



OPERATION AND MAINTENANCE MANUAL

GRS Grain Chaser Bins



PROVEN IN THE FIELD

CONTACT US

+44(0)1728 723224 • sales@richardwestern.com

Richard Western Ltd, D'Urbans, Framlingham, Suffolk IP13 9RP

Make note of the Machine serial number in this place for future reference and when ordering replacement parts.

Original instructions:

**Please read and follow
all instructions before
operating the machine.**

It is responsibility of the operator to read and understand the contents of this manual before operating the machine for the first time.

The operators manual must accompany the machine at all times. If the machine is resold the operators manual must be given with the machine to the new owners.

Manufacturers Name: **UAB Western Fabrications**

Manufacturers Address: **Tučių st. 10, Kapėnų village Mažeikių dist.
Lithuania LT89477**

Suppliers Name: **Richard Western Ltd**

Suppliers Address: **Richard Western Ltd, D'Urbans,
Framlingham, Suffolk IP13 9RP**

Agents Stamp:

OPERATING ON PUBLIC ROADS

Before operating on public roads the trailer must be correctly connected to the towing vehicle, the lights must be connected and function of the lighting equipment must be checked. The trailers are equipped with hydraulic and/or pneumatic braking systems. These must be correctly connected to the Towing Vehicle and checked for correct operation. If the trailer has an air brake system the brake lines and any breakaway rope (breakaway brake) must be connected.

DISPOSAL

Upon completion of the useful life of the machine, all parts can be disposed of at a suitable waste disposal facility. Care must be taken if oxy-acetylene cutting equipment is to be used. The wheels and tyres, hydraulic & pneumatic cylinders, valves and hoses must be removed before using cutting equipment. Oil must be drained, collected, and disposed of in accordance with current legislation. Electrical components must be disposed of in accordance with the relevant legislation.

INFORMATION



The operator must ensure that the unit is properly maintained and operated.

SAFETY WARNINGS

Identification of Warnings and Danger

All parts of the manual to do with the safety of the operator, or the safe operation of the machine, are marked with the following symbols.

WARNING



WARNING

This symbol identifies that hazard exists. If proper precautions are not taken, it is highly probable that the operator (or others) could be killed or seriously injured.

WARNING



This symbol is a reminder of safe practices. Failure to follow these safety practices could result in injury to the operator (or others) and possible damage to the equipment.

INFORMATION



WARNING

This symbol indicates instructions that allow you to use the device more efficiently and economically.

WARRANTY

The Western Fabrications range of machines are supplied with a full One Year warranty.

There are some exclusions, namely:

- Wheels and Tyres;
- Damage caused by misuse and abuse;
- Damage caused by overloading;
- Damage to ground engaging or suspension parts ;

For full details refer to the manufacturers documentation.

If you have a claim under warranty contact the manufacturer or the manufacturers agent.

Modifications of the device without the manufacturer's consent and permission exempt the manufacturer from any responsibility for damages arising from the changes made, therefore the warranty is terminated.

Using the product outside of the instructions for use will void the warranty.

INDEX

Warranty	4	Changing of the angle of the vertical unloading auger with the filling pipe	48
Tilly Pass	7	PTO shaft	49
Tilly Pass Scheme	8	Greasing points	50
1. Safety	9	Lubrication points of vertical unloading auger	52
Safety decals	9	Lubrication points of horizontal unloading auger	54
General hazards related to device operation	13	3. Before Operation	56
2. Grain chaser bin trailer operation	10	Attention	57
Grain chaser bin trailer GRS 1620	24	Identification plate	57
Grain chaser bin trailer GRS 2530	25	Road transport	57
Roll sheet mounting	26	General specification	59
Extension sides mounting	29	Tightening torque requirements for wheel nuts	60
Assembly of wheels and installation of mudguards	30	Minimum brake lining thickness	61
Assembly of wheels and installation of mudguards	31	Tyre information	62
Preparation of the semitrailer for storage	32	Tyre load index	63
Roll sheet operation	33	Tyre speed index	64
Chain greasing system	35	Connecting and disconnecting a semitrailer	65
Chain greasing system	36	Types and suitability of tractor coupling hooks for towing a semitrailer	66
Grain seeds and fertilizer loading pipe	37	Types of hydraulic bracket legs	67
Protective grills	39	Tractor coupling with a semitrailer	68
GRS weight systems	40	Electrical and hydraulic connections	69
Horizontal discharge auger service with hydraulic cylinder.	46	Air and hydraulic brakes connections	70
Vertical discharge screw and funnel angle change	47		

INDEX

ABS and EBS brake system connections	71	4. Maintenance & service schedules	87
Working body support prop	72	Grease points	82
Coupling the drive shaft (PTO) to the towing vehicle	73	Power take-off greasing	84
Height adjustment of the semitrailer tower according to tractor trailer height	74	Electrical system maintenance	99
Changing the height with multi-position plate	75	Draining of condensate	100
Adjustments before towing the trailer	76	Tyre pressure check	100
Calculation of transported cargo weight	77	Tightening wheel nuts	101
Before operating the semitrailer	79	Axle maintenance	102
Hand brake	80	Brake maintenance and adjustment	104
Rear towing eyelet operation	81	Adjustment of automatic load sensing valve for hydraulic brakes	106
Electric system	82	Adjustment of automatic load sensing valve for air brakes	107
7 pole socket connection	82	Brake load sensing valve data sheet	108
13 Pole socket connection	83	Suspension maintenance	109
Warnings for loading and unloading	84	Drawbar with longitudinal spring maintenance	110
Reversing the trailer	86	Drawbar with cross spring maintenance	111
		Notes	112
		Contact us	114

TILLY PASS

Richard Western Ltd recommends that thorough, planned maintenance is carried out on all our machines and trailers on a frequent and regular basis as under the Health and Safety at Work Act 1974, it is the employers responsibility to manage health and safety risks in their businesses. As such employers have a duty to protect the health, safety and welfare of their employees and others who may be affected by their work activities. It is important to maintain and repair your equipment in good mechanical working order. Richard Western Ltd would recommend that you replace worn and broken parts with genuine Richard Western parts.

You should have received a Richard Western manual when you purchased your trailer or machine, but these are also available online

www.richardwestern.com.

Please note that Richard Western Ltd will not be liable for damage or personal injury caused by failure to comply with regular maintenance or the use of aftermarket parts.



TILLY PASS SCHEME

There is no Ministry of Transport test on agricultural machinery as there is no government regulation that requires agricultural trailers to be registered for road use in the UK. This may result in trailers not being maintained in accordance with the Provision and Use of Work Equipment Regulations 1998 (PUWER) ([hse.gov.uk/work-equipment-machinery/puwer.htm](https://www.hse.gov.uk/work-equipment-machinery/puwer.htm)) with the potential of a trailer being used in a dangerous, unroadworthy condition.

Richard Western Ltd encourage their UK customers to register their trailer with the Tilly Pass scheme. This is a voluntary scheme for farm trailer operators whereby authorized Tilly Pass dealers carry out an annual maintenance inspection of the trailer, repair and issues and confirm the trailer has been inspected to PUWER. A re-check is required each year and a new certificate will then be issued.



Find out more information about the Tilly Pass Scheme, including dealers that have subscribed to the scheme at www.tilypass.co.uk



**FULL DAILY & MONTHLY CHECKS MUST BE CARRIED
OUT BY TRAINED OPERATORS / OWNER.**

**LOAD THE HEAD TO TOW APP AT www.tilypass.co.uk TO ACCESS
TRAILER MANUFACTURERS RECOMMENDED SAFE TOWING CHECKS.**

1. SAFETY

SAFETY DECALS

Safety decals & warning symbols are placed in danger areas of the machine to help identify risks of injury.

The decals fixed to a machine do not make the machine safe they are there as a guide and to direct appropriate behaviour when using the machine.

The operator is ultimately responsible for his own safety and that of other persons around the machine. Never permit anyone to ride on the trailer or to approach the trailer or any of its components whilst operating.

The information in these decals show how to avoid injury and accidents by appropriate behaviour.

The location of the decals on the machine and their wording is shown on the following pages.

Over time the manufacturer may change the type and quantity of decals. A machine may therefore contain a mixture of all of the decals shown.

The numbers against the explanation correspond to those showing the location on the illustrations.

CAUTION 	CAUTION Immediately replace damaged or illegible safety decals with new replacements. When replacing parts with decals affixed to them, make sure you affix new decals again to the new parts.
---	--



SAFETY DECALS



Refer to Operators Manual

Reminds the operator to refer to the operators manual for Technical information and data.



Hydraulic & Pneumatic Pressure

Warns the operator of the danger of trapped residual pressures when coupling and decoupling the trailer.



Crush Prevention

Warns the operator of the potential for crushing injuries in the area between the Trailer and Towing vehicle.



Risk of Injury

Warns the operator of the need to use wheel chocks during repair or maintenance work, in order to avoid insure.



Risk of Injury

Warns the operator of the potential of slicing and crushing injury.



Rotating Shafts

Warns the operator of the danger in this area due to rotating machinery.



Overhead Power Lines

Warns the operator not to raise the body or any lifting device in the proximity of Overhead Power lines or obstructions.



Refer to Operators Manual

Warns the operator to disable the Towing Vehicle and Isolate the trailer from any energy sources when undertaking maintenance.



Rotating Shafts

Warns the operator to refer to the Operators Manual for information relating to getting and using the rotating driveshaft and its guards.



Keep your distance

Warns the operator to keep his distance from Rotating Shafts or any other source of motion until it has stopped.



Information sticker

Live animals in the vehicle.



Information sticker

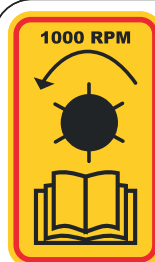
Lubrication points Glued near the lubrication points that the operator would have easier to spot.

SAFETY DECALS



Power Take Off Speed

Reminds the operator to refer to the Operators Manual for information on Power Take Off Connection and permissible rotation Speed 540 RPM.



Power Take Off Speed

Reminds the operator to refer to the Operators Manual for information on Power Take Off Connection and permissible rotation Speed 1000 RPM.



Crush Prevention

Warns the operator of the potential for crushing injuries in the area between the Trailer body and Chassis especially when installing the body prop.



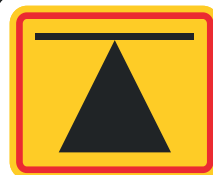
Risk of Injury

Warns the operator of a potential explosion hazard and toxic gas, necessary to ventilate the area before climbing into the tank.



Warning sticker

Slow moving vehicle.



Information sticker

Jack lifting point



Information sticker

The device or its individual parts, during installation or dismantling works, lifting place for hanging the hook.



Information Sticker

Strapping points



Risk of Injury

Alerts the operator to make sure that before use there are no bystanders near the hydraulic tailgate and watch out for falling load from the trailer.



Information Sticker

Shows in what position unloading Anger door is.



Maximum permissible speed

Reminds the operator about the maximum permissible speed. This speed established in the road traffic rules, so vehicles the driver must pay attention.

SAFETY DECALS



Risk of Injury

Alerts the operator to beware when opening the Standard tailboard for compressed and falling loads.



Risk of Injury

Alerts the operator to always use the body prop when running maintenance or repairs under the body. Never use the body prop if the trailer has a load.



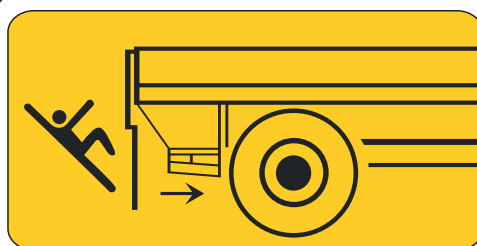
Risk of Injury

Alerts the operator to make sure before use there is no one in the danger zone. Do not stand within the danger zone and do not put your hands into moving revolving parts.



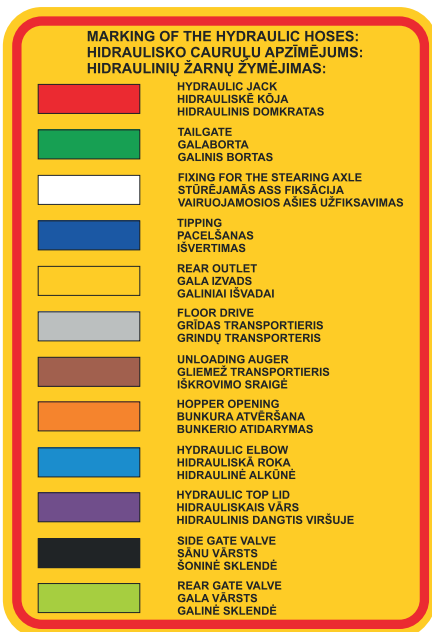
Information sticker

Inform operator in which position the Level needs to be for vacuum or Pressure.



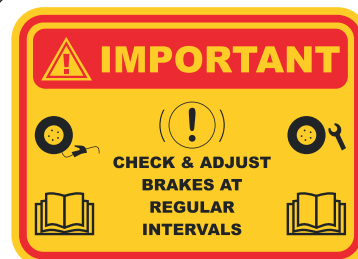
Crush Prevention

Warns the operator of the potential for crushing injuries if the ladder is in use when moving of.



