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# „TANDEM” TYPE FARM TRAILER FOR TRANSPORTING ANIMALS

## KURIER 10

## INSTRUCTIONS FOR USE AND SERVICING

### Identification of the machine

Symbol /Type: T046/1  
KTM Symbol: 1026-696-848-615  
VIN factory No.: .....

The factory No. is engraved on the data plate. The data plate is riveted to the carrying body.

While purchasing the trailer it must be checked conformity of the factory numbers placed on the trailer along with the number written down in the guarantee certificate, in the sales documents and in the instruction for servicing.

**The hydraulic system was filled up with hydraulic oil of L - HL32 type.**

Quality control mark.....

The instruction is valid along with the annex no ..... of .....

The manufacturer reserves itself the right to introduce, in the manufactured machines, structural alterations facilitating servicing and improving quality of their operation.

Comments and remarks on the structure and action of the machine please sent to the Manufacturer's address. This information will allow objective evaluation of the machine and will be helpful as guidelines in their further modernization.

Information on essential structural alterations are delivered to the user by means of informative supplements (annexes) attached to the instruction.

### **ATTENTION!**

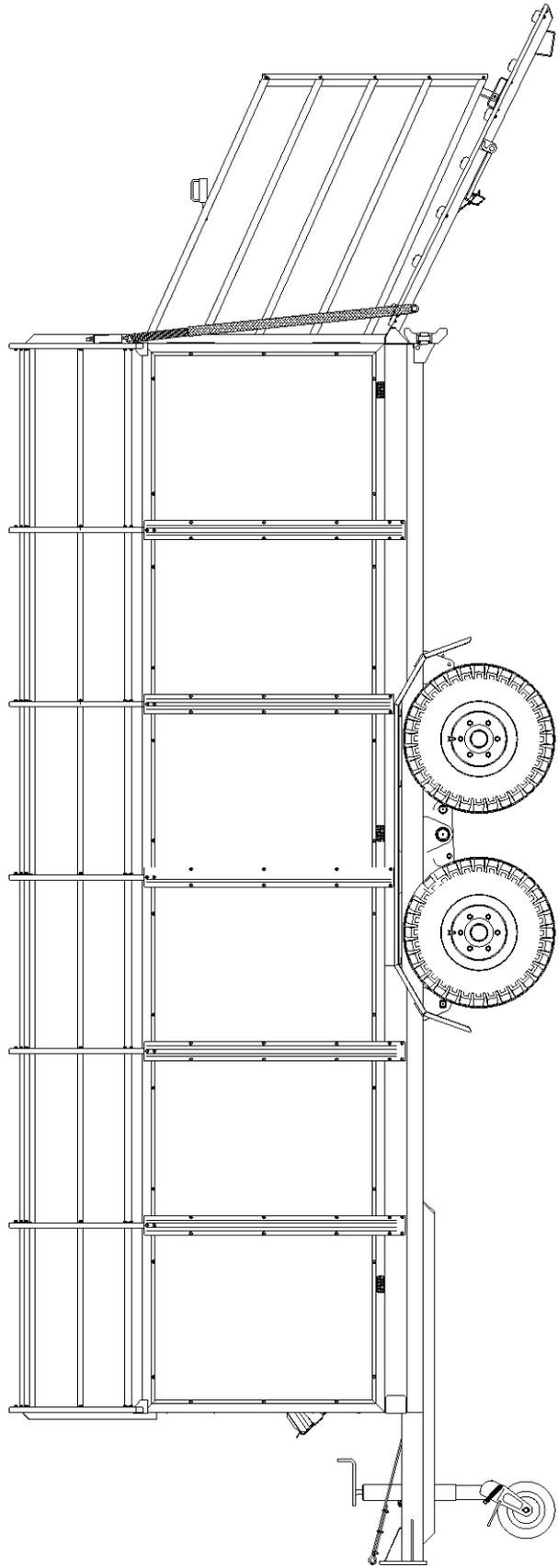
**The instruction for use and service constitutes the Basic equipment of the machine**

**Before starting exploitation the user must get acquainted with contents of this instruction and observe all recommendations contained in it. It will guarantee failure-free operation of the machine.**

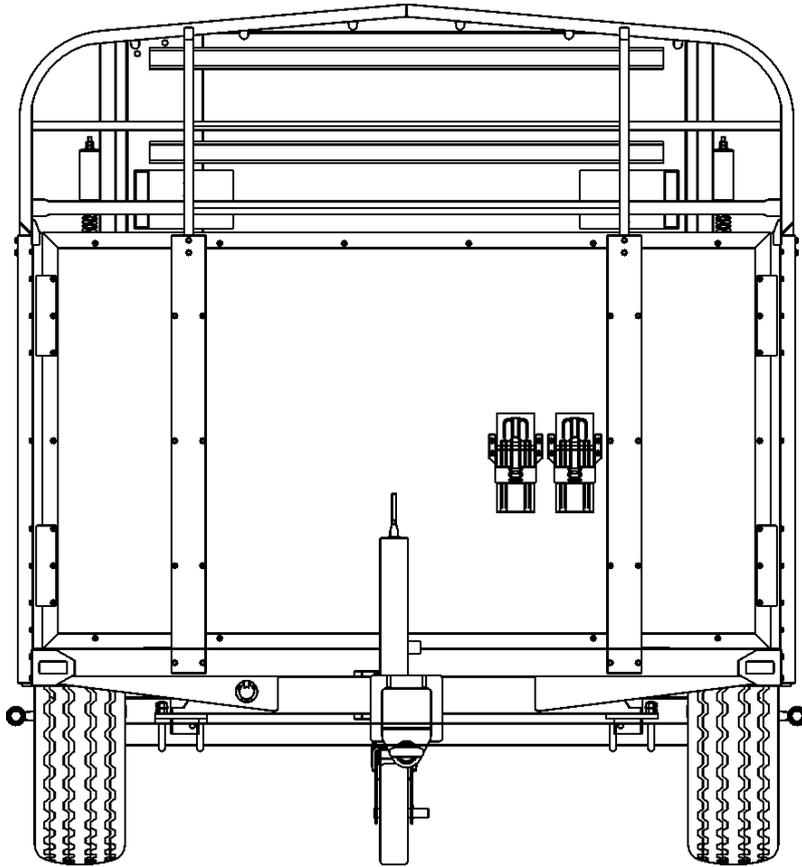
The machine has been designed in accordance with binding standards, documents and currently binding legal provisions.

