

CynkoMet Sp. z o.o.
ul. Fabryczna 7W
16-020 Czarna Białostocka
phone (085) 710 24 56

SINGLE-AXLE AGRICULTURAL TRAILER FOR LIVESTOCK TRANSPORT

T-677 (KURIER - 6)

Type T-3

INSTRUCTIONS FOR USE AND OPERATION

Identification of the machine

Symbol/Type T-3

Version:

Variant:

VIN:


The serial number is stamped on the rating plate and on the front beam of the front beam of the trailer. The rating plate is riveted to the front beam of the cargo box or to the stringer of the frame.

During purchase, check the conformity of the serial numbers stamped on the trailer with the serial number given in the warranty card, in the sales documents and in the instruction manual..

NOTE!

The manufacturer reserves the right to introduce, in the manufactured machines, structural alterations facilitating servicing and improving the quality of their work. The information on significant design changes are communicated to the user by means of enclosed information (annexes).

Comments and observations about the design and operation of the machine should be sent to the manufacturer. This information will allow objective evaluation of the machine, and serve as guidelines in their further modernization.

	<p>NOTE!</p> <p>Before the operation, the user should be familiar with this manual and follow all recommendations. This will ensure safe maintenance and trouble-free operation of the machine.</p>
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The T-677 trailer is compliant with road traffic laws pertaining to machines with a speed up to 30 km/h. At the same time, the manufacturer reserves that the trailer may not travel on public roads at speeds exceeding the speed indicated above. If information given in the instruction manual is not fully comprehensible, contact the sales point at which the machine was purchased or the Manufacturer directly for assistance.

Manufacturer's Address:

CynkoMet Sp. z o.o.
ul. Fabryczna 7W
16-020 Czarna Białostocka
phone . (085) 710 24 56

**INSTRUCTIONS FOR USE AND SERVICE CONSTITUTE BASIC
EQUIPMENT OF THE MACHINE!**

The machine was designed in compliance with applicable standards, documents and currently binding legal regulations.

DETERMINATION OF DIRECTIONS IN THE MANUAL

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

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

DECLARATION OF CONFORMITY

CynkoMet sp z o.o.

16-020 Czarna Białostocka ul. Fabryczna 7W Poland

acting as the manufacturer

declares with full responsibility that the machine:

KURIER TRAILER

TYPE / MODEL: T-3/677

YEAR OF PRODUCTION:

SERIAL NUMBER:

BRIEF DESCRIPTION OF THE MACHINE AND ITS FUNCTIONS:

Single-axle Kurier trailer. The trailer's chassis consists of the following assemblies: the lower frame, drawbar are welded constructions made from steel sections and sheets. The essential load-bearing components are two stringers joined to one another by cross-bars. The trailer's cargo box consists of the top frame with wood floor and water-resistant plywood walls. The trailer is intended for transport of livestock on farms and on public roads.

To which this declaration relates complies with the requirements:

- Directive 2006/42/EC of the European Parliament and the Council of 17 May 2006 on machinery, and amending Directive 95/16/EC (OJ L157 of 09.06.2006, pages 24-86)
- **Regulation of the** Minister of Economy of 21 October 2008 on essential requirements for machines (Journal of Laws of 2008, no. 199, item 1228)

For the conformity evaluation, the following harmonized standards have been used:

- PN-EN ISO 4254-1 Agricultural machinery – Safety – Part 1: General requirements of 2014.
- PN-ISO 11684:1998P Tractors, machinery for agriculture and forestry, powered lawn and garden equipment – Safety signs and hazard pictorials – General principles of 1998.
- PN-EN ISO 12100-1:2012 Safety of machinery – General principles for design – Risk assessment and risk reduction of 2012.
- PN-EN ISO 13857:2010 Safety of machinery – Safety distances to prevent hazard zones being reached by upper and lower limbs of 2010.

Person authorized to prepare technical documentation:

Head of Constructors and Technologists

Address: Fabryczna 7, 16-020 Czarna Białostocka, Poland

THE DECLARATION LOSES ITS VALIDITY IF THE MACHINE IS MODIFIED OR REBUILT WITHOUT THE MANUFACTURER'S CONSENT.

Czarna Białostocka
Place and date of declaration


The identity and signature of the person authorized to make
declarations

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1. Introduction

This manual describes the basic principles of safe use and operation of agricultural trailers.

	<p>NOTE! Before using a trailer you should carefully read the contents of the manual.</p>
<p>NOTE!</p>	<p>Before running a trailer, it must be checked for operational safety.</p>

If the information contained herein will prove to be not fully understood, ask the manufacturer or the sales point where it was purchased for help.

Particularly important information and recommendations, the observance of which is absolutely necessary in the text are highlighted in bold or preceded by the word „**CAUTION!**“.

Information, descriptions of danger and precautions as well as commands and orders "related to the safety of use are highlighted in the manual with a sign  and also mentioned in the chapter "SAFETY OF USE".

1.1 Identification of the machine

The trailer is marked with the plate (1) and a serial number (VIN) (2). The rating plate is affixed and the serial number stamped on the front beam of the frame – figure 1.

During purchase of the trailer, the serial numbers on the machine should be checked against the number written in the WARRANTY CARD, in sales documents and in the INSTRUCTIONS FOR USE AND OPERATION

CYNKOMET SP. Z O.O. R3a			
SYR351043K8C00014	T-1	T-2	T-3
	B-1		
	B-2		
	B-3		
5 800 kg	B-4		
A-0: 1 000 kg			
A-1: 5 800 kg			
A-2: _____			
A-3: _____			
CynkoMet®		T-677	
ul. Fabryczna 7W 16-020 Czarna Białostocka Poland		www.cynkomet.pl	
		CE	

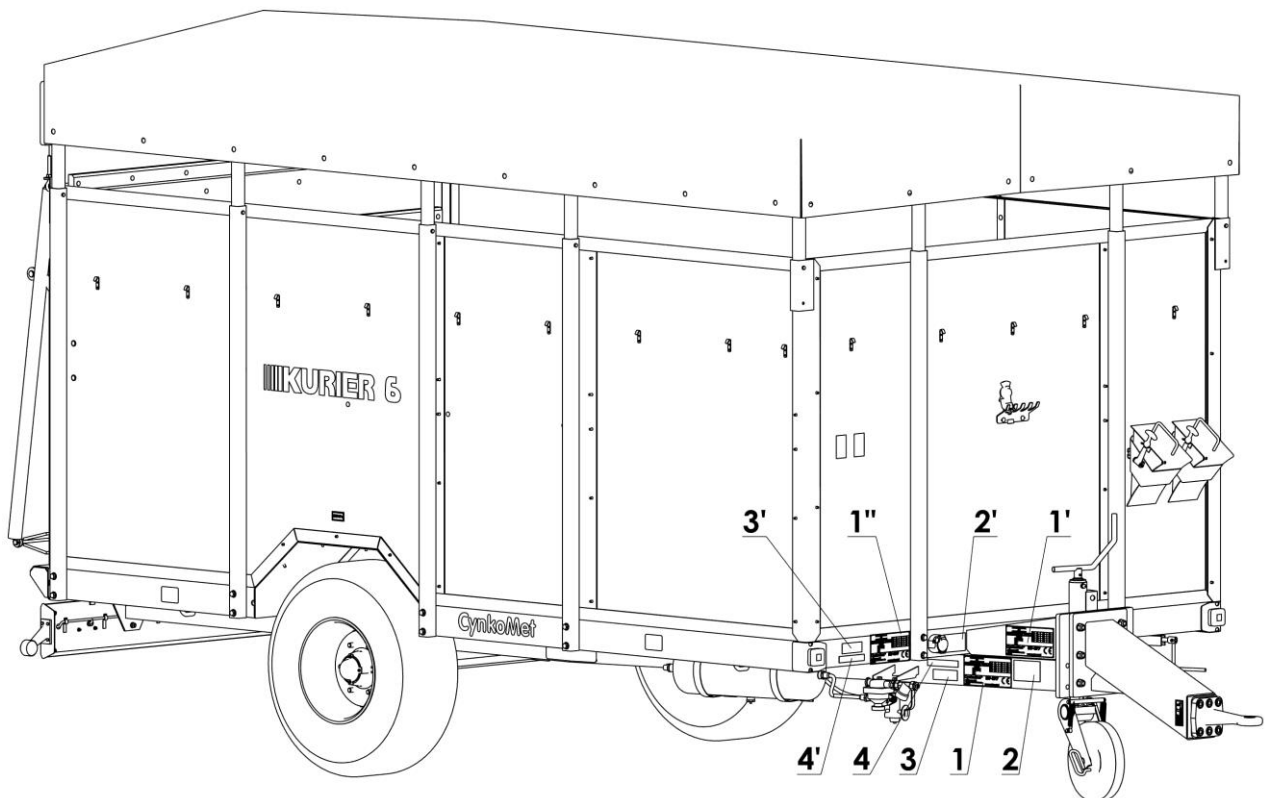


Fig. 1 Potential place of rating plate fixing and serial number stamping, and reference rating plate

1 - rating plate, 2 - serial number (VIN), 3 - rating plate of brake system, 4 - plate with homologation of brake system


2. Purpose of the trailer

The trailer is intended for transport of livestock. During transport, animals are to be secured in a manner disabling their uncontrolled movement during transport. It can be used to transport goods, agricultural crops, construction materials, etc.

The braking, lighting and signaling systems meet the requirements of road traffic regulations.

The trailer is adapted to cooperation with agricultural tractors fitted with a hitch for single-axle trailers.

The trailer IS NOT ADAPTED and cannot be used to transport people and / or animals.

 <p>NOTE!</p>	<p>NOTE!</p> <p>The trailer must not be used contrary to its purpose, and in particular:</p> <ul style="list-style-type: none"> • for transport of humans or animals not secured against uncontrolled movement, • for transporting bulk hazardous toxic materials when there is a possibility of causing environmental contamination, • to transport machinery and equipment, whose center of gravity affects the stability of the trailer, • to carry loads, machines, etc. that affect the unequal load or overload of axles and suspension components, • to carry loads not secured, which - while driving - can change its position on the loading platform.
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Use in accordance with the product's destination also includes all activities related to correct and safe operation and maintenance of the machine. Therefore, the user is obliged to:

- read the content of the *MANUAL* of the trailer and *the WARRANTY CARD* and adhere to the recommendations contained in these elaborations,
- comply with the established maintenance plans and regulations,
- comply with general safety regulations while working,
- prevent accidents,
- abide by road traffic laws and transportation regulations

applicable in the country in which the trailer is operated,

- read the instructions for operating the tractor and comply with its recommendations,


The trailer may only be used by persons who:

- are familiar with the contents of publications and documents attached to the trailer and the contents of the agricultural tractor manual,
- have the required driver's licenses and are familiar with road traffic laws and transportation regulations.

3. Safety in use

3.1 General safety and accident prevention regulations

- Before using a trailer, user should carefully read the instructions completely. During operation, observe all instructions contained in the manual.
- Before each start, the trailer should be checked in terms of operational safety (completeness of all trailer components, wheel and tire condition, tightening of all bolts (Table 6), cracks or visible damage on the structure).
- Entering onto the trailer is only possible with absolute machine immobilisation, with the tractor engine switched off and the keys removed from the ignition.
- The trailer should be combined with tractors recommended by the manufacturer (Table 2).
- Pay attention to the warnings in places of crushing and shearing when starting the machine.
- During transport, check the condition of preheat of the tires, brake drums and wheel bearings. In the case of detecting an excessively heating element, stop the machine from operating until determining the cause and rectifying the fault.
- The speed of driving must always be adapted to the environmental conditions. Please undertake special care when overcoming unevenness and avoid sudden turns.

	<p>NOTE!</p> <p>Before driving with a trailer in a place where there are flammable materials you should imperatively check the status of the heating elements of the trailer, especially the brake drums and wheel bearings, due to the risk of fire.</p>
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- When switching and disconnecting the machine from the tractor, you must be careful.
- Exceeding the permissible load can cause accidents on the road and damage to the machine.
- When cornering, you should take into account the inertia of the machine.
- Before you start, check if the trailer has any loose parts
- Within additional elements which are force operated (e.g. by hand), there are places of crushing and shearing.
- Malfunctioning of the trailer should be removed only when the engine of the tractor is off and the ignition key is pulled out
- No one can stay one between the tractor and the trailer before the vehicle is not be protected against self-running off through the parking brake (hand brake) and wedges under the wheels.
- It is forbidden to transport people or animals on the trailer
- The machine is designed to work on slopes up to 8 °.
- Modifications can be made only with the permission of the manufacturer. The basic condition for safety are original spare parts and components. Using other parts may result in exclusion of liability of the manufacturer for resulting consequences.
- Careless operation and maintenance of the trailer can injure the operator or third parties and damage the tractor-trailer.
- It is forbidden to use the machine by persons not qualified to drive agricultural tractors, including children and persons under the influence of alcohol.
- It is forbidden to use the trailer contrary to its purposes. The staff operating the machine should strictly observe basic health and safety regulations.
- Prior to each trailer's use check its technical condition, especially the condition of the coupling system, drive system, brakes and signaling lights.

- The machine is marked with information and warning inscriptions in the form of stickers as specified in Table 1. The user is obliged to constantly take care of the readability of signs and warning symbols on the machine. In the event of damage or destruction replace them with new ones.
- Labels with inscriptions and symbols are available from the manufacturer.
- Animals found on the trailer affecting the its center of gravity must be secured by tying to special rails fastened on the side walls and on the front wall,
- It is forbidden to transport humans on the trailer, as well as animals unsecured against uncontrolled movement during transport.

3.2 COUPLING AND DECOUPLING THE TRAILER

- Before attaching a trailer, make sure that the tractor and trailer are technically efficient.
- The trailer is to be secured against rolling by wedges (item 6 fig. 2).
- The trailer cannot drive in a suspended coupling, only by coupling to the tractor's hitch.
- The trailer is adapted to cooperation with agricultural tractors fitted with a hitch for single-axle trailers.
- While connecting the trailer, use only the hitch for single-axle trailers. After completion of the machine coupling, check the security of the hitch. Read the whole manual for the tractor's use If the tractor is equipped with an automatic hitch, make sure the coupling operation has been completed correctly.
- Be very careful when you connect the machine.
- The trailer may only be coupled or decoupled when the machine has been immobilized by means of the parking brake.
- When coupling, nobody may stay between the trailer and the tractor. The person assisting during coupling of the machine should be visible to the tractor's operator throughout the entire trailer coupling process.
- A trailer decoupled from a tractor must be secured by means of wheel chocks and the parking brake.
- Decoupling of the trailer is prohibited if live animals or cargo placed in a manner that may render the

vehicle unstable are found in the cargo box.

3.3 TIRES.

- When working with the wheels, secure the spreader, in case of self-launching of movement, using the parking brake and planting chocks under the wheels.
- Repair work on the tires and wheels should be performed by using appropriate tools.
- After each installation of a wheel, tighten the nuts after the first 10 working hours, then every 50 working hours to check their tightening (according to Table 6).
- The air pressure is to be checked regularly. Observe the recommended air pressure.
- Dismantling the wheels can be carried out only in the case when the trailer is not loaded.
- Avoid damaged road surface, quick and variable maneuvers and high speed during turns.
- Tire valves are to be protected with caps to prevent penetration of impurities.

3.4 PNEUMATIC AND HYDRAULIC SYSTEM.

- The hydraulic and pneumatic installations during operation are under high pressure.
- Regularly check the technical condition of the connections and the hydraulic and pneumatic systems. Oil leaks and air leaks are unacceptable.
- In case of failure of the hydraulic or pneumatic installation, the trailer should be out of operation until failure removal.
- When connecting the hydraulic hoses to the tractor, pay attention that the hydraulic system of the tractor and the trailer are not under pressure. If necessary, reduce the residual pressure system.
- In the case of injury with a strong jet of hydraulic oil should, immediately consult a doctor. The hydraulic oil can penetrate the skin and cause an infection. If the oil gets into your eyes, rinse with plenty of water and consult a doctor.
- In the event of contact of oil with skin, wash the dirty spot with soap and water. Do not use organic solvents (petrol, kerosene).
- Use the hydraulic oil recommended by the Manufacturer.
- After replacing the hydraulic oil, the used oil must be disposed of Used oil or one that has lost its properties should be stored in its original containers or in substitute

packages which are hydrocarbon-resistant. Replacement containers must be carefully described and stored properly.

- It is forbidden to store hydraulic oil in packaging designed for food storage.
- Rubber hydraulic couplings must be replaced every 4 years regardless of their technical condition. Hose replacement must comply with the technical requirements of the manufacturer.

3.5 MAINTENANCE.

- Repair, maintenance and cleaning jobs and the removal of function faults is to be performed with the engine of the tractor stopped and the ignition key taken out.
- During maintenance and repair jobs use appropriate tools and protective clothing.
- Oils and lubricants are to be carefully removed. The used oil and grease is to be disposed of.
- Before electrical, welding and working works on the electrical system, separate the continuous supply of power to the electrical system of the tractor.
- Use the spare parts according to the catalog of spare parts.
- Modifications can be made only with the permission of the manufacturer. The basic condition for safety are original spare parts and components. Using other parts may result in exclusion of liability of the manufacturer for resulting consequences.
- It is forbidden to weld galvanized elements because of the harmful vapors.

3.6 PRINCIPLES OF MOVEMENT ON PUBLIC ROADS.

- When driving on public roads you must adapt to the traffic regulations and transport regulations in force in the country in which the trailer is operated.
- Do not exceed the speed limit.
- Adapt the speed to the prevailing road conditions and the degree of loading of the trailer.
- While driving on public roads the trailer should be equipped with a certified or approved warning triangle. A triangular plate should be placed on the rear wall for slow-moving vehicles (1) as shown below (Fig. 2).

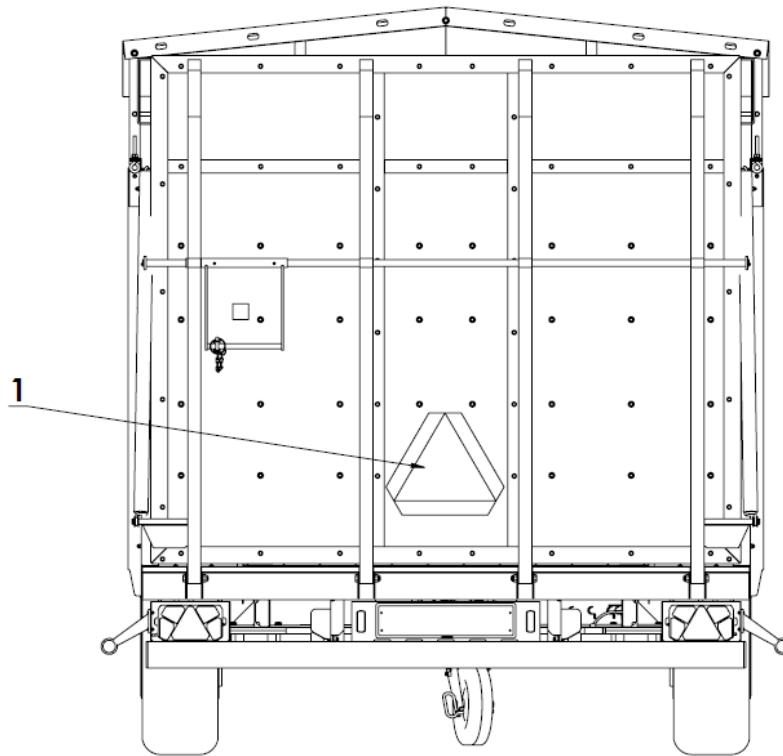


Fig. 2. T-677 trailer (view from rear)

1 – Warning triangle



NOTE!

NOTE!

It is forbidden to park on the slopes with a loaded and unsecured machine. Securing is based on stopping with the service brake, parking brake and planting chocks under the wheels.

- The presence and transport of people in the trailer load crate is prohibited.
- Before driving, make sure that the trailer is properly connected to the tractor (in particular, check the safety pin hook).
- It is forbidden to park on the slopes with a loaded and unsecured machine. Securing is based on stopping with the service brake, parking brake and planting chocks under the wheels. The chocks (1) should be planted only under one wheel (2) (one front wheel and one on the back - Fig. 3).
- Prior to each trailer's use, check its technical condition, especially in terms of safety. In particular, check the technical condition of the coupling system, drive system, brakes and signaling lights and hydraulic, pneumatic and electrical connection elements.

