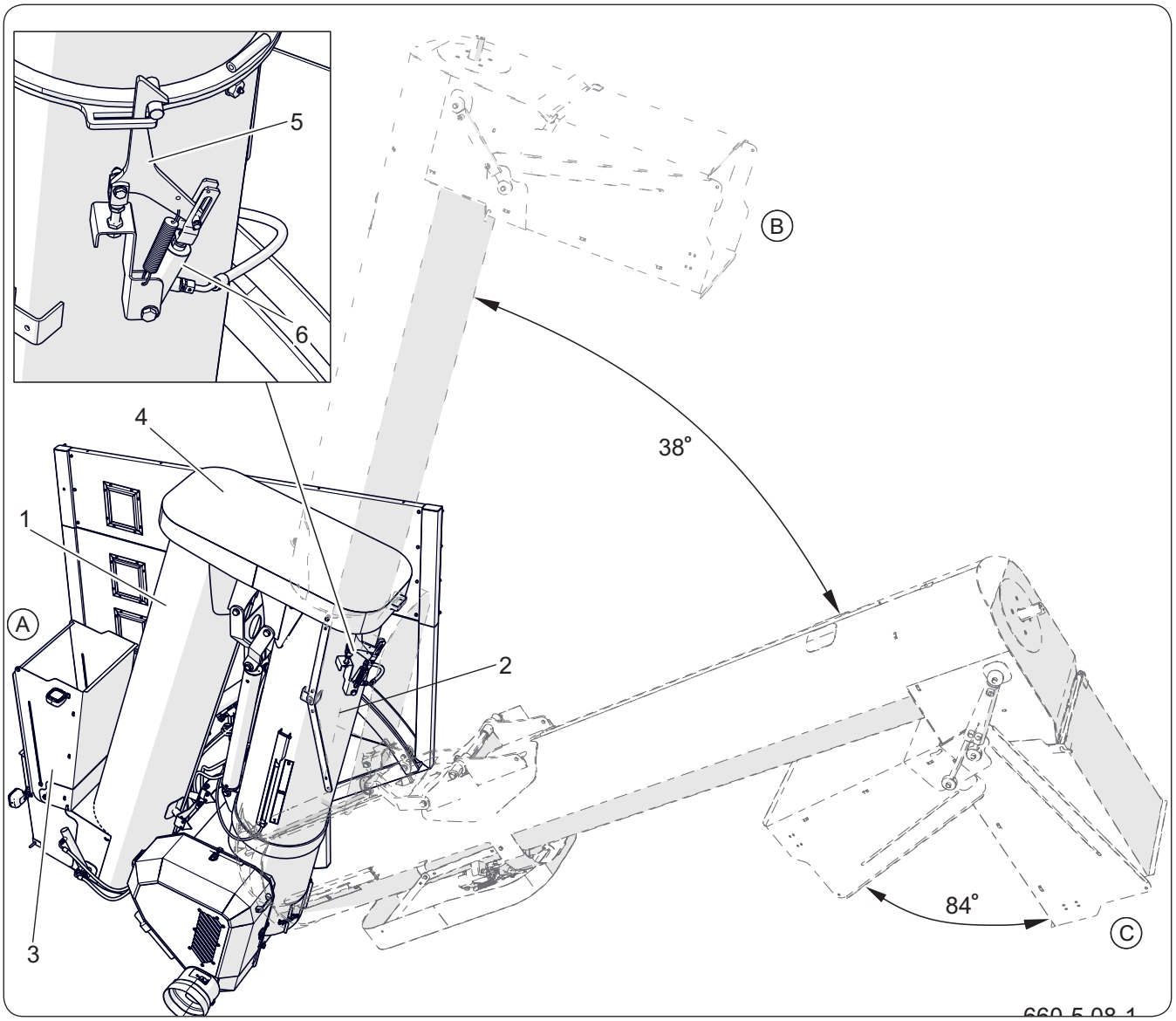

Figure 5.12 Vertical conveyor

(1) deposited conveyor *(2) vertical conveyor* *(3) hydraulic chute*
(4) cover *(5) latch* *(6) actuator*
(A) transport position *(B) upper unfolded position* *(C) lower unfolded position*

CAUTION

Before unfolding the vertical conveyor, check that there is enough room for the unfolding manoeuvre. Keep a safe distance from overhead electrical wires.

It is forbidden to drive with the vertical conveyor unfolded.

Ensure that no-one is in the vicinity of hazardous areas when the conveyor is in operation. Keep a safe distance from hazardous areas,

It is forbidden to be directly under the conveyor chute.

ADVICE

If the agricultural tractor has a reserve of torque at the maximum opening of the shutter (1), you can increase the opening of the shutter (2) - drawing "Floor conveyor shutter". This will speed up the unloading by means of a vertical conveyor.

CAUTION

When unloading by vertical conveyor, first start the PTO drive and then open the floor conveyor gates.

the material through the chute.

- Start the conveyor drive with the floor conveyor gate closed where its opening indicator will show "0". This will affect the smooth start of the discharge mechanism.

  It is forbidden to open the floor conveyor shutter before the PTO drive is started. Clear the loaded floor conveyor by gravity discharge with floor flaps.
- Start the tractor's PTO drive, set the PTO speed to 1,000 rpm.
- Open the floor conveyor gate halfway. Observe the unloading process and the load on the tractor drive train. Increase or decrease the slider opening if necessary.
- Switch off the PTO drive when unloading is complete.
- Close the floor conveyor gates to the "0" position.
- Fold the conveyor into the transport position (A).
- Make sure the vertical conveyor is correctly folded before starting.
- Clean the trailer of load residue.

OBS.3.H-007.01.EN

5.8 WEIGHT OF MATERIALS TO BE TRANSPORTED

DANGER

Overloading the trailer, inadequate loading and securing of the load are the most common causes of accidents during transport.

The load must be distributed in such a way that it does not jeopardise the stability of the trailer or impede the driving of the combination.

The approximate specific gravity of the selected materials is shown in the table below. Special care must be taken not to overload the trailer.

Table 5.1 Approximate volumetric weights of selected loads

Type of material	Volumetric weight [kg/m^3]
Building materials:	
Seeds:	
broad beans	750-850
mustard	600-700
peas	650-750
lentils	750-860
beans	780-870
barley	600-750
clover	700-800
grasses	360-500
maize	700-850
wheat	720-830
rapeseed	600-750
flax	640-750
lupin	700-800
oats	400-530
alfalfa	760-800
rye	640-760

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

OBS.3.H-003.01.EN

5.9 CHUTE OPERATION

DANGER

Take extra care, possibility of crushing and crushing fingers.

The put-down conveyor is fitted with an adjustable chute as standard. Determine the chute angle yourself by adjusting the chute trough to one of several possible positions. Once the adjustment is complete, secure the position of the chute on both sides with screw connections.

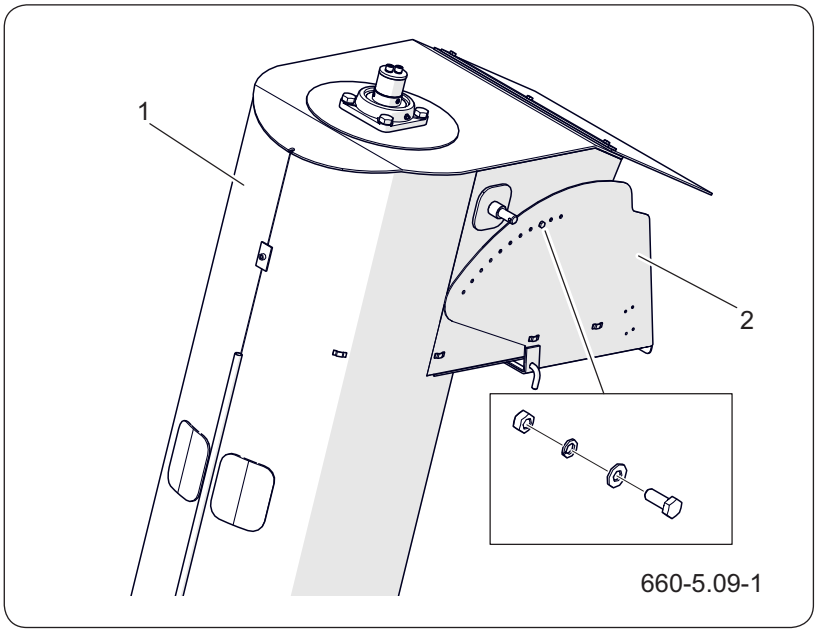

Figure 5.13 Conveyor chute
(1) feeder *(2) chute*

OBS.3.H-008.01.EN

5.10 OPERATION OF THE TARPAULIN

In order to protect the load from spillage and to protect it from adverse weather conditions, the trailer is equipped with a rolling tarpaulin including a fixing frame.

UNROLLING OF THE TARPAULIN

- Go to the trailer.
- Release the crank (1) from the handle (8).
- Use the crank (1) to open the tarpaulin (2).
- Roll out slowly, allowing the tarpaulin to spread evenly.
- Insert the crank into the handle (8).
- Fasten the straps (3) and tension the tarpaulin

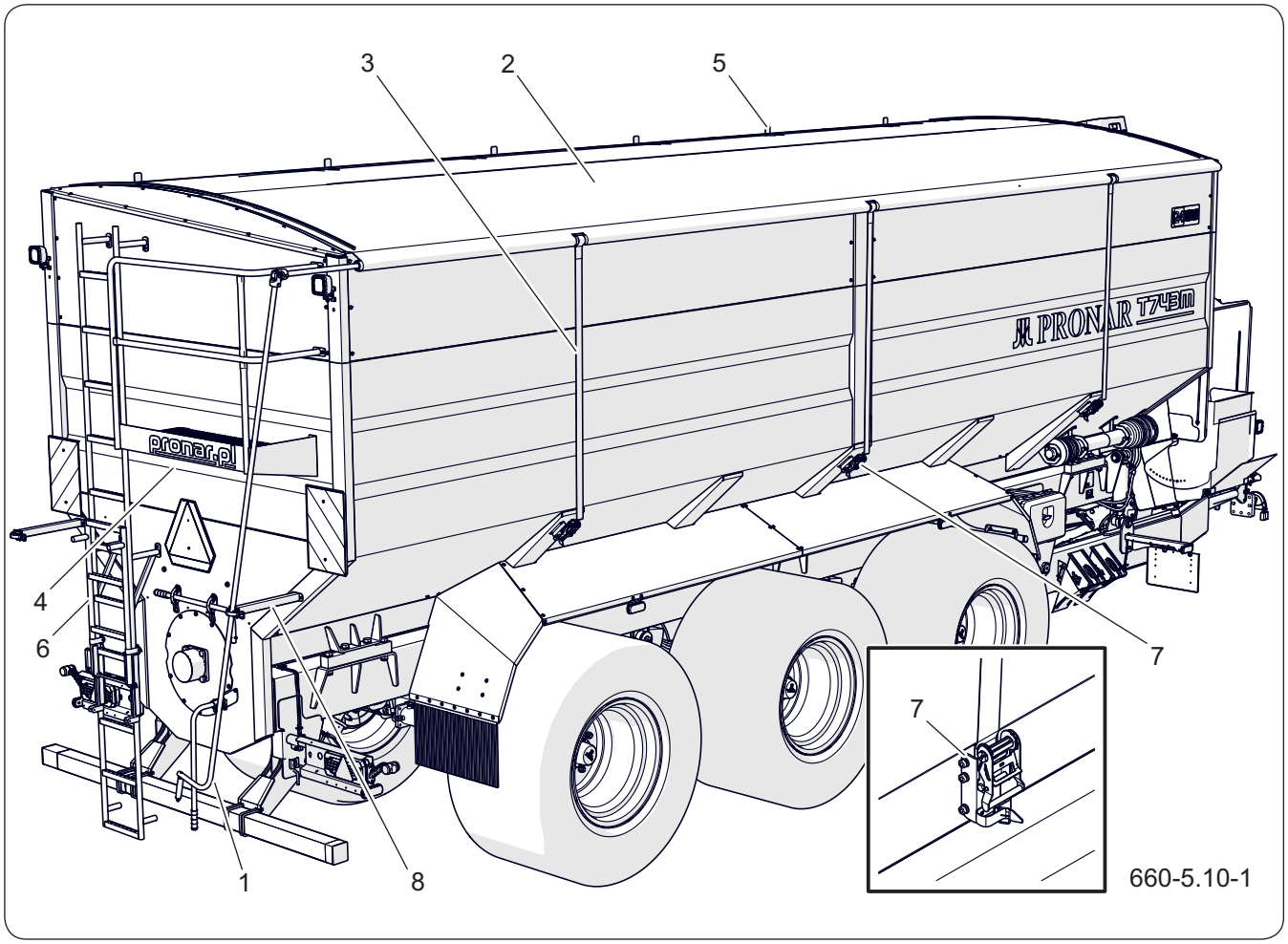

Figure 5.14 Operation of rolling tarpaulins

(1) crank *(2) tarpaulin* *(3) belt*
(4) balcony *(5) stop* *(6) ladder*
(7) tensioner *(8) handle*

with the tensioners (7).

If the tarpaulin is not tensioned correctly, water will collect on its surface, etc. As a result, the tarpaulin may become deformed and not fulfil its purpose..

ROLLING UP THE TARPAULIN

- Loosen the belt tensioners (7) and detach the straps (3) securing the tarpaulin.
- Release the crank (1) from the handle (8).
- Roll up the tarpaulin by turning the crank (1) so that the tarpaulin rests on the stops (5).
- Insert the crank into the handle (8).

OBS.3.H-009.01.EN

5.11 USE OF TIRES

- When working with tires, the machine should be secured against rolling by placing chocks under the wheels. Wheels can be taken off the trailer 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.
- Checking the tightening of the wheel nuts carry out after the first use of the trailer, every 2- 3 hours during the first month of using the machine and then every 30 hours of driving. Always repeat all operations if the wheel was disassembled. Wheel nuts should be tightened in accordance with the recommendations contained in the *Inspections and technical service*chapter.
- Regularly check and maintain proper tire pressure as recommended in the instructions (especially after a long break in the trailer use).
- Tire pressure should also be checked during all-day intensive work. Take into account that an increase in tire temperature can increase the pressure by up to 1 bar. With this increase in temperature and pressure, reduce the load or speed of the trailer.
- Never reduce the pressure by venting if it increases due to temperature.
- Valves must be secured with appropriate caps to avoid soiling.
- Do not exceed the maximum trailer speed.
- During the whole day cycle, take a minimum of one hour break at noon.

- Observe 30 minutes breaks for cooling the tires after driving 75 km or after 150 minutes of continuous driving, whichever comes first.
- Avoid damaged surfaces, sudden and variable manoeuvres, and high speeds when turning.

OBS.3.8-010.01.EN

5.12 REMOVAL OF CARGO RESIDUES

DANGER

Before entering the tank, switch off the tractor engine, disconnect the telescopic PTO shaft, restrain the trailer with the parking brake and secure the tractor against unauthorised access.

Never run the screw conveyor drive when the vertical conveyor inspection cover and tank floor flaps are open.

A change of grain grade or a prolonged stop of the trailer after work requires a thorough cleaning of the hopper and vertical conveyor from the residue of the previously transported load. For this purpose, use the floor flaps and the vertical conveyor revisions, which must be opened before work can begin. Use compressed air to clean the tank thoroughly. If it is not possible to clean the box in this way, use a jet of running water. Dry the trailer before loading, otherwise this can lead to clogging of the floor gate outlets and the conveyor.

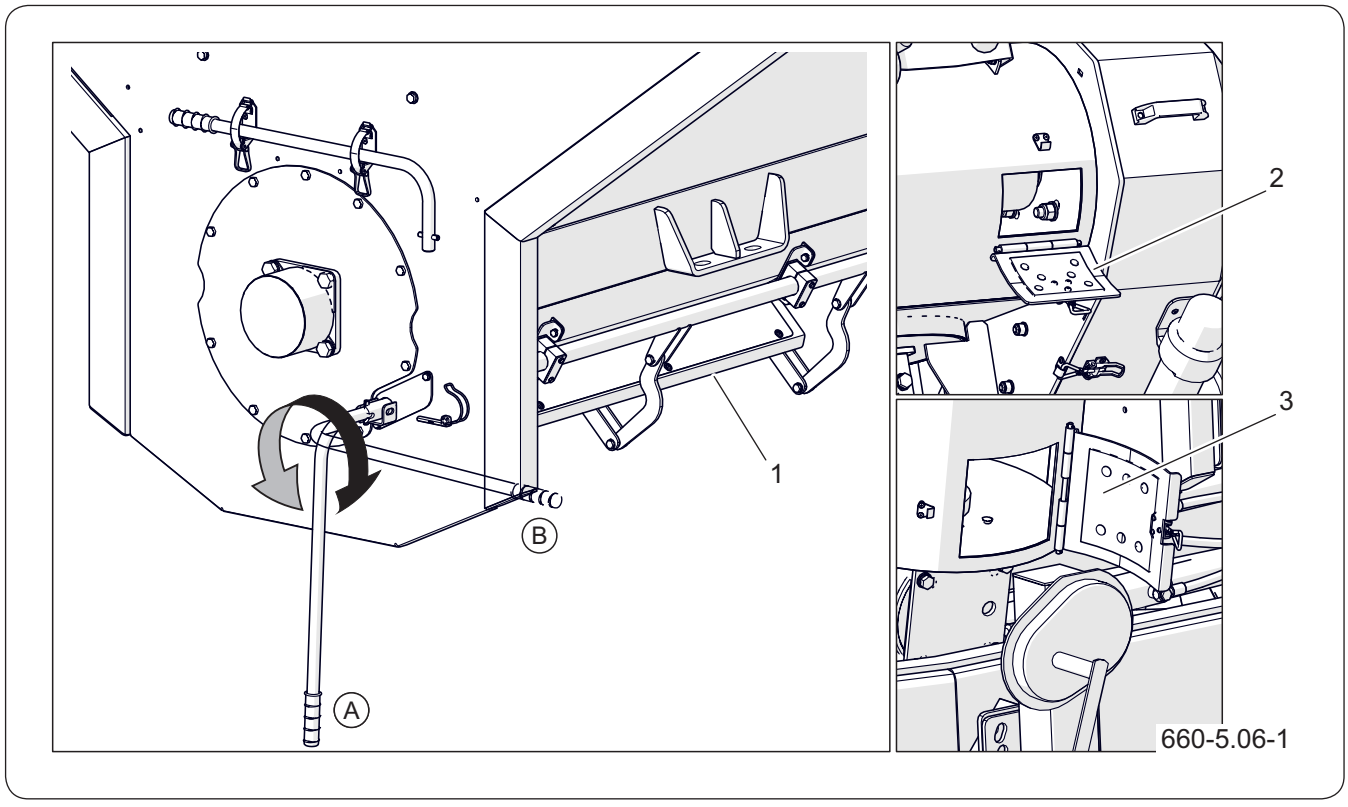

Figure 5.15 Operation of rolling tarpaulins

(1) floor flaps *(2) right-hand revision* *(3) left-hand revision*

(A) open position *(B) closed position*

OBS.3.H-010.01.EN

5.13 CLEANING

DANGER

Refer to the instructions for using cleaning detergents and preservatives.

