

MANUFACTURER



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SINGLE AXLE AGRICULTURAL TRAILER THREE-WAY TIPPER

T655

OPERATOR'S MANUAL

Machine identification

Symbol /Type: T655
Symbol KTM: 1026-636-847-507
Serial number:

The factory number is stamped into the data plate and on the beam of the trailer's front frame. Data plate is riveted to the trailer's load box.

When buying the trailer check that the serial number corresponds with that indicated in the Warranty Book, in the sales documents and in the Operator's Manual.

The hydraulic system is filled with HL32 hydraulic oil.

Quality Control marking

The Operator's Manual and spare parts catalogue are valid together with annex number dated

The manufacturer reserves the right to introduce design changes in machines produced that facilitate operation and improve the quality of their work.

Please send comments and observations on the subject of the design and operation of the machine to the manufacturer. This information enables objective evaluation of the machines produced and provides indications for their further modernisation.

Information on significant design changes are passed on to users with the aid of the information insert attached to this Operator's Manual (annexes).

ATTENTION!

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

Before using the machine, the user must familiarise himself with the content of this Operator's Manual and observe all recommendations. This guarantees safe operation and ensures malfunction free work of the machine.

The machine is designed to meet obligatory standards, documents and legal regulations currently in force.

The trailer possesses CERTIFICATE NO..... authorising marking the product with the safety mark valid for the period from to..... issued by INSTITUTE FOR BUILDING, MECHANIZATION AND ELECTRIFICATION IN AGRICULTURE (IBMER), Warsaw.

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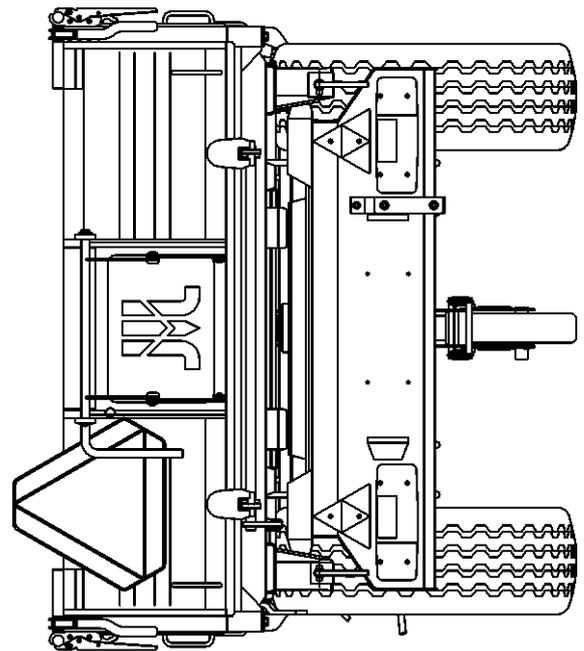
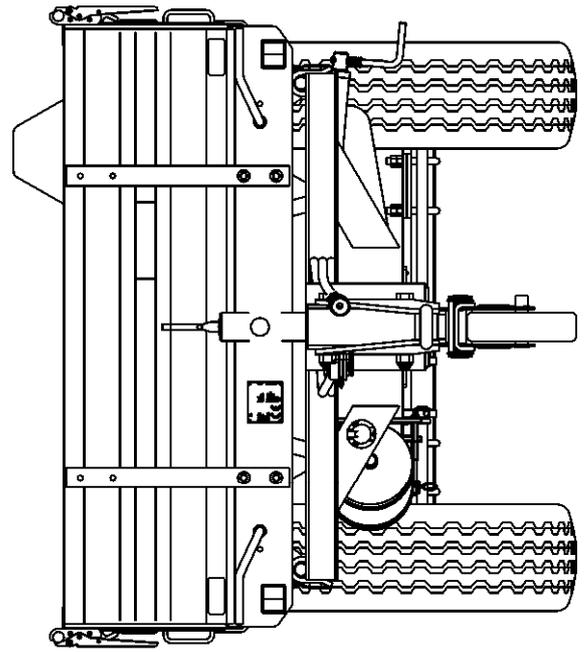
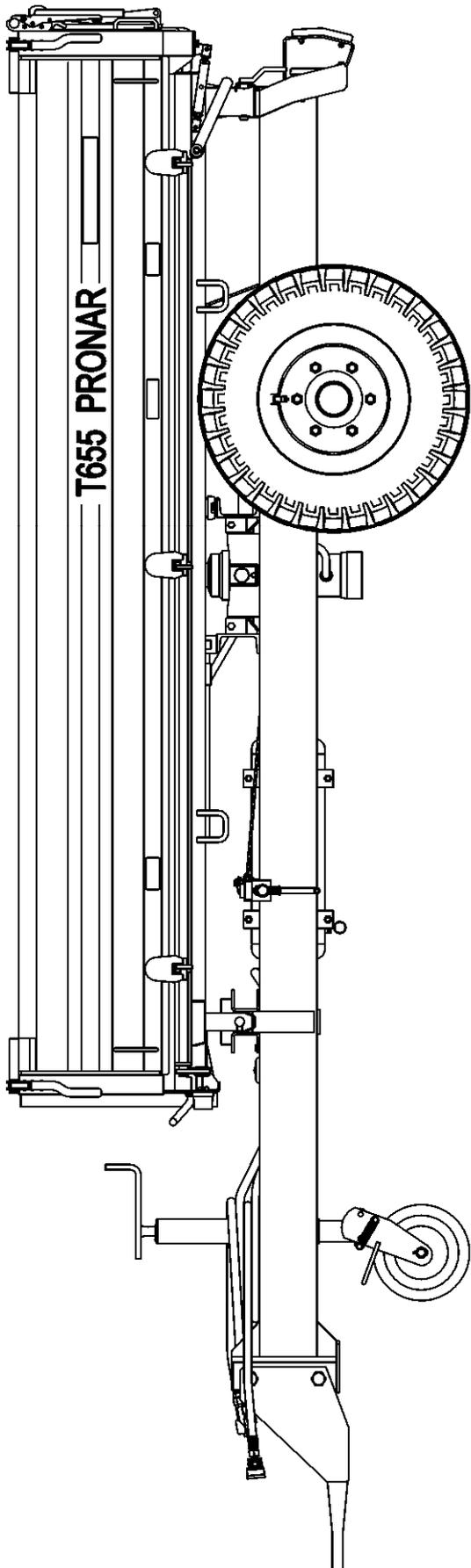


Fig. 1. Trailer T655

1 INTRODUCTION

1.1 BASIC INFORMATION

The manual describes the basic principles of safe use and operation of agricultural trailer. If the information contained in the Operator's Manual needs clarification then the user should refer for assistance to the sale point where the machine was purchased or directly to the manufacturer.

Particularly important information and instructions, the observance of which is essential, are distinguished by the bold typeface or preceded with the word "ATTENTION".

Information, descriptions of danger and precautions and also recommendations and orders associated with user safety instructions are marked:



and mentioned in the section "Safety in use"

1.2 INTENDED USE

The trailer is designed for transport of harvested crops and agricultural products as well as loose and bulk materials in the vicinity of the farm and on public roads at a maximum speed of 30 km/h.

The braking system and the light and indicator system meet the requirements of road traffic regulations.

Axle system (axles, wheels and tyres), meet the requirements of agricultural trailers, which according to road traffic regulations can be used at a maximum allowable speed of 30 km/h. The fulfilment of these requirements is a condition of proper operation and adherence to the principles contained in this operator's manual.

The trailer is designed for use with agricultural tractors, equipped with external hydraulic systems and hitches for single axle trailers.



ATTENTION!

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

- **for transporting people and animals,**
- **for transporting loose unsecured toxic materials, if there is a possibility of causing environmental damage,**
- **for transporting machines and equipment, with centre of gravity location impairing the trailer stability,**
- **for transporting loads with uneven loading and overloading of axles,**
- **for transporting unsecured loads, which may move in the load box platform.**

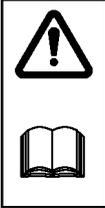
2 SAFETY IN USE



- Before using the trailer, the user must thoroughly familiarise himself with the content of these instructions. While using it, follow all the recommendations contained in them.
- If the information contained in the Operator's Manual is difficult to understand, contact a seller who runs an authorised technical service on behalf of the manufacturer, or contact the manufacturer directly.
- Careless and improper use and operation of the trailer, and non-adherence to the recommendations included in this Operator's Manual is dangerous for the health.
- Non-adherence to the principles of safe use can be dangerous to the health and life of the operator and others.
- Be warned that a minimal risk does exist, and for this reason the fundamental basis for using this trailer should be the application of safety principles and sensible behaviour.
- The machine must never be used by persons who are not authorised to drive agricultural tractors, including children and people under the influence of alcohol or other drugs.
- The trailer must not be used for purposes other than those for which it is intended. Anyone who uses the trailer other than the way intended takes full responsibility for himself for any consequences of this potentially improper use.
- Any modification to the trailer frees PRONAR Narew from any responsibility for damage or detriment to health which may arise as a result.
- Before using the trailer always check its technical condition. In particular, check the technical condition of the hitch system, the axle system, brake systems and indicator lights.
- Check condition of machine hydraulic system frequently, oil leaks are not permissible.
- Be especially careful when attaching the trailer.
- To hitch the trailer to a tractor, use exclusively the hitch for single axle trailers. Check safety clips.
- When attaching, there must be nobody between the trailer and the tractor.
- The trailer can only be stood on when it is absolutely motionless and the tractor engine is switched off and parking brake is engaged.
- Do NOT proceed with disconnecting trailer from the tractor when load box is raised on a telescopic cylinder. Exercise caution when disconnecting trailer.
- The trailer unhitched from tractor must be immobilised with parking brake. If the trailer is positioned on a slope or elevation it shall be additionally secured against moving by placing wedges or other objects without sharp edges under the trailer's wheels.