Information sticker

Hydraulic hoses marking
Hydraulic hoses are marked with separate colour stickers will help the operator to find out for what function is there hose is used. Labelled with a sticker the colour is indicated on intestines.



Service Checks

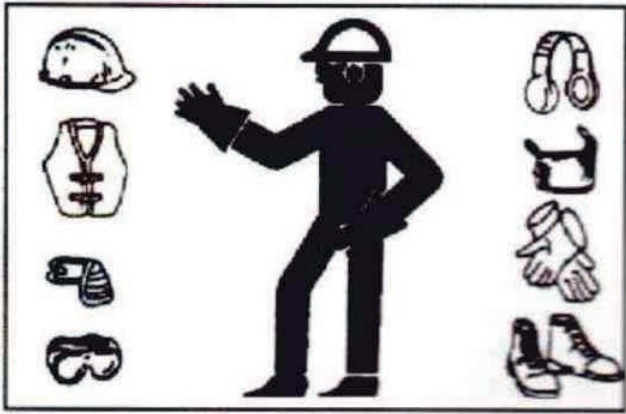
Warns the operator of that on regular basis to check the brake adjustment and performance, tyre pressures and the wheel nuts are tight. Always refer to the instruction manual for the information.

GENERAL HAZARDS RELATED TO DEVICE OPERATION

The following Warnings and Cautions are of a General nature and are not task specific. All personnel operating or maintaining this machine must be fully aware of these warnings.

PREVENTION OF INJURY TO BODY PARTS

WARNING 	Make sure the location of high voltage power lines and buried power cables are known. Serious injury or death, by electrocution, can occur if the machine contacts these hazards.	WARNING 	Untrained, uninstructed and unacquainted with the user manual must not be allowed to use the equipment.
WARNING 	Do not wear loose clothing or Jewellery, which can snag on the controls or machine structure, causing personal injury.	WARNING 	Make sure that the dimensions and carrying capacity of the device are known. This will allow the device to be used safely in closed or other spaces with limited dimensions.
WARNING 	Make sure that all protective guards and covers are secured in place on the machine. If guards and covers are removed, a hazard to personnel will exist.	WARNING 	Never attempt to make adjustments or repairs to the equipment while the equipment is moving or the engine or other power source is running.
WARNING 	Make sure that all foreign objects and materials, such as oil, tools, debris and other items, are kept clear from equipment, walkways and steps on the machine. Failure to do this can cause personal injury.	WARNING 	Force is used to remove the retaining pin, it may fly out and cause personal injury. Always wear safety glasses before beating to holding pin and ensure that no other personnel are in the area.
WARNING 	Make sure that all loose items, such as tools, lunch boxes and other items, which are not part of the equipment, are secured correctly before operating the machine. Failure to do this can cause personal injury.	WARNING 	Always wear safety glasses before hammering or using other tools that may cause flying pieces of material that can cause serious injury.
WARNING 	Always wear the correct protective equipment, including a hard hat and protective glasses, as required.	WARNING 	Always keep away from rotating or moving parts of the equipment. Always reattach guards or covers that have been temporarily removed.
WARNING 	Machine operators must be aware of the correct hand signals and those personnel authorised to give them.	WARNING 	Never check for leaks from pipes, tanks or hoses with your bare hands. Tighten the connections and, if necessary, replace the worn parts with new ones.
WARNING 	Operators must accept hand signals only from a single and authorised person.	WARNING 	Prepare the equipment properly before doing any work under the unit.
WARNING 	Make sure that all fluids used during maintenance of the machine are stored in the correct containers.	WARNING 	Make sure that all liquids are disposed of in accordance with the environmental and health safety requirements in force in the country.



PRESSURISED AIR AND WATER

WARNING



If released, air or water in pressurised machine systems can cause debris or hot water to be ejected. This can cause personal injury. Care must be taken when working on pressurised machine systems.

WARNING



Operators using pressurized air or water for cleaning purposes must wear the correct protective equipment. This includes protective clothing, shoes/boots and goggles or face shield.

WARNING



Operators using pressurised air or water for cleaning purposes must not exceed the following maximum operating pressures: Air - 205 kPa (30 psi) Water - 275 kPa (40 psi).

RESIDUAL HYDRAULIC PRESSURE

WARNING



Before carrying out any repair or service work, always ensure that the residual pressure in the hydraulic systems is removed, protected from unexpected movement of connected implements or equipment, and all hydraulic hoses are disconnected to avoid direct contact with lubricants.

WARNING



If there is hydraulic leak, never try to locate the leak with your bare hands, use a piece of wood or cardboard instead. And through the tiniest hole, hydraulic pressure can inject lubricant under the skin. If this happens, seek medical attention immediately.

WARNING



Leaks from unsecured or damaged pipes, tanks or hoses can cause system or component failure or fire. Regularly inspect pipes, tanks and hoses, especially for signs of mechanical damage, leakage or aging, and replace with new ones.

WARNING



Do not bend or rebend the high pressure pipe or re-install a bent or damaged high pressure pipe.

WARNING



The pipe or hose must be replaced with a new one if:

- they are damaged or show signs of leakage;
- there are noticeable mechanical damages on the outside;
- the outer covering is blistered or swollen;
- the flexible part of the hose is twisted.

ASBESTOS HAZARDS

WARNING



The disposal of waste materials, including potentially harmful fluids, must be in accordance with local Health and Safety Regulations. Improper disposal procedures can be harmful to personnel and the environment. Always use the correct and leak proof type of container for the storage of waste fluids. Do not dispose of these fluids by pouring onto the ground, into water sources or into drains. Improper disposal procedures can be harmful to personnel and the environment.

ASBESTOS HAZARDS

WARNING






Contact with asbestos must be avoided, particularly inhalation of airborne dust, which can cause serious injury or death.

If it becomes necessary to come into contact with asbestos, you must use the guidelines that follow:







- Avoid creating dust if handling debris or components that may contain asbestos, such as brake pads and bands, liner material, clutch plates and some gaskets.
- Never use compressed air for cleaning purposes. Avoid machining or brushing materials that may contain asbestos.
- Before disposal, use a wet, damping down method to concentrate material dust and debris. If possible, a vacuum cleaner fitted with a high particle air filter (HEPA), should be used to collect debris and dust.
- Use exhaust ventilation on permanent machining work. Wear an approved respirator if there is no other way to control any dust produced. Always comply with the applicable environmental regulations for the disposal of asbestos.
- Stay away from areas that may contain airborne asbestos particles. Always comply with the applicable rules and regulations for the work place. Use genuine Western Fabrications equipment, components and parts, which are supplied asbestos free.












HAZARDS OF INJURY

WARNING 	Always wear protective gloves when handling cables with your hands. Never use frayed or frayed cables.
WARNING 	Debris can fly into any object after hitting it, causing injury to the person. Always wear safety glasses before entering any object and ensure that no other personnel are in the area.
WARNING 	If force is applied to the retaining wire, it may fly out and cause personal injury. Always wear safety glasses before entering the wire and ensure that no other personnel are in the area.






BURN PREVENTION

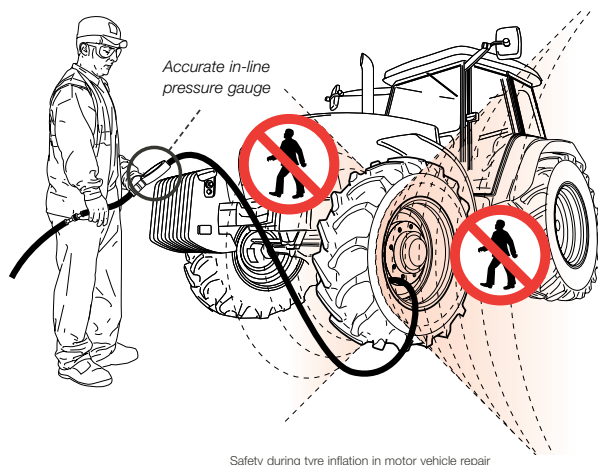
WARNING 	Some components will get hot during operation, causing a potential burn hazard to personnel. Before you do any maintenance on these parts, you must: Always release residual pressure in the air, hydraulic and lubrication systems and associated pipe lines/hoses, before you do any maintenance work.
WARNING 	Hot fluids and surfaces can cause personal injury. Avoid direct contact with hot fluid or surfaces.
WARNING 	Store oil-stained rags and other flammable materials in containers designed for this purpose. Do not smoke in areas where flammable materials are stored.
WARNING 	Do not operate the device near open flames.
WARNING 	Make sure heat shields installed to prevent liquids or sprays from igniting.
WARNING 	Do not weld or flame cut any pipes or tanks containing flammable liquids or gases. Always wet the pipes well with a non-flammable solvent before any repair or disposal work.

FIRE AND EXPLOSION PREVENTION




WARNING 	If a Fire extinguisher is fitted, make sure it is available and in a fully charged and serviceable condition.
WARNING 	Make sure you are fully aware of the operating instructions for the fire extinguisher. Inspect and service the fire extinguisher at regular intervals or in accordance with the manufacturers instructions.
WARNING 	All fuels, most lubricants and some coolant mixtures are flammable and if leaking onto a hot surface or electrical components, can create a fire. Fire can cause severe personal injury or death.
WARNING 	Do not operate the machine close a naked flame or heat source.
WARNING 	Always clean pipes and thoroughly with a non- flammable solvent first. Examine all electrical wires daily and check and tighten all electrical connections. If necessary, repair loose or frayed wires before you operate the machine.
WARNING 	Dust produced from repairs to Non-metallic components, such as hoods or fenders, can be flammable. Always repair such components in a well ventilated area, away from naked flame and heat sources.
WARNING 	Leaking pipes and hoses can cause a fire. Examine all pipes, hoses and associated supports for wear, deterioration and damage and ensure that pipe and hose clamps are secure. Make sure pipe and hose connections are correctly torque.
WARNING 	Remove all flammable materials such as fuel, oil and debris from the machine. Do not allow the accumulation of flammable materials on or around the machine.
WARNING 	Always store fuels and lubricants in the correct and properly marked containers and away from unauthorised personnel.

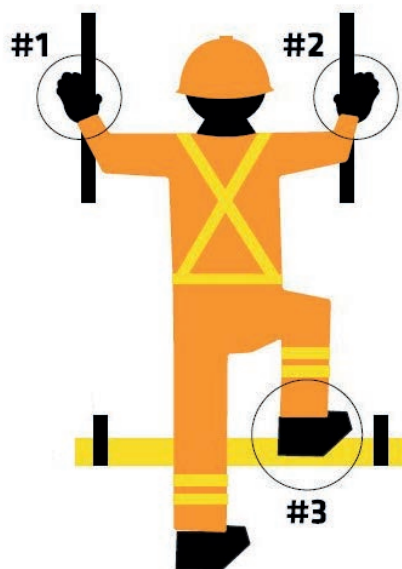
TYRE HAZARDS

<p>WARNING</p> 	<p>An air-inflated tyre can expand and explode:</p> <ul style="list-style-type: none"> - if excessive heat is applied through welding; - heating rim components, external are or excessive use of the brakes. <p>An exploding tyre can eject axle and wheel debris 500 m (1500 ft) or more from the vehicle, causing damage and possibly personal injury or death. All personnel must be aware of the hazards of overheating tyres.</p>
<p>WARNING</p> 	<p>Maintenance on tyres and rims can be hazardous. The use of incorrect procedures can result in a tyre exploding. An exploding tyre can eject axle and wheel debris 500m (1500 ft) or more from the vehicle, causing damage and possibly personal injury or death.</p> <p>Maintenance on tyres and rims must be done only by trained personnel, using the correct tools and procedures. The tyre dealer or manufacturers instructions must be allowed.</p>
<p>WARNING</p> 	<p>An over-inflated tyre can blow out or cause a rim failure. This can cause damage or personal injury. Inflation of tyres must only be done by trained personnel.</p>
<p>WARNING</p> 	<p>When you inflate a tyre, you must stand behind the tyre tread and use a elf attaching inflator.</p>
<p>WARNING</p> 	<p>Do not approach a warm or hot tyre. Keep the minimum distances away from the tyre and stay outside the shaded areas (refer to illustration above).</p>












INSTALLATION AND DISASSEMBLY OF ADDITIONAL ACCESSORIES

<p>WARNING</p> 	<p>You must never attempt to mount, dismount or jump from a machine that is moving.</p>
<p>WARNING</p> 	<p>Always mount or dismount the machine at the recognised locations, which have steps and/or hand holds.</p>
<p>WARNING</p> 	<p>When you mount or dismount the machine, always keep a three -point contact with the steps and hand holds. Three-point contact can be two feet/one hand or two hands/one foot.</p>



BEFORE OPERATING THE MACHINE

WARNING 	This machine must be operated only by correctly trained and authorised personnel. Certain local operating conditions may require the machine operator to obtain an operators licence or a certificate.
WARNING 	Check the work area or site for changes in the stability of the ground surface, back filled trenches and structural integrity of buildings, roofs etc.
WARNING 	Make sure that if the machine is equipped with a fully working lighting system that is adequate for the working conditions, and is compliant with local or national road traffic regulations.
WARNING 	Make sure that before the machine is moved, there are no personnel on, under or near the machine.
WARNING 	Check the area for vertical and horizontal clearances. Check for overhead obstructions. Check for electrical power lines and make sure the machine keeps at least 8 m (25 ft) away.
WARNING 	Make sure that all protective guards and covers are correctly installed on the vehicle.
WARNING 	Make sure that the machine's all-electric lighting is in full working order.
WARNING 	Collisions between high-speed road traffic and slow moving machines can cause personal injury or death. When on a public road, use a flashing beacon and other lights according to local laws. Use a Slow Moving Vehicle (SMV) emblem displayed at the rear of the machine where this is a national requirement. Pull over to let faster traffic pass. Signal and slow down before turning off the road.
WARNING 	ALWAYS make sure the body is propped up with support during work. NEVER take more than one wheel at a time. ALWAYS keep your distance when the wheel is removed.