When washing with detergents, wear suitable protective clothing and eye protection.

When cleaning the machine and staying on the cargo box, the tractor engine must be turned off, the articulated telescopic shaft must be disconnected.

Every day, after finishing, thoroughly clean the trailer of the remains of the transported material. If you use a pressure washer, learn about the principle of operation and recommendations for safe operation of this device.

Guidelines for cleaning the trailer

- Stop the tractor and trailer on a flat, even surface.
- Turn off the tractor engine and remove the ignition key.
- Secure the trailer and tractor with the parking brake, place wedges under the manure spreader wheel.
- Secure the tractor against unauthorized persons.
- Clean and wash the trailer with a strong stream of water and allow to dry in a dry and ventilated place.

The use of pressure washers increases the effectiveness of washing, but be careful when work. During washing, the nozzle of the cleaning aggregate must not be closer than 50 cm from the surface being cleaned. The water temperature should not exceed 55^0C.

Paint damage may occur when washing with excessive pressure.

Do not direct the water jet directly at the system components and trailer equipment, i.e. the control valve, brake cylinders, pneumatic, electric and hydraulic plugs, lights, electrical connectors, information and warning decals, data plate, conduit connections, lubrication points, etc. high water pressure may cause mechanical damage to these components.

CAUTION

Each time the work with trailer is finished, clean the trailer of the remains of the transported material.

After washing, wait for the machine to dry and then apply grease to all lubrication points as recommended. Wipe off excess grease or oil with a dry cloth.

During work, use appropriate, close-fitting protective clothing, gloves and the right tools.

- For cleaning and maintenance of plastic surfaces, use clean water or specialized preparations intended for this purpose.
- Do not use organic solvents, preparations of unknown origin or other substances that may damage the lacquered, rubber or plastic surface. Perform test on an invisible surface in case of doubt.
- Surfaces oily or greasy should be cleaned with petrol or degreasing agents, and then washed with clean water and detergent. Follow the cleaning agent manufacturer's instructions.
- Detergents intended for washing should be stored in their original containers, or alternatively, but marked exactly. The preparations cannot be stored in containers intended for storing food and beverages.
- Observe environmental protection principles, wash trailer in designated places.
- Washing and drying the trailer must take place at temperatures above $0\ ^{0}C$.

  In winter, frozen water can cause damage to the paint coat or machine components.

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5.14 STORAGE

After finishing work, carefully clean and wash the machine.

In the event of damage to the paint coating, damaged areas must be cleaned of rust and dust, degreased, and then painted with paint while maintaining a uniform colour and uniform thickness of the protective coating. Until painting, damaged areas shall be covered with a thin layer of grease, anti-corrosive agent or primer.

It is recommended that the machine be stored indoors or under a roof.

For long-term storage outside the room, it must be protected against the effects of weather conditions, especially factors causing corrosion of steel and accelerating the aging of tires.

In the event of a longer stop, it is necessary to lubricate all points regardless of the period of the last treatment.

Wash and dry the rims and tires. During longer storage, it is recommended to move the machine once every 2-3 weeks so that the place of contact of the tire with the ground is in a different position. The tires will not deform and will maintain proper geometry. You should also check your tire pressure from time to time, and if necessary inflate the wheels to the correct value.

Store the articulated telescopic shaft for connecting to the tractor in a horizontal position.

OBS.3.8-012.01.EN

Chapter 6

Periodic inspections and the technical support

PRONAR T743M

6.1 GENERAL

CAUTION

It is forbidden to use a damaged machine.

Repairs during the warranty period may only be carried out by authorized service centres.

When using the trailer, it is necessary to constantly check the technical condition and perform maintenance procedures that will allow the machine to be kept in good technical condition. Mandatory perform all maintenance and regulatory activities specified by the manufacturer in accordance with the assumed schedule.

Repair of the during the warranty period may only be carried out by Authorized Sales and Service Points (APSiO). The machine's warranty inspection is only carried out by authorized service centres.

In the event of unauthorized repairs, changes to factory settings or activities that have not been considered as being possible by the trailer operator (not described in this manual), the user loses the warranty.

Detailed information on the review schedule can be found in chapter entitled "*Maintenance and inspection schedule*".

After the warranty expires, it is recommended that inspections be carried out by specialized repair workshops.

During work, use protective clothing and protective equipment suitable for requirements.

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6.2 MAINTENANCE AND INSPECTION SCHEDULE

Table 6.1 Review categories

Category	Description	Respon-sible	Frequency
A	Daily review	Operator	Every day before first start-up or every 10 hours of continuous shift work.
B	Maintenance	Operator	Inspection performed periodically every 1,000 kilo-metres travelled or every month of trailer operation, depending on which comes first. A daily inspection should be carried out each time prior to this inspec-tion.
C	Maintenance	Operator	Review performed periodically every 3 months. A daily inspection must be carried out each time before this inspection is carried out and a review every 1 month of use of the trailer.
D	Maintenance	Operator	Review performed periodically every 6 months. A daily inspection, an inspection every 1 month of trailer use and an inspection every 3 months must be carried out each time before this inspection is carried out.
E	Maintenance	Operator	Review performed periodically every 12 months. A daily inspection, an inspection every 1 month of trailer use and an inspection every 3 months must be carried out each time before this inspection is carried out.
F	Guarantee	APSiO(1)	A charged inspection carried out after the first 12 months of use of the trailer, upon notification of the owner.
G	Maintenance	Service (2).	Inspection every 4 years of trailer use

(1) - Authorised Point of Sale and Service

(2) - post-warranty service

Table 6.2 Technical inspection schedule

Description of activities	A	B	C	D	E	F	Page
Measurement of air pressure	•						6.15
Checking the tightness of the running wheels	•						6.37
Air tank drainage	•						6.6
Checking plugs and connection sockets	•						6.11
Inspection of shields	•						6.9
Machine check before starting to drive	•						6.13
Gearbox control	•						6.17
Measurement of air pressure, check tires and wheels		•					6.15
Checking breake lining wear				•			6.23
Air filter cleaning				•			6.19
Checking the clearance of the axle bearings				•			6.24
Checking of mechanical breakes				•			6.26
Parking brake cable tension check					•		6.29
Cleaning the drainage valve				•			6.20
Drive belt tension check				•			6.21
The pneumatic braking system inspection					•		6.32
Hydraulic system checking					•		6.30
Lubrication	See table: *Trailer lubrication schedule*						6.49
Tightening torques for screw connections	See table: *Timing of tightening of vital screw connections*						6.33

Description of activities	A	B	C	D	E	F	Page
Replacement of hydraulic hoses						•	6.39
Tridem suspension control	See table: *Suspension check schedule*						6.40

Table 6.3 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-hydraulic systems	25 - 45 mm	
Minimum brake lining thickness	5 mm	
Angle between spreader axis and fork	90°.	With the brake applied

SER.3.H-001.01.EN.

6.3 AIR TANK DRAINAGE

- Press the stem of the drain valve (1) located at the bottom of the tank (2).
- The compressed air in 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.
- If it is necessary to clean the drain valve, follow the chapter "*Cleaning the drain valve"*.

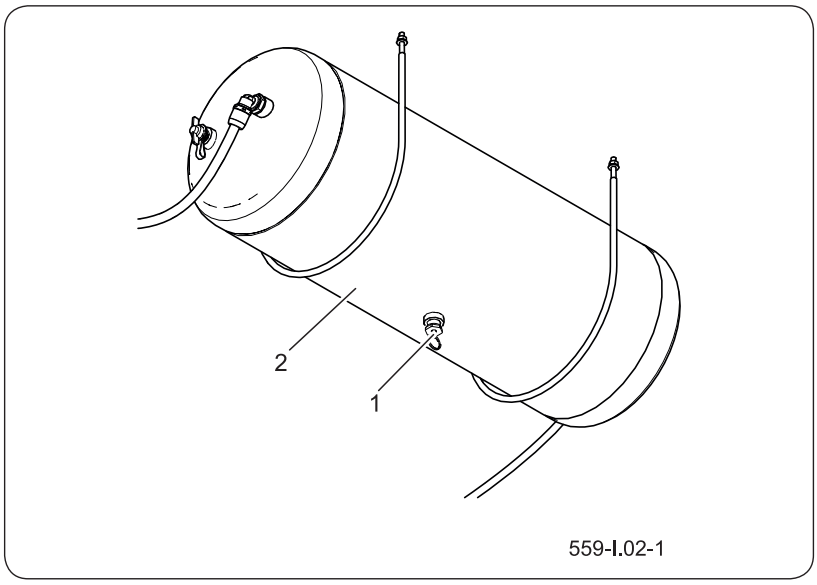

Figure 6.1 Air tank
(1) drain valve *(2) air tank*

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6.4 PREPARING OF THE TRAILER

- Connect the trailer to the tractor.
- Place the tractor and trailer on firm, level ground. Set the tractor to drive straight ahead.
- Apply the tractor's parking brake.
- Turn off the tractor engine and remove the ignition key from the ignition switch. Close the tractor cab, thus securing the tractor against unauthorised access.
- Place locking chocks under the trailer wheel.

  Make sure the trailer does not roll away during the inspection.
- If the wheel needs to be lifted during inspection, place the locking chocks under the

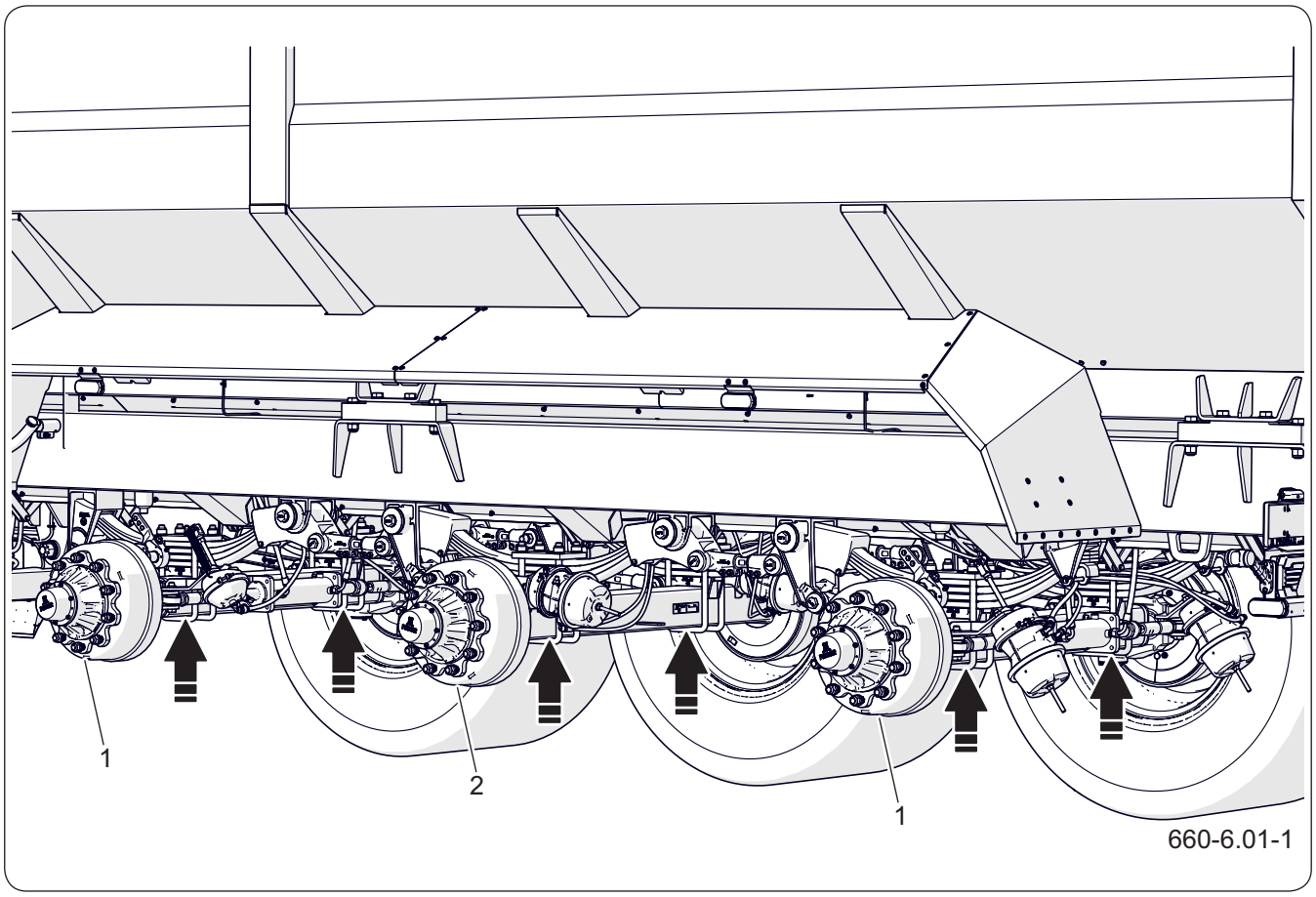

Figure 6.2 Recommended trailer support points

(1) Torsion axle *(2) Rigid axle*

DANGER

Secure the tractor cab against unauthorised access.

When working with the lift, read the instructions for this equipment and follow the manufacturer's recommendations. The jack must stand firmly against the ground and trailer components.

Before carrying out maintenance and repair work on a raised trailer, make sure it is properly secured and will not roll during operation.

wheel of the rigid axle on the opposite side. Lift the bases at the locations indicated by the arrow in the above drawing.

The recommended place to support the trailer is the running axle between the bow bolts.

- The jack must rest on a firm and stable surface.
- The lift must be matched to the empty weight of the trailer.
- In exceptional cases, release the parking brake on the trailer, e.g. when measuring the play of the running axle bearings. In this case, take special care.

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6.5 INSPECTION OF SHIELDS

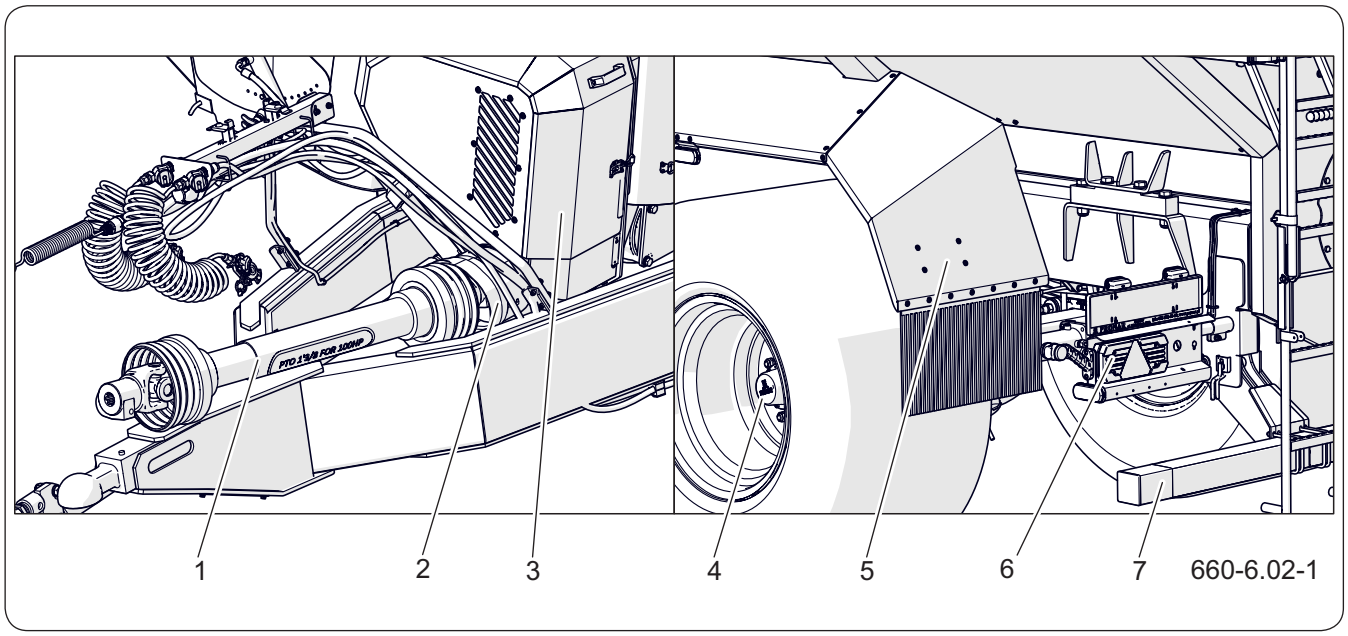

Figure 6.3 Trailer covers

(1) PTO shaft guard *(2) gearbox shaft guard* *(3) gearbox cover*
(4) axle cap *(5) mudguard* *(6) lamp cover*
(7) bumper

DANGER

It is forbidden to use the trailer with damaged or incomplete covers.

Shields protect the user of the trailer from loss of health or life, and are a protective element for machine components. For this reason, their technical condition must be checked before starting work. Damaged or lost components must be repaired or replaced with new ones.

The scope of activities

- Check the completeness of the safety guards.
- Check that the covers are fitted correctly, assess the condition of the bumper (6) and the fixing of the lamp shade covers (7).
- Check that the mudguards (5) are correctly fitted and in good condition.
- Check the security and completeness of the caps (1).

- Ensure that the PTO shaft guard (1) is complete.
- Check the gearbox covers (3) for collision and correct attachment.
- If necessary, tighten the screw connections of the casing mountings.