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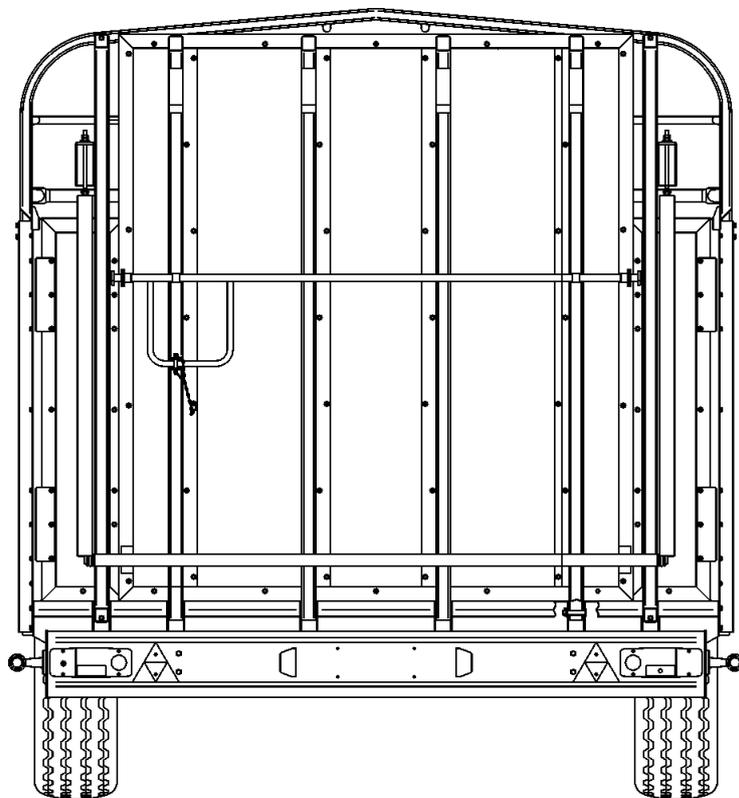
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**FIGURE 1.** KURIER 10 (Side view)



**FIGURE 2.** KURIER 10 (Front view)



**FIGURE 3.** KURIER 10 (Back view)

# 1. INTRODUCTION

## 1.1. GENERAL INFORMATION

This instruction purpose is to familiarize the owner-user with proper and safe operation, servicing as well as maintenance of the plough.

If information contained in the instruction appears not fully comprehensible it should be turned for help to the sales point in which the tractor has been purchased or to the manufacturer.

Particularly important information and recommendations the observance of which is utterly necessary are distinguished in the text through underlining or preceded with the word „ATTENTION“.

Information, description of threats and precautions as well as recommendations and orders connected with safety of use, in contents of the instruction, are distinguished with the sign:



as well as mentioned in the chapter „Safety of use“.

## 1.2. APPROPRIATION OF THE TRAILER

The trailer is designed for transporting animals fixed on it.

Braking system as well as lighting and signalling system perform conditions resulting from road traffic rules.

The trailer is designed for being accoupled with farm tractors equipped with tandem-type coupling.

It is declared, that aforementioned Kurier 10 trailer, being the farm heavy load trailer, was designed for transporting animals and to be operated by farmers, with use of farm tractors and own, above mentioned trailer, in order to conduct business In the Fidel of farming, In order to transport animals, that belong to farmers conducting business in the field of farming, with use of their own above mentioned trailer and tractor to pasturages, in order to transport animals, that belong to farmers conducting business in the field of farming, up to 50 km away from their farm, on the condition that they have previously taken steps imposed by the Directive No 1/2005 of 22.12.2004, art. 3 and art. 27. In particular, that have taken steps to minimalize the transporting time, in order to satisfy animals' BASIC needs without using force or applying metod, causing fear and sufler, in order to keep goud technical condition of the trailer.

**By declaring such appropriation of the trailer Kurier 10, we testify, that structurally, the trailer Kurier 10 is up to the mark with Directive – Decree of the EU Board, No. 1/2005 of 22.12.2004. For this trailer only Article 3 and Article 27 is relevant.**



ATTENTION!

You must not use the trailer inconsistently with its appropriation, and in particular:

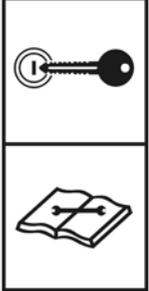
- to transport people
  - to transport loose, unsecured toxic materials
  - to transport machines and devices applying point pressure
  - to transport animals, that have not yet been fixed up
-

## 2. SAFETY OF USE



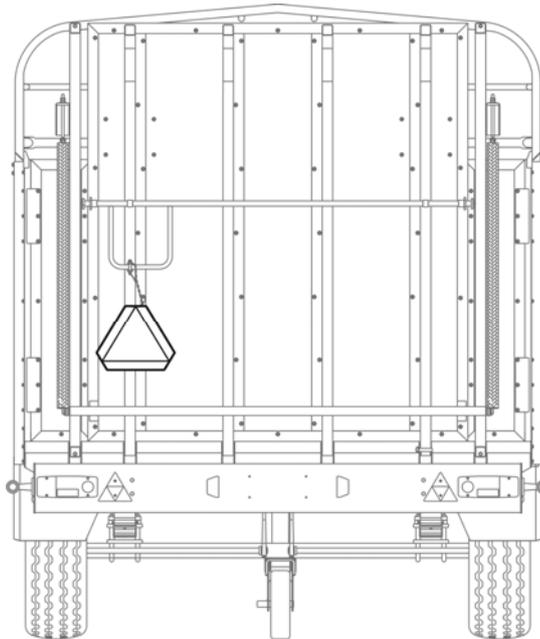
- Before setting about working with the trailer, the user must get to know the content of the following manual. When using the machine all provisions contained therein must be observed.
- In case any information contained in this manual are considered as incomprehensible, it is necessary to contact with the supplier, running authorized technical service on behalf of the manufacturer or directly with the manufacturer.
- Careless and inappropriate usage and service of the trailer and non-observance of rules contained in the manual, create danger for health.
- Non-observance of rules of safety use imposes health hazard for operator of the machine as well as strangers and animals, that are being transported.
- There is a warning on existing residual risk, thus observing provisions of safety use is the basic rule of using the trailer.
- It is forbidden to use the machine by individuals unauthorised for driving with farm tractors, including children and people in drink.
- It is forbidden to use the machine inconsistently with its appropriation. Each individual, who takes advantage of the machine inconsistently with its appropriation, shall therefore take all consequences resulting from such using the trailer, upon oneself.
- Any modification of the trailer shall release the PRONAR Narew from responsibility for occurred damages as well as harm.
- Before setting about using the machine, it is necessary to verify its technical condition. In particular the condition of attachment, travelling system, braking system and lighting system as well as tightness of wheels.
- Exercise special caution when accoupling the trailer.
- Nobody must stay between trailer and tractor during accoupling procedure.
- Climbing on the trailer is allowed when the trailer is fully immobilized and engine powered off. Trailer detached from the tractor must be braked. In case the trailer stands on slope, it is necessary to secure it against rolling off by putting wedges or other elements devoid of sharp edged, under wheels.
- Animals standing on the trailer must be secured by attaching purpose-made beam.
- It is forbidden to exceed maximum load.
- In case of observation of any failure or damage, it is necessary to shut off the machine until having it repaired.
- Use protective gloves and appropriate tools when operating the trailer.
- Aforementioned operation-repair actions must only be taken, if general work safety rules are being observed. In case of body injury it is necessary to wash and disinfect the wound.
- The trailer is equipped with information-warning markings in a form of labels described in table 1 below. The user is obliged to take care the wording as well as symbols on labels be always legible. Labels must be replaced with new ones in case of its damage. Labels can be purchased from the manufacturer of trailers.