GENERAL SAFETY INSTRUCTIONS

- Check that the machine is roadworthy and safe to operate every time it is put into operation!
- Observe the current regulations regarding safety and accident prevention as well as the information in the operator's manual.
- When using public roads observe all traffic regulations.
- Make yourself familiar with all equipment and controls and their functions before starting work as it will be too late once you have set off.
- Make sure that there is no one in close proximity to the machine before putting it into operation (Be especially aware of children!).
- Check that visibility is good, particularly when reversing (have someone direct you if necessary).
- Clothing worn by the operator must be close fitting.
- Avoid wearing loose fitting clothing when operating or maintaining the machine.
- Keep the machine clean to prevent fire.
- If it is necessary to access the machine, the Engine of the towing vehicle must be switched off.
- The ignition key of the towing vehicle must be removed.
- Any safety guards must be checked regularly for wear and replaced if necessary.
- Any safety decals that are missing must be replaced immediately.
- Use only the recommended fastenings on the machine!
- Do not exceed the maximum load on the trailer drawbar.
- Use extreme caution when coupling and uncoupling the machine from the towing vehicle to avoid risk of injury.
- During maintenance or after use prevent the machine from rolling away by use of the parking brake or wheel chocks.
- Repair work to the tyres must be carried out by qualified technicians using suitable tools.
- When working on the wheels make sure that the trailer is secured and that wheels are chocked to prevent it from moving.
- Tighten the wheel nuts after the first trip with a load.
- After replacing the wheels retighten the wheel nuts or bolts after the first 10 operating hours, check them every 50 operating hours.
- Avoid excessive inflation pressure.
- The specified tyre pressure must be maintained.
- Stand clear of the tyre when inflating.
- Check the pressure regularly.
- Regularly check nuts and screws for tightness and retighten them, if necessary.
- All mounting bolts and nuts must be tightened to the torque specified by the manufacturer.
- Always switch off the towing vehicle engine before carrying out any troubleshooting, and before all repair, maintenance and cleaning work. Remove the ignition key!
- Use suitable tools and wear safety gloves when replacing working parts!

2. GRAIN CHASER BIN TRAILER OPERATION

GRS without loading tube



GRS with loading tube.



The GRS semi-trailers are used to transport grain from the combine to other vehicles to transport grain by road. The GRS is otherwise known as a reloading semi-trailer and can also be used to pour grain seed into seeding or fertilizer into fertilizer spreader. In order to perform grain seed or fertilizer filling operations, the semi-trailer must be assembled with additional accessories, which one of them is a filling pipe.

If reloading semi-trailer does not include filling pipe, it is impossible to carry out grain seed and fertilizer filling operations. The loading to the semi-trailer shall be done from the top by opening the wrapped tent. Unloading from the reloading semi-trailer is done by means of horizontal and vertical augers, the torque is transmitted to the augers from the PTO of the towing vehicle.

WARNING



NEVER remove more than one wheel at a time. ALWAYS stand clear of the trailer with the wheel removed.

2. GRAIN CHASER BIN TRAILER OPERATION

Before starting to operate the reloading semitrailer, make sure that the towing vehicle and the reloading semitrailer are properly coupled, the electrical, brake and hydraulic connections are connected, as well as the PTO, the PTO and guards are properly locked. Check the operation of external lights and the proper functioning of connected systems, make sure that there are no air or hydraulic fluid leakage. Check the grease level of the chain lubrication system, top up if necessary. Make sure

that connecting cables or hydraulic and pneumatic hoses are not pinched or otherwise obstructed or damaged by the wheels or other parts of the towing vehicle while performing turning manoeuvres during operation. Check the set PTO speed on the towing vehicle, set the required PTO speed as required.

Depending on the chaser bin the specification can work with 540 or 1000 transmission, check the information on the information label that is affixed on the front part of the semitrailer.



WARNING



When working in the risk area between the semitrailer and the towing vehicle, always make sure that the engine of the towing vehicle is turned off and the key is removed from the ignition switch.

WARNING



Never enter an area where the PTO is rotating.

WARNING



Always make sure that all PTO guards are installed and in good working order.

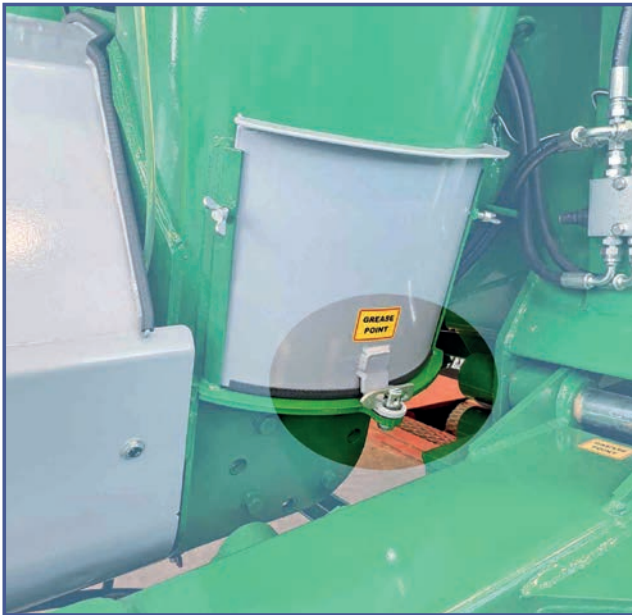
WARNING



Never work under any unsupported vehicle.

2. GRAIN CHASER BIN TRAILER OPERATION

Before starting the operation, make sure that all cleaning maintenance openings are closed and properly locked.



Make sure that the drainage cock of the chain lubrication system is closed and that grease does not leak out of the unit during operation.



The drainage cock is closed



The ladder is open



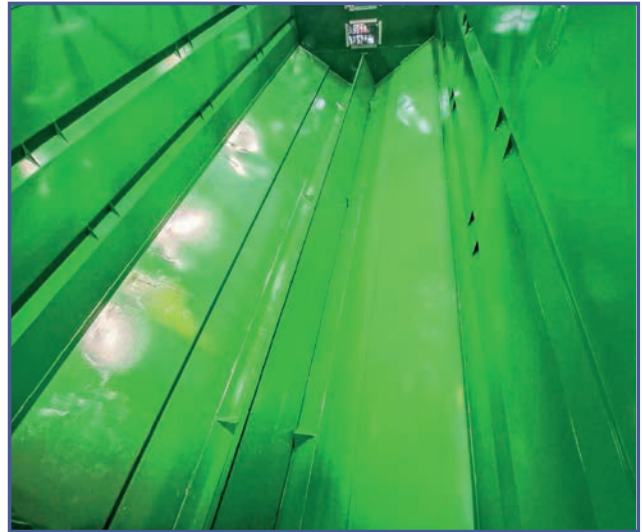
The ladder is closed

Before loading the semitrailer, make sure that the rollover sheet is open and locked in the open position, there are no foreign objects inside the reloading semitrailer, and the step ladder is closed so that it does not get stuck or damaged during the operation.



2. GRAIN CHASER BIN TRAILER OPERATION

Make sure the horizontal auger feed dosing lid is closed and grain cannot enter the horizontal auger and make it difficult to start the unit. The position of the horizontal auger feed dosing lid is indicated by an arrow on the vertical unloading auger in the front of the reloading semitrailer. The dosing lid is controlled by hydraulic cylinders.



The dosing lid is closed

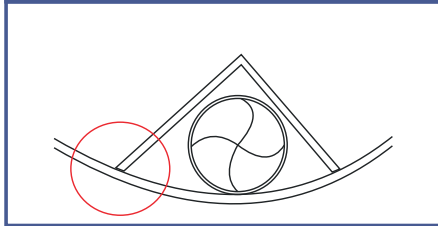
When unloading from the reloading semitrailer, the operator must approach the other vehicle properly to allow the back and forth movements in parallels to the vehicle to be loaded. Bend backward the vertical unloading auger to the working position, the vertical unloading auger has the possibility to change the positioning angle, making it easier for the operator to fill another vehicle. The vertical unloading auger must not be obstructed by building structures, tree branches or overhead power lines.



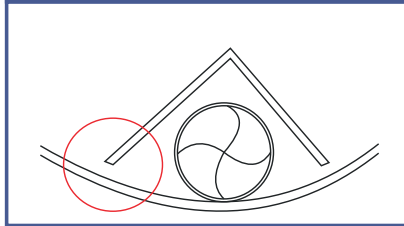
The grain is loaded into the reloading semitrailer from the combine while the units are stationary, or while moving parallel to the combine at the same speed. When loading grain or fertilizer and using a telescopic loader, the reloading semitrailer must be placed on solid and stable ground, in such a place that during loading, tree branches, building structures, or external power lines would not obstruct. The grain filling level cannot be higher than the height of the tent hoops, the weight of the loaded fertilizer cannot exceed the permissible load capacity of the reloading semitrailer.

2. GRAIN CHASER BIN TRAILER OPERATION

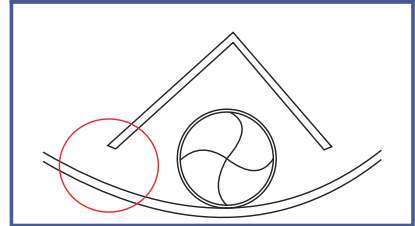
Turn on the PTO, when the unit starts to rotate, slowly open the horizontal auger dosing lid, open it enough to control the reloading process properly. The more the dosing lid is opened, the higher flow of the being unloaded product will be.