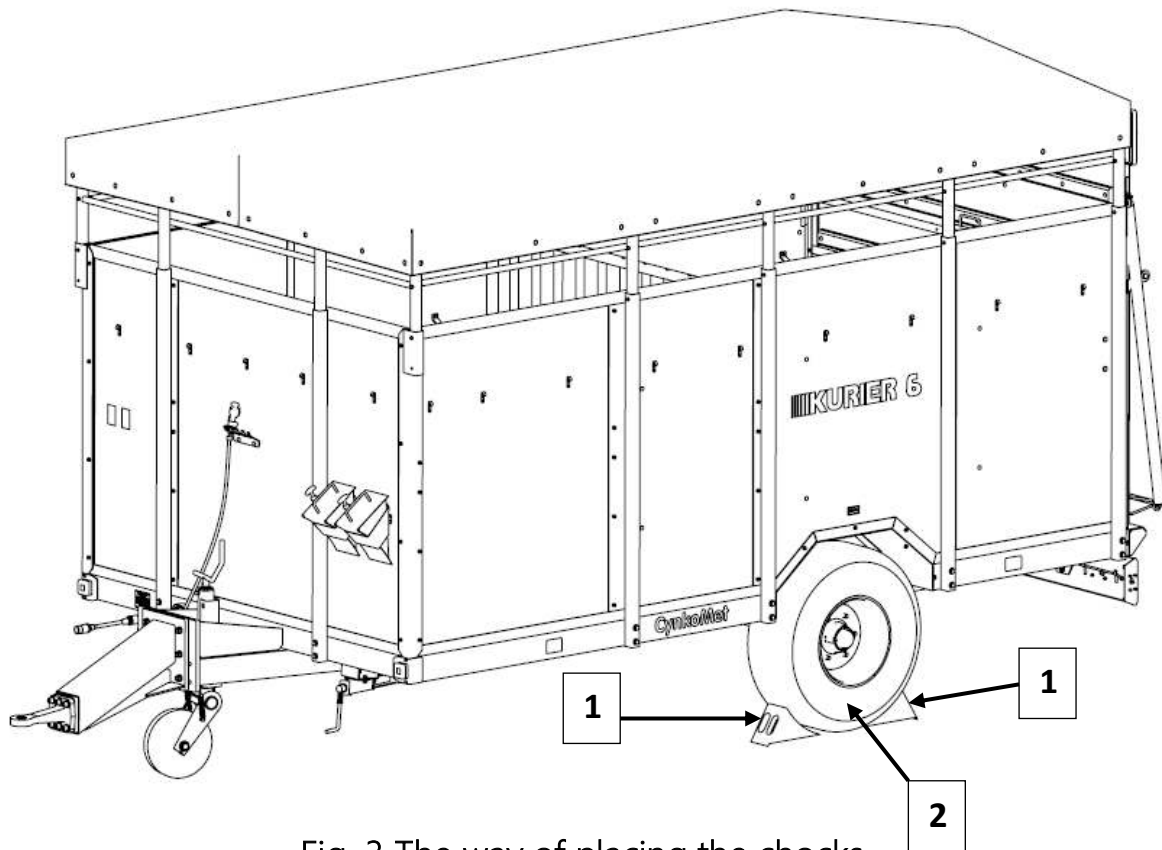



Fig. 3 The way of placing the chocks.

- Before driving, check that the parking brake is released and the braking force regulator is set to the correct position (concerns pneumatic systems with a manual, three-position regulation).
- The trailer is adapted for driving on slopes up to 8°. Moving the trailer through grounds with steeper slopes may cause the trailer to tip over as a result of loss of stability.
- Each time, after finished work, drain the air reservoir in the pneumatic installation. During frosts, freezing water may cause damage to pneumatic system components.
- The cargo protruding beyond the outline of the trailer should be marked in accordance with the rules of the traffic.
- It is prohibited to exceed the admissible trailer load. Exceeding the carrying capacity may lead to equipment damage, loss of stability while driving, scattering of the load and cause a hazard to third parties. The brake system of the machine has been adapted to the total weight of the trailer, which if exceeded will result in a drastic reduction in the effectiveness of the brake.
- The load on the trailer should be distributed evenly and must not impede

driving the set. The load must be secured so as not to have the ability to move or fall over.

- When reversing, it is recommended to use the assistance of another person. During maneuvering, the person helping must keep a safe distance from the danger zones and at all times be visible to the operator of the tractor.
- If during reversing we are not using the help of a second person, before commencing the maneuver, make sure that nobody is in the danger zone. Before the start of the maneuver, use a sound signal.

 NOTE!	NOTE! Before each maneuver of reversing and start of dumping the material loaded on the load box, use of the beep signal 2 times is recommended in the tractor in order to inform bystanders about the threat.
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3.7 DESCRIPTION OF RESIDUAL RISK.

Although the "CYNKOMET" Czarna Białostocka company takes responsibility for the design and construction in order to eliminate the danger, and made every effort to eliminate the risk of an accident, some elements of risk during operation of the trailer are unavoidable. The residual risk stems from the wrong behavior of the machine operator.

The greatest danger occurs when you do the following:

- use the trailer for purposes other than those described in the manual,
- stay between the trailer and the tractor when the engine is running,
- operating the machine by unauthorized persons, under aged persons or under the influence of alcohol or other drugs,
- stay on the machine during operation,
- clean the machine during operation,
- not maintaining a safe distance during the operation of the machine including (reversing, driving, loading or unloading the trailer,
- introduce structural changes without the consent of the manufacturer,
- clean, carry out maintenance and technical checks of the trailer,
- the presence of people or animals in areas invisible from the driver's position.

When presenting the residual risk, the spreader is treated as a machine, which until the start of production was designed and manufactured according to the current "state of the art".

3.8 RESIDUAL RISK ASSESSMENT.

When observing such recommendations as:

- carefully reading the user manual.
- prohibition of placing your hands in inaccessible and forbidden places,
- prohibition on being on the machine during operation,
- maintenance and repair of the machine according to instructions,
- to work with the components and elements with sharp edges you must use suitable protective clothing (gloves, boots, etc.)
- securing the machine against the access of children,
- use of the observations and recommendations contained in the operating instructions,
- keeping a safe distance from forbidden or dangerous places during unloading, loading and coupling trailers,
- performing maintenance and repair jobs in accordance with the security service rules,
- prohibition on being on the machine during driving, loading or unloading
- can be eliminated residual risk with the use of the machine without risk to humans and the environment.



NOTE!

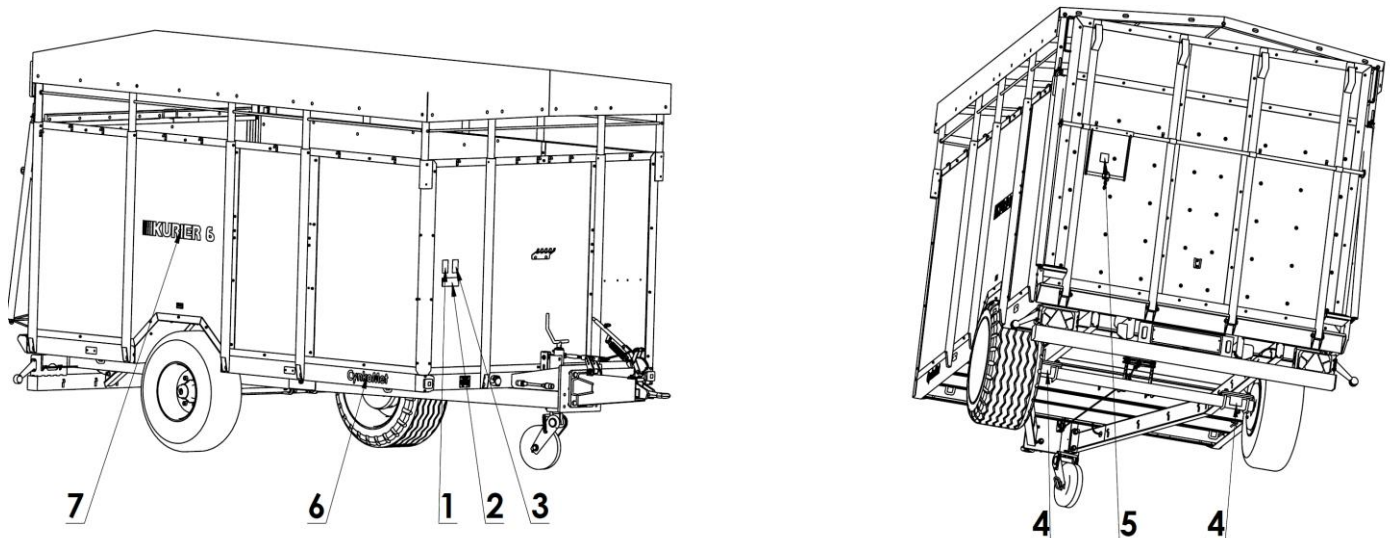
NOTE!

There is residual risk in the event of failure to comply with the set-out recommendations and guidelines.

3.9 INFORMATION AND WARNING STICKERS.



The trailer is marked with information and warning labels listed in table 1 and positioned as in fig. 4. The user of the machine is obliged to take care of the readability of the subtitles, warning symbols and information placed on the trailer throughout the whole period of its use. In the case of destruction, replace them with new ones. Labels with inscriptions and symbols are available from the manufacturer or the place where the machine was purchased. New units replaced during repairs must




be re-marked with the appropriate safety signs. When cleaning the trailer, do not use solvents that can damage the coating of labels and do not direct a strong stream of water.



Rys.4 Positioning of stickers

Table 1. Placement of informational and warning signs.

No	Safety symbol (mark) or content of inscription	Meaning of the symbol (sign)	The placement on the machine
1		Note Before starting work, please read the User's Manual.	Front wall
2		Note Turn off the engine and remove the key before starting maintenance or repair	Front wall
3	Inscription "Coupling only to hitch for single-axle trailers."	-	Front wall

4		Designation of lifting points for lifts.	Driving axle of trailer
5		Designation of crushing hazard areas for scissor-folding elements.	On rear door from the rear of the trailer
6	CynkoMet		The right-side wall, left side wall
7			The right-side wall, left side wall

4. INFORMATION REGARDING USE

4.1 TECHNICAL CHARACTERISTICS.

Table 2. Basic technical specifications of the agricultural trailer.

NO.	CONTENT	Unit of measure	KURIER - 6
1	Total length	mm	5720
2	Total width	mm	2420
3	Total height	mm	2790 (2805)
4	Track of wheels	mm	2000 (1970)
5	Dimensions of the loading crate: <ul style="list-style-type: none"> • Length • width • height 	mm mm mm	4160 2256 1500
6	Loading surface	m ²	9.3
7	Height of the loading surface	mm	700

8	Gross vehicle weight rating	kg	5360
9	Maximum axle load	kg	4360
10	Vehicle weight	kg	1760
11	Allowed payload of the vehicle	kg	3600
12	Maximum vertical load on hitch	kg	1000
13	Tire size		11.5/80-15.3
14	Tires Speed Index		Min. A6 (min A8)**
12	Tires Load Index		Min. 135 (2180 kg)
13	Permissible design speed	km/h	30 (40)**
14	Power requirement	HP/kW	60/44
15	The level emitted of noise	dB	Below 70

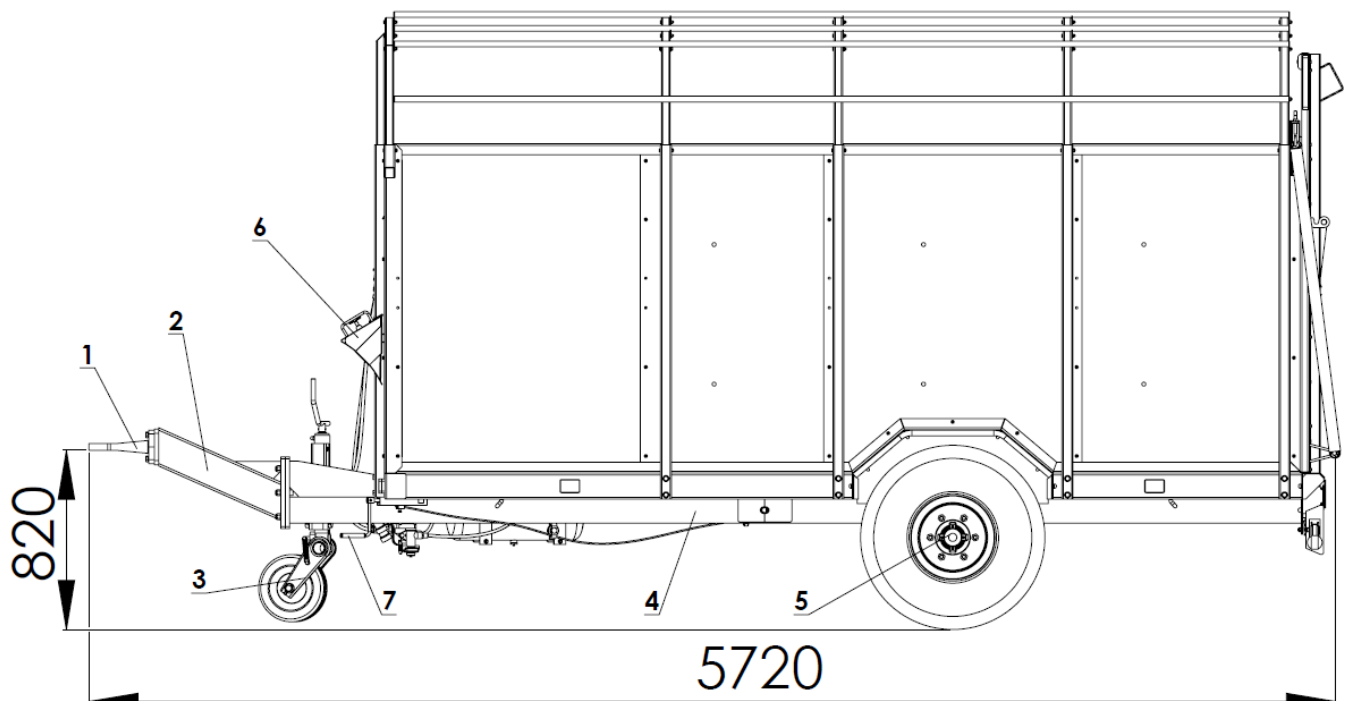
*Dimensions in parentheses pertain to 400/60-15.5 14PR tires

** Version with overrun brake.

4.2 DESCRIPTION OF CONSTRUCTION AND OPERATION.

4.2.1. TRAILER CHASSIS.

The chassis of the trailer consists of the following parts shown in figure 2.



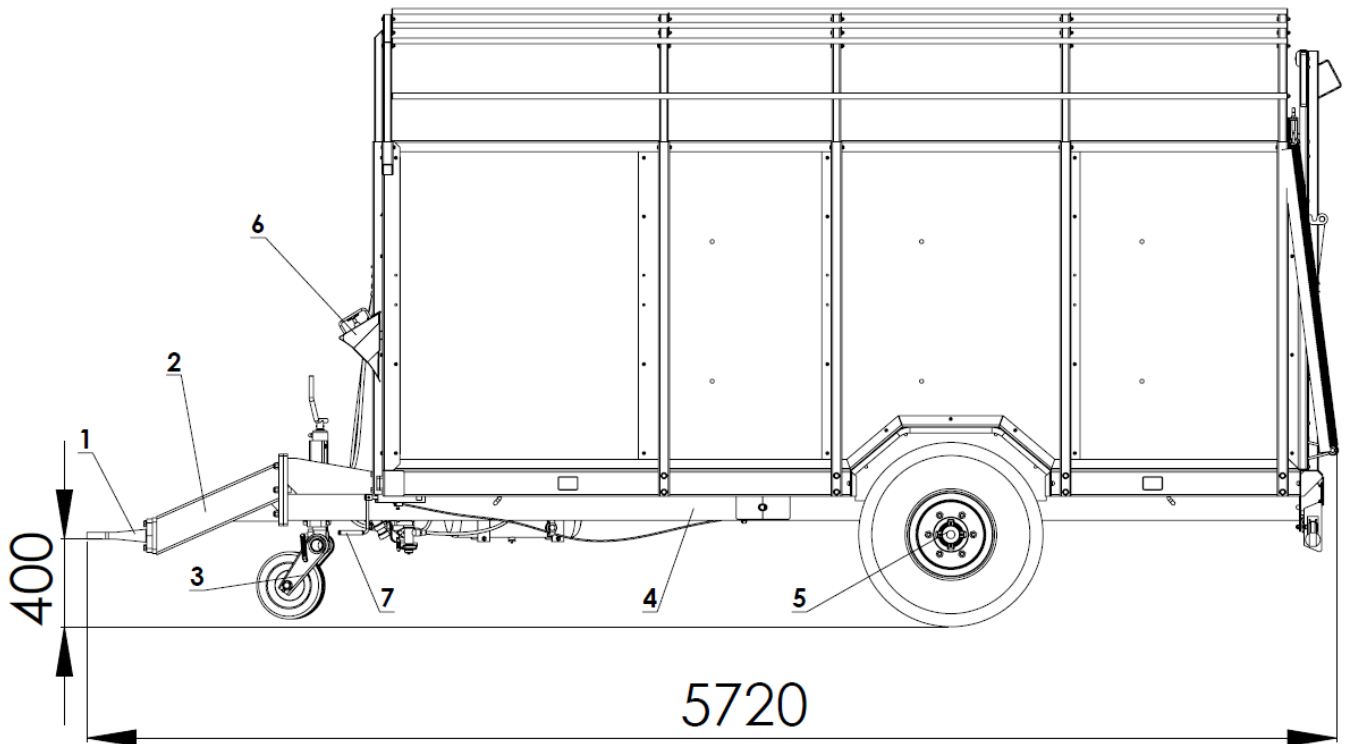


Fig. 5. T-677 trailer (view from side).

1 – drawbar tension member; 2 – adjustable drawbar bracket; 3 – support; 4 – frame; 5 – driving axle with wheels, 6 – driving wedges, 7 – parking brake crank

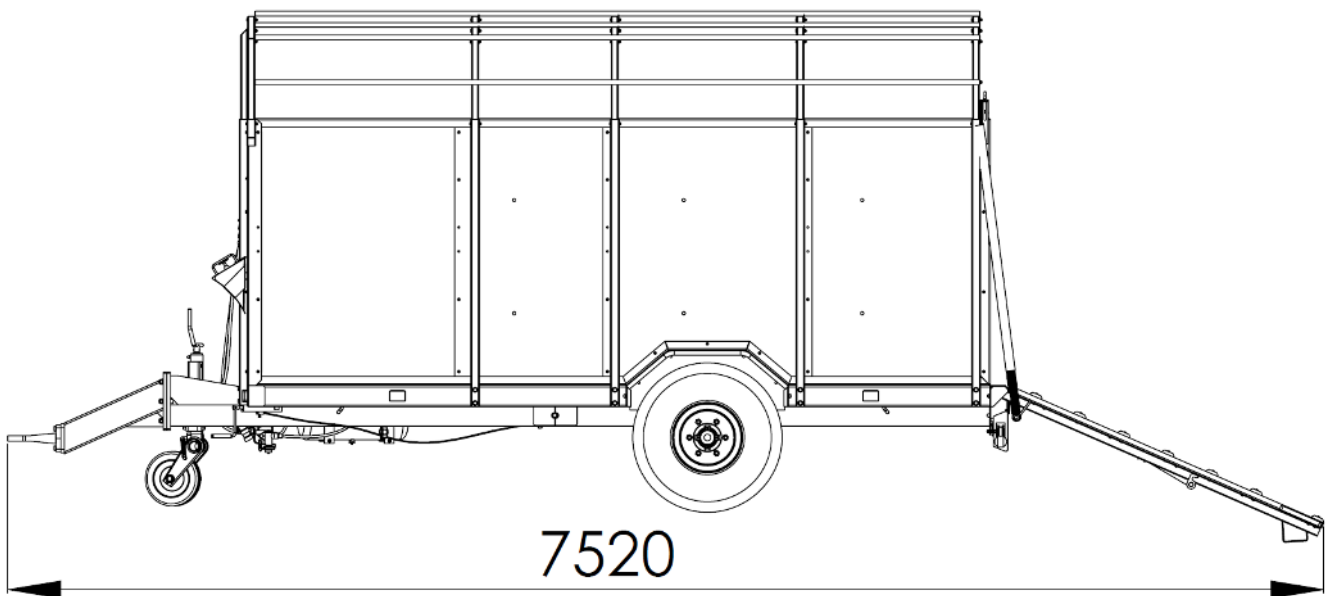


Fig. 6 T-677 trailer with lowered rear wall.