**TABLE 1.** Information – warning labels

Safety symbol (sign) or wording	Meaning of the symbol	Placement
	<p>Read the instructions for use and servicing</p>	<p>Front wall</p>
	<p>Turn off the engine and take ignition key out before taking any repair action and read the manual</p>	<p>Front wall</p>
<p><b>400 kPa</b></p>	<p>Tyre pressure 11.5/80-15.3 12PR</p>	<p>Above wheels, left and right wall</p>
<p><b>540 kPa</b></p>	<p>Tyre pressure 14.0/65-16 14PR</p>	<p>Above wheels, left and right wall</p>
	<p>Before climbing up the trailer turn off the engine and take ignition key out</p>	<p>Front wall</p>
	<p>Lubricate according to recommendations contained in this manual</p>	<p>Front wall</p>
	<p>Verify condition of screw joints of traveling wheels</p>	<p>Front wall</p>

## RULES OF DRIVING ON PUBLIC ROADS

- When driving on public roads it is necessary to follow road traffic rules.
- Exceeding maximum load of the trailer may cause its damage and create danger for road traffic.
- You must not exceed maximum speed. Adjust speed to weather conditions.
- It is forbidden to leave the trailer unsecured. Securing the machine consists in pulling parking brake.
- When driving on public roads the trailer must be equipped with certified or approved warning reflective triangle.
- One must put the low-speed vehicle board on back wall, in case the trailer is the last vehicle in aggregate (Figure 4).



**FIGURE 4.** Placement of low-speed vehicle board.

## 3. ADDITIONAL INFORMATION

### 3.1. EQUIPMENT OF THE TRAILER

Equipment of each trailer include:

- instructions for use and servicing and spare parts list
- guarantee card
- connector of wiring system

On request of the user, manufacturer may equip the trailer with following accessory elements:

- warning reflective triangle
- low-speed vehicle board
- partition walls

### 3.2. WARRANTY TERMS

"PRONAR" Sp. z o.o. in Narew hereby warrants failure-free operation of the machine, when using in compliance with technical-operational terms described in the following instruction.

Troubles revealed during warranty period are to be removed by the warranty service within 14 working days from the day of taking the machine for repair by the warranty service, unless otherwise agreed.

The warranty does not hold parts neither sub-assemblies of machines, that undergo wear and tear before expiring the warranty period, e.g.: exploitatively worn tyres and brake lining, mechanical damages, damages resulting from improper usage, adjustment and maintenance.

Detailed warranty terms are included in warranty card attached to each newly purchased trailer.



ATTENTION!

You must request from the seller to fill in the guarantee card and claim coupons. Lack of e.g. date of sale or the seal of the selling point expose the user to non-recognition of possible claims.

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### 3.3. TRANSPORTATION

The trailer is prepared for sale as a fully set up machine and does not require packing. Only technical documentation of the trailer, connector of wiring system and, if need be, warning triangle, subject to packing.

Delivery takes place by motor transportation or after having the trailer accoupled with tractor, by means of independent transportation.



ATTENTION!

In case of independent transportation, the operator of tractor must get to know the content of following manual and observe rules contained therein. In case of motor transportation, the trailer is fixed on the platform of the transport mean according to safety requirements during transport. The driver, when transporting the machine, must exercise special caution. It results from the fact of moving the centre of mass upward.

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### 3.4. WITHDRAWAL THE TRAILER FROM USE

In case of taking decision by the user on withdrawal of the machine from use, the whole trailer must be delivered to the scrap depot designated by the Starost. Dismounted parts remained after repair must be delivered to a purchasing centre of secondary materials.

Certification obtained in strap deposit makes up the basis for signing out the trailer.

# 4. OPERATING INSTRUCTIONS

## 4.1. TECHNICAL DESCRIPTION

TABLE 2. Basic technical data of the trailer

ITEM	WORDING	UNITS OF MEASURE	1	2
1	MAXIMUM TOTAL WEIGHT AUTHORISED	kg	8000	8000
2	MAXMUM LOAD CAPACITY	kg	5430	5430
3	COMPLETE VEHICLE WEIGHT	kg	2570	2570
4	TOTAL LENGTH*	mm	7829 -7915	7829 -7915
5	WIDTH	mm	2340	2340
6	HEIGHT	mm	3035	3047
7	WIDTHE OF CARRYING BODY (INSIDE)	mm	2340	2340
8	LENGTH OF CARRYING BODY (INSIDE)	mm	5987	5987
9	HEIGHT OF CARRYING BODY (INSIDE)	mm	1909	1909
10	FLOOR HEIGHT FROM THE GROUND	mm	945	945
11	WHEEL TRACK	mm	2100	2100
12	WHEELBASE	mm	1090	1090
13	TYRE SIZE	-	11.5/80-15.3 12PR	14.0/65-16 14PR
14	TYRE PRESSURE	kPa	400	540
15	MAXIMUM SPEED	km/h	30	30
16	VOLTAGE IN WIRING SYSTEM	V	12	12

\* - depending on string applied

1 – Trailer in version with tyre 11.5/80-15.3 12PR 134A8

2 – Trailer in version with tyre 14.0/65 14 PR 145 A8

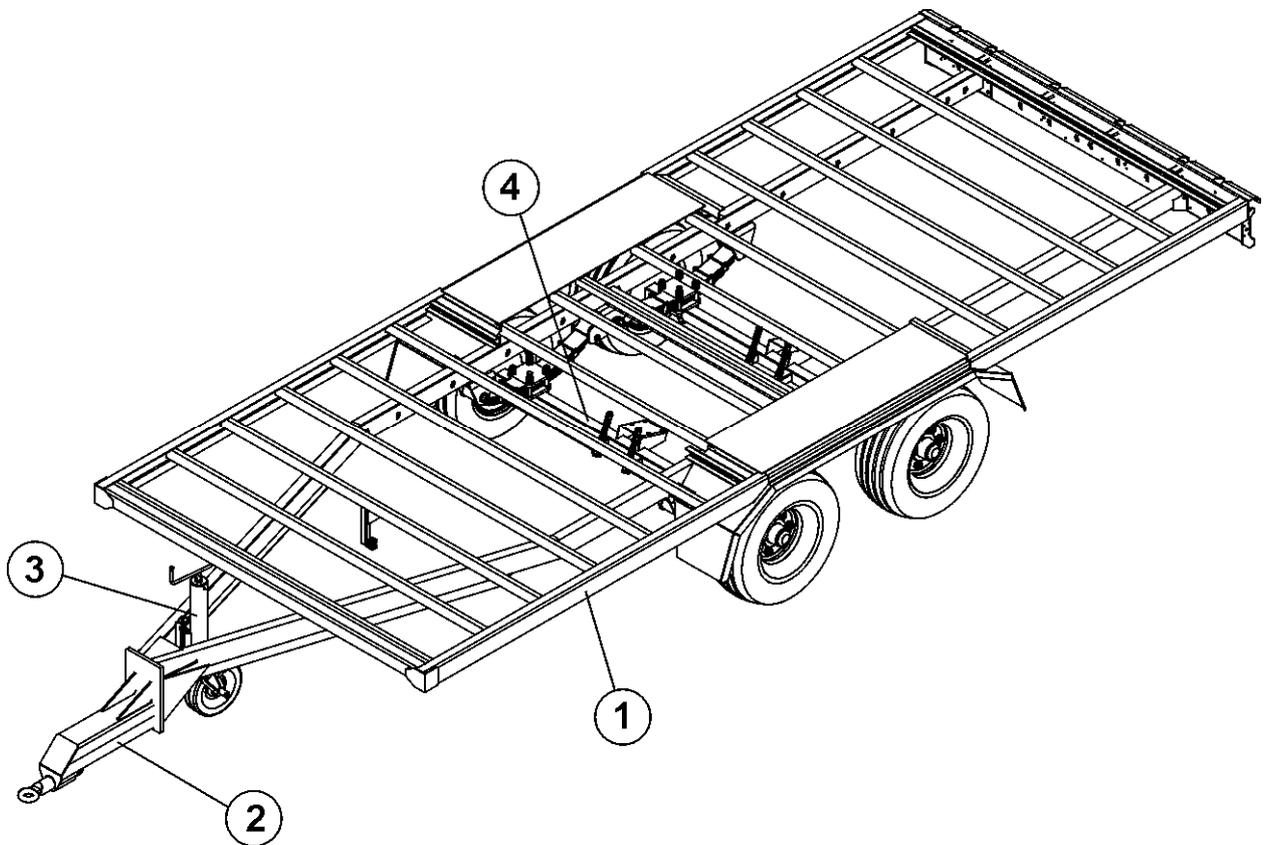
## 4.2. STRUCTURE AND PRINCIPLE OF OPERATION