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6.6 CHECKING PLUGS AND CONNECTION SOCKETS

A damaged body of the hydraulic or pneumatic hose connector or socket 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,

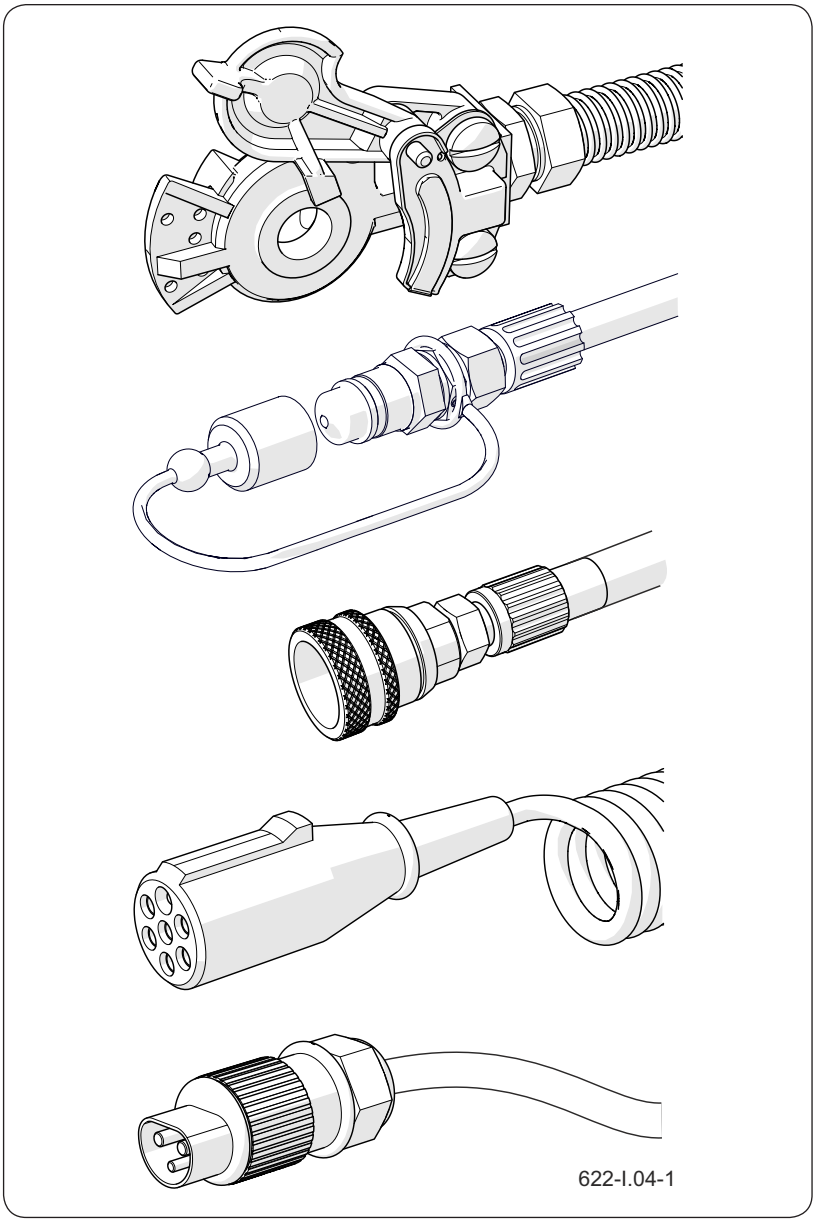

Figure 6.4 Checking the trailer connections

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.

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6.7 MACHINE CHECK BEFORE STARTING TO DRIVE

DANGER

Driving with a faulty lighting or brake system is prohibited.

If the machine is damaged, refrain from using it until it has been repaired.

- Ensure that the electrical, hydraulic and pneumatic hoses are not damaged before connecting the trailer to the tractor.
- Check the completeness, technical condition and correct operation of the machine lighting.
- Check the cleanliness of all electric lamps and reflectors.
- Before driving on a public road, remove the tail lamp covers and place them in the space provided.
- Mount the triangular plate of a slow-moving vehicle
- Ensure that a warning reflective triangle is fitted to the tractor.
- Check that the actuator vents are not clogged with debris and that there is no water or ice inside. Check that the actuator is fitted correctly.
- Clean the actuator if necessary. During the winter period, it may be necessary to defrost the actuator and remove accumulated water

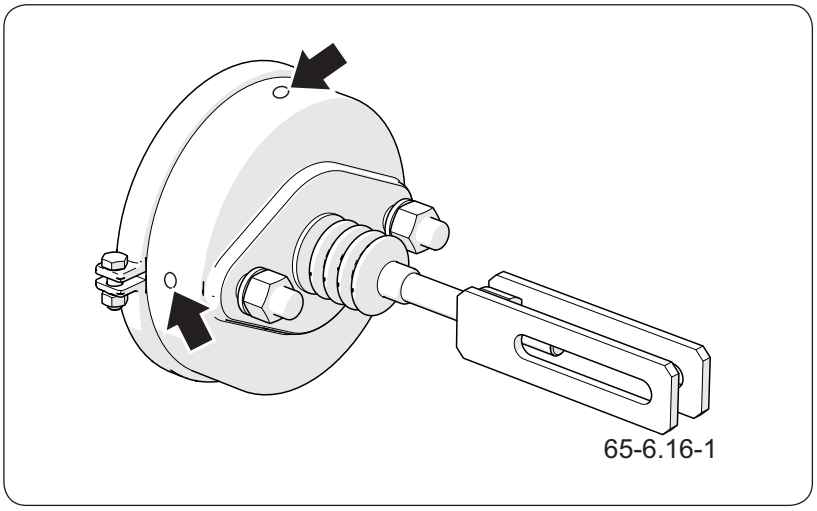

Figure 6.5 Brake actuator

through the blocked vents. If damage is found, replace the actuator.

- When starting from a standstill, check the function of the service brake system. An adequate level of air pressure in the machine's air tank is required for proper operation of the pneumatic system.
- Check the correct functioning of the other systems on an ongoing basis during the operation of the machine.

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6.8 MEASUREMENT OF AIR PRESSURE, CHECK TIRES AND WHEELS

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.

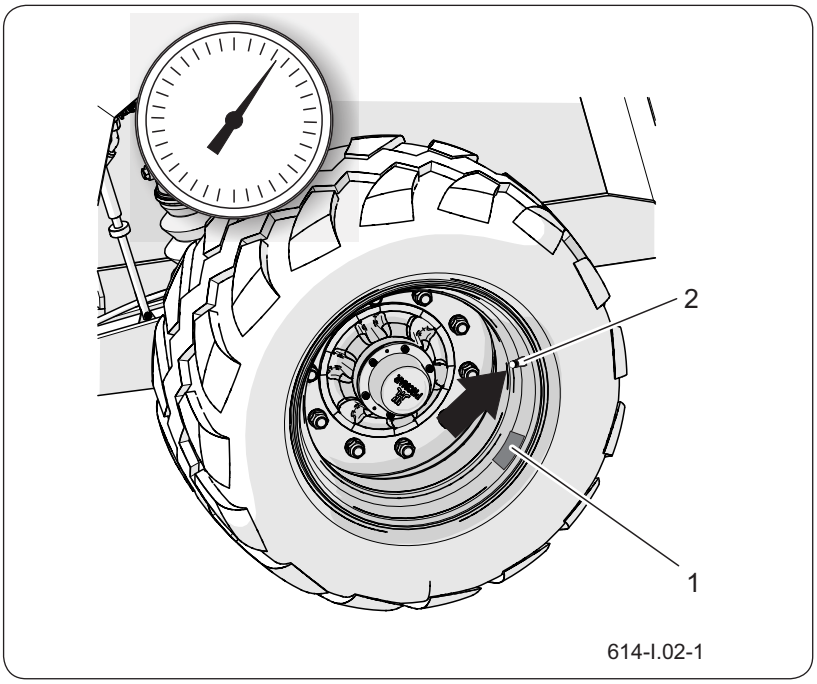

Figure 6.6 Trailer wheel
(1) sticker *(2) valve*

During pressure measurement the trailer must be unloaded. Checking should be carried out before driving, when the tires are not warm, or after a long standstill of the trailer.

The scope of activities

- Connect the pressure gauge to the valve.
- Check the 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 the tread depth.
- Check the side wall of the tire.
- Inspect the tire for defects, cuts, deformations, bumps indicating mechanical damage to the tire.
- Check that the tire is correctly positioned on the rim.

- Check the tire age.

When checking pressure, pay attention to the technical condition of rims and tires. In the event of mechanical damage, consult your nearest tire service centre and ensure that your tire defect is eligible for replacement. Rims should be checked for deformation, material cracks, weld cracks, corrosion, especially around welds and in the place contact with the tire.

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6.9 GEARBOX CONTROL

DANGER

With the machine connected to the tractor, before carrying out the inspection, switch off the PTO and engine, remove the ignition key, immobilise the vehicle with the parking brake.

It is forbidden to carry out maintenance and repair work underneath an unsecured machine.

Do not touch the gearbox once the machine has stopped! Due to the high oil temperature, gearbox surfaces can reach high and dangerous temperatures.

Wear appropriate personal protective equipment, i.e. protective clothing, footwear, gloves, goggles, when carrying out oil inspection and refilling work. Avoid oil contact with the skin.

ADVICE

Use 4 litres of SAE 90 EP gear oil (API GL-5 SAE 80W/90) to lubricate the gearbox.

ADVICE

Perform the first oil change in the gearbox after the first 50 hours of operation. Carry out subsequent oil changes every 500 hours or once a year (whichever comes first).

Servicing the gearbox comes down to a general inspection of its condition, replacing or topping up any loss of gear oil. If the gearbox is damaged, contact an authorised service centre for repair.

Perform an oil change just after operation when the gearbox is warmed up and any contaminants are mixed in with the oil. Carry out all oil changes when the machine is level, disconnected from the tractor, supported on a parking stand.

If you notice a leak, carefully inspect the seal and check the oil level. Operating the gearbox with low or no oil can lead to permanent damage to its mechanisms.

The correct oil level (4) in the gearbox should reach the lower edge of the control hole secured by the breather (1). A filler hole protected by a filler plug (2) is used to top up the oil.

Oil change:

1. Place the trailer on a firm surface. Level the

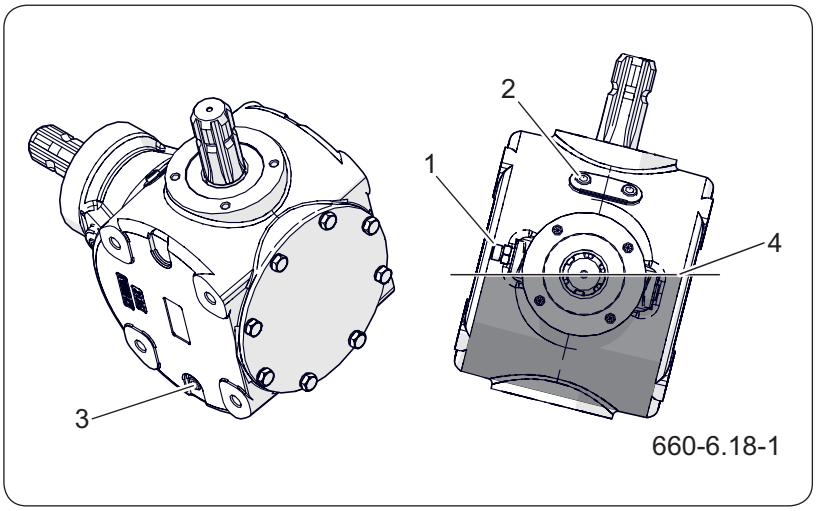

Figure 6.7 Bevel gearbox

(1) air vent *(2) filler plug*

(3) drain plug *(3) correct oil level*

CAUTION

The oil level in the gearboxes should be checked before every time the machine is started.

When checking the gearbox, the machine must be switched off and the oil cooled.

Do not pour too much oil. Exceeding the gearbox oil level can cause the gearbox temperature to rise excessively.

If a leak is noticed, the seal should be carefully inspected and the oil level checked.

Operating the gearbox with too little or no oil can lead to permanent damage to its mechanisms.

Repair of the gearbox during the warranty period may only be carried out by specialised mechanical workshops.

machine.

2. Prepare a vessel for the used oil.
3. Unscrew the filler cap (2).
4. Unscrew the drain plug (3) and pour the oil into the vessel.
5. If the oil manufacturer recommends flushing the gearbox, perform the flush following the oil manufacturer's instructions.

   Such notes may be listed on the oil package.
6. Pour new oil through the filler hole (2).

   The gearbox holds 4l of SAE 90 EP oil (API GL-5 SAE 80W/90). If oil appears in the vent hole, refrain from filling the gearbox.
7. Turn off the filler cap and vent.

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6.10 CLEANING THE AIR FILTERS

The scope of activities

- 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 filter lock (1).
- 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.
- The cartridge and the filter body should be thoroughly washed and blowed out with compressed air. Installation should be made in reverse order.

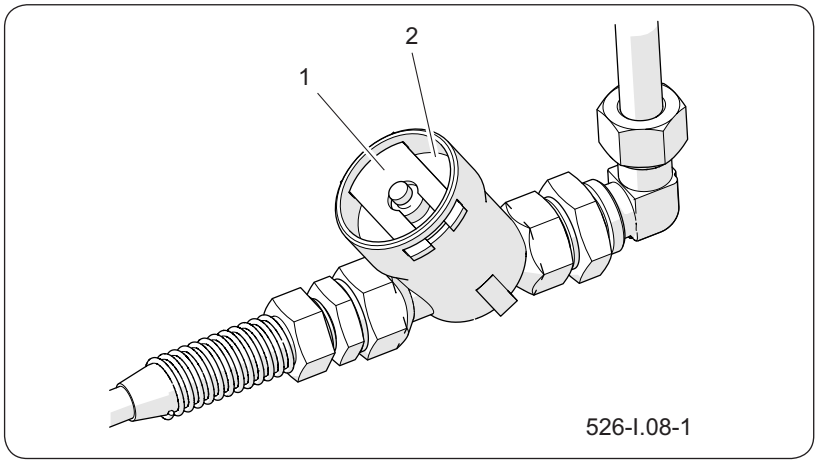

Figure 6.8 Air filter
(1) filter *(2) cover*

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6.11 CLEANING THE DRAINAGE VALVE

DANGER

Bleed the air tank before removing the drain valve.

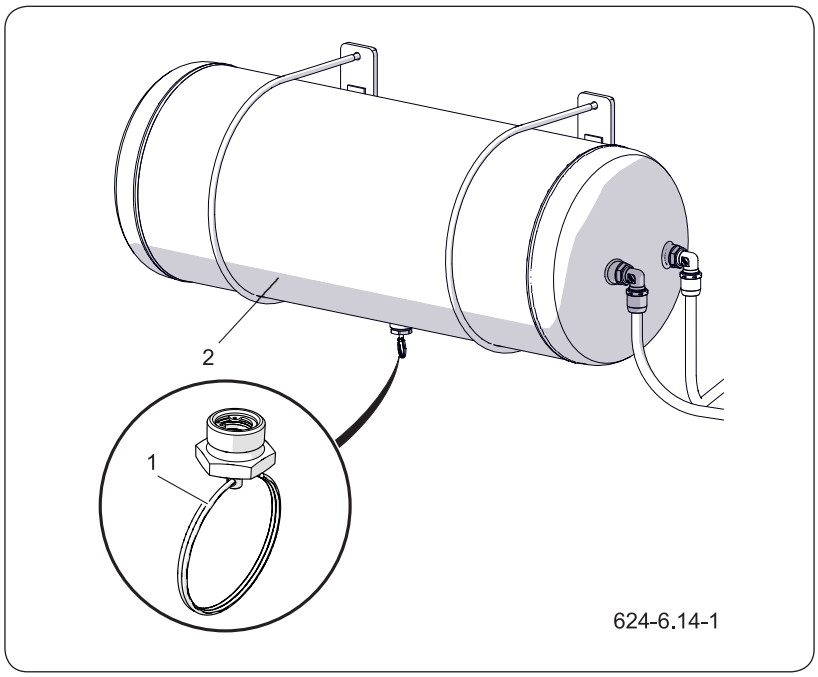

Figure 6.9 Air tank
(1) drain valve *(2) tank*

The scope of 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.

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6.12 DRIVE BELT TENSION CHECK

CAUTION

Use only original spare parts.

Pay particular attention to the condition of the V-belt guards and the completeness of their mountings.

Check the tension of the drive belt regularly.

DANGER

The belt transmission rotates at high speed.

It is forbidden to operate the machine with the guards removed or damaged. Risk of serious accidents.

Absolutely replace damaged belt transmission components with new ones recommended by the machine manufacturer.

ADVICE

Perform a tension check on the newly fitted drive belt 0.5 - 4 hours after starting the drive.

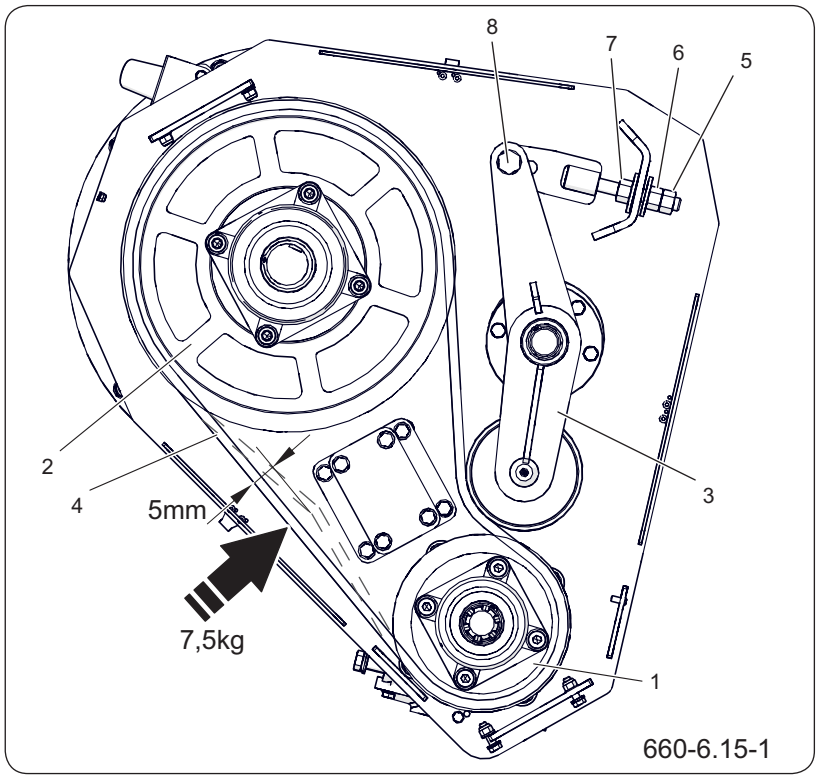

Figure 6.10 Belt transmission

(1) drive wheel *(2) conveyor wheel*
(3) tensioner *(4) combination belt*
(5) screw *(6) lock nut*
(7) lock nut *(8) bolt connection*

The correct process of unloading the material requires the correct tension of the V-belt driving the floor conveyor. Replace the combination belt if it shows signs of wear, damage, surface fraying or has been overstretched.