- Load on the trailer must be uniformly distributed.
- The maximum carrying capacity must not be exceeded.
- Do not tow the trailer when loadbox is raised. People or animals must not be carried on the trailer.
- Ensure that during unloading nobody is near tipped load box or load material pouring out.
- Keep a safe distance from electric power lines during unloading and when load box is raised.
- In the event of any fault or damage whatsoever, do not use the trailer until the fault has been fixed.
- Do NOT perform any maintenance or repairs on the load box that is loaded, raised or not supported.
- When operating the trailer wear protective gloves and use the appropriate tools.
- Servicing and repair work should be carried out in line with the general principles of workplace health and safety. In the event of injury, the wound must be immediately cleaned and disinfected. In the event of more serious injuries, seek a doctor's advice.
- The trailer is labelled with the information and warning stickers listed in table 1. Throughout the time it is in use, the trailer's user is obliged to take care that notices and warning and information symbols located on the machine are clear and legible. In the event of their destruction, they must be replaced with new ones. Stickers with notices and symbols are available from the manufacturer, or from the retailer where the trailer was purchased.

Tab. 1. Information and warning stickers.

Safety symbol or message	Meaning of symbol	Positioning on the machine
	Read operating instructions	Front wall
	Switch off engine and remove key from ignition prior to servicing or repairs,	Front wall
<div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center;">UWAGA!</p> <p>Zabrania się wykonywania prac obsługowo - naprawczych pod obciążoną lub podniesioną i niepodpartą skrzynią ładunkową</p> </div>		Front wall

Tab. 1. Information and warning stickers, continued

Safety symbol or message	Meaning of symbol	Positioning on the machine
Łączenie tylko z zaczepem do przyczep jednoosiowych		Front wall
Ładowność 2000 kg		Left and right wall
390 kPa	Air pressure in the tyres 10.0/75-15.3 14PR	Above wheels, left and right wall
<p>Przed rozładunkiem przyczepy odblokować dwa sworznie łączące skrzynię z ramą, po przeciwnej stronie wysypu.</p> <p>Podniesiona skrzynia ładunkowa, zachować bezpieczną odległość.</p>		Front wall

2.1 PRINCIPLES WHEN TRAVELLING ON PUBLIC ROADS

- When travelling on public roads, respect the road traffic regulations.
- Exceeding the maximum load capacity of the trailer may damage it, and also threaten the safety of traffic.
- Under no circumstances, do NOT exceed the maximum design speed of 30 km/h. Adjust your speed to the road conditions.
- The trailer is designed to operate on slopes up to 8°. Tipping of the load box can only be done when trailer is positioned on a flat surface.
- The trailer must NOT be left unsecured. Securing involves engaging the parking brake.
- While driving on public roads the trailer must be fitted with a certified or authorised reflective warning triangle.
- If the trailer is the last vehicle in the group, a slow-moving vehicle sign should be placed on the trailer's rear load box wall – (figure 2).

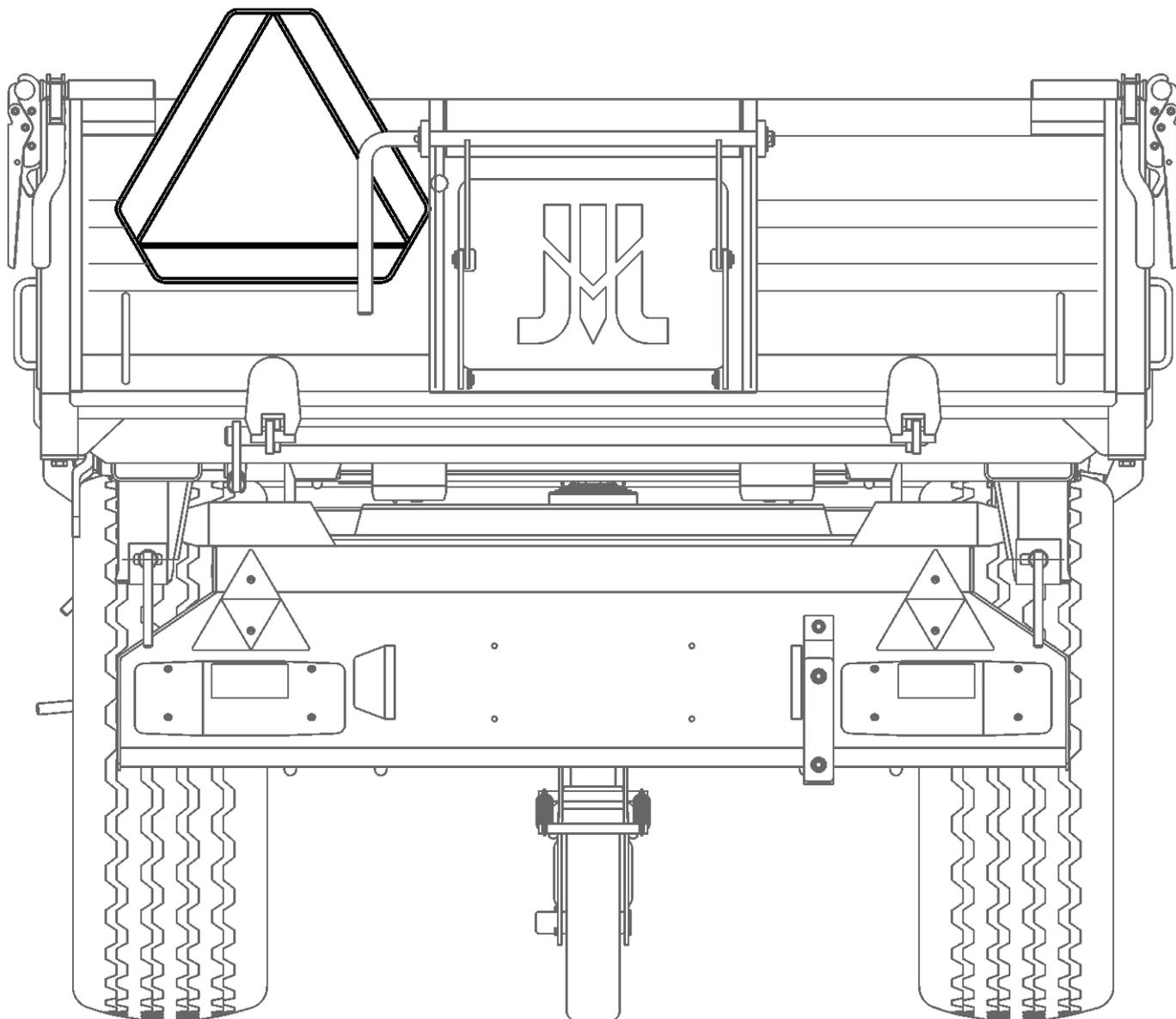


Fig. 1. Location of the slow-moving vehicle warning sign.

3 ADDITIONAL INFORMATION

3.1 TRAILER ACCESSORIES

The standard equipment and accessories of each trailer include:

- operator's manual and a list of replacement parts. - 1
- Warranty book - 1
- Connection lead for the electrical system - 1

At the request of the recipient, the manufacturer may equip the trailer with the following additional equipment:

- Warning reflective triangle
- Slow-moving vehicle warning sign

3.2 WARRANTY CONDITIONS

"PRONAR" Sp. z o.o. in Narew guarantees the reliable operation of the machine when it is used according to the technical usage instructions described in the Operator's Manual.

Faults discovered during the warranty period will be rectified by the Warranty Service within no more than 14 working days of the machine being received for repair by the Warranty Service, or within another agreed time.

The guarantee does not apply to parts and sub-assemblies of the machine, which are subject to wear in normal usage conditions, regardless of the warranty period. normal tyre wear, brake linings, mechanical damage, damage arising from improper use, adjustment and maintenance.

Detailed guarantee regulations are contained in the Warranty Book attached to each trailer.



ATTENTION!

Demand that the seller carefully and precisely fills out the Warranty Book and guarantee repair coupons. A missing date of purchase or sale point stamp, may make the user ineligible for any warranty repair or refund.

3.3 TRANSPORT

The trailer is ready for sale in a completely assembled state and does not require packing. Packing is only required for the trailer's technical and driving documentation, connection lead for the electrical system and any extra fittings and warning reflective triangle.

The trailer is delivered to the user either transported on a vehicle or, after being attached to a tractor, independently (towed).



ATTENTION!

When transporting independently, the user must familiarise himself with the content of this Operator's Manual and observe all recommendations. When being transported on a motor vehicle the trailer must be mounted on the vehicle's platform in accordance with the transport safety requirements. The driver of the vehicle should take particular care while transporting the trailer. This is due to the vehicle's centre of gravity shifting upwards when loaded with the machine.

3.4 SCRAPPING THE TRAILER

Should the user decide to withdraw the machine from use, the entire trailer should be taken to a scrap yard approved by local authorities. Any parts left over after replacement with spare parts should be taken to a recyclable materials collection point.

Certificate obtained at the scrapyards is the basis for withdrawing the trailer's registration with authorities.

4 INFORMATION ON THE USE

4.1 TECHNICAL SPECIFICATION

Tab. 2. Basic technical specification

Item	Contents	Unit	T655
1	Total length	mm	4425
2	Total width	mm	1595
3	Total height	mm	1270
4	Axle track	mm	1150
5	Internal load box dimensions:		
	- length	mm	2910
	- width (front/rear)	mm	1410
	- height	mm	400
6	Load volume	m ³	1.6
7	Load surface	m ²	4.1
8	Lift of load surface	mm	840
9	Tare weight	kg	980
10	Maximum gross weight	kg	2980
11	Maximum carrying capacity	kg	2000
12	Load box tipping angle		
13	- to the sides	(°)	50
14	- to the rear	(°)	50
15	Wheel rim size		9.00x15.3
16	Tyre size & PR number		10.0/75-15.3 10 PR
17	Tyre pressure	kPa	390
18	Electrical system voltage	V	12
19	Maximum speed	km/h	30
20	Hydraulic oil demand	l	8

Tab. 3. Basic tyre specification

Tyre dimensions (optionally PR number)	Load index and speed symbol	Tread	Rim	Diameter st. dyn. [mm]	Load-bearing capacity [kg] at the speed [km/h]			Recommended pressure [kPa]	Notes
					30	40	other		
10.0/75-15.3 10PR	120 A8	TL	9.00x15.3	343	1500	1400		390	BF Goodrich

4.2 CONSTRUCTION AND PRINCIPLE OF OPERATION

4.2.1 Chassis

Trailer chassis consists of subassemblies indicated on figure 3. Lower frame (1) of the load box is a structure welded from steel sections. The main support elements are two longitudinal rails connected with crossbars.