### 4.2.1. Chassis

Chassis of the trailer is composed of elements marked in the figure 5. Frame (1) is a structure welded from steel sections. Basic bearing elements are frame side members linked with cross-beams.

In the rear of the frame there are elements designed for fixing travelling axle (4) and elements of rear lighting unit. Travelling axle (4) is made of square-shaped rod ended with plugs, where hubs of travelling wheels are installed on cone bearing. These are single wheels, equipped with shoe brakes, actuated by mechanical cam expanders. In the front of the frame, there are draught bar (2) and supporting wheel (3). Kind of draught bar applied (2) depends on the version of ordered trailer.

In the trailer Kurier 10 there are several draught bar, that may be applied: draught bar with fixed string (draught bar eye  $\varnothing 40$ ), draught bar with rotational string (draught bar eye  $\varnothing 50$ ). Figure 5 shows the trailer with rotational draught bar.

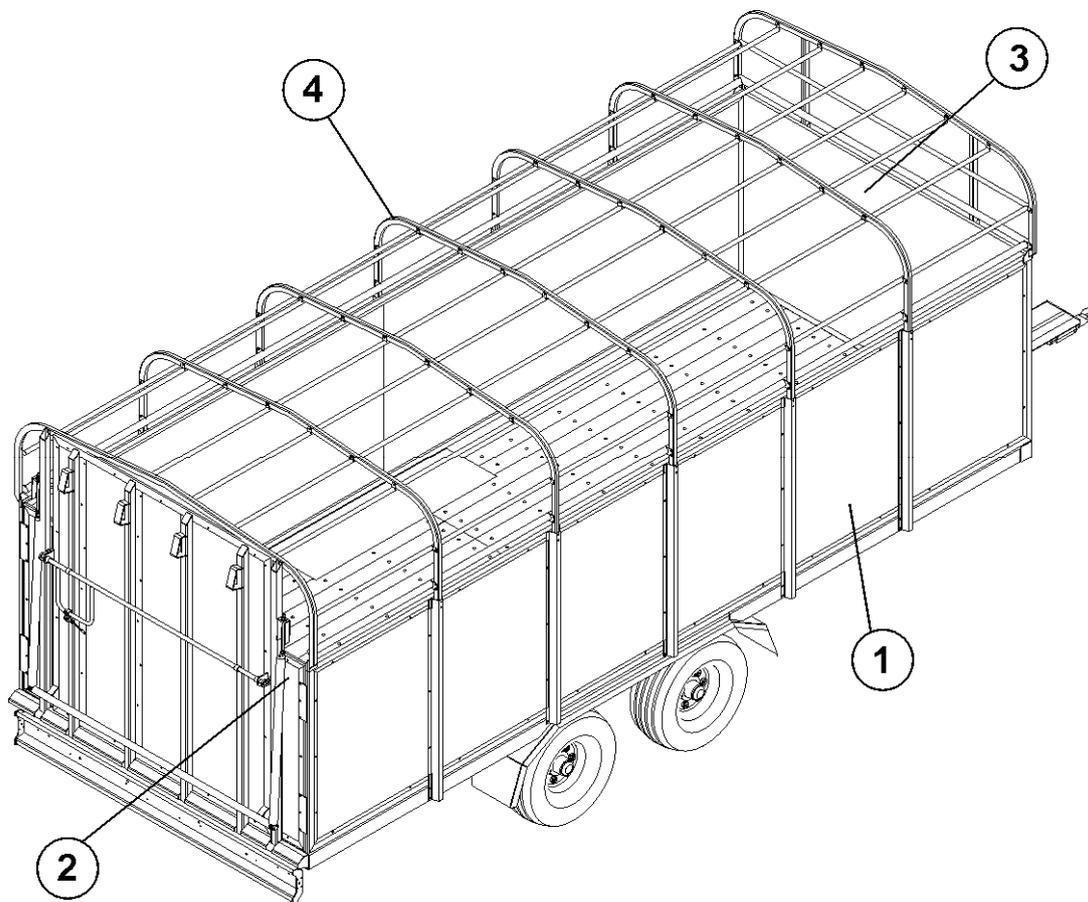


**FIGURE 5.** Chassis

(1-bottom frame, 2-draught bar, 3-supporting wheel, 4-traveling axle)

### 4.2.2. Carrying body

Carrying body is designed for transporting livestock animals. Carrying body of the trailer KURIER 10 is composed of wooden floor, made from waterproofed wooden battens, resting upon the frame, side walls (1), front wall (3), rear wall (2), rack (4), tarpaulin, gates located in rear wall (2) and barrier. Component parts were shown in the figure 6.