Incorrect V-belt tension will result in poor performance, belt and pulley wear.

Checking the belt transmission

- Detach and remove the cover.
- Inspect the pulleys carefully; replace damaged or cracked pulleys with new ones.
- Check axial and lateral play of both wheels if

possible.

- Check the tension of the drive belt.
- Check the adhesion of the belt to the pulleys.
- Put on the cover

Composite belt tension

- Loosen the screw connection (8).
- Unscrew the nut (5) and counter nut (6).
- Loosen the lock nut (7).
- Tighten the belt by turning the nut (6) clockwise.
- Check belt tension (4).
- Tighten the stop nut (7).
- Tighten the lock nuts (5).
- Tighten the screw connection (8).

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6.13 CHECKING BRAKE LINING WEAR

ADVICE

Brake lining wear control,

- according to the schedule of inspections,
- if the brakes overheat,
- the stroke of the brake cylinder piston significantly increases,
- in the event of unnatural noises coming from around the road axle drum.

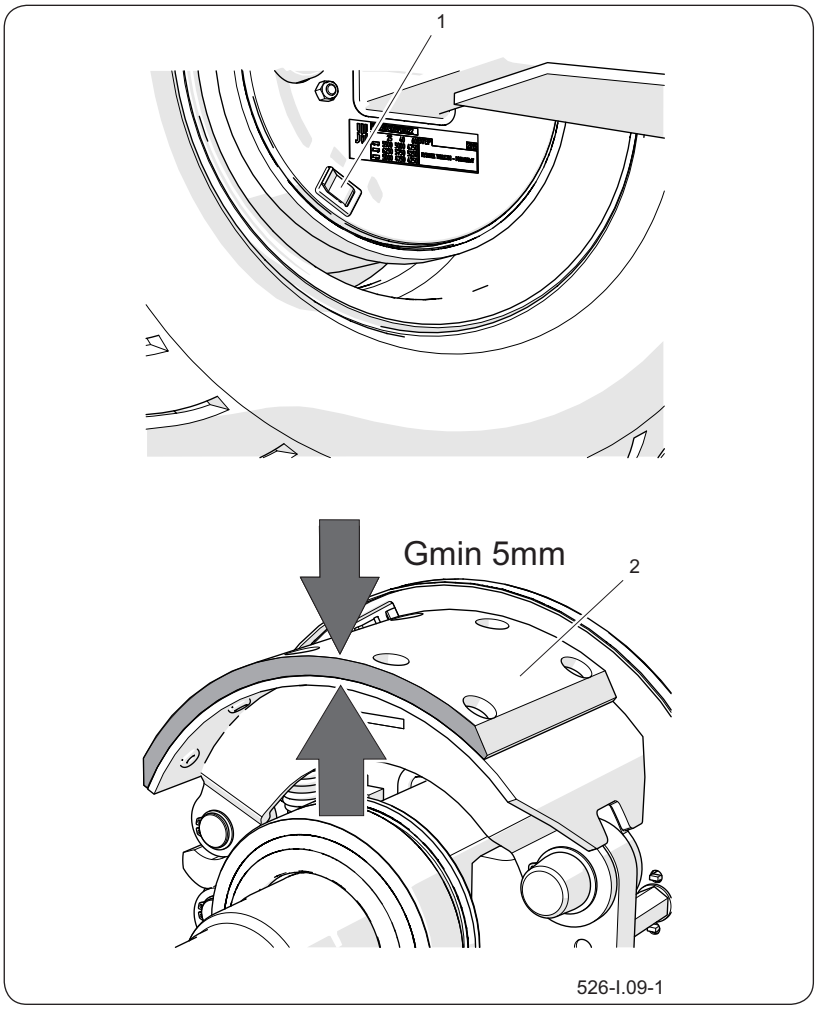

Figure 6.11 Checking the brake lining thickness
(1) blanking plug (2) brake lining

- 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 must be replaced if the thickness of the brake lining is less than 5 mm.
- Check the the remaining linings for wear.

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6.14 CHECKING THE CLEARANCE OF THE AXLE BEARINGS

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.

DANGER

Before starting work, read the jack User's Manual.

Ensure that the machine will not roll when checking the looseness of the axle bearings.

Perform a clearance control of the bearings only and only when the machine is connected to the tractor, and the load box is empty and is not raised.

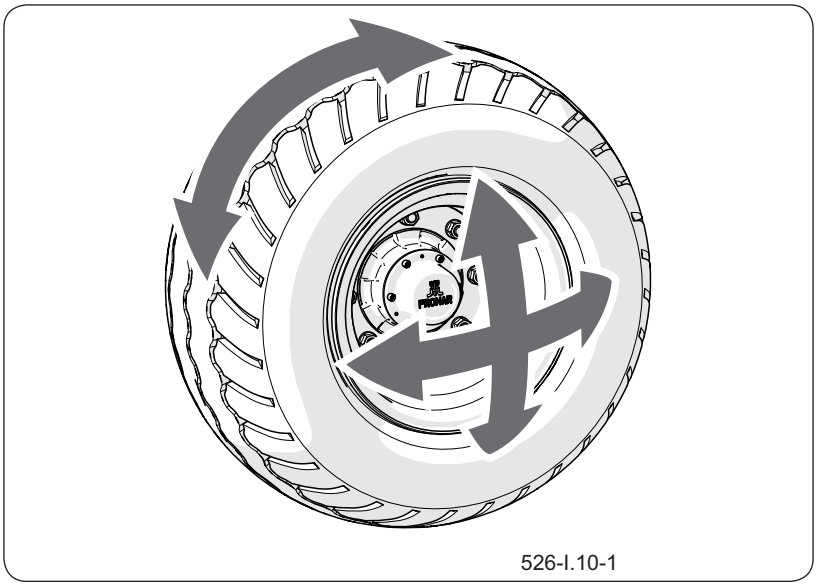

Figure 6.12 Clearance inspection

- 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 jamming.
- Turn the wheel so that it rotates very quickly, check the that the bearing does not make any unusual sounds.
- Try to feel looseness by moving the wheel.
- Repeat steps separately for each wheel.

  Remember that the lift 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 re greased. 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 the technical condition of the hub cover, replace if necessary.

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6.15 CHECKING OF MECHANICAL BRAKES

ADVICE

Checking the technical condition of the brakes:

- according to the schedule of inspections,
- before the period of intensive use.
- after repairing the braking system.
- in the event of uneven braking of the trailer wheels.

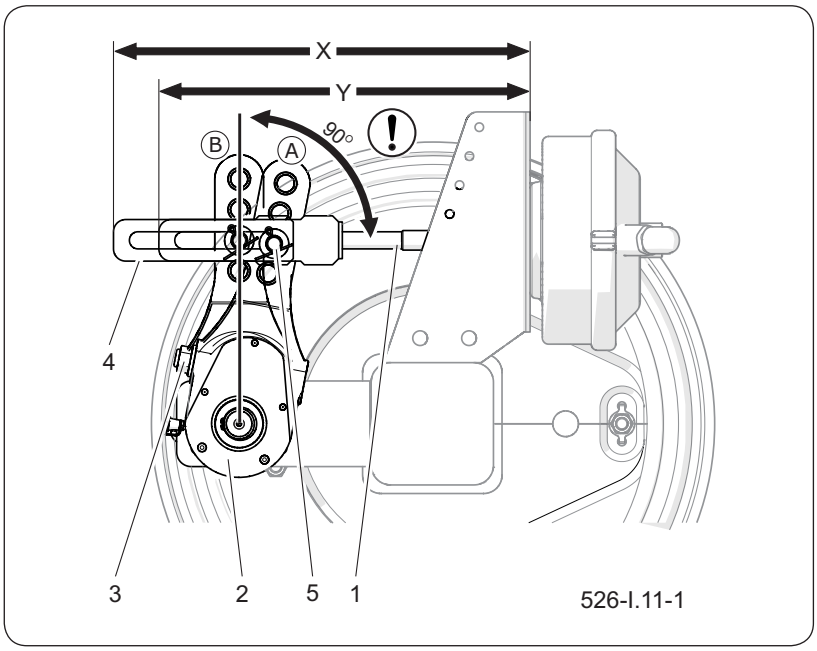

Figure 6.13 Brake check

(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

In a correctly adjusted brake the cylinder piston stroke brake should be within the range given in Table 6.3 and depends on the type of cylinder used. 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 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 X-Y (rod stroke).
- Check the angle between the cylinder piston axis and the expander lever.
- If the expander arm angle (2) and piston rod stroke exceed the range given in table 5.3, the brake should be adjusted.

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6.16 PARKING BRAKE CABLE TENSION CHECK

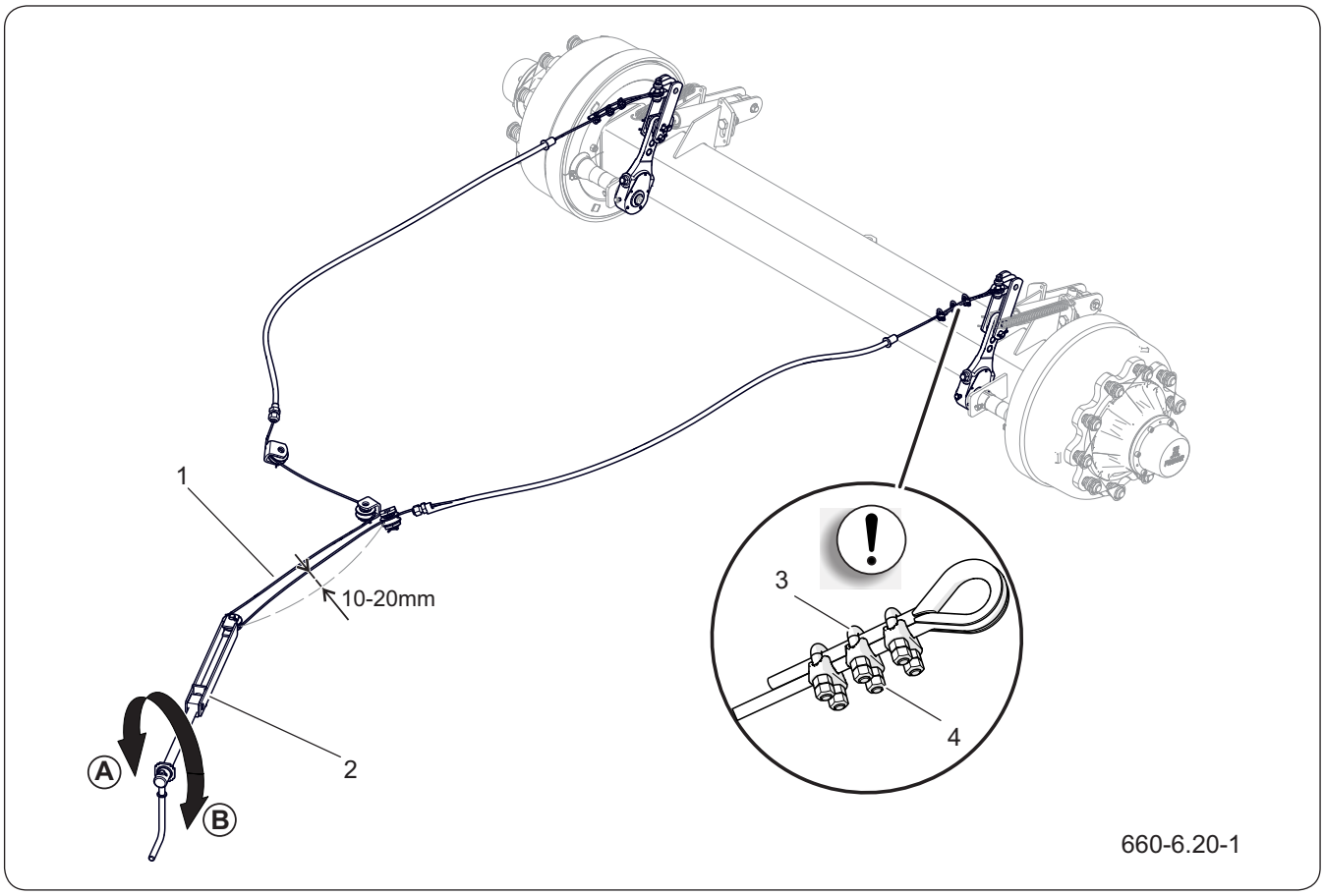

Figure 6.14 Wire tension check

(1) cable *(2) brake mechanism* *(3) cable clamp*

(4) clamp nut

DANGER

It is forbidden to use the machine with a faulty brake system.

Voltage control

Check the parking brake after checking the mechanical brake on the driving axle.

- Attach the machine to the tractor. Place the machine and tractor on level ground.
- Place chocks under one wheel of the machine's rigid axle;
- Turn the brake mechanism crank (2) in direction (B) to apply the parking brake.
- Check cable tension (1).
- With the mechanism screw fully removed, the cable should sag approximately 10 to 20 mm.

Cable tension adjustment

- Remove the brake mechanism screw (2) to the maximum by turning the crank in direction (A).
- Loosen the nuts (4) of the cable clamps (3) on the handbrake cable (1).
- Tension the cable (1) and tighten the nuts (4) of the clamps.
- Apply the parking brake and release it again. Check (approximately) the cable slack. When the service and parking brake are fully released, the cable should sag approximately 10-20 mm. The axle spreader levers should be in the rest position.

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6.17 HYDRAULIC SYSTEM CHECKING

UWAGA

It is forbidden to use the machine with a faulty hydraulic installation.

Checking the tightness of the hydraulic system

- Connect the trailer to tractor.
- Connect all hydraulic system hoses according to the instructions in the manual.
- Clean the 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. Check the all hydraulic circuits for leaks.
- After completing the inspection, put all cylinders to the rest position.

In the event of oiling on the hydraulic cylinder body, the nature of the leakage must be check.

When the cylinder is fully extended, check the the seal locations. Small leaks with symptoms of "sweating" are permissible. When you notice "droplets" type leaks do not use the machine until the fault is removed. If malfunctions appeared in brake cylinders or other brake installation elements, you can not move with the trailer until the fault is removed.

If visible moisture appears on the cable connectors tighten the connector with a specified torque and carry out the test again. If the problem persists replace the leaking element.

Control of the technical condition of hydraulic connectors

Hydraulic couplings for connecting to the tractor must be technically sound and kept clean. Each time before connecting, make sure that the sockets in the tractor are maintained in good condition. The tractor's and trailer's hydraulic systems are sensitive to the

presence of solid impurities that can cause damage to precise components of the installation (scratch the surface of cylinders, etc.)

SER.3.8-015.01.EN

6.18 THE PNEUMATIC BRAKING SYSTEM INSPECTION

DANGER

It is forbidden to use the machine with inefficient braking system.

DANGER

Repair, replacement or regeneration of pneumatic system components may be performed only in a specialized workshop.

The scope of activities

- Connect the machine to the tractor.
- Block the tractor and the machine with the parking brake. Put the wedges under one wheel of the rigid axis of the machine.
- Start the tractor to supplement the air in the machine braking system tank.
- Switch off the tractor engine.
- Check the the system components with the tractor brake pedal released.
- Pay special attention to cable connections and brake actuators.
- Repeat the system check with the tractor brake pedal depressed.

In the event of a leak, the compressed air will leak out in places of damage with a characteristic hiss. The leakage of the system can detect coating checked elements for washing or other foaming preparation, which will not interact aggressively to the elements of the installation. Damaged elements should be replaced or sent for repair. If the leak appeared around the connections, user can tighten the connector on their own. If the air continues to leak replace the elements of the connector or sealing into new ones.

When checking for leaks, pay attention to the technical condition and degree of cleanliness of the system components. Contact of pneumatic conduits, seals etc. with oil, grease, gasoline etc. may damage them or accelerate the aging process. Bisted, permanently deformed, cut or damaged wires should be replaced for new ones.

SER.3.G-019.01.EN

6.19 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 bolted connections are shown in the Table. The given values apply to non-lubricated steel bolts.

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

Check the tightness using a torque wrench. During daily inspection of the manure spreader pay attention to loose connections and tighten the connector if necessary. Replace lost items with new ones.