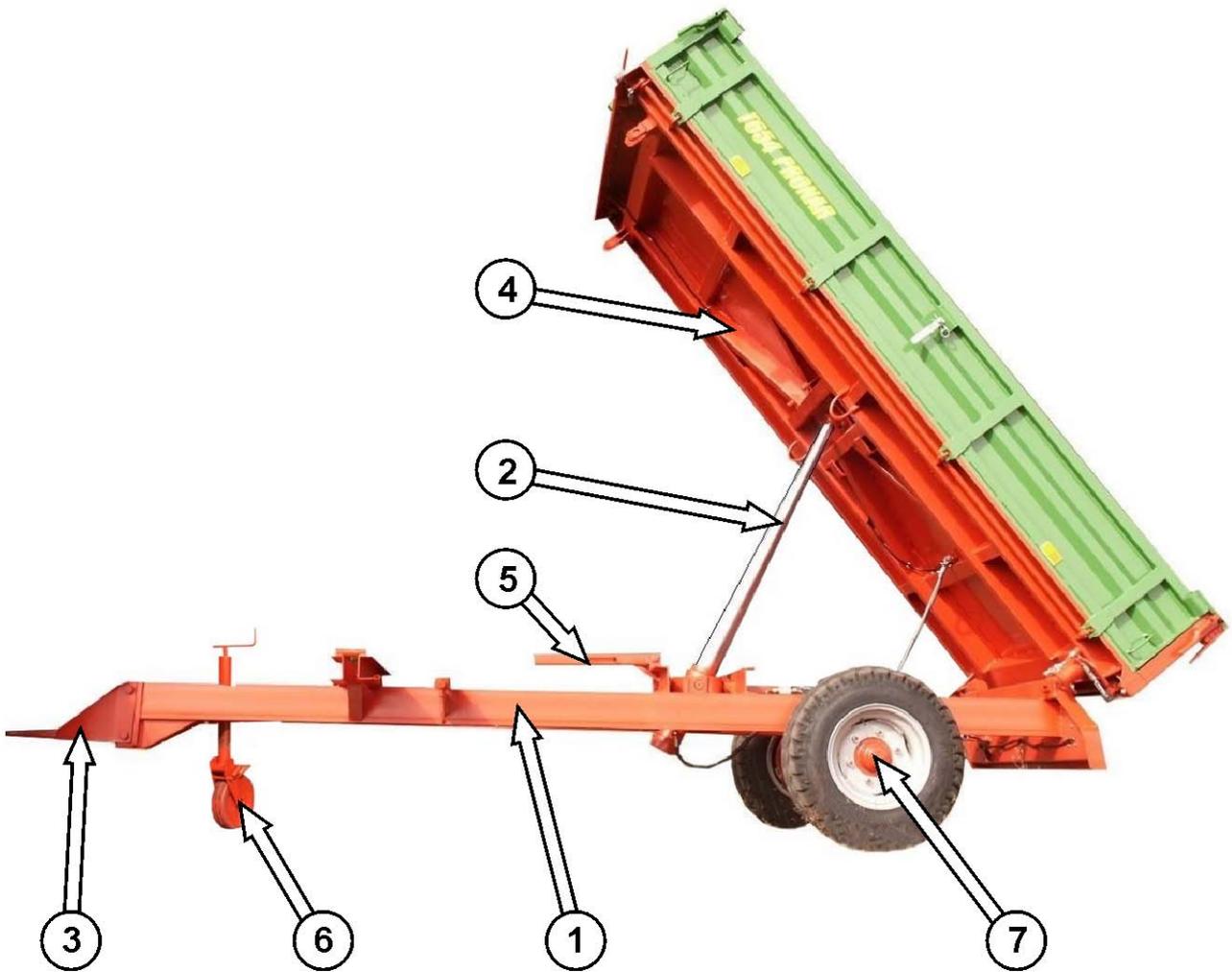


Fig. 2. Chassis and upper frame

1 - lower frame, 2 - hydraulic ram cylinder, 3 - drawbar, 4 - upper frame, 5 - load box support, 6 - support wheel, 7 - wheel axle.

At the corners of the frame are sockets and pins for seating the upper frame, and in the centre part - sockets for seating the hydraulic cylinder ram (2). On the rear part of the frame are elements for securing the axle (7), and elements of the rear light group. Axle shaft (7) consisting of square bar terminated with a pin, on which on cone bearings are mounted wheel hubs. The wheels are single, equipped with brake shoes activated through mechanical expander cams.

4.2.2 Load box

Trailer's load box consists of: upper frame with welded steel floor and side walls A, B, C.

Upper frame is mounted on the lower frame and articulated sockets secured with pins, which are pivot points when tipping the load box. The required tipping direction is obtained through the appropriate setting of the tipping pins.

Side locks (5) and pouring window chute slide (4) are secured against spontaneous, undesired opening.

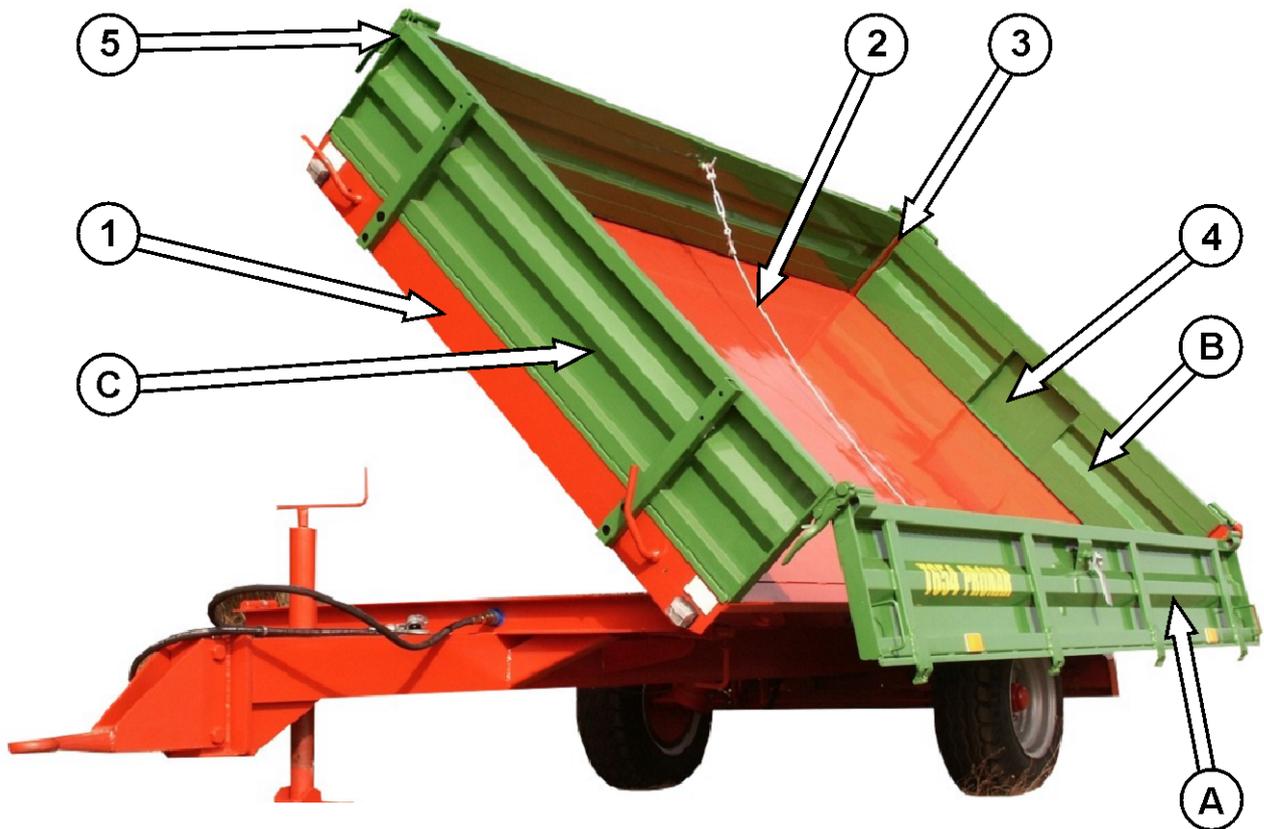


Fig. 3. Load box elements

A - side walls, B - rear side, C - front side, 1 - upper frame, 2 – side brace cable, 3 – rear pillar, 4 – pouring window, 5 – side lock

4.2.3 Hydraulic tipper system

Hydraulic tipping system serves in automatic unloading of trailer by tipping the load box to the rear or sideways. The trailer's hydraulic tipping system is supplied with oil from the tractor's hydraulic system. Hydraulic oil manifold of the tractor's external hydraulic system is used to control the load box tipping mechanism.