**FIGURE 6.** Compound parts of carrying body

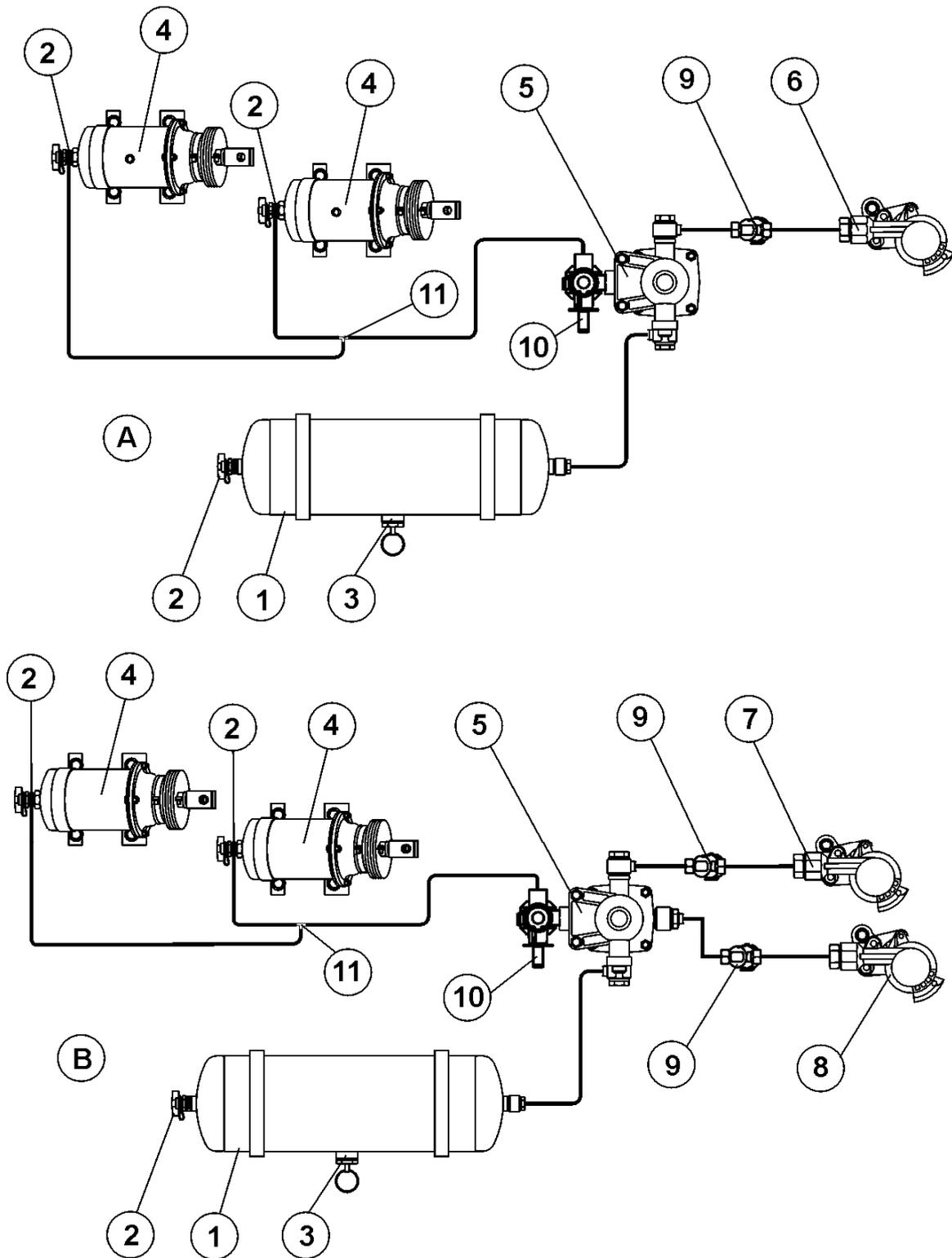
1 – side walls, 2 – rear wall, 3 – front wall, 4 – rack

### 4.2.3. Braking system

The trailer is equipped with braking system, which includes:

- main brake - pneumatic;
- parking brake (controlled with frank or lever mechanism)

Main brake is actuated from the operator's cabin by pressing brake foot pedal in the tractor. Structure of pneumatic brake provides automatic activation of trailer brake in case of accidental disconnection of pneumatic systems of trailer and tractor.



**FIGURE 7.** Pneumatic braking system schematic diagram

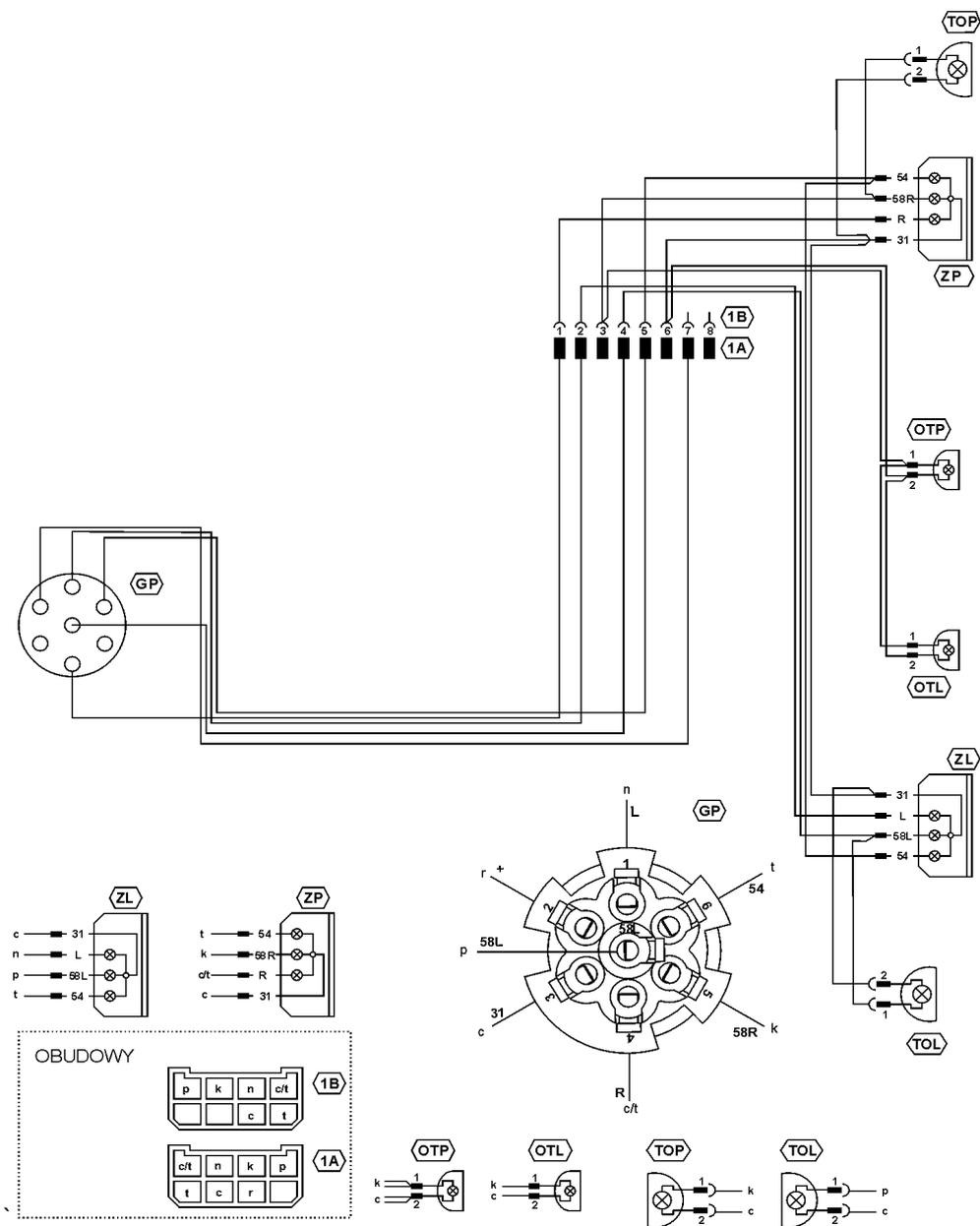
A – single-pipe pneumatic braking system

B – two-pipe pneumatic braking system

1 – air tank, 2 – control joint, 3 – drain valve, 4 – pneumatic servomotor, 5 – control valve, 6 – pipe joint (black), 7 – pipe joint (red), 8 – pipe joint (yellow), 9 – air filter, 10 – kaking force controller, 11 – pipe tee.