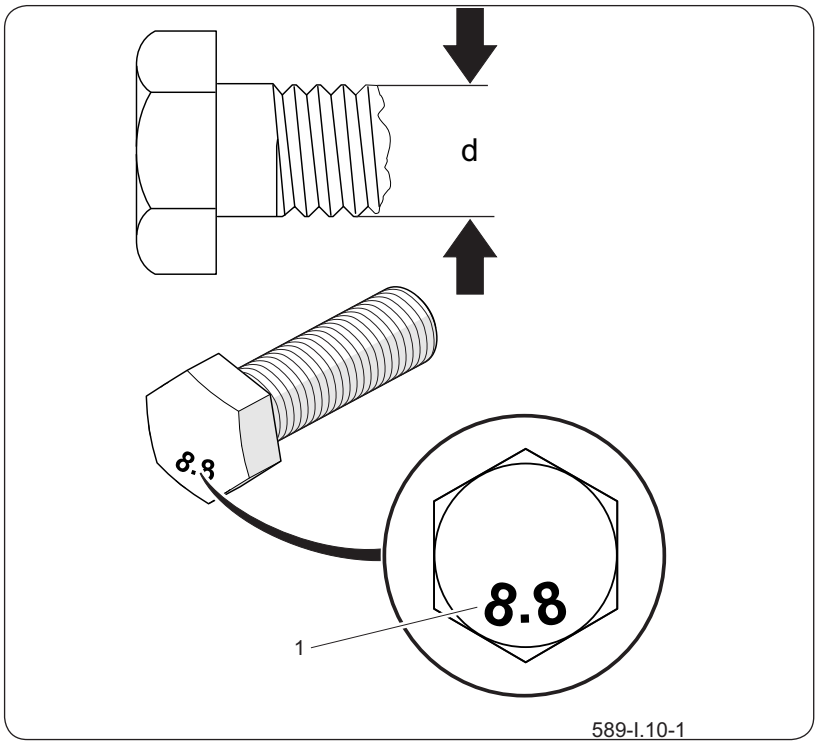

Figure 6.15 Metric thread screw
(1) strength class *(d) thread diameter*

Table 6.4 Tightening torques for screw connections

Metric thread		
	8.8(*)	**10.9**(*)
M8	25	36
M10	49	72
M12	85	125
M14	135	200
M16	210	310
M20	425	610
M24	730	1,050
M27	1,150	1,650
M30	1,450	2,100

(*) - strength class according to DIN ISO 898

Table 6.5 Tightening torques of hydraulic elements

Thread of nuts	Wire diameter DN (inch)	Tightening torques [Nm]
M10x1 | M12x1.5 | M14x1.5	6 (1/4”)	30÷ 50
M16x1.5 | M18x1.5	8 (5/16”)	30÷ 50
M18x1.5 | M20x1.5 | M22x1.5	10 (3/8”)	50÷ 70
M22x1 | M24x1.5 | M26x1.5	13 (1/2”)	50÷ 70
M26x1.5 | M27x1.5 | M27x2	16 (5/8”)	70÷ 100
M30x1.5 | M30x2 | M33x1.5	20 (3/4”)	70÷ 100
M38x1.5 | M36x2	25 (1”)	100÷ 150
M45x1.5	32 (1.1/4”)	150÷ 200

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6.20 TIGHTENING ROAD WHEELS

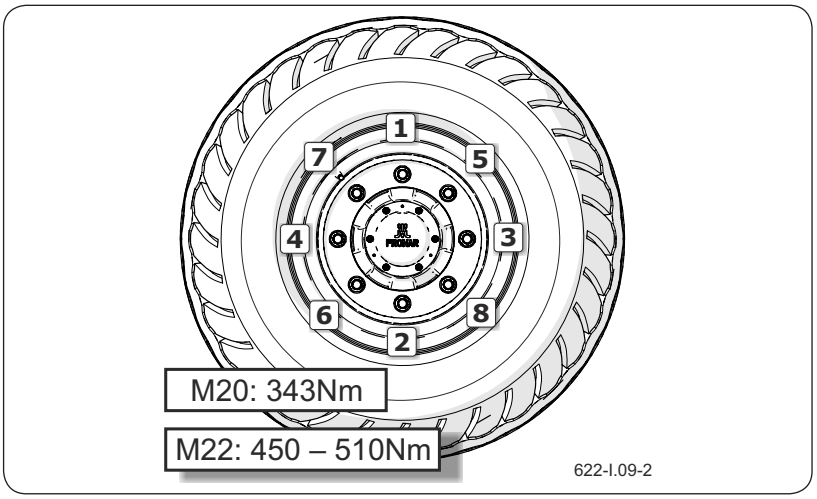

Figure 6.17 The order of the nuts tightening (8 pcs)

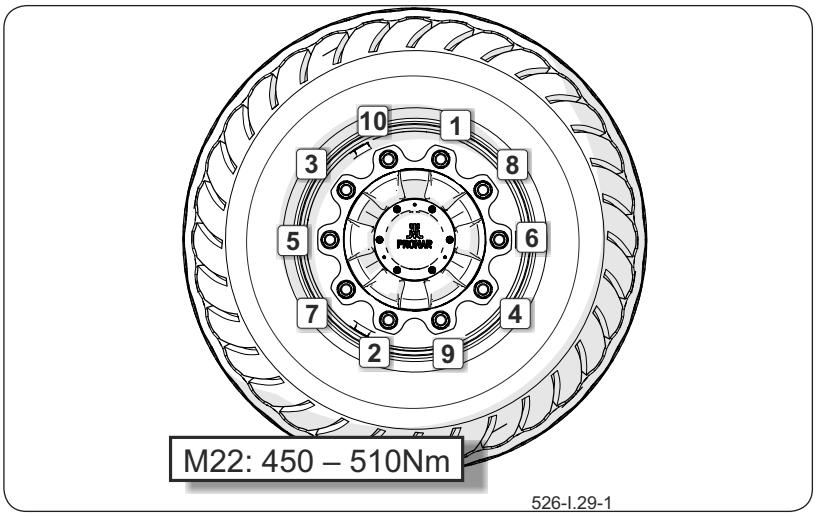

Figure 6.16 The order of the nuts tightening (10 pcs)

The wheel nuts be tightened gradually diagonally (in several stages until the required tightening torque is achieved), using a torque wrench. The recommended order of tightening of the nuts and the tightening torque is shown on the figures.

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 first use of the machine (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.

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6.21 INSPECTION OF TRIDEM SUSPENSION SYSTEM

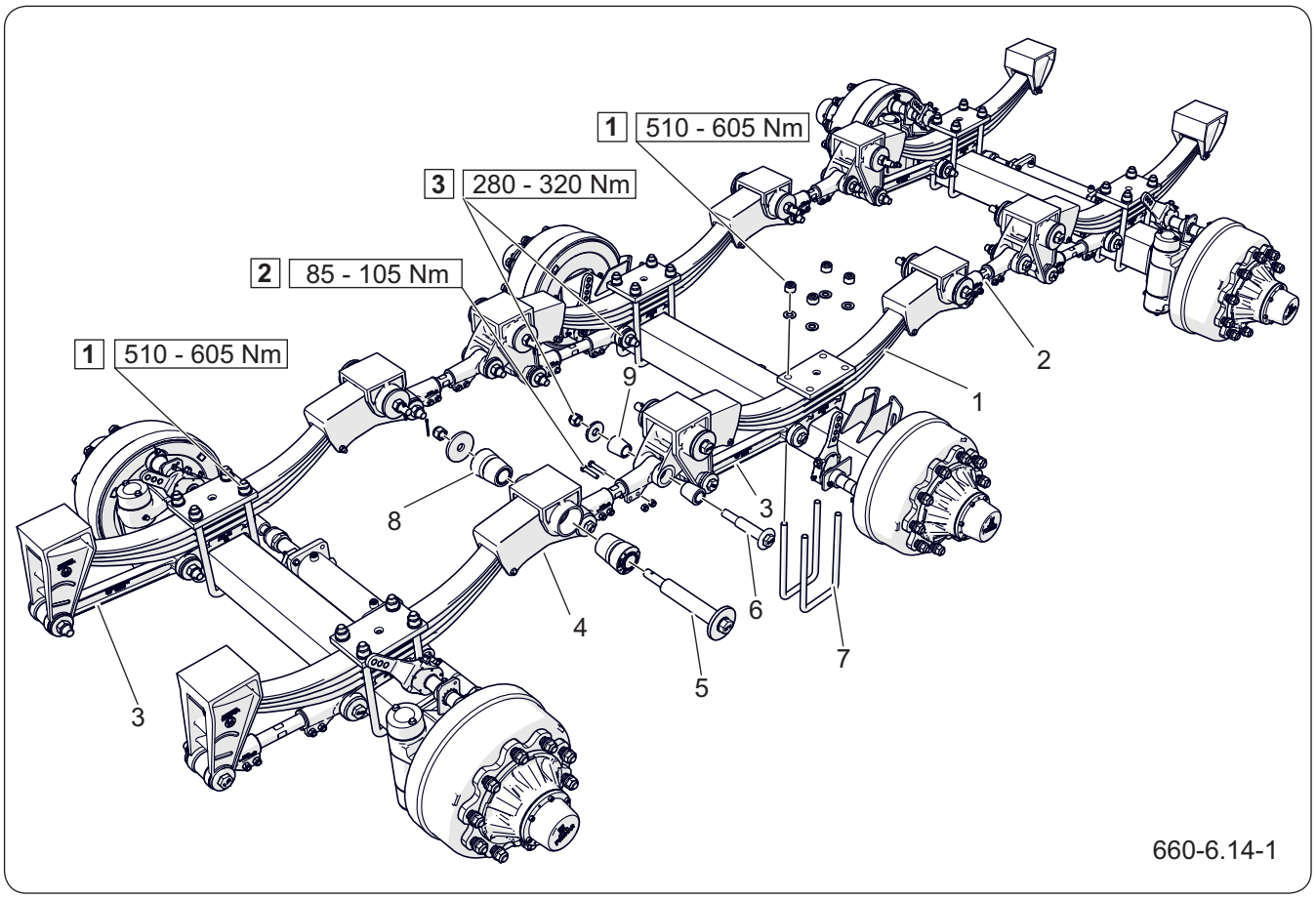

Figure 6.18 Maintenance od tridem mechanical suspension system, axle mounted under the spring

(1) spring, (2) adjustable link, (3) rigid link, (4) swing arm, (5) suspension pin,
(6) spring leaf mounting, (7) axle mounting U-bolt, (8) (9) metal-rubber sleeve

Table 6.6 Suspension system inspection schedule

Item	Maintenance activities	Frequency
1	Checking the tightening of the nuts of U-bolts on the axle should be performed using a torque wrench with a torque of 510 - 605 Nm (M22x1.5), the first after driving 50 km with a load or after 500 hours of operation, the next after 5,000 km or after 1,500 hours of operation, then once a year.	first after travelling the 50 km with a load or after 500 hours of operation, next after travelling 5000 km or after 1500 hours of operation, then once a year

Item	Maintenance activities	Frequency
2	Checking the tightening of the nuts of adjustable control rods should be performed using a torque wrench with a torque of 85 - 105 Nm, the first after driving 50 km with a load or after 500 hours of operation, the next after 5,000 km or after 1,500 hours of operation, then once a year.	first after travelling the 50 km with a load or after 500 hours of operation, next after travelling 5000 km or after 1500 hours of operation, then once a year
3	Checking the tightening of the pin nuts should be performed using a torque wrench with a torque set to 280 - 320 Nm. The inspection applies to the rocker arms pins and control rods pins. In the case of the rocker arms pins, check the condition of the securing pin. If any are destroyed or damaged, they must be replaced with new.	first after driving 50 km with a load or after 500 hours of operation, another one after 5,000 km or after 1,500 hours of operation, then once a year
4	Inspection of the spring support consists in checking whether there is grease at the point of contact between the spring and the bracket or rocker arm. Use lithium grease with EP additive for lubrication.	after receiving the trailer, then once a year
5	Inspection of metal-rubber bushings: visual assessment of the condition of the bushings. The pressure washers should not come into contact with the bracket, if they do, replace the rubber conical bushings.	once a year
6	Check the condition of the suspension springs (1), carefully clean and brush the sides of the suspension springs in order to confirm that there are no cracks.	once a year

TIP

If the trailer is operated in severe conditions or is operated intensively, the maintenance activities should be performed more frequently.

ATTENTION

Bolt and nut connections of suspension system should be tightened under load.

SER.3.H-005.01.EN

6.22 REPLACEMENT OF HYDRAULIC HOSES

Rubber hydraulic hoses should be replaced every 4 years regardless of their technical condition. This operation should be entrusted to specialized workshops.

SER.3.8-020.01.EN

6.23 ADJUSTING THE CLEARANCE OF THE AXLE BEARINGS

CAUTION

Adjusting the bearing looseness only be carried out when the trailer is connected to the tractor and the loading box is empty.

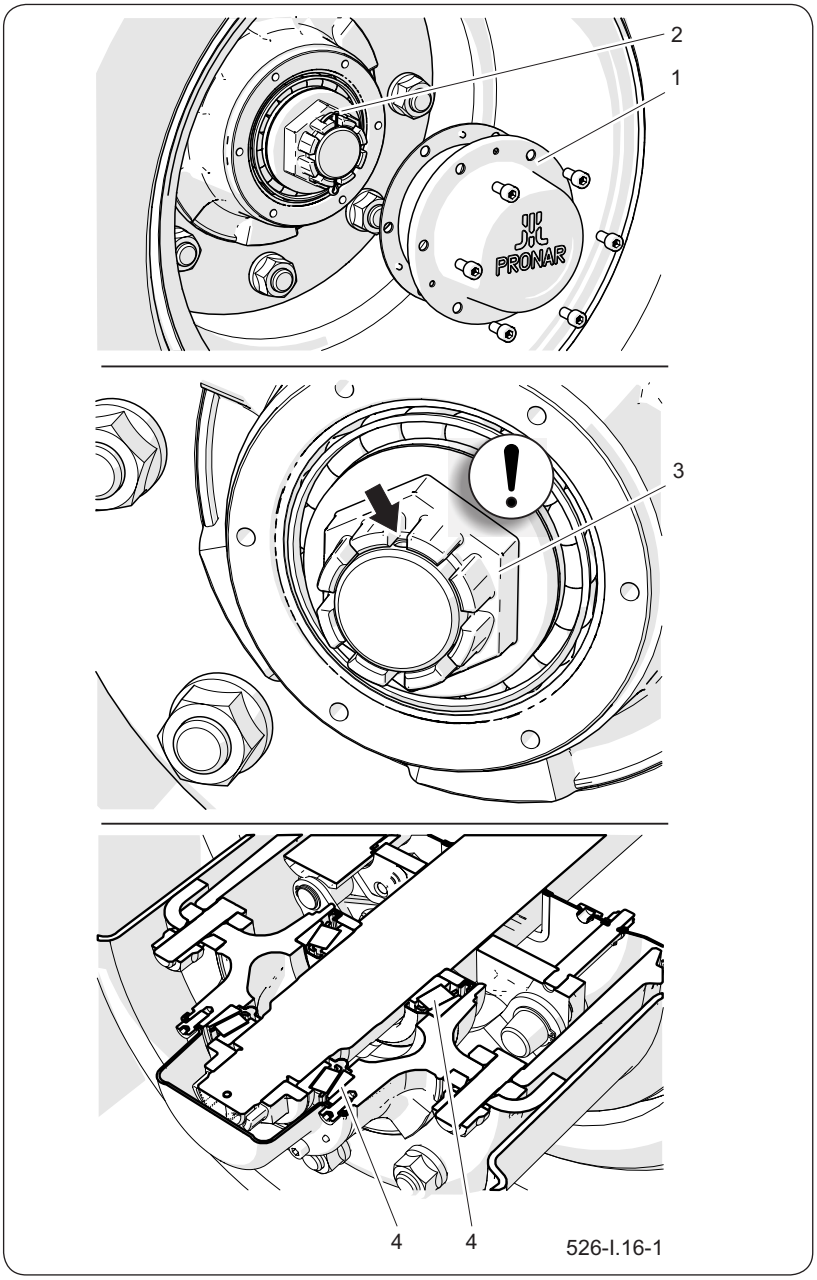

Figure 6.19 The principle of bearing clearance adjustment

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

The scope of activities

Prepare the tractor and machine for adjustment as described in chapter „Preparing of the machine”.

Remove the hub cover (1).

- Remove the cotter pin (2) securing the castellated nut (3).

- Tighten the the castellated nut to remove slack.

  The wheel should rotate with slight resistance.
- 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 without excessive resistance.

  The wheel should rotate without excessive resistance. Too strong pressure is not recommended due to the deterioration of bearings.
- Secure the castellated nut with a cotter pin and mount the hub cover (1).
- Gently tap the hub with a rubber or wooden hammer.

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6.24 BRAKE ADJUSTMENT

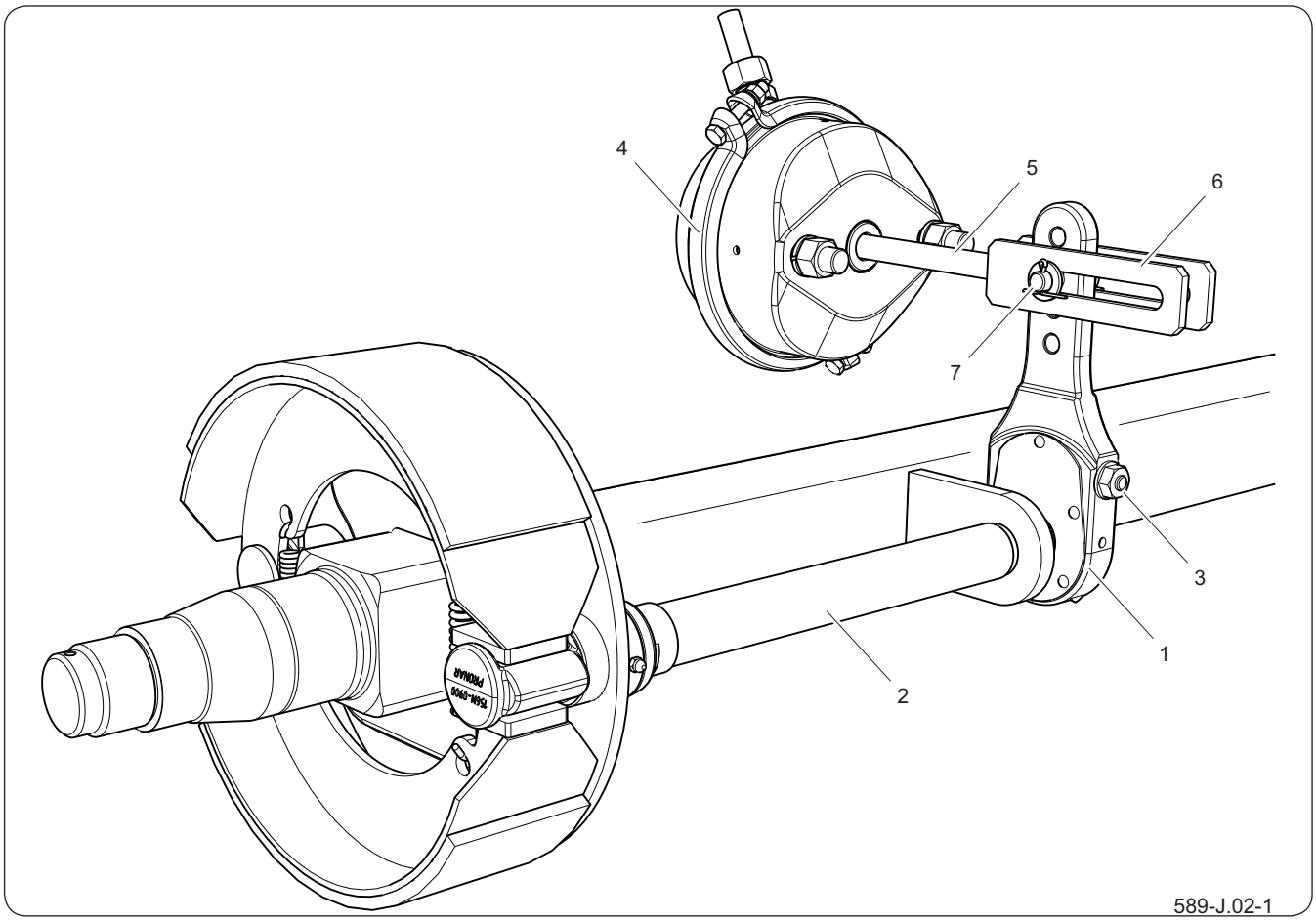

Figure 6.20 Construction of the air brake on the running axle

(1) spreader arm, *(2) spreader shaft,* *(3) adjusting screw,*
(4) pneumatic cylinder, *(5) cylinder piston rod,* *(6) cylinder fork,*
(7) actuator pin

ADVICE

The correct piston rod travel should be in the range 25-45 mm.