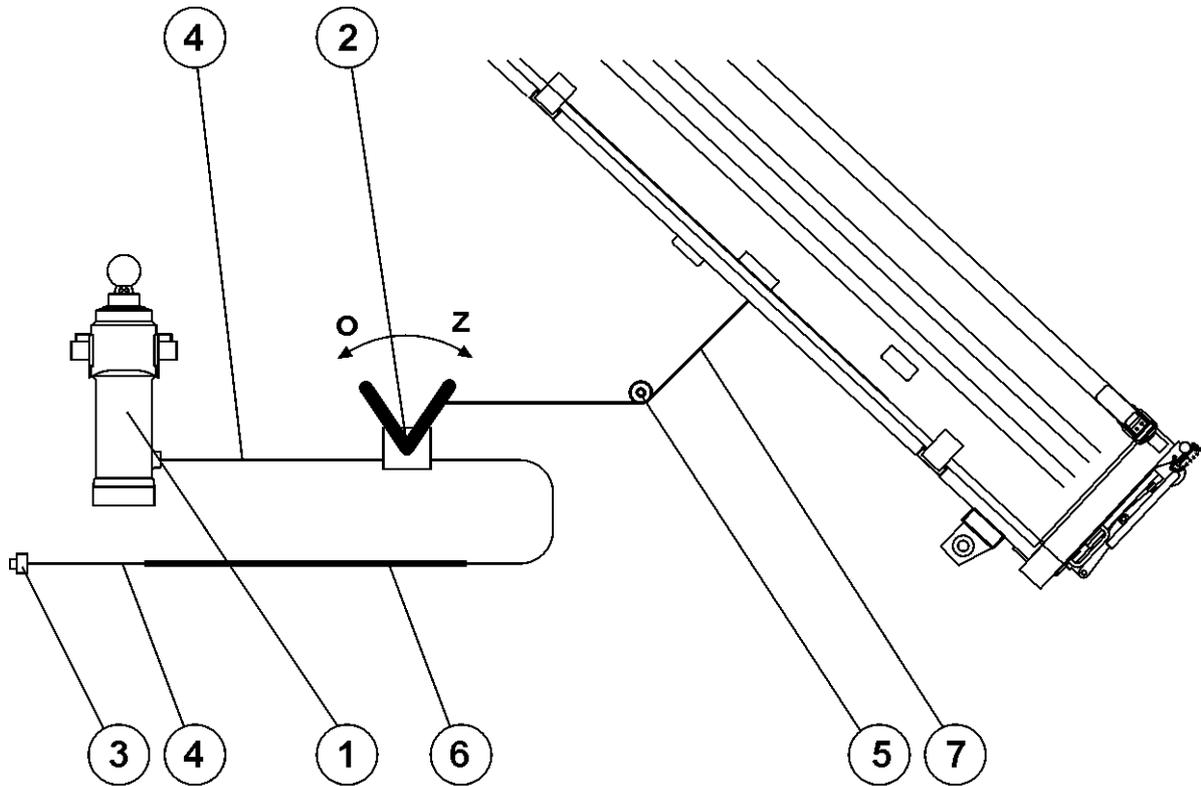


Fig. 4. Hydraulic system diagram of load box unloading mechanism

1 - hydraulic ram cylinder, 2 - cut-off valve, 3 - valve connection plug, 4 - flexible conduits, 5 - roller, 6 – rigid hydraulic conduits, 7 – cut-off valve control cable



ATTENTION!

Cut-off valve 2 limits tipping angle of load box. The length of the control cable controlling this valve is factory adjusted by the manufacturer and must not be changed when the trailer is used.

4.2.4 Brake system

The trailer is equipped with a braking system which includes:

- main brake (pneumatic, hydraulic or overrun)
- parking brake (operated by crank mechanism or lever)

Working brake (pneumatically or hydraulically controlled) activated from the tractor driver's cab by pressing on the brake pedal in the tractor. The tractor's and trailer's pneumatic brakes are designed to automatically activate when the pneumatic system conduits are inadvertently pierced or disconnected.

Overrun brake is activated when tractor brakes due to the inertial force of the trailer. During braking the drawbar eye is activated (position 1 figure 6), and the lever system with cable (5), which drives the brake system of the axle. When reversing, the axle brake is disengaged automatically.

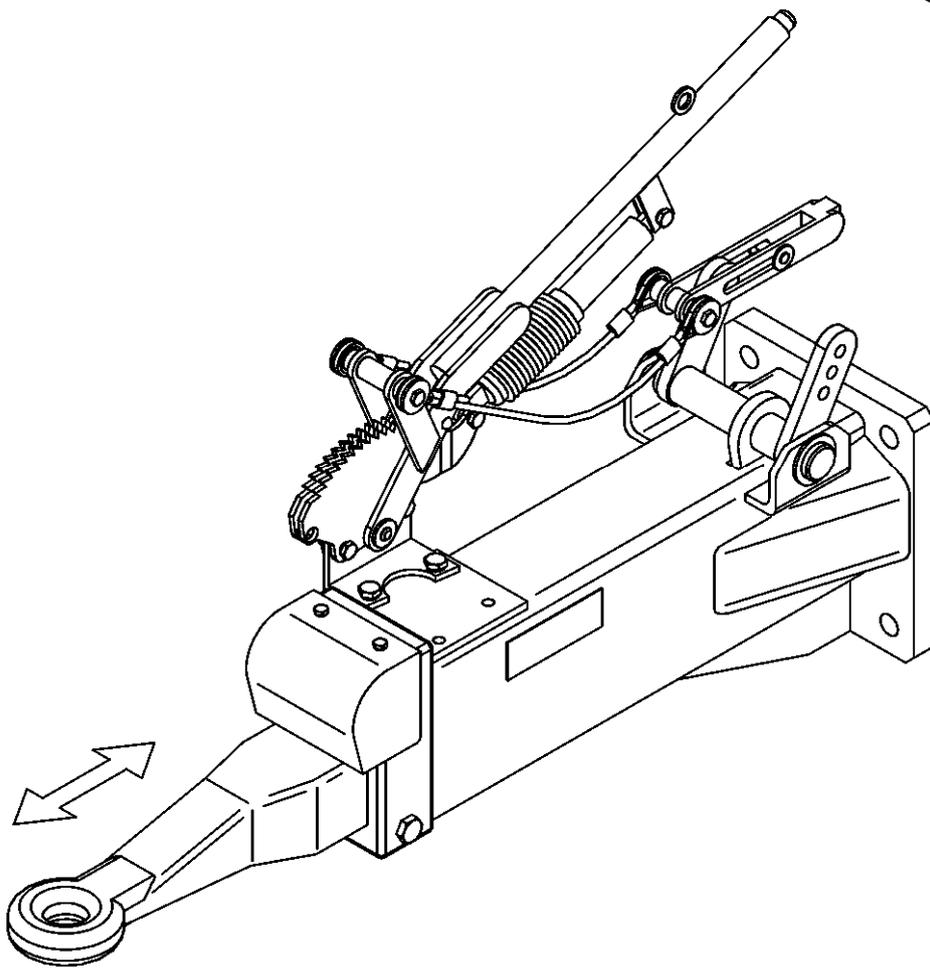
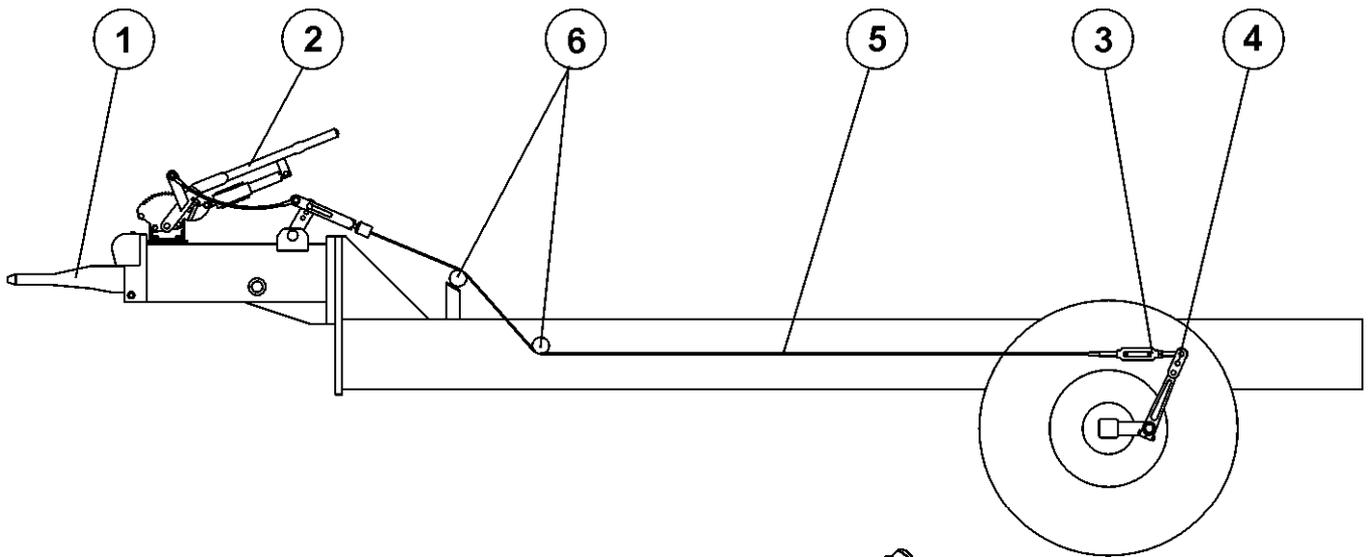


Fig. 5.Overrun brake system diagram

1 – overrun drawbar eye, 2 – handbrake lever, 3 – tensioner, 4 – steel cable, 6 – guide rollers

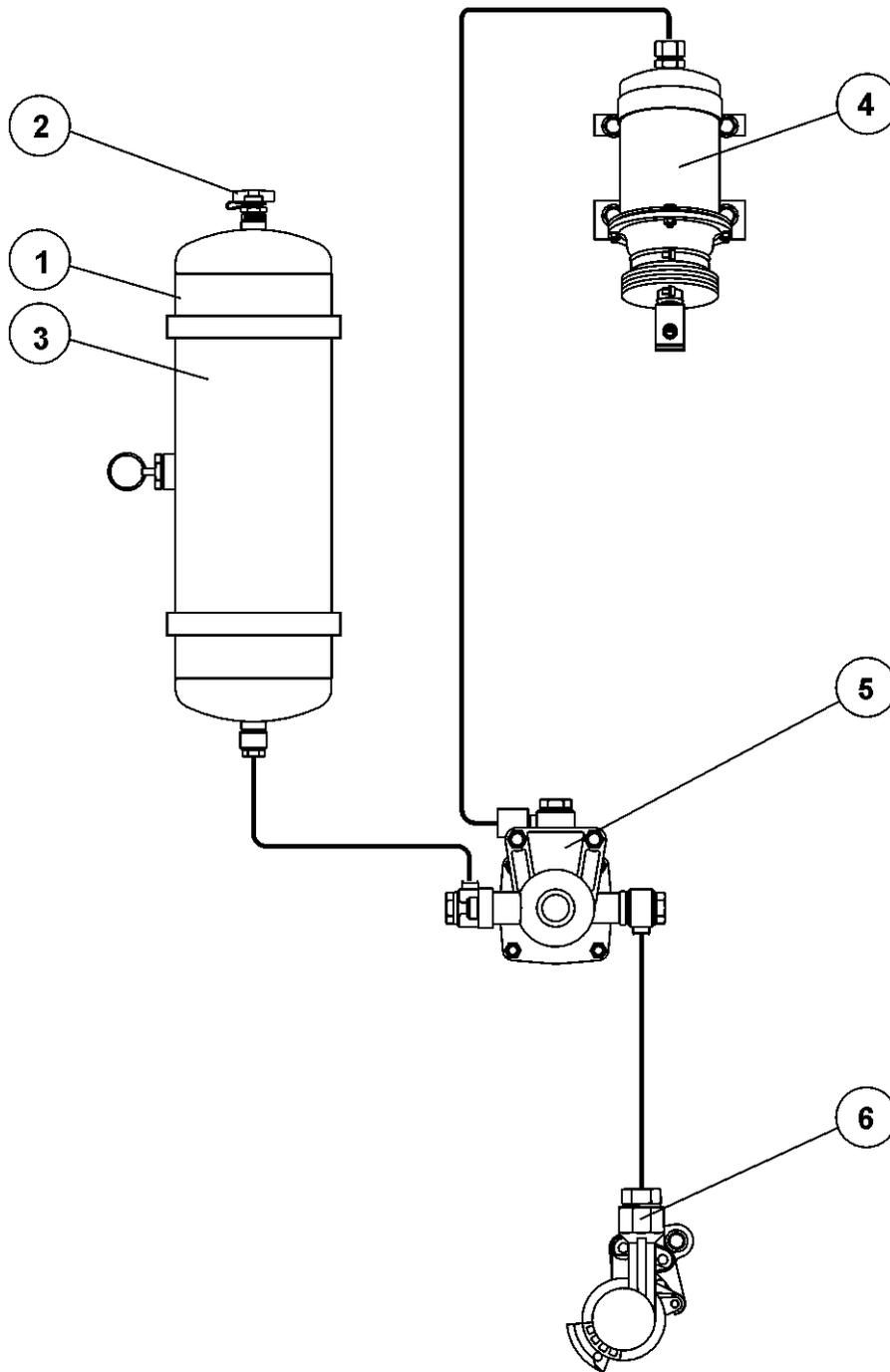


Fig. 6. Pneumatic brakes system diagram

1 - air tank, 2 – inspection joints, 3 – drain valve, 4 – pneumatic cylinder, 5 - control valve, 6 - conduit joints

4.2.5 Electrical system, lights and indicators

The trailer's electrical system is designed for supply of 12 V DC. Connection of the trailer's electrical system with the tractor should be made through an appropriate connection lead.

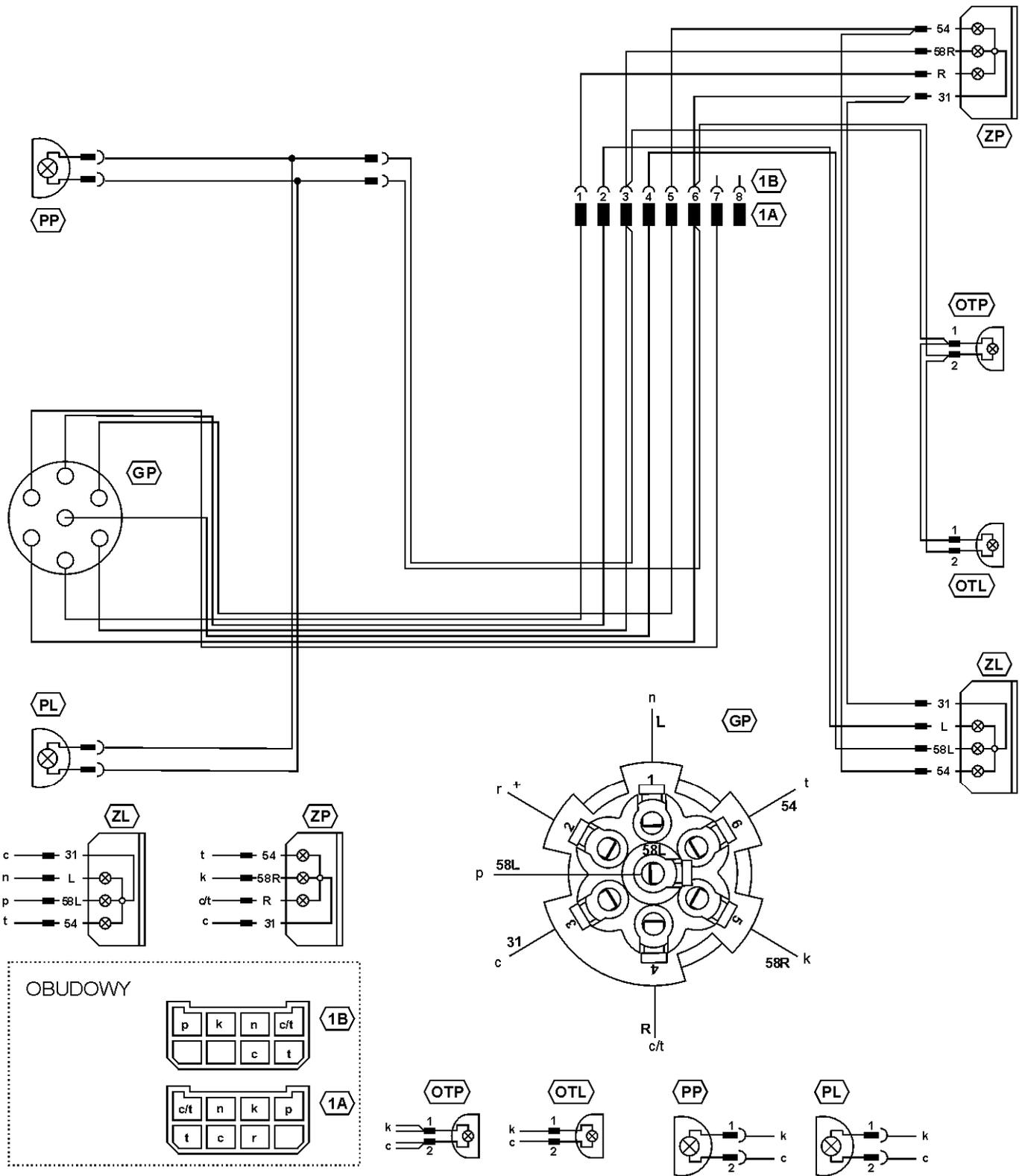


Fig. 7. Trailer's electrical system diagram

PP (PL) - stop/parking front right (left), GP - plug connection socket, ZP (ZL) - stop/parking rear right (left)

Conduit colour marking

p – orange, c – black, k – red, r – pink, n – blue, c/t - black green, t - green, 31 – earthing, R (L) – indicator right (left), 58R (58L) – right lamp (left) stop/parking, 54 - "STOP", „+” – electricity supply +12V

IMPORTANT! View of housings is shown from conduit entry side.

4.3 TRAILER USE PRINCIPLES

4.3.1 Attaching to tractor

Prior to attempting to link the trailer to a tractor verify that the trailer is immobilised with a parking brake.

In order to attach the trailer to tractor, perform the following:

- Position drawbar eye at the correct height. Precise setting of drawbar height may be achieved by use of support wheel screw crank (figure 9).
- While tractor is in reverse, connect drawbar eye to **the tractor's hitch designed for single axle trailers** and check if the connection is secure,
- Using the crank handle raise support wheel upwards. Press pedal (2), causing the freeing of wheel, which must be placed by hand in transport position shown on figure 9b.
- Connect electrical leads to the tractor as well as hydraulic and braking system conduits,
- Release trailer's parking brake.

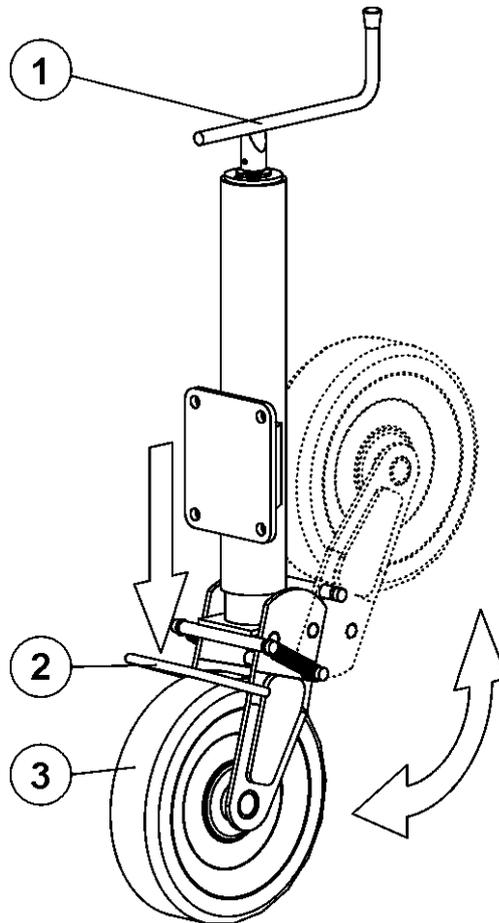


Fig. 8. Trailer support

1 – crank handle, 2 – pedal, 3 – support wheel



ATTENTION!

When attaching, there must be nobody between the trailer and the tractor.

4.3.2 Preparation for work

Before commencing work check the following:

- **technical condition of tyres and tyre pressure,**
- **tightening of nuts fixing the wheels and drawbar,**
- **condition of other screw and nut connections,**
- **operation of lights and indicators,**
- **operation of brake system,**
- **condition and action of side locks and side hinges**
- **correct action of the hydraulic tipping system**

4.3.3 Loading the load box

Load box can be loaded only when the trailer is connected to the tractor and positioned horizontally. Always aim at distributing the load uniformly in the load box.

When loading the load box, it is recommended to use a crane, loader or belt conveyor. Before beginning loading check that locks and side hinges are closed and that pouring chute window in rear side is closed.

When transporting materials which exert high local pressure on the load box platform, it should be protected against damage using thick planks. Table 4 gives permissible loading heights of loading layers of various materials. **As it transpires from data presented in the table, in many cases, using total capacity of the trailer is not allowable as it leads to exceeding trailer's nominal carrying capacity.** Attention should be paid during loading not to overload the trailer.

Light materials with a large volume may be loaded even above the edge of the load box extension walls paying special attention to trailer stability and ensuring that the road is not soiled.

Tab. 4. Height of load

Type of material	Height of load [m]
wet gravel, wet soil, clinker, stones	0.25
cement, dry gravel, soil, bricks	0.30
manure, full bricks, mineral fertilisers	0.40
rye, potatoes, maize, oil seed rape, wheat	0.40
barley, oats, turf, coke	0.40



ATTENTION!

- **Do NOT exceed permissible load weight of trailer because this may cause danger to road traffic and cause damage to the machine.**
- **Prior to moving off with the trailer hitched, check the following:**
 - **pins connecting the load box with the lower frame are secured against falling out,**
 - **side wall hinge pins are protected against falling out.**

4.3.4 Transport

- When travelling on public roads, respect the road traffic regulations.
- Exceeding the maximum load capacity of the trailer may damage it, and also threaten the safety of traffic.
- Under no circumstances, do NOT exceed the maximum design speed of 30 km/h. Adjust your speed to the road conditions.
- The trailer is designed to operate on slopes up to 8°. Tipping of the load box can only be done when trailer is positioned on a flat surface.
- The trailer must NOT be left unsecured. Securing involves engaging the parking brake.
- While driving on public roads the trailer must be fitted with a certified or authorised reflective warning triangle.
- If the trailer is the last vehicle in the group, a slow-moving vehicle sign should be placed on the trailer's rear load box wall.

4.3.5 Proper use and maintenance of tyres

- When performing maintenance and servicing of tyres, the trailer must be immobilised and protected against rolling.
- Repair work on the wheels or tyres should be carried out with use of appropriate tools by persons trained and entitled to do so.
- Each time a wheel is fitted, tighten all nuts after the first 10 working hours and then check proper tightening of nuts every 50 working hours.
- Regularly check and maintain correct pressure in tyres according to Operator's Manual (especially if trailer is not used for a longer period).
- Pressure and tyres should be also checked after the whole day of intensive work. Please note that higher temperatures could raise tyre pressure by as much as 1 bar. At high temperatures and pressure reduced load or speed.
- Do not release air from warm tyres to adjust the pressure or the tyres will be underinflated when temperatures return to normal.
- Protect valves using suitable caps to avoid soiling.
- Do not exceed the trailer's maximum design speed.
- When trailer is operated all day, stop working for a minimum of one hour in the afternoon.
- Adhere to 30 minutes rest for cooling tyres after driving 75 km or after 150 minutes continuous travel depending on which occurs first.
- Avoid potholes, sudden manoeuvres or high speeds when turning.

4.3.6 Unloading the load box

Trailer's load box is unloaded by tipping the load box to the rear or sideways. In order to unload the trailer perform the following actions in sequence:

- Position the trailer on flat surface, immobilise the tractor and trailer using parking brake. Tractor and trailer must be placed to drive forward,
- Open lower closures or side locks appropriate to the direction of unloading.
- Tilt load box by raising it with hydraulic cylinder ram.



ATTENTION!

- Tipping the load box must be done on hard and level ground.
- Use only original pins with a handle. Using third-party pins could damage the trailer.
- When opening load box side wall locks take particular care, because of the pressure of the load on the wall.
- When closing the rear grain chute gate or the walls, take particular care to avoid crushing fingers.
- Bulk materials loaded in excess of 1 m can be unloaded by tipping the load box to the rear only.
- Ensure that during unloading nobody is near tipped load box or load material pouring out.
- Tipping may only be performed when trailer is hitched to tractor.
- Do NOT tip load box in strong gusty winds conditions.
- Do NOT move off or drive when load box is raised.

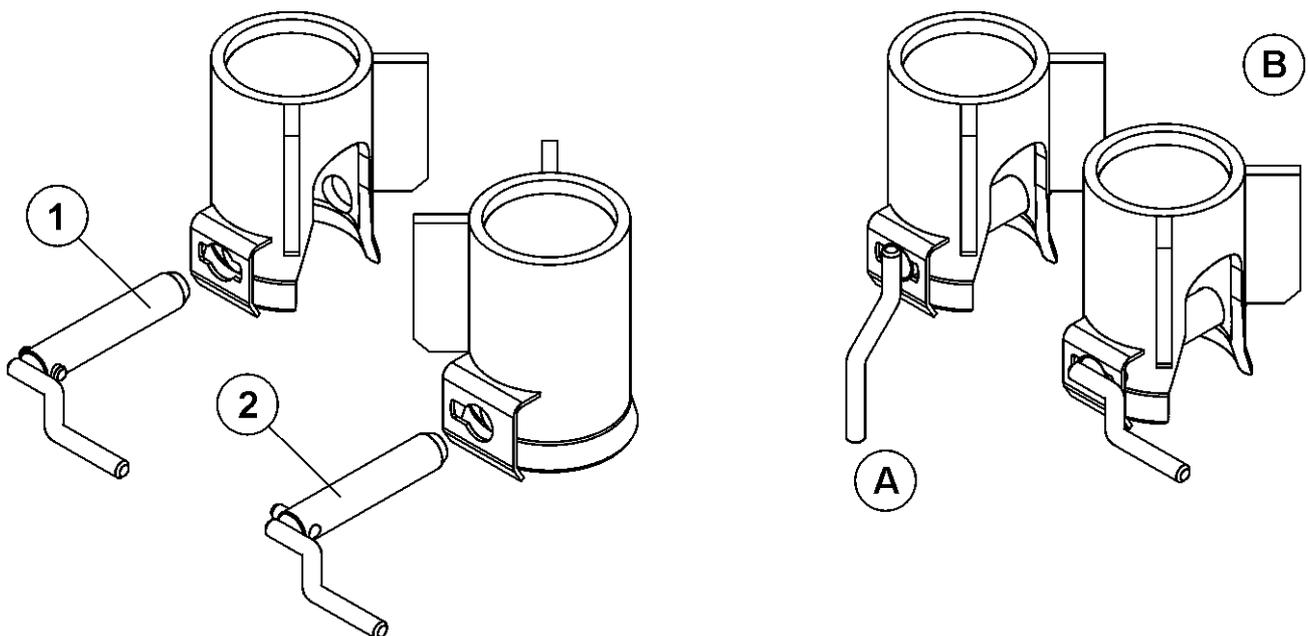


Fig. 9. Tipping pins

1 – tipping pin I, 2 – tipping pin II

A – tipping pin I in locked position, B – tipping pin II in unlocked position

Load box tailgate is equipped with grain chute opening, which can be opened to required size. This makes it possible to adjust the stream of the loose materials such is mineral fertilisers or grain pouring through the opening.

Opening chute opening (1) (figure 11), requires previous loosening of securing nut (2). If using chute opening do NOT open rear side locks.