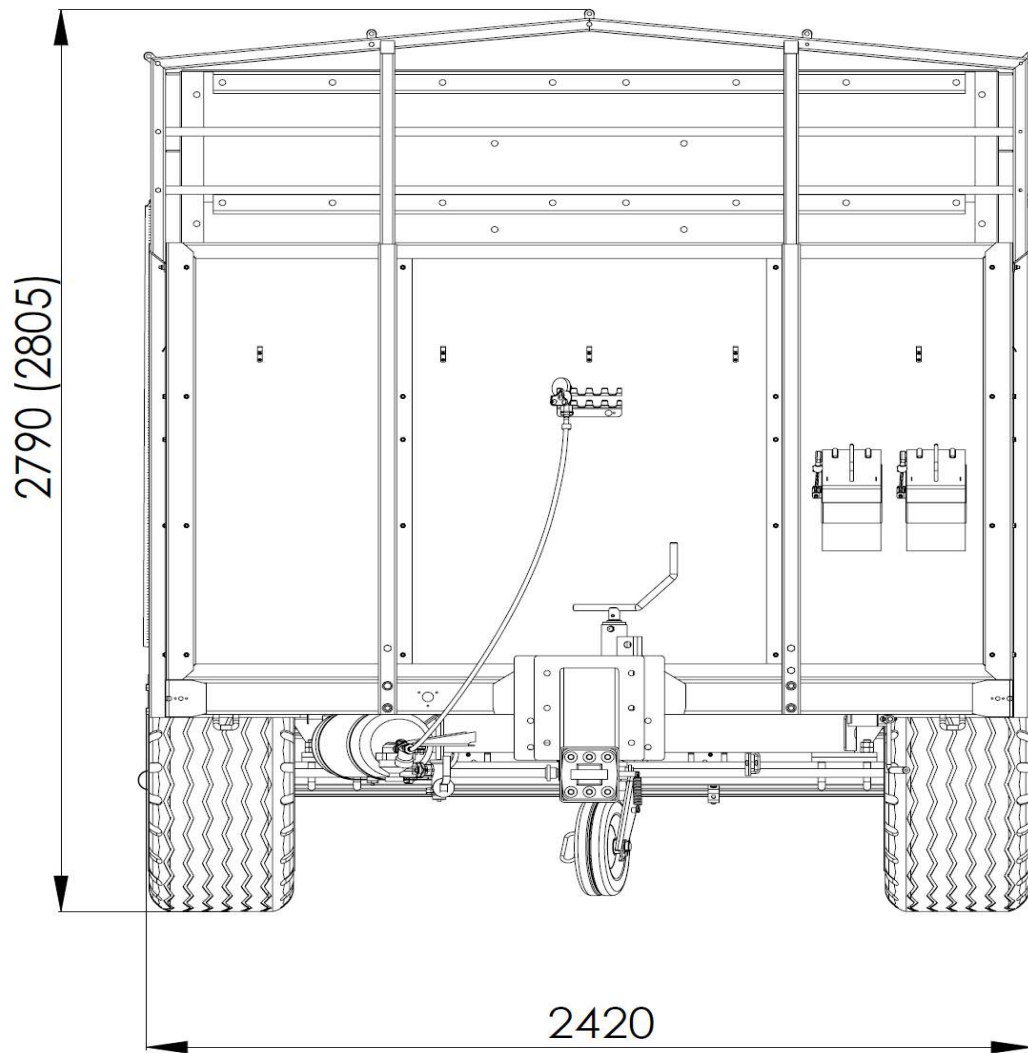


Fig. 7 T-677 trailer (view from front)

The frame consists of welded steel sections. The basic carrying elements are two stringers connected to each other via crossbars. Elements for fastening the driving axle and elements of the rear lighting unit are located in the rear part of the frame.

The driving axle is made of a square bar ending with pivots, on which tapered roller bearings, and then wheel hubs, are mounted. These are single wheels equipped with shoe brakes activated by mechanical cam expanders. An adjustable drawbar (item 2 fig. 5) and support (item 3 fig. 5) are found in the front part of the frame. Drawbar fastening variants are presented in fig. 2.

4.2.2. LOAD BOX.

The load box (fig. 8) is designed for transport of livestock. It consists of a wooden floor (impregnated boards mounted on the frame), side walls, front wall, rear wall, tarpaulin frame and rails situated near the rear wall. In addition, the trailer can be equipped with a tarpaulin and interior partition making it possible to divide the cargo box.

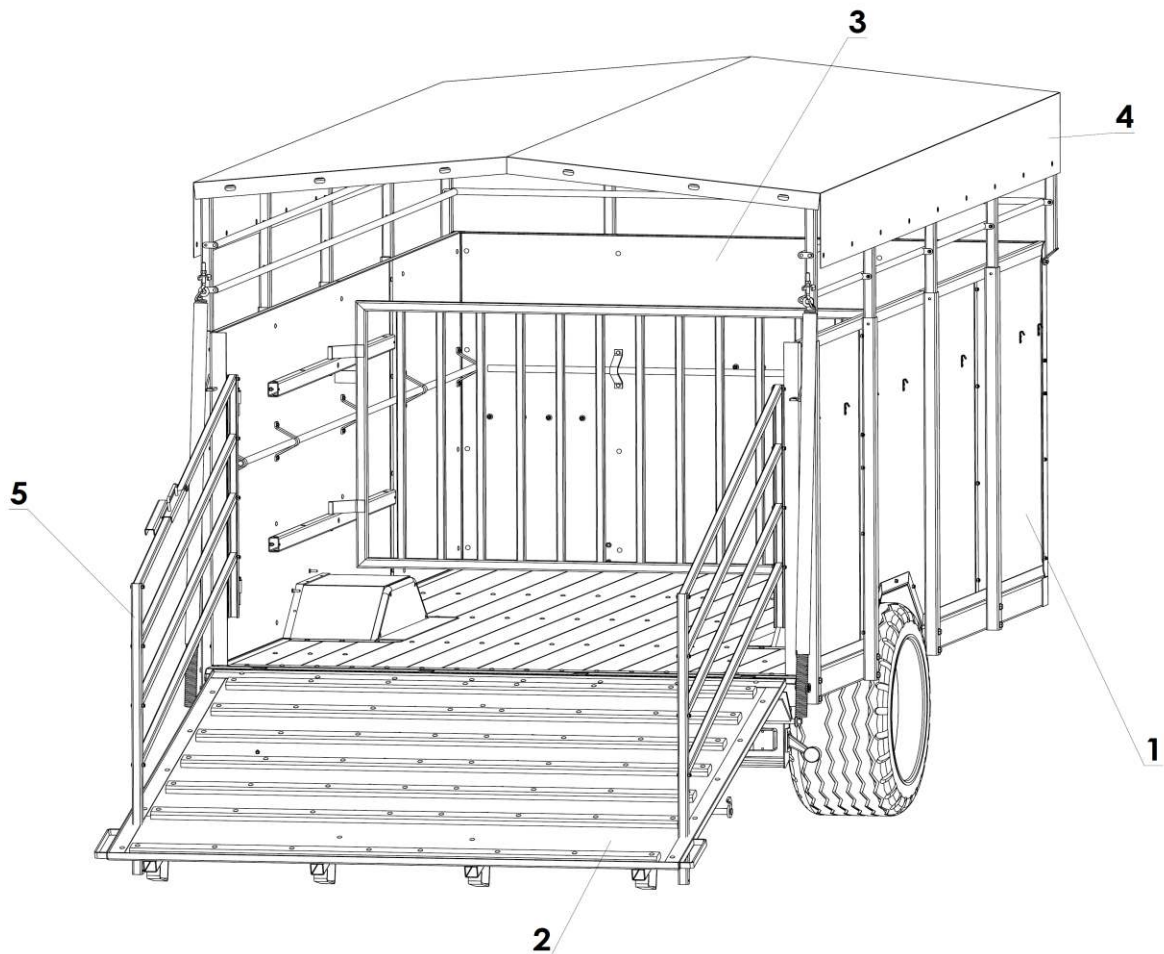


Fig. 8 Cargo box.

1 – side wall; 2 – dismountable rear wall; 3 – front wall; 4 – frame with tarpaulin; 5 – rail.

4.2.3. BRAKE SYSTEM.

The trailer is equipped with a braking system consisting of:

- working brake, controlled pneumatically or hydraulically or by the overrun brake system, depending on the order,
- parking brake engaged manually by means of a crank mechanism found at the front of the trailer or by means of a ratchet mechanism (in the case of an option with the overrun brake)

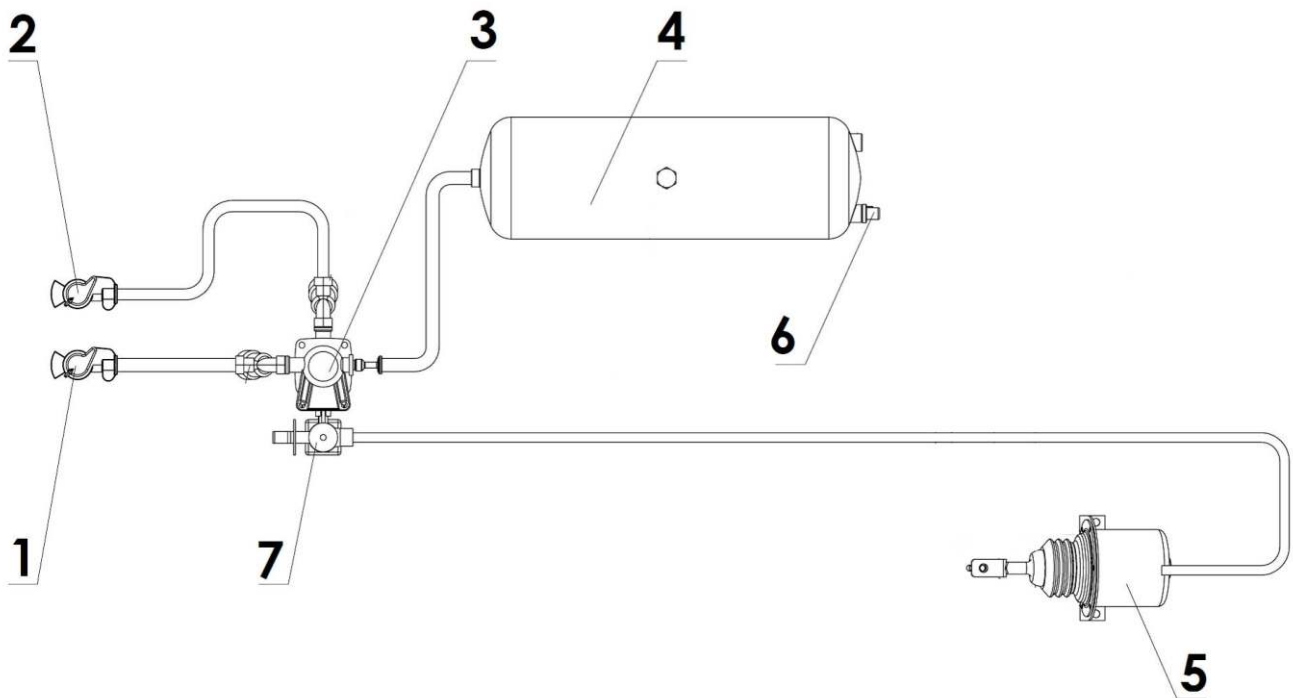


Fig. 9 Diagram of the pneumatic double-circuit braking installation.

1 – red hose connector; 2 – yellow hose connector; 3 – control valve; 4 – air tank; 5 – pneumatic actuator; 6 – inspection coupling; 7 – braking force regulator;

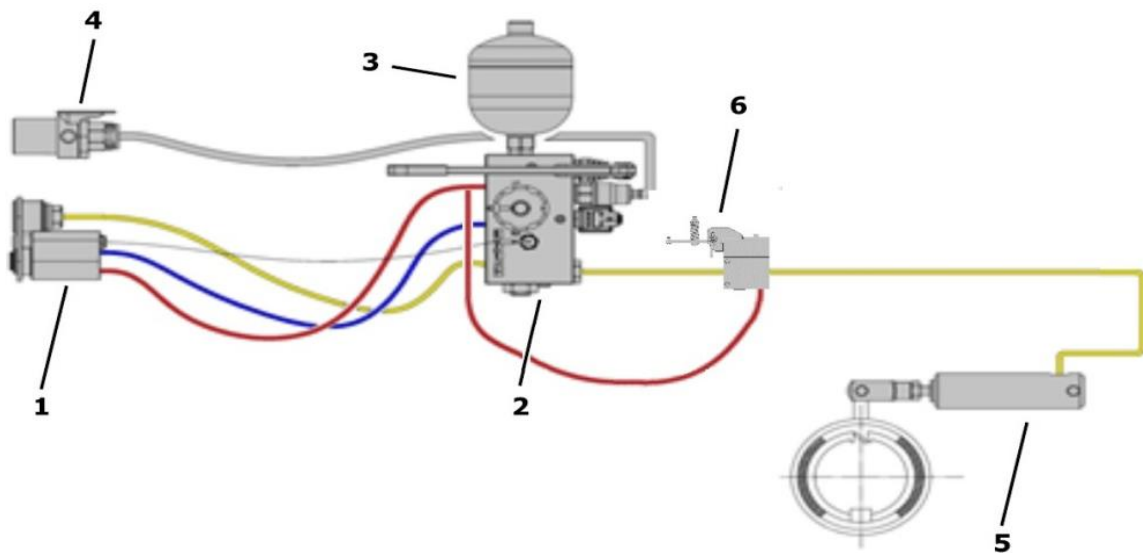


Fig. 10. Diagram of a hydraulic brake system.

1 – double brake coupling (compliant with ISO 5676 and ISO 16028); 2 – brake valve; 3 – accumulator; 4 – electrical connector (ISO 76382); 5 – brake cylinders; 6 – automatic braking force regulator


 NOTE!	NOTE! Factory-made, the hydraulic system of the trailer is filled with Agrol U oil.
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Table 3. Characteristics of Agrol U oil

Item no.	Requirements	Research method based on	Unit	Value
1.	kinematic viscosity at 100 ^o C	ASTM D 445	mm ² /s	10.0-11.5
2.	flow temperature	ASTM D 97	^o C	<- 24
3.	flash point	ASTM D 92	^o C	>230
4.	base number	ASTM D 2896	mgKOH/g	9.9
5.	viscosity index	ASTM D 2270		>95
6.	CCS structural viscosity at - 18 ^o C	ASTM D 5293	mPa*s	<9000

Specifications, qualifications of the **Agrol U oil**:

- API GL-4
- DIN HLP
- ISO VG 100
- John Deere J20C
- MF CMS M1145
- Volvo WB101
- ZF TE-ML-03E, ZF TE-ML-05F

The pneumatic or hydraulic service brake is activated from the workplace of the tractor driver by pressing the brake pedal of the tractor. The construction of this brake provides automatic braking of the driving wheels of the trailer in the event of an unexpected disconnection of tractor's and trailer's pneumatic systems.

The braking force regulator found in the pneumatic system (item 9 fig. 9) is controlled manually. Depending on the load of the trailer with cargo, the control lever must be set in one of three positions:

- position "0" - for an unladen trailer,
- position "1" - for the trailer partially loaded,
- position "2" - for the trailer fully loaded.

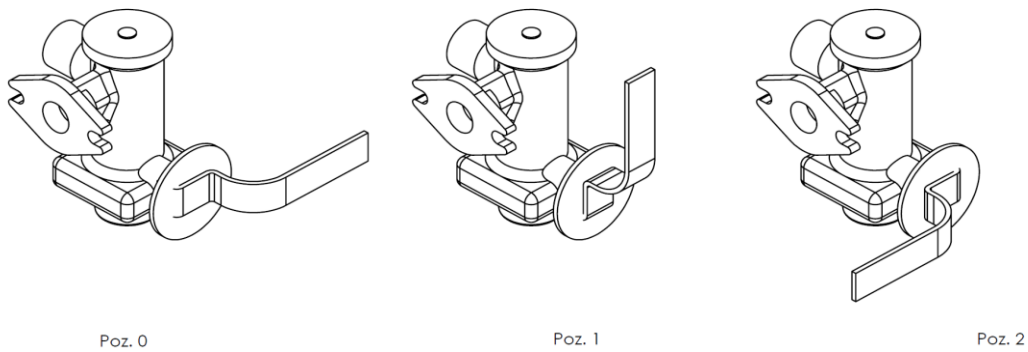


Fig. 11 Manual braking force regulator of T-677 trailer

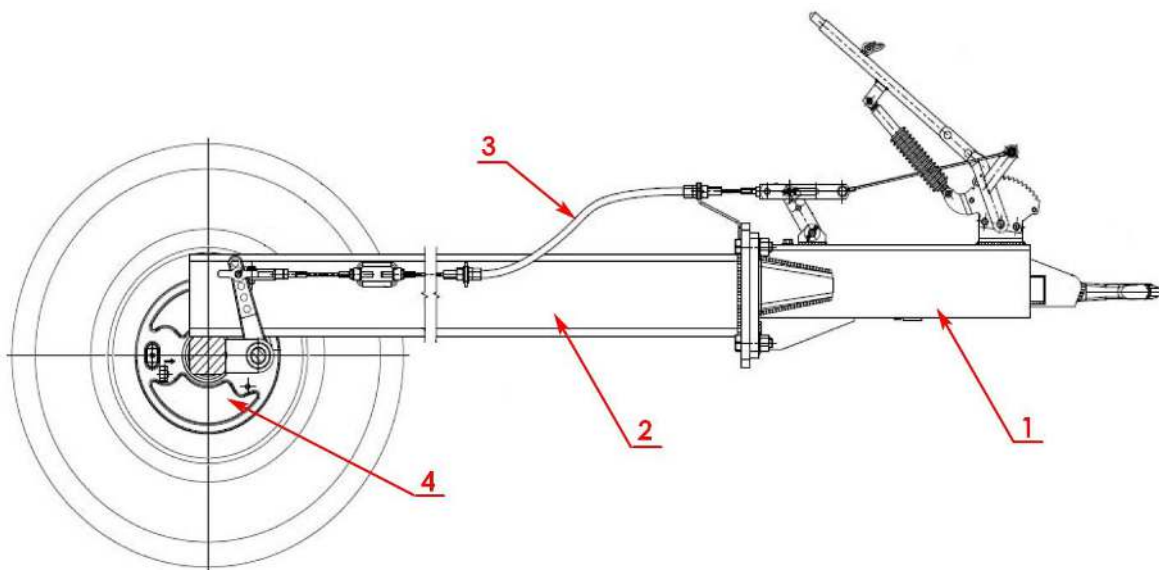


Fig. 12. Diagram of overrun brake system

1 – drawbar of overrun brakem 2 – vehicle frame, 3 – steel cord, 4 – driving axle

The overrun brake (fig. 12) is engaged automatically during braking of the drawing vehicle. When the brake is engaged in the tractor, the trailer exerts pressure on the hitching point on the tractor due to inertia, which makes the drawbar's tension member move to the back of drawbar (1), putting tension on steel cord (3) connected to the expanders of driving axle (4), engaging the trailer's brakes. In the option with the overrun brake, the axle is equipped with a system preventing locking of wheels during the reversing maneuver.

A trailer equipped with an overrun brake does not have a separate parking brake system.

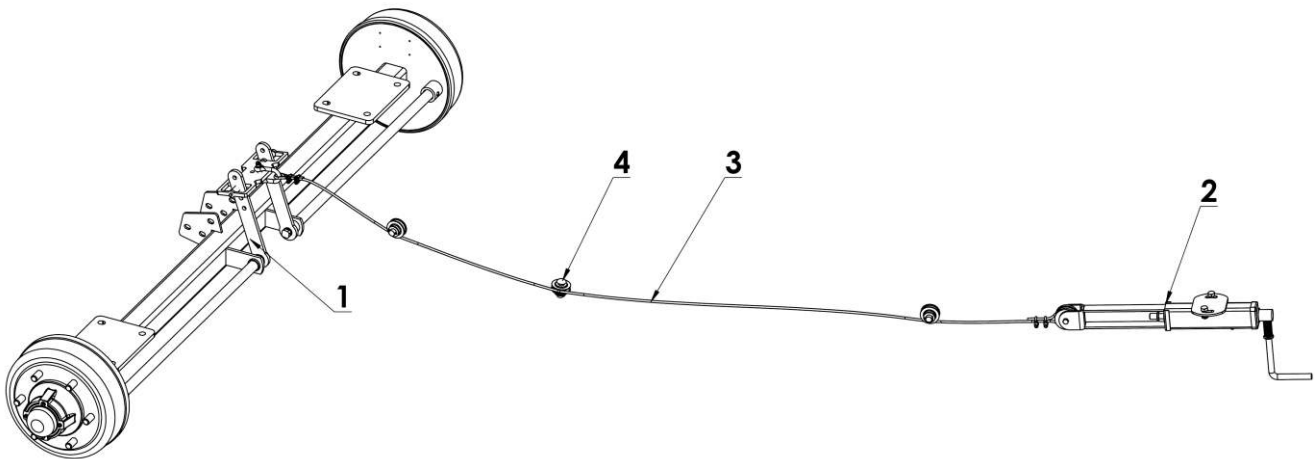


Fig. 13 Parking brake with crank mechanism

The parking brake (fig. 13) is used to immobilize the trailer when stationary. The brake's crank mechanism (item 2) is welded to the right stringer of the lower frame. The steel cable (item 3), led by the rollers (item 4), is connected to the levers of the rear driving axle's expander (item 1) with the crank mechanism. Tightening the string (rotation of the crank mechanism in the direction of the clock's rotation) causes a shift of the lever spreader that, when parting the brake linkage, immobilize the trailer.

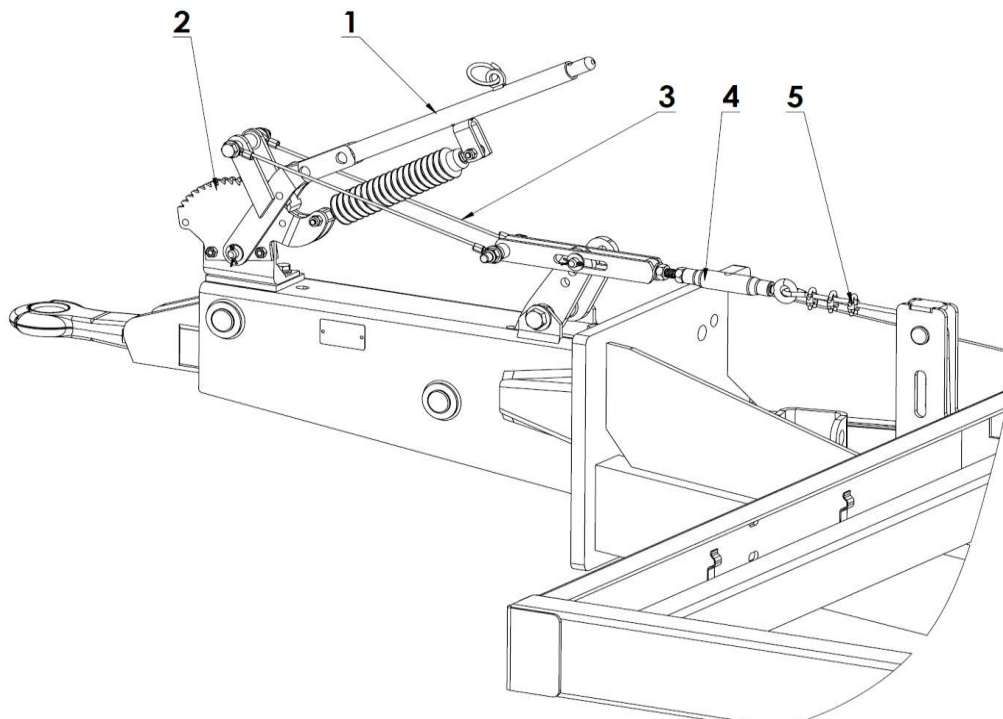


Fig. 14 Overrun brake drawbar

lever, 2 - gear, 3 - cord, 4 - tensioner, 5 – overrun brake cable

If the trailer is equipped with an overrun brake, the parking brake is integrated with the overrun brake (fig. 14). The parking brake is engaged by pulling the lever (item 1) towards the front of the trailer. The ratchet system (item 2) prevents the lever from spontaneously returning to the disengaged position. To release the brake, press the button found in the lever's hand-grip and move the lever towards the back of the drawbar.

Table 4 Required pressure values in brake systems

Ite	Nominal pressure in the brake system	Unit	Value
1.	Two-wire pneumatic installation	bar (kPa)	6,5-8 (650-800)
2.	Hydraulic installation	bar (kPa)	150 (15000)



NOTE!

NOTE!

Before connecting the trailer, check whether the nominal pressure given in table 4 is reached on the brake lines. If the pressure is lower than specified, it is PROHIBITED to use the trailer with such a tractor.



NOTE!

NOTE!

In the event of pressure drop below 4.5 bar in the pneumatic double-hose brake system, the trailer's brake system may be blocked.

ELECTRICAL INSTALLATION, LIGHTING AND

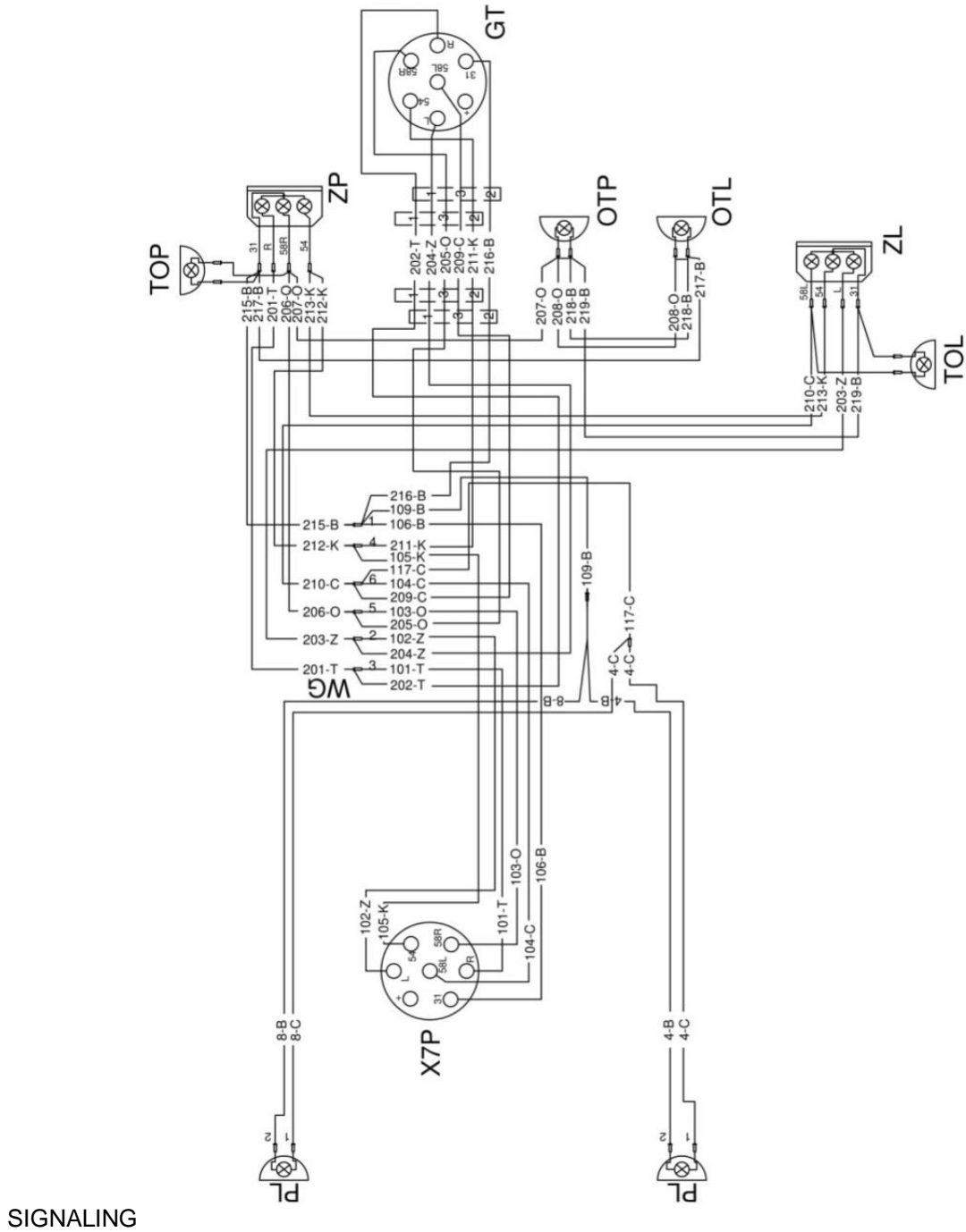


Fig. 15. Wiring diagram of the trailer.

(PL) front clearance lamp, (X7P) front seven-slot socket, (GT) rear seven-slot socket, (TOP, TOL) Rear clearance lamp, (OTP, OTL) lighting lamp of the license plate, (ZP) rear right assembly lamp, (ZL) rear left assembly lamp

Electrical installation of the trailer (fig. 15) is designed to be powered from a DC voltage source of 12V. Joining the electrical installation of the trailer of the tractor should be made with a suitable connecting line.

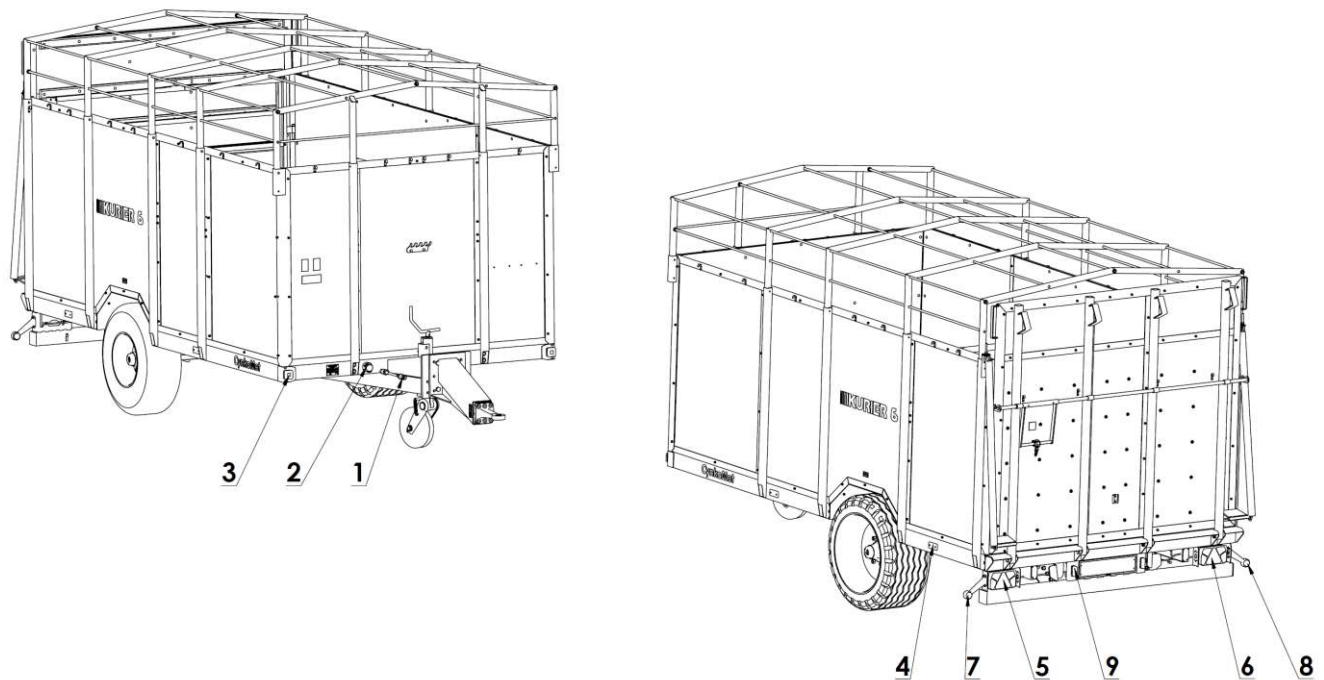


Fig. 16 Lighting and signaling diagram

complete connector cable; 2 - plug-in socket; 3 - front position lamp with reflector; 4 - side position lamp and yellow reflective device; 5 - left rear cluster lamp; 6 - right rear cluster lamp; 7 - left rear perimeter lamp; 8 - right rear perimeter lamp, 9 - registration plate lighting lamp

4.3 RULES OF PROPER TRAILER USE.

4.3.1 PREPARATION BEFORE RUNNING FOR THE FIRST TIME.

4.3.1.1 CONTROL OF THE TRAILER AFTER DELIVERY

The manufacturer guarantees that the trailer is fully operational and complete and has been checked according to quality control procedures and is approved for use. However, this does not relieve the user from the obligation of checking the vehicle after delivery and before first use.

Before starting work, the operator of the trailer must inspect the technical condition of the trailer and prepare it for the first run. Please refer to this manual attached to the trailer and follow the recommendations

contained in it, take a look at the design and understand the principle of operation of the machine.



NOTE!

NOTE!

Before connecting and before starting the trailer, read this manual and follow the instructions contained therein.

External visual inspection:




- Check the completion of the machine (standard and optional equipment).
- Check the condition of the anti-corrosion coatings.
- Perform a visual inspection of the individual components of the trailer for mechanical damage resulting inter alia due to improper transport of machines (dents, piercing, bending or broken components).
- Check the condition of tires of the driving wheels and the air pressure in the tires.
- Inspect the technical state of the flexible hydraulic hoses.
- Check the technical condition of pneumatic cables.
- Make sure that there are no leaks of hydraulic oil.
- Check the electric lamps of lighting.
- Control the markings on the machine (according to Table 1)

4.3.1.2 PREPARATION OF THE TRAILER FOR THE FIRST CONNECTION.

Preparation

- Check all lubrication points of the trailer, if necessary, lubricate the machine.
- Check for proper tightening of nuts fixing the driving wheels.
- Dehydrate the air tank in the brake installation.
- Make sure that the pneumatic, hydraulic and electrical connections in the agricultural tractor comply with the requirements, otherwise do not connect the trailer.
- Set the drawbar's hitching member at the height of the tractor's hitch (this can be achieved by rotating the lever of the support, extending or retracting the support's

wheel or adjusting the tractor's hitch height, if possible).

 <p>NOTE!</p>	<p>NOTE!</p> <p>Before each maneuver of reversing and unloading the material loaded on the loading crate, it is recommended to use the beep signal 2 times in the tractor in order to inform bystanders about the threat.</p>
 <p>NOTE!</p>	<p>NOTE!</p> <p>Presence of third parties between machines is absolutely prohibited at the time of aggregation of the trailer to the tractor. Failure to follow these instructions and performing the maneuver incorrectly can lead, in extreme cases, to death of the person who is between the spreader and the tractor</p>
 <p>NOTE!</p>	<p>NOTE!</p> <p>It is absolutely forbidden to leave the tractor with the engine running and the key inserted in the ignition.</p>

Trial passage

If all the above steps have been performed and the technical condition of the trailer does not raise any objections connect the machine to the tractor. Start the tractor, inspect the individual systems and carry out a test run of the trailer and make a road test with no load (no loaded create). It is recommended to carry out an inspection by two people, one of them should reside in the operator's cab of the tractor. The test run should be carried out in the order shown below.


- Connect the trailer to an appropriate hitch in the agricultural tractor.
- Connect the wires of the braking, electrical and hydraulic systems.
- Running individual lights, check the correct operation of the electrical system.
- Moving from place, check the brake operation.
- Perform a test drive.

If during the test drive, you experience disturbing symptoms such as:

- noise and unnatural noises coming from moving parts rubbing against the trailer construction,

- leakage of hydraulic oil,
 - pressure drop in the brake system,
 - incorrect operation of hydraulic and / or pneumatic actuators
- or other failures, diagnose the problem. If a fault cannot be removed or removing it will invalidate the warranty, please contact your dealer to resolve the problem or repair.

After completion of the test drive, check the tightness of the driving wheel nuts.

 <p>NOTE!</p>	<p>NOTE!</p> <p>Careless and improper use and operation of the trailer, and non-compliance with the recommendations contained in this manual is dangerous to your health.</p> <p>It is forbidden to use the trailer by persons not qualified to drive agricultural tractors, including children and drunken persons.</p> <p>Failure to observe the rules of safe use poses a threat to the health of the operator or bystanders.</p>
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4.3.2 PREPARATION FOR DAILY WORK.

In preparation for work, the following should be checked:

- the wear of the tires and driving wheels,
- Air pressure in the tires,
 - tightening the nuts fixing the discs of the driving wheels to wheel hubs and the condition of other screw connections

In addition, after combining the machine with the tractor check:

- the efficiency of the electrical system and lighting system and trailer signaling,
- the effectiveness of the brake system,
- Mount the triangular sign distinguishing slow-moving vehicles - if the trailer will be moving over public roads

4.4 COUPLING TO AND DECOUPLING FROM THE TRACTOR

The trailer can be connected to the agricultural tractor, if all connections (electrical, pneumatic, hydraulic), and the hook in the agricultural tractor comply with the requirements of the Manufacturer of the trailer and the Manufacturer of the tractor.

In order to connect the trailer to the tractor, perform the following steps:

- Prior to coupling with tractor, check if the trailer is braked with the parking brake.
- Set the drawbar hitch anchorage on the height of the transport hitch of the tractor (this can be achieved by adjusting the drawbar spring tension).
- Reversing the tractor, connect the drawbar end with the upper transport hitch of the tractor (if in the agricultural tractor, an automatic coupler is used, ensure that the aggregate operation has been completed correctly and the drawbar anchorage is secured).
- Stop the tractor engine
- Install and secure the pivot pin from falling out or check the automatic hitch.
- Connect with the electric, hydraulic and brake installation wiring with the trailer.
- Release the parking brake of the machine.
- Raise the wheel of the support to the extreme top position
- Set the transport wheel to transport position as shown in fig. 17. Take special caution – crushing hazard.
- Check, and if necessary, secure hoses against abrasion or mechanical damage
- Immediately prior to driving, remove the chocks from under the trailer's wheels and place them in the holders found on the trailer's front wall.

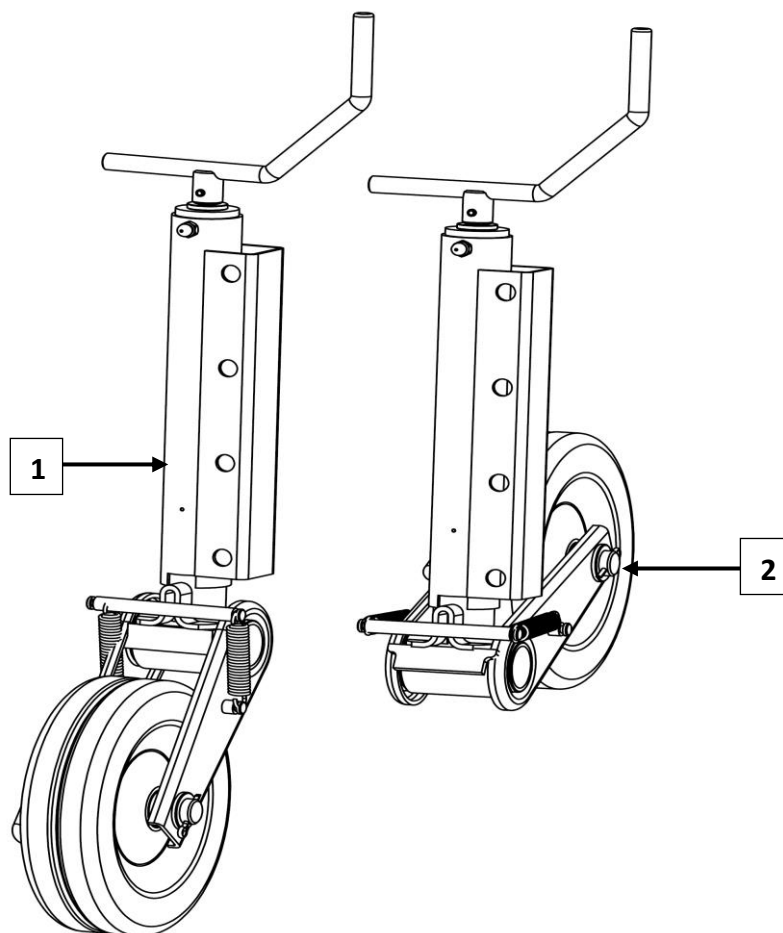



Fig. 17. Support of trailer's drawbar.
1 – drawbar support position, 2 – transport position.

	<p>NOTE!</p> <p>It is forbidden to use an unserviceable trailer.</p> <p>When making connections, connectors must hand loosely and cannot be tangled in the moving parts of the trailer and tractor.</p> <p>During travel of the trailer, the support's wheel must be raised and rotated to transport position.</p> <p>At the time of the coupling, unauthorized people cannot be between the trailer and the tractor. The operator of the tractor, when connecting the machine should be particularly careful when working and make sure that in the course of coupling, other people are not in the danger zone.</p> <p>NOTE! When connecting the hydraulic hoses to the tractor, pay attention that the hydraulic system of the tractor and the trailer are not under pressure.</p> <p>When coupling ensure adequate visibility.</p> <p>Take special caution when working with the support – there is a limb crushing hazard.</p> <p>Coupling the trailer with a hitch other than a hitch for single-axle trailers is unacceptable because it threatens the safety of road traffic</p> <p>After completion of the machine coupling, check the security of the hitch.</p>
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When connecting the braking system (two-wire pneumatic), the correct sequence of connecting cables is important. Be the first to connect the plug marked yellow to a yellow socket in the tractor, and then the plug marked in red to the red socket in the tractor. When you connect the second cable, the brake release system will switch to the normal mode of operation (disconnection or interruption of the air duct causes the trailer control valve to automatically switches to the position of actuating the brakes of the machine). The cables are marked with colored protective caps that identify the correct cable installation.

The plug of the brake line of the hydraulic brake system may only be connected to the socket of the hydraulic brake installation on the tractor.

In order to disconnect the trailer from the tractor, perform the following steps:

- Stop the trailer, turn off the engine and remove the keys from the ignition.
- stop the tractor with a manual parking brake.

- if a trailer with cargo is located on a steep slope or an elevation, it should be protected additionally against rolling by planting chocks under rear wheels.
- disconnect the hydraulic, electrical and brake system cables of the trailer from the tractor
- When removing the pin, disconnect the drawbar from the tractor transport hitch and drive the tractor away.