Significant wear of the brake shoe linings increases the piston rod travel of the brake actuator and reduces braking performance.

During braking, the piston rod travel should be within the specified operating range and the angle between the piston rod (1) and the spreader arm (3) should be approximately 90°. The wheels of the machine must brake simultaneously.

The braking force also decreases when the angle of the brake cylinder piston rod (5), relative to the spreader

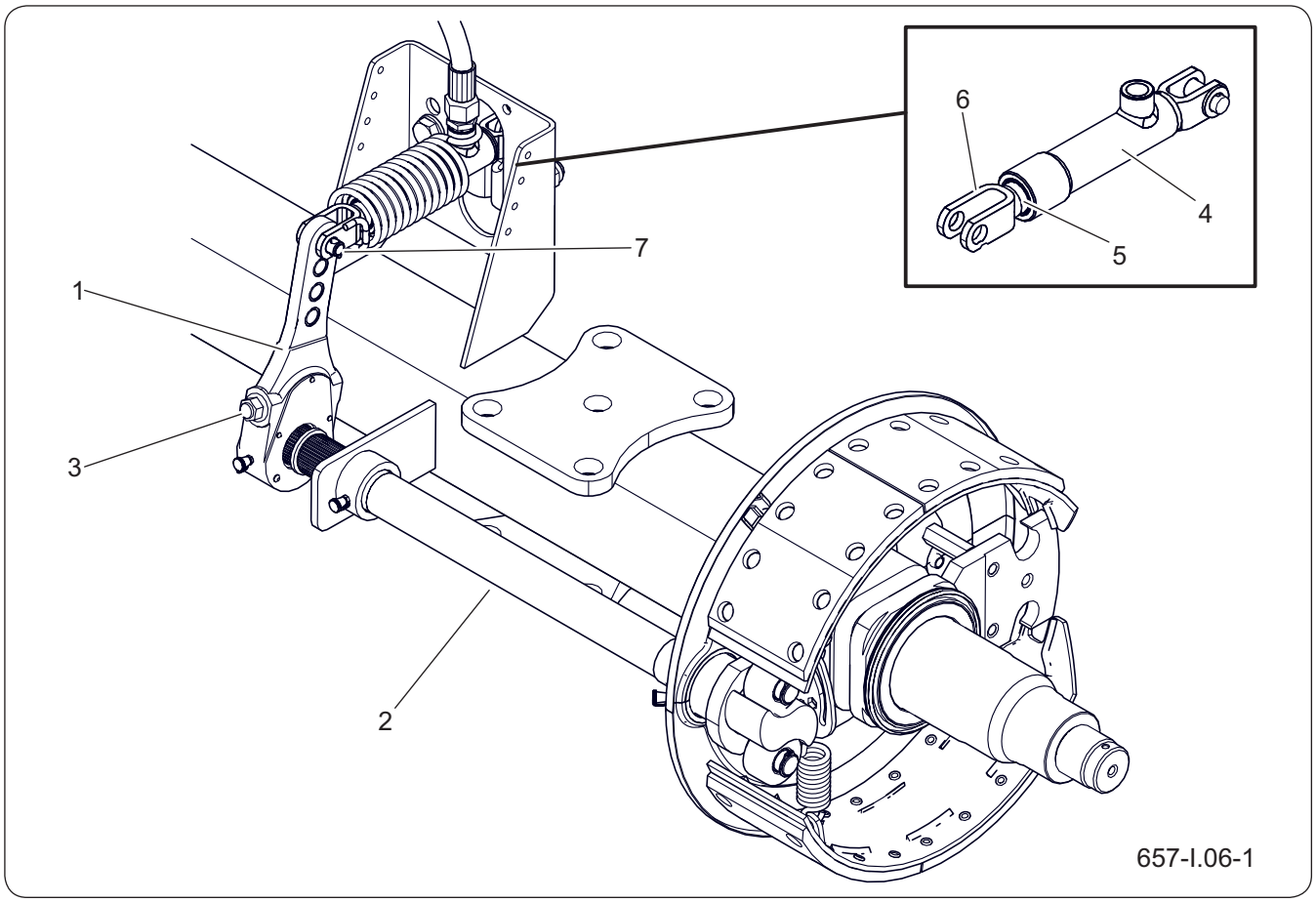

Figure 6.21 Construction of the hydraulic travel axle brake

(1) spreader arm, (2) spreader shaft, (3) adjusting screw, (4) hydraulic cylinder, (5) cylinder piston rod, (6) cylinder fork, (7) actuator pin

CAUTION

An improperly adjusted brake can cause the shoes to rub against the drum, resulting in faster wear of the brake linings and/or overheating of the brake.

arm (1), is not appropriate. In order to achieve the optimum mechanical operating angle, the piston rod fork (6) must be mounted on the spreader arm (1) in such a way that the operating angle is approximately 90° at full braking.

The check consists of measuring the length of extension of each piston rod during braking at standstill. If the piston rod travel exceeds the maximum value (45mm), the system must be adjusted.

When removing the actuator fork (6), note or mark the original setting of the actuator fork pin (7). The mounting position depends on the type of braking system and tyre size used on the machine, is selected by the manufacturer and cannot be changed.

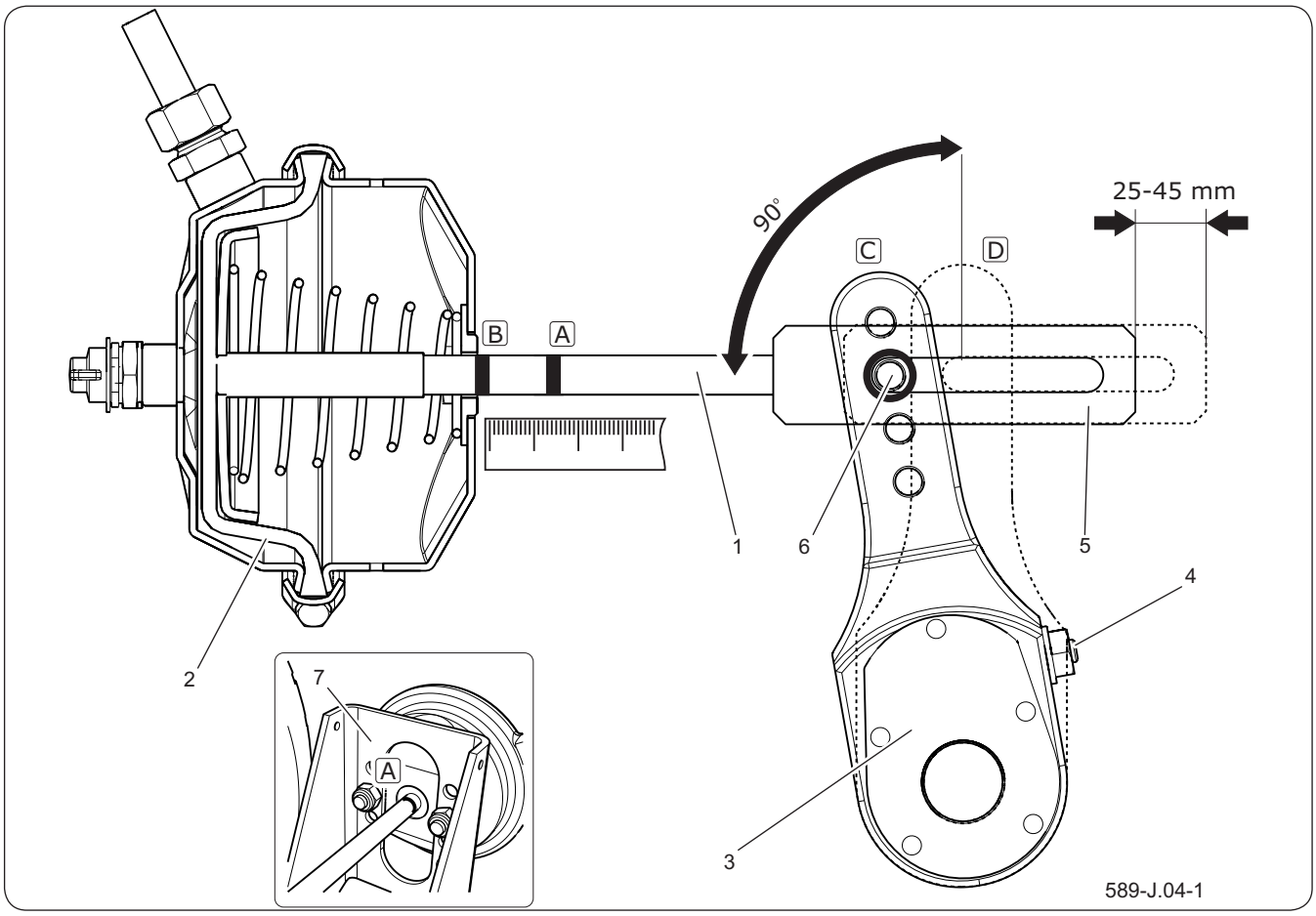

Figure 6.22 Air brake adjustment principle

(1) actuator piston rod, (2) actuator diaphragm, (3) spreader arm, (4) adjustment screw, (5) actuator fork, (6) fork pin, (7) actuator bracket, (A) marker on piston rod in deceleration position, (B) marker on piston rod in full deceleration position, (C) position of arm in deceleration position, (D) position of arm in braking position

CAUTION

The attachment positions of the brake actuator in the bracket holes and the actuator pin in the spreader arm are fixed by the manufacturer and cannot be changed.

Whenever removing a pin or actuator, it is advisable to mark the location of the original fixing.

The scope of activities

- Attach the machine to the tractor.
- Turn off the tractor engine and remove the ignition key.
- Immobilise the tractor with the parking brake.
- Ensure that the machine is not inhibited.
- Secure the machine against rolling with wheel chocks.
- On the piston rod (1) of the actuator, mark with a dash (A) the position of maximum piston rod retraction with the trailer brake off.
- Press the brake pedal on the tractor, mark with

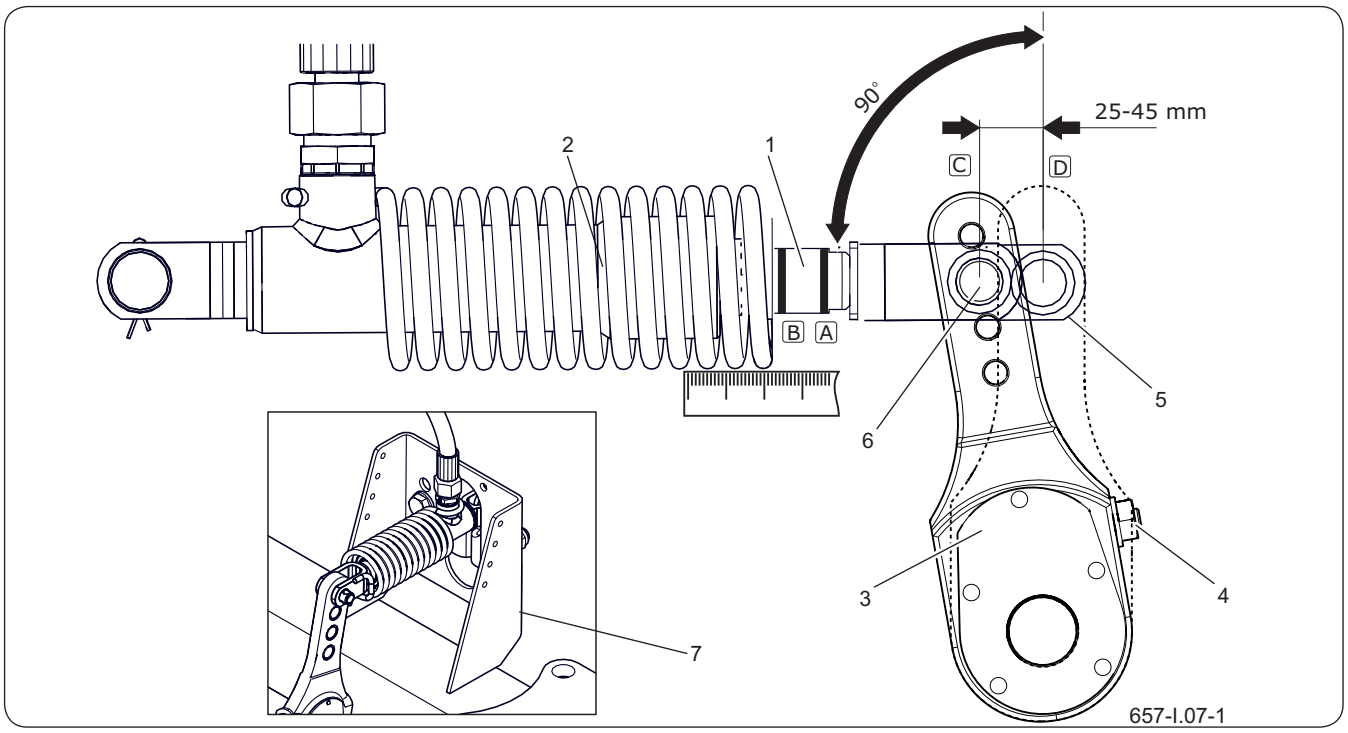

Figure 6.23 Hydraulic brake adjustment principle

(1) actuator piston rod, (2) actuator housing, (3) spreader arm, (4) adjustment screw, (5) actuator fork, (6) fork pin, (7) actuator bracket, (A) marker on piston rod in deceleration position, (B) mark on piston rod in fully braked position, (C) position of arm in unbraked position, (D) position of arm in fully braked position

a dash (B) the position of maximum piston rod extension.

- Measure the distance between the dashes (A) and (B). If the piston rod travel is not within the correct operating range (25-45mm), carry out an adjustment of the spreader arm.
- Remove the actuator fork pin (6).
- Note or mark the original position of the pin (6) in the hole of the spreader arm (3).
- Check that the piston rod of the actuator moves freely and within the full nominal range.
- Check that the actuator vents are not clogged with debris and that there is no water or ice inside (pneumatic actuator). Check that the actuator is fitted correctly.
- Clean the actuator, defrost if necessary and remove water through the blocked vents

(pneumatic actuator). If damage is found, replace the actuator with a new one. When installing the actuator, maintain its original position relative to the bracket (7).

- Turn the adjusting screw (4) so that the marked hole of the spreader arm coincides with the fork hole of the actuator
- During adjustment, the diaphragm (2) must rest against the rear wall of the actuator (pneumatic actuator).
- Fit the piston rod fork pin, washers and secure the pin with cotter pins.
- Turn the adjusting screw (4) clockwise for one or two clicks in the spreader arm adjusting mechanism.
- Repeat the adjustment steps on the second actuator on the same axis.
- Apply the brake.
- Wipe off the previous markings, and measure the piston rod travel again.
- If the piston rod travel is not in the correct operating range, repeat the adjustment.

Functional check

- After the adjustment has been completed, carry out a test drive.
- Perform several braking operations. Stop the machine and check the temperature of the brake drums.
- If any drum is too hot, correct the brake adjustment and test drive again.

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6.25 EMERGENCY ACTUATOR RELEASE

CAUTION

Take extra care when working. When tensioning the actuator spring, the trailer is not braked by the parking brake, so it is essential that you put chocks under the wheels of the trailer to prevent it from rolling away.

The actuator must only be repaired at an authorised service centre.

Driving with a faulty brake system is prohibited.

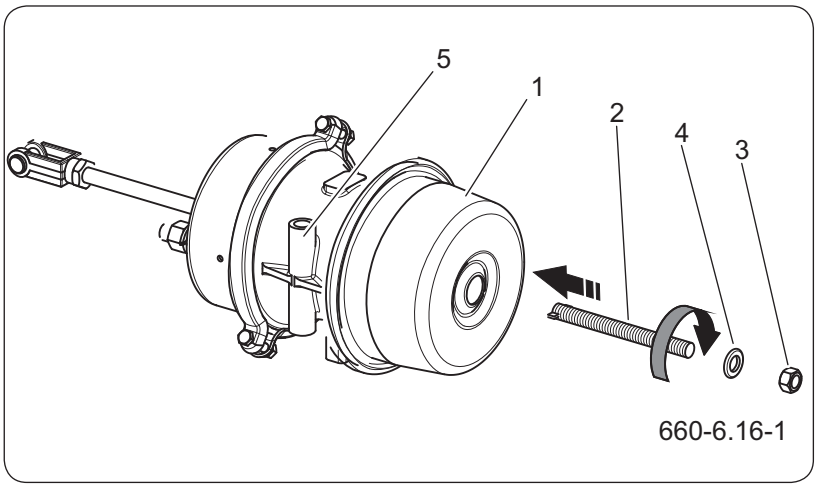


Figure 6.24 Emergency brake cylinder release
(1) actuator *(2) tension screw*
(3) nut *(4) washer*
(5) tension screw holder

A defect in the pneumatic system that results in air escaping from the brake cylinders will result in the trailer braking. Emergency release of these actuators involves tensioning the spring using a tension screw. During normal operation, it is placed in the holder (5) of the actuator.

Emergency release of the diaphragm-spring actuator

- Block the trailer from rolling away by putting wheel chocks under the wheels,
- Insert the tensioning screw (2) into the rear hole of the diaphrahm actuator (1),
- Turn the screw 90°.
- Install the washer (4) and screw on the nut (3).
- Screw in the nut until it stops,
- Repeat the above steps for the remaining actuators.

To return the actuator to normal operation mode, unscrew the nut (3) and remove the tensioning screw

(2) from the actuator. When you have finished, place the screw with the remaining components in the actuator holder (5). Secure the hole in the actuator body with a plastic nut.