#### 4.2.4. Wiring system, lighting, signalization

Wiring system of the trailer KURIER 10 is designed to be supplied with constant current source of 12V. Connecting wiring systems of the trailer and tractor must be performed with use of appropriate connector. Wiring system schematic diagram of the trailer KURIER 10 was shown in the picture 8.



**FIGURE 8.** Wiring system schematic diagram of the trailer KURIER 10

TOP(TOL) – rear contour lamp right (left), OTP(OTL) – number plate lamp right (left), ZP(ZL) – rear combined lamp right (left), GP – 7-pin front socket.

#### Colour marking of leads:

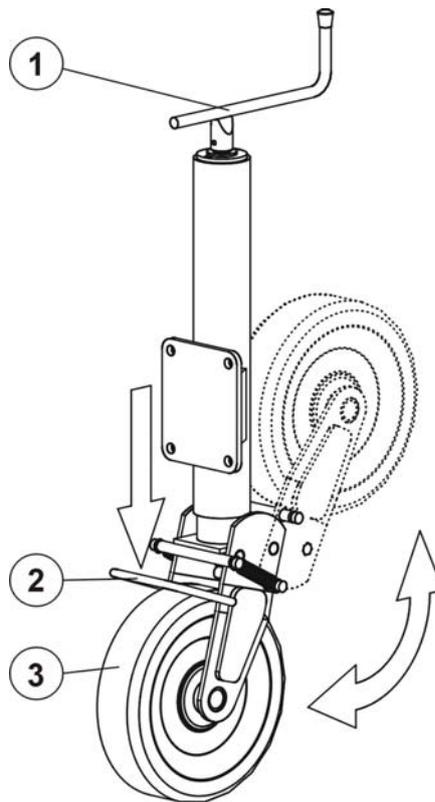
c – black, k – red, n – blue, p – orange, r – pink, c/t – black green, t – green, z – yellow; 31 – mass, R(L) – right (left) turn indicator, 58R(58L) – position lamp right (left), 54 – „STOP”, „+” – supply + 12V. **ATTENTION!** Covers were show from leads input side.

## 4.3. RULES FPR USING TRAILERS

### 4.3.1. Accoupling with tractor

Before setting about accoupling the trailer with tractor, one must check whether the trailer is immobilized by means of parking brake. In order to accouple the trailer to tractor, take following actions:

- Set the draught bar at appropriate height. Precise alignment of draught bar can be obtained by turning the knob bolt of supporting wheel;
- By moving tractor backward, connect draught bar eye with hook-type coupling of tractor and verify its fixing;
- Lift the support wheel up with use of knob. By pressing the pedal (2) release the wheel, which must be positioned in transport position, that was shown in the picture 9;
- Connect wiring and braking systems;
- Release parking brake of the trailer.



**FIGURE 9.** Trailer's support

1 – knob, 2 – pedal, 3 – support wheel



ATTENTION!

No one must stand between tractor and trailer when performing accoupling procedure.

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#### 4.3.2. Preparing to work

When preparing the trailer for operation, it is necessary to check:

- condition of traveling wheels and tyre pressure;
- tightness of screws fixing traveling wheels and draught bar by applying force of 270 Nm;
- condition of all other screw joints;
- performance of lighting and signaling system of the trailer;
- performance of braking system of the trailer;
- condition and performance of locks of back door;

#### 4.3.3. Loading the trailer

**Loading the trailer must take place only when it is connected to tractor and positioned levelly.**

Loading the trailer must be performed by taking following actions, minding its order and exercising special caution:

- brake the tractor and the trailer with use of parking brake;
- open lock of back door;
- open out back door;
- set gate and secure them;
- let animals in;
- secure animals by fixing them to purpose-made rod;
- compact gates and secure them;
- close and secure back door.



ATTENTION!

It is forbidden to exceed allowable load capacity of the vehicle, because it will be dangerous for road traffic and can damage the machine.

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#### 4.3.4. Transportation

- When driving on public roads you must observe road traffic rules;
- It is forbidden to transport unattached animals;
- Exceeding allowable load capacity of the trailer could cause its damage and create danger for road traffic as well;
- It is very important not to exceed allowable speed of 30 km/h and to adjust speed to weather conditions;
- It is forbidden to leave the trailer unsecured. Securing the trailer consists in pulling parking brake;
- When driving on public roads it is necessary to equip the trailer in certified or approved reflective triangle;
- One must place low-speed vehicle board on the rear wall of the trailer, if the trailer is the last vehicle in the aggregate.

### 4.3.5. Use of tyres

- When setting about mounting and dismantling tyres, one must secure the trailer against spontaneous dislocation;
- Actions of repair and replacement must only be taken by authorised and trained personnel and with use of purpose-made tools;
- After having wheels mounted, screw nuts tight after first 50 km, and then verify its tightness after every 100 km (applied force ought to be 270Nm);
- Inspect tyres and verify tyre pressure on regular basis, according to the manual (especially after long-lasting stoppage);
- Tyre pressure ought to be checked after daylong operation. One must mind, that temperature rise of tyres may cause raise the pressure by 1 bar. At such temperature rise one must either lower the load or speed;
- Never decompress by venting in case of pressure rise due to temperature rise;
- Valves must be secured with use of purpose-made plugs. It will allow to avoid penetration of dirt;
- Do not exceed maximum speed of the trailer;
- During daylong operation cycle, one must stop the machine for at least one hour at noon;
- Comply with rule of 30 minutes breaks for cooling tyres after 75 km or after 150 minutes of uninterrupted drive, whichever comes first;
- One ought to avoid holes, sudden and alternate manoeuvres and high speed when taking turn.

### 4.3.6. Unloading the trailer

**Before setting about unloading the trailer, one must place it on levelly ground, brake tractor and pull hand brake of the trailer.**

Unloading the trailer must be performed according following instructions, with special regard to its order and exercising care:

- open rear door lock;
- open rear door out;
- set gates and secure them;
- sit animals out;
- set gates down and secure them;
- Close and secure rear door.

### 4.3.7. Disconnecting the tractor

In order to disconnect tractor, one must take following actions:

- After stopping the tractor, stop the trailer as well with use of parking brake;
- Disconnect pipes of wiring and braking system from tractor and secure its ends against getting dirty;
- Set supporting wheel into supporting position and with use of supporting knob lower the wheel until it rests on the ground;
- Disconnect draught bar string of the trailer from hook-type coupling of tractor and drive the tractor back.

# 5. TECHNICAL SERVICE

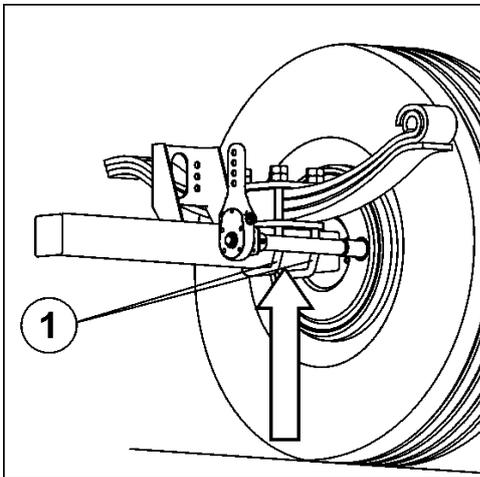


## ATTENTION!

- In case of discovering any abnormal operation or damage of systems and subassemblies of the trailer, it is necessary to stop using it until having it repaired or fault removed.
- It is forbidden to take any service-repair actions with loading body loaded.
- Service-repair actions must only be taken by observing basic work safety rules. In case of injury, one must wash and disinfect the wound immediately. In case of heavy injuries, one must consult with physician.