Dosing lid closed



Dosing lid open 50%



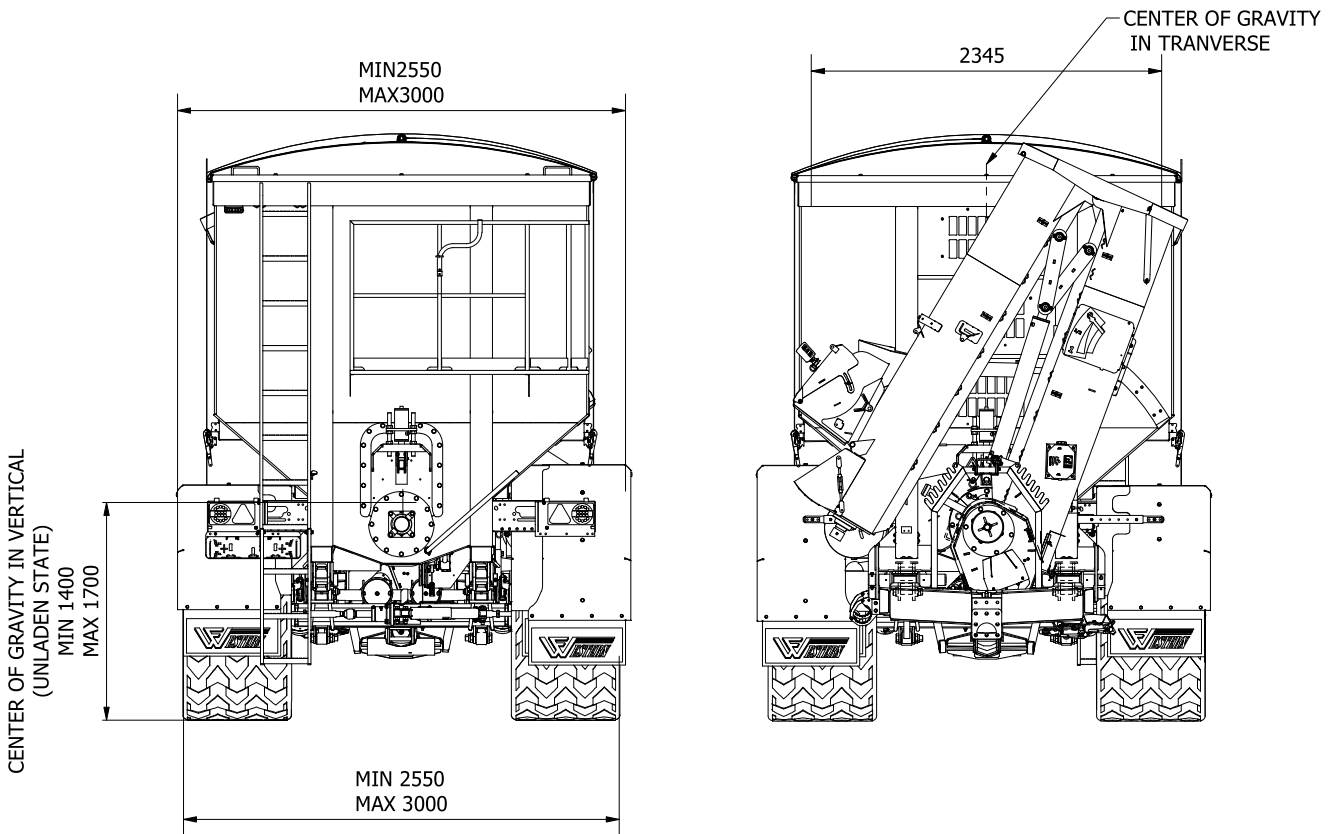
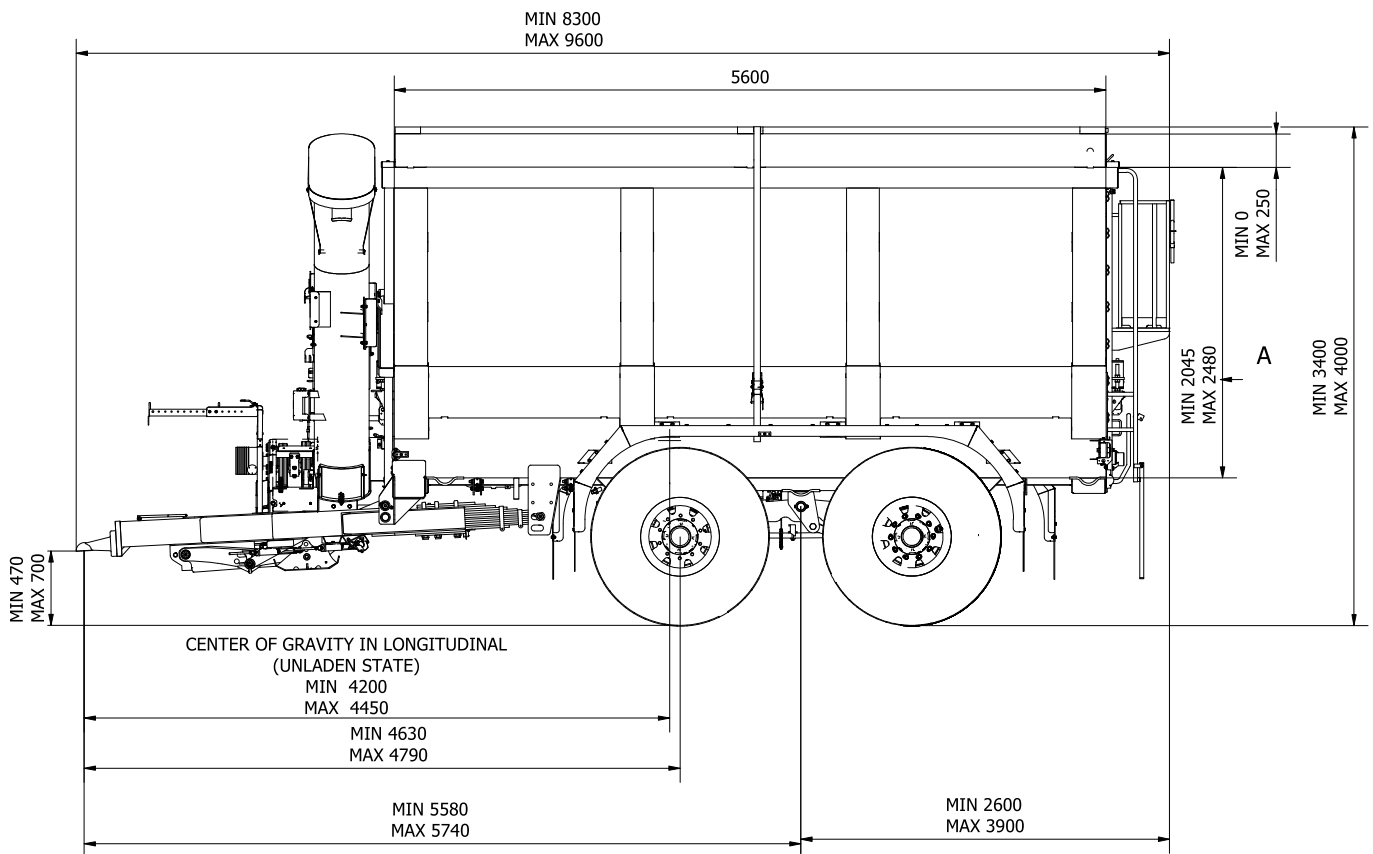
Dosing lid open 100%

In order to stop the unloading process when the being unloaded product has not ended yet, first of all, close the horizontal auger feed dosing lid, the unloading will continue for a few seconds until the horizontal and vertical augers are cleared, when the being unloaded product stops falling, turn off PTO and the unloading process is stopped.

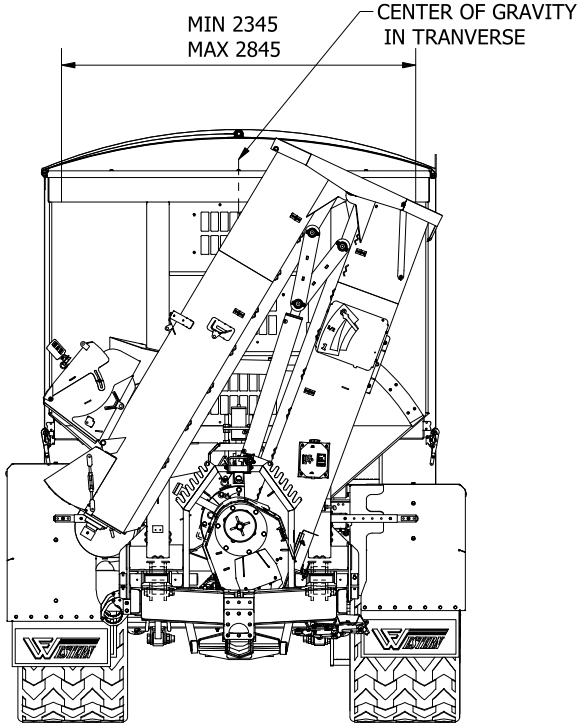
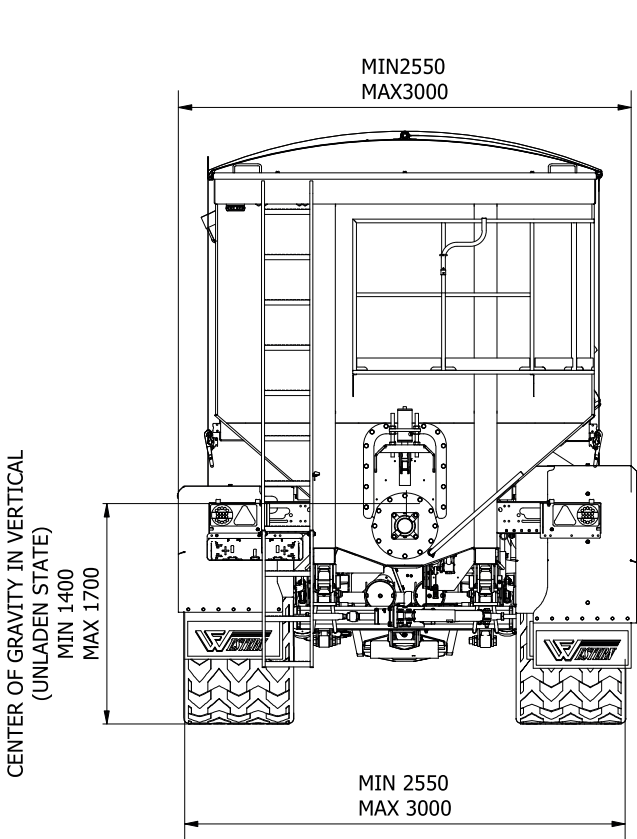
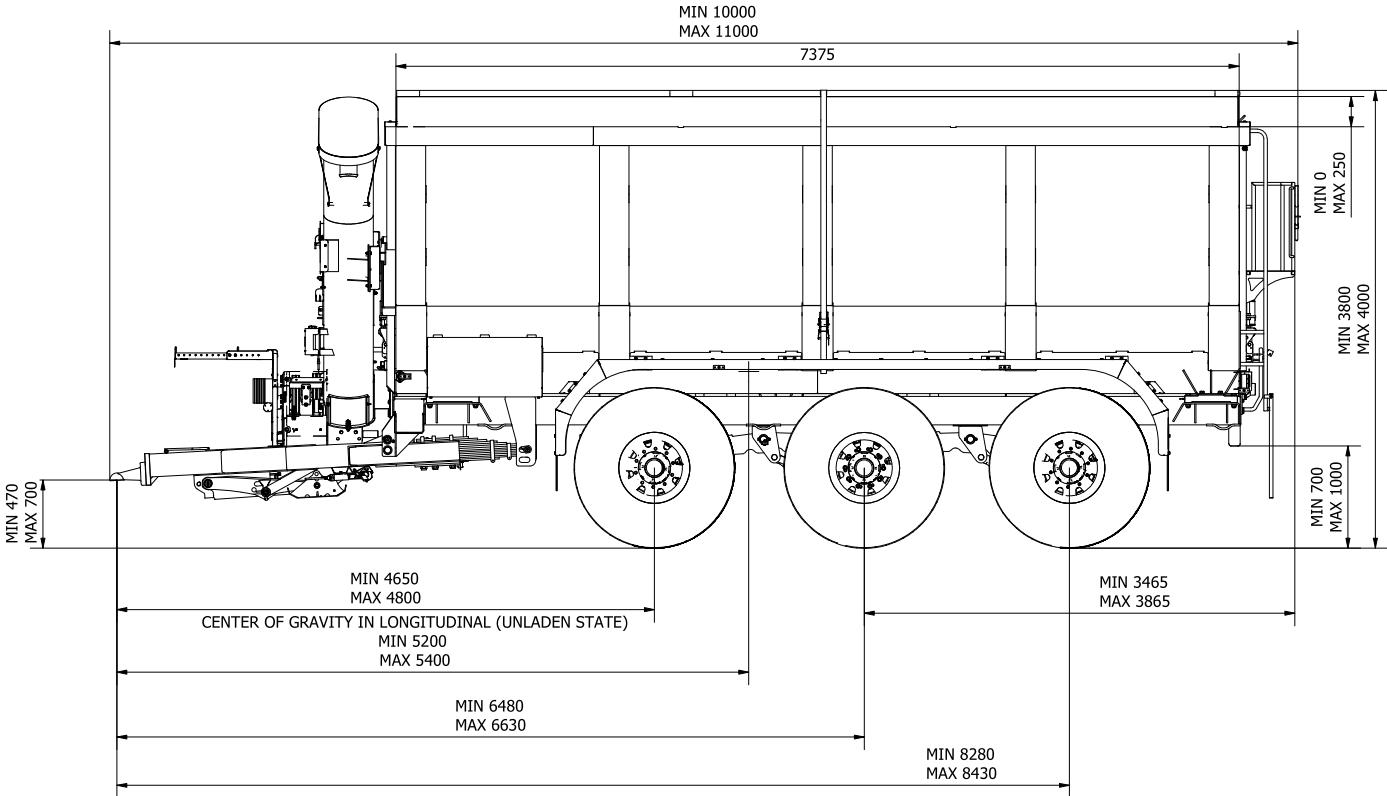
In order to stop the unloading process, when the being unloaded product has already ended, the being unloaded product has stopped falling, close the dosing lid of the horizontal auger feed, turn off the PTO, the unloading process is finished. Place the vertical unloading auger at the maximum angle (highest position), bend the vertical unloading auger into the transporting position.



2.1. GRAIN CHASER BIN TRAILER GRS 1620



2.1. GRAIN CHASER BIN TRAILER GRS 2530



2.3 ROLL SHEET MOUNTING

Due to the peculiarities of transportation, the product may be delivered with not installed roll over sheet on top of the product, so the user must install the sheet on his own. During transportation, the parts of the roll over sheet are placed inside the product, so unload and unpack.

The roll over sheet is installed on the top of the body or on the elevations, depending on the completeness. First, you need to install the front 1 and the back 2 parts, then install the tent hoops 3. Everything is fixed with screws.

WARNING

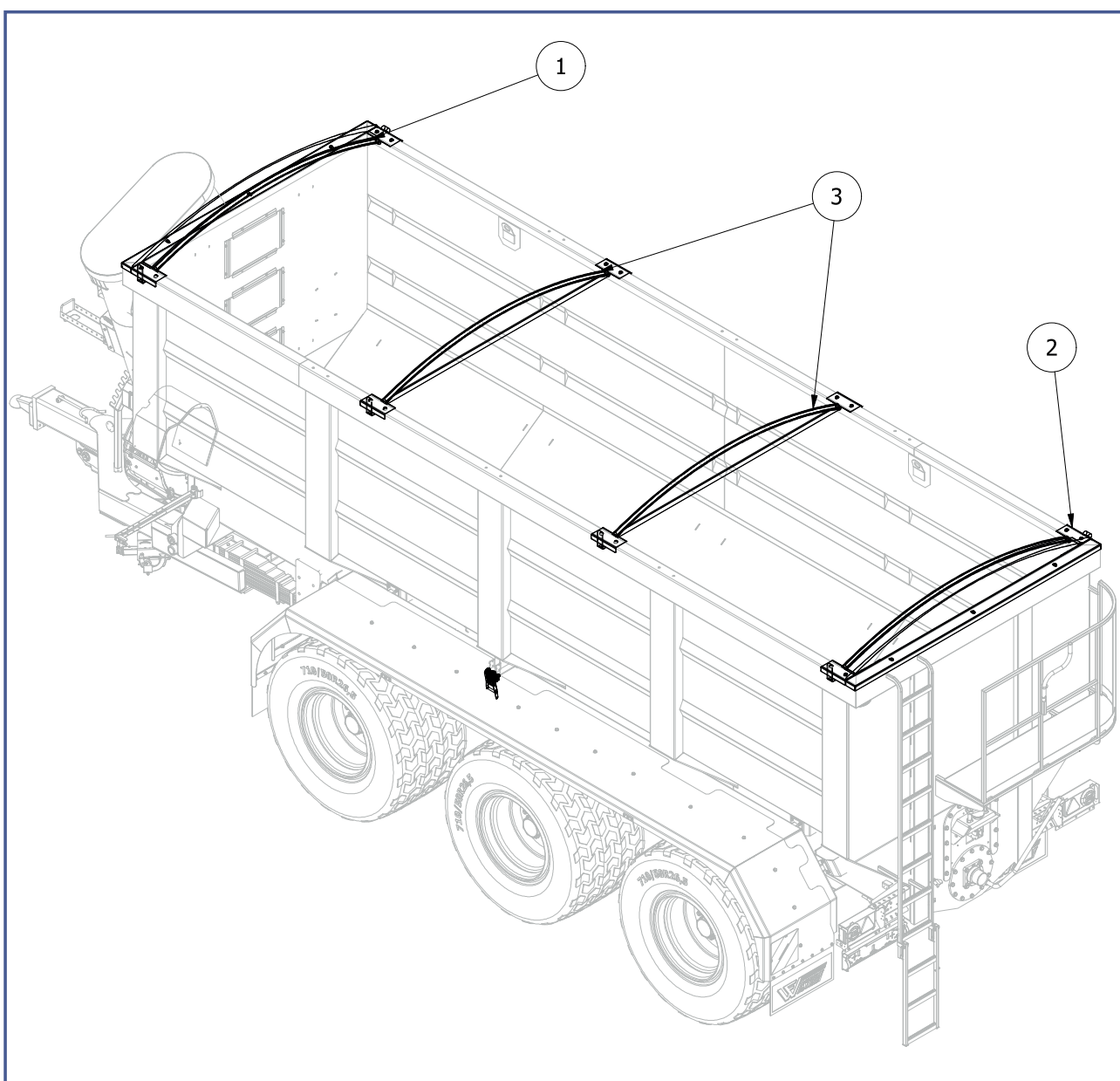


When installing or dismantling the unit, always maintain three-point contact with stairs and handrails. Three-point contact can be two feet and one hand or two hands and one foot.

WARNING



When installing or dismantling the unit, always stand facing the unit and never carry tools or supplies. Tools and supplies must be lifted or lowered from the unit using auxiliary lifting equipment.



2.3 ROLL SHEET MOUNTING

The buckles of the sheet straps are attached to the holders on the sides of the product, three buckles of the straps for fixing the closed sheet, one on one side and one on the opposite side for fixing the open sheet.

WARNING

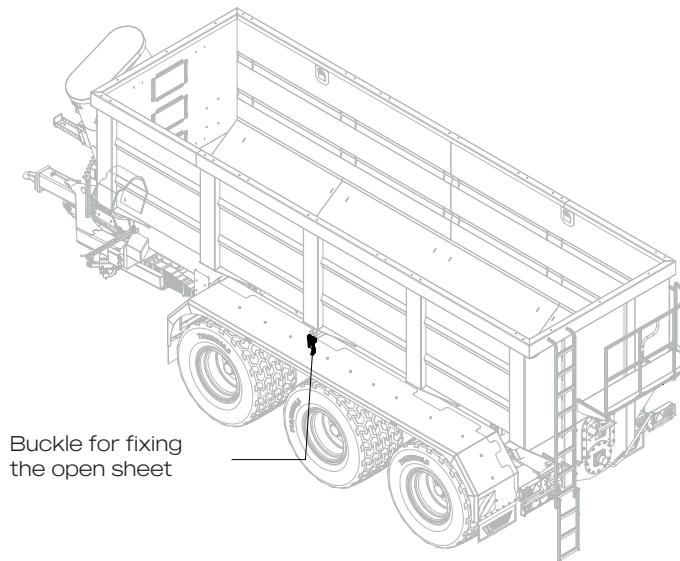


Always assemble or disassemble the device in a place with a suitable lifting and climbing equipment.

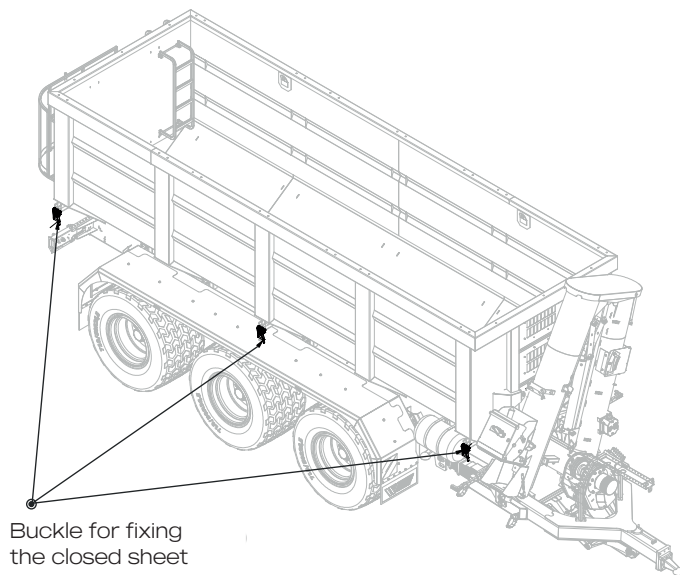
WARNING



Installation works must be performed after familiarization with the installation sequence and recommendations from the manufacturer.



Buckle for fixing the open sheet



Buckle for fixing the closed sheet



2.3 ROLL SHEET MOUNTING

It is necessary to lift the sheet on top of the installed hoops, when lifting the sheet pay attention to the winding direction. The sheet has three installed tubes, the first "1" is for locking the sheet to the edge of the structure,

the second "2" is for wrapping the sheet and the third "3" is for connecting the pulling straps to the sheet and closing the sheet.



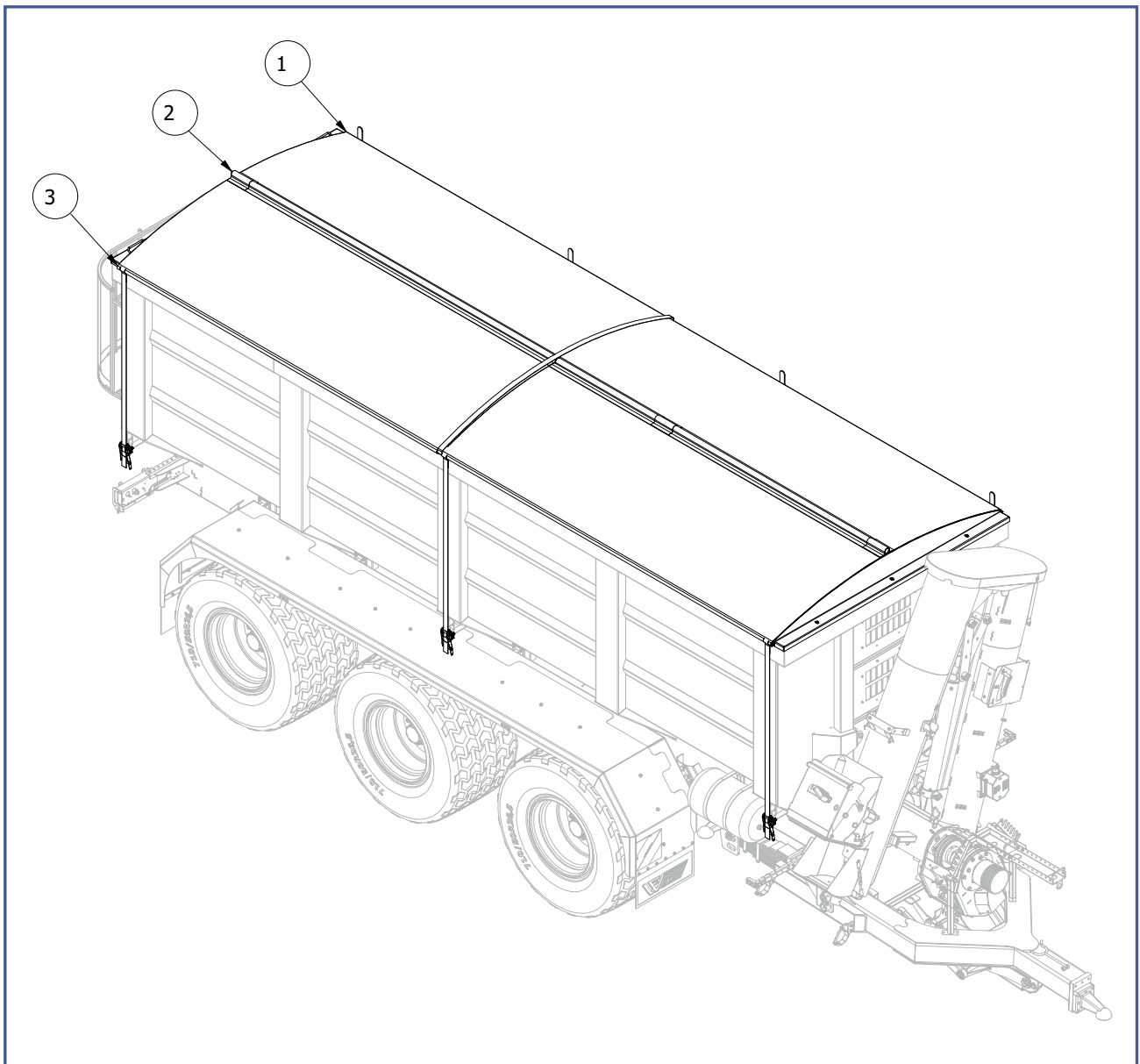
WARNING

Installation works must be performed after familiarization with the installation sequence and recommendations from the manufacturer. If you have any questions, contact the manufacturer or the representative of the manufacturer.



WARNING

Always make sure the engine of the towing vehicle is turned off and the ignition key is removed from the ignition switch when performing maintenance, repair, or adjustment works.



2.4 EXTENSION SIDES MOUNTING

Due to the peculiarities of transportation, the product may be delivered with not installed side extensions on top of the product, so the user must install the extensions himself.

During transportation, side extensions are placed inside the product, so unload and unpack. The side extensions should be installed in the following order, first of all the extensions should be installed on the front "1" and the rear "1", then the side extensions "23" are placed, everything is fixed with the screws.

WARNING

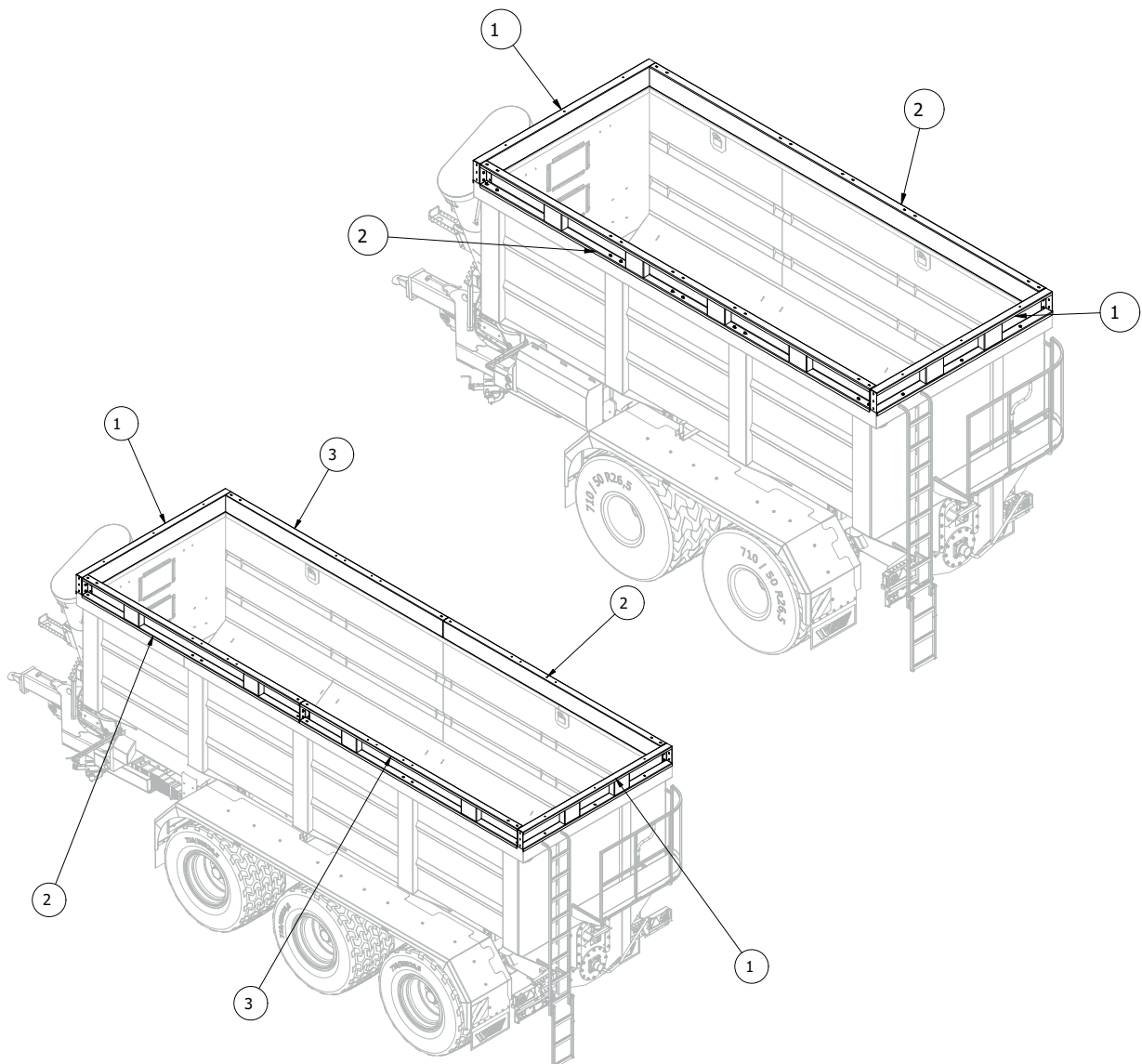


Make sure you are using the correct lifting equipment before installing the extensions. Also use safe climbing equipment.