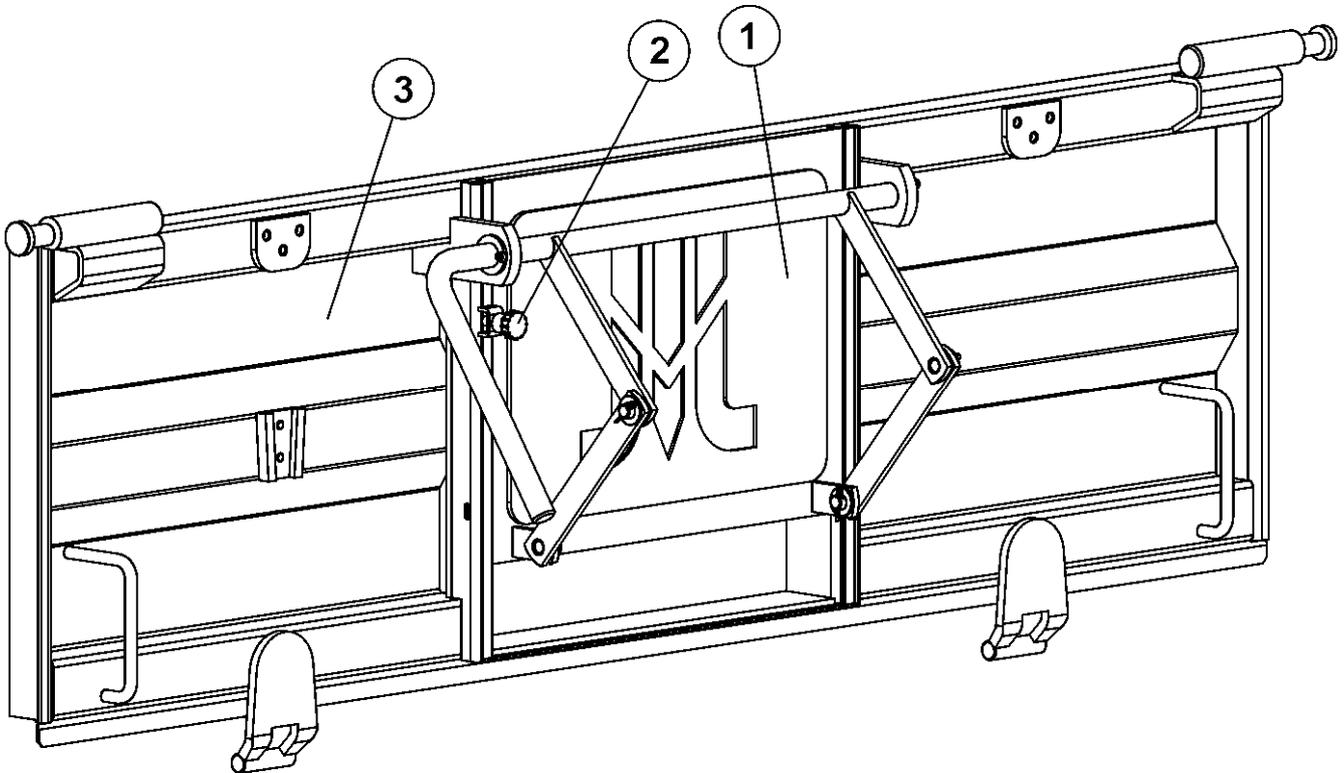


Fig. 10. Chute opening

1 – chute slide, 2 – nut security clamp, 3 – rear side wall of trailer

After pouring out load:

- Lower the load box.
- Insert and lock pins connecting load box to lower frame.
- Clean edges of sides and floor of remaining material or contamination. Close sides. Set locks in position preventing unintended opening.

If unloading trailer on sloping surface it is permissible to unload on that side of the trailer, which is higher.

4.3.7 Disconnecting from tractor

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

- One tractor is stopped, immobilise the trailer using parking brake.
- Disconnect from the tractor all electrical leads as well as hydraulic tipping and braking system conduits and protect ends of these conduits against contamination.

- Turn support wheel to support position and using support crank lower wheel until the ground supports it.
- Disconnect drawbar from the tractor's hitch and move the tractor forward.

4.3.8 Faults and unreliability

Most frequently occurring defects and unserviceability and also their remedies are given in section of "OPERATOR'S MANUAL"

5 TECHNICAL MAINTENANCE

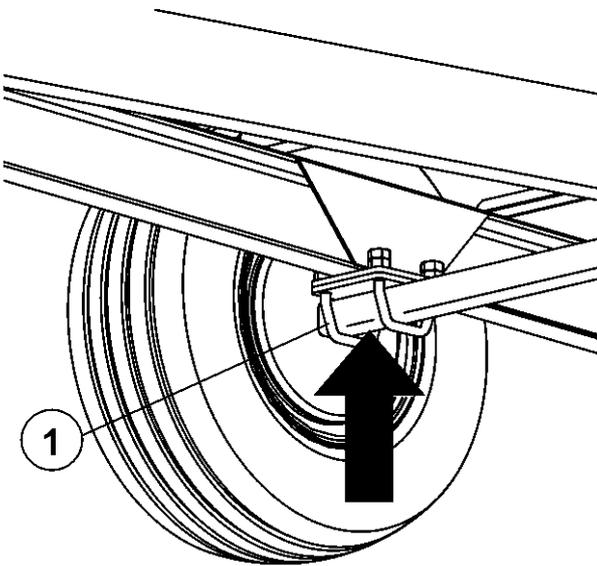


ATTENTION!

- In the event of any fault or damage to trailer's components whatsoever, do not use it until the fault has been fixed.
- Do NOT perform any maintenance or repairs on the load box that is loaded, raised or not supported.
- Servicing and repair work should be carried out in line with the general principles of workplace health and safety. In the event of injury, the wound must be immediately cleaned and disinfected. In the event of more serious injuries, seek a doctor's advice.
- If it is necessary to perform service and repair work under raised load box (e.g. change of telescopic cylinder), the trailer should be repaired in a specialist workshop.

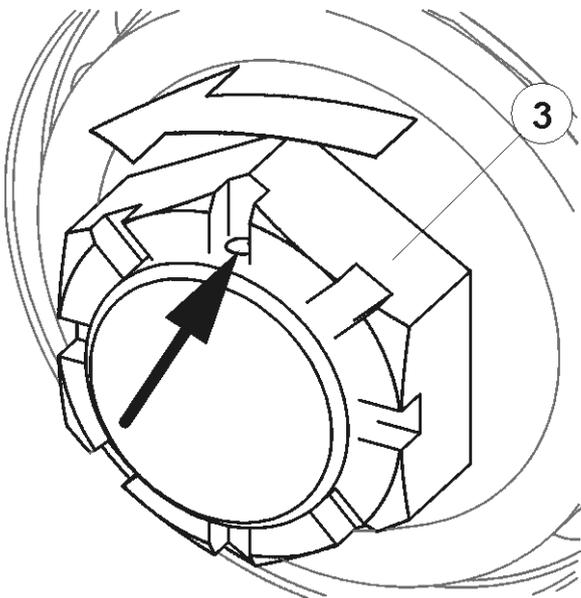
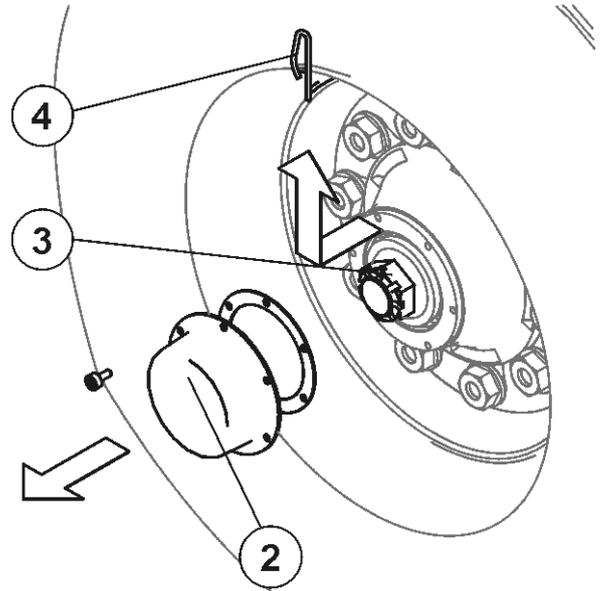
5.1 ADJUSTMENT OF WHEEL AXLE BEARINGS

In newly purchased trailer, after covering a distance of 500 km, and after covering 1500 - 2000 km check and regulate wheel axle bearings when needed. In order to do this:



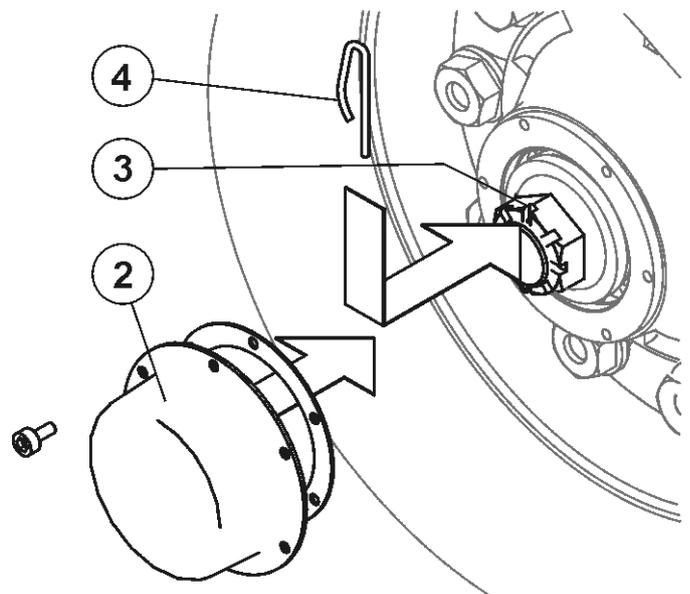
Hitch trailer to tractor, immobilise the tractor, place blocking wedges under trailer wheels and raise wheels in succession using the appropriate lifting jack. The lifting jack should be placed under the axle between U bolts (1) fixing absorber springs to the axle. Check if there is any bearing radial play.

In the event of excessive play, disassemble hub cap (2) and remove split cotter pin (4) from castellated nut (3).



Turning the wheel simultaneously tighten castellated nut until the wheel comes to a stop. unscrew nut by 1/3 rotation to cover the nearest thread groove with alignment to opening in wheel stub axle

Secure castellated nut (3) with cotter pin (4) and mount hub cap (2). The wheel should turn smoothly without faltering or detectable resistance not originating from abrasion of brake shoes in brake drum.



5.2 BRAKES ADJUSTMENT

Brakes regulation is necessary when:

- as a result of wear of brake shoe linings between lining and drum there is excessive slack and reduced braking effectiveness.
- wheel brakes do not brake evenly or simultaneously.

If brakes are correctly regulated, braking of trailer road wheel takes place simultaneously.

Brakes adjustment involves changing the setting of the expander arm (1) (figure 11), in relation to expander shaft (2). To do this, loosen nut (4), and then place expander arm on the end of the multisplined shaft (2) in the appropriate direction, that is:

- to the rear - if brake brakes too late
- forward - brake brakes too early.

Regulation should be conducted separately for each wheel. After proper brake adjustment, at full braking the axle shaft expander arm should create an angle of 90° with pneumatic ram piston. Regulation of parking brake should be conducted in the event of extension of the cable or loosening of the clamps of the parking brake cable. Length of parking brake cable should be so selected that at total release of working and parking brake the cable would be loose and hanging by $1 \div 2$ cm.