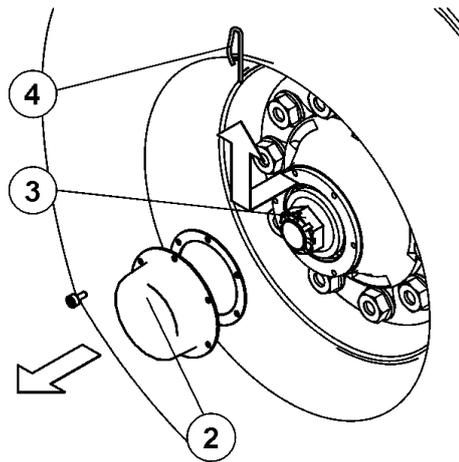
## 5.1. ADJUSTING WHEEL BEARINGS

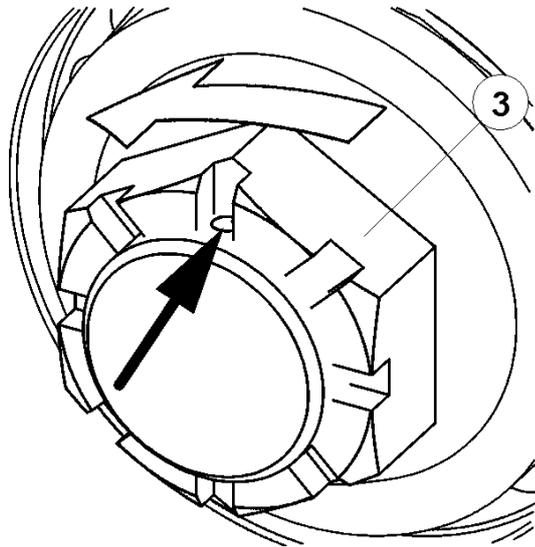
In newly purchased trailer, after having driven first 500 km, and during further usage – after having driven next 1500-2000 km, one must check and, if need be, adjust bearing slackness of driving wheels.



Connect trailer with tractor, brake tractor, place wedges under wheels of the machine, lift wheels one after another with use of purpose-made lifting jack. Lifting jack must be placed under axis between bow bolts (1) fixing spring to the axis. Verify bearing slackness.

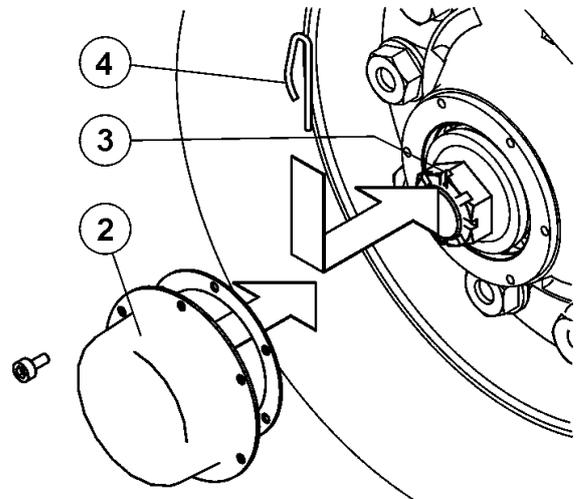
If particular wheel manifests excessive backlash, you must dismount the hub cover (2) and take the pin (4) of castellated nut (3) out.





When turning the wheel screw the castellated nut (3) tight until the wheel stops. Unscrew this nut of 1/3 turn, until the closest pin groove aligns with the hole in journal.

Secure castellated nut (3) with spring-type cotter-pin (4) and mount the hub cover (2). The wheel should rotate easily, without jams and noticeable opposal, not being caused by rubbing brake clutches against brake drum.



## 5.2. ADJUSTING BRAKES

Adjusting procedure should be performed in case of:

- excessive backlash between brake lining and brake drum, caused by abrasive wear, and when braking effect decreases,
- wheel brakes operate dissymmetric ally and not simultaneously.

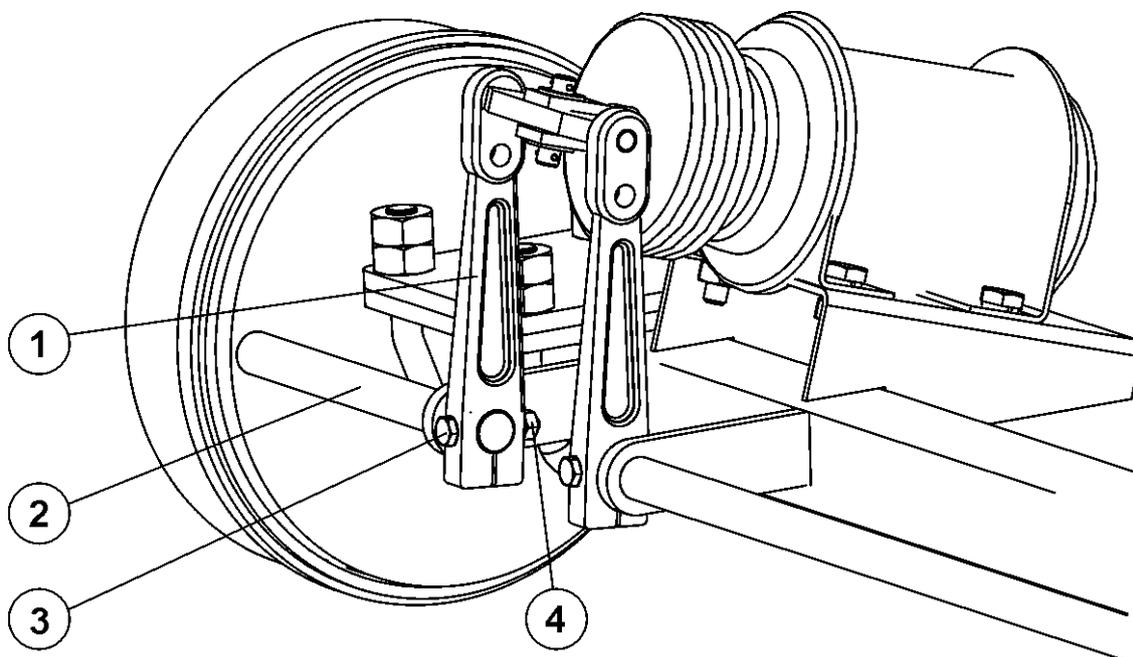
When brakes are properly adjusted, braking of all wheels of the machine happens in the same time.

Adjustment procedure consists in changing location of brake expander arm (1), Figure 10, in relation to brake expander roll (2). For this purpose, you must loosen nut (4) and then adjust arm position at groove ending of shaft (2) in proper direction, i.e.:

- backward – in case the brake brakes too late
- onward – in case the brake brakes too fast

Adjustment must be carried out individually for each wheel. After having brakes properly adjusted, at full setback, brake expander arms must form angle of 90° with piston rod of pneumatic or hydraulic servomotor.