SER.3.H-011.01.EN

6.26 LUBRICATION

ADVICE

Lubrication frequency (table Trailer lubrication schedule):

D - working day (8 hours of trailer operation),

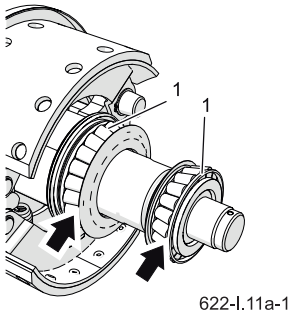
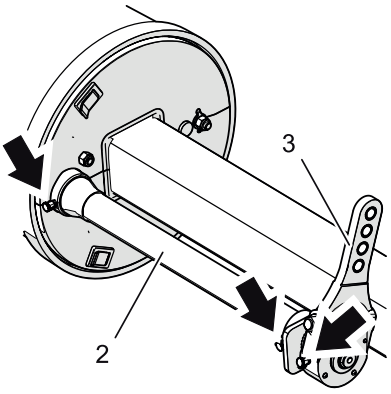
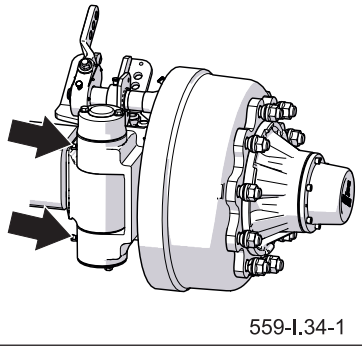
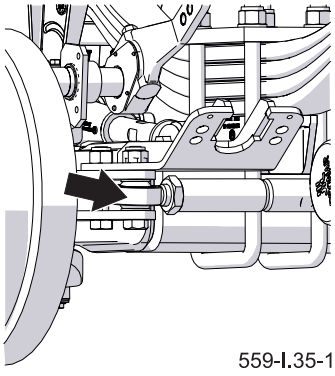
M - month

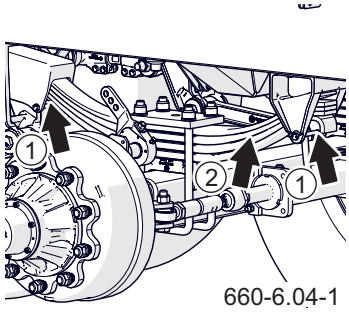
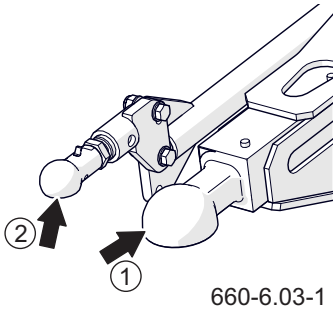
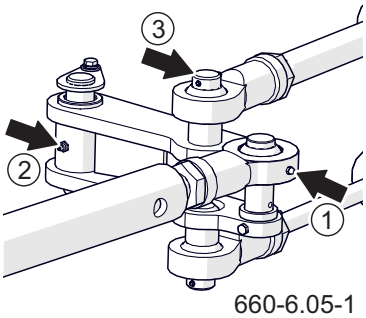
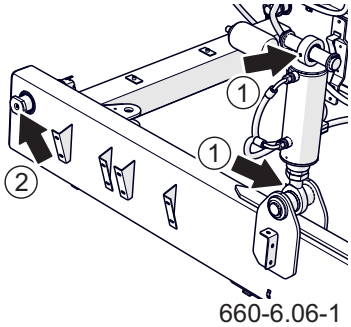
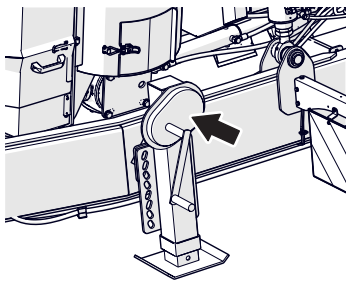
- Lubricate the trailer using a hand or foot lubricator filled with the recommended lubricant. Remove old grease and other contaminants before starting work. Wipe off excess grease when finished.
- Wipe parts that should be lubricated with machine oil with a dry and clean cloth. Apply the oil to the surface with a brush or oiler. Wipe off excess oil.
- Have the grease in the bearings of the driving axle hubs replaced by a specialised service centre with the appropriate tools. Dismantle the entire hub, remove the bearings and individual sealing rings. After thorough washing and visual inspection, install the lubricated components. Replace bearings and seals if necessary.
- Dispose of empty grease or oil containers in accordance with the lubricant manufacturer's recommendations.

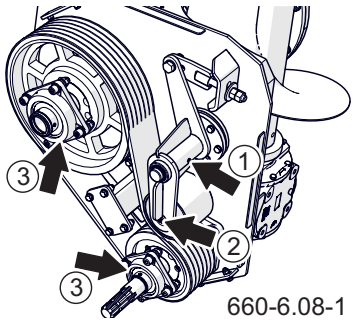
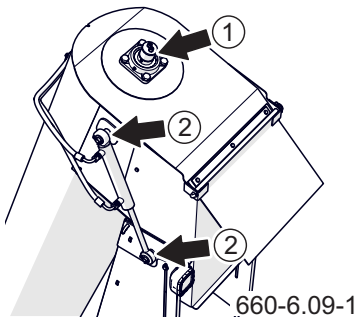
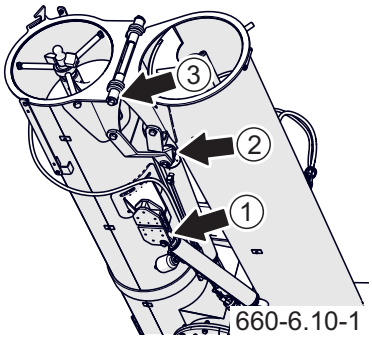
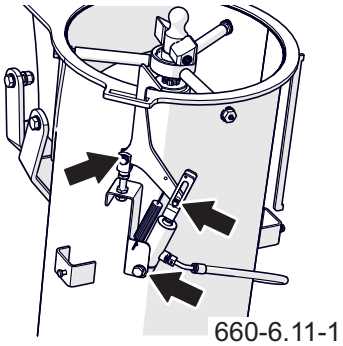
Table 6.7 Lubricants

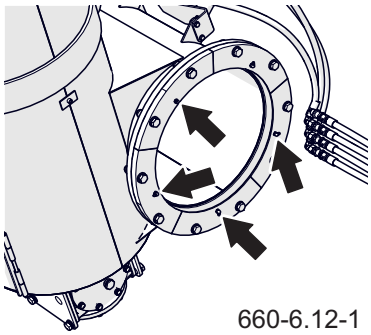
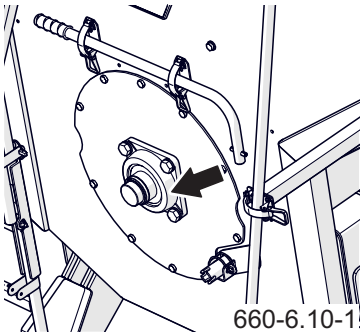
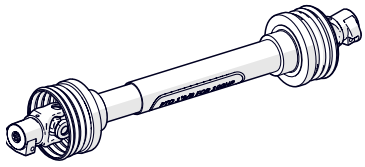
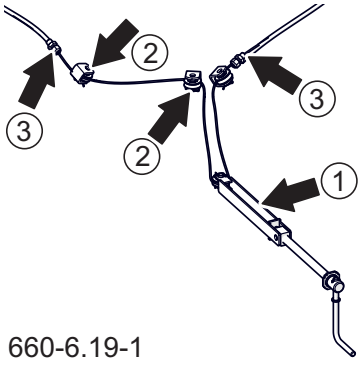
ITEM	Symbol	Description
1	A	general purpose solid lubricant (lithium, calcium),
2	B	solid lubricant for heavily loaded parts with MoS_2 or graphite additives
3	C	anti-corrosion spray
4	D	ordinary machine oil, silicone spray lubricant

Table 6.8 Trailer lubrication schedule

Item	Name	Number of lubrication points	Type of grease	Frequency	
1	Hub bearing (2 in each hub)	4	A	24M	
2	Spreader shaft sleeve	12	A	3M	
3	Spreader arm	6	A	3M	
4	Axle knuckle pin	8	A	3M	
5	Torsion axle ram bearings	4	A	3M	

Item	Name	Number of lubrication points	Type of grease	Frequency	
6	Sliding surface of the springs	12	A	1M	 660-6.04-1
	Spring feathers *Caution:* *Don't let it run dry!*	6	C	3M	
7	Drawbar linkage (1)	2	B	14D	 660-6.03-1
	Steering linkage (2)				
8	Steering linkage (1)	1	A	3M	 660-6.05-1
	Steering pin (2)	1	A	3M	
	Steering cylinder pin (3)	2	A	3M	
9	Drawbar suspension cylinder eye (1)	4	B	1M	 660-6.06-1
	Drawbar pin (2)	2	B	1M	
10	Parking stand	1	A	3M	 660-6.07-1

Item	Name	Number of lubrication points	Type of grease	Frequency	
11	Tensioner (1)	1	A	1M	
	Tensioner wheel (2)	1	A	1M	
	Bearing housing (3)	2	A	1M	
12	Bearing housing (1)	1	A	1M	
	Chute actuator socket (2)	2	A	3M	
13	Folding cylinder eye (1)	2	A	3M	
	Folding cylinder eye (2)	2	A	3M	
	Feeder hinge (3)	4	A	3M	
14	Locking mechanism	3	D	6M	

Item	Name	Number of lubrication points	Type of grease	Frequency	
15	Conveyor tilt sleeve	4	A	3M	 660-6.12-1
16	Bearing housing of a floor conveyor	1	A	1M	 660-6.10-1
17	Telescopic articulated shaft ** lubrication plan according to the pivot shaft instructions attached to the trailer*	-	-	-	 660-6.17-1
18	Parking brake mechanism	1	A	6M	 660-6.19-1
	Guide wheel axle	4	A	6M	
	Brake cable sheath	2	D	6M	

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6.27 ELECTRICAL SYSTEM SERVICE AND WARNING ELEMENTS

CAUTION

Driving with defective lighting installations is prohibited. Damaged lamps should be replaced immediately before driving off. Lost or damaged reflectors should be replaced with new ones.

Before travelling, make sure that all lamps and reflectors are clean.

ADVICE

The light source in the lamps are LEDs and in case of damage are only replaced as a complete lamp without the possibility of repair or regeneration.

Work related to the repair, replacement or regeneration of electrical installation components should be entrusted to specialized workshops that have appropriate technologies and qualifications to perform this type of work.

The user's duties include only technical inspection of the electrical installation and reflectors.

The scope of activities

- Connect the the trailer to the tractor with a suitable connection lead.
- Make sure the connection cable is OK. Check the connection sockets on the tractor and on the trailer.
- Check the completeness, technical condition and correct functioning of the trailer lighting.

  Check the wiring harness for damage (rubbed insulation, wire break, etc.). Check the completeness of lamps and all reflectors.
- Check the correct installation of the triangular plate holder for slow moving vehicles.
- Before travelling on a public road, make sure that the tractor has a reflective warning triangle.

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6.28 CONSUMABLES

6.28.1 Hydraulic oil

ADVICE

In the hydraulic system of the trailer, L-HL 32 LOTOS oil was used.

It is absolutely necessary to observe that the oil in the machine's hydraulic system and the tractor's hydraulic system is 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, read the oil manufacturer's instructions carefully. If he recommends flushing the system with an appropriate preparation, follow these recommendations. It 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, due to its composition, is not classified as a dangerous substance, 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

Table 6.9 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

DANGER

Do not use water to extinguish a fire of oil!

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 may be released.
In the event of fire, the oil must be extinguished with carbon dioxide, foam or extinguishing steam

6.28.2 Lubricants

ADVICE

Lubrication frequency (Table Trailer lubrication schedule).

For heavily loaded parts, it is recommended to use lithium grease with the addition of molybdenum disulphide (MOS2) 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) store together with the grease.

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6.29 TYRES

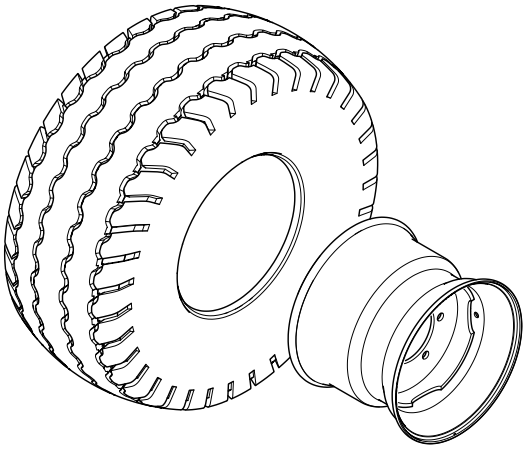

Table 6.10 Machine tyres

ITEM	Tyre size	Disc wheel size
1	560/60- R22,5 161D 172A8	16.00X22,5 ; ET=10
2	600/55- R26,5 165D 176A8	20.00x26,5 ; ET=-50
3	620/50- R22,5 161D 172A8	20.00x22,5 ; ET=-40
4	650/50- R22,5 163D 175A8	20.00x22,5 ; ET=-40
5	700/50- R26,5 16PR 174A8	24.00x26,5 ; ET=-80
6	710/45- R26,5 169A8	24.00x26,5 ; ET=-80
7	710/50- R26,5 170D 181A8	24.00x26,5 ; ET=-80

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6.30 TROUBLESHOOTING

Table 6.11 Troubleshooting

Fault	Possible cause	Remedy
Problem with moving off.	Emergency brake engaged.	Release emergency brake.
	Applied parking brake.	Release parking brake.
	Leaking connections	Tighten, replace washers or seal sets, replace lines.
Noise in wheel axle hub.	Excessive bearing slackness.	Check slackness and adjust if needed
	Damaged bearings	Replace bearings.
	Damaged hub parts.	Replace it.
Overheating of axle hubs.	Incorrect main or parking brake adjustment.	Regulate setting of expander arms.
	Worn brake linings.	Change brake shoes.
Incorrect hydraulic system operation.	Improper hydraulic oil viscosity.	Check oil quality, make sure that the oil in both machines is of the same type. If necessary change oil in tractor or in trailer.
Incorrect hydraulic system operation.	Insufficient tractor hydraulic pump output, damaged tractor hydraulic pump.	Check tractor hydraulic pump.
	Damaged or contaminated cylinder	Check cylinder piston rod (bending, corrosion), check cylinder for tightness (cylinder piston rod seal), if necessary, repair or replace the cylinder.
	Excessive cylinder loading	Check and reduce cylinder load, if necessary.
	Damaged hydraulic lines	Check and make certain that hydraulic lines are tight, not fractured and properly tightened. If necessary, replace or tighten.

Damaged PTO shaft	Excessive angular deviation during operation.	Use a wide-angle PTO shaft or disconnect the PTO when cornering.
	PTO shaft is too short or too long	Replace PTO shaft with a different one. Adjust the PTO shaft according to its Operator Manual.
Excessive wear of left and right tyre shoulders on both sides.	Too low air pressure in tyres. Excessive ground speed of loaded trailer on turns. Too fast loss of air due to damaged wheel, valve, puncture, etc.	Check air pressure. Regularly check correctness of air pressure in tyres. Excessive loading of the trailer. Do not exceed the permissible gross weight of the trailer. Reduce ground speed while driving on turns on hardened surface. Check wheel and valve. Replace damaged part
Excessive wear of central part of tyre.	Excessive air pressure in tyres.	Check air pressure. Regularly check correctness of air pressure in tyres.
Excessive wear of left or right tyre shoulder, on one side.	Incorrect toe-in. Incorrectly positioned wheel axles.	Damaged leaf spring on one side of the suspension system. Replace leaf springs.
Worn tyre tread.	Damaged suspension system, broken leaf spring. Damaged brake system, blocking of brakes, incorrectly adjusted brake system. Too frequent and violent braking.	Check suspension system for looseness, check leaf springs. Replace damaged or worn elements. Check brake system for malfunctions. Adjust expander lever.
Damaged rim (hardening and cracking near rim), brittleness of tyre.	Incorrect braking technique. Too frequent violent braking. Damaged brake system.	Check brake system. Control braking technique. Damage occurs due to excessive heating of hub which leads to heating of wheel.

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Chapter 7

Control panel

PRONAR T743M

7.1 REMOTE CONTROL

7.1.1 General information

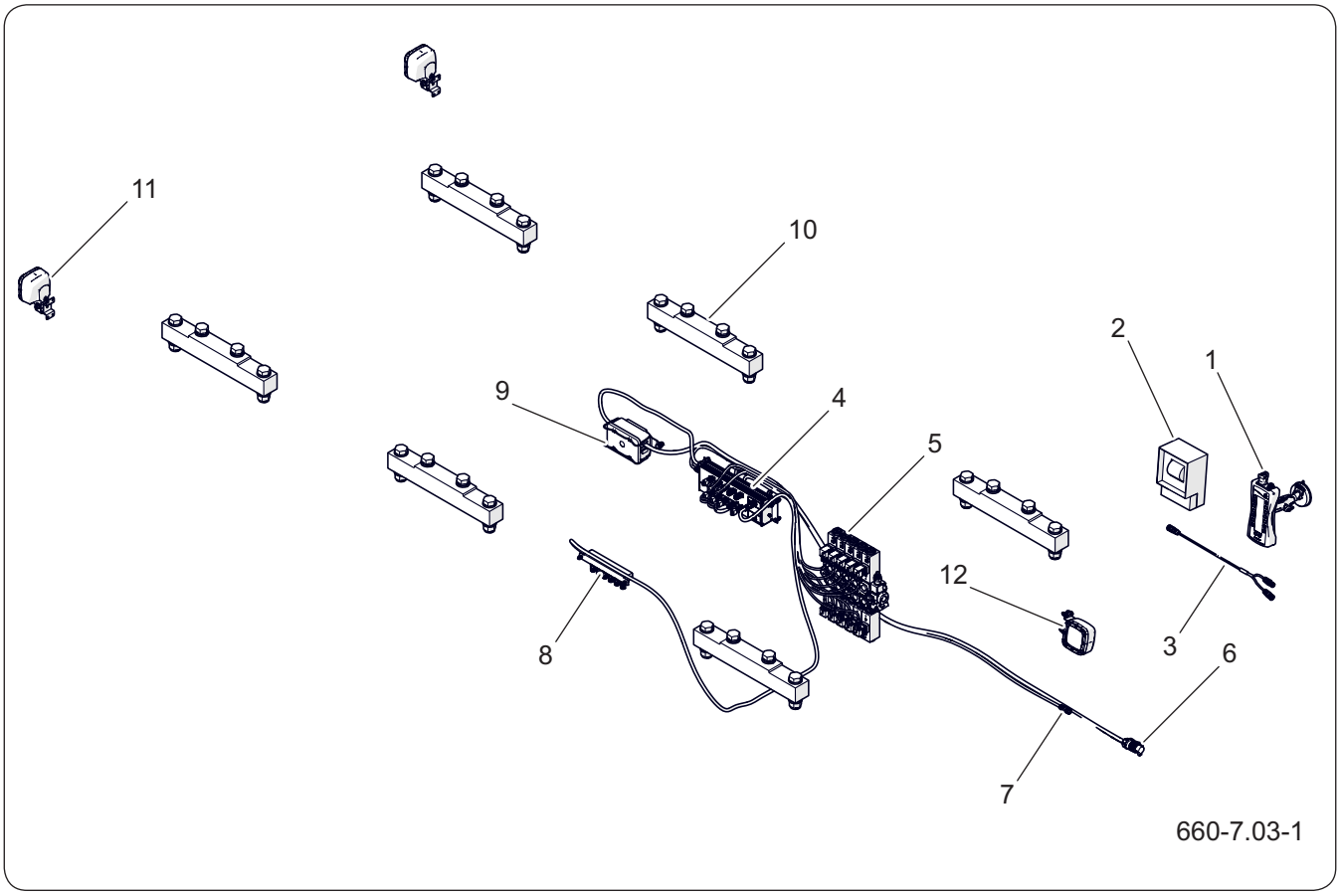

Figure 7.1 Electrical control system components

(1) remote control *(2) printer (optional)* *(3) connecting cable*
(4) control unit *(5) distributor with coils* *(6) supply cable*
(7) control cable *(8) combiner (optional)* *(9) junction box*
(10) weight module (optional) *(11) rear lights* *(12) front lights*

The remote control is powered by the tractor's electrical system via a three-pin 12V cable (6). Place the remote control and any printer in the tractor operator's cab.

Optionally, the trailer can be equipped with a weighing system consisting of six load modules (10), a signal combiner (8) and a printer (2). The menu of the remote control for a machine equipped with a weighing system differs slightly from the version without load weighing capability.

Construction of the remote control

The front of the housing (1) contains the display (2), the selection buttons (6) and the ON / OFF button (4). A safety button (3) and a connector for connecting the remote control (5) are located at the top. The remote control is equipped with an adjustable suction cup handle (7) for easy mounting in the tractor cab.

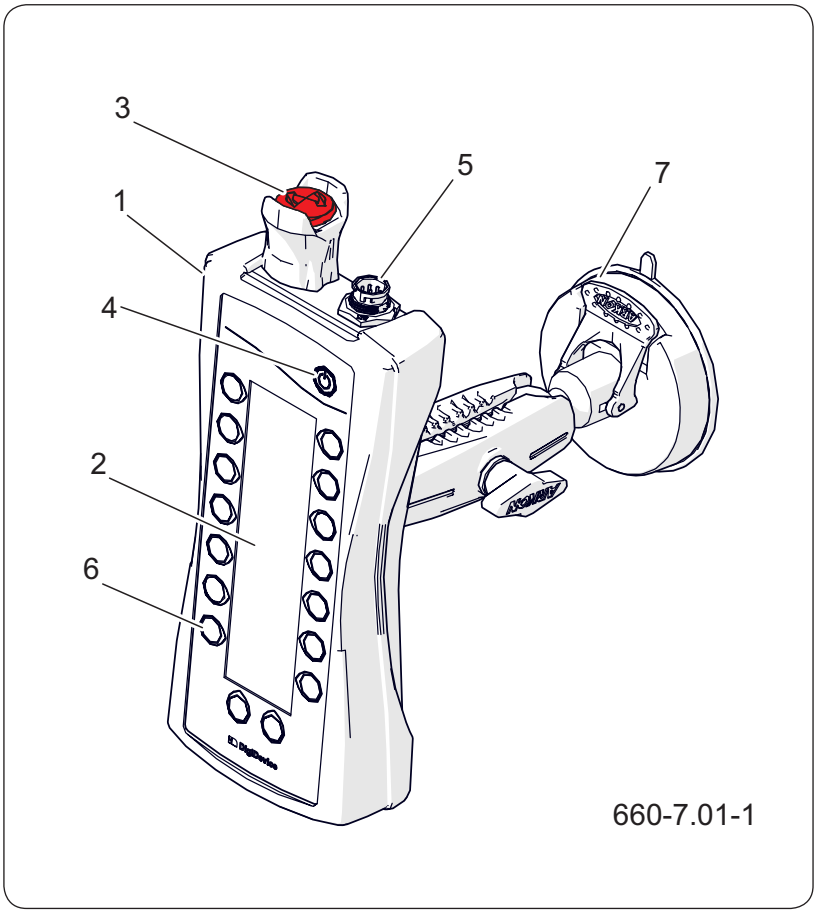

Figure 7.2 Remote control

(1) housing *(2) display*
(3) safety button *(4) ON / OFF button*
(5) communication interface *(6) selection buttons*
(7) handle

7.1.1 Remote control for versions without scales

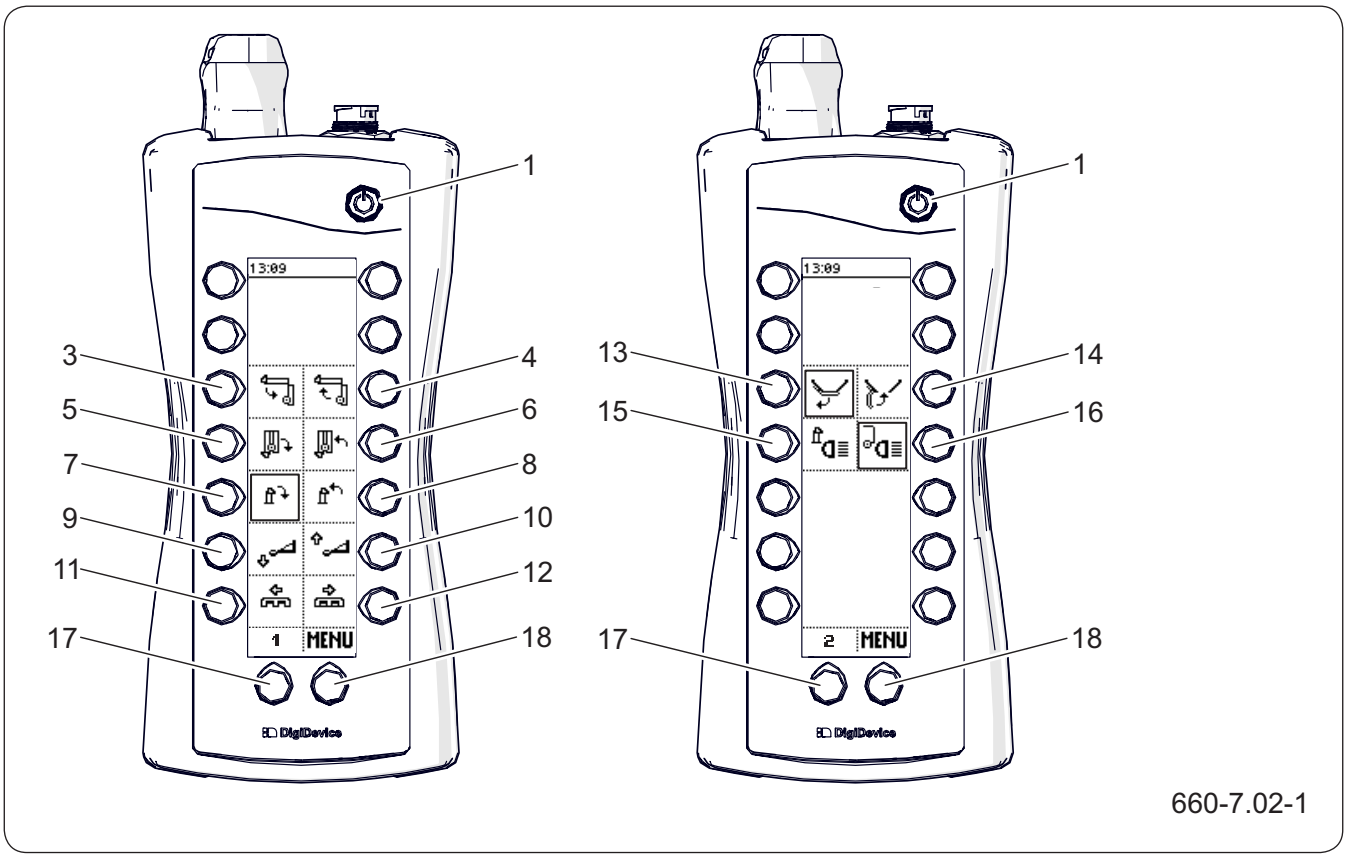

Figure 7.3 Remote control buttons without weight installation description of the individual buttons in the table below

Table 7.1 Buttons for trailers without weighing systems

Button no.	Description
1	on/off
3	assemble a vertical conveyor
4	unfold the vertical conveyor
5	tilt the vertical conveyor to the right
6	tilt the vertical conveyor to the left
7	fold up the vertical conveyor chute
8	unfold the vertical conveyor chute
9	lower the hitching gear
10	raise the hitching gear
11	close the floor conveyor shutter
12	open the floor conveyor shutter

Button no.	Description
13	open the unloading flaps of the floor conveyor
14	close the unloading flaps of the floor conveyor
15	front auxiliary lighting on/off
16	switch rear auxiliary lighting on/off
17	switch next screen
18	MENU button

Before activating the remote control, connect the communication cable to the remote control and then connect the power supply to the system via the 3pin cable.

Switch on the remote control by briefly holding down the button (1). During start-up, the software version and controller information will be displayed.

The various functions are carried out via function keys located around the display.

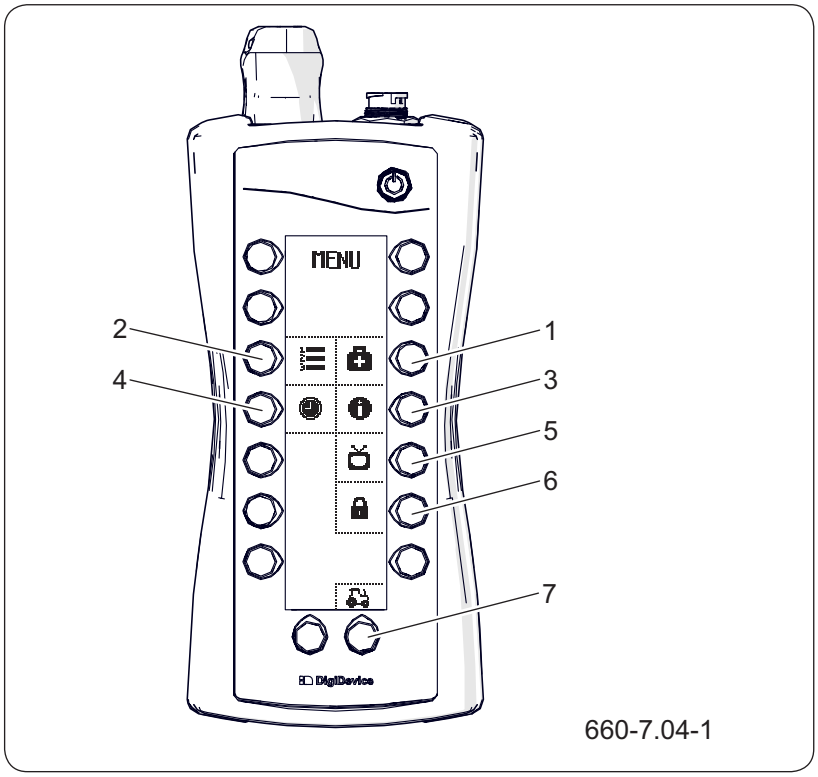

Figure 7.4 Menu screen without scales description of the individual buttons in the table below

Table 7.2 Menu without scale installation

Button no.	Description
1	module input test
2	advanced settings (service code)
3	driver version, software
4	time and date settings
5	display settings, menu language
6	advanced settings (service code)
7	return to initial screen

Menu for remote control without scale installation

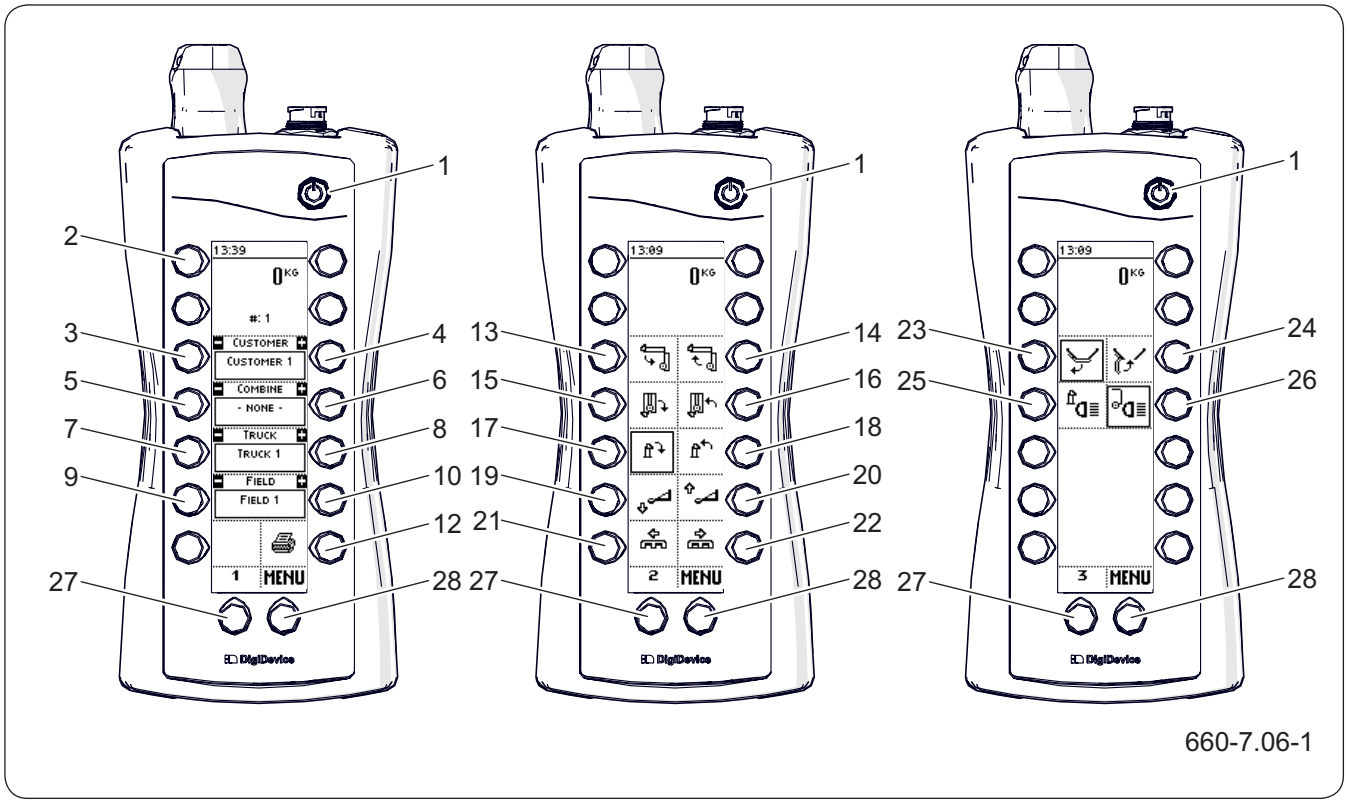

Figure 7.5 Remote control buttons without weight installation. description of the individual buttons in the table below

Table 7.3 Buttons for trailers without weighing systems

Button no.	Description
1	on/off
2	cargo weight
3	switch user "+"
4	switch user "-"
5	switch harvester "+"
6	switch harvester "-"
7	switch truck "+"
8	switch truck "-"
9	switch area "+"
10	switch area "-"
12	print
13	assemble a vertical conveyor
14	unfold the vertical conveyor

Button no.	Description
15	tilt the vertical conveyor to the right
16	tilt the vertical conveyor to the left
17	fold up the vertical conveyor chute
18	unfold the vertical conveyor chute
19	lower the hitching gear
20	raise the hitching gear
21	close the floor conveyor shutter
22	open the floor conveyor shutter
23	open the unloading flaps of the floor conveyor
24	close the unloading flaps of the floor conveyor
25	front auxiliary lighting on/off
26	switch rear auxiliary lighting on/off
27	switch next screen
28	MENU button

7.1.1 Remote control for version with scale and printer

Table 7.4 Menu without scale installation

Button no.	Description
1	module input test
2	advanced settings (service code)
3	driver version, software
4	time and date settings
5	display settings, menu language
6	advanced settings (service code)
7	return to initial screen
8	settings for screen "1" user name, harvester, truck, crop
9	setting the accuracy of the weight measurements

Menu for remote control without scale installation

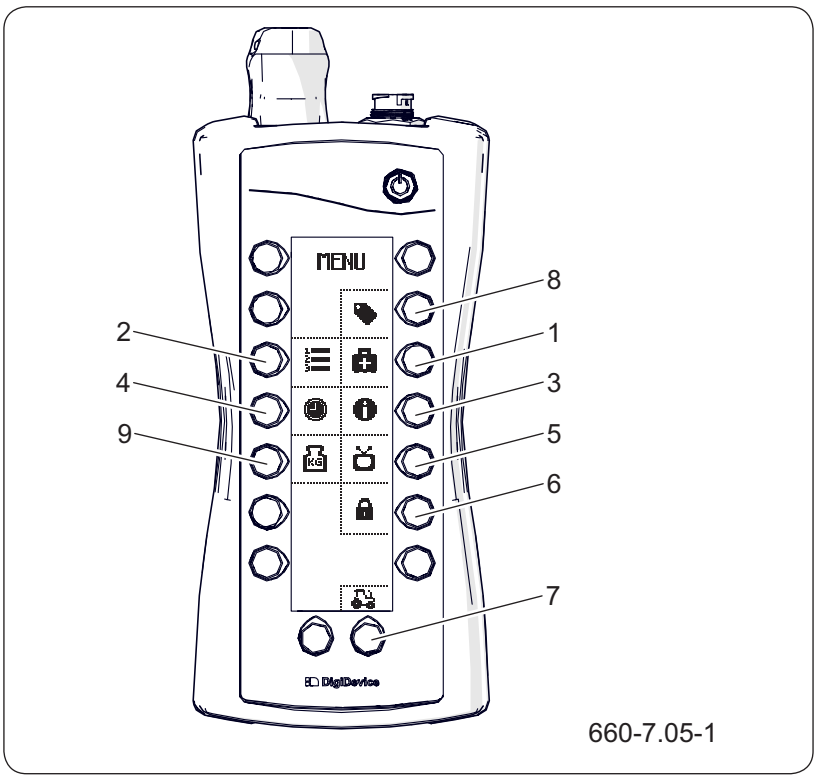

Figure 7.6 Menu screen without scales description of the individual buttons in the table below

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CHAPITRE 7. ZAŁĄCZNIKI

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