WARNING



Do not install additional sides arbitrarily, nor use third-party extensions. Such changes will void the warranty.



2.5 ASSEMBLY OF WHEELS AND INSTALLATION OF MUDGUARDS

Due to the peculiarities of transportation, the product can be delivered to the customer with transport wheels, which are only suitable for transportation of the product. The mudguards can be installed in the transport position, so the user must install the main wheels and adjust the mudguards by himself.

The main wheels are placed inside the product, unload the wheels and sort them according to the direction of rotation. Dismantle the transport wheels, install the main wheels and tighten them properly (Nut tightening torque max 510 Nm). Adjust the mudguards properly to the width of the wheels and tighten the locking screws.

WARNING



Watch out falling objects. Use personal protective equipment. Use lifting equipment and supports in good working order.

WARNING

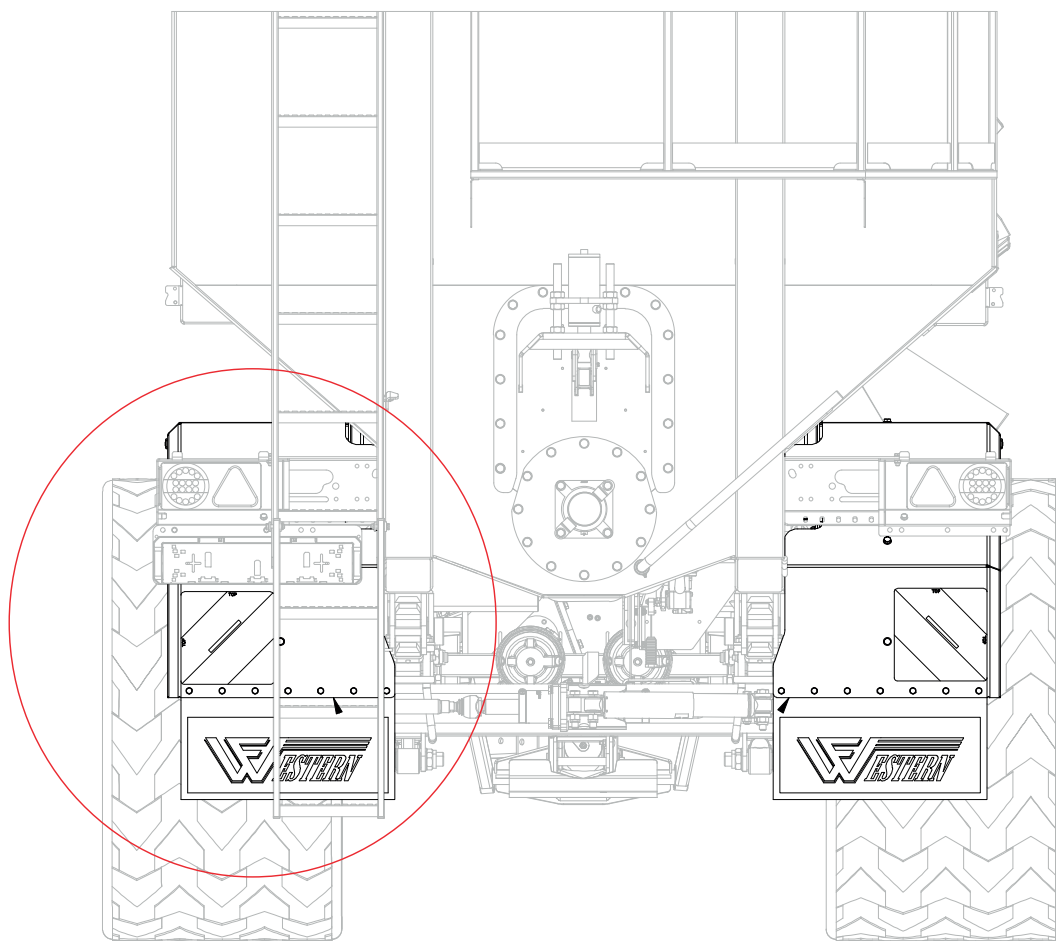


Always assemble or disassemble the device in a place with a suitable lifting and climbing equipment.

WARNING

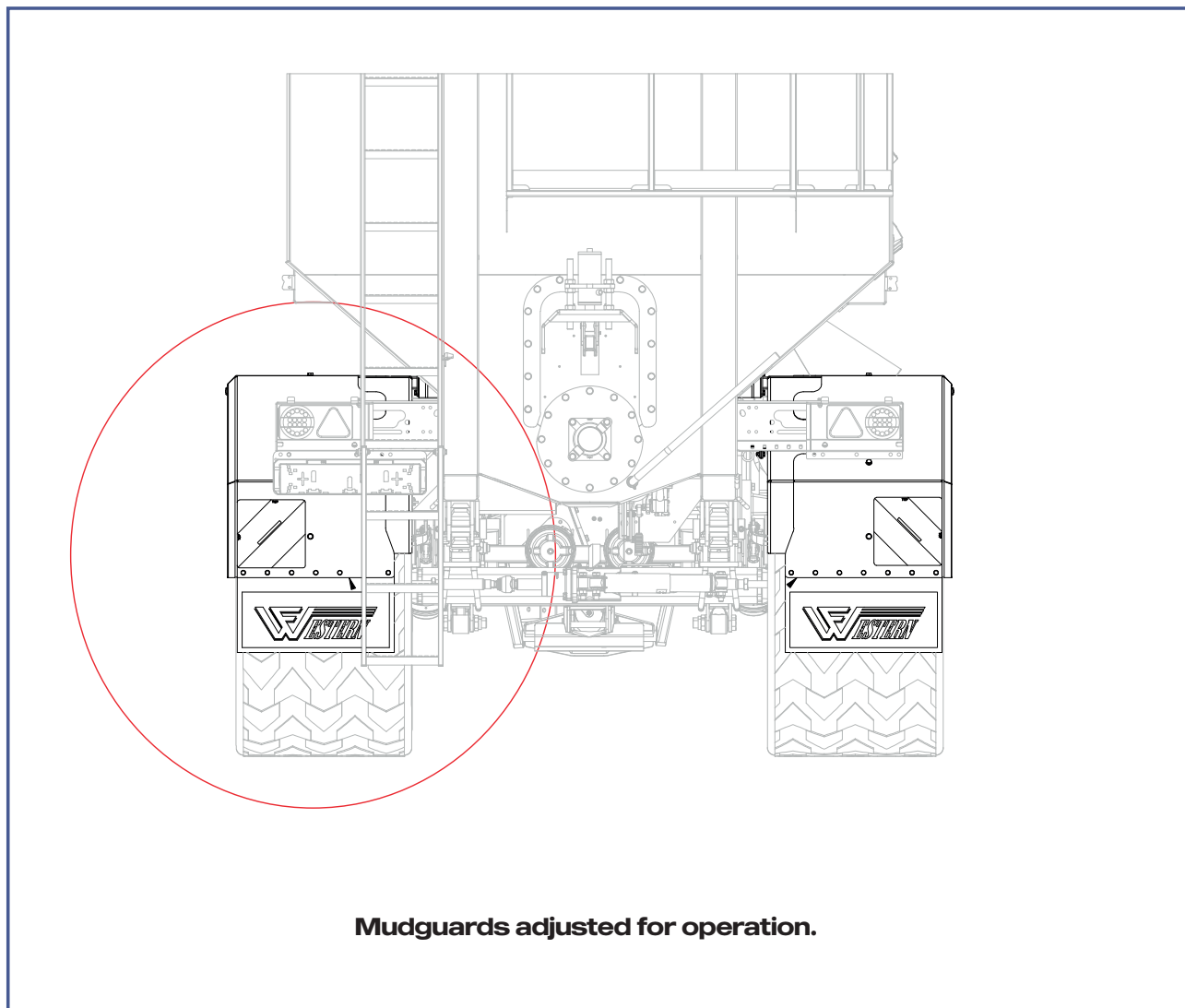


Never work under any unsupported vehicle.



**Mudguards position for trailer transportation,
not intended for semitrailer operation.**

2.5 ASSEMBLY OF WHEELS AND INSTALLATION OF MUDGUARDS



VIDEO INSTRUCTION FOR TIGHTENING THE WHEELS

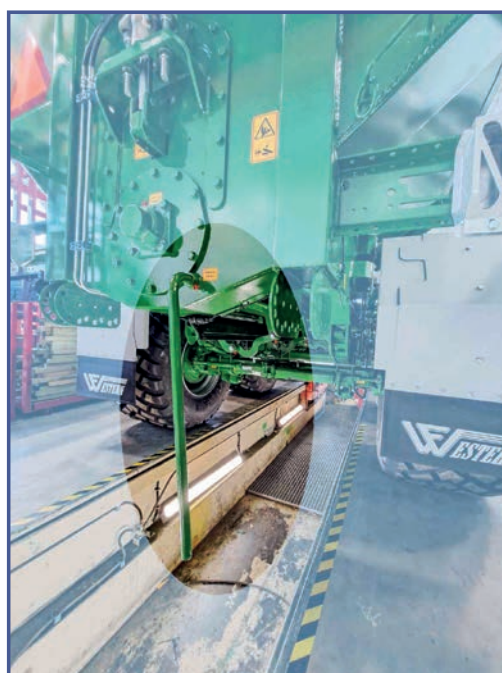


2.6 PREPARATION OF THE SEMITRAILER FOR STORAGE

When storing the product, it is recommended to keep the roll over sheet open and locked in the open position so that accumulated rain or snow would not damage or stretch the material of the tent. If it rains or snows when the semitrailer is empty, precipitation begins to accumulate in the smallest bends of the sheet, the sheet material begins to stretch, the amount of precipitation increases, so the weight increases, and as a result of which the sheet material can tear and the sheet can be damaged.



When storing the reloading semitrailer, all cleaning openings must be opened, all grain or other material residues must be cleaned, and all lubrication points must be lubricated. The control computer (if included) is disconnected and placed in a dry and warm place.



2.7 ROLL SHEET OPERATION

To avoid dropping the loaded grain or other product when closing the roll over sheet, the loading level must be below the sheet hoops, if the loading level exceeds the height of the sheet hoops when closing the sheet, the loaded product will possibly be pushed from the top of the closing tent onto the ground. The closing of the sheet is done in the following order, unfasten the locking strap of the sheet in the open position and loosen it in the buckle so that it does not obstruct the closing of the sheet. Go to the opposite side of the semitrailer where the three tensioning straps of the tent are installed, take the middle strap above the buckle and pull the sheet to the end, pull and lock the middle strap, just don't over pull, as over stretching can tear the sheet material. After that, tighten and lock the side straps, press the ends of the straps with the locking buckles. The roll over sheet is closed.



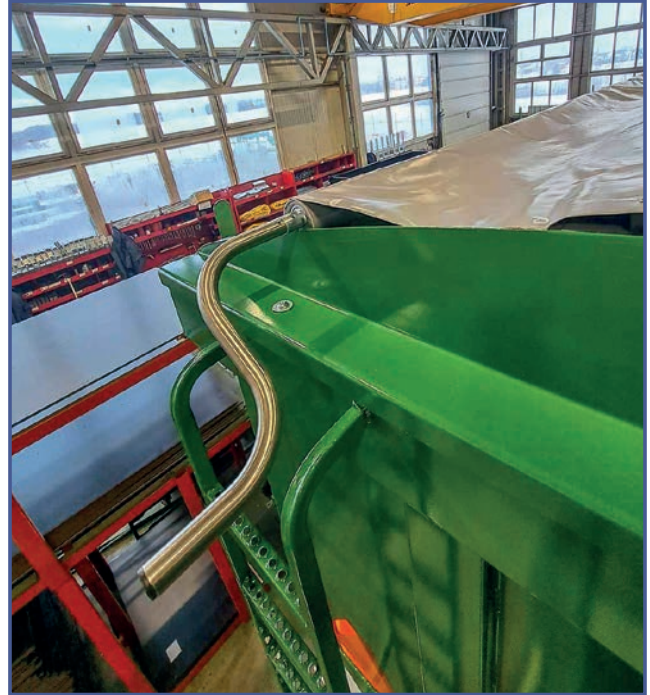
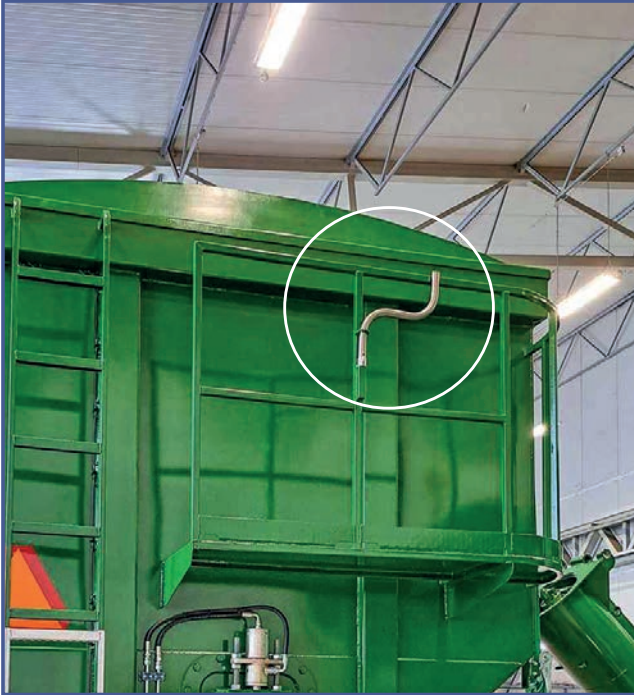
The use of roll over sheet. See how the roll over sheet opens and closes. Each step is essential in order to perform the operation correctly and efficiently.

Scan the QR code.



2.7 ROLL SHEET OPERATION

The opening of the roll over sheet is done in the following order, unfasten all three tensioning locking straps of the sheet and loosen them, climb on maintenance area the semitrailer which is at the back of it, take the handle and insert it into the winding tube located in the middle of the sheet. Turn the tube using the handle until the sheet is fully rolled up. Remove the roll over handle and place it in the storage area. Climb down from the maintenance area, go to the locking strap in the open position on the side of the semitrailer, pull and lock the locking strap, press the end of the strap with the locking buckles. The sheet is open.



ROLL SHEET REPAIR WORKS



This video for roll sheet repair works.

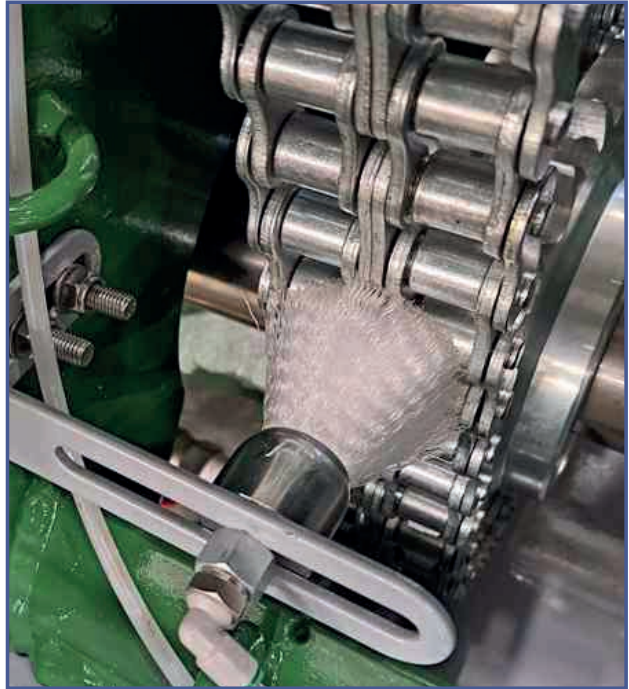


2.8 CHAIN GREASING SYSTEM

GRS semitrailers are equipped with an automatic chain lubrication system that lubricates the chains during operation. 1 – a pump that pumps grease during the rotation of the PTO. 2 lubrication brushes for lubricating the chain. 3 – container for lubricating grease, used grease is SAE85W140; APIGL4/GL5.



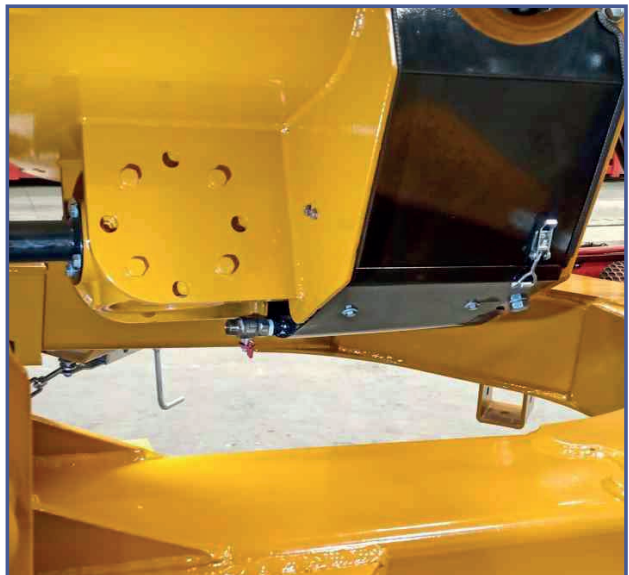
Lubrication system pump



Lubricating brushes for lubricating the chain



Oil tank

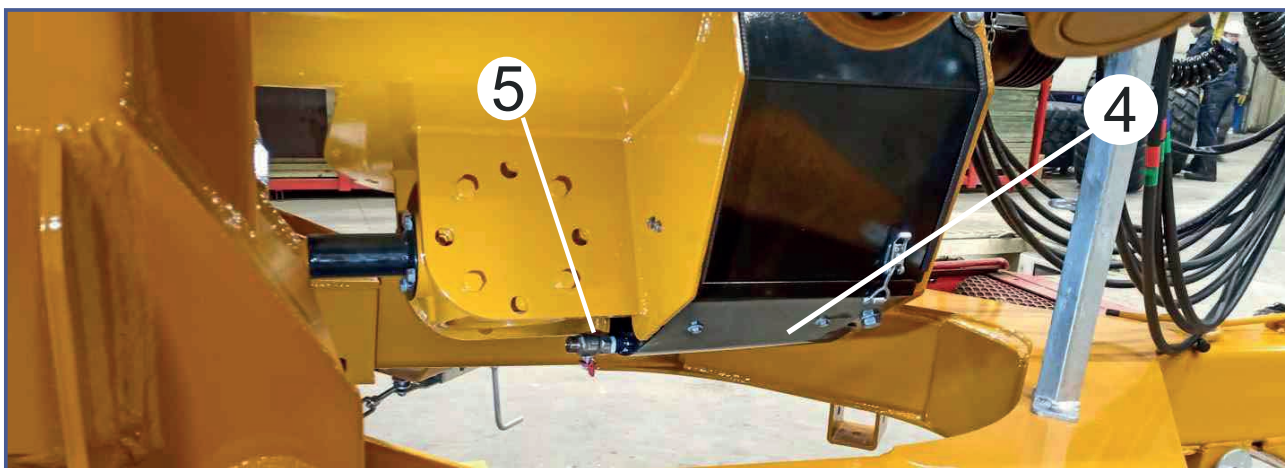
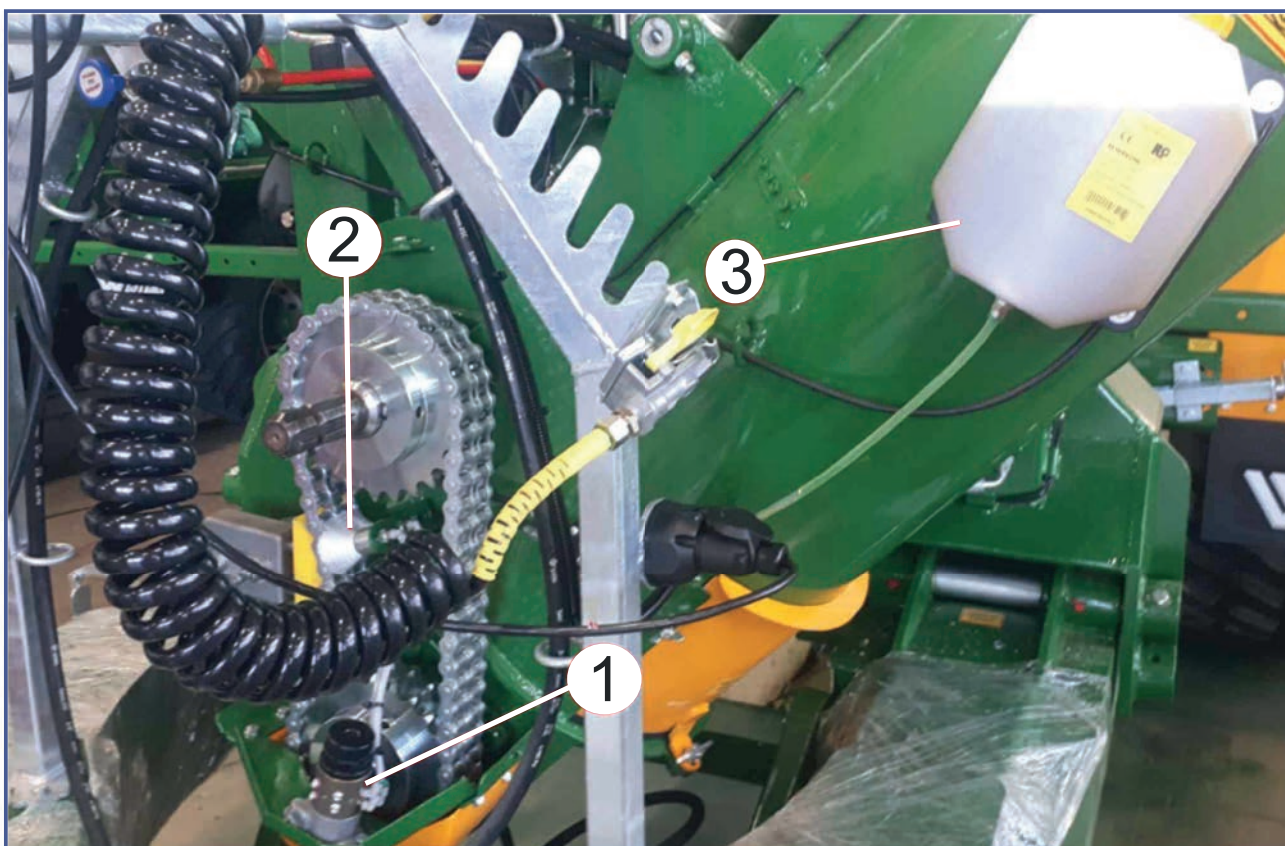


Used oil collection container and drain tap

2.8 CHAIN GREASING SYSTEM

SAE85W140 and API GL4/GL5 oil is used for chain lubrication, maintained grease level in grease tank No. 3, when the grease in the tank runs out, the chain will not be lubricated, which will increase the wear and tear of the chain and sprockets that may cause failure of the unit. The grease flows from the tank through a tube to pump No. 1, the pump supplies grease through a tube to lubrication brushes No. 2, which lubricate the chain.

At intervals of every 500 tons of reloaded grain, it is necessary to drain the accumulated grease, which runs off the lubricated chains and collects in the collection tank No. 4. Take a container in which you can store the used grease until the disposal. Drain the grease from collection tank No. 4 into the container after opening the drain tap No. 5. After draining the grease, do not forget to close the drain tap No. 5. Dispose the grease in accordance with the environmental protection and health safety requirements applicable in your country.



2.9 GRAIN SEEDS AND FERTILIZER LOADING PIPE

The GRS semitrailer is otherwise known as a reloading semitrailer and can also be used to pour grain seed into seeding machine or fertilizer into fertilizer spreader. In order to carry out the operations of filling seeds or fertilizers, the reloading semitrailer must be equipped with an additional accessory the "Filling Pipe". If there is not included the "Filling pipe" in the specification, it is impossible to carry out grain seeds and fertilizers filling operations. The "Filling Pipe" is controlled by a hydraulic cylinder.



The filling pipe in "Working position", the angle can be changed by a hydraulic cylinder.



The "filling pipe" can also be installed on previously manufactured reloading semitrailers, if the user has a need for this additional equipment during operation.

2.9 GRAIN SEEDS AND FERTILIZER LOADING PIPE

The filling pipe has the following locking positions, depending on the work to be done: "Working position" when pouring grain seeds or fertilizers into the seeding machine or fertilizer spreader. "Transport position", when the filling pipe is bent and the vertical unloading auger is bent in the transport position, after the loading is finished and is transported to another place, the grain seed or fertilizer filling will still be carried out in the future and can be quickly switched to the working position. "Filling pipe off" when the grain seed or fertilizer filling operations are not carried out, but grain is collected from combines and reloaded to other vehicles.