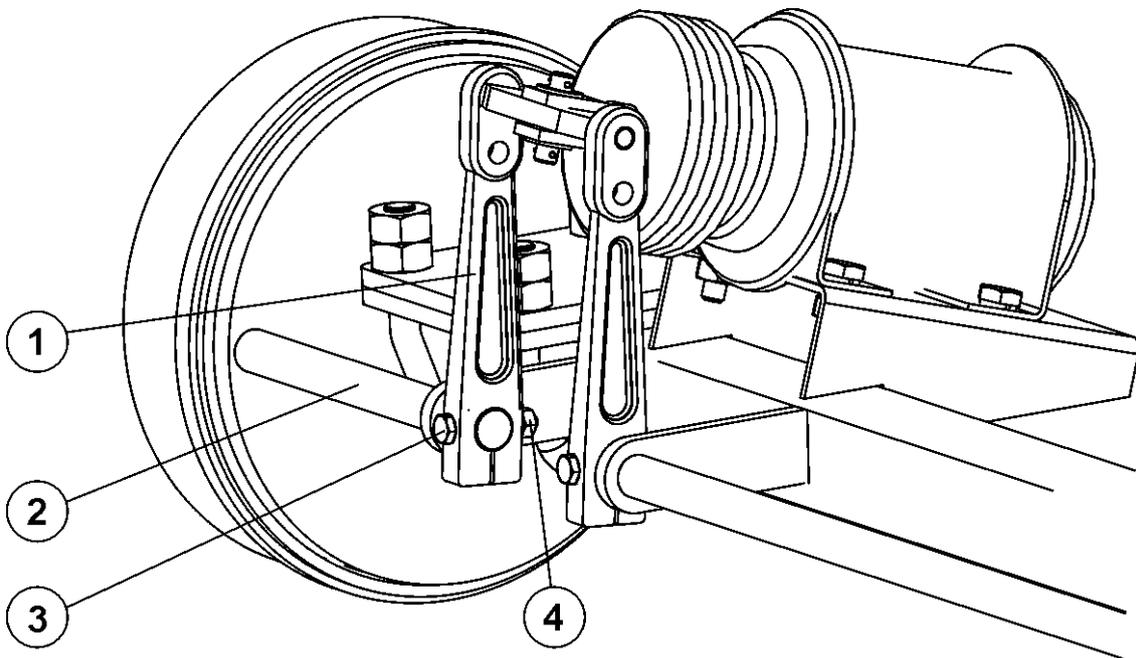


Fig. 11. The brakes adjustment components

1 - expander arm, 2 - expander shaft, 3 - bolt, 4 - nut



ATTENTION!

With properly regulated brakes, trailer parking brake braking force should reach a value not less than that given in table 5.

Tab. 5. Braking force

Type of trailer	Main brake braking force (kN)	Parking brake braking force (kN)
T655	9.5	5.4

Difference in braking force of left and right wheel may not be greater than 30%, considering that 100% constitutes greater force.



ATTENTION!

Braking force of the trailer, is the braking force of all trailer wheels.

5.3 PNEUMATIC SYSTEM OPERATION

As a part of trailer maintenance, conduct inspection of individual pneumatic systems, giving particular attention to all places of connection. Tightness of the system should be checked at nominal pressure in system of approximately 600 kPa (6.0 kg/cm²).

If conduits, seals or other system elements are damaged, compressed air will escape in these damaged places with a characteristic hiss, or for a minor leak, small air bubbles will show up. Small leaks can be detected by applying a solution of washing-up liquid. Damaged seals or conduits, causing leaks should be replaced. If the source of the leak is a pneumatic cylinder, it must be repaired.

Condensation collecting as water should be removed from air tank periodically. In order to do this open out drain valve placed in lower part of tank. The compressed air in the tank causes the removal of water to the exterior. After release valve mandrel should automatically close and stop air flow from tank.

Annually before the winter period unscrew drain valve and clean off accumulated dirt.

5.4 HYDRAULIC SYSTEM OPERATION

Always adhere to the principle that the oil in the trailer hydraulic system and in the tractor external hydraulic system are the same type. Application of different types of oil is not permitted.

In a new trailer system is filled with HL32 hydraulic oil.

The hydraulic system should be completely tight sealed. Checking tightness of hydraulic system involves connecting trailer with tractor and starting hydraulic cylinders ram and holding them in position of maximum extension for a period of 30 seconds.

In the event of confirmation of an oil leak on hydraulic conduit connections, tighten connections, and if this does not remedy faults then change conduit or connection elements. If oil leak occurs beyond connection, the leaking conduit system should be changed. Change of sub assemblies is equally required in each instance of mechanical damage.

In the event of confirmation of oil on hydraulic ram cylinder bodies ascertain origin of leak.

Inspect hydraulic seals when ram cylinders are completely extended. Minimum leaks are permissible with symptoms of "sweating", however in the event of noticing leaks in the form of "droplets" stop using the trailer until the fault is remedied.



ATTENTION!

Trailer with a leaking hydraulic tipping system must NOT be used.

Do NOT use trailer with extended (in relation to factory setting) length of cable operating cut-off valve (2) (figure 5)



ATTENTION!

The condition of hydraulic systems should be inspected regularly while using trailer.

In the event of intensive use of the hydraulic system (significant number of loads tipped), the hydraulic conduits should be replaced every 4 years.

5.5 LUBRICATION

Trailer lubrication must be carried out in places indicated in figure 13, and also detailed in table 6 "Trailer's lubrication points"

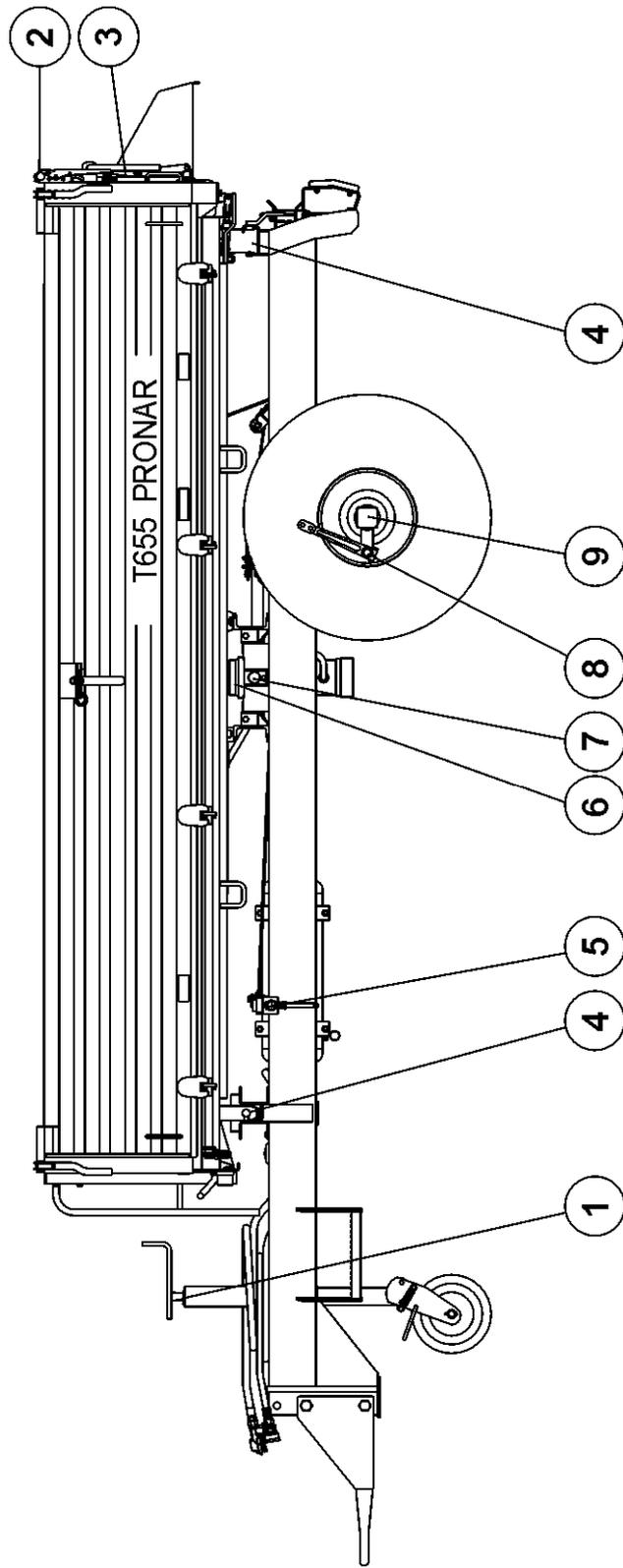


Fig. 12. Trailer's lubrication points

Tab. 6. Trailer's lubrication points

No. on fig. 12	Greasing point	Number of greasing points	Type of grease	Greasing frequency and method
1	Support screw shaft	4	permanent	every 3 – 4 months
2	Trailer load box locks	12	oil	Once a month
3	Chute opening guide	2	permanent	apply a very thin layer of grease every 3 - 4 months
4	Trailer load box seating sockets	4	permanent	every 2 months cover surface with fresh grease
5	Handbrake bolt	1	permanent	every 3 – 4 months
6	Cylinder upper ball-and-socket joint	1	permanent	every 6 months
7	Hydraulic cylinder lower suspension pins	4	permanent	Apply lubricant to pins every 6 months
8	Axle expander shaft sleeves	4	permanent	every 6 months
9	Wheel bearings	4	permanent	replace lubricant every 2 years

5.6 STORAGE AND MAINTENANCE

After finishing work, trailer should be thoroughly cleaned and washed with water jet. In the event of damage to the lacquer coating clean those places from rust and dirt, degrease and then paint with paint maintaining uniform colour and even thickness of protective coating. Until the time of touch-up painting, the damaged place may be covered with a thin layer of grease or anticorrosion preparation.

It is recommended to keep the trailer in a closed or roofed building. Before longer outdoor storage, it is essential to protect the trailer against adverse weather conditions, especially those causing corrosion and accelerated ageing of tyres.