Adjustment must be carried out in case of extension of brake cable or loosening parking brake cord clamps. Length of parking brake cable must be set, so that at releasing the main brake and parking brake, the cable was loose and hang out at  $1 \div 2$  cm.



**FIGURE 10.** Adjusting of brakes schematic diagram

1 – expander arm 2 – expander shaft, 3 – screw, 4 – nut.



**ATTENTION!**

With properly adjusted brakes, the braking force should not be lower than this, specified below in the table 3.

**TABLE 3.** Braking force

Type of trailer	Braking force of main brake [kN]	Braking force of parking brake [kN]
KURIER 10	24	14,4

Discrepancy between braking force of left and right wheel must not be bigger that 30%, assuming that 100% makes up the bigger force.



ATTENTION!

Braking force of the feed car makes up the braking force of wheels of the machine.

### 5.3. SERVICING OF PNEUMATIC SYSTEM

Within the scope of servicing of feed car one must verify the pneumatic system tightness, exercising special care of all fittings. Tightness of the system must be checked at rated pressure of approximately 600 kPa (6,0 kg/cm<sup>2</sup>).

In case the piping, gaskets and other elements of the system are damaged, compressed air will get through the damaged parts with characteristic fizzing or in case of small leakiness, in the form of air-bladders. Small leaks may be detected by laying washing liquid on verified parts. Damaged pipes or gaskets, that are the reason of lack of tightness, must be replaced with new ones. If the reason of lack of tightness is air coming out of servomotor – you must regenerate servomotor.

You should remove condensation water from the tank on regular basis. For this purpose you should put the pin of drain valve, located on the bottom of the tank, out. Compressed air will make to water flow outside. After releasing the pin the valve should close itself automatically and stop air outflow from the tank.

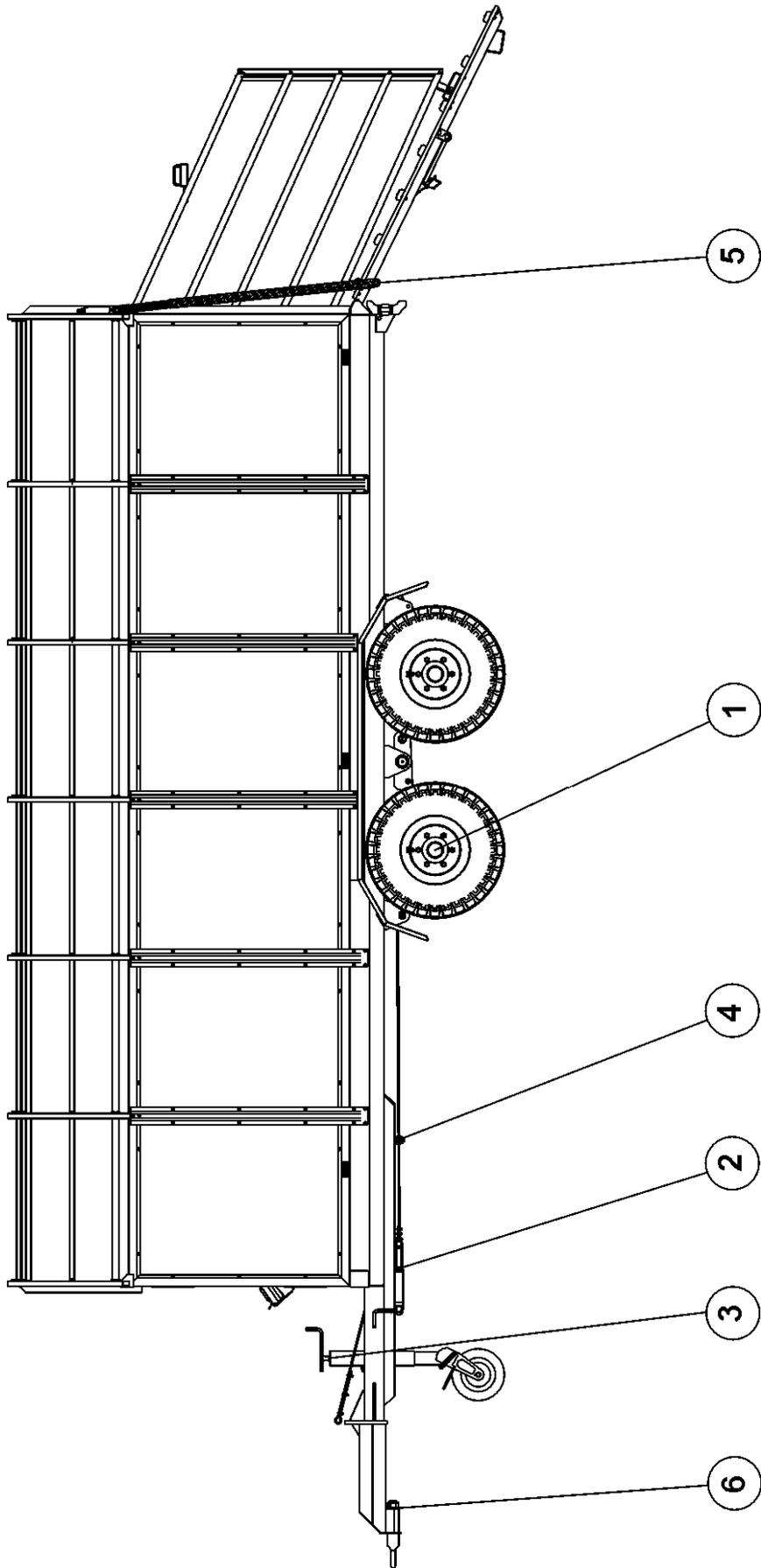
You must screw the valve out and clean it thoroughly once a year, before winter season

### 5.4. LUBRICATION

Lubricating of the trailer should be performed in spots pointed in Figure 11 and described in Table 4 “Lubrication points of the trailer”.

**TABLE 4.** Lubrication points of the trailer

Number of Figure 11	Place of lubrication	Number of lubrication points	Type of lubricant	Frequency and way of lubrication
1	Bearings of wheel hubs	4	solid	replace grease once a two years
2	Hand brake (brake mechanism)	1	solid	every 3 – 4 months
3	Screw of supporting element	4	solid	every 3 – 4 months
4	Wheel axle of brake cable	1	solid	every 6 months
5	Hinges of rear door	4	solid	every 3 – 4 months
6	Rotational string of draught bar	1	solid	every 3 – 4 months



**FIGURE 11.** Lubrication points of the trailer

## **5.5. STORAGE AND MAINTENENCE**

At the end of work, you must clean the machine thoroughly and wash it by applying a jet of water. In case you find any damaged with relation to coat of varnish, you must clean these spots from dirt and dust, degrease and then apply new layer of varnish, keeping in mind the same colour and thickness of protective coating. Before having these spots varnished, you must protect them with use of grease or anti-corrosion agent.

It is recommended to keep the machine in closed and covered area. Keeping the machine outside for a longer period of time, you must secure its body against negative weather factors, especially these, that cause steel corrosion and forcing tyre ageing

# NOTES: