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FARM SHELLER TIPPER TRAILER WITH DOUBLE TIPPING OF THE TYPE TANDEM

T669/1

INSTRUCTION FOR USE AND SERVICING

Identification of the machine:

Symbol /Type: T669/1

KTM number: 1026-634-847-710

Factory number:

The factory number is engraved on the data plate and on the front beam of the trailer frame.
The name plate is riveted to the load carrying body.

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

The hydraulic installation has been filled with the hydraulic oil HL32

Mark of quality control.....

The instruction and catalogue of spare parts are binding with the annex No..... dated.....

The manufacturer reserves itself the right to introduce, in the manufactured machines, structural alterations facilitating servicing and improving quality of their operation. In connection with this the Servicing Instruction and the Catalogue of Spare Parts may not correspond with reality of the trailer only to a small degree. In case of any doubts it is necessary to direct questions to the Manufacturer.

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

tion 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 safe servicing and 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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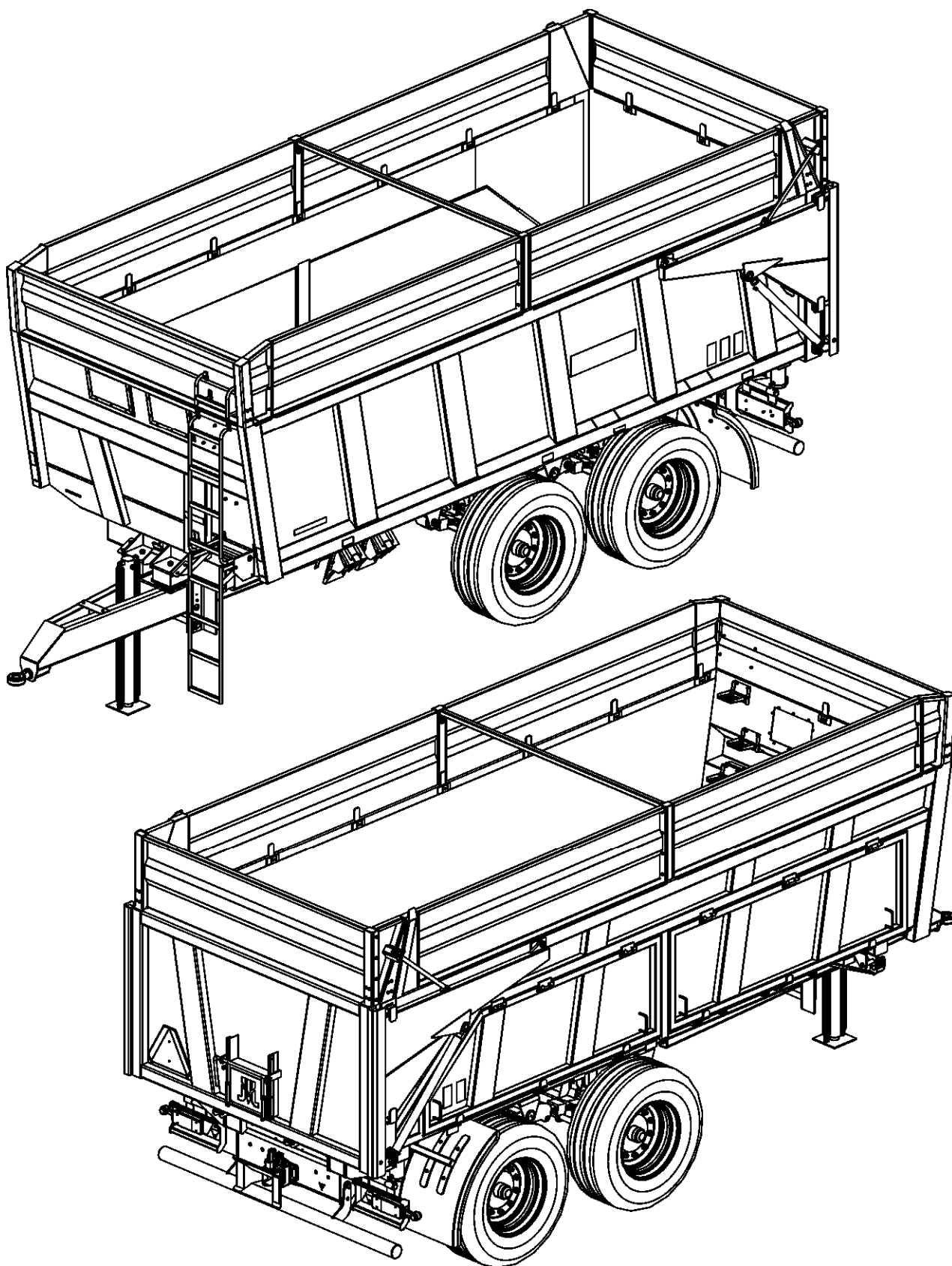


FIGURE 1. The trailer T669/1 (version with rotational regulated draught bar)

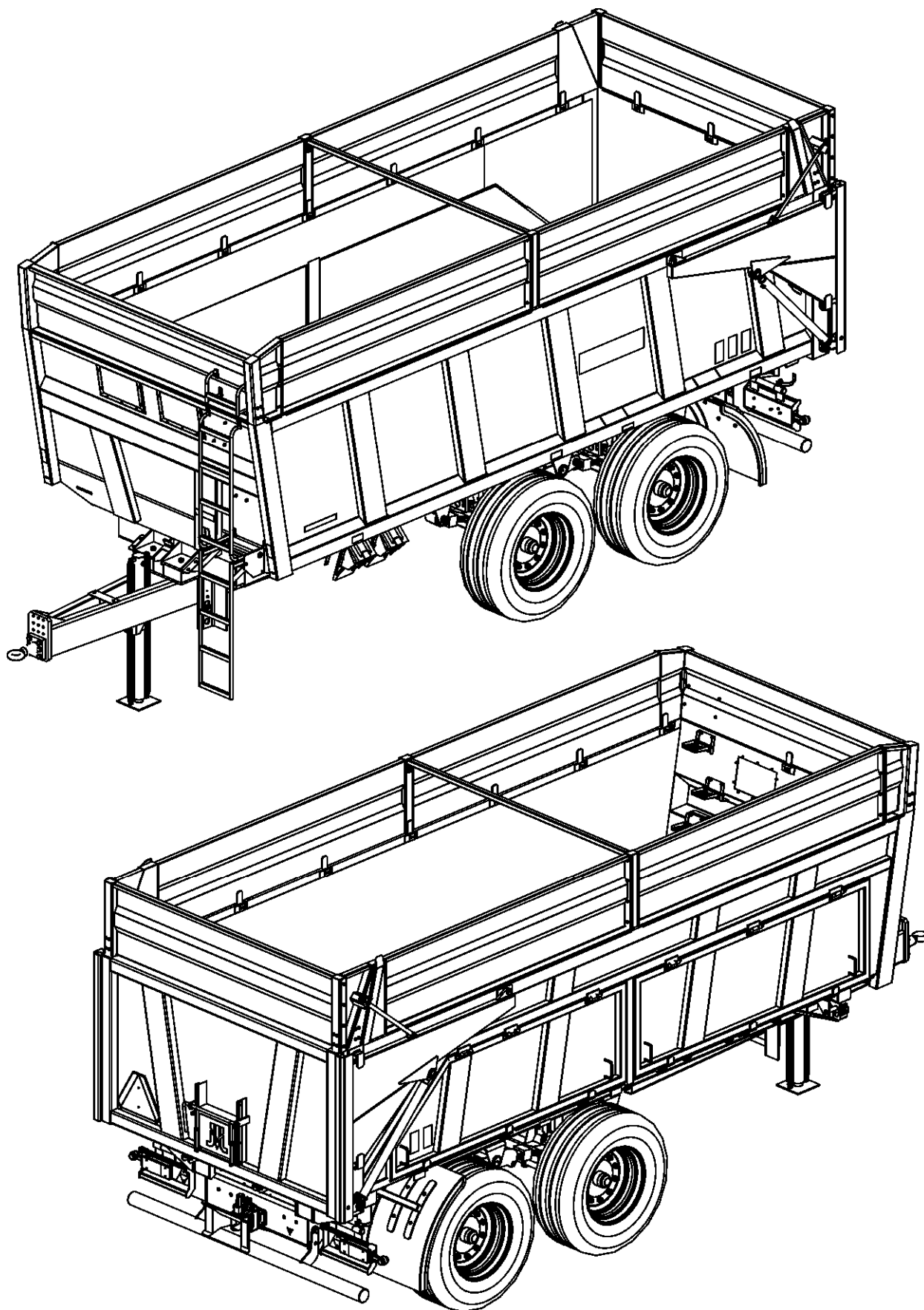


FIGURE 2. The trailer T669/1 (version with straight draught bar)

1. Introduction

1.1 Basic information

The instruction describes basic rules of safe use and service of farm tipper trailers.

If information contained in the instruction appears not fully comprehensible it is necessary to turn for help to the sales point in which the trailer 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 exclusively designed for transportation, in agriculture, of crops and agricultural products as well as loose and volumetric materials within the area of the farm and on public roads .with maximal speed of 30 km/h.

The braking system as well as the lighting and signalling system meets requirements resulting from provisions of road traffic.

The driving road system (axles, springs, wheels, tyres), meet requirements imposed on farm trailers, which, according to the Act „Law on road traffic“ may be used with admissible speed, maximum 30 km/h. Meeting these requirements is conditioned by proper servicing and observance of rules contained in this instruction.

The trailer is adapted to cooperation with farm tractors equipped with one line or two lines pneumatic installation as well as with hydraulic external installation with nominal pressure 16 bar (1.6 MPa). Oil demand in the trailer amounts to 30 litres. The hydraulic installation has been filled with hydraulic oil HL32.

The trailer is appropriated to combine with tractors equipped with hitches of load carrying capacity - minimum 2500 kg.

The trailer may be equipped with the flexible connector with internal diameter of the eye specified in the table 1.

Tabele 1. Requirements for hitches and tension rods connectors related to combining of the trailer with tractor.

Tension rod of the trailer	Required hitch
Tension rod, eye diameter Ø40 DIN 11026	Top transport hitch, pin diameter: <ul style="list-style-type: none"> • Ø32 according to DIN 11028 • Ø32 according to DIN 11025 • Ø38 according to DIN 74051-1 • Ø38 according to DIN 74054
	Low transport hitch: <ul style="list-style-type: none"> • „HITCH” according to ISO 6489-1 • „PITON – FIX” according to ISO 6489-4
Tension rod, eye diameter Ø45	Farm hitch, Ø38

ATTEN- -TION



The trailer must not be used inconsistently with its appropriation and particularly:

- to transport people and animals
- to transport in bulk not protected toxic materials when there is possibility to cause environmental contamination.
- to transport machines and equipment when their location of centre of gravity negatively influences the stability of the trailer.
- to transport loads, machines which influence non-uniform loading and overload of running axes
- to transport non-fixed loads which may change their position on the platform of the load carrying body during travelling
- to transport non-secured loads which may cause environmental pollution
- to transport loads acting strongly corrosively on structural elements of the trailer

2. Safety of use

2.1 Basic safety rules



- Before starting exploitation of the trailer the user should get acquainted thoroughly with the contents of this instruction. In the course of exploitation all recommendations contained in it must be observed.
- If information contained in the instruction is not comprehensible you must contact the seller conducting authorized technical service on behalf of the manufacturer or directly contact the manufacturer.
- Careless and improper use and service of the trailer as well as non-observance of recommendations contained in this instruction creates threat to health.
- Non-observance of rules of safe use creates threat to health of attending persons and strangers.
- It is warned of existence of residue risk of threats, therefore application of rules of safe use and reasonable conduct should be the basic principle of using the trailer.
- It is forbidden to use the machine by persons non-qualified to drive farm tractors including by children and intoxicated persons.
- It is forbidden to use the trailer inconsistently with its appropriation. Everybody who uses the trailer in a manner inconsistent with appropriation, he takes, in this way, full responsibility for all consequences resulted from improper use.
- Any modifications relieve the company PRONAR Narew from responsibility for arisen damages or detriment to health.
- Before each use of the trailer you must check its technical state. In particular you must check the technical state of the hitch system, driving road system, braking installation and light signalling.

- Climbing up the trailer is possible only when there is absolute standstill of the trailer and the engine of the tractor is switched off.
- The trailer disconnected from the tractor must be braked. If the trailer is standing on a slope or height it must be additionally secured against rolling through putting wedges or other elements without sharp edges under the wheels.
- It is forbidden to drive with lifted load carrying body.
- It is forbidden to transport people and animals on the trailer.
- The trailer is marked with information and warning inscriptions in form of labels mentioned in the table2. The user of the trailer is obliged to take care of readability of warning inscriptions and symbols placed on the machine during the whole period of use. In case of damage or destroying of them they must be replaced for new ones. Labels with inscriptions and symbols are to be purchased at the manufacturer of trailers.
- .Before starting road driving you must check if pins connecting the load carrying body with the lower frame and pins of the walls are secured against autogenous falling out.

2.2 Connecting and disconnecting from the tractor

- During combining the trailer with the tractor you must use exclusively tractor hitches provided for connection with a given type of tension rod which the trailer is equipped with (table 1). Check the protection.
- You must keep particular care during connecting of the trailer.
- In the course of connecting nobody may stay between the trailer and the tractor.
- Disconnecting of the trailer from the tractor is forbidden when the load carrying body is lifted with the telescopic servo-motor. You must keep particular care during disconnecting of the trailer.
- During connecting and disconnecting of the trailer parking brake must be actuated.

2.3 Loading and unloading of the trailer

- It is forbidden to exceed admissible trailer load capacity because it threatens safety of road traffic and may cause damage to the machine.
- A load must be uniformly distributed on the trailer.
- It must be observed that nobody will stay near the load carrying body and the sliding load.
- During lifting of the load carrying body the trailer must be connected with the tractor.
- During lifting of the load carrying body it must be kept safe distance from electricity lines.
- Tilting of the load carrying body may be performed only in flat and hard subsoil.
- Lifting of the load carrying body should not be performed during strong blasts of wind.
- Only original pins with grips must be used. Application of non-original pins threatens with destruction of the trailer.
- During opening of locks and walls particular care must be taken due to pressing of load against the walls.

- Particular care must be kept in order to avoid crushing of fingers or hands during opening and closing of walls of the load carrying body.

2.4 Pneumatic and hydraulic installation

- The hydraulic Installation is under high pressure during operation
- You must regularly check technical condition of connections as well as hydraulic and pneumatic conduits.
- In case of failure of the hydraulic or pneumatic installation must be switched off from operation until the time of removal of failure.
- During connecting of hydraulic conduits to the tractor, you must pay attention so that the hydraulic installation of the tractor will not be under pressure.

2.5 Tyres

- During works connected with tyres you must pay attention so that the trailer will be secured against rolling through putting wedges attached to the machine under the wheels.
- Repair works at wheels and tyres should be performed by persons trained and qualified to this aim. These works should be performed with use of properly selected tools.
- After mounting of wheels you must tighten nuts after the first 50 km of road driving and next check tightening of them every 100 km.
- You must regularly check pressure of tyres.

2.6 Servicing

- In case of ascertaining of any defects in action or damage the trailer must be taken out of use until the time of repair.
- During servicing of the trailer you must use protective gloves and appropriate tools.
- It is forbidden to perform servicing and repair works under the lifted load carrying body before the support of the load carrying body is not installed. The load carrying body must be empty.
- Servicing and repair actions must be performed applying general rules of work safety and hygiene.
- In case of cut the wound must be washed out and disinfected immediately. In case of suffering of more serious injuries you must seek medical advice.
- Repair, maintenance and cleaning works must be performed only when the engine of the tractor is switched off and the ignition key is taken out from ignition switch.
- You must control state of screw joints.
- Before welding or electric works the trailer must be disconnected from permanent inflow of electric current.
- During the guarantee period all repairs may be conducted only by the guarantee service station authorized by the Manufacturer.

- In case of necessity of replacement of particular elements you must use only original elements or elements indicated by the Manufacturer. Non-complying with these requirements may create threat to life or health of strangers or persons servicing the trailer and also may contribute to damage of the machine.

2.7 Rules of movement on public roads

- During driving on public roads you must adapt to the road traffic provisions.
- Before starting to drive you must make sure if the braking system is functioning correctly.
- Exceeding of the admissible load capacity of the trailer may cause its damage and also may threaten safety of road traffic.
- You should not exceed the admissible speed. Adapt speed to road conditions. According to the act on road traffic the admissible speed of the farm trailer is 30 km/h.
- It is forbidden to leave the non-secured trailer. Securing consists in braking with the parking brake.
- For the time of driving on public roads the trailer should be equipped with the attested and officially certified warning reflective triangle.
- You must see to it that nobody climbs the trailer during driving.
- On the rear wall there must be placed the triangular board distinguishing slow-moving vehicles if the trailer is the last vehicle in the group (figure 3).

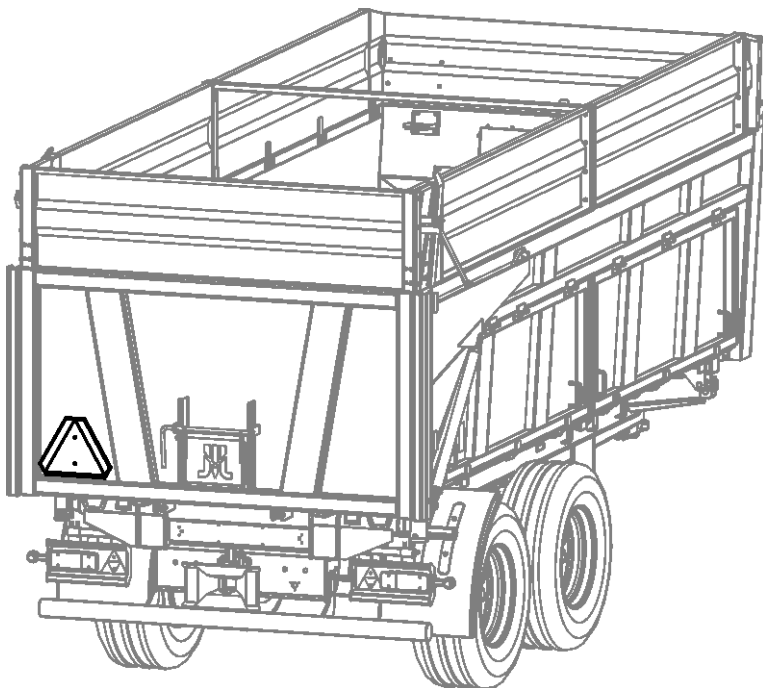


FIGURE 3. Location of the triangular board of slow-moving vehicles.

2.8 Description of residual risk

The company Pronar Sp. z o. o. in Narwia has made all efforts in order to eliminate risk of unfortunate accident. However there exist a certain residual which may bring to an accident and it is connected first of all with actions described below

- use of the trailer to other purposes than described in the instruction
- staying between the tractor and the trailer during operation of the engine and in the course of connecting the trailer
- servicing of the trailer by persons being under influence of drink or other narcotic agents
- servicing of the trailer by unauthorized persons
- cleaning, maintenance and technical inspection of the trailer

Residual risk may be reduced to minimum, applying the following recommendations:

- prudent and leisurely servicing of the machine (trailer)
- reasonable application of comments contained in the servicing instruction
- keeping safe distance from forbidden and dangerous places
- ban on staying on the machine (trailer) during its operation
- performance of maintenance and repair works by trained persons
- use of protective clothing
- securing of the machine (trailer) against access of persons unauthorized to servicing and especially children

2.9 Information and warning labels

Tabele 2. Information and warning labels.

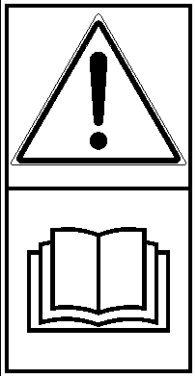
Number on figure 4	Safety symbol	Meaning of the symbol	Place of location
1		Read the servicing instruction	Front wall

Table 2 Information and warning labels, continued

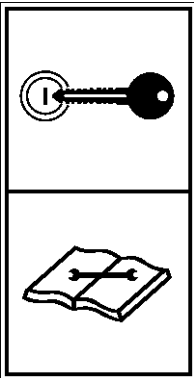
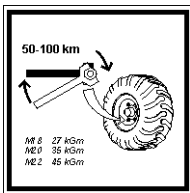

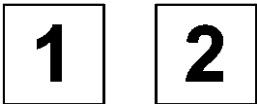




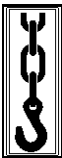
Number on figure 4	Safety symbol	Meaning of the symbol	Place of location
2		Switch off the engine and take out the key before starting of servicing or repair actions	Front wall
3		Control the condition of screw joints of driving axles	Front wall
3		Lubricate according to recommendations contained in the servicing instruction	Front wall
4		Switching of hydraulic circuits I and II of the trailer	Cut-off valve
5		Air pressure in wheels	Over wheels, the right and left side
5		Air pressure in wheels	Over wheels, the right and left side
5		Air pressure in wheels	Over wheels, the right and left side
6			The right and left side
7		Transporting label	The right and left side

Table 2 Information and warning labels, continued

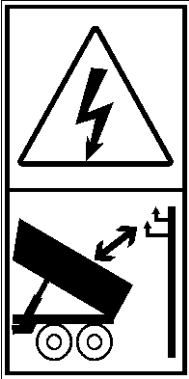
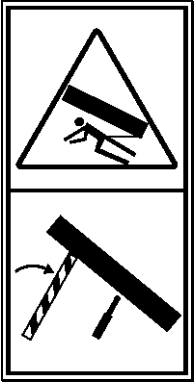
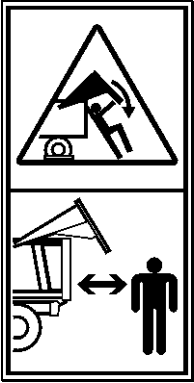
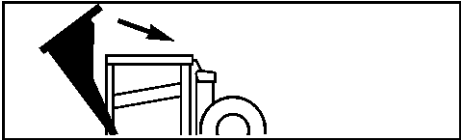

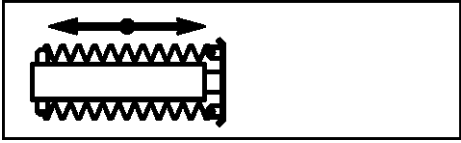
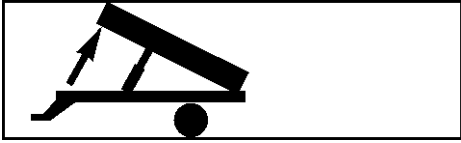
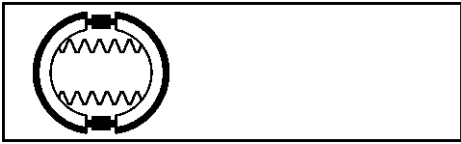
Number on figure 4	Safety symbol	Meaning of the symbol	Place of location
8		Keep safe distance in the proximity of power lines	Right and left wall
9		Before starting actions of servicing, secure the load carrying body	Right and left wall
10		Keep special care during opening and closing of rear flap board	Right and left wall
		Lowering of rear flap board	Hydraulic conduit
		Lifting of rear flap board	Hydraulic conduit

Table 2 Information and warning labels, continued

Number on figure 4	Safety symbol	Meaning of the symbol	Place of location
		Lifting / lowering of hydraulic support	Hydraulic conduit
		Lifting / lowering of load carrying body	Hydraulic conduit
		Hydraulic braking Installation	Hydraulic conduit

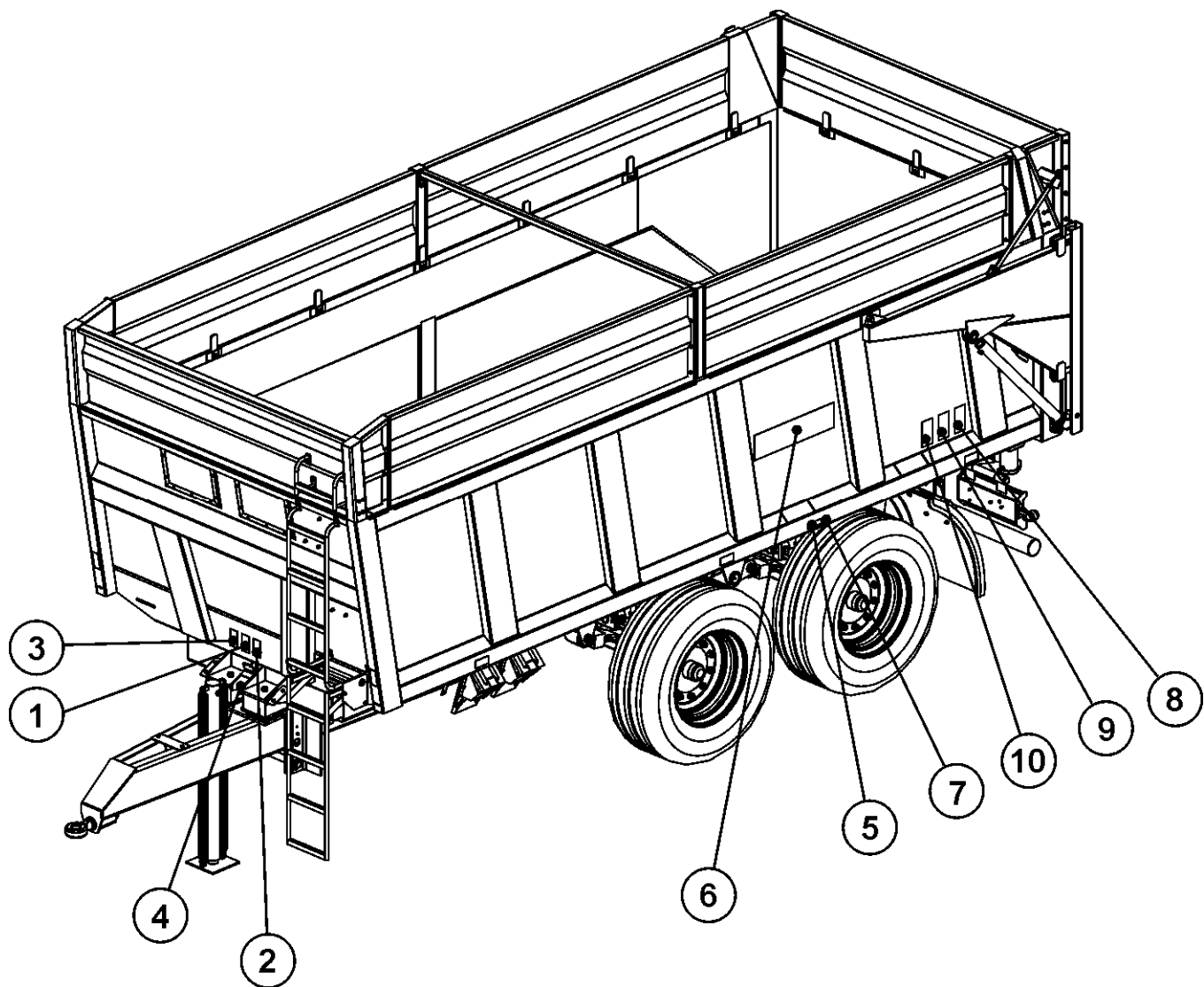


FIGURE 4. Arrangement of Information and warning labels

3. Additional information

3.1 Equipment of the trailer

In the composition of the trailer there are:

- | | | |
|--|---|---|
| • instruction for use and servicing and catalogue of spare parts | - | 1 |
| • guarantee card | - | 1 |
| • jointing conductor of electric installation | - | 1 |

At customer's wish the manufacturer may equip the trailer with the following elements of the additional equipment:

- warning reflective triangle
- board distinguishing slow-moving vehicles
- rack with canvas cover
- balcony
- automatic hitch
- spare wheel
- gutter for chute window

3.2 Guarantee conditions

The company "PRONAR" Sp. z o.o. in Narwia guarantees efficient operation of the machine during its use according to the technical and exploitation conditions described in the servicing instruction.

Defects disclosed within the guarantee period will be remedied by Guarantee Service within the time limit not longer than 14 working days from the date of receipt of machine for repair by the guarantee service or within the other agreed term.

Parts and subassemblies of machines which undergo wear under normal exploitation conditions before lapsing of the guarantee period: tyres and brake linings worn due to exploitation, mechanical damages and damages resulted from improper exploitation, regulation and maintenance.

Detailed conditions of guarantee are given in the guarantee card attached to the newly purchased trailer.

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

3.3 Transport

The trailer is prepared for sale in the complete mounted state and it does not require packaging. Only technical and operating documentation of the trailer, jointing conductor of electric installation and possibly the warning triangle are subject to packaging.

Delivery to the user takes place by means of truck transport or by means of independent transport in connection with the tractor.

**ATTEN-
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In case of independent transport the operator of the tractor should get acquainted with contents of this service instruction and observe recommendations contained in it. In case of truck transport the trailer is fastened on the platform of the transporting vehicle according to the safety requirements during transportation. The driver of the truck, during transportation of the trailer, should maintain particular care. It results from the fact of shifting upwards of the centre of gravity of the vehicle with loaded machine.

3.4 Withdrawal of 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.

The certificate obtained from the scrap depot is the basis for removal of the trailer from the registration.

4. Information relating to use

4.1 Technical characteristics

Tabele 3. Basic technical data

Item	Contents	Unit	T669/1 with various variants of tyres		
			20.5 R22	550/60-22.5 16PR	385/65-R22.5 (15.0R22.5)
1	Overall length	mm	7255		
2	Overall width	mm	2550	7255	7255
3	Overall height without added boards	mm	2630	2550	2550
4	Overall height with added boards	mm	3250	2620	2540
5	Wheel track	mm	1920	3240	3160
6	Dimensions of the load carrying body:			1900	1960
	- length (bottom/top)	mm	5500/5760	5500/5760	5500/5760
	- width (front/rear)	mm	0		
	- height without added boards	mm	2200/225	2200/2250	2200/2250
	- height with added boards	mm	0	1200	1200
7	Loading capacity (with added boards)	m ³	1200	1780	1780
8	Loading surface	m ²	1780	22.4	22.4
9	Height of loading surface	mm	22.4	12.2	12.2
10	Tare weight of the vehicle without added boards	kg	12.2	1521,5	1436,5
11	Tare weight of the vehicle with added boards	kg	1430	5750	5750
12	Admissible load capacity without added boards	kg	5750	6000	6000
13	Admissible load capacity with added boards	kg	6000	14100	14100
14	Inclination angle of the load carrying body		14100	13500	13500
	-backwards	(°)	13500	50	50
	-sideways	(°)	50	45	45
15	Pressure in tyres	kPa	450	280	550
16	Rated voltage	V	12	12	12
17	Admissible speed	km/h	30	30	30
18	Hydraulic oil demand.	l	30	30	30

Tabele 4. Tyres

Tyre size	Company	Load capacity index	Tread	Rim size	Applied pressure [kPa]	load capacity [kg]	diameter [mm]	Width [mm]
550/60-22.5	Mitas	163A8	IM-09	16.00x22.5	280	4875	1232	580
385/65R22.5 15R22.5	Bandenmarkt	160F	Y1	11.75x22.5	550	5400	1080	497
20.5R22	Bandenmarkt	173A8	Kargo Radial	16.00x22	450	6500	1230	565

4.2 Structure and principle of operation

4.2.1 Chassis

The chassis of the trailer is composed of assemblies specified on the figure 5. The lower frame is a welded structure of steel sections. Two longitudinal members connected with cross-bars are the basic bearing elements. In the middle part there are sockets for seating the hydraulic servomotor. In the rear part of the frame there is the wheel set of the tandem type with carriage spring suspension and elements of the rear lighting assembly. The carriage spring suspension consists of leaf springs connected with the rocker arm. The whole is connected by means of pins. Two travelling axes are connected to the suspension.

The travelling axes are made of quadratic bar ended with journals on which, on cone bearings, there are seated hubs of ground wheels. The ground wheels are single wheels equipped with shoe brakes actuated with mechanical cam expanders

In the front part of the frame it was mounted the draught bar, absorbed by means of rubber ground beams fastened on the front beam of the frame. The hydraulic support is screwed to the draught bar.

4.2.2 Load carrying body

The load carrying body (figure 6) is a welded structure of steel sections and sheet. In the rear part of the load carrying body there is located the rear flap, opened and closed by means of hydraulic servo-motors. The right side of the load carrying body is equipped with side flaps and closing mechanism. The load carrying body has been equipped with added boards of 580mm. The upper frame is seated on the lower frame in joint sockets being pivoting points during inclining the load carrying body.

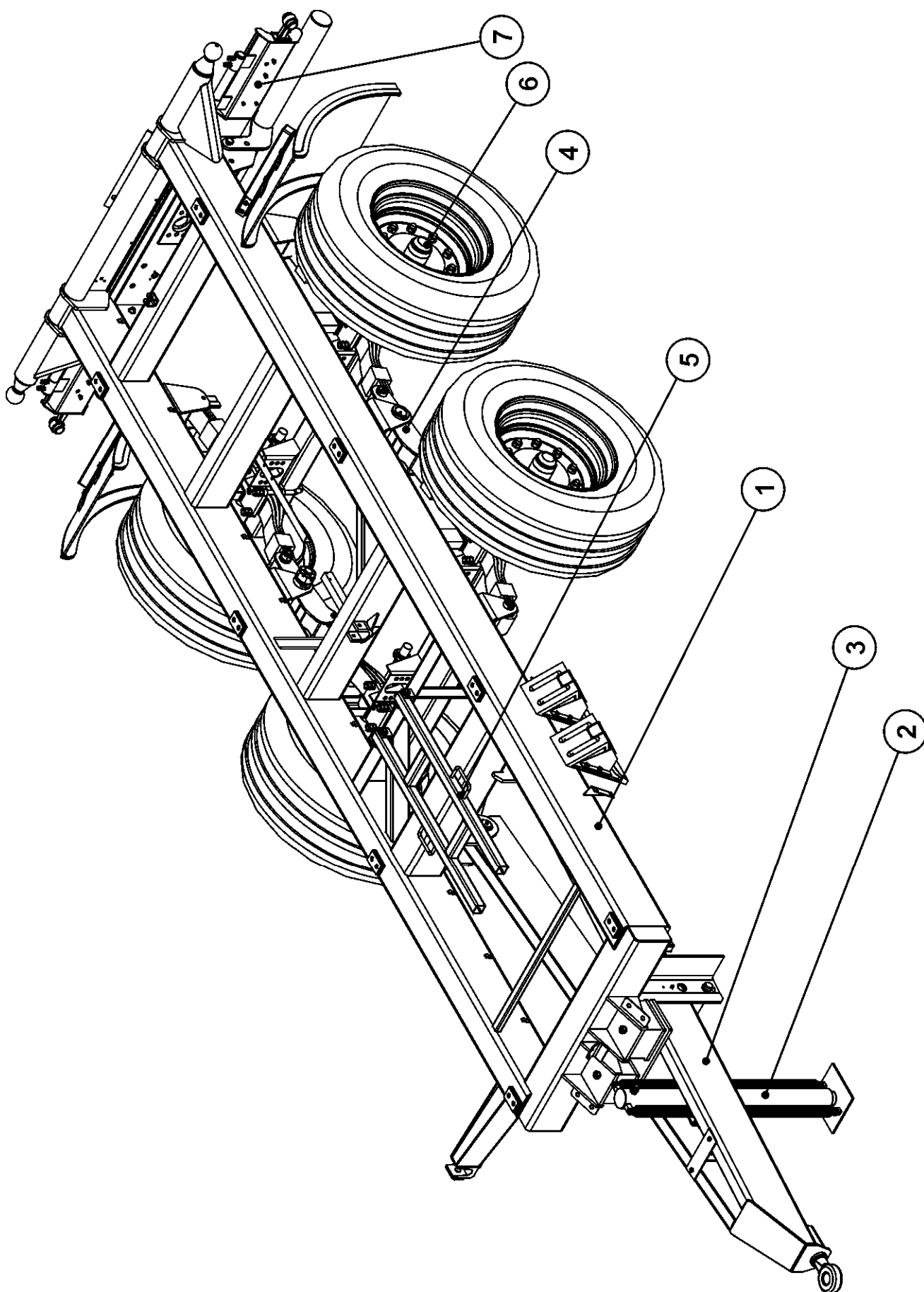


FIGURE 5. Chassis

1 – bottom frame, 2 – straight hydraulic support, 3 – rotary regulated draught bar, 4 – carriage spring suspension, 5 – support of the load carrying body, 6 – travelling axis, 7 – lighting beam

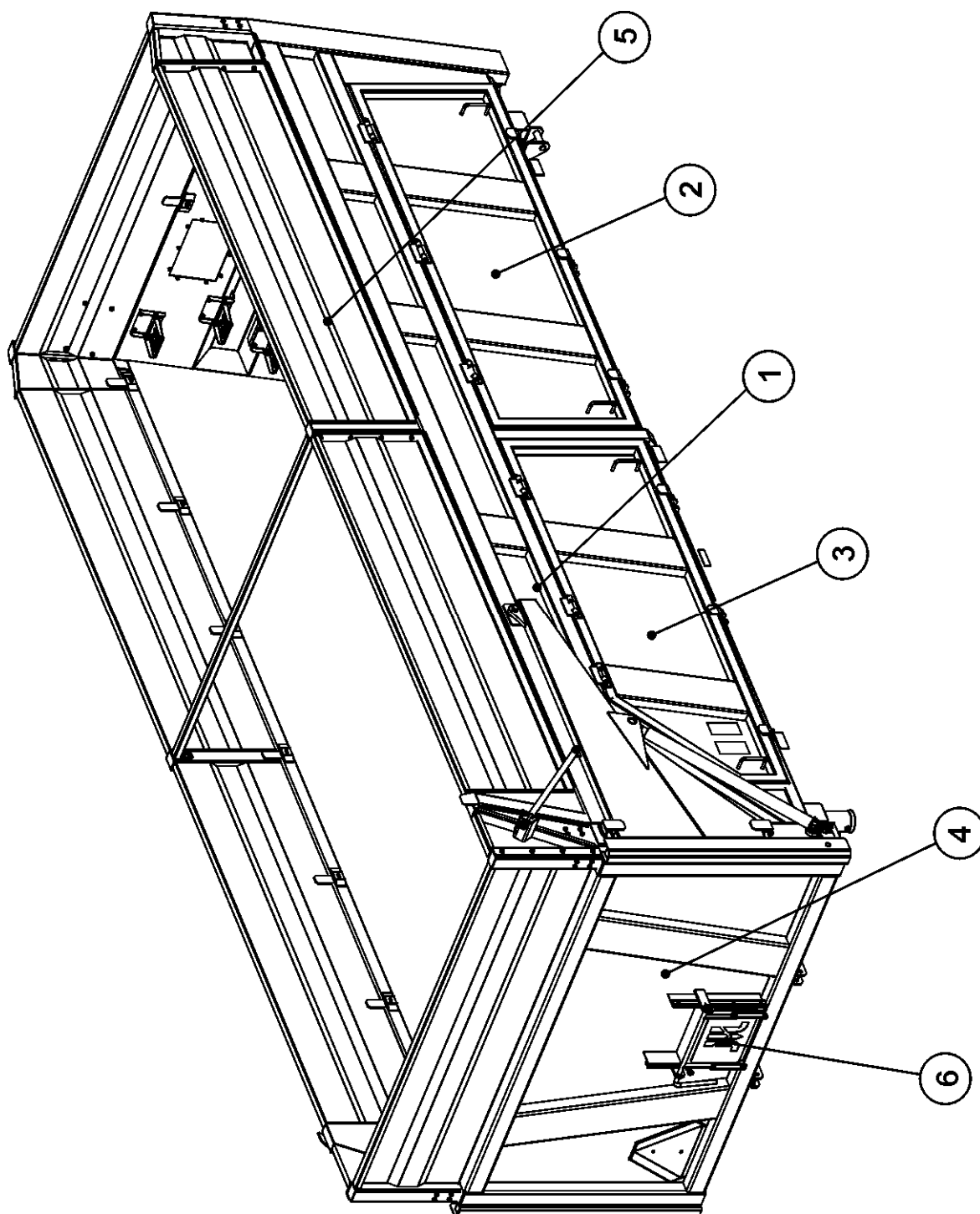


FIGURE 6. Load carrying body

1 – load carrying body, 2 – side flap I, 3 – side flap II, 4 – rear flap, 5 – set of added boards, 6 - chute

4.2.3 Hydraulic installation

Hydraulic dump installation serves for self-acting unloading of the trailer through lifting the rear flap and inclining the load carrying body backwards or sideways (dump to the right side of the trailer). The hydraulic installation of the unloading mechanism is fed with oil from the hydraulic system of the tractor and it consists of two separate circuits: the circuit for lifting and lowering the load carrying body and the circuit for lifting and lowering the rear flap.

The circuit for lifting and lowering the load carrying body consists of hydraulic conduits, the hydraulic servo-motor, the cut-off valve and the line steering the cut-off valve.

The task of the line is to cut off inflow of hydraulic oil to the servo-motor (1), through restearing of the cut-off valve (2), at the moment of exceeding the admissible angle of dump of the load carrying body. The scheme of the hydraulic dump installation has been presented on figure 7.

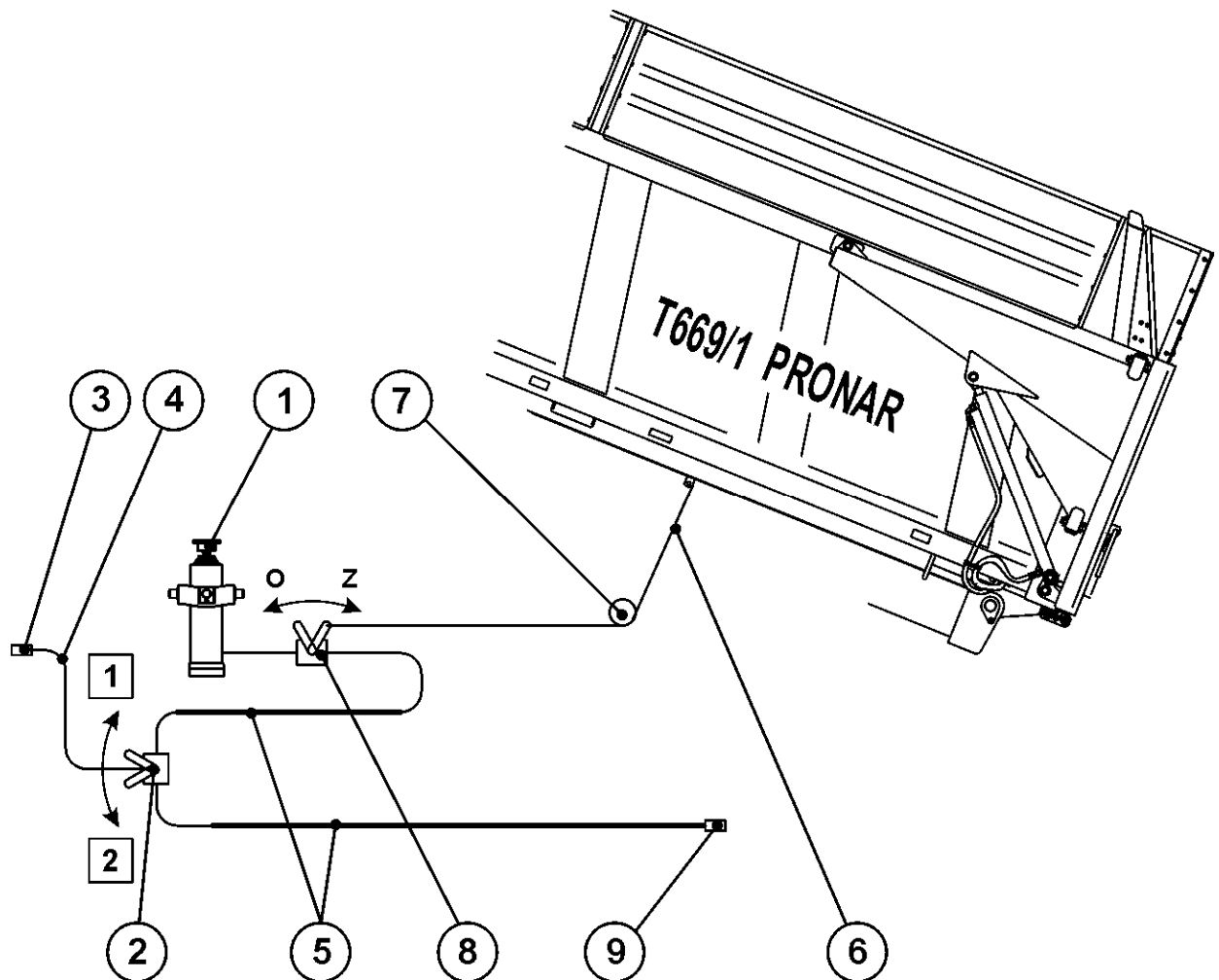


FIGURE 7. Hydraulic dump installation

1 – hydraulic servo-motor, 2 – steering valve, 3 – plug of coupling valve, 4 – flexible conduits, 5 – rigid conduits, 6 – line steering the cut-off valve, 7 – roller, 8 – cut-off valve, 9 – seat of coupling valve

**ATTEN-
-TION**

The cut-off valve (8) limits and angle of inclination of the load carrying body during inclining it sideways. The length of line steering this valve is regulated by the manufacturer and it should not be regulated in the course of use of the trailer.

The circuit for lifting and lowering the rear flap consists of two hydraulic of double sided function and hydraulic conduits. In the course of action of the system the hydraulic cylinders steer operation of interlocking hooks. At the moment of closing the rear flap, the interlocking hooks cause its locking (position (a), figure 8).

**ATTEN-
-TION**

The interlocking hook, after lowering the rear flap must actuate to the end and block the interlocking pin of the rear flap (3) totally.

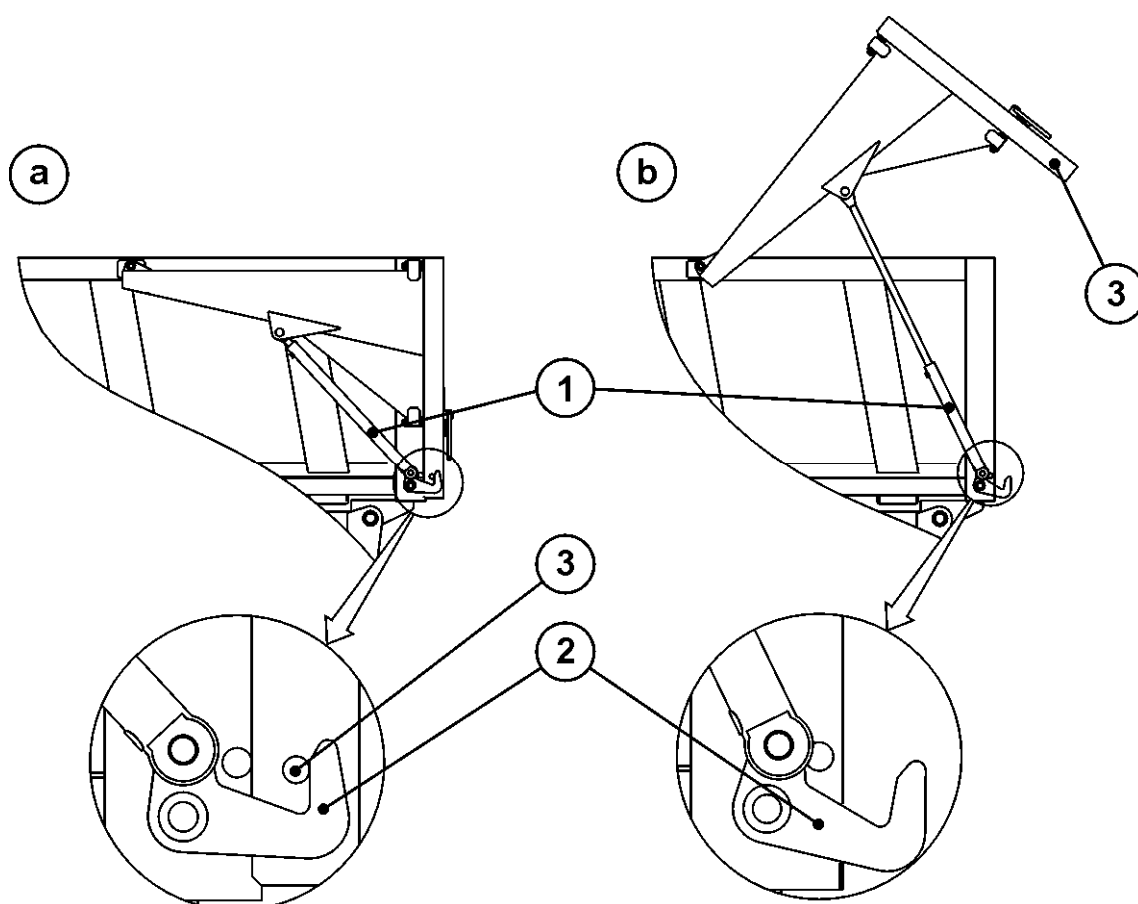


FIGURE 8. Hydraulic dump installation

1 – hydraulic servo-motor of double-sided function, 2 – interlocking hook, 3 – interlocking pin

4.2.4 Pneumatic installation

The trailer is equipped with braking system which includes:

- working brake steered pneumatically
- parking brake steered manually by means of crank mechanism

The working brake (pneumatic) is actuated from the tractor driver's workplace through pressing the brake pedal in the tractor. The structure of pedals ensures self-acting actuation of these brakes during unforeseen disconnection of the pneumatic installation of the trailer and tractor.

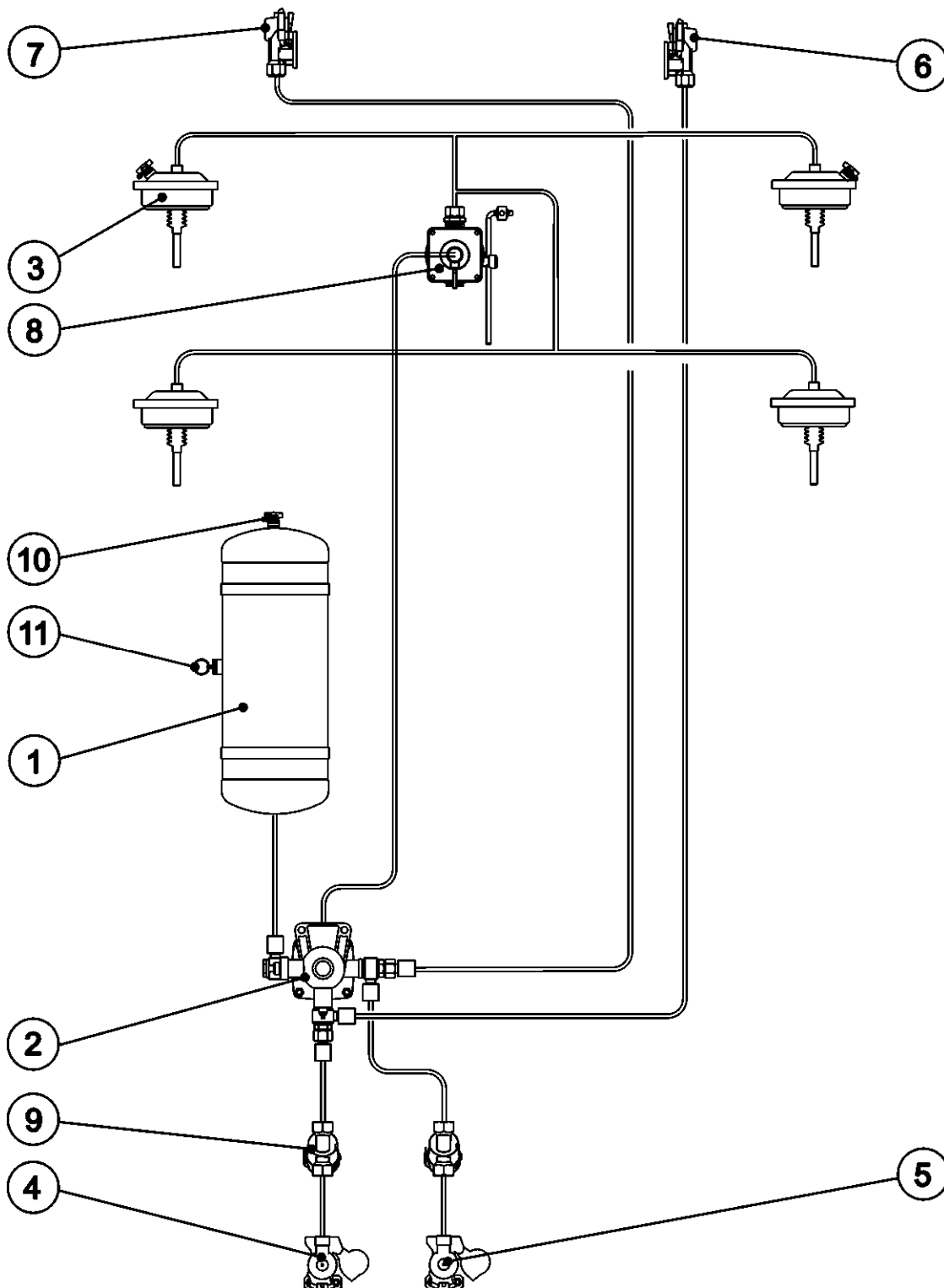


FIGURE 9. Pneumatic two-line braking installation with automatic regulator

1 – air tank, 2 – steering valve, 3 - pneumatic servo-motor , 4 – joint (yellow) of the steering line for connection with the tractor , 5 – joint (red) of the feeding line for connection with the tractor , 6 – joint (yellow) of the steering line for connection of the second trailer, 7 – joint (red) of the feeding line for connection of the second trailer, 8 – automatic regulator of braking force, 9 – air filter, 10 – control joint of air tank, 11- drainage valve

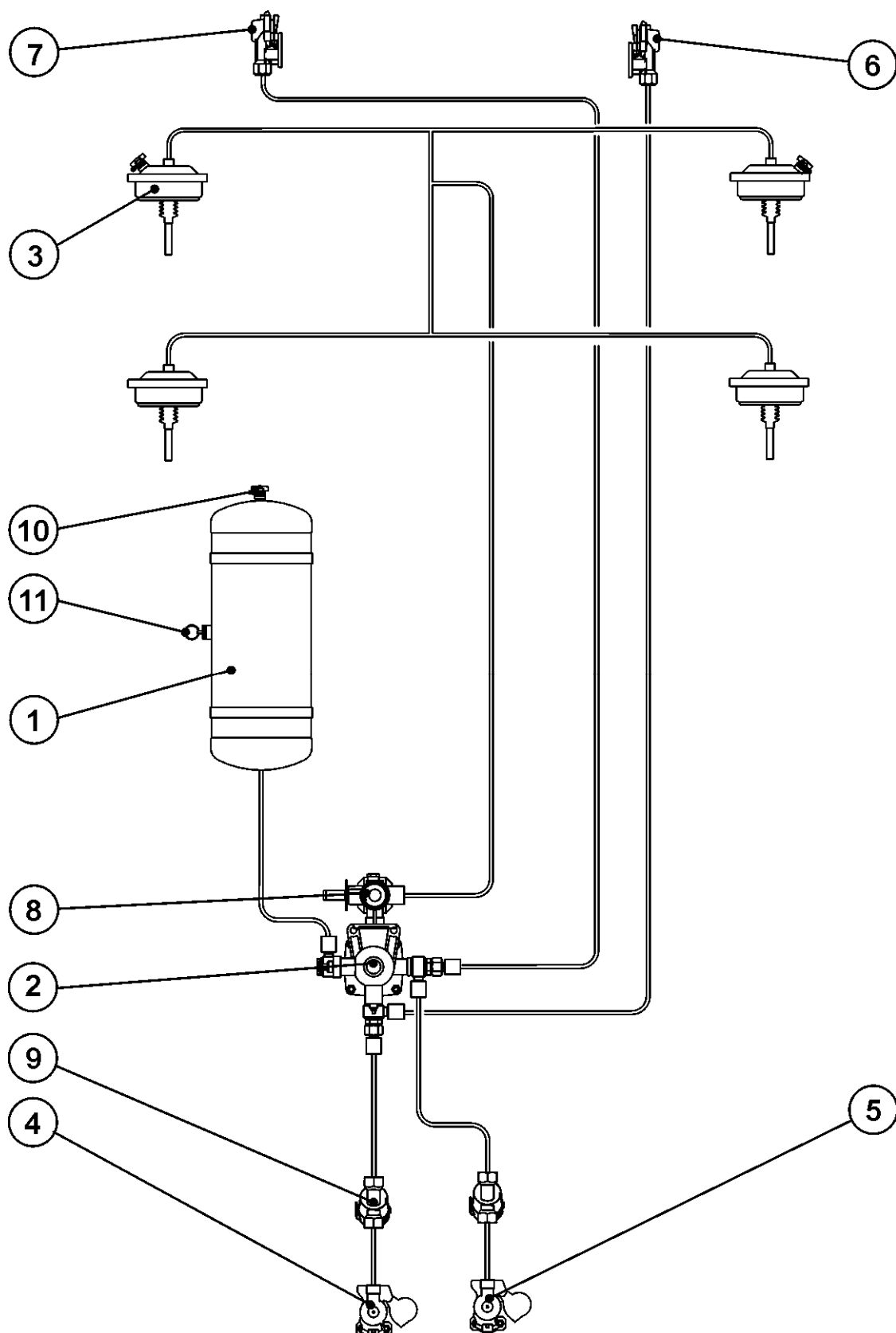


FIGURE 10. Pneumatic two-line braking installation with three-position regulator

1 – air tank, 2 – steering valve, 3 - pneumatic servo-motor , 4 – joint (yellow) of the steering line for connection with the tractor , 5 – joint (red) of the feeding line for connection with the tractor , 6 – joint (yellow) of the steering line for connection of the second trailer, 7 – joint (red) of the feeding line for connection of the second trailer, 8 – automatic regulator of braking force, 9 – air filter, 10 – control joint of air tank, 11- drainage valve

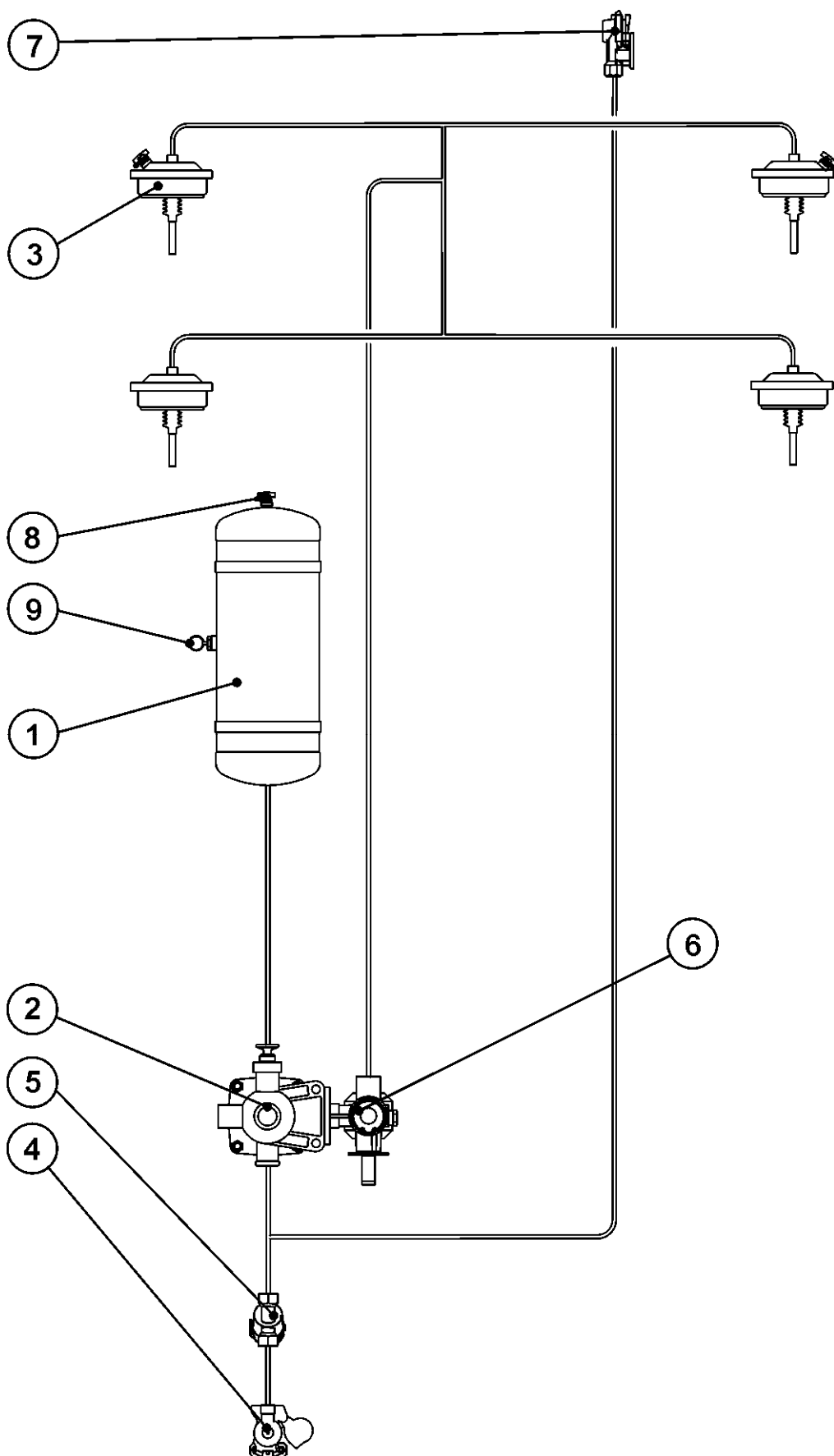


FIGURE 11. Pneumatic single line braking installation with three-position regulator.

1 – air tank, 2 – steering valve, 3 - pneumatic servo-motor, 4 – joint of the line for connection with the tractor, 5 – air filter, 6 – three-position regulator of braking force, 7 - joint of the line for connection of the second trailer , 8 – control joint ,9- drainage valve

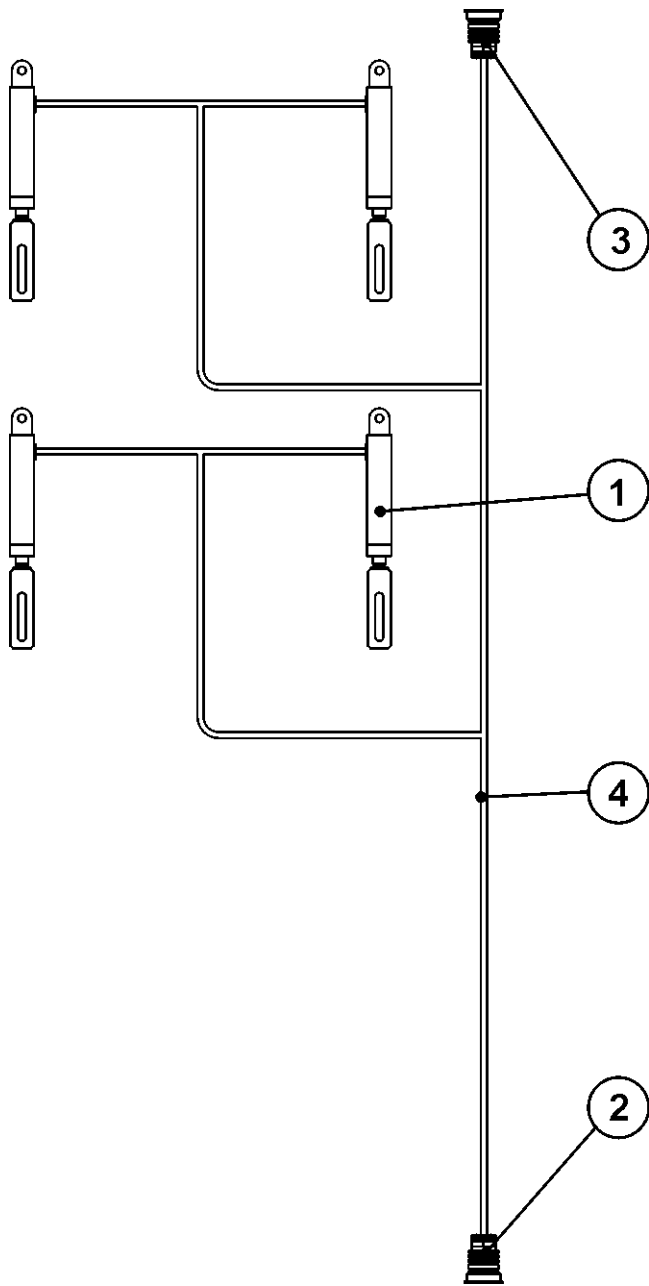


FIGURE 12. Hydraulic braking installation

1 – plunger cylinder, 2 – quick coupling – plug, 3 – quick coupling – seat, 4 – hydraulic conduits

4.2.5 Electric installation, lighting, signalling

The electric installation of the trailer is adapted for feeding from the direct current source 12 V. Connection of the electric installation of the trailer must be made by means of an appropriate jointing conductor.

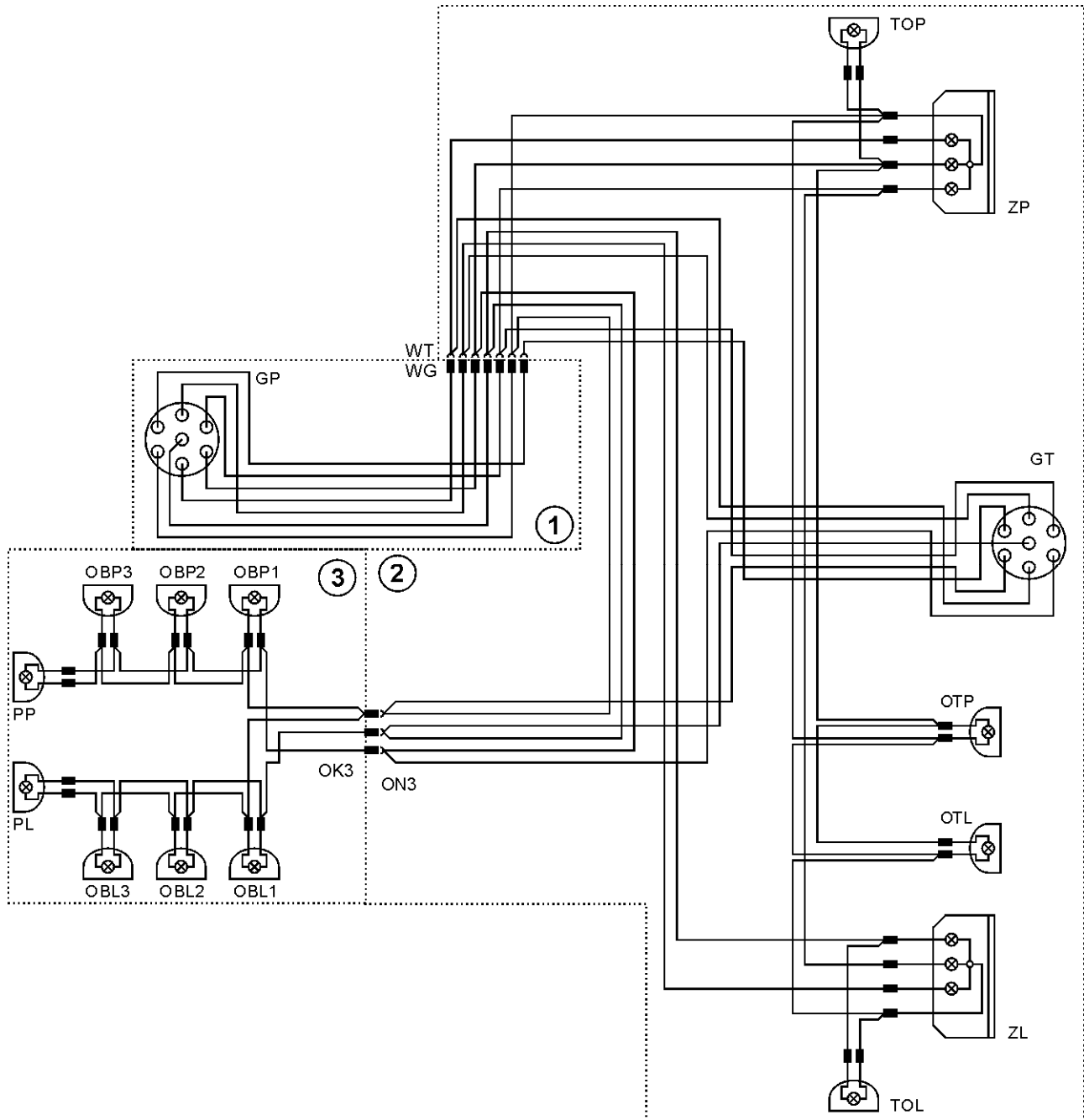


FIGURE 13. Scheme of electric installation of the trailer

PP (PL) – right (left) front parking lamp, ZP (ZL) – right (left) rear combined lamp, OTP (OTL) – right (left) number plate illumination lamp, GP (GT) – front (rear) seven-contact socket, TOP (TOL) – right (left) rear contour lamp, OBP (OBL) – right (left) side contour lamp

1 – central bundle, 2 – front bundle (Polish version), 3 – rear bundle

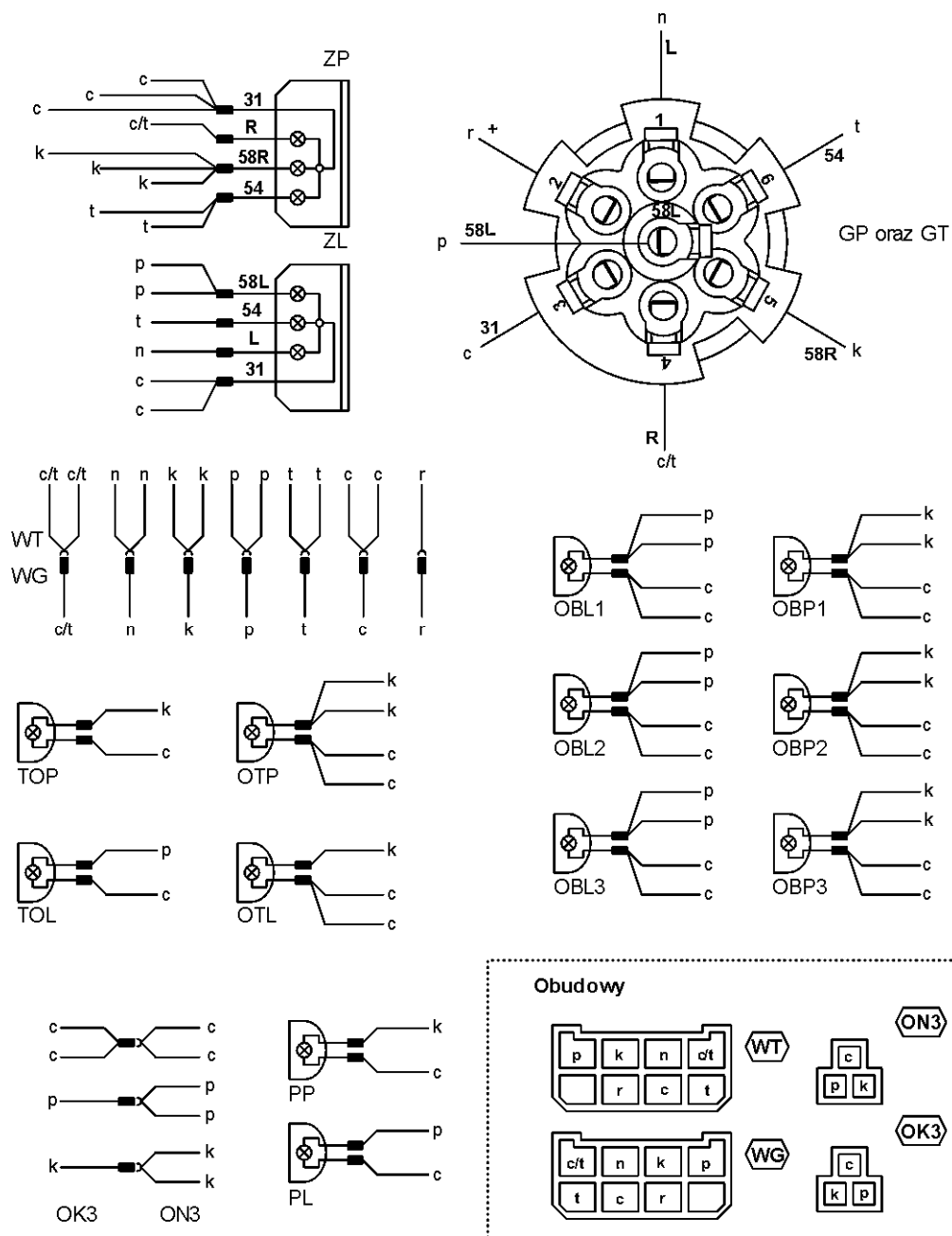


FIGURE 14. Connection of conduits

Identification of colours of conduits

p – orange, c – black, k – red, r – rosy, n – blue, c/t – black and green, t – green

31 – mass (earthing), R (L) – right (left) direction indicator, 58R (58L) – right (left) parking lamp, 54 - „STOP”, „+” – feeding +12V

legend: oraz – and, obudowy - casings

Attention! Views of casings were shown from the side of inlet of conductors

5. Rules of use

5.1 Preparation for operation

Within the framework of preparation of the trailer for operation you must check:

- condition of road wheels and pressure in tyres
- tightening of nuts fastening the road wheels and draught bar
- condition of remaining screw connections
- efficiency of the lighting and signalling system of the trailer
- functioning of braking system of the trailer
- condition and functioning of locks of walls, hinges of walls, pins of dump
- correctness of functioning of the hydraulic unloading system

5.2 Connecting with the tractor

Before start of connecting the trailer with the tractor you must check if the trailer is braked with the manual parking brake. Combine only with the tractor equipped with the hitch which transfers vertical loading of minimum 25kN (2500 kg).

In order to connect the trailer with the tractor you must perform the following actions:

- Set the eye of the draught bar at the proper height.
- Precise setting of height of the draught bar eye can be achieved by means of hydraulic support. To this aim, move back the tractor and connect the hydraulic conduit of the support and then release the valve securing the supports and set the draught bar eye to proper height.
- Moving back the tractor, connect the draught bar eye with the hitch and check its protection.
- Lift the support upwards.
- Connect conduits of electric, hydraulic dump installation and rear flap and braking installation with the tractor.
- Release the manual parking brake of the trailer.

**ATTEN-
-TION**

During connection strangers must not stay between the trailer and the tractor. Keep special care.

5.3 Loading of the load carrying body

The loading of the load carrying body may take place only when the trailer is connected with the tractor and positioned on horizontal subsoil. You must aim at uniform distribution of the loading in the load carrying body.

During loading it is recommended to use crane, loader or conveyor. Before starting of loading you must check if the chute window in the rear flap and side flaps are closed.

During transport of materials exerting point pressure on the floor of the load carrying body you must underlay thick boards. In table 5 there have been specified approximate mass of 1 m³ of the most often transported materials. As it results from the table, in many cases it is not admitted to use total capacity of the trailer because it leads to exceeding of nominal load capacity. Therefore during loading you must take care in order not to cause overloading of the trailer.

Light materials of large volume may be loaded even above the added boards of the load carrying body with paying special attention to stability of the trailer and protection of roads.

**ATTEN-
-TION**

It is forbidden to exceed admissible load capacity of the trailer because it threatens security of road traffic and may cause damage of the machine.

Tabele 5. Approximate weights of 1 m³ of materials.

Material	Mass [kg/m ³]	Material	Mass [kg/m ³]
Concrete	1800 - 2800	Coal	1200 – 1600
Clinker brick	1600 – 1900	Soil	1200 – 1600
Cement (powder)	1300 – 2000	Gravel	1800 – 1850
Clay	1500 – 2600	Debris	1050
Sand	1400 – 1650	Stone (crushed)	2200
Lime (powder)	900 – 1300		

5.4 Rules for use of tyres

- During works connected with assembling and disassembling of tyres the trailer must be secured against self-acting displacement.
- Repair or replacement of tyres should be conducted by persons trained to this aim and with use of appropriate tools.
- After each assembling of the wheel you must tighten nuts after the first 50 km of driving, and then check their tightening very 100 km.
- Control regularly and keep proper pressure in tyres according to the instruction (especially after longer break of non-using the trailer).
- Pressure of tyres should also be checked during intensive full day's operation. It must be taken into account the fact that increase of tyres temperature may increase pressure even by 1 bar. In case of such increase of temperature and pressure it must be reduced load or speed.
- Never reduce pressure through venting in case of increase of pressure due to action of temperature.
- Valves must be secured by means of appropriate nuts in order to avoid penetration of pollutants.
- Do not exceed the maximum speed of the trailer and do not overload the trailer.
- During full day's cycle of operation you must make at least one hour break at noon.
- Observe 30 minutes breaks for cooling tyres after driving 75 km or after 150 minutes of continuous driving in dependence on what occurs first.
- You must avoid holes sudden and changeable manoeuvre and high speed during turning.

5.5 Unloading of the load carrying body

Self-acting unloading must be conducted by performing the following actions with keeping their sequence:

- Position the trailer on flat subsoil, brake the tractor and the trailer by means of parking brake. The tractor must be positioned for driving straight ahead during unloading.
- Pin with grip joining the load carrying body with the lower frame must be placed on the side of planned direction of sliding.
- Open the rear flap by means of hydraulic servo-motors or side flaps by means of the lever located at the front wall. During unloading sideways it is possible to open one side flap only. It may be done by actuating the locking of the flap.
- Incline the load carrying body through its lifting with the hydraulic servomotor.

The rear wall of the load carrying body is equipped with the chute window which may be opened gaining gaps of various sizes. It allows regulating the stream of loose materials such as mineral fertilizers or grain unloaded from the load carrying body. Opening of damper of the window requires earlier loosening the nut of the securing clamp. After sliding of load you must lower the load carrying body:

- Lower the load carrying body.

- Close the rear flap steering the proper circuit from the tractor. Closing and opening the flap takes place by means of 2 hydraulic cylinders of double-sided function. Closing the rear flap should be performed until the moment it is blocked by means of interlocking hooks.

ATTEN- TION



-
- Inclination of the load carrying body may be performed only on hard and flat subsoil.
 - Only original pins with grip must be applied. Application of non-original pins of dump threatens damage of the trailer.
 - During opening of closings and locks of walls you must pay special attention due to pressing of the load on the walls.
 - During closing of side flaps and the damper of chute window you must keep special care in order to avoid crushing of fingers or hands.
 - Unloading of volumetric materials which have been loaded to the height over 1 m may be performed through inclination of the load carrying body backwards.
 - It must be observed that during unloading nobody will stay near the inclined load carrying body and sliding load.
 - Inclining the load carrying body may be performed only when the trailer is connected with the tractor.
 - It is forbidden to incline the load carrying body during strong blasts of wind.
 - It is forbidden to move and drive with the lifted load carrying body.
 - The trailer may stand disconnected from the tractor and may be inclined only when the front axle is positioned for driving straight ahead.
 - It is forbidden to lift the loaded load carrying body when the rear flap or side flaps are closed.
 - During unloading the trailer sideways with opened one side flap only, there exists increased risk of occurrence of the following hazards: loss of stability of the trailer, overturning of the trailer, loss of strength of elements of the trailer.
 - During closing of the rear flap you must pay special attention because injuries may cause serious detriment to health or in special cases they may bring to death.
-

5.6 Disconnecting from the tractor

In order to disconnect the trailer from the tractor you must perform the following actions:

- Brake the trailer with the manual parking brake after stopping the tractor.
- Position the trailer on subsoil at the proper height by means of the hydraulic supports and then secure with the valve securing the supports.

- Disconnect conduits of the electrical, hydraulic dump installation and rear flap and braking installation from the tractor and secure endings of these conduits against contamination.
- Disconnect the flexible connector of the draught bar of the trailer from the hitch of the tractor and drive away with the tractor.

**ATTEN-
TION**



Actuate the parking brake during disconnecting the trailer.

6. Instructions for servicing

ATTEN-

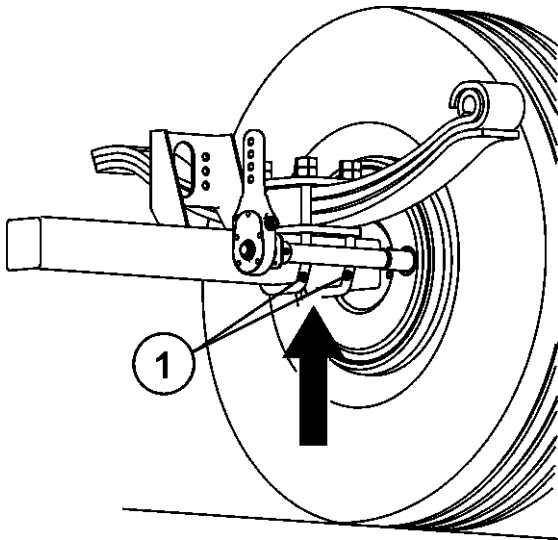
TION



- In case of ascertaining of any incorrectness in action or damage of systems and subassemblies of the trailer, the machine must be taken out of use until the time of repair and removal of defect
 - It is forbidden to perform servicing or repair works when the engine is running.
 - Servicing and repair actions must be performed applying general rules of work safety and hygiene. In case of cut the wound must be washed out and disinfected immediately. In case of suffering of more serious injuries you must seek medical advice.
 - It is forbidden to perform servicing or repair works under the lifted load carrying body so long as the support of the body is not installed. The load carrying body must be empty.
-

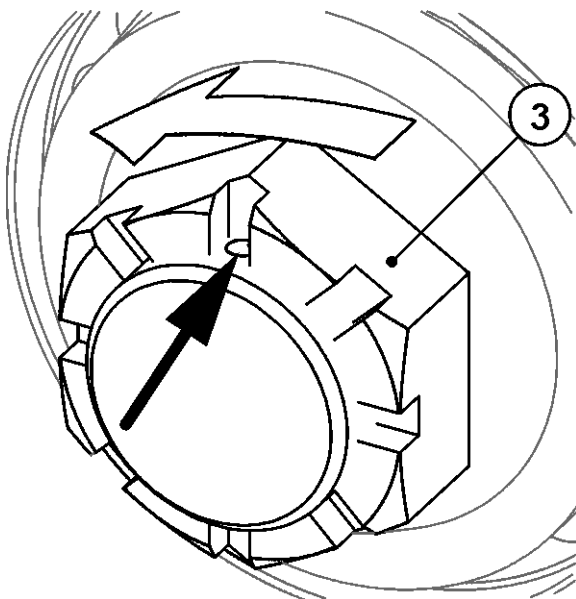
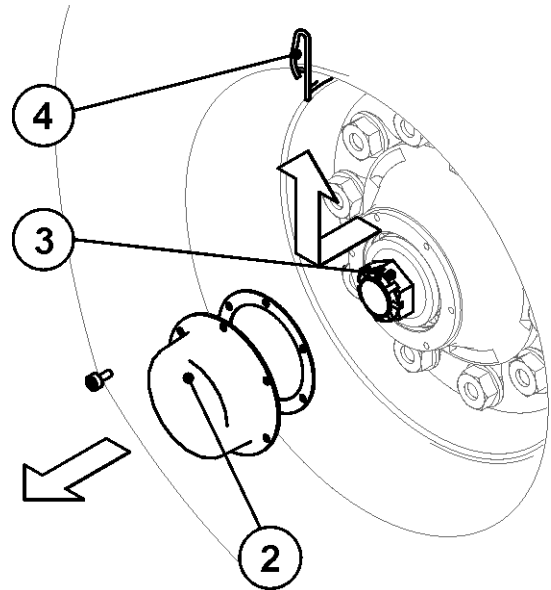
6.1 Regulation of bearings of road wheels

In the newly purchased trailer, after driving of the first 500 km, and in the course of further use – after driving the next 1500-2000 km – you must check and in case of necessity regulate play of bearings of road wheels.



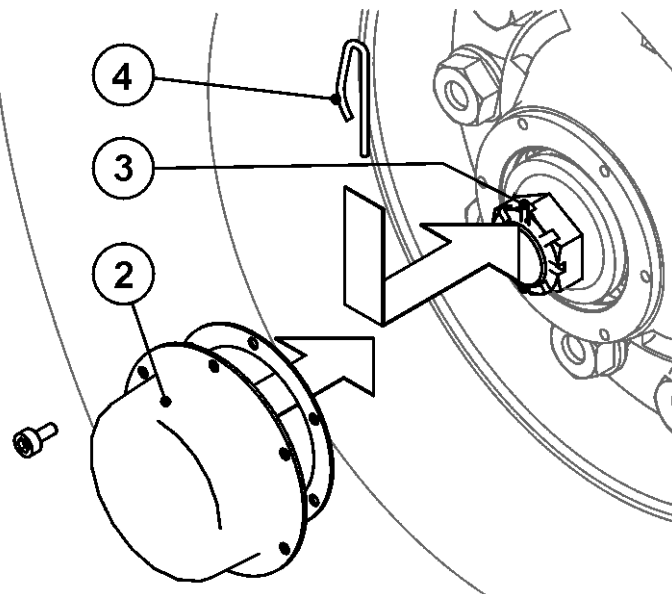
Connect the trailer with the tractor, brake the tractor, put blocking wedges under the wheels of the trailer, and subsequently lift the wheels by means of a proper hoist. The hoist must be placed under driving axle between bow bolts (1) fastening the carriage spring to the axle. Check the play of bearings.

If the wheel shows excessive play, dismantle the cover of the hub (2) and take out the cotter pin (4) of the castellated nut (3).



Rotating the wheel, simultaneously tighten the castellated nut until total braking of the wheel. Unscrew the nut by 1/3 of revolution, until the nearest groove for the cotter pin is in line with opening in the journal.

Secure the castellated nut (3) with the cotter pin (4) and mount the cover of the hub (2). The wheel should rotate fluently, without jams and perceptible resistances non-coming from rubbing of brake shoes against the drum.



6.2 Regulation of brakes

Regulation of brakes must be conducted when:

- in consequence of wear and tear of lining of brake shoes, excessive play appears between the lining and the drum and the efficiency of braking decreases,
- brakes of wheels brake non-uniformly and non-simultaneously.

In case of correctly regulated brakes, braking of road wheels of the trailer must take place at the same time.

Regulation of brakes consists in changing of position of the arm of the expander (1) (figure 15) against the shaft of the expander (2). To this aim you must, loose the nut (4), and next shift the arm of the expander on the multi-grooved ending of the shaft (2) in the proper direction, that means:

- backwards – if the brake brakes too late
- forwards - if braking takes place too early

Regulation must be conducted separately for each wheel. After correct regulation of brakes, during full braking, the arms of expanders should create the angle of 90° with the piston rod of the pneumatic servomotor. Regulation of the parking brake must be conducted in case of stretching the line or loosening the clamps of the line of the parking brake. The length of the line of the parking brake should be so selected that during total release of the working and parking brake the line will be loose and hang down $1 \div 2$ cm.

ATTEN- TION



In case of properly regulated brakes the braking force of the trailer should achieve values not lower than those specified in the table 6.

Braking force of the trailer is the sum of braking forces of all wheels of the trailer.

Tabela 6. Braking force.

Braking force with the main brake (kN)	Braking force with the parking brake (kN)
55,5	33,3

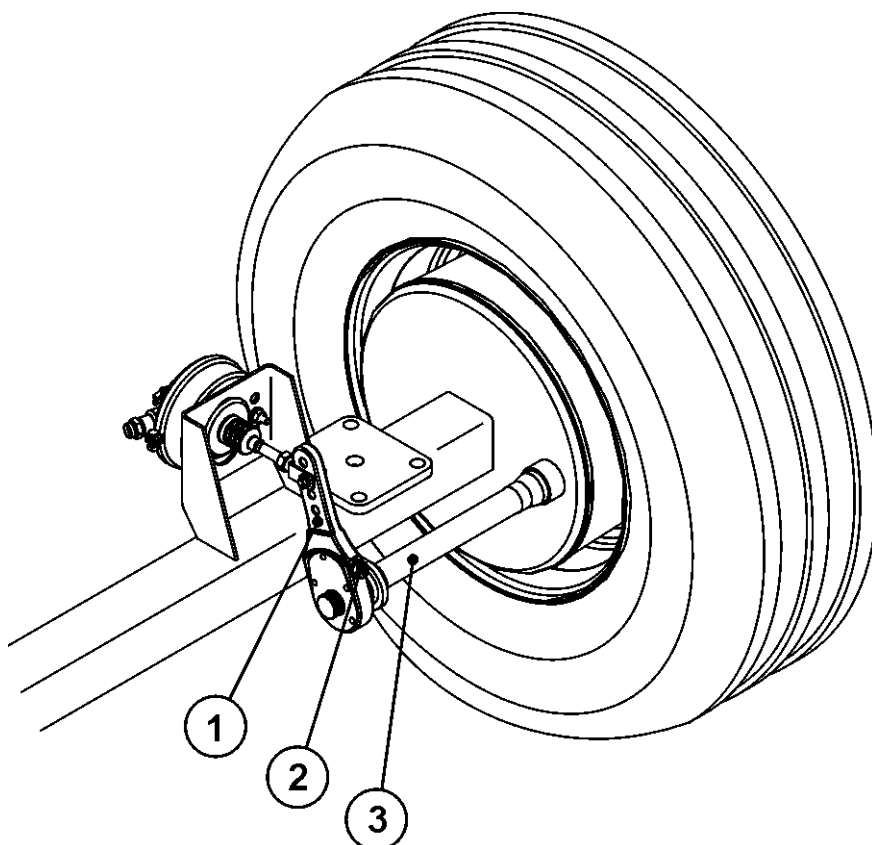


FIGURE 15. Elements of regulation of brakes

1 – arm of expander, 2 - expander, 3 – regulating screw

The difference of braking forces of the left and right wheel may not be greater than 30% considering that the greater force constitutes 100%.

6.3 Servicing of the pneumatic installation

Within the framework of servicing of the trailer, you must conduct control of tightness of the pneumatic installation, paying special attention to places of all connections. Tightness of the system must be checked at nominal pressure in the system of about 600 kPa (6,0 kg/ cm²).

If conduits, gaskets and other elements of the system are damaged, compressed air will get outside in places of damages with characteristic hissing or in case of small leaks in form of air bubbles. Small leaks can be detected through coating checked elements with washing fluid. Then the damaged gaskets or conduits causing leaks must be replaced for new ones. If the cause of leakage is outflow of air from the servomotor – the servomotor must be regenerated.

Periodically condensate of water gathering in the air tank must be removed from this tank. To this aim you must deflect the stem of the drainage valve placed in the lower part of the tank.

Compressed air being in the air tank will cause removing water outside. After release of the stem the valve should close automatically and break outflow of air from the tank.

Once a year before winter period you must screw out the drainage valve and clean from gathered dirt.

6.4 Servicing of the hydraulic installation

You must absolutely observe the rule that the oil in the hydraulic system of the trailer and the oil in the external hydraulic installation of the tractor will be of the same type. Use of different grades of oil is inadmissible.


In the new trailer the installation is filled with the hydraulic oil HL32.

The hydraulic installation of the trailer should be tight totally. Checking of tightness of the hydraulic system consists in connection of the trailer with the tractor, actuation of the hydraulic cylinder, keeping in the position of maximum sliding-out of cylinders for 30 sec.

In case of ascertaining of oil leak on connections of hydraulic conduits, the coupling must be tightened, if this does not cause removal of defect – you must replace the conduit or elements of coupling for new ones. If leak of oil occurs beyond the joint, then the untight conduit of the installation must be replaced for a new one. Each damage, of mechanical nature, of a subassembly requires replacement of it for a new one.

In case of ascertaining of oiling up on the housing of the hydraulic servomotor you must check the nature of leakage.

During total sliding-out of cylinder of the servomotor you must check places of seals. Small leaks with symptoms of "sweating" are admissible and in case of noticing of leaks of the "droplet" type you must stop exploitation of the trailer until the time of removal of the defect.

<div><div>ATTEN-</div><div>TION</div><div></div></div>	It is inadmissible to use the trailer with untight hydraulic system of dump.
	It is forbidden to use the trailer with lengthened, in proportion to the factory setting, length of the line steering the cut-off valve (8) (figure 7 „Hydraulic dump installation”)
	Condition of the hydraulic installation should be controlled currently during use of the trailer.

In case of intensive exploitation of the hydraulic system you must replace hydraulic conduits for new ones every 4 years.

6.5 Lubrication

Lubrication of the trailer must be conducted in places presented on the figures 16 and 17 and specified in the table 7 “Lubricating points of the trailer”.

Tabele 7. Lubricating points of the trailer

No. on fig. 16 and 17	Place of lubrication	Number of lubricating points	Type of grease	Frequency of lubrication	and way
1	Screw of hand-brake	1	solid	every 3 - 4 months	
2	Pin of the draught bar	2	solid	every 3 - 4 months	
3	Sliding surface of the draught bar	2	solid	every 3 - 4 months	
4	Pin of the carriage spring	4	solid	cover with grease 1 – once a month	
5	Pins of rocker arm	2	solid	cover with grease 1 – once a month	
6	Mechanism of rear hitch	1	solid	every 3 - 4 months	
7	Upper ball-and-socket joint of the servo-motor	1	solid	every 6 months	
8	Pins of suspension of the hydraulic servo-motor	2	solid	pins cover with fresh grease every 6 months	
9	Sleeves of shafts of expanders	8	solid	every 6 months	
10	Bearings of road wheels	4	solid	change the grease every 2 years	
11	Bearings of servo-motor of the rear flap	4	solid	every 3 - 4 months	
12	Pins of interlocking hook	2	solid	every 3 - 4 months	
13	Guide of the sliding window	2	solid	cover with very thin layer of grease every 3 – 4 months	
14	Rotating tension rod of draught bar	1	solid	every 3 - 4 months	
15	Sleeves of dump	2	solid	every 3 - 4 months	
16	Sliding surfaces of carriage springs	4	solid	1 once a month	
17	Pins of flap wing	4	solid	every 3 - 4 months	
18	Axle of ladder	1	solid	every 3 - 4 months	
19	Latch of ladder	1	solid	cover with very thin layer of grease every 3 – 4 months	
20	Regulating screws of the brake levers	4	solid	every 6 months	
21	Hinge of the flap	6	solid	every 3 - 4 months	
22	Interlock of the flap	6	solid	every 3 - 4 months	

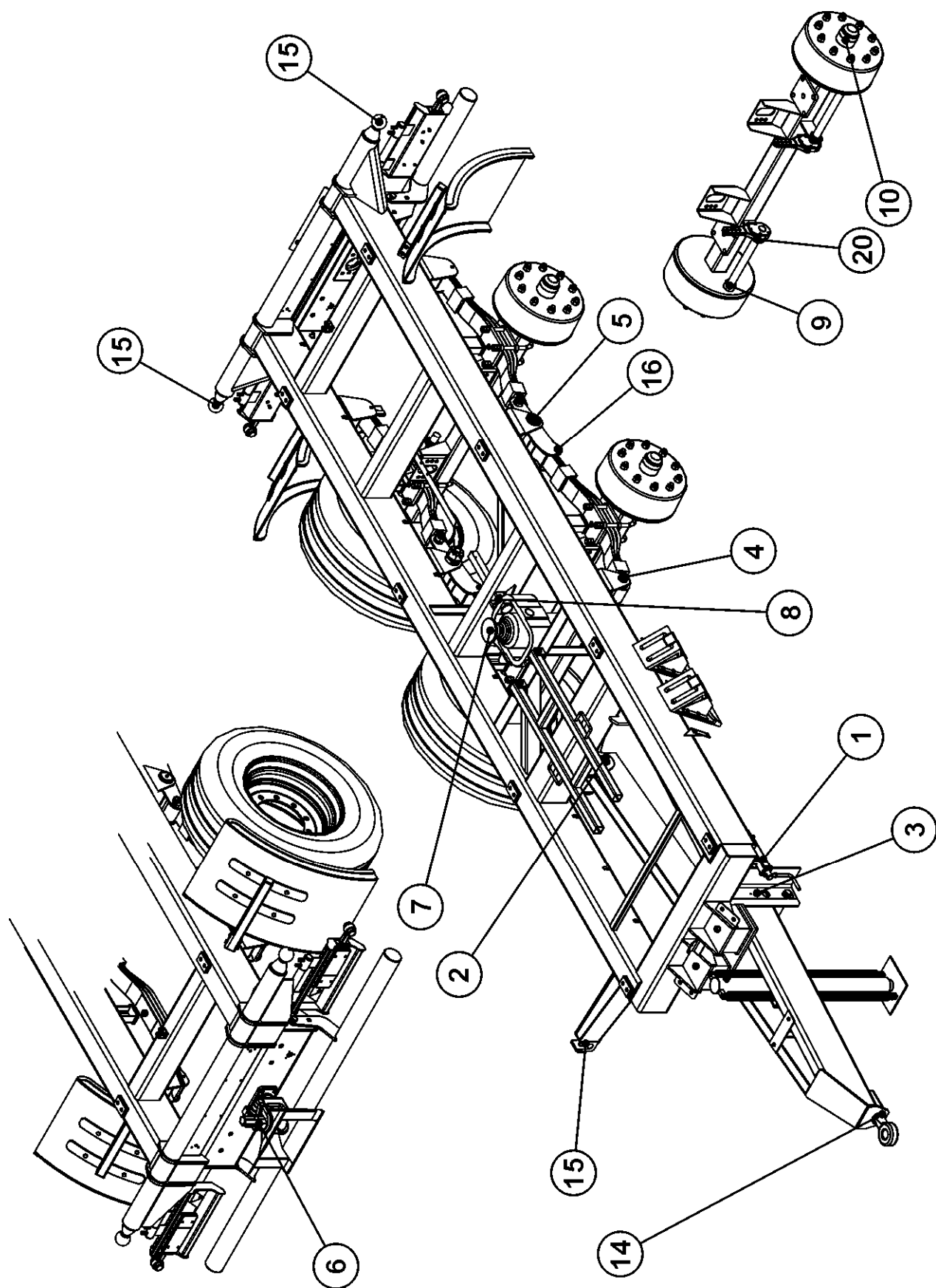


FIGURE 16. Lubricating points of the trailer

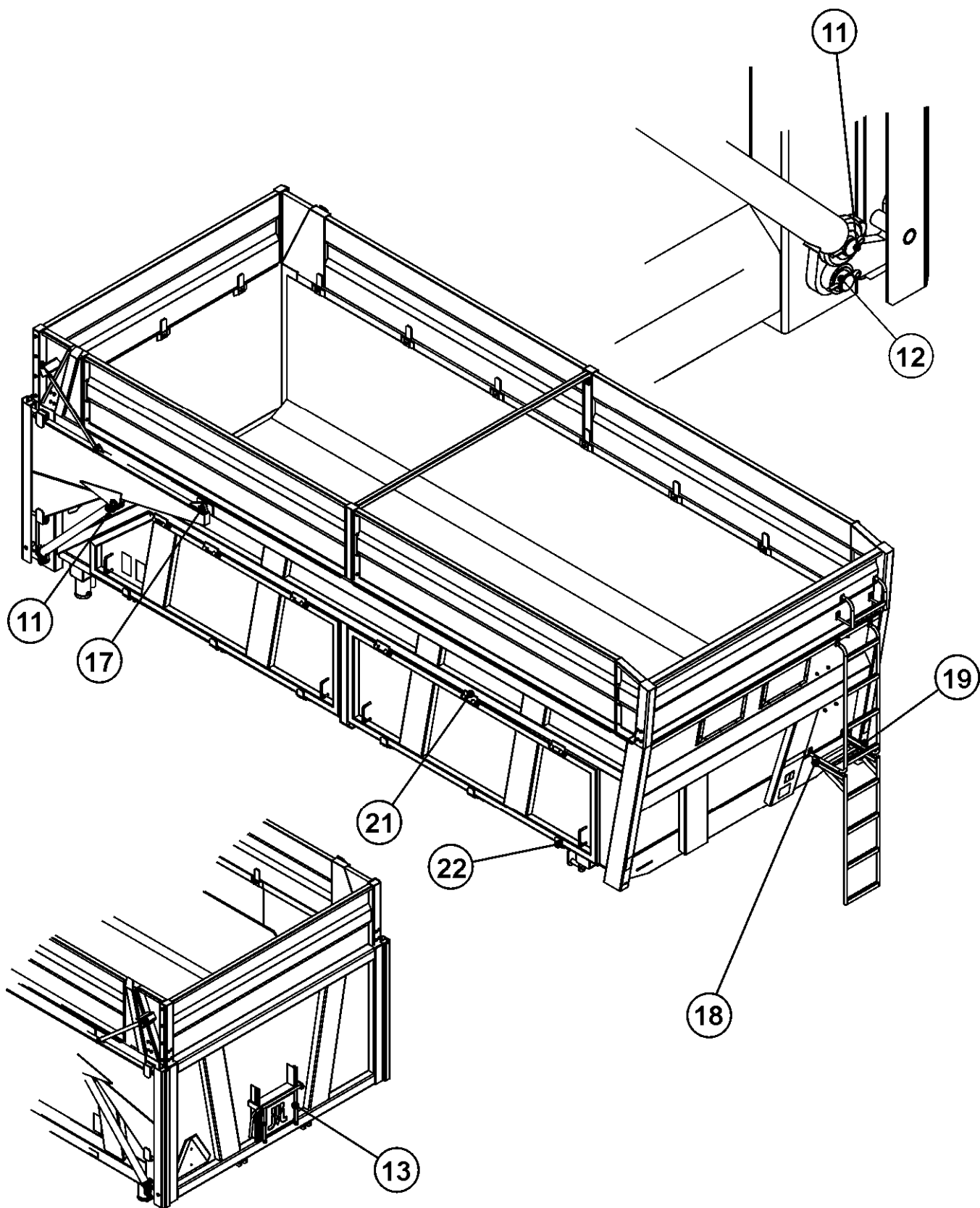


FIGURE 17. Lubricating points of the trailer

6.6 Assembling and disassembling of added boards

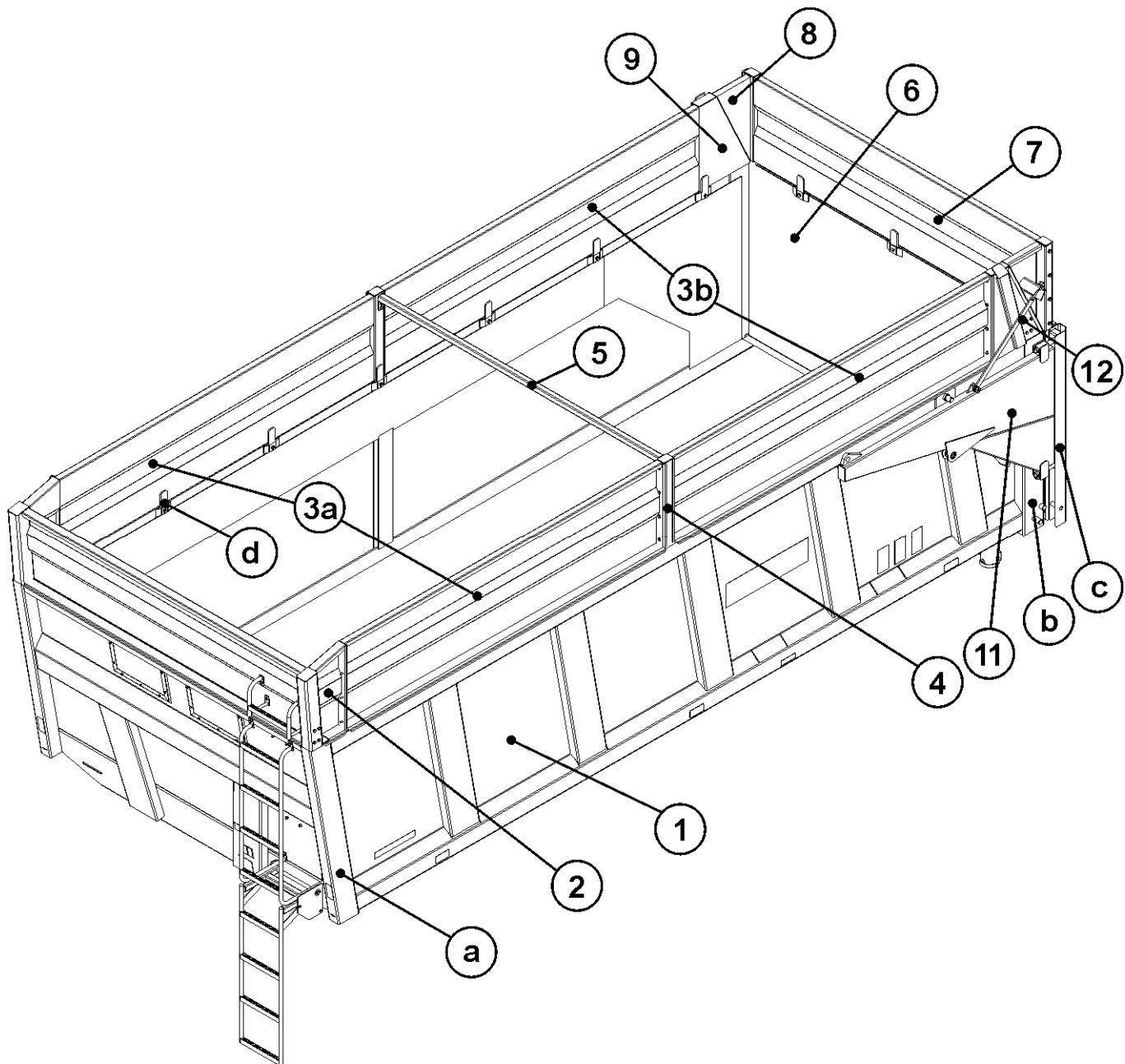
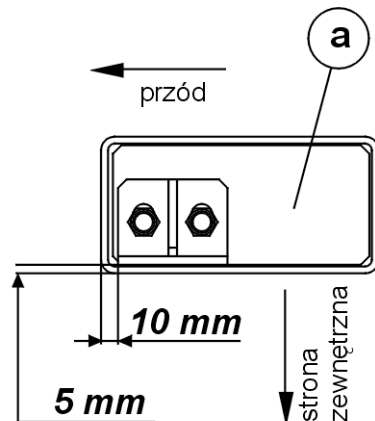
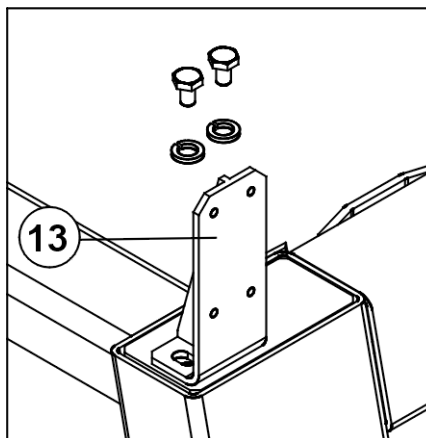


FIGURE 18. The load carrying body with the whole set of added boards.

1 – load carrying body, 2 – front added board, 3a – front side added boards, 3b- rear side added boards, 4 –side pillar of added boards, 5 – clamping beam, 6 – rear flap, 7 – rear added board, 8- rear section of added board (left, right), 9 – rear pillar (left, right), 10 – ladder of added boards, 11 – wing of flat (left, right) , 12 – tension rod, 13 – supports of added boards (non visible on the figure)

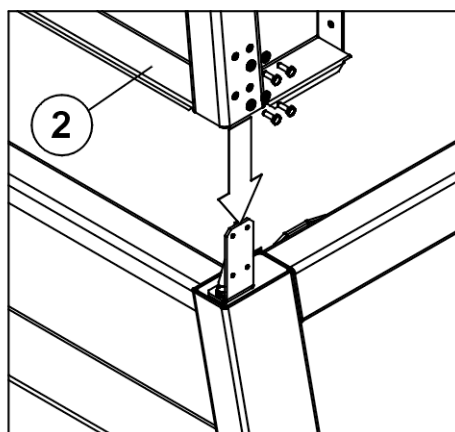
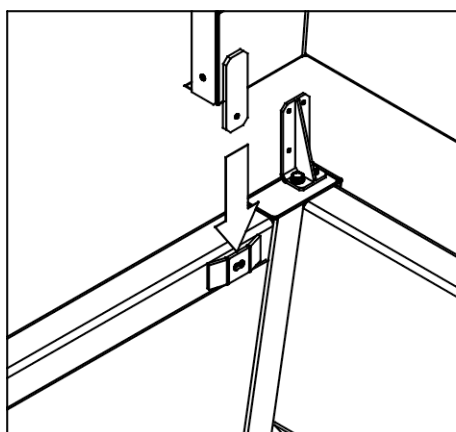
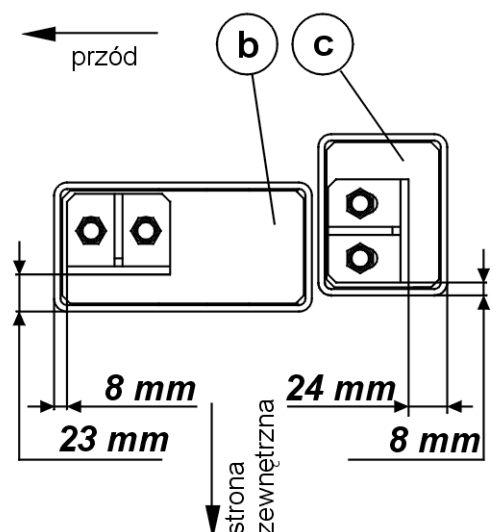
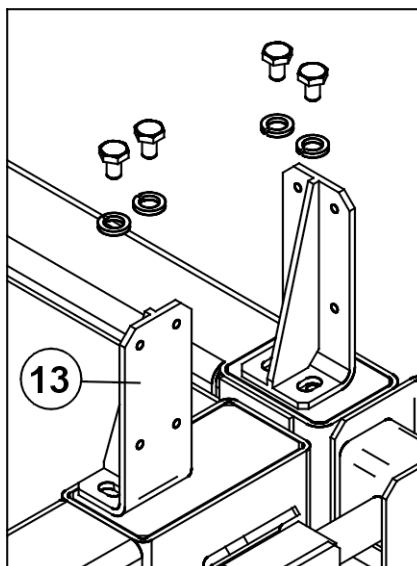
a – left front pillar of the load carrying body, b – left rear pillar of the load carrying body, c – left pillar of flap, d – fastening grips



Assembling of added boards must be started from screwing down 6 supports of added boards (13) to pillars of the load carrying body and to the flap. During this action special attention must be paid to maintaining of proper dimensions specified in schemes. The scheme (1) presents fastening of the support to the left front pillar of the load carrying body (a) The right support must be fastened in similar way on the right front pillar of the load carrying body.
przód – front
strona zewnętrzna – external side

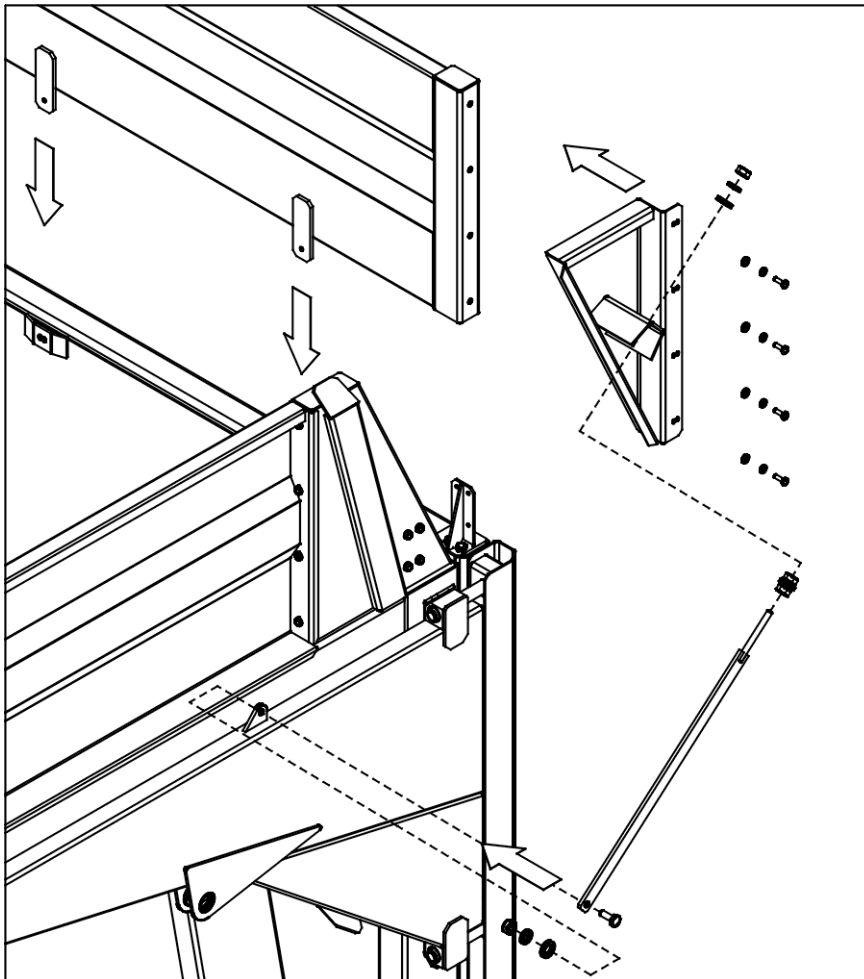
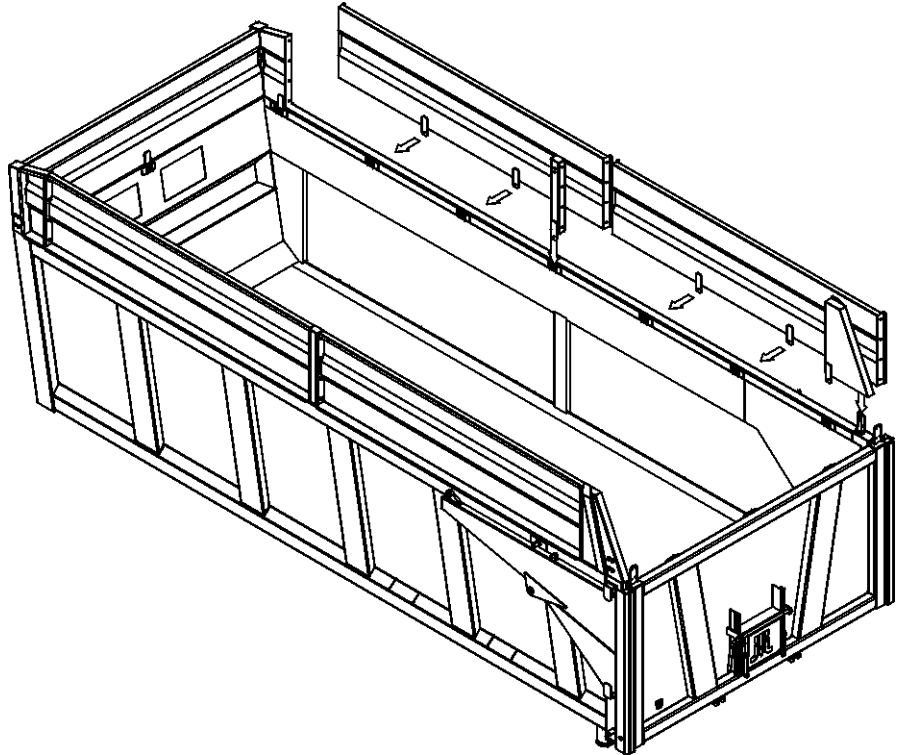
Assembly supports of added boards (13), on rear pillars of the load carrying body and on side pillars of the flap. The scheme (2) presents fastening of supports on the left rear pillar of the load carrying body (b) and on the left pillar of the flap (c).

przód – front
strona zewnętrzna – external side



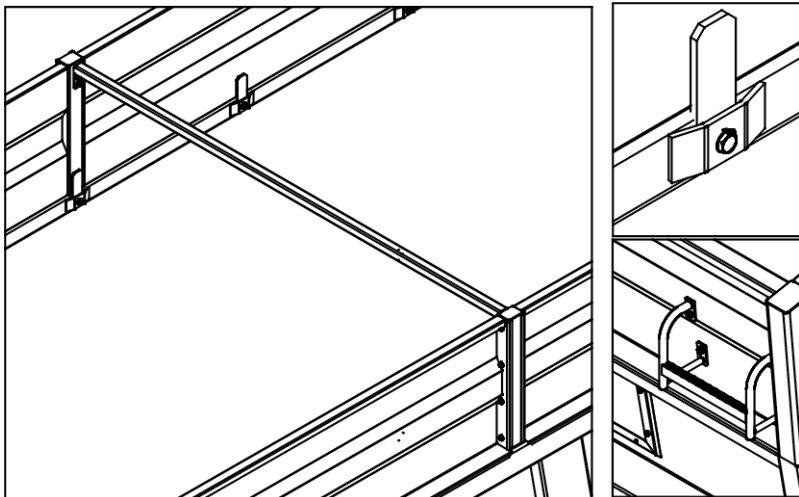
Assembly the front added board (2). Holes in pillars must be in line with holes of supports. The arms (d), fastening the added board to the load carrying body must be inserted into proper grips welded to the load carrying body.

Assembly two side front added boards (3a), inserting them into proper grips indicated on the scheme (4) with arrows. Screw down the side added boards (3a) to the front added board (2). Screw down two side pillars (4) and the next pair of side rear added boards (3b). Screw down side added boards (3b) and (3a) to pillars (4). Assembly rear pillars of added boards: the left pillar (9) and the right pillar, to supports of added boards (13). Screw down the rear pair of side added boards (3b), to rear pillars.



Fasten the rear added board of the flap (7) to the flap (6) by means of supports (13). Screw down the left and right rear sections of the added board (8) to pillars of the rear added board (8). The whole structure must be stiffened by means of two tension rods (12), located on two sides of the load carrying body. The tension rods (12) must be screwed down to the left and the right wing of the flap and side sections (8) of the rear added board.

After installing added boards, screw down the clamping beam (5) to side pillars (4). Screw down all added boards (2), (3a), (3b), (7) and pillars (4), (5), (6) to the load carrying body. At the end fasten the ladder (10) to the front added board.



The detailed specification of parts and connections is in the catalogue of spare parts. The description of structural elements to the assembly scheme corresponds to the description from the figure 18, „The load carrying body with the whole set of added boards.”

Disassembly of the added boards must be conducted in reverse sequence compared to the assembly.

ATTENTION



Assembly and disassembly of added boards must be conducted with use of foot-pieces, ladders or a ramp with proper height. The condition of these devices must secure workers against falling down. At least two persons should perform the work. Keep special care.

Lower edges of the pillars of added boards must be in line with upper edges of the pillars of the load carrying body (figure 19, „Control of correctness of fastening of the added boards.”). Otherwise during opening or closing the flap you may cause damage of the mechanism for opening of the flap and added boards of the load carrying body.

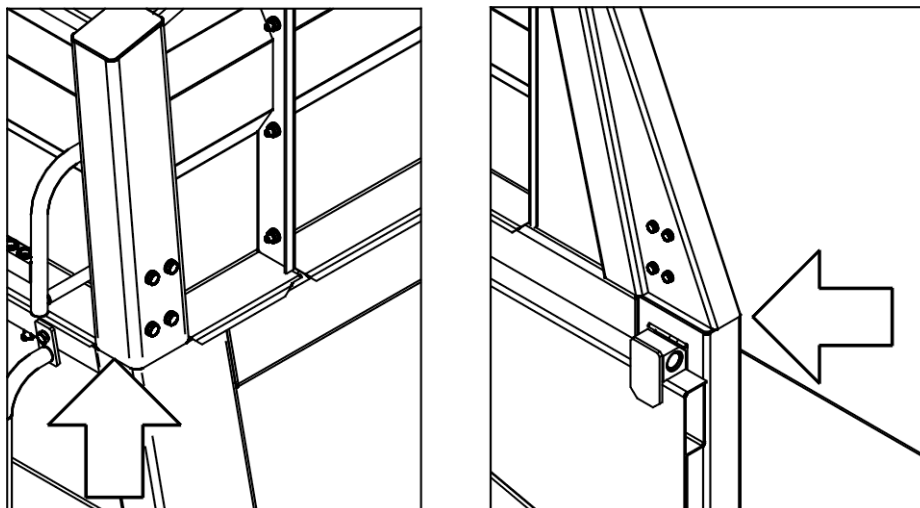


FIGURE 19. Control of correctness of fastening of added boards.

6.7 Servicing of the carriage spring system

Servicing of the carriage spring system consists in periodical lubrication in places specified in the table 7 and current control of the condition of spring leaves.

The spring leaves must be maintained in such state that they are covered with thin layer of grease. You must not allow gathering thick layer of dried mud on carriage springs.

ATTEN- -TION



In case of noticing a crack of a spring leaf in any carriage spring you must be taken out from operation until the defect is removed.

6.8 Storage and maintenance

After finishing of operation the trailer must be cleaned thoroughly and washed with water jet. In case of damage of lacquer coating the damaged places must be cleaned from rust and dust, fat must be removed from them and next they must be coloured with paint maintaining homogeneous and uniform thickness of protective coating. Until the time of painting the damaged places must be covered with thin layer of grease or anti-corrosion preparation.

It is recommended to store the trailer in closed or roofed space. In case of storage of the trailer outside the space the trailer must necessarily be protected against influence of weather conditions especially factors causing corrosion of steel and accelerating ageing of tyres.

**FARM SHELLER TIPPER TRAILER
WITH DOUBLE TIPPING
OF THE TYPE TANDEM**

T669/1

SPARE PARTS LIST

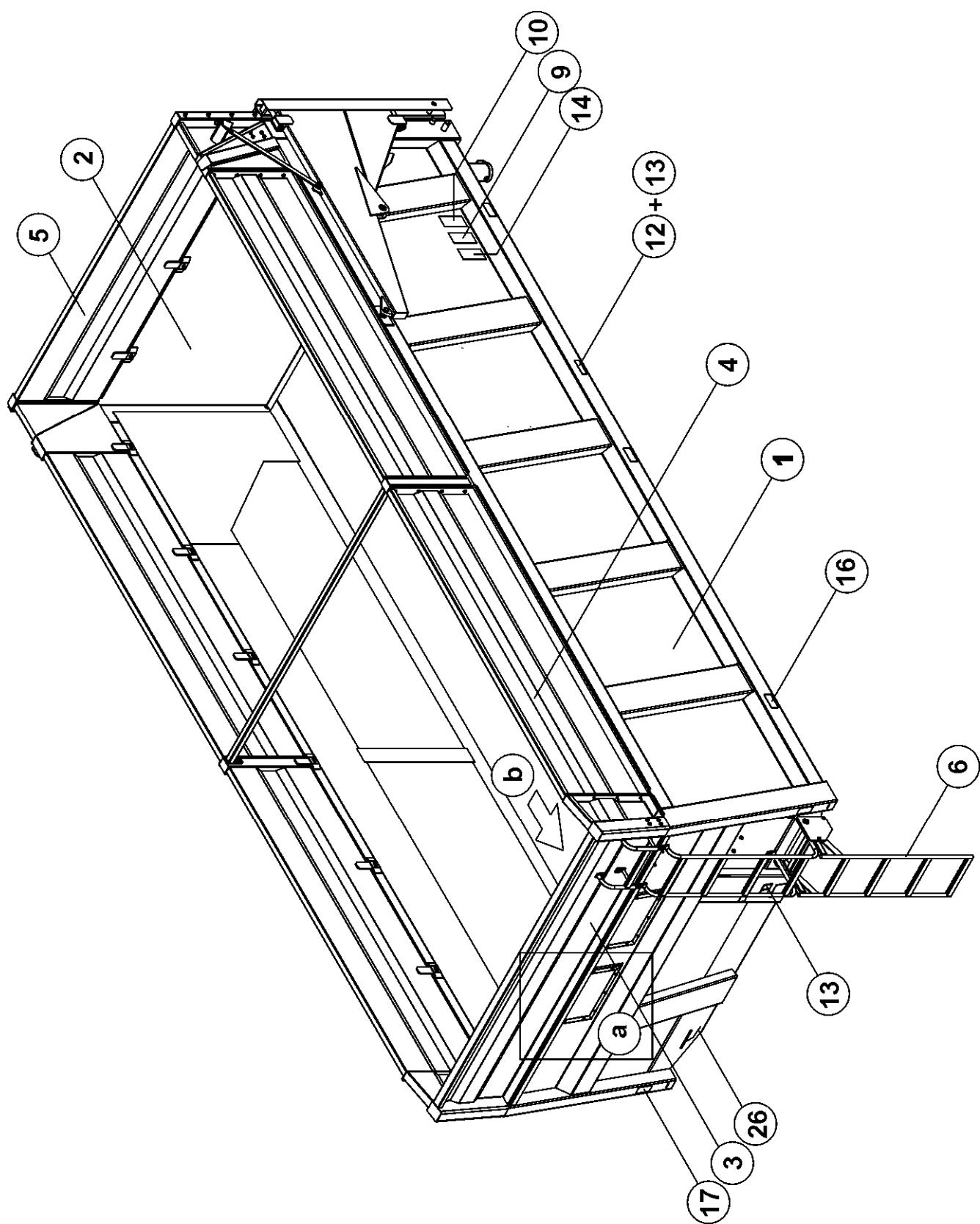


FIGURE 1. Open load-traveling body full assembly

Unit name			Quantity
OPEN LOAD-TRAVELING BODY			
Figures' numbers		Unit/part No. set	T669/1
1, 2			
Item	Part name	Figure No. or standard No.	
1	Open load-traveling body	67RPN-01.00.000	1
2	Dumping door set	58RPN-04.00.000	1
3	Front added top wall 580	58RPN-10.01.000	1
4	Side added top wall 580	58RPN-10.02.000	4
5	Added top wall of dumping door 580	58RPN-10.03.000	1
6	Ladder set	58RPN-00.01.000	1
7	Window frame box	58RPN-00.00.100	2
8	Perspex	58RPN-00.00.009	2
9	Warning label I	58RPN-00.00.012	2
10	Warning label II	58RPN-00.00.013	2
11	Information label	58RPN-00.00.014	1
12	Label „280 kPa”	58RPN-00.00.018	2
13	Label „350 kPa”	29RPN-00.00.019	2 ⊗
14	Warning label III	58RPN-00.00.020	2
15	Side foot step	EB20-010 zinc	3
16	White rectangular self-adhesive reflective marker	DOB35	2
17	Yellow rectangular self-adhesive reflective marker	DOB35	6
18	Bolt M8x25 8.8-B-Fe/Zn5	PN-85/M-82105	12
19	Bolt M6x25-8.8-B-Fe/Zn	PN-85/M-82105	20
20	Nut M8-8-B-Fe/Zn5	PN-86/M-82144	12
21	Nut M6-8-B-Fe/Zn5	PN-86/M-82144	20
22	Washer 8.4-Fe/Zn5	PN-78/M-82005	12
23	Washer 6.4-Fe/Zn5	Pn-78/M-82005	20
24	Spring washer Z8.2-Fe/Zn5	PN-90/M-82008	12
25	Spring washer Z6.1-Fe/Zn5	PN-90/M-82008	20
26	Lever set	67RPN-00.00.01.00	1

⊗ - according to the tyre applied

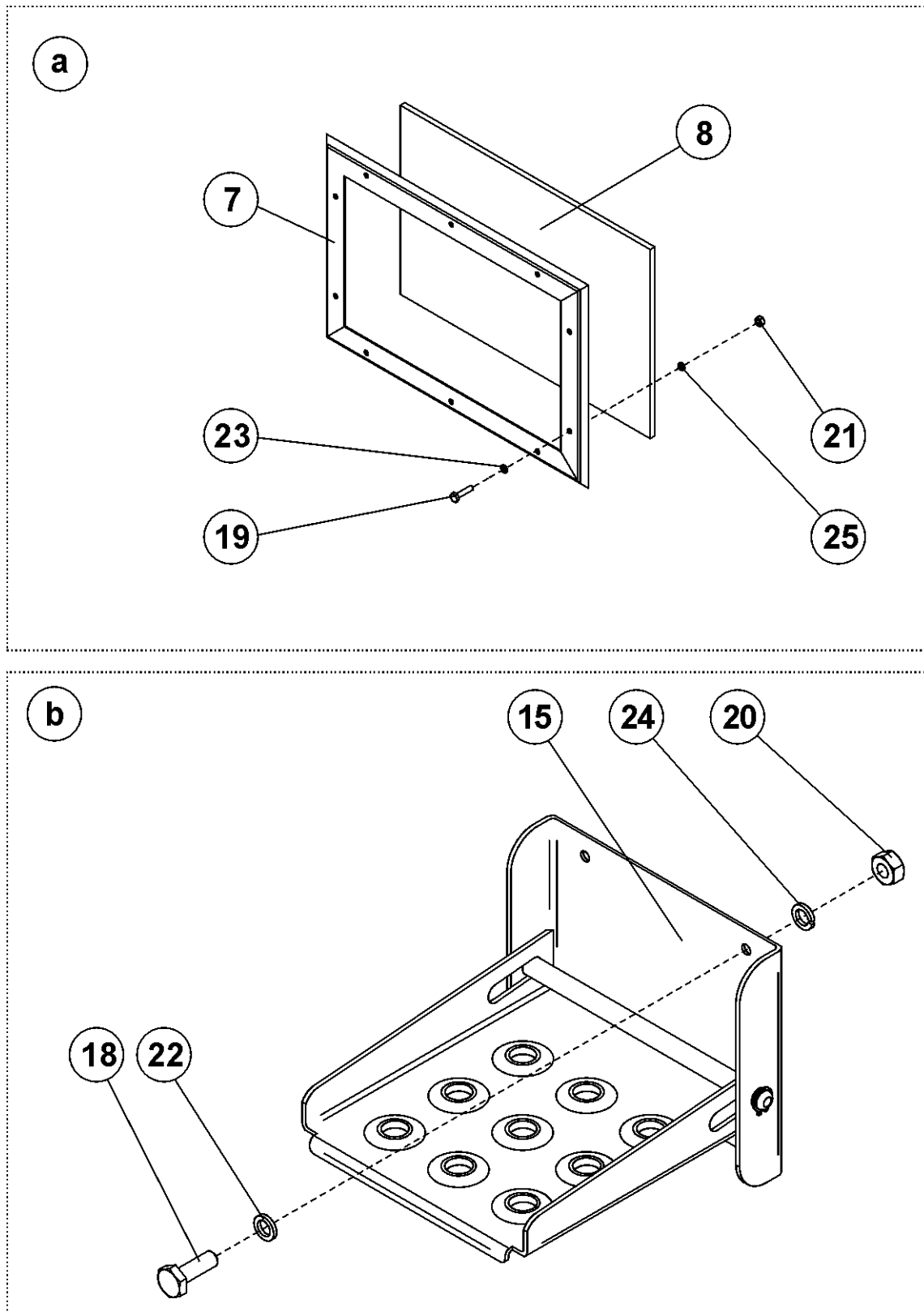


FIGURE 2. Open load-traveling body full assembly

Unit name			Quantity
OPEN LOAD-TRAVELING BODY			
Figures' numbers		Unit/part No. set	T669/1
1, 2			
Item	Part name	Figure No. or standard No.	
1	Open load-traveling body	67RPN-01.00.000	1
2	Dumping door set	58RPN-04.00.000	1
3	Front added top wall 580	58RPN-10.01.000	1
4	Side added top wall 580	58RPN-10.02.000	4
5	Added top wall of dumping door 580	58RPN-10.03.000	1
6	Ladder set	58RPN-00.01.000	1
7	Window frame box	58RPN-00.00.100	2
8	Perspex	58RPN-00.00.009	2
9	Warning label I	58RPN-00.00.012	2
10	Warning label II	58RPN-00.00.013	2
11	Information label	58RPN-00.00.014	1
12	Label „280 kPa”	58RPN-00.00.018	2
13	Label „350 kPa”	29RPN-00.00.019	2 ⊗
14	Warning label III	58RPN-00.00.020	2
15	Side foot step	EB20-010 cynk.	3
16	White rectangular self-adhesive reflective marker	DOB35	2
17	Yellow rectangular self-adhesive reflective marker	DOB35	6
18	Bolt M8x25 8.8-B-Fe/Zn5	PN-85/M-82105	12
19	Bolt M6x25-8.8-B-Fe/Zn	PN-85/M-82105	20
20	Nut M8-8-B-Fe/Zn5	PN-86/M-82144	12
21	Nut M6-8-B-Fe/Zn5	PN-86/M-82144	20
22	Washer 8.4-Fe/Zn5	PN-78/M-82005	12
23	Washer 6.4-Fe/Zn5	Pn-78/M-82005	20
24	Spring washer Z8.2-Fe/Zn5	PN-90/M-82008	12
25	Spring washer Z6.1-Fe/Zn5	PN-90/M-82008	20
26	Lever set	67RPN-00.00.01.00	1

⊗ - according to the tyre applied

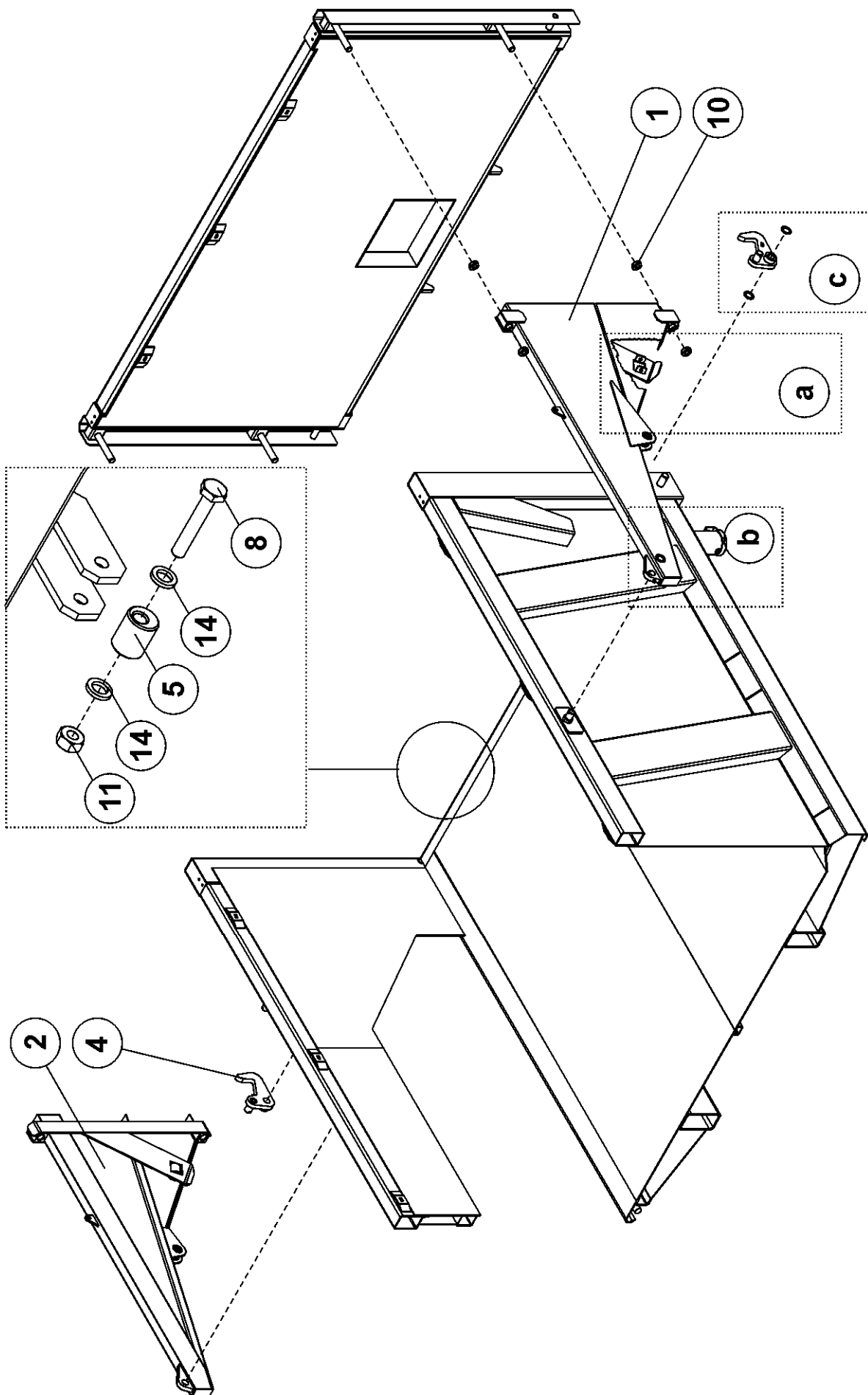


FIGURE 3. Rear hatch clamping

Unit name			Quantity
REAR HATCH CLAMPING			
Figures' numbers		Unit/part No. set	T669/1
3			
Item	Part name	Figure No. or standard No.	
1	Left wing, set	58RPN-05.00.000	1
2	Right wing, set	58RPN-06.00.000	1
3	Left locking hook	58RPN-00.00.200	1
4	Right locking hook	58RPN-00.00.300	1
5	Hatch lock sleeve	64RPN-00.00.001	2
6	Washer of the hook	58RPN-00.00.008	2
7	Wing pulley	58RPN-05.00.001	2
8	Bolt M16x100-8.8-B-Fe/Zn5	PN-85/M-82101	2
9	Bolt M12x100-5.8-B-Fe/Zn5	PN-85/M-82101	2
10	Nut M27x2-05-B-Fe/Zn5	PN-86/M-82153	8
11	Self-locking nut M16-8-B-Fe/Zn5	PN-85/M-82175	2
12	Self-locking nut M12-5-B-Fe/Zn5	PN-85/M-82175	2
13	Washer 30 Fe/Zn5	PN-90/M-82004	2
14	Washer 17 Fe/Zn5	PN-78/M-82005	4
15	Washer 13 Fe/Zn5	PN-78/M-82005	4
16	Cotter pin S-Zn 6.3x45	PN-76/M-82001	2
17	Lubricating nipple M6	PN-76/M-86002	2

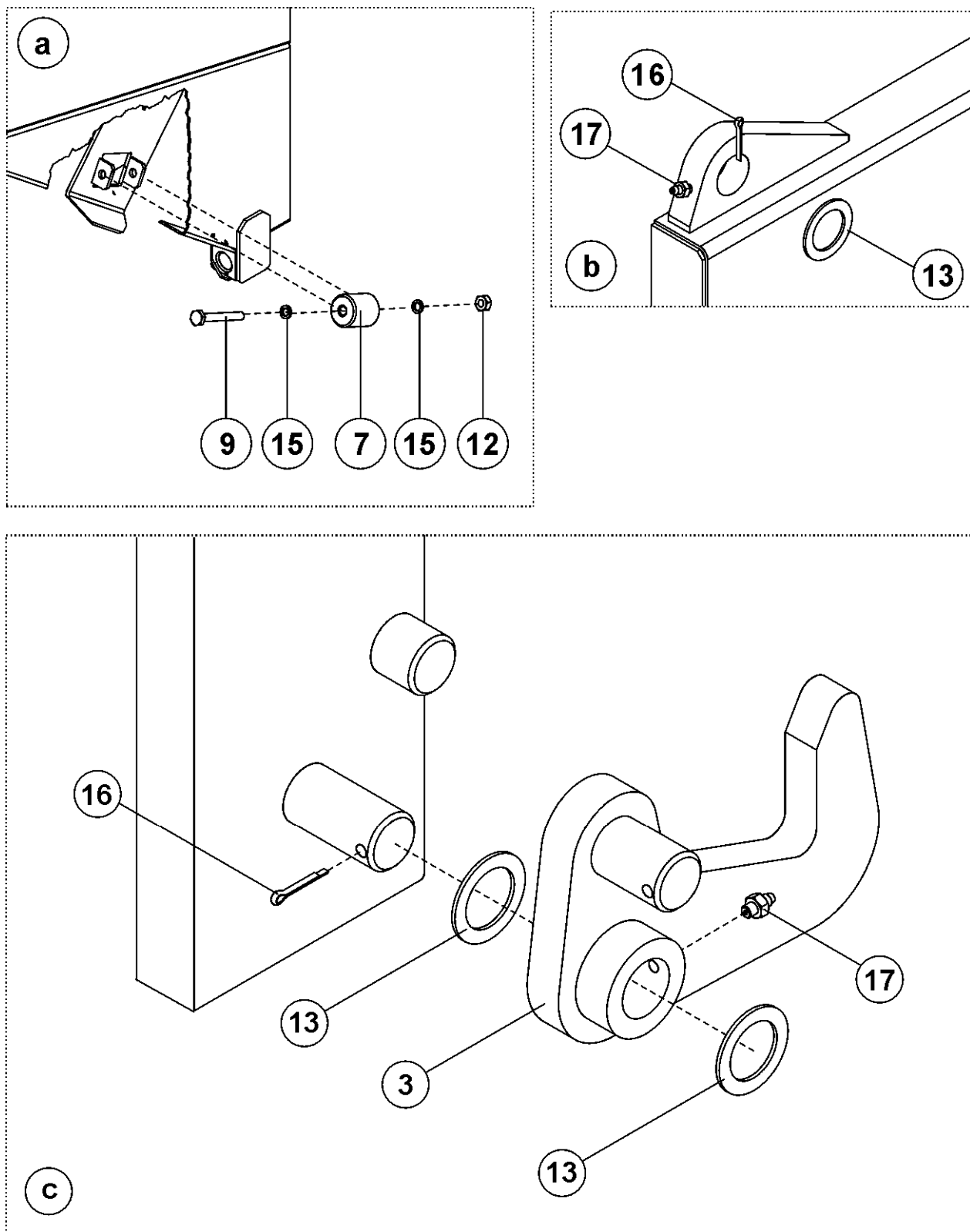


FIGURE 4. Rear hatch clamping

Unit name			Quantity
REAR HATCH CLAMPING			
Figures' numbers		Unit/part No. set	T669/1
3, 4			
Item	Part name	Figure No. or standard No.	
1	Left wing, set	58RPN-05.00.000	1
2	Right wing, set	58RPN-06.00.000	1
3	Left locking hook	58RPN-00.00.200	1
4	Right locking hook	58RPN-00.00.300	1
5	Hatch lock sleeve	64RPN-00.00.001	2
6	Washer of the hook	58RPN-00.00.008	2
7	Wing pulley	58RPN-05.00.001	2
8	Bolt M16x100-8.8-B-Fe/Zn5	PN-85/M-82101	2
9	Bolt M12x100-5.8-B-Fe/Zn5	PN-85/M-82101	2
10	Nut M27x2-05-B-Fe/Zn5	PN-86/M-82153	8
11	Self-locking nut M16-8-B-Fe/Zn5	PN-85/M-82175	2
12	Self-locking nut M12-5-B-Fe/Zn5	PN-85/M-82175	2
13	Washer 30 Fe/Zn5	PN-90/M-82004	2
14	Washer 17 Fe/Zn5	PN-78/M-82005	4
15	Washer 13 Fe/Zn5	PN-78/M-82005	4
16	Cotter pin S-Zn 6.3x45	PN-76/M-82001	2
17	Lubricating nipple M6	PN-76/M-86002	2

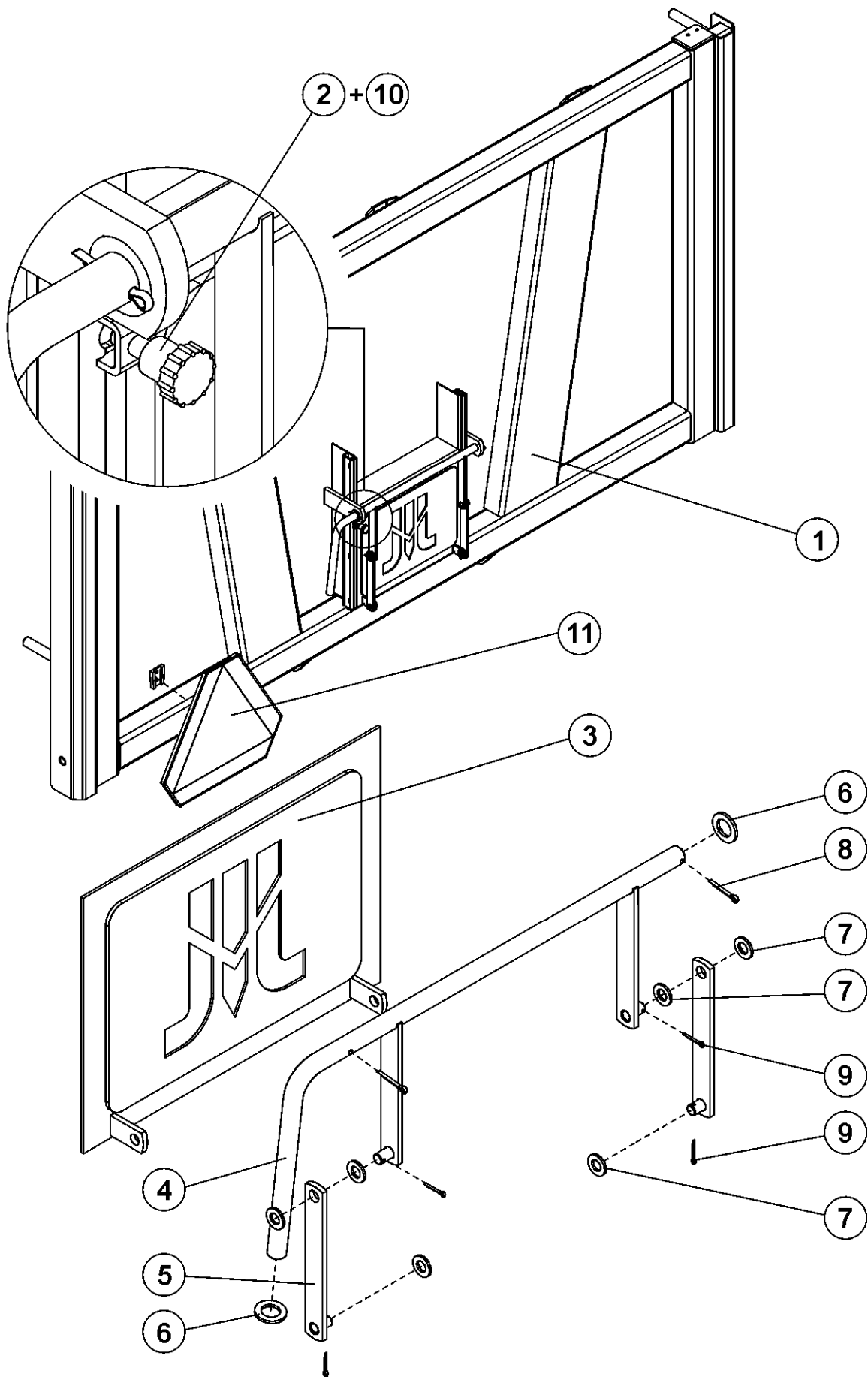


FIGURE 5. Back dumping door, full assembly

Unit name			Quantity
BACK DUMPING DOOR, FULL ASSEMBLY			
Figures' numbers		Unit/part No. set	T669/1
5			
Item	Part name	Figure No. or standard No.	
1	Back dumping door	58RPN-04.01.000	1
2	Clamping screw	29RPN-06.01.104	1
3	Fastener, set	29RPN-06.02.000	1
4	Lever	29RPN-06.03.000	1
5	Strand	29RPN-06.04.000	2
6	Washer 21 Fe/Zn5	PN-78/M-82005	2
7	Washer 13 Fe/Zn5	PN-78/M-82005	6
8	Cotter pin S-Zn 5x28	PN-76/M-82001	2
9	Cotter pin S-Zn 3.2x16	PN-76/M-82001	4
10	Spring-type straight pin 3x10 Fe/Zn5	Pn-89/M-85023	1
11	Low-speed vehicle triangle		1 ⊗

⊗ - special equipment on request

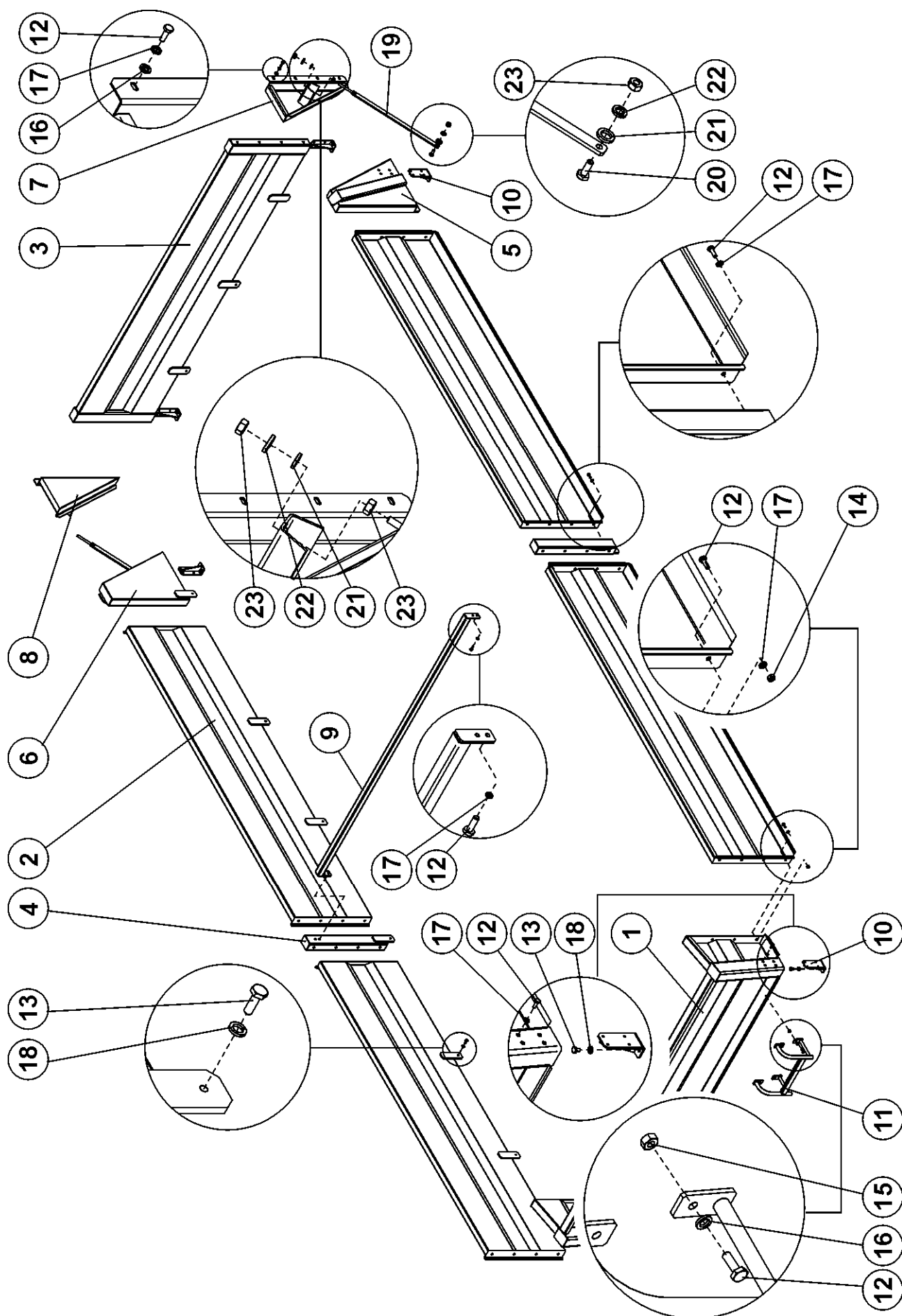


FIGURE 6. Added side walls full set

Unit name			Quantity
ADDED SIDE WALLS FULL SET			
Figures' numbers		Unit/part No. set	T669/1
6			
Item	Part name	Figure No. or standard No.	
1	Front added top wall 580	58RPN-10.01.000	1
2	Side added top wall 580	58RPN-10.02.000	4
3	Added top wall of dumping door 580	58RPN-10.03.000	1
4	Side post 580	58RPN-10.04.000	2
5	Left rear post 580	58RPN-10.05.000	1
6	Right rear post 580	58RPN-10.06.000	1
7	Left rear section 580	58RPN-10.07.000	1
8	Right rear section 580	58RPN-10.08.000	1
9	Clamping beam	58RPN-10.00.100	1
10	Added side walls bracket	58RPN-10.00.200	6
11	Ladder of the added side wall 580	58RPN-10.00.300	1
12	Bolt M8x20-8.8-B-Fe5	PN-85/M-82105	72
13	Bolt M10x16-8.8-B-Fe/Zn5	PN-85/M-82105	28
14	Nut M8-B-Fe/Zn5	PN-86/M-82144	8
15	Self-locking nut R M8-5-B-Fe/Zn5	PN-85/M-82175	4
16	Washer 8.4 Fe/Zn5	PN-78/M-82005	36
17	Spring washer Z8.2 Fe/Zn5	PN-77/M-82008	68
18	Spring washer Z10.2 Fe/Zn5	PN-77/M-82008	28
19	Strand, set	58RPN-10.00.400	2
20	Bolt M12x35-8.8-B-Fe/Zn5	PN-85/M-82105	2
21	Washer 13 Fe/Zn5	PN-78/M-82005	4
22	Spring washer Z12.2 Fe/Zn5	PN-77/M-82008	4
23	Nut M12-8-B-Fe/Zn5	PN-86/M-82144	6

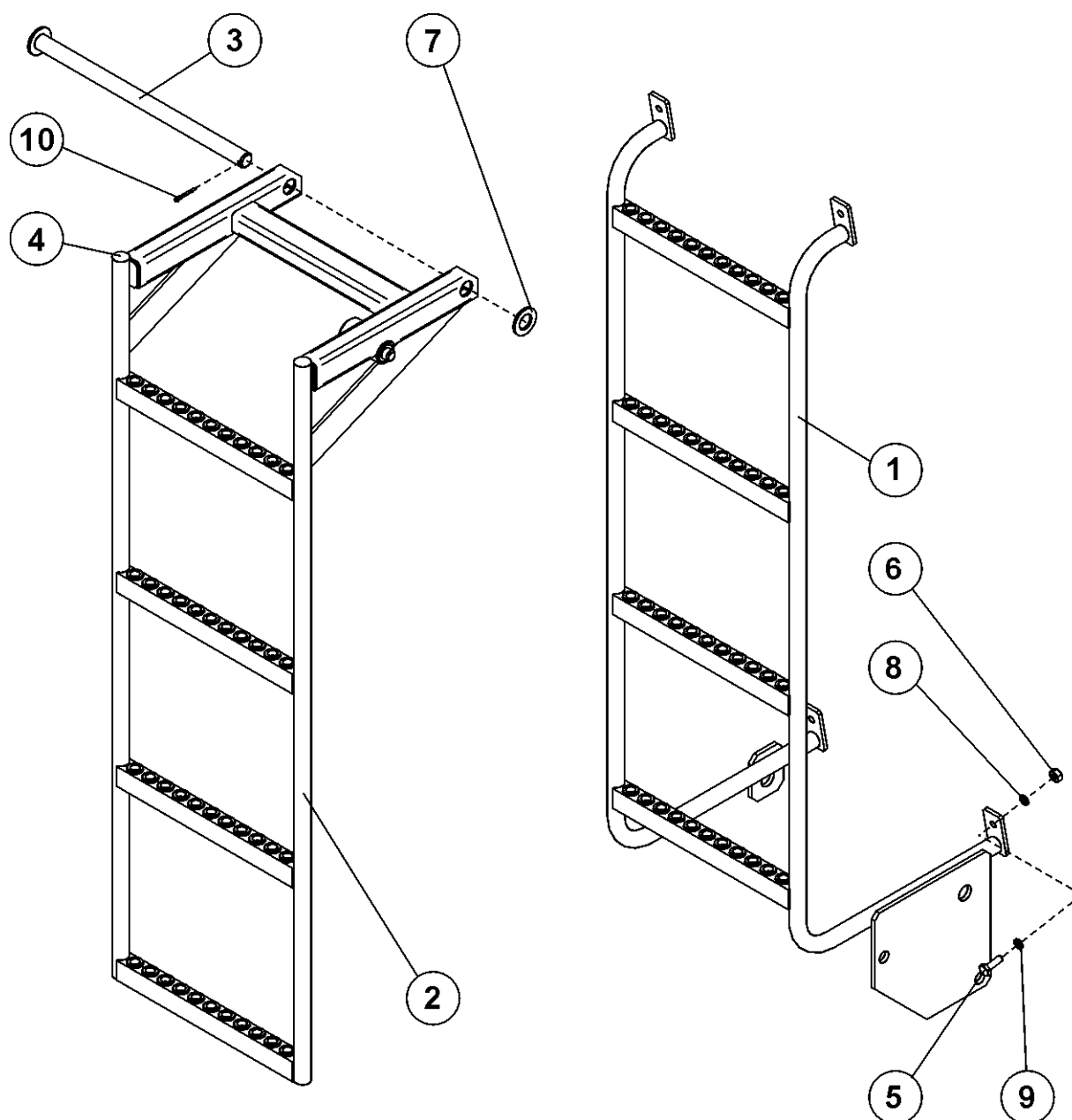


FIGURE 7. Ladder, set

Unit name			Quantity
LADDER, SET			
Figures' numbers		Unit/part No. set	T669/1
7		58RPN-00.01.000	
Item	Part name	Figure No. or standard No.	
1	Top ladder	58RPN-00.01.100	1
2	Bottom ladder	58RPN-00.01.200	1
3	Pin set	58RPN-00.01.300	1
4	Hole plug IK22	PPHU Plast Trading	4
5	Bolt M8x25-8.8-B-Fe/Zn5	PN-85/M-82105	4
6	Nut M8-8-B-Fe/Zn5	PN-86/M-82144	4
7	Washer 21 Fe/Zn5	PN-78/M-82005	1
8	Spring washer Z8.2-Fe/Zn5	PN-90/M82008	4
9	Washer 8.4-Fe/Zn5	PN-78/M-82005	4
10	Cotter pin S-Zn 4x32	PN-76/M-82001	1

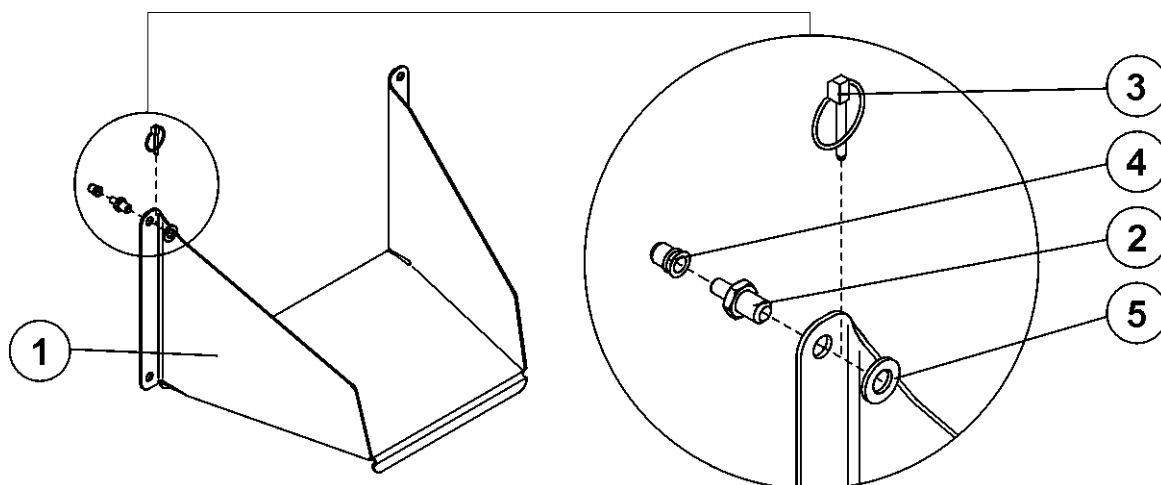


FIGURE 8. Chute, set ☒

☒ - on special request

Unit name			Quantity
CHUTE, SET			
Figures' numbers		Unit/part No. set	T669/1
8		58RPN-00.08.000	
Item	Part name	Figure No. or standard No.	
1	Chute	58RPN-00.08.001	1
2	Chute bolt	58RPN-00.08.002	4
3	Pin S.3545		4
4	Knurled nut M8		4
5	Washer 13 Fe/Zn5	PN-78/M-82005	4

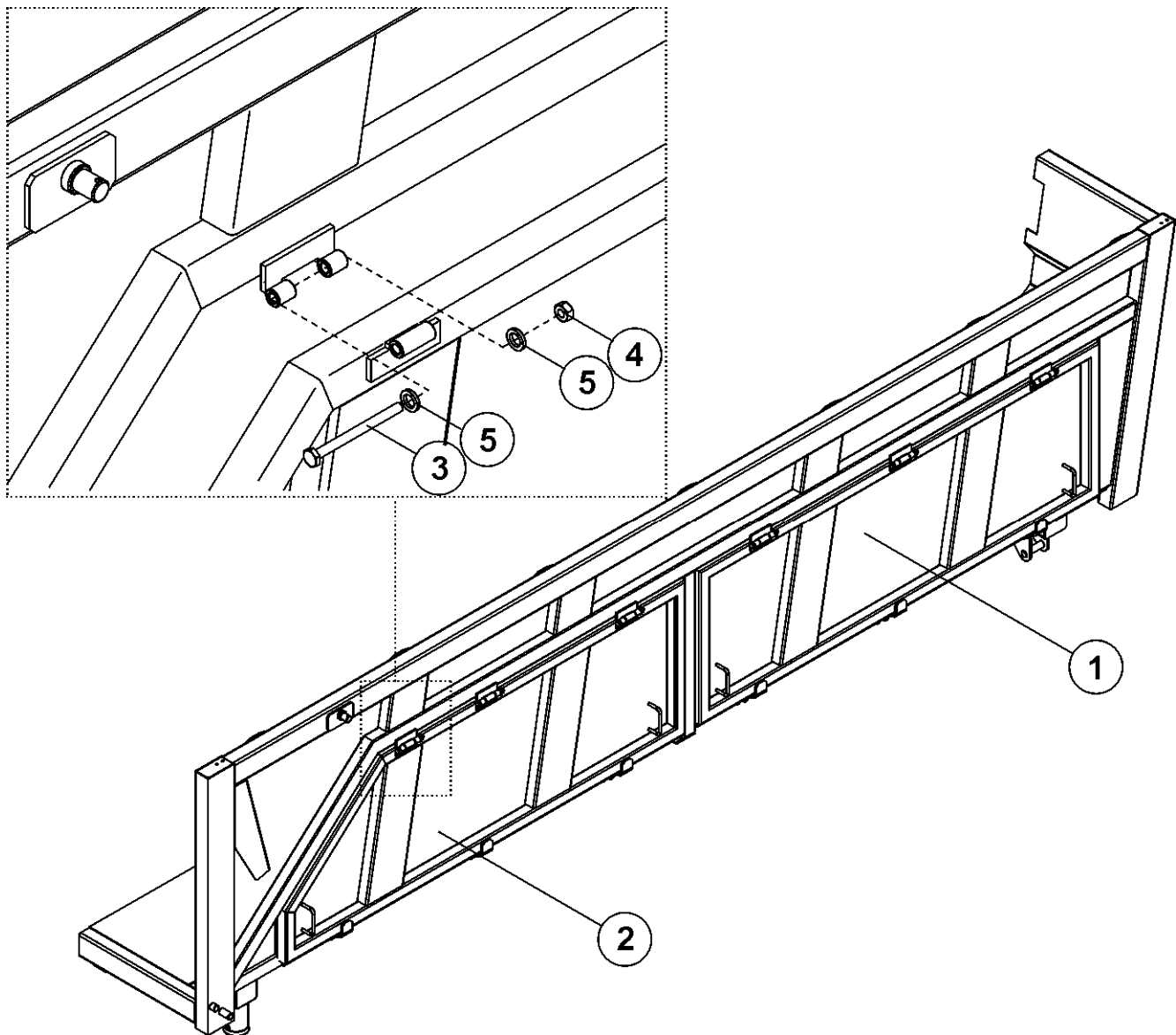


FIGURE 9. Side hatch clamping

Unit name			Quantity
SIDE HATCH CLAMPING			
Figures' numbers		Unit/part No. set	T669/1
9			
Item	Part name	Figure No. or standard No.	
1	Side dumping door I	67RPN-00.01.00.00	1
2	Side dumping door II	67RPN-00.02.00.00	1
3	Bolt M12x150-8.8-B Fe/Zn5	PN-85/M=82105	6
4	Self-locking nut M12-8-B Fe/Zn5	PN-86/M-82175	6
5	Washer 13 Fe/Zn5	Pn-78/M-82005	12

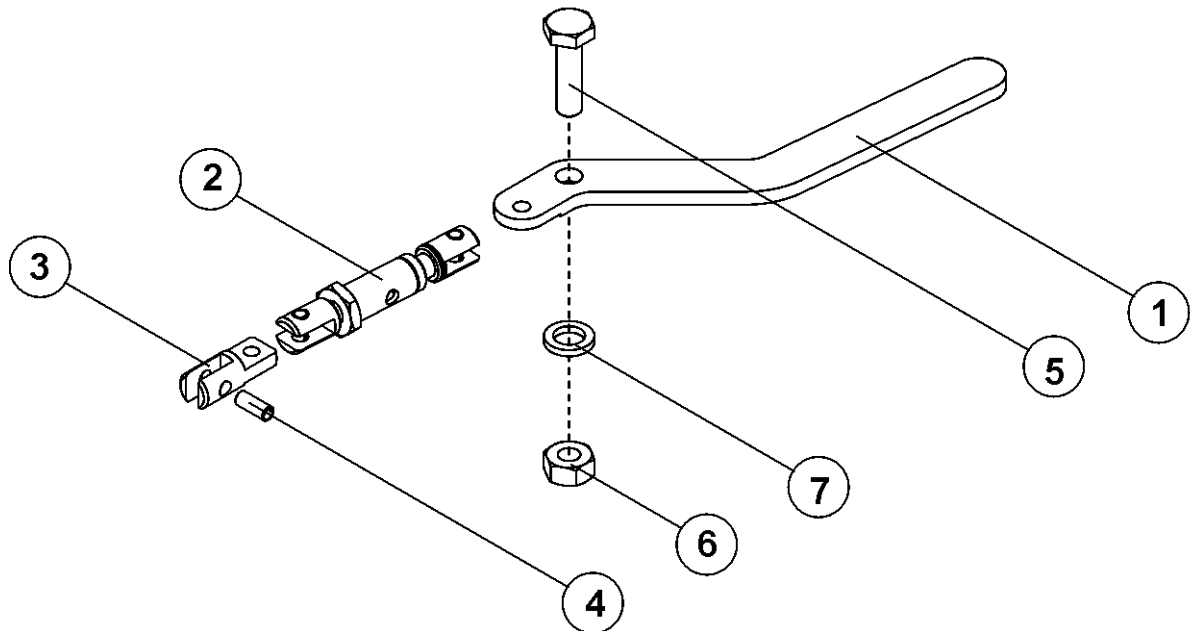
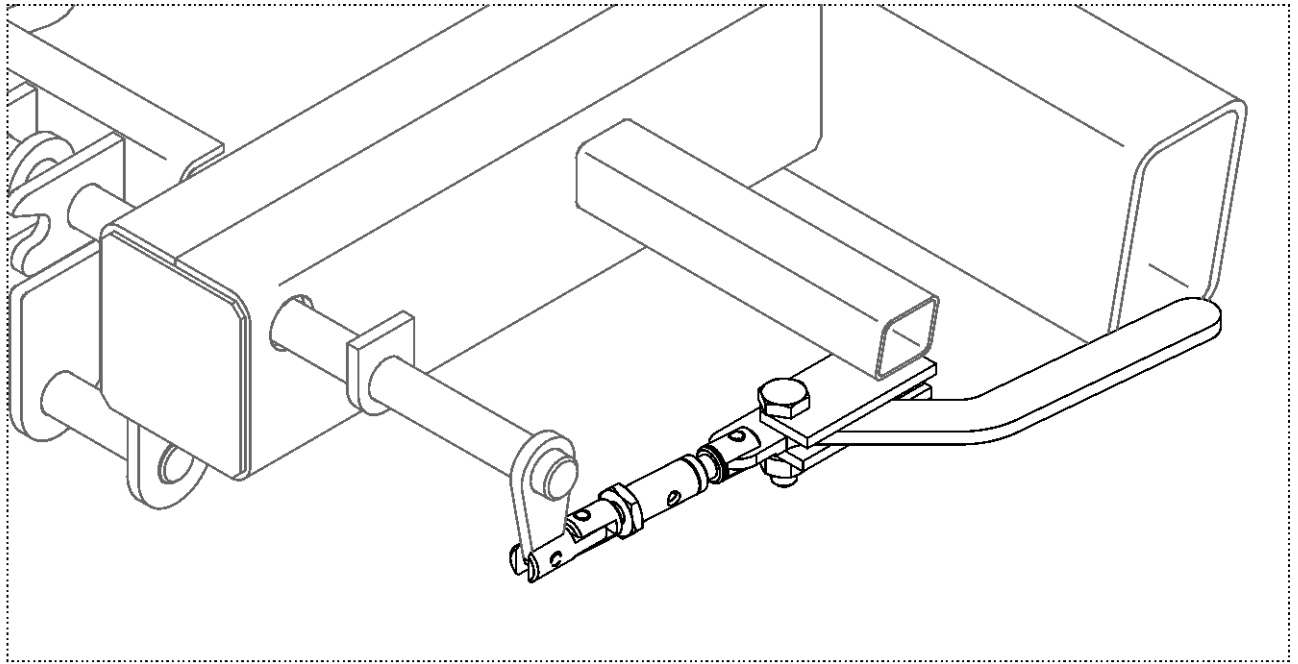
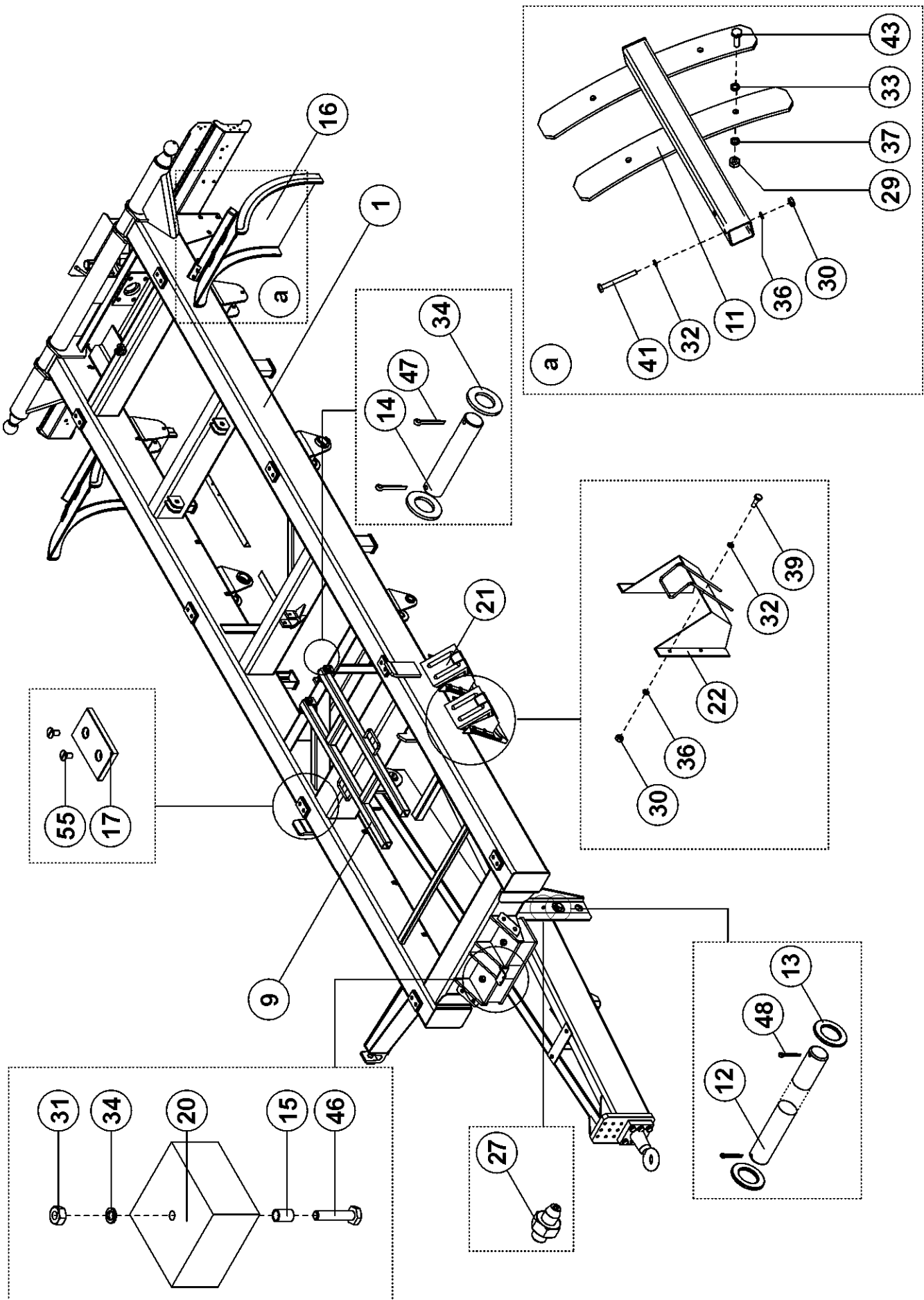


FIGURE 10. Lever set

Unit name			Quantity
LEVER, SET			
Figures' numbers		Unit/part No. set	T669/1
10		58RPN-00.08.000	
Item	Part name	Figure No. or standard No.	
1	Closure lever	67RPN-00.00.01.01	
2	Strand	29RPN-00.00.300	
3	Coupler	29RPN-00.02.001	
4	Spring-type straight pin 10x25	PN-89/M-85023	
5	Bolt M16x60-8.8-A Fe/Zn5	PN-85/M-82101	
6	Self-locking nut M16-6-B Fe/Zn5	PN-85/M-82175	
7	Washer 17 Fe/Zn5	PN-78/M-82005	



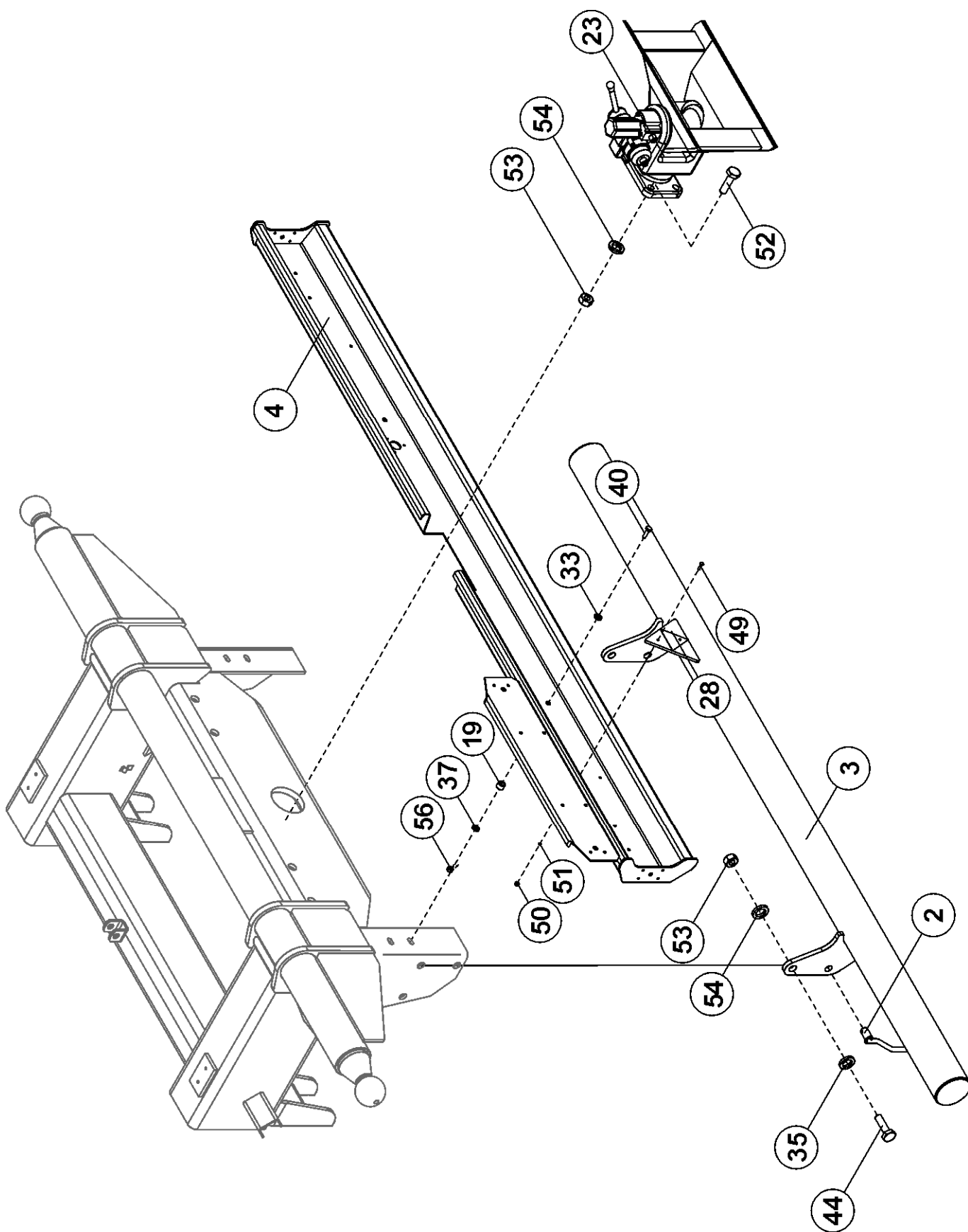


FIGURE 12. Chassis

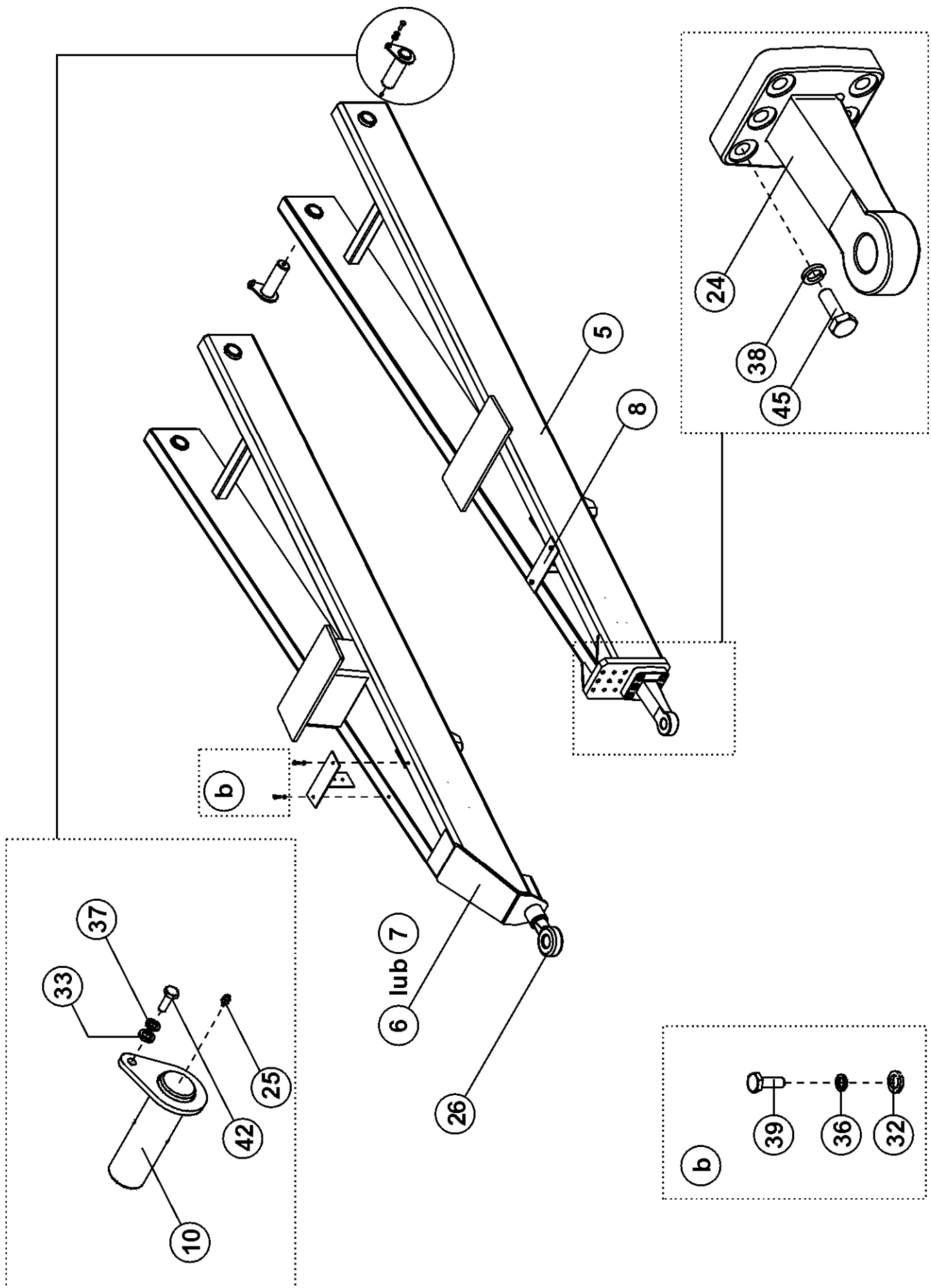


FIGURE 13. Chassis

Unit name			Quantity
CHASSIS			
Figures' numbers		Unit/part No. set	T669/1
11, 12,13			
Item	Part name	Figure No. or standard No.	
1	Lower frame	67RPN-01.00.00.00	1
2	Buffer pin, set	67RPN-00.06.00.00	2
3	Buffer set	67RPN-00.00.02.00	1
4	Lighting bar	67RPN-00.00.03.00	1
5	Draught bar set	58RPN-02.00.000	1
6	Rotatable draught bar	58RPN-08.00.000	-
7	Rotatable draught bar	58RPN-08.00.000-PL	1
8	Hydraulic piping bracket	58RPN-17.00.000	1
9	Open load-carrying body support	58RPN-18.00.000	1
10	Clamping pin of the draught bar	58RPN-00.06.000	2
11	Mudguard arm, set	58RPN-00.11.000	2
12	Draught bar suspension pin	58RPN-00.00.001	1
13	Draught bar pin washer	58RPN-00.00.002	2
14	Carrying body pin	58RPN-00.00.005	2
15	Distance sleeve	58RPN-00.00.006	2
16	Mudguard I	58RPN-00.00.015	2
17	Cushion lining	64RPN-00.00.004	8
18	Dump pin I	45 RPN-00.07.000	1
19	Lighting bar distance	29RPN-10.00.001	4
20	Rubber lining 180x180x100	7617/00-00-023	2
21	Wedge for wheels	EB22-034	2
22	Pocket for wedge	EB22-034	2
23	Automatic clamp	R0*400A5100 Rockinger	1
24	Strand 30904	DIN 11026	1
25	Lubricating nipple M8x1	PN-76/M-86002	2
26	Rotatable strand, set Art. 30448		1
27	Lubricating nipple M6	PN-76/M-86002	2
28	Reflective triangle DOB31		2
29	Self-locking nut M10-5-B-Fe/Zn5	PN-85/M-82175	8
30	Nut M8-8-B-Fe/Zn5	PN-86/M-82144	12
31	Self-locking nut M16-8-B-Fe/Zn5	PN-85/M-82175	4
32	Washer 8.4-Fe/Zn5	PN-78/M-82005	14
33	Washer 10.5 Fe/Zn5	PN-78/M-82005	14
34	Washer 17 Fe/Zn5	PN-78/M-82005	6
35	Washer 21 Fe/Zn5	PN-78/M-82005	2
36	Spring washer Z8.2 Fe/Zn5	PN-90/M-82008	14
37	Spring washer Z10.2 Fe/Zn5	PN-90/M-82008	14
38	Spring washer z16.3 Fe/Zn5	PN-90/M-82008	4
39	Bolt M8x25-8.8-B Fe/Zn	PN-85/M-82105	10
40	Bolt M10x40-8.8-B Fe/Zn	PN-85/M-82105	4
41	Bolt M8x75-8.8-B Fe/Zn	PN-85/M-82101	4
42	Bolt M10x30-8.8-B Fe/Zn	PN-85/M-82105	2
43	Bolt M10x35-8.8-B-Fe/Zn	PN-85/M-82105	8
44	Bolt M20x50-8.8-B Fe/Zn5	PN-85/M-82105	2
45	Bolt M16x50	PN-85/M-82105	4
46	Bolt M16x80-5.8-B-Fe/Zn	PN-85/M-82105	2
47	Cotter pin S-Zn 4x32	PN-76/M-82001	4
48	Cotter pin S-Zn 6.3x45	PN-76/M-82001	2
49	Screw M5x20-4.8-B Fe/Zn5	PN-85/M-82215	4

Unit name			Quantity
CHASSIS			
Figures' numbers		Unit/part No. set	T669/1
11, 12, 13			
Item	Part name	Figure No. or standard No.	
50	Nut M5-5-B Fe/Zn5	PN-86/M-82144	4
51	Washer Z5.1 Fe/Zn5	PN-77/M-82008	4
52	Bolt M20x70-8.8-B Fe/Zn5	PN-85/M-82101	4
53	Nut M20-8-B Fe/Zn5	PN-86/M-82144	6
54	Spring washer Z20.5 Fe/Zn5	PN-90/M-82008	6
55	Screw M8x16-8.8-B-Fe/Zn5	DIN 7991	16
56	Nut M10-8-B Fe/Zn5	PN-86/M-82144	4

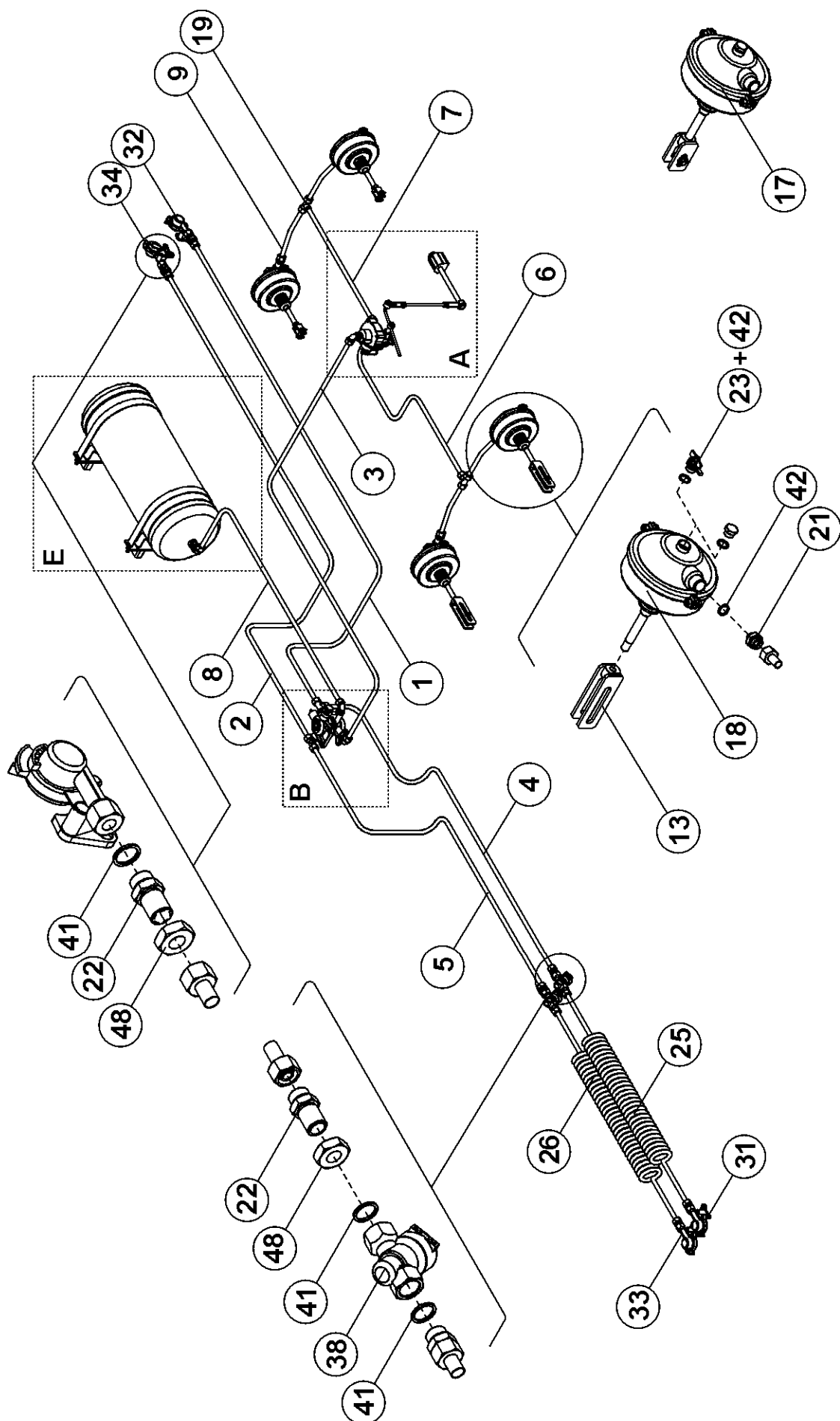


FIGURE 14. Two pipe brake hydraulic system with ALB

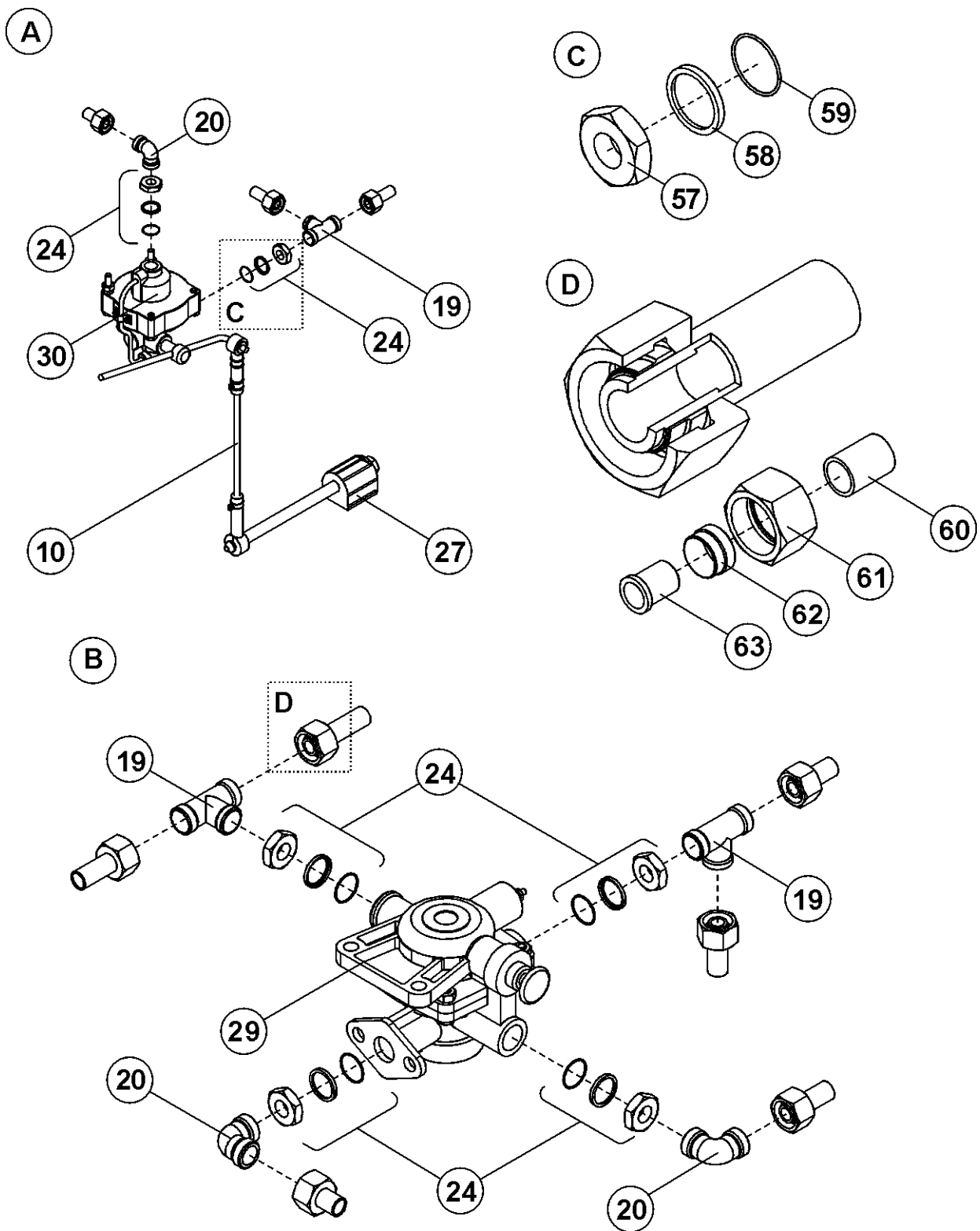


FIGURE 15. Two pipe brake hydraulic system with ALB

Unit name			Quantity
TWO PIPE BRAKE HYDRAULIC SYSTEM WITH ALB			
Figures' numbers		Unit/part No. set	T669/1
14, 15, 16		67RPN-03.00.00.00	
Item	Part name	Figure No. or standard No.	
1	Pipe BŁH W-W 5960	67RPN-03.01.00.00	1
2	Pipe BŁH W-W 5050	67RPN-03.02.00.00	1
3	Pipe BŁH W-W 4150	67RPN-03.03.00.00	1
4	Pipe BŁH W-W 2300	67RPN-03.04.00.00	1
5	Pipe BŁH W-W 1900	67RPN-03.05.00.00	1
6	Pipe BŁH W-W 1250	67RPN-03.06.00.00	1
7	Pipe BŁH W-W 450	67RPN-03.07.00.00	1
8	Pipe BŁH W-W 300	67RPN-03.08.00.00	1
9	Pipe BŁH W-W 210	67RPN-03.09.00.00	4
10	Rod	67RPN-03.00.00.02	1
11	Valve support, set	67RPN-00.00.04.00	1
12	Air tank support	64RPN-15.00.100	2
13	Servomotor fork	58RPN-12.01.000	2
14	Air tank band	45RPN-00.13.000	2
15	Plug	29RPN-11.00.002	1
16	Pin	29RPN-11.00.004	2
17	Servomotor 24" T25.24.000+ short fork, set		2
18	Servomotor 24" T25.24.000, no fork		2
19	Three-way coupler BŁH 063 309 066		5
20	Elbow coupler BŁH 063 206 054		4
21	Straight coupler BŁH M22x1.5/M16x1.5		4
22	Straight long coupler M22x1.5 063 130 047		4
23	Control coupler 333 200 108		2
24	Sealing set KMPL M22x1.5		7
25	Spiral hose 12x1.5/4500/2xM22x1.5/yellow	WS-8	1
26	Spiral hose 12x1.5/4500/2xM22x1.5/red	WS-7	1
27	Spring coupler 86.10.014.0		1
28	Air tank 585 000 000		1
29	Control valve 44.12.010.0		1
30	Brake force regulator 61.20.015.0		1
31	Pipe coupler 87.10.030.0		1
32	Pipe coupler 87.15.030.0		1
33	Pipe coupler 87.10.020.0		1
34	Pipe coupler 87.15.020.0		1
35	Self-tapping screw Ø5.5x19	DIN-7504-K	11
36	Drain valve 83.10.012.0		1
37	Control coupler 88.10.011.0		1
38	Filter 81.01.010.0		2
39	Band Ribencclip 16		13
40	Coupler clamp Art.-331000		2
41	Copper washer 27/22/2		11
42	Copper washer 22/17/2		6
43	Cotter pin S-Zn3.2x25	PN-76/M-82001	2
44	Bolt M12x25 5.8-B-Fe/Zn5	PN-85/M-82105	1
45	Bolt M10x35 5.8-B-Fe/Zn5	PN-85/M-82105	2
46	Bolt M8x35 5.8-B-Fe/Zn5	PN-85/M-82105	6
47	Bolt M8x25 5.8-B-Fe/Zn5	PN-85/M-82105	4
48	Nut M22x1.5-05-B-Fe/Zn5	PN-86/M-82153	4
49	Nut M10-5-B-Fe/Zn5	PN-86/M-82144	6

Unit name			Quantity
TWO PIPE BRAKE HYDRAULIC SYSTEM WITH ALB			
Figures' numbers 14, 15, 16		Unit/part No. set 67RPN-03.00.00.00	T669/1
Item	Part name	Figure No. or standard No.	
50	Nut M8-5-Fe/Zn5	PN-86/M-82144	8
51	Washer 13Fe/Zn5 Fe/Zn5	PN-78/M-82005	3
52	Washer 10.5 Fe/Zn5	PN-78/M-82005	2
53	Washer 8.4 Fe/Zn5	PN-78/M-82005	12
54	Spring washer Z12.2 Fe/Zn5	PN-77/M-82008	1
55	Spring washer Z10.2 Fe/Zn5	PN-77/M-82008	4
56	Spring washer Z8.2 Fe/Zn5	PN-77/M-82008	12
Compound elements of the sealing set (pos. 24), (given quantities refer to one set)			
57	Lock-nut M22x1.5		1
58	Ring 063.000.139		1
59	Oring 93H		1
Compound elements of the pipe BŁH (given quantities refer to one set)			
60	Pipe TEKALAN PA12 15x1.5 L=... ⊗	DIN74324	1
61	Nut BŁH M22x1.5 063.000.006		2
62	Clamping ring BŁH Ø15.2 063.00.005		2
63	Strengthening sleeve Ø12x17		2

⊗ - Attention! When ordering the pipe provide its length L (positions from 1 to 9)

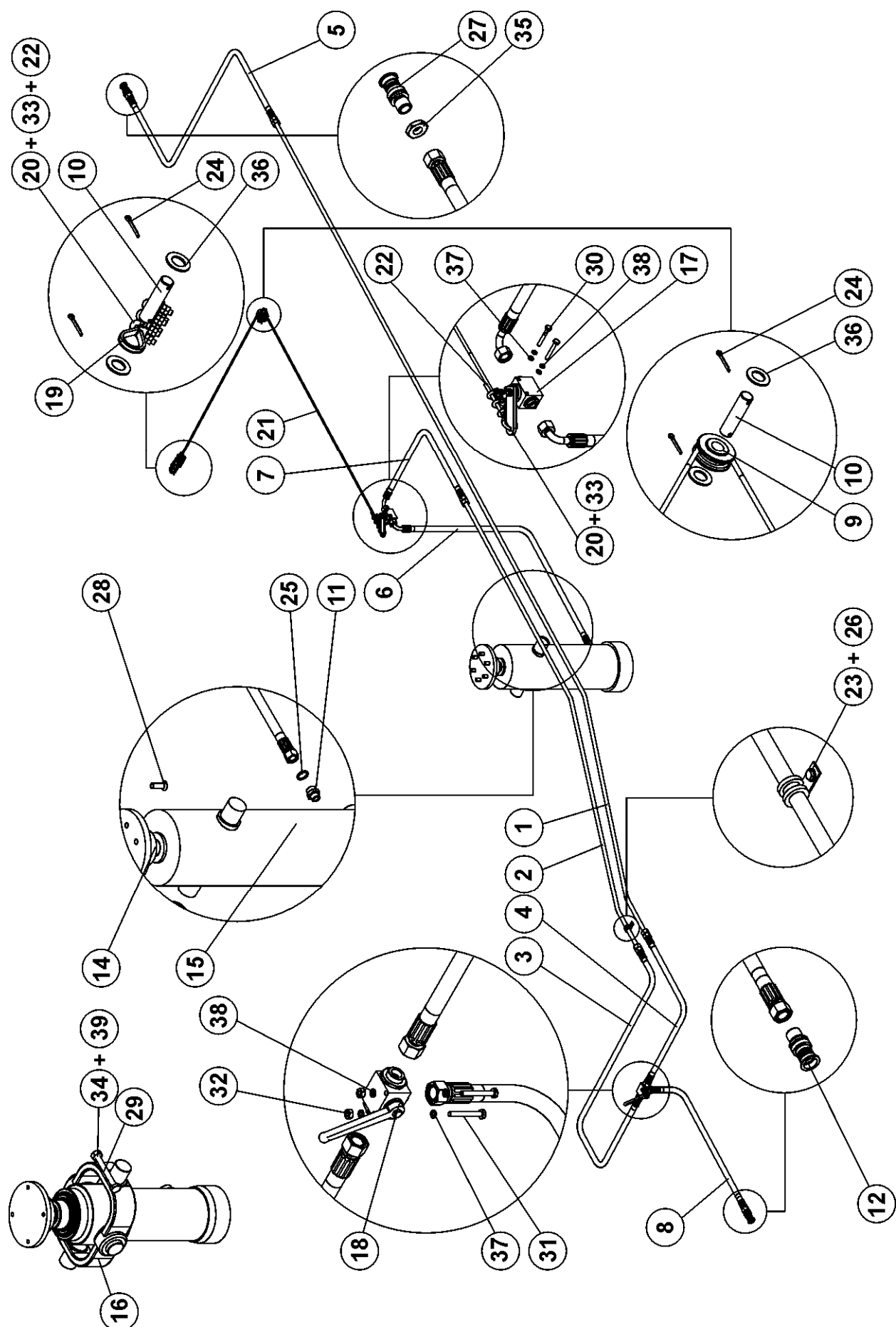


FIGURE 17. Hydraulic system of the dump

Unit name			Quantity
HYDRAULIC SYSTEM OF THE DUMP			
Figures' numbers		Unit/part No. set	T669/1
17			
Item	Part name	Figure No. or standard No.	
1	Pipe I, set	67RPN-05.01.00.00	1
2	Pipe II, set	67RPN-05.02.00.00	1
3	Pipe DN13 H2.12 H4.13 1800	67RPN-05.03.00.00	1
4	Pipe DN13 H2.12 H4.13 1300	53RPN-14.04.000	1
5	Pipe DN13 H2.12 H4.13 650	53RPN-14.07.000	1
6	Pipe DN13 H17.8 H2.12 800	45RPN-12.05.000	1
7	Pipe DN13 H17.8 H4.13 500	45RPN-12.06.000	1
8	Pipe DN13 H2.12 H2.12 2500	45RPN-12.07.000	1
9	Rope pulley	29RPN-13.00.001	1
10	Pulley axis	29RPN-13.00.002	2
11	Coupler body	12RPN-18.00.002	1
12	Quick coupler – plug ISO 12.5	SZ12-W06	1
13	Plug-in socket ISO		1
14	Spherical bearing 55 ŁK-S01-55/0.00		1
15	Tel. cylinder CT-S226-16-75/5/2400	CT-S226-75/0.00	1
16	Cylinder sling ZCT-145		1
17	Cut off valve Pister	HBKH-15L-DN13	1
18	Hydraulic three-way valve	29RPN-13.00.003	1
19	Thimble A6 oc.	PN-66/M-80247	1
20	Bow clamp 6.5 oc	PN-73/M-80241	4
21	Cord Ø6 6x19+P+p l=3250		1
22	Thermoshrinkable pipe PBF 12/6 l=30	BN-89/C-89209	2
23	Band RIBENCLIP 16		15
24	Cotter pin S-Zn 4x32	PN-76/M-82001	4
25	Copper washer 27/22/2		1
26	Self-tapping screw Ø5.5x19	DIN-7504-K	12
27	Quick coupler – socket ZSR 12.5	ZSR12-G06L	1
28	Screw M12x25-8.8-B-Fe/Zn5	DIN 7991	6
29	Bolt M12x110-8.8-B-Fe/Zn5	PN-85/M-82101	2
30	Bolt M6x45-5.8-B-Fe/Zn5	PN-85/M-82101	2
31	Bolt M6x50-5.8-B-Fe/Zn5	PN-85/M-82101	2
32	Nut M6-5-B-Fe/Zn5	PN-86/M-82144	2
33	Nut M5-5-B-Fe/Zn5	PN-86/M-82144	16
34	Nut M12-5-B-Fe/Zn5	PN-86/M-82144	2
35	Nut M22x1.5-0.4-B-Fe/Zn5	PN-86/M-82153	1
36	Washer 17-Fe/Zn5	PN-78/M-82005	4
37	Washer 6.4-Fe/Zn5	PN-78/M-82005	6
38	Washer 6.1-Fe/Zn5	PN-77/M-82008	4
39	Washer Z12.2-Fe/Zn5	PN-77/M-82008	2

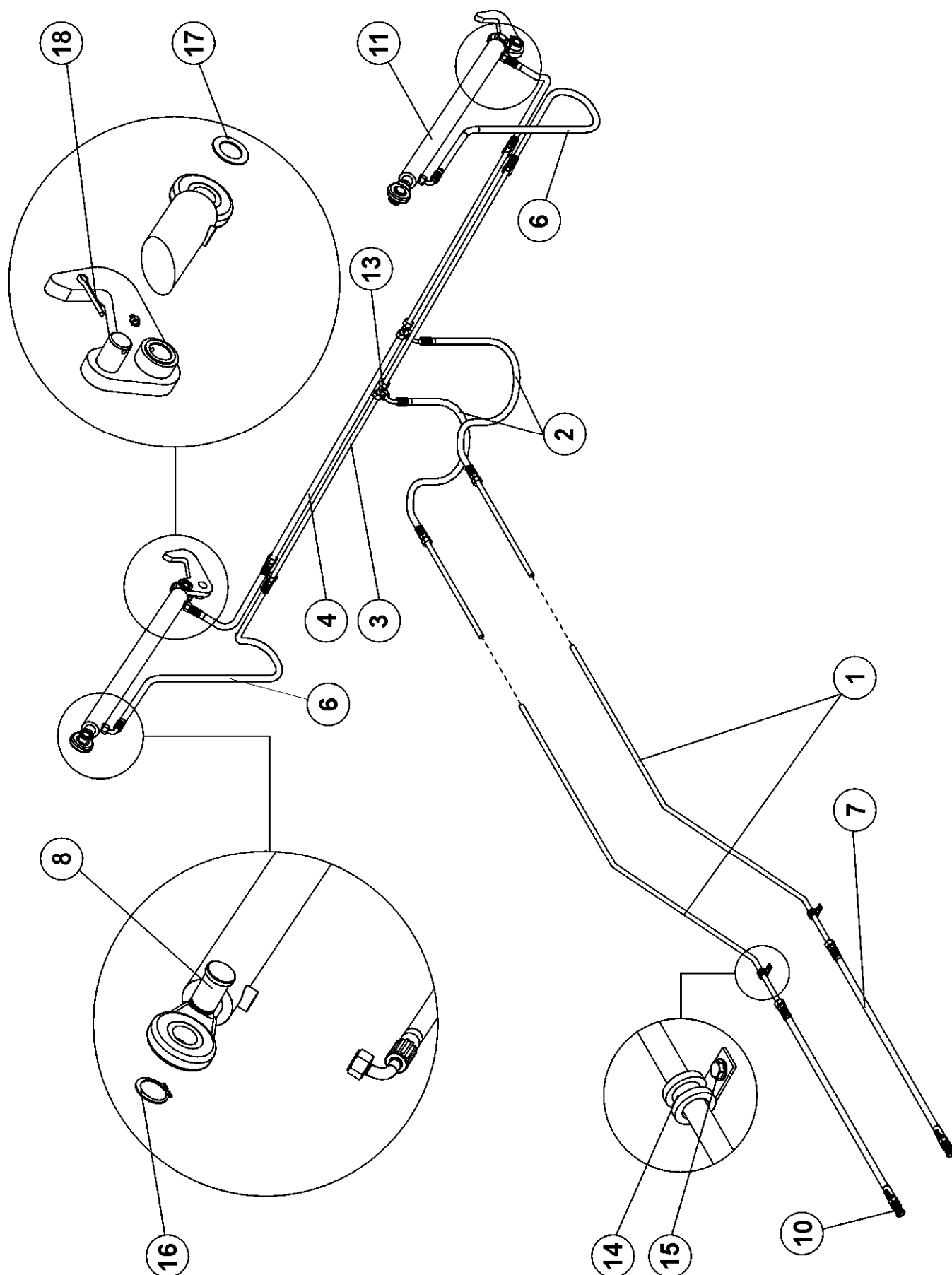


FIGURE 18. Hydraulic system of the hatch lifting mechanism

Unit name HYDRAULIC SYSTEM OF THE HATCH LIFTING MECHANISM KITEMAY			Quantity
Figures' numbers 18		Unit/part No. set	T669/1
Item	Part name	Figure No. or standard No.	
1	Pipe I, set	67RPN-04.01.00.00	2
2	Pipe DN13 H17.8 H4.13 1400	67RPN-04.02.00.00	2
3	Pipe III set	58RPN-14.02.000	2
4	Pipe IV set	58RPN-14.03.000	2
5	Pipe DN13 H2.12 H4.13 700	58RPN-14.05.000	2
6	Pipe DN13 H17.8 H4.13 1300	58RPN-14.06.000	2
7	Pipe DN13 H2.12 H4.13 2900	58RPN-15.02.000	2
8	Pin	58RPN-14.00.001	2
10	Quick coupler – plug ISO 12.5	SZ12-W06	2
11	Hydraulic cylinder 50sj36A/800m5b15	33RPN-04.07.00.00	2
12	Plug-in socket ISO		2
13	Three-way coupler body 1613	PN-66/M-73147	2
14	Band RIBENCLIP 16		18
15	Self-tapping screw Ø5.5x19	DIN-7504-K	18
16	Mounting ring Z30	PN-81/M-85111	2
17	Washer 30 Fe/Zn5	PN-90/M-82004	2
18	Cotter pin S-Zn 6.3x45	PN-76/M-82001	2

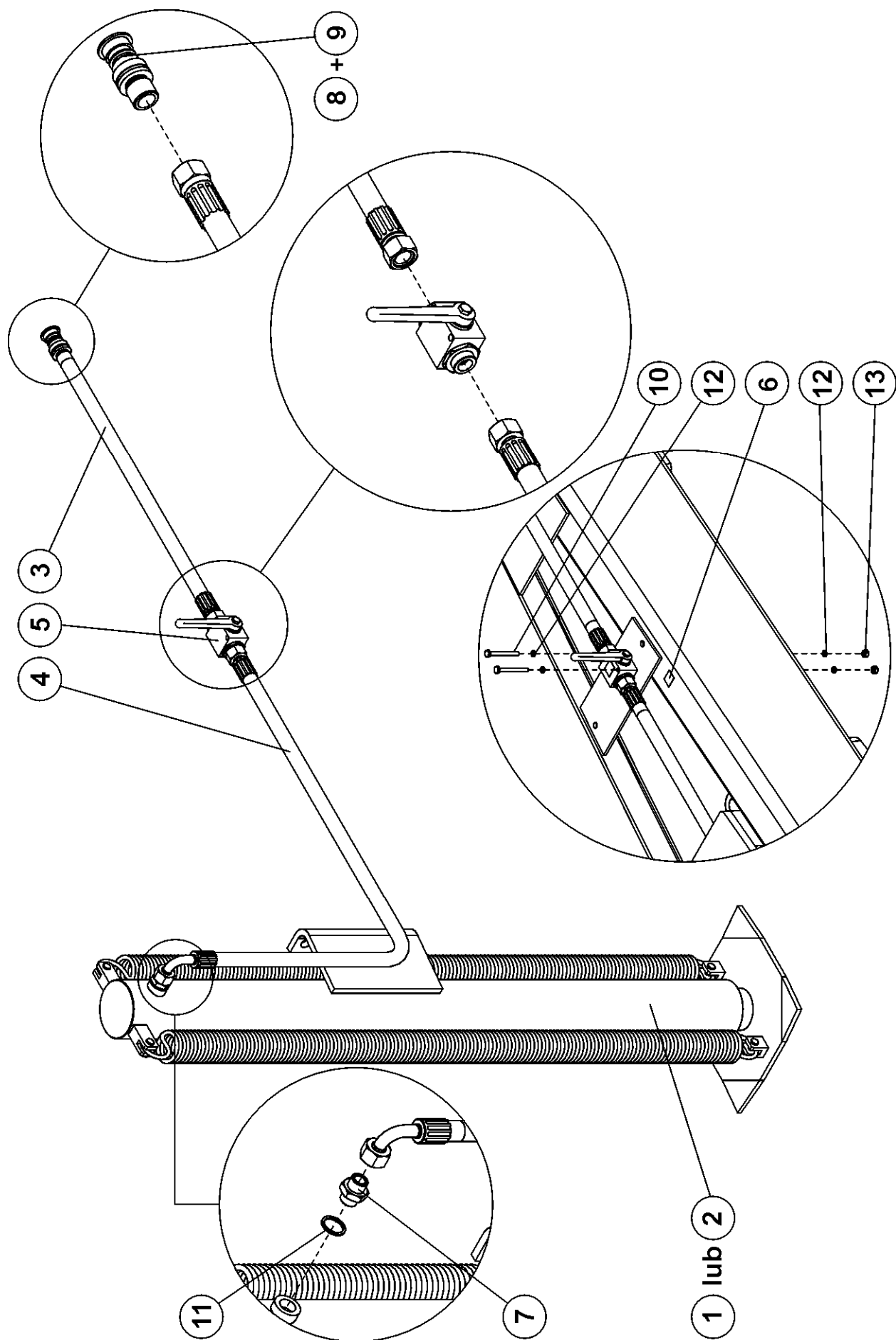


FIGURE 19. Hydraulic system of the support

Unit name			Quantity
HYDRAULIC SYSTEM OF THE SUPPORT			
Figures' numbers		Unit/part No. set	T669/1
19		58RPN-19.00.000 58RPN-13.00.000	
Item	Part name	Figure No. or standard No.	
1	Support, set	58RPN-00.02.000	
2	Rotatable draught bar support, set	58RPN-00.03.000	
3	Pipe DN13 H2.12 H2.12 1800	58RPN-13.01.000	
4	Pipe DN13 H17.8 H2.12 300	58RPN-13.02.000	
5	Hydraulic valve	45RPN-26.00.001	
6	Label „O/Z”	45RPN-26.00.002	
7	Coupler body	12RPN-18.00.002	
8	Quick coupler – plug ZSR12.5	ZSR12-W06L	
9	Cap for connectors ISO 12.5		
10	Bolt M6x50-5.8-B-Fe/Zn5	PN-85/M-82101	
11	Copper washer	27/22/2	
12	Washer Z6.1-Fe/Zn5	PN-77/M-82008	
13	Nut M6-8-B-Fe/Zn5	PN-86/M-82144	

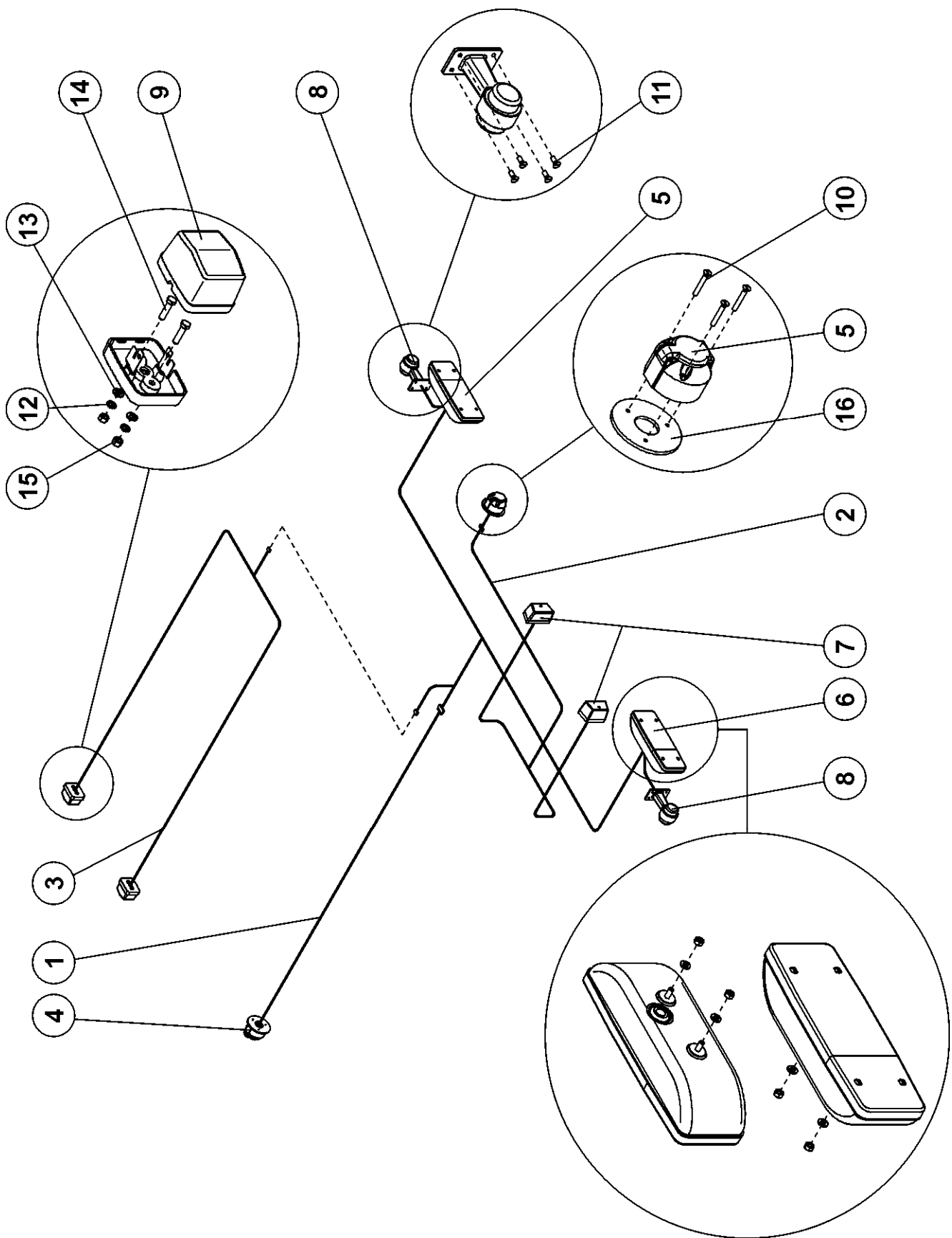


FIGURE 20. Wiring system

Unit name			Quantity
WIRING SYSTEM			
Figures' numbers		Unit/part No. set	T669/1
20		58RPN-09.00.000	
Item	Part name	Figure No. or standard No.	
1	Central bundle	58RPN-11.01.00	1
2	Rear bundle	67RPN-10.01.00.00	1
3	Front bundle	67RPN-10.02.00.00	1
4	Socket GN-7(X7)	8JB001941-002	2
5	Rear complex light WE 54P	04	1
6	Rear complex light WE 54L	03	1
7	Driving licence plate light	LT120	2
8	Contour light	127 021 00 00	2
9	Front side-light LO-110PP		2
10	Screw M5x35-5.8 Fe/Zn5	PN/M82207	6
11	Screw M5x16 B Fe/Zn5	PN/M-82201	8
12	Spring washer 5.1 Fe/Zn9	PN/M-82008	4
13	Washer 5.3 Fe/Zn5	PN/M-82005	4
14	Nut M5-8-Fe/Zn5	PN/M-82144	4
15	Bolt M5x25-B-5.8 Fe/Zn5	PN/M-82105	4
16	Washer of the seven-pin socket	006004.60	2
	Connector	29RPN-10.05.00	1

LIGHT BULB SET		Pieces
Front side-light LO-110PP	C5W-SV 8.5	1
	P21W	1
Right back complex lamp (left)	P21/5W	1
	R5W	1
Driving licence plate light LT-120	C5W-SV 8.5	1
Contour right light (left)	R5W	1

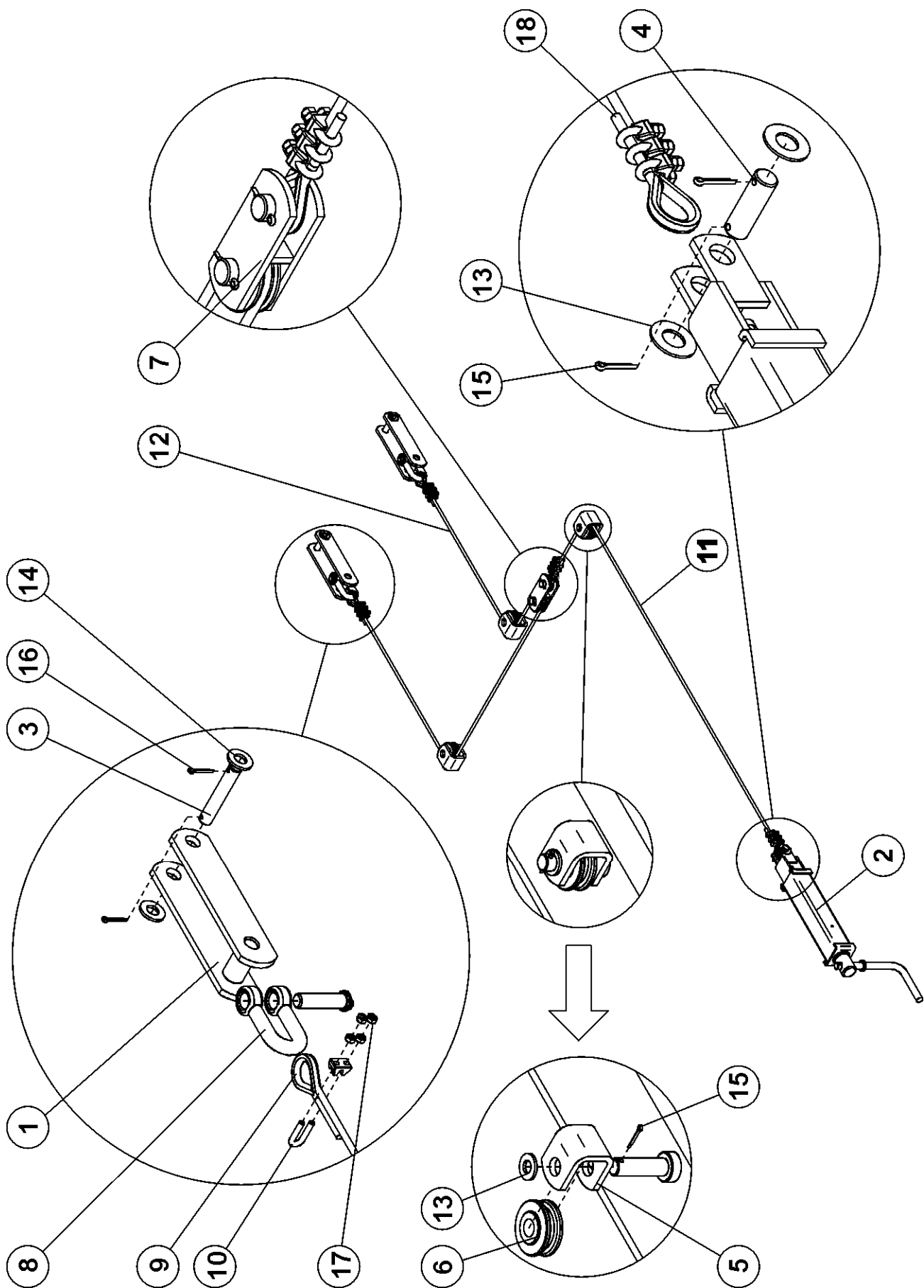


FIGURE 21. Hand brake

Unit name			Quantity
HAND BRAKE			
Figures' numbers		Unit/part No. set	T669/1
21		58RPN-09.00.000	
Item	Part name	Figure No. or standard No.	
1	Hand brake pulling off device	45RPN-22.01.000	2
2	Brake gear	29RPN-12.01.000	1
3	Brake pin	45RPN-22.00.002	2
4	Pin	29RPN-12.00.001	1
5	Cord attachment	29RPN-01.00.018	3
6	Cable wheel	29RPN-13.00.001	3
7	Brake pulley block	31RPN-05.01.000	1
8	Screw catch S.2768	SPRAEX	2
9	Thimble A6 zinc	PN-66/M-80247	4
10	Bow clamp 6.5 oc.	PN-73/M-80241	12
11	Cord I Ø6x19+P+p l=1900		1
12	Cord II Ø6x19+P+p l=2300		1
13	Washer 17 Fe/Zn5	PN-78/M-82005	5
14	Washer 13 Fe/Zn5	PN-78/M-82005	4
15	Cotter pin S-Zn 4x40	PN-76/M-82001	5
16	Cotter pin S-Zn 3.2x25	PN76/M-82001	4
17	Nut M5-5-B Fe/Zn5	PN-86/M-82144	24
18	Thermoshrinkable pipe PBF 12/6 l=30	BN-89/C-89209	4

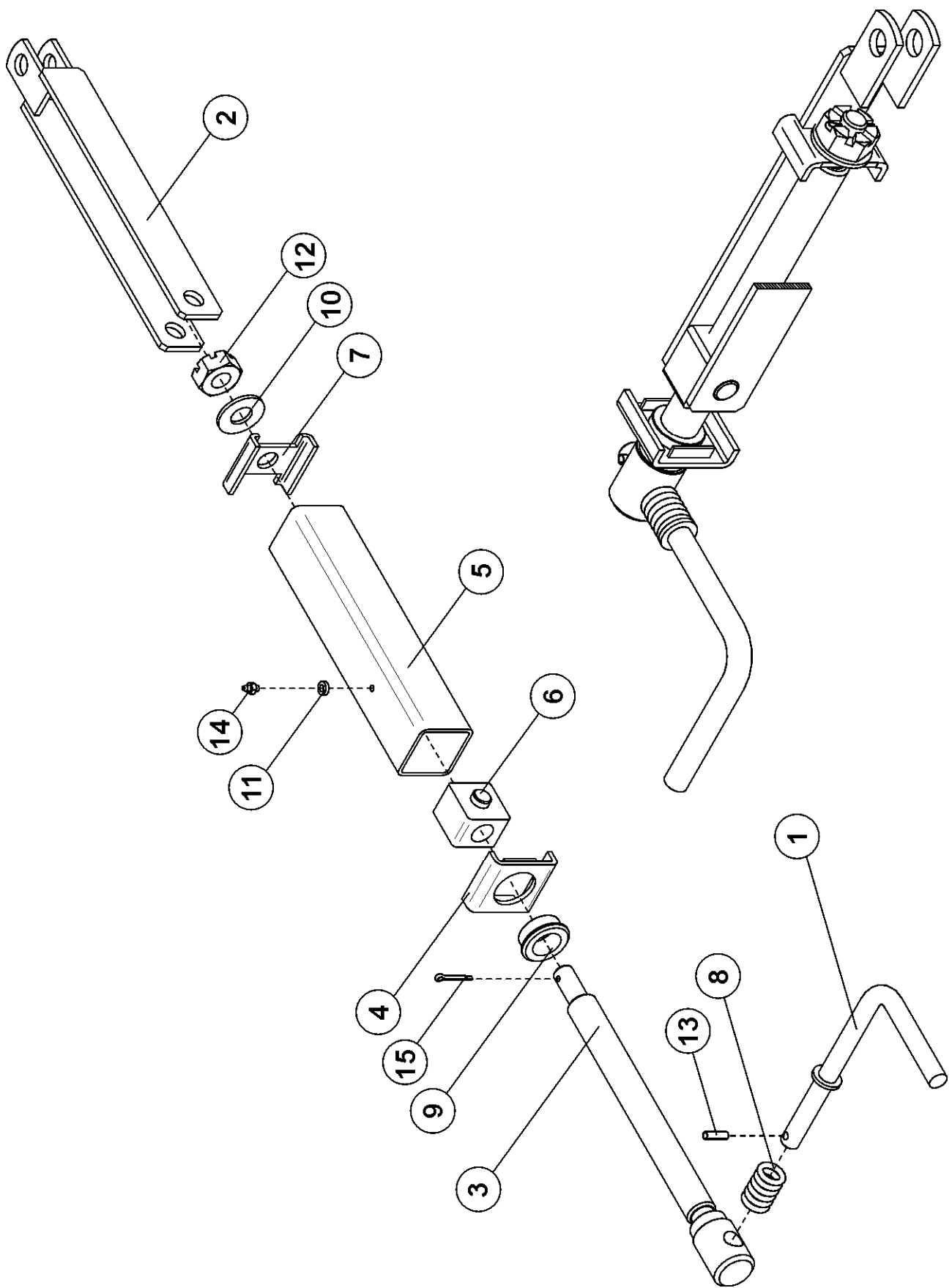


FIGURE 22. Brake gear

Unit name			Quantity
BRAKE GEAR			
Figures' numbers		Unit/part No. set	T669/1
22		29RPN-12.01.000	
Item	Part name	Figure No. or standard No.	
1	Crank handle, set	29RPN-12.01.100	1
2	Strand, set	29RPN-12.01.200	1
3	Bolt, set	29RPN-12.01.300	1
4	Hole plug, set	29RPN-12.01.400	1
5	Body	29RPN-12.01.001	1
6	Nut	29RPN-12.01.002	1
7	Hole plug	29RPN-12.01.003	1
8	Spring	29RPN-12.01.004	1
9	Sleeve	29RPN-12.01.005	1
10	Washer 17 Fe/Zn5	PN-78/M-82005	1
11	Washer 6.4 Fe/Zn5	PN-78/M-82005	1
12	Castellated nut K M16-5-C Fe/Zn5	PN-86/M-82148	1
13	Spring-type straight pin 6x24	PN-89/M-85023	1
14	Lubricating nipple M6	PN-76/M-86002	1
15	Cotter pin	PN-76/M-82001	1

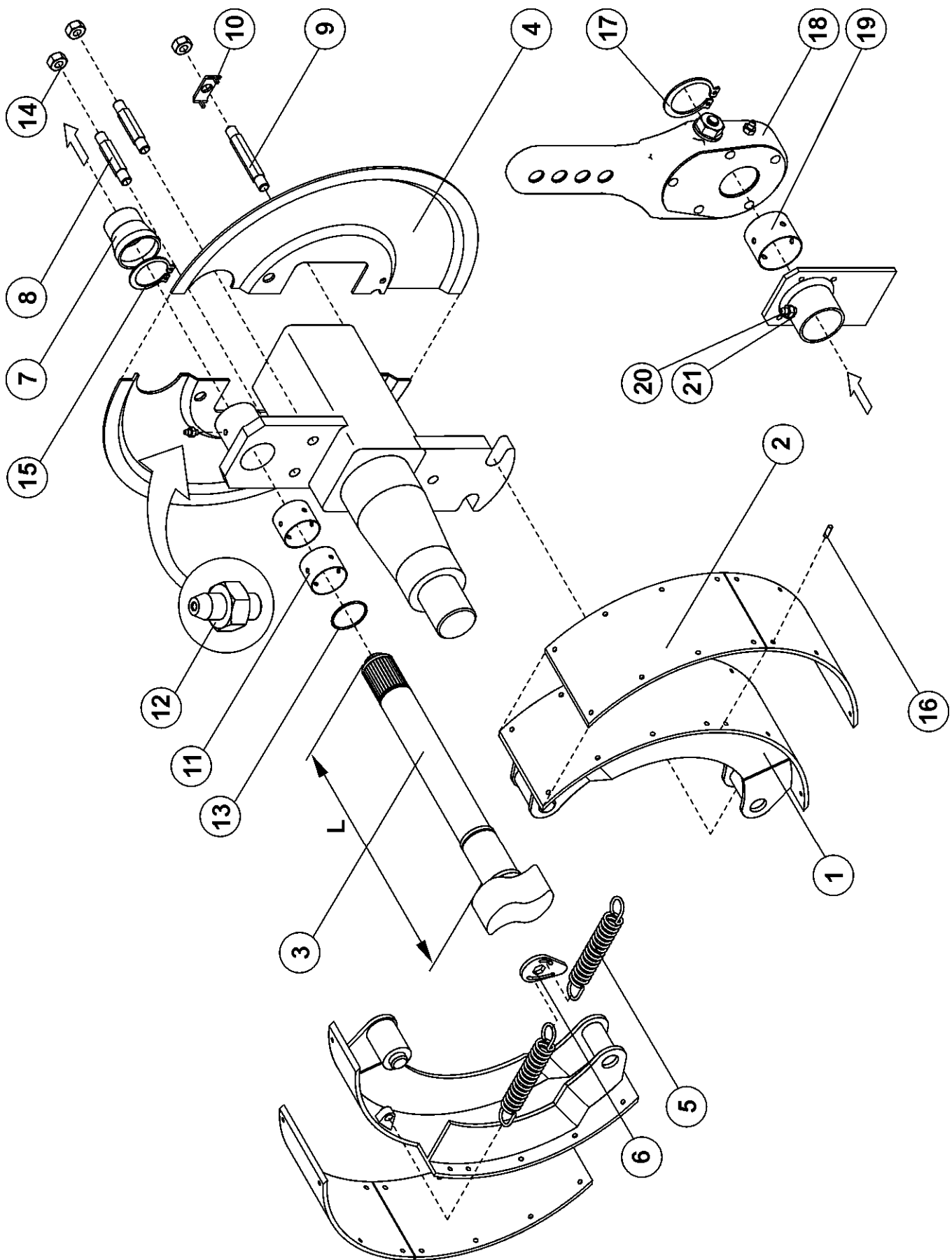


FIGURE 23. Traveling axis brake

Unit name			Quantity
TRAVELING AXIS BRAKE			
Figures' numbers		Unit/part No. set	T669/1
23			
Item	Part name	Figure No. or standard No.	
1	Brake shoe	9FC412	2
2	Brake lining	9FCI406-GUARN	4
3	Expander shaft	LEWY 756S4N	1
4	Brake drum cover set	910PP412 100	1
5	Spring	914M412/30	2
6	Tightener	914SP262	1
7	Rubber cover	915C42	1
8	Special bolt	906A10A	2
9	Special bolt	906B10B	1
10	Special washer	915R10/21S	1
11	Bearing sleeve	921B42	2
12	Lubricating nipple	914INGR45	1
13	Sealing ring	921OR146	1
14	Self-locking nut	908DA10B	3
15	Outer expanding ring	914RES42	1
16	Rivet	930RIV	44
17	Outer expanding ring	915RES25	1
18	Brake lever	761W20004c0	1
19	Sleeve	921B38	1
20	Lubricating nipple	914INGR	1
21	Washer	915R08	1

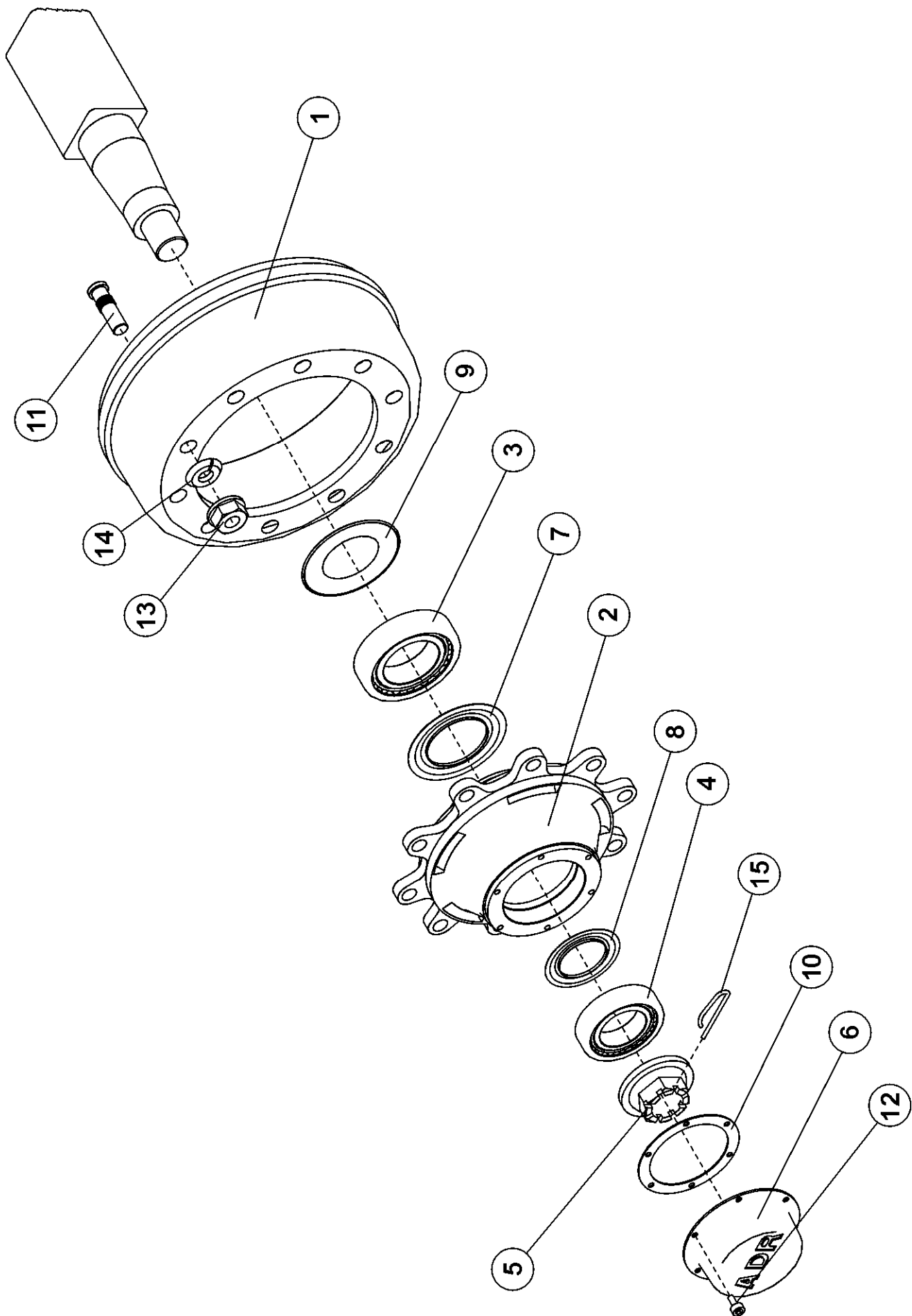


FIGURE 24. Drum hub and bearing of the traveling axis

Unit name			Quantity
DRUM HUB AND BEARING OF THE TRAVELING AXIS			
Figures' numbers		Unit/part No. set	T669/1
24			
Item	Part name	Figure No. or standard No.	
1	Brake drum	66LV1050	1
2	Hub	611L0125150170	1
3	Bearing	902CC32217	1
4	Bearing	902CC32214	1
5	Castellated nut M48x1.5	908DF48/65	1
6	Hub cover	912T125AC	1
7	Bearing cover	915N32217	1
8	Bearing cover	915PA72	1
9	Oil sealing	915PI150/87	1
10	Gasket	918G125	1
11	Pin	903C22L1	10
12	Bolt M8x1.25	914VB8x10	6
13	Nut M22x1.5	903D228G	10
14	Spring washer	903RL22G	10
15	Cotter pin	914C48E	1

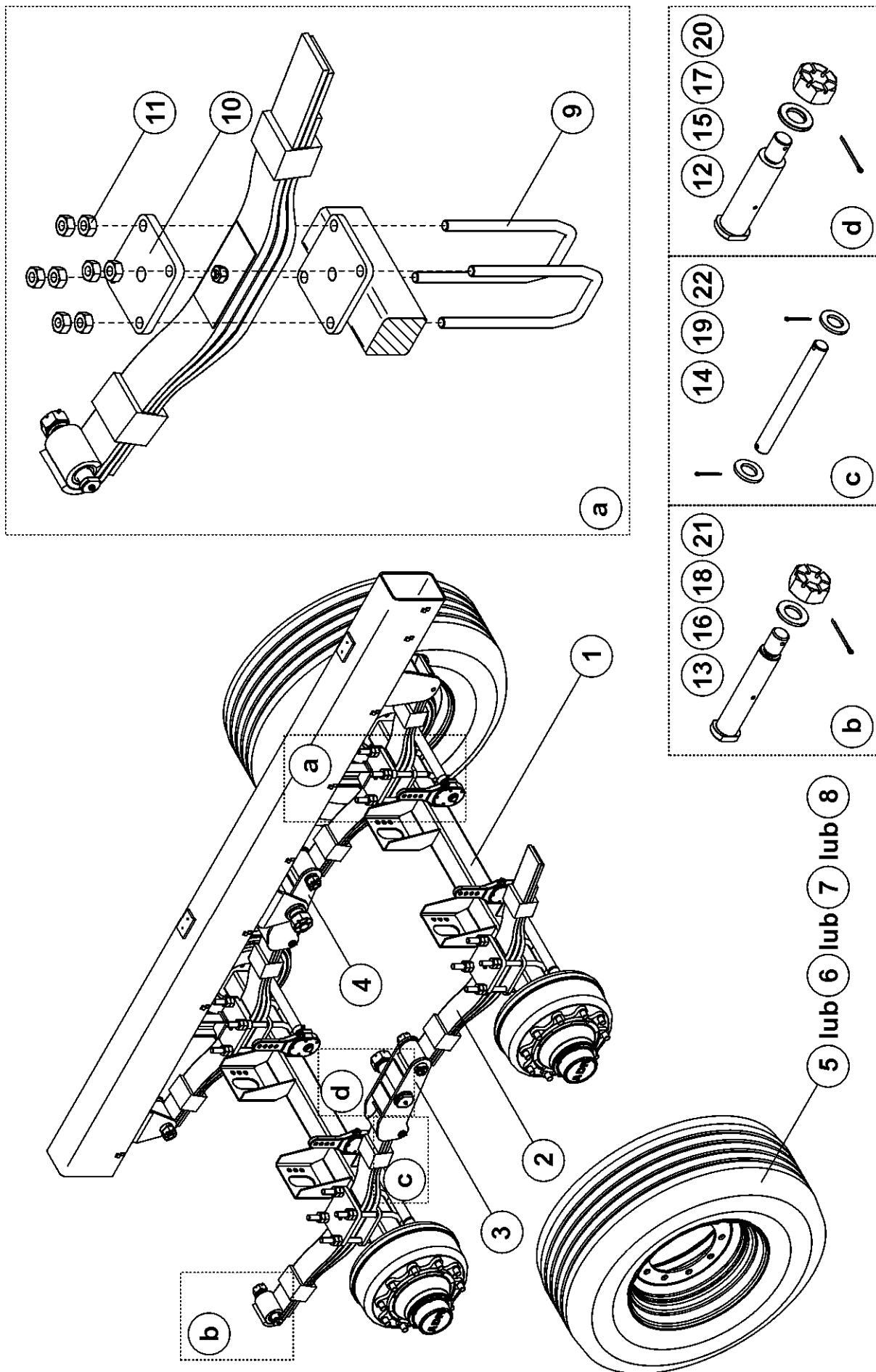


FIGURE 25. Suspension

Unit name			Quantity
SUSPENSION			
Figures' numbers		Unit/part No. set	T669/1
25			
Item	Part name	Figure No. or standard No.	
1	Travelling axis	67RPN-00.03.00.00	2
2	Parabolic spring	67RPN-00.04.03.00	4
3	Left rocker arm, set		1
4	Right rocker arm, set	67RPN-00.04.01.00	1
5	Wheel set 50x20 R22 32PR	58RPN-00.07.000-01	4
7	Wheel set 550/60 R22.5 16PR ⊗	58RPN-00.07.000-03	4
8	Wheel set 600/50-R22.5 16PR ⊗	58RPN-00.07.000-04	4
9	Bow screw	58RPN-00.00.004	8
10	Top spring plate	58RPN-00.00.003	4
11	Nut M20x1.5-5-B-Fe/Zn5	PN-86/M-82144	32
12	Rocker arm pin, set	67RPN-00.04.02.00	2
13	Suspension spring pin, set	62RPN-00.00.300	4
14	Suspension spring pin	45RPN-00.03.001	4
15	Washer	37RPN-18.00.002	2
16	Castellated nut Z M24-8-B-Fe/Zn5	PN-86/M-82148	4
17	Castellated nut Z M36x3-8-B-Fe/Zn5	PN-86/M-82148	2
18	Washer 25 Fe/Zn5	PN-78/M-82005	4
19	Washer 17 Fe/Zn5	PN-78/M-82005	8
20	Cotter pin S-Zn 6.3x71	PN-76/M-82001	2
21	Cotter pin S-Zn 5x50	PN-76/M-82001	4
22	Cotter pin S-Zn 4x32	PN-76/M-82001	8
23	Travelling axis	67RPN-00.03.00.00 ALB	2

⊗ - on special request

NOTES