 <p>NOTE!</p>	<p>NOTE!</p> <p>It is prohibited to decouple the trailer if animals are present in the cargo box.</p> <p>When disconnecting the trailer from the tractor, keep caution.</p> <p>Provide yourself a good visibility.</p> <p>Before disconnecting the hoses and rods, the cabin of the tractor must be closed to prevent it from unauthorized access.</p> <p>The tractor engine must be turned off.</p>
 <p>NOTE!</p>	<p>NOTE!</p> <p>Pay attention to the compatibility of oils in the tractor hydraulic system and the hydraulic brake system of the trailer.</p>

4.5 LOADING AND UNLOADING OF ANIMALS

4.5.1 PREPARING THE TRAILER FOR LOADING

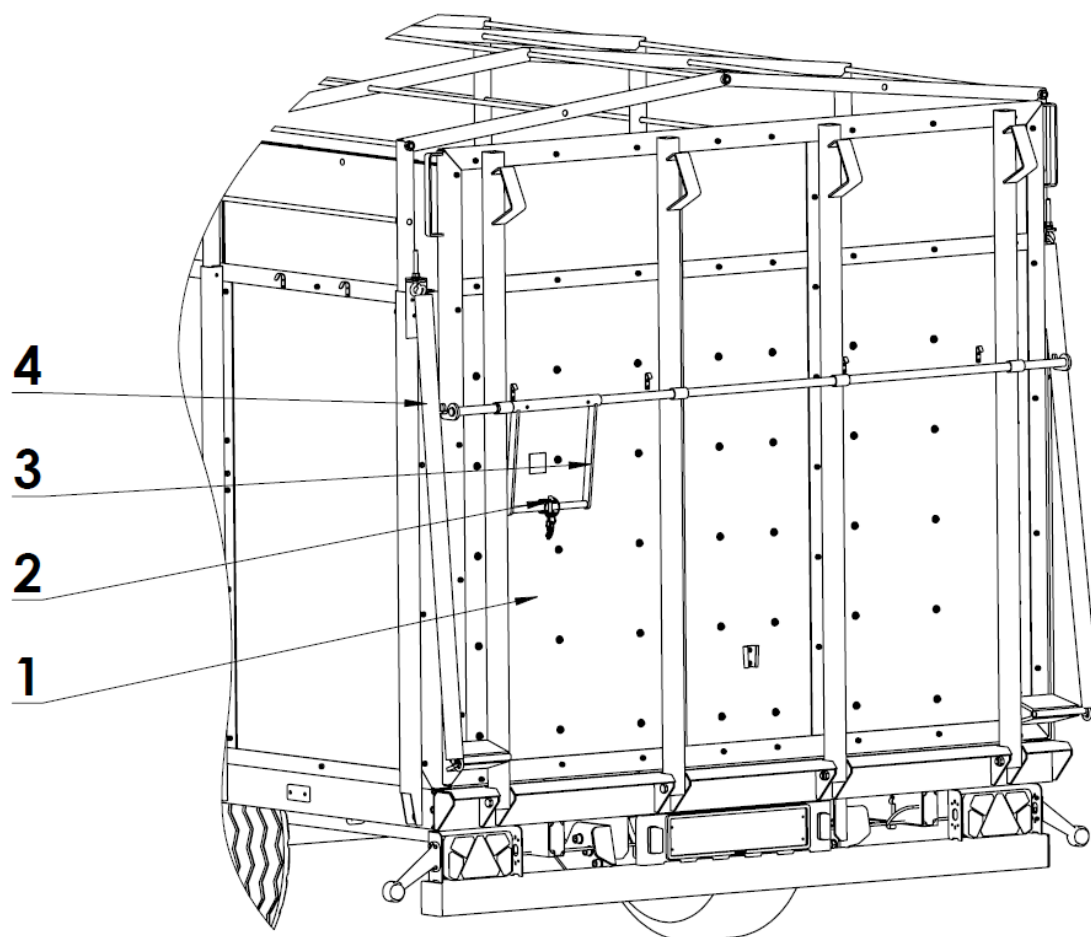


Fig. 18 Rear flap

1 – rear flap, 2 – pin, 3 – rear flap locking lever, 4 – tensioning spring

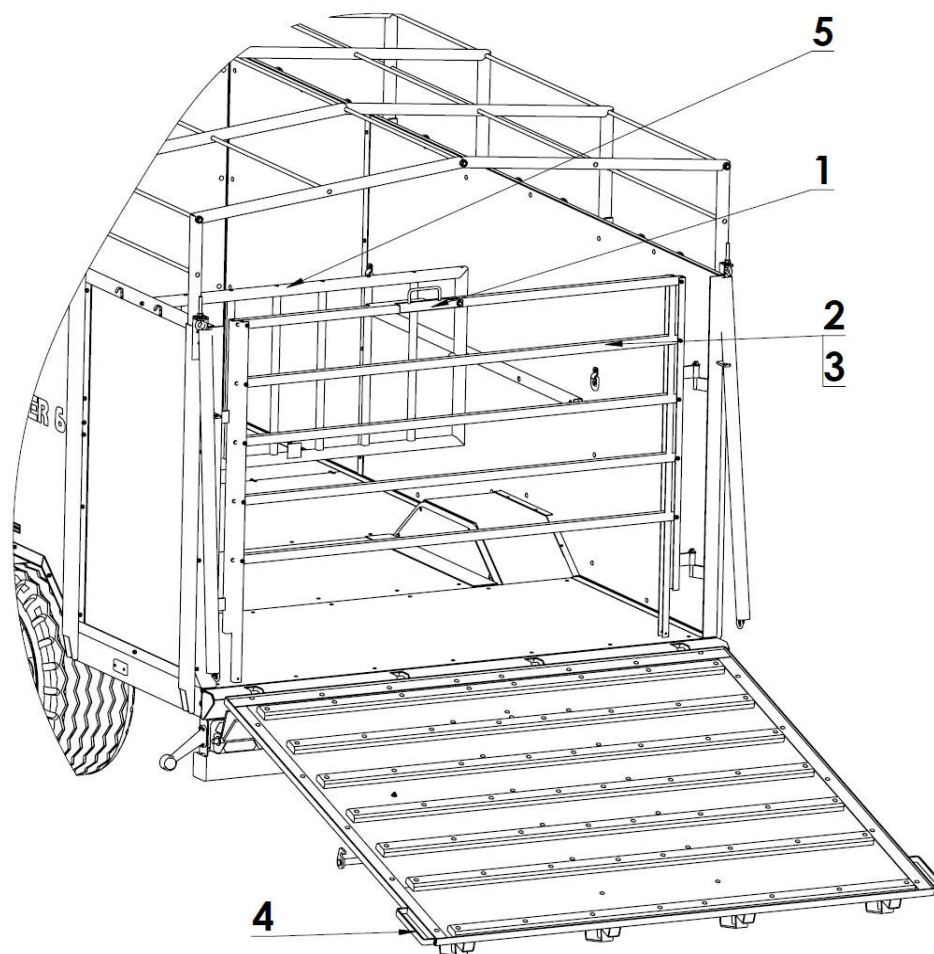


Fig. 19 Opening of rails

1 - rail lock, 2 – left rail, 3 – right rail, 4 – pocket of rear flap, 5 – interior partition

- Couple the trailer to the tractor according to section 4.4
- Set the trailer and tractor on a flat, level surface and immobilize them using the parking brake.
- Unlock the rear flap locking lever (fig. 3) by removing the securing pin (fig. 18, item 2)
- Open and lower the rear flap (item 1)
- Tensioning springs (item 4) facilitate lowering and raising of the rear flap to the extent that this operation can be performed by one person.
- Raise the rail lock (1 fig. 19)
- Open the right rail, then the left rail (items 2, 3)
- Set the rails parallel to the side walls, placing the vertical elements of gates in the rear flap's pockets (item 4)
- Open the interior partition - optional equipment (item 5)



NOTE!

NOTE!

When lowering the rear flap, take special caution due to the possibility of crushing of the entire body and/or individual body parts.

4.5.2 LOADING OF LIVESTOCK

Due to the unpredictability of animal behavior and their different sizes and other factors, it is not possible to write detailed instructions concerning loading and distribution of animals inside the trailer. Despite this, the general guidelines of the Manufacturer concerning the aforementioned operations should be followed

- Depending on needs, adjust the position of the interior partition
- Animals should be loaded one after another
- After loading each animal, it must be tied to the handles found on the side and front walls.
- Animals should be distributed as evenly as possible
- It is prohibited to exceed the admissible trailer load, because it threatens the safety of road traffic and causes damage to the machine.
- Take caution during loading and unloading.
- After loading and tying down animals, close the rails and lock them into place by lowering the rail lock
- Raise and close the rear flap, then lock it using the flap locking lever, and secure it with the securing pin.



NOTE!

NOTE!

It is prohibited to exceed the admissible trailer load, because it threatens the safety of road traffic and causes damage to the machine.

It is strictly forbidden to carry people on the trailer.

4.5.3 TRANSPORT OF LIVESTOCK.

When driving on roads (public and private) you must adapt to the traffic regulations, be guided by prudence and reasonable conduct. Below are the most important tips to steer the tractor with an attached trailer.

- Before starting, make sure that in the vicinity of the trailer and the tractor there are no bystanders, especially children. Ensure sufficient visibility.
- It is prohibited to transport animals incapable of transport.
- All components should be properly locked and secured (rear flap, interior partition, rails), and animals should be tied to handles.
- Make sure that the trailer is properly connected to the tractor, and the tractor hitch is properly secured, as well as the ring hitch is not carved out.
- The trailer must not be overloaded, the load must be uniformly distributed so as not to exceed the permitted pressure on the trailer axle chassis. Exceeding the maximum load capacity of the vehicle is prohibited and may cause damage to the machine, as well as pose a risk when traveling on the road for the operator of the tractor and trailer or other road users.
- Do not exceed the maximum construction speed and speed limitations resulting from road traffic law. The travel speed must be adapted to the prevailing road conditions, trailer load, type of cargo and other conditions.
- The trailer can be towed on slopes of up to 8° and unloading must be carried out only on level ground.
- The trailer disconnected from the tractor must be secured by immobilizing it with a parking brake and planting chocks under wheels. Leaving the trailer unsecured is prohibited. In case of failure of the machine, stop on the roadside, without endangering other road users and mark the spot in accordance with the rules of the road.



NOTE!

NOTE!

Before driving, make sure that:

- the trailer braking system is connected to the tractor and works properly
- the trailer hydraulic system is connected to the tractor and works properly
- the trailer electric installation is connected to the tractor and works properly


- During travel on public roads, the trailer must be marked with a plate distinguishing slow-moving vehicles, attached to the rear wall of the loading crate if the trailer is the last vehicle in the group.

- The tractor operator is obliged to equip the trailer with a certified or approved plate distinguishing slowly-moving vehicles (according to the regulations of the country in which the trailer is used).
 - When driving, observe the traffic rules, signal the change of direction with indicators, keep clean and take care of the technical condition of the lighting and signaling installation.
 - Damaged or lost lighting and signaling elements are to be immediately repaired or replaced.
 - Avoid ruts, depressions, ditches or driving on slopes of the road. Driving through such obstacles can cause sudden tilting of the trailer and tractor. This is particularly important because the center of gravity of the loaded trailer (especially with a volumetric load), adversely affects safety. Driving near the edge of ditches or channels is dangerous because of the risk of landslides under the wheels of the trailer or tractor.
 - The driving speed must be reduced early enough before driving to the corners, when driving on uneven or sloping terrain.
 - When driving avoid sharp corners, especially on slopes.
 - Please note that the braking system increases significantly with increasing mass of the traffic load and increase in speed.
 - Control the behavior of the trailer while driving on uneven terrain, and adjust the speed to local conditions and traffic.
 - Avoid sudden acceleration, turning and braking.
- The trailer is adapted for driving on slopes up to 8°. Moving the trailer through the grounds of the steeper slopes may cause the trailer to tip over as a result of loss of stability. Prolonged moving on an incline poses a risk of loss of braking efficiency.

4.5.4 UNLOADING OF LIVESTOCK

- Set the trailer and tractor on a flat, level surface and immobilize them using the parking brake.
- Unlock the rear flap locking lever by removing the securing pin
- Open and lower the rear flap
- Raise the rail lock
- Open the right rail, then the left rail

- Set the rails parallel to the side walls, placing the vertical elements of gates in the rear flap's pockets
- unload the animals found at the back of the trailer
- Open the interior partition - optional equipment
- After untying and unloading the animals, close the rails in the reverse sequence to the sequence in which they were opened and lock them into place by lowering the rail lock
- Raise and close the rear flap, then lock it using the flap locking lever, and secure it with the securing pin

 <p>NOTE!</p>	<p>NOTE!</p> <p>When lowering the rear flap, take special caution due to the possibility of crushing of the entire body and/or individual body parts.</p>
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4.6 INSTRUCTIONS OF TIRE USE.

- During works related to mounting and dismounting of tires, secure the trailer against spontaneous movement by immobilizing the machine using the parking brake and by laying chocks under the wheels;
- Tire repair or replacement is to be performed by people trained to do so and with the use of the proper tools;
- After mounting the wheel, tighten fastening nuts after driving the first 10 kilometers, then check their tightening every 100 km (tightening torque should be within the range of 270-290 Nm);
- Inspect the tightening of nuts fastening driving wheels and tire pressure regularly (particularly after a long break in trailer use) according to table 2;
- Do not exceed the trailer's maximum speed;
- Tire pressure should also be checked during day-long work. It should be accounted for that an increase in a tire's temperature may raise pressure even by 1


bar. Either the load or speed must be reduced if a such an increase in temperature and pressure occurs.

- Never reduce pressure by letting off air when it rises due to temperature;
- In order to prevent contaminants from penetrating into valves, they should be secured using the appropriate caps;
- Take 30 minute breaks to cool tires after traveling 50 kilometers or after 120 minutes of continuous driving, depending on which occurs first;
- When driving, avoid potholes, curbs, rapid and sharp maneuvers, and high speeds during turning and reversing

4.7 DECOUPLING FROM TRACTOR.

In order to disconnect the trailer from the tractor, perform the following steps:

- Stop the trailer, turn off the engine and remove the keys from the ignition.
- stop the tractor with a manual parking brake.
- if a trailer with cargo is located on a steep slope or an elevation, it should be protected additionally against rolling by planting chocks under rear wheels.
- disconnect the hydraulic, electrical and brake system cables of the trailer from the tractor
- when removing the pin, disconnect the drawbar from the tractor transport hitch and drive the tractor away.

 NOTE!	<p>NOTE!</p> <p>It is prohibited to decouple the trailer if animals are present in the cargo box.</p> <p>When disconnecting the trailer from the tractor, keep caution. Provide yourself a good visibility.</p> <p>Before disconnecting the hoses and rods, the cabin of the tractor must be closed to prevent it from unauthorized access. The tractor engine must be turned off.</p>
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5. EQUIPMENT AND ACCESSORIES.

Table 5 Trailer Equipment

Equipment	Standard	Option
User manual	•	
Warranty Card	•	
Connecting cable of the electrical system	•	
Chocks under wheels	•	
Two-line pneumatic brake system	•	
Hydraulic brake installation		•

Overrun braking system		•
Tarpaulin		•
Plate distinguishing slow-moving vehicles		•
Electrical installation with LED lamps		•
Interior partition.		•
Aluminum floor		•
Interior lighting		•
Side entry door		•
Leaktight plastic tub		•

6. TECHNICAL SUPPORT

 NOTE!	<p>NOTE!</p> <p>In the case of noting any irregularities in the operation or damage to systems or assemblies of the trailer, the machine must be taken out of use until repair and removal of the defect.</p> <p>All maintenance and repair tasks should be performed with the general principles of health and safety. In the case of injury, the wound should immediately be washed and disinfected. In case of serious injuries, seek medical advice</p>
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6.1 REGULATION OF DRIVING WHEEL BEARING BACKLASH.

In a newly purchased machine, after the first 100 km, while during further use - after driving another 1500- -2000 km - check and if necessary adjust the backlash of the wheel bearings.

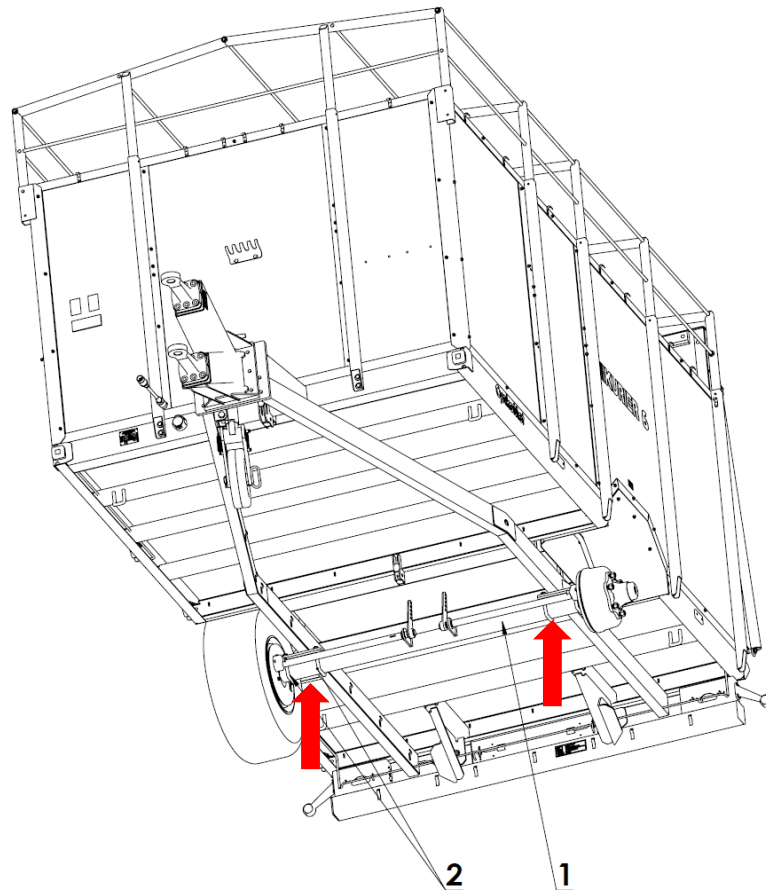


Fig. 20 Jack support point
1 – axle, 2 – glomerular bolts

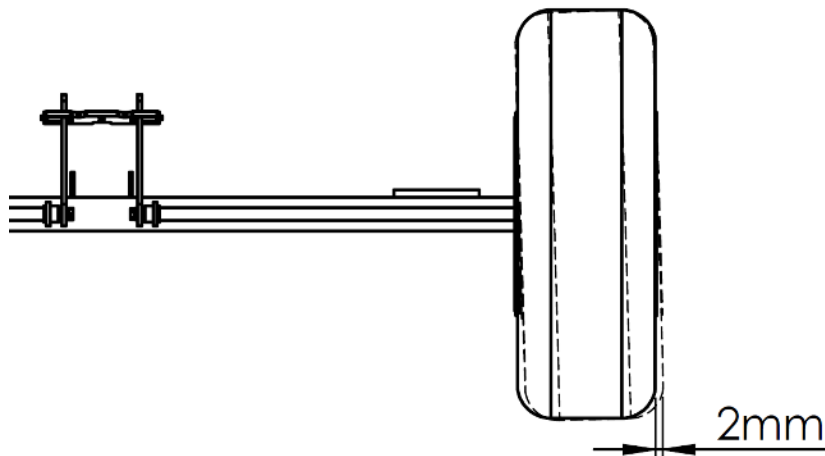


Fig. 21 Checking driving wheel bearing backlash.

To do this you need to:

- couple the machine to the tractor, place the set on a hard surface, brake the tractor, place locking wedges under the trailer's wheels, raise wheels one after the

other using the proper jack and check clearance. The jack is to be laid under the driving axle between U-bolts fastening the axle to the frame;

- if a wheel exhibits excessive clearance, i.e. clearance on the extreme exterior surface of the tire is above 2mm (fig. 21), dismount the hub cover and gasket, and remove the pin of the crown nut;
- turning the wheel, simultaneously tighten the castellated nut until the wheel stops completely;
- unscrew the nut by a 1/3 turn, until alignment of the next groove on the pin with a hole in the pivot;
- secure the nut with a NEW cotter pin, and mount the hub cap.


The wheel should turn fluidly, without jerks or noticeable resistance not originating from friction of the brake shoes on the drum. Light grinding of brake shoes on the drum is normal, particularly in a new trailer.

The soundness of bearings backlash has to be finally checked after driving a few kilometers with the trailer controlling the degree of the hubs heat by hand.

6.2 MOUNTING AND REMOVAL OF THE WHEEL AND INSPECTION OF NUT TIGHTENING.

In order to remove the wheel, perform the following steps:

- Immobilize the trailer with a parking brake.
- Place locking chocks on the side of the trailer opposite to the wheel to be removed (fig. 3).
- Make sure that the trailer has been correctly immobilized and that there is no risk of rolling during wheel removal.
- Loosen the nut of the wheel to be removed.
- Place a jack under the axle near the wheel to be dismantled and raise the trailer to the height required in order for the wheel to turn freely.

 <p>NOTE!</p>	<p>NOTE!</p> <p>The jack must:</p> <ul style="list-style-type: none"> • Have suitable capacity. • Be operable. • Be set on a hard, level surface.
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- Loosen the wheel nuts.
- Remove the wheel.

Follow these steps to mount the wheel:

- Clean the pins and nuts and check their condition. If necessary, replace them with new ones. **DO NOT USE** lubricants on wheel nuts and pins.
- Mount the wheel on the hub and tighten the nuts so that the rim tightly adheres to the hub.
- Lower the trailer.
- Tighten the nuts using suitable torque.

Wheel nuts should be tightened gradually and diagonally until suitable torque is reached. Use a torque wrench to tighten the wheel nuts.

If you do not have a torque wrench, use a regular wrench with a suitable adapter. Table 6 indicates the approximate weight to be applied at the end of the adapter depending on its length to achieve suitable torque. This method is not as accurate as using the torque wrench.

 <p>NOTE!</p>	<p>NOTE!</p> <p>Wheel nuts should be tightened with the following torque:</p> <ul style="list-style-type: none"> - nuts with M18x1.5 thread – 270–290 Nm - nuts with M20x1.5 thread – 350–380 Nm - nuts with M22x1.5 thread – 450–510 Nm.
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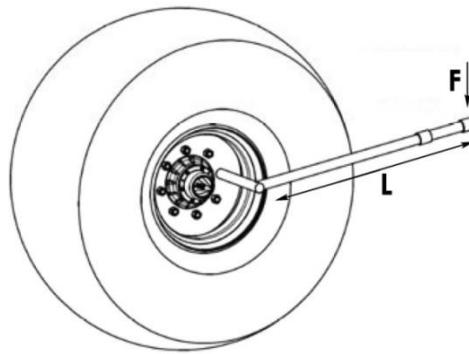


Figure 22 Wheel nut tightening.

Table 6

Nut tightening torque	Wrench adapter length	Weight at the end of the adapter
[Nm]	[mm]	[kg]
270	300	90
	350	77
	400	67
	450	60



NOTE!

NOTE!

Wheel nuts cannot be tightened with an impact wrench because this could result in exceeding the permissible torque and damage the nut and/or pin.



NOTE!

NOTE!

Check wheel nut tightening in the following situations:

1. After purchasing the trailer
2. After the test drive
3. After first 5 km of driving with a loaded trailer
4. After every 50 hours of trailer driving or once a week.

Repeat items 2–3 every time the wheel is removed and mounted.

6.3 BRAKE ADJUSTMENT.

Brake adjustment (fig. 23) should be carried out when:

- there is excessive clearance between the lining and drum and braking

effectiveness decreases due to wear of brake shoe linings,

- the brakes of both wheels brake unevenly and non-simultaneously.

With properly adjusted brakes, braking of both trailer wheels must take place at the same time.

Brake adjustment involves changing the position of expander arm (1) with respect to the expander roller (2). For this purpose, dismount securing ring (3), then turn the expander arm on the multi-groove in the proper direction, i.e.:

- back - if the brake is too late,
- forward - if the brake is too early.
-

The adjustment should be conducted separately for each wheel. After proper brake adjustment, at full braking, expander arms should form a 90° angle with the piston of the pneumatic actuator. Parking brake adjustment is to be performed in the event of stretching of the cord or loosening of the cord's clamps. The length of the parking brake cord should be selected so that, during total disengagement of the working and parking brakes, the cord is loose and hangs by 1÷2 cm.

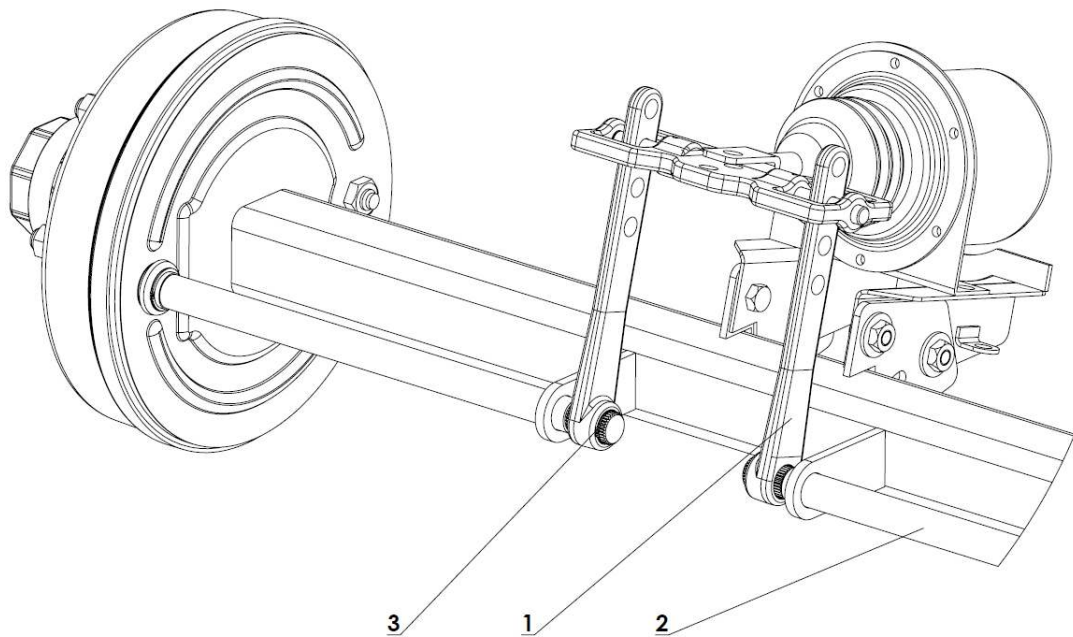


Fig. 23 Brake adjustment elements.

- expander arm, 2 - expander shaft, 3 – securing ring.

**NOTE!****NOTE!**

When brakes are properly adjusted, the trailer's braking force should be at least 27.5 kN during braking with the main brake. When braking with the parking brake, the braking force should be at least 9.2 kN. The difference between braking forces of the left and right wheel may not exceed 30%, with 100% being the greater force. The trailer's braking force is the sum of the braking forces of the trailer's wheels.

In a new trailer, brakes must unconditionally be inspected and adjusted, if necessary, after driving the first 100 km.

6.4 MAINTENANCE OF THE PNEUMATIC SYSTEM.

As part of the trailer's maintenance, check the tightness of the pneumatic system, paying special attention to the places of all connections. The system's tightness must be checked at a nominal pressure of approx. 600 kPa (6 kg/cm²).

If hoses, seals or other elements of the system are damaged, compressed air will be released to the outside with a characteristic hiss, or in the case of small leaks, in the form of air bubbles (after coating the inspected elements with dishwashing fluid). The damaged seals or conduits causing leaks should be replaced. If air leakage from the actuator is the cause of the leak – replace it.

Pneumatic hoses should be replaced at least every 5 (five) years from their date of manufacture, unless previously found to be damaged and replaced.

Every so often, remove the condensate gathering in the water from the air tank. For this purpose, deflect the mandrel of the drain valve at the bottom of the tank to the side (item 4 fig. 9). The compressed air in the tank will push the water out. After releasing pressure on the mandrel, the valve should automatically close and stop the airflow from the tank.

**NOTE!****NOTE!**

Attention - once a year, before the winter, unscrew the drain valve and clean off the accumulated dirt.

6.5 MAINTENANCE OF THE HYDRAULIC BRAKE SYSTEM.

Always follow the principle that the oil in the trailer hydraulic system and the oil in the external tractor hydraulic system are to be of the same type. The use of different types of oil is not permitted. In a new trailer, the system is filled with AGROL U hydraulic transmission oil.

The hydraulic system of the machine should be completely tight. Checking tightness of the hydraulic system consists of connecting the trailer to the tractor, running the hydraulic cylinder and holding it in the position of maximum extension of the plunger for 30 seconds. In the case of noticing oil leaks on connections of hydraulic conduits, you must tighten the connector, if this does not rectify the fault, replace the conduit or the connector with a new one. If the oil leak occurs beyond the connection, the leaking conduit system should be replaced. Replacement of a component with a new one is also required for any damage of mechanical nature.

In the case of noting oiling on the body of the hydraulic cylinder, check the nature of the leak. When fully taking out the cylinder plunger, check for leaks. Minor leaks with symptoms of "sweating" are acceptable, but if you see a leak of a "drip" type, you must stop the operation and repair the failure.

Hydraulic hoses should be replaced at least every 5 (five) years from their date of manufacture (or more often in the case of intensive operation), unless previously found to be damaged and replaced.



NOTE!

NOTE!

Using a trailer with a leaking hydraulic system is unacceptable.
Operation of the trailer with a leaking tilting hydraulic system is unacceptable

6.6 LUBRICATION.

Lubrication of the trailer should be carried out in the points specified in Figure 24 and listed in Table 7.

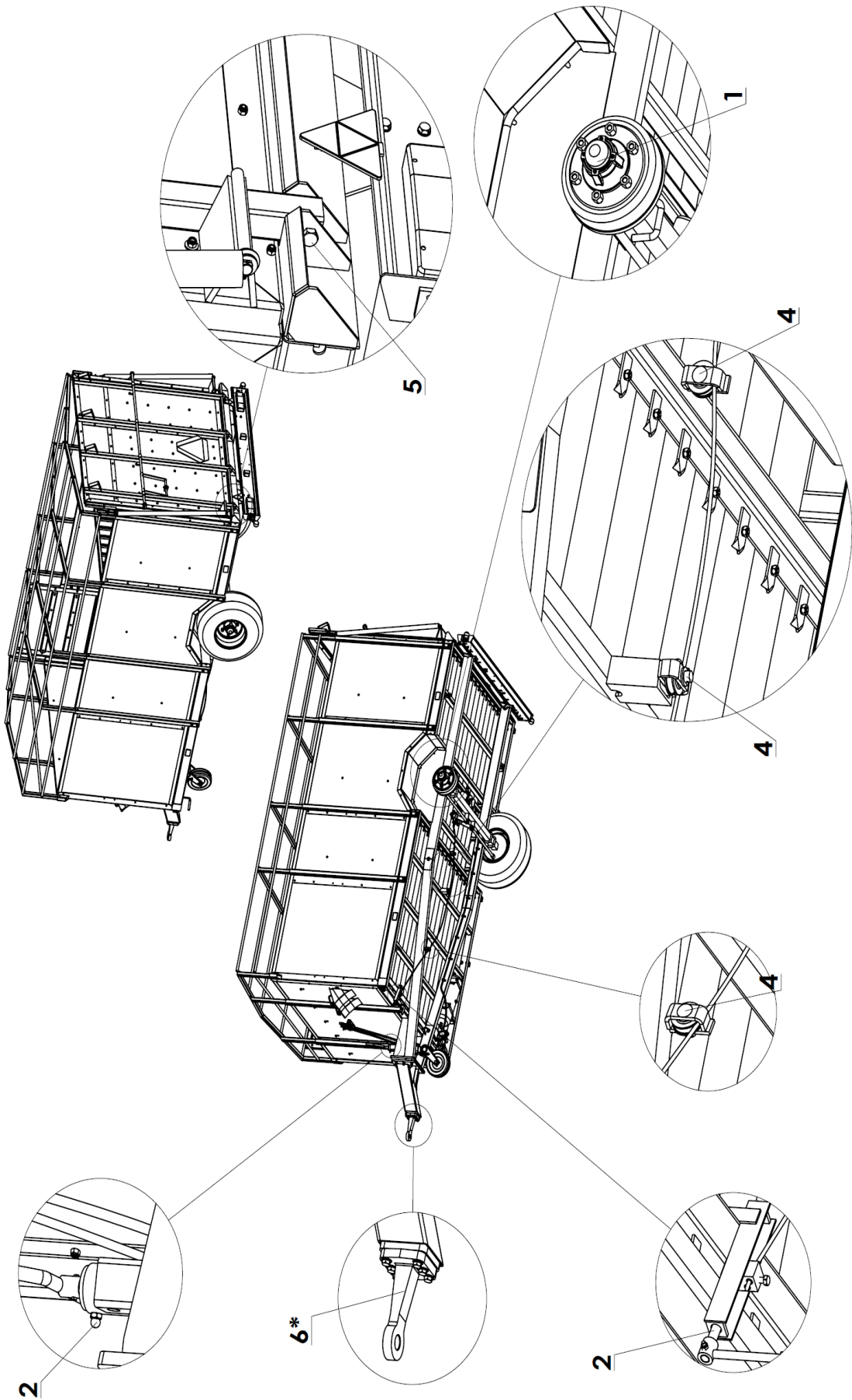


Fig. 24 Lubrication points.

Table 7 Frequency and method of lubrication of the trailer mechanisms.

NUMBER IN FIG. 10	PLACE OF LUBRICATION	NUMBER OF LUBRICATION POINTS	GREASE TYPE	FREQUENCY AND METHOD OF LUBRICATION
1	Bearings of driving wheel hubs	2	Solid grease	Replace grease once every 2 years.
2	Screw of the parking brake crank	1	Solid grease	Every 3-4 months.
3	Support bearing and screw	1	Solid grease	Every half year.
4	Brake cord wheel axle	3	Solid grease	Every half year.
5	Hinges of the rear flap	4	Solid grease	Every 3-4 months.
6*	Drawbar's rotating hitching member (in the case of a rotating drawbar)	1	Solid grease	Every 3-4 months.

6.7 STORAGE AND MAINTENANCE.

After ending operation, the trailer must be carefully cleaned and washed, and then left it in a dry and ventilated area. In the event of failure of these actions on the zinc coating, dark and light gray areas (spots) may occur, which do not constitute grounds for complaint if the zinc coating still has the required minimum thickness (PN-EN ISO 1461: 2000). In the case of damage of the external paint coating, the damaged areas must be cleaned of rust and dust, degreased, and painted retaining the same color and uniform thickness of the protective coating. Until painting, the damaged areas should be covered with a thin layer of grease or anticorrosion preparation.

During a long break in the use of the trailer, it is desirable to place it indoors or in a roofed place. It is also advisable that the metal parts not coated with paint are secured with an anti-corrosion preparation of temporary protection or a layer of grease. During long-term storage of the trailer, it is recommended to reduce pressure in tires to approx. 300 kPa or to place it on supports in order to unload axles.

6.8 TRANSPORT.

The trailer is prepared for sale in a fully assembled state and does not require packing. Only the machine's operation and maintenance documentation is packed, and with regard to additional equipment: connector cable of the electrical installation, tarpaulin, and potentially warning triangle,

Delivery of the trailer to the user is carried out by means of car transport or after coupling with a tractor in independent transport.



NOTE!

NOTE!

During independent transport, the trailer operator should be familiar with the contents of this manual and follow the recommendations contained in it. During road transport, the trailer is mounted on a platform of the transport mean in accordance with the manufacturer's technology. The driver of the car, while transporting the machine, should take extra caution. This is due to the upward movement of the vehicle's center of gravity with a loaded machine.

7. TRAILER CASSATION

Should the user make a decision on withdrawal of the machine, you must pass the entire trailer to the scrap depot designated by the Governor or a Starost. The dismantled parts remaining after repair must be submitted to the collection point of recyclable materials.

The certificate obtained from this facility is the basis for the de-registration of the trailer.

8. WARRANTY.

"CYNKOMET" Sp. z o.o. in Czarna Białostocka ensures the smooth operation of the machine according to the technical-operational terms described in the operating manual. The condition of accepting a complaint is to follow all the recommendations contained in the operating and use manuals.

TERMS OF THE WARRANTY:

1. The guarantee will be respected after the presentation by the customer of a clearly and correctly filled warranty card of the machine undergoing reclamation.
2. The warranty does not cover parts and assemblies damaged as a result of normal wear.
3. In a written notification claim (mail, fax, e-mail, etc.) you must give the data and contact of the owner of the machine, its name, serial number, purchase date and a description of the complaint (causes, damaged parts, subassemblies).
4. The user must file a claim immediately, within 14 days from the date of failure, at the latest.
5. Parts subject to wear during exploitation are not covered by the warranty e.g. tires, brake linings, lighting, damage caused by external causes, such as: mechanical impacts, improper handling, insufficient tightening of threaded joints, as well as the

operation incompatible with the intended purpose.

6. This manual does not allow you to make changes, alterations, modifications to the discretion of the Customer without consulting with the manufacturer.
7. Detailed warranty conditions are mentioned in the warranty card attached to each newly purchased machine.



NOTE!

NOTE!

It is advisable to require from the seller to fill in the warranty card and reclamation coupons. Lack of e.g. the date of sale or point of sale stamp exposes the user to non-recognition of any complaints.

SPARE PARTS CATALOGUE

1. INTRODUCTION.

The "Spare parts catalog" is, next to the "Instruction manual", the basic operation and maintenance document intended for trailer users.

The catalogue includes:

- drawings of all assemblies and mechanisms of the trailer;
- lists of parts of individual units and mechanisms.

5 HOW TO USE THE CATALOGUE.

For each drawing, there is a text table added, containing the list of parts of the unit or the mechanism.

In order to obtain the part number, select an assembly or mechanism drawing, which includes the part from the catalogue, read the number of its position, and then on the appropriate plate, find the appropriate position under this name and part symbol

When ordering please specify:

- the exact address of the contracting authority (recipient of the parts);
- part name compatible with the catalog;
- the number of pieces of the ordered parts;
- year of production and serial number of the machine.

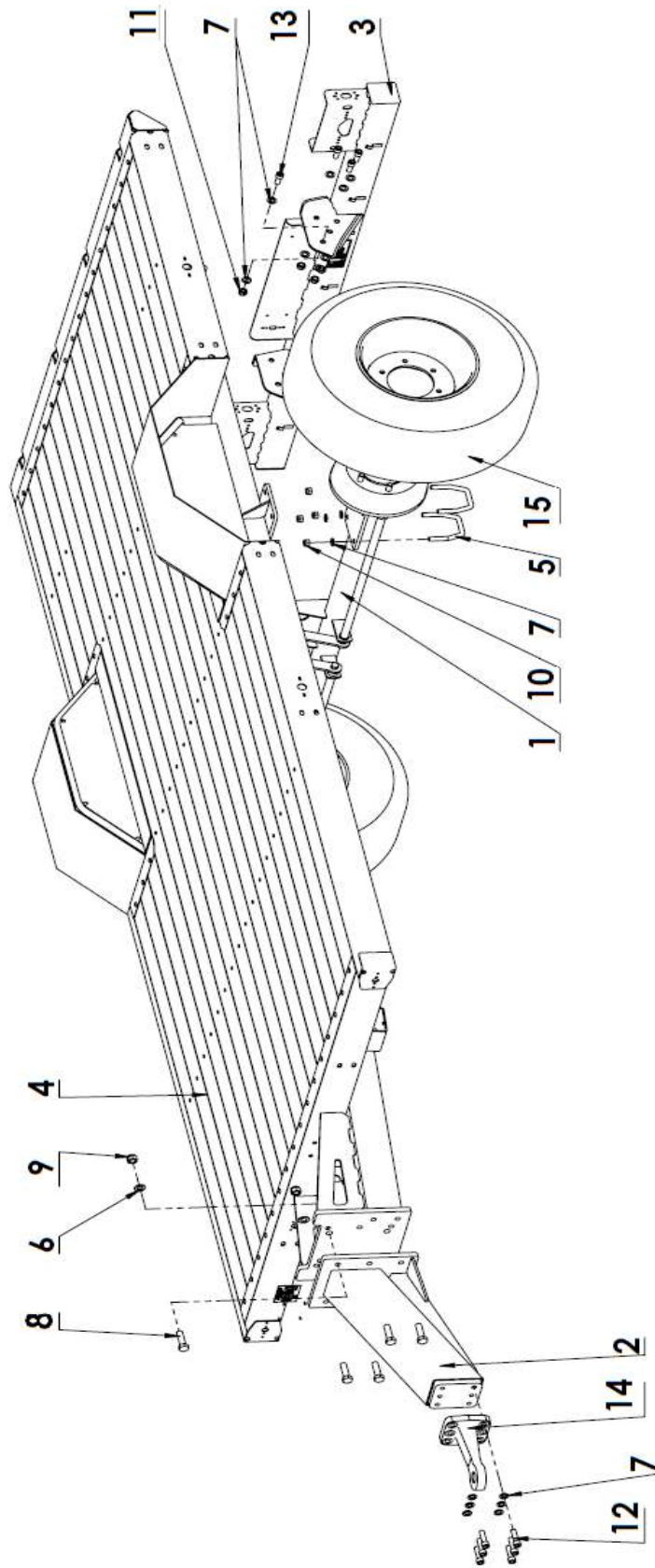


Fig. 25 Chassis

CHASSIS

Table 8

Item no.	Part name	Number	Amount
1	Driving axle	131/21.00.000/3	1
2	Threaded drawbar D-6	131/24.00.000/2	1
3	Bumper	7677/00.00.100	1
4	Frame with floor set	7677/01.00.000/1	1
5	U-bolt	2219/00.00.002/2	4
6	Washer n 21	PN-78/M-82005	6
7	Washer Ø 17	PN-78/M-82005	22
8	M20x70-10,9-B Screw	PN-85/M-82101	6
9	M20 nut with polyamide insert - class 10	PN-85/M-82175	6
10	M16 nut with polyamide insert	PN-85/M-82175	8
11	M16 nut with polyamide insert - class 10	PN-85/M-82175	8
12	M16x60 IM screw - 12.9	PN-M/82302	6
13	M16x40 IM screw - 12.9	PN-M/82302	8
14	Drawbar ear	TMW D40-C.B6.T30	1
15	11.5-80-15.3-14PR wheel	11.5/80-15.3 14PR 140A8	2

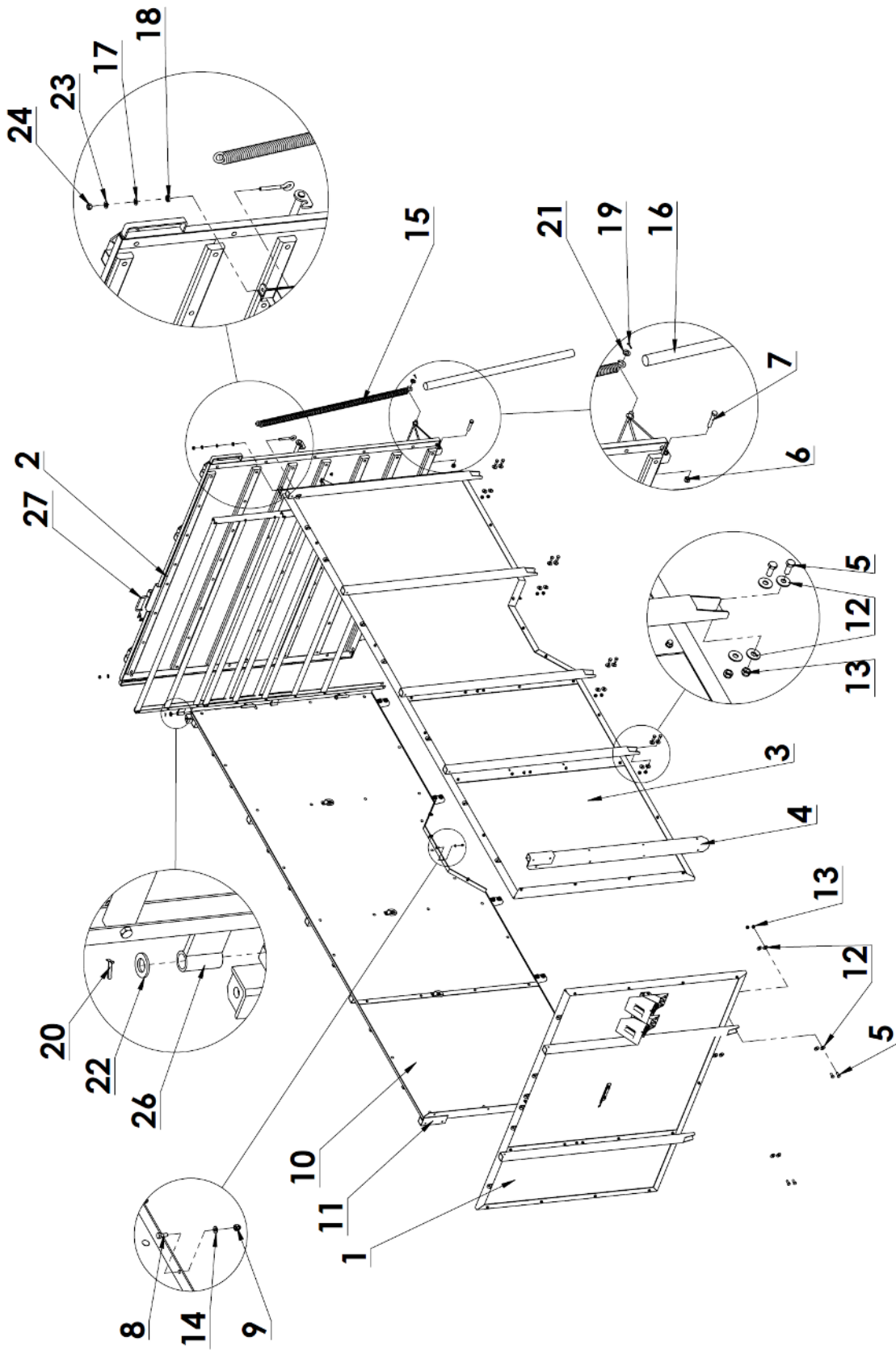


Fig. 26 Set of walls

WALLS SET

Table 9

Item no.	Part name	Number	Amount
1	Front wall set	7677/02.03.000/1	1
2	Rear wall	131/05.00.000/1	1
3	Left wall set	7677/02.02.000/1	1
4	Left corner angle section set	7677/02.04.100	1
5	M12x30 8.8 B screw	PN-85/M-82105	20
6	M16 nut with polyamide insert	PN-85/M-82175	4
7	M16x85 8.8-B screw	PN-85/M-82101	4
8	M8x20-8,8-B Screw	PN-85/M-82105	8
9	M8 dome nut with polyamide insert	DIN 986	8
10	Right wall set	7677/02.01.000/1	1
11	Right corner angle section set	7677/02.04.200	1
12	Washer Ø 13	PN-59/M-82030	40
13	M12 nut with polyamide insert	PN-85/M-82175	20
14	Washer n 8.4	PN-78/M-82005	8
15	Spring	131/00.00.002	2
16	Spring guard	131/00.00.004	2
17	Ball washer	DIN 6319-C	2
18	Ball washer	DIN 6319-D	2
19	S-ZN 4X32 Pin	PN-76/M-82001	2
20	S-Zn 4x25 Pin	PN-78/M-82001	4
21	Washer n 21	PN-78/M-82005	2
22	Washer Ø 17	PN-78/M-82005	4
23	Washer Ø 13	PN-78/M-82005	2
24	Nut M12-8-B Fe/Zn12	PN-86/M-82144	2
25	Eyebolt	WO 12x90 M12	2
26	Rail	131/00.02.000/2	2
27	Rail lock	131/00.03.000	1

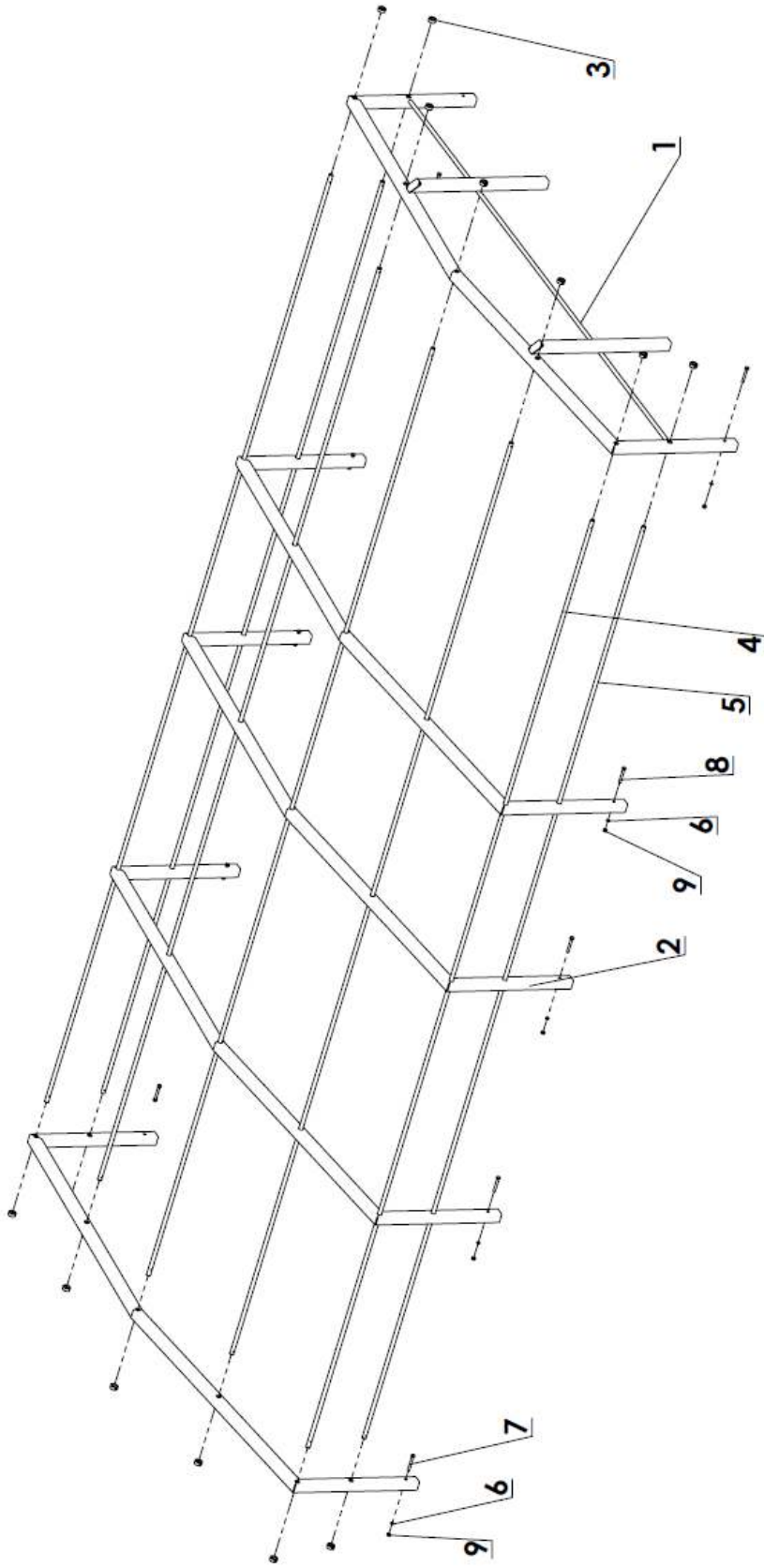


Fig. 27 Frame

FRAME

Table 10

Item no.	Part name	Number	Amount
1	Front clamp	7677/03.00.100	1
2	Bow	7677/03.00.200	4
3	Mounting ring GN-705 - 16		14
4	Frame bar I	7677/03.00.001	3
5	Frame bar II	7677/03.00.002	4
6	Spring washer Ø 8.2	PN-77/M-82008	10
7	M8x65 screw	PN-85/M-82101	2
8	M8x60 - 8.8-B Screw	PN-85/M-82101	8
9	Nut M8-8-B Fe/Zn12	PN-86/M-82144	10

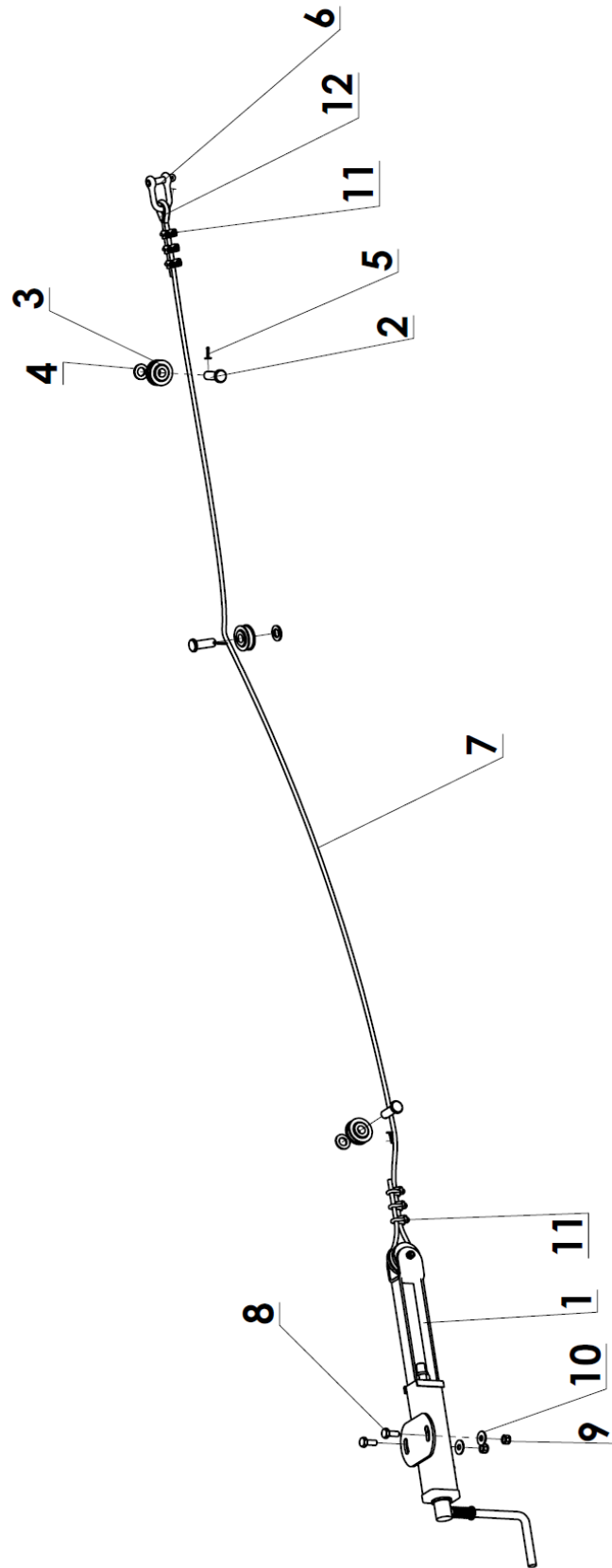


Fig. 28 Hand brake

HAND BRAKE

Table 11

Item no.	Part number	Name	Amount
1	2221/05.03.000	Handbrake mechanism set	1
2	PN-73/M-80241	Terminal clip 8	6
3	131/00.05.101	Cord L=2750	1
4	7110/16.00.001	Hand brake wheel	3
5	DIN 82101-A	M12 shackle	1
6	ISO 2341	Pin 16x47	3
7	PN-59/M-82030	Washer n 10.5	2
8	PN-66/M-80247	A8 OC thimble	1
9	PN-78/M-82001	S-Zn 3,2x25 Pin	3
10	PN-78/M-82005	Washer Ø 17	3
11	PN-85/M-82105	M10x25 8.8 screw	2
12	PN-85/M-82175	M10 nut with polyamide insert	2

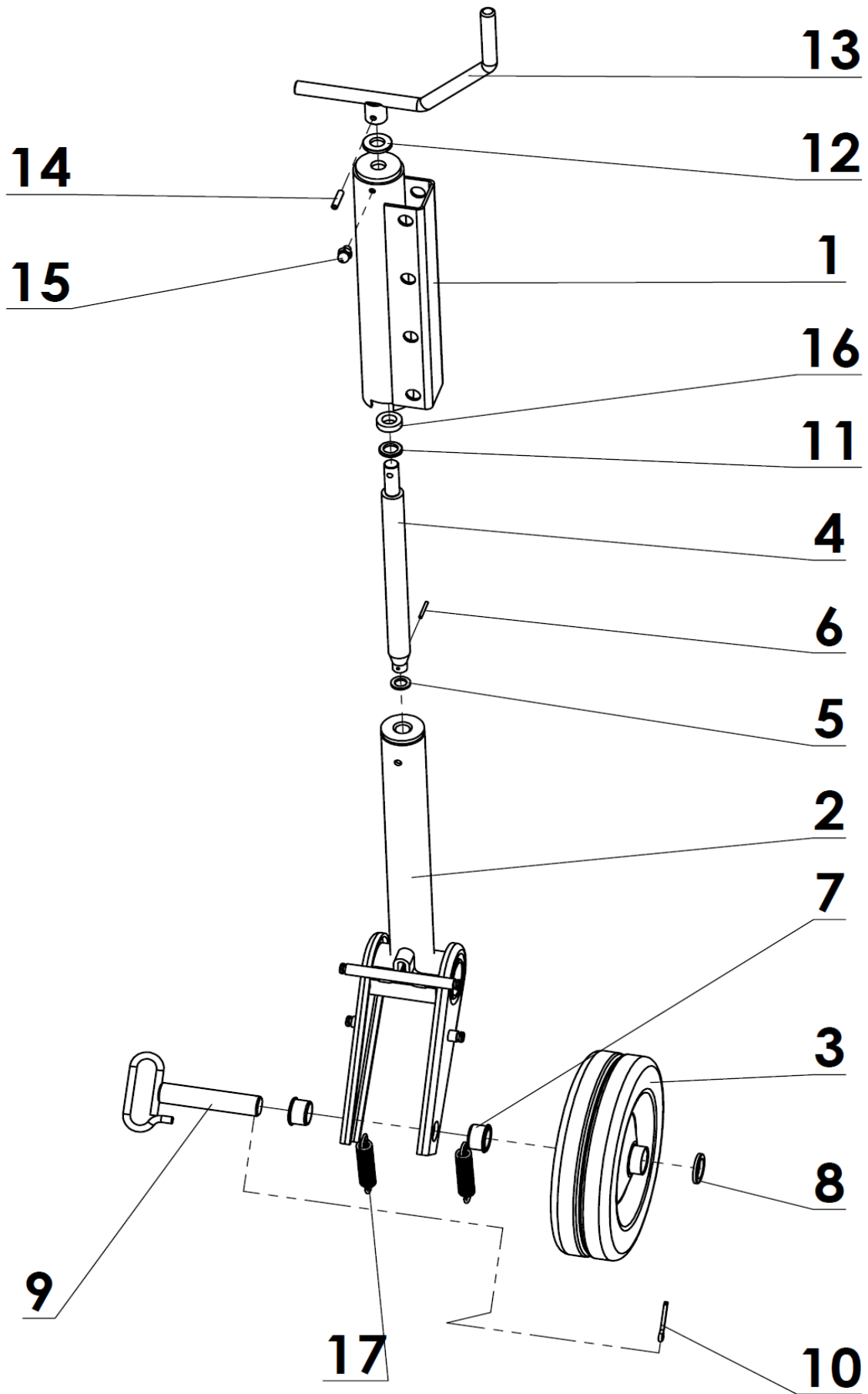


Fig. 29 Support

SUPPORT

Table 12

Item no.	Part number	Name	Amount
1	2219/02.05.000/1	Pipe 2 set	1
2	2219/02.08.000/3	Support arm	1
3	7105/03.03.000/1	Support wheel set	1
4	2219/02.00.006/2	Screw	1
5	PN-78/M-82005	Washer Ø 21	1
6	PN-82/M-85023	Dowel pin 4x35	1
7	2219/02.00.004	Sleeve	2
8	PN-78/M-82005	Washer 31	1
9	2219/02.02.000	Wheel pin	1
10	PN-82/M-85023	Pin S-Zn-5x45	1
11	PN-78/M-82005	Washer Ø 21	1
12	7105/03.00.002/1	Special washer	1
13	7105/03.00.100	Lever arm set	1
14	PN-82/M-85023	Dowel pin 8x30	1
15	PN-76/M-86002	m10 grease fitting	1
16	PN-86/M-86260	Longitudinal ball bearing 51104	1
17	7105/03.00.001/1	Spring	2

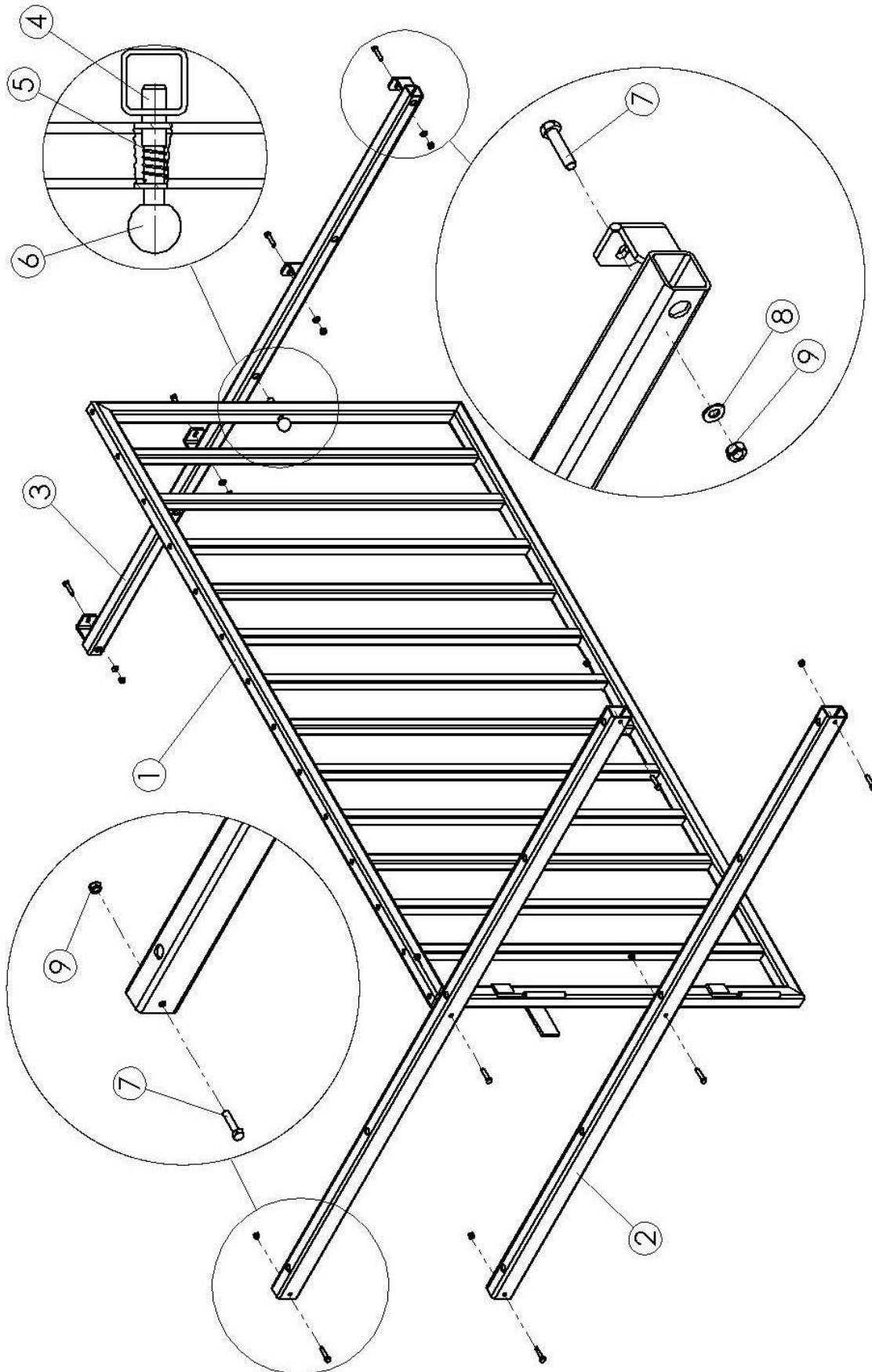


Fig. 30 Interior partition

INTERIOR PARTITION

Table 13

Item no.	Part number	Name	Amount
1	Partition	7677/00.01.100	1
2	Beam I	7677/00.01.001	2
3	Beam II	7677/00.01.002	1
4	Pin	7677/00.01.003	1
5	Spring	2219/08-09-003	1
6	Spherical knob Ø32	PN-63/M-56170	1
7	m8x30-5.6-c screw	PN-85/M-82406	10
8	Washer n 8.5	PN-59/M-82030	4
9	Nut m8-8-b with insert	PN-86/M-82175	10

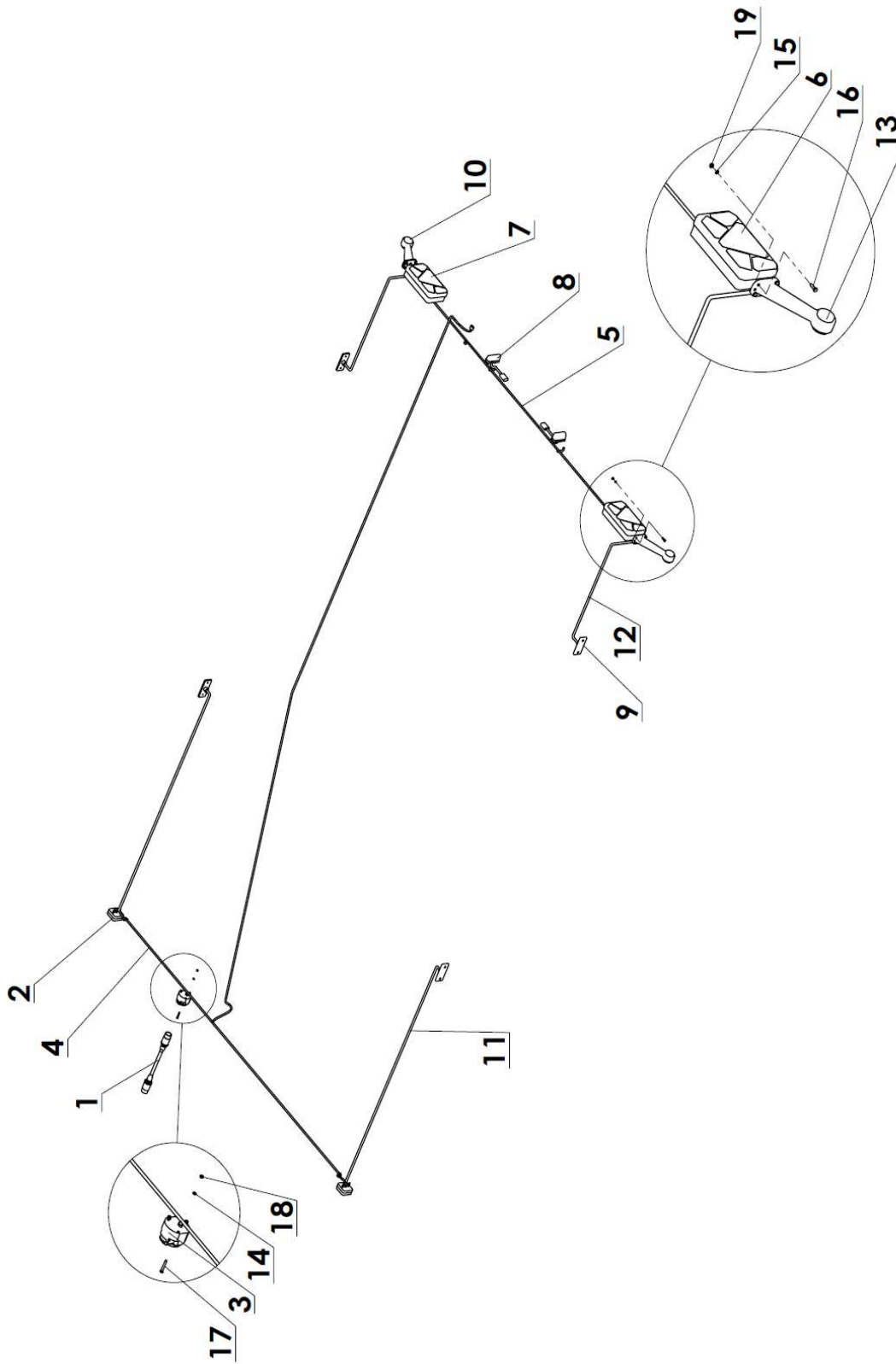


Fig. 31 Electrical installation

ELECTRICAL INSTALLATION

Table 14

Item no.	Part name	Number	Amount
1	Connecting cable	2235/04.10.003	1
2	Front clearance lamp	7677/18.10.004	2
3	Plug-in socket	PN83/S-76055	1
4	Central beam with front outline lamps	7677/18.10.001	1
5	Rear beam	7677/18.10.002/1	1
6	Left rear lamp W125 907B	7649/04.10.005	1
7	Right rear lamp W125 908B	7649/04.10.004	1
8	Lighting lamp of the registration plate	7149/20.10.004	2
9	Side perimeter lamp WAŚ W17D 101P	7169/39.10.005	4
10	Right rear perimeter lamp WAŚ W21.3RF - 295P	7677/18.10.006/1	1
11	Front perimeter lamp harness	7677/18.10.011	2
12	Side perimeter lamp harness - rear	7677/18.10.010	2
13	Left rear perimeter lamp WAŚ W21.3RF - 295L	7677/18.10.005/1	1
14	Spring washer Ø 5.1	PN-77/M-82008	3
15	Spring washer Ø 6.1	PN-77/M-82008	8
16	M6x20 screw	PN-85/M-82105	8
17	M5x355.8-B Screw	PN-85/M-82207	3
18	M5 Nut	PN-86/M-82144	3
19	Nut M6-8-B Fe/Zn12	PN-86/M-82144	8

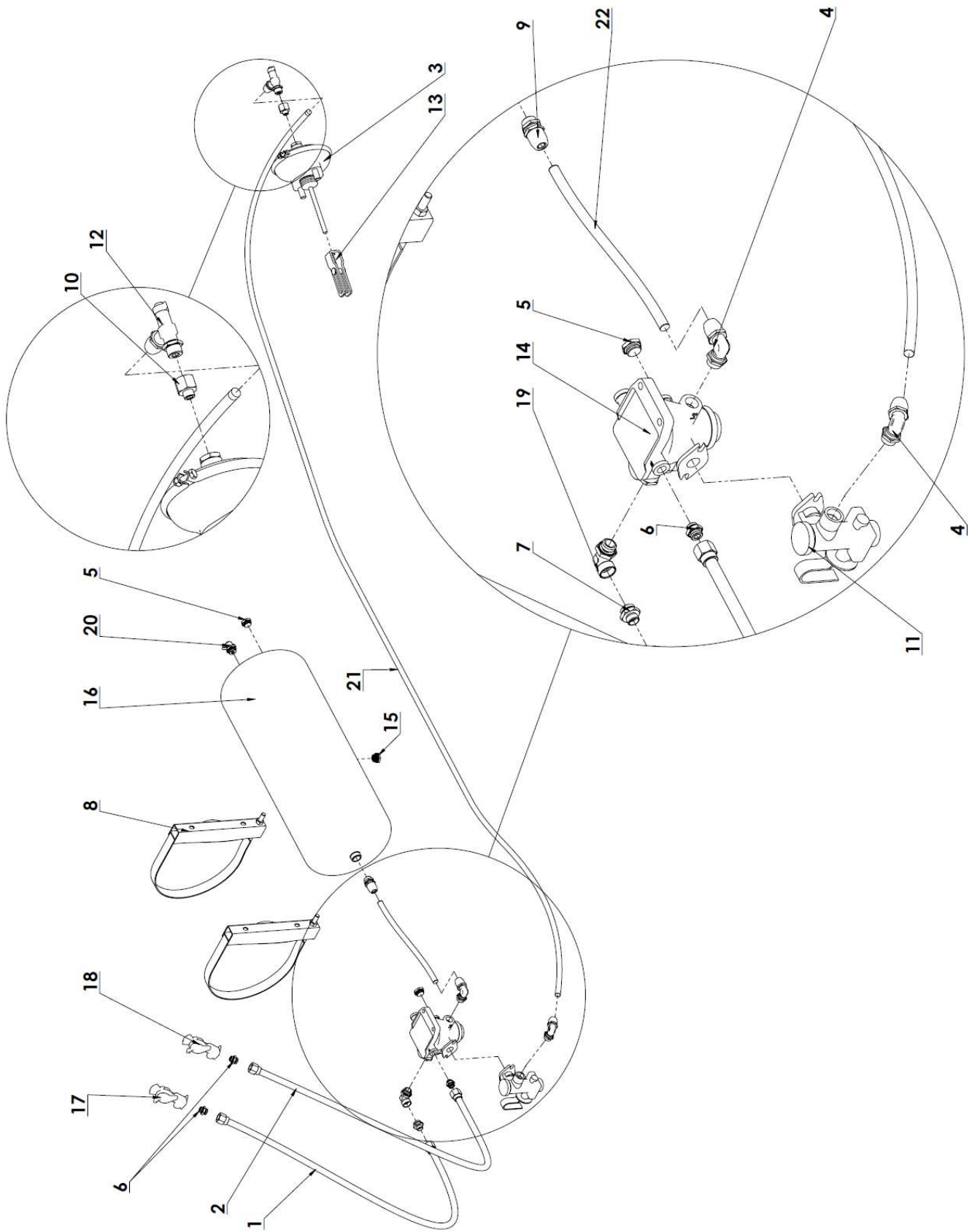


Fig. 32 Pneumatic brake system

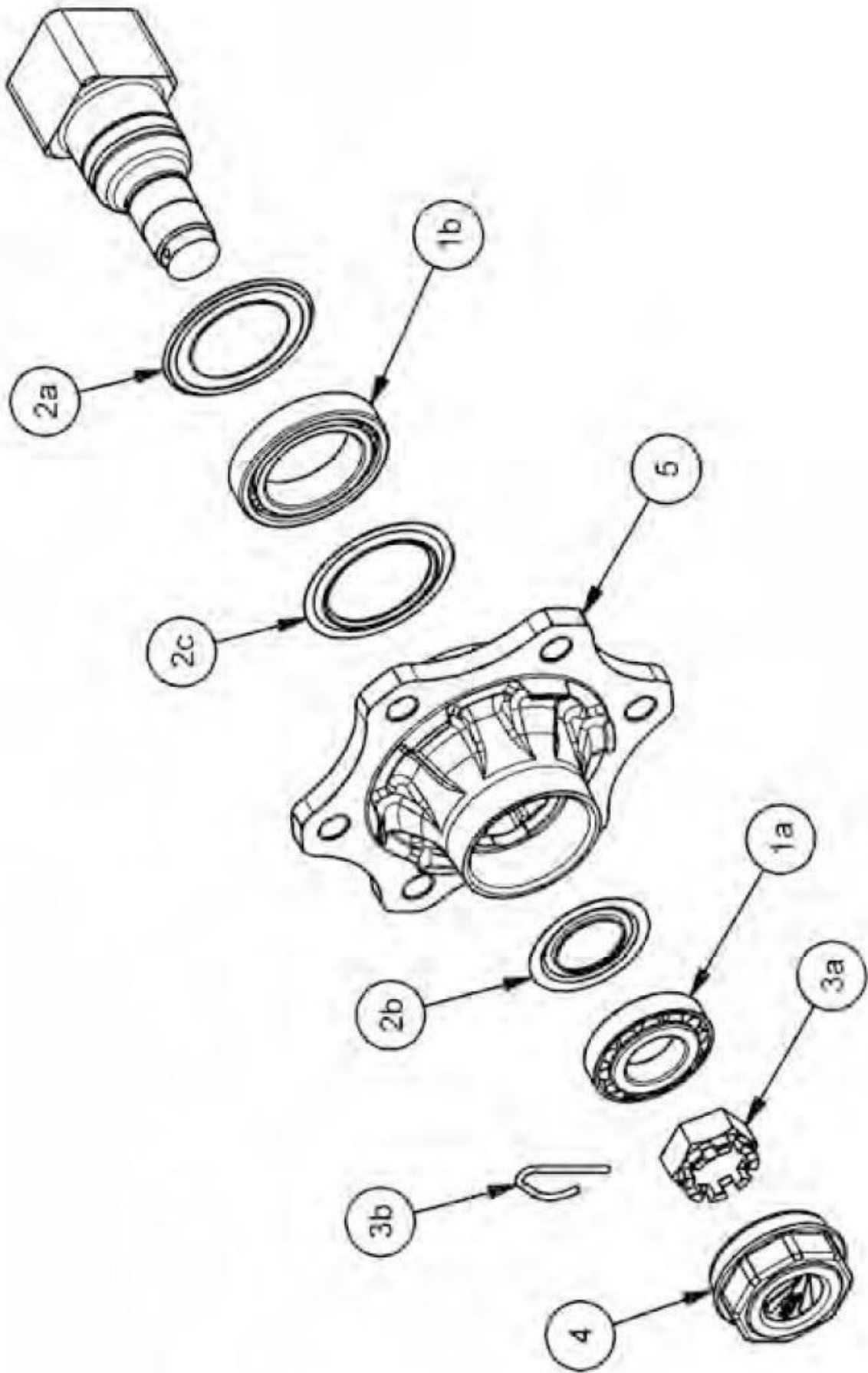
PNEUMATIC BRAKE SYSTEM

Table 15

Item no.	Part name	Number	Amount
1	Spiral red cable Haldex	33016509	1
2	Spiral yellow cable Haldex	33016009	1
3	24" Diaphragm actuator Haldex	123240002	1
4	Elbow M22x1.5/15 Haldex	3230515222	2
5	M22 plug Haldex	3236280222	2
6	Nipple Haldex M16x1.5/M18x1.5	3280112162	3
7	Nipple M18x1.5/M22x1.5 Haldex	3280112222	1
8	Tank ring clamp n276mm Haldex	307027600	2
9	Straight M22x1.5/15 Haldex	3230115222	1
10	M16-M22w reducer Haldex	3236116222	1
11	Braking force regulator Haldex	352,011,122	1
12	Inspection coupling T-pipe M22/15 Haldex	3236514942	1
13	Long fork Haldex	3033609	1
14	Brake valve Haldex	350,026,102	1
15	Cut-off valve M22x1.5 Haldex	315019031	1
16	Air tank 40/276 Haldex	30351209	1
17	Front connector of control cables with filter Haldex	334085111	1
18	Front connector of power cables with filter Haldex	334086101	1
19	Elbow connector M22x1.5/M22x1.5w	3230522212	1
20	M22 Inspection coupling Haldex	3236509225	1
21	Tekalan hose n15 L=3300		1
22	Tekalan hose n15 L=380		1

Fig.

33



Bearings of drive axle.

BEARINGS OF DRIVE AXLE FROM ADR COMPANY

Table 16

Item no.	Part name	Number	Repair kit	Amount
1a	Bearing 30208	59130208	9RCMA	1
1b	Bearing 32013x	59132013X		1
2a	Oil sealing	5411002	9RNMA	1
2b	Guard of bearing 30208	5510801		1
2c	Guard of bearing 32013x	5510991		1
3a	Castellated nut	57539B1	9RDF3950	1
3b	Pin	58205		1
4	Cover	56108003	9RT80	1
5	Hub	61L6LA001	61L6LA001	1

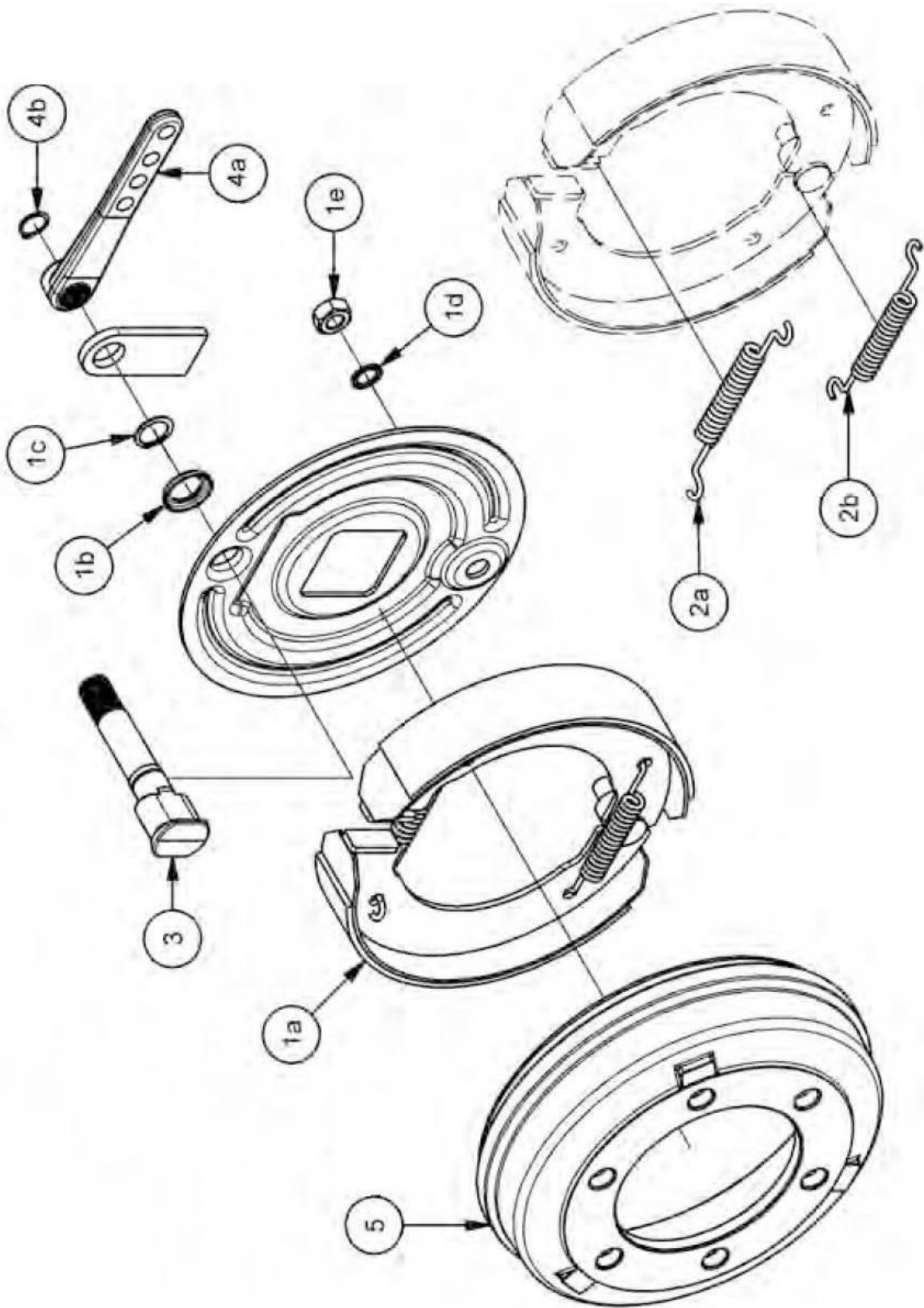


Fig. 34 Brake of drive axle.

BRAKE OF DRIVE AXLE FROM ADR COMPANY

Table 17

Item no.	Part name	Number	Repair kit	Amount
1a	Complete brake	731FF01	9RE0008	1
1b	Cap	73F02		1
1c	Seating ring	58509		1
1d	Washer	9800162		1
1e	Nut	97116D1		1
2a	Spring	738108	9RK0003	2
2b	Spring	738108		2
3	Expander	7522631...	7522631...	1
4a	Expander lever	7611304	9RQ002	1
4b	Seating ring	58507		1
5	Drum	66LFG0602	66LFG0602	1