The filling pipe is disconnected



Transport position of the filling pipe

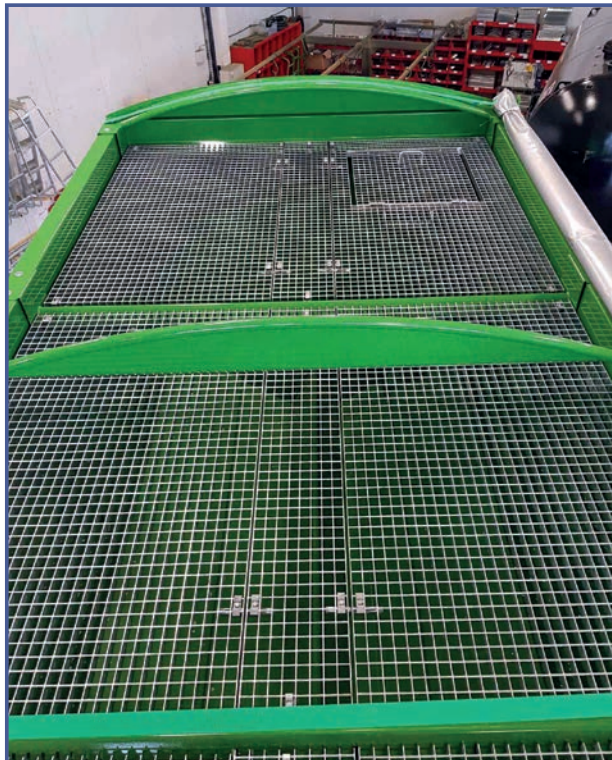


Filling pipe working position

2.10 PROTECTIVE GRILLS

When using a reloading semitrailer for fertilizer application, additional equipment is recommended, a grate that is installed in the upper part of the semitrailer.

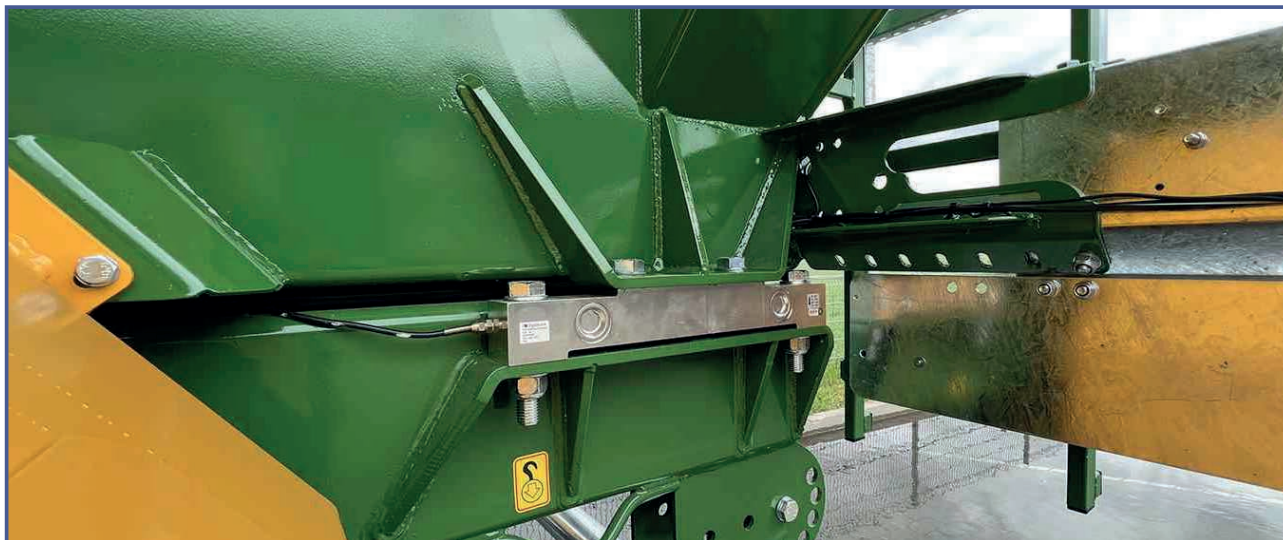
They are necessary to ensure the smooth operation of the semitrailer and to protect against failures of the equipment which can be caused by solidified fertilizer or other foreign objects entering the horizontal unloading auger.



2.11 GRS WEIGHT SYSTEMS

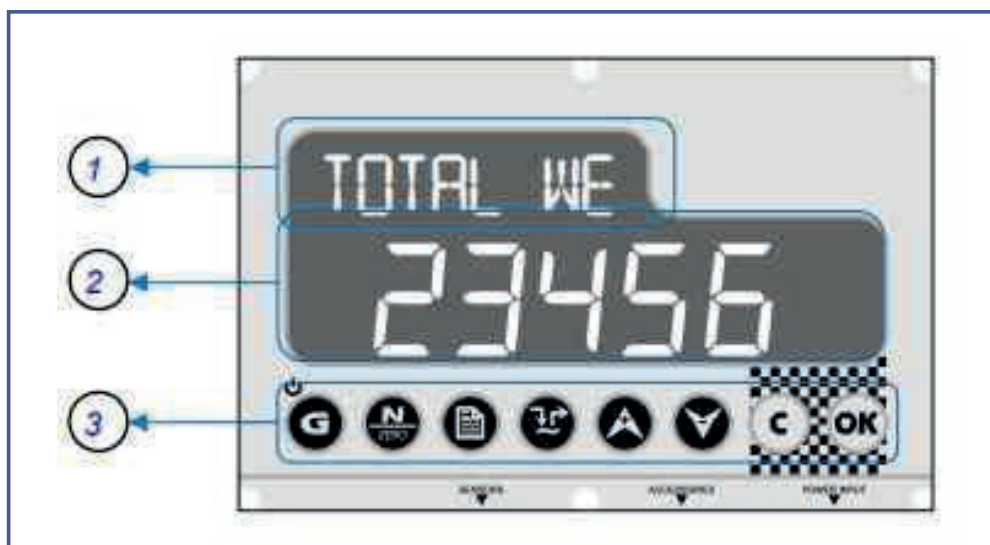
The reloading semitrailer can be equipped with scales, so that a double frame is required to install the scales, it is not possible to install a weighing system for previously manufactured products where there is no double frame. 6 weighing sensors are placed between the two frames as you can see in the Photo.

There are offered three versions of weighing systems.



The first version is the simplest weighing system which you can count the weight that is loaded and unloaded. The screen is mounted on the front of the product, the power is supplied by a cable from the three pole socket of the towing vehicle. There is possibility to install a duplicate control button unit in the operator's workplace, which would allow to control the scales both from the operator's workplace and on the screen itself while standing at the front of the semitrailer.

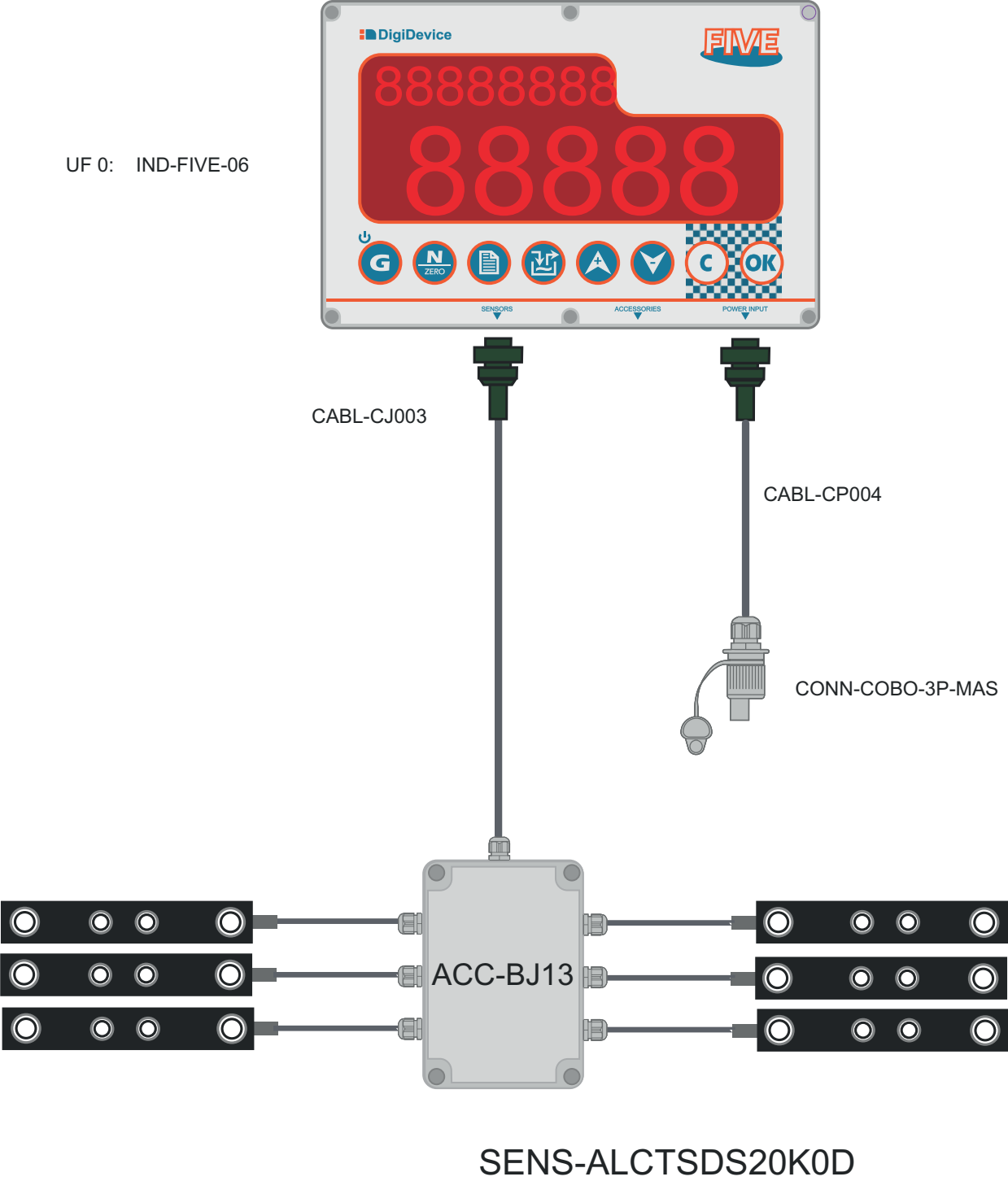
Read the operating manual of the scale manufacturer for how to use the functions of the scale.



There are three zones on the scale screen, zone "1" shows what function is set, zone "2" shows weight, zone "3" has control buttons.

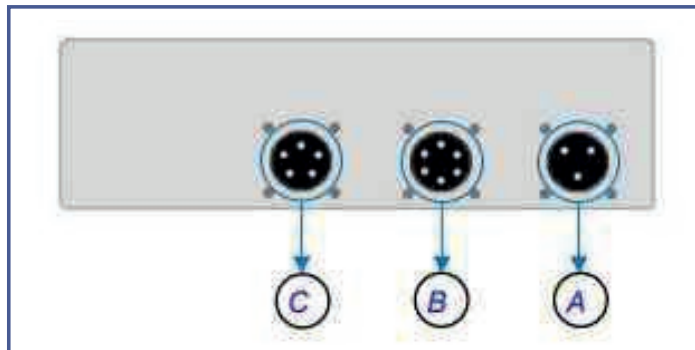
2.11 GRS WEIGHT SYSTEMS

The first version, which is the simplest weighing system, consists of weighing sensors, a data processing computer, a scale display and connecting power cables.

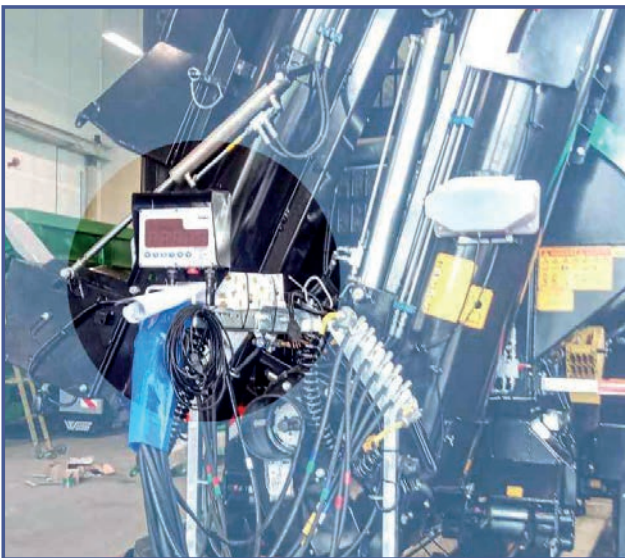


2.11 GRS WEIGHT SYSTEMS

Connections of scale display: "A" Electrical power connection; "B" duplicate control unit or printer connection. "C" connection with weighing sensors.



The first weighing system provides information on the amount of load being loaded and unloaded, and can record the loading and unloading quantities at the required time interval. If there is a printer in the set, the data can be printed. It is necessary to calibrate the scale before usage. Read the operating manual of the scale manufacturer for how to use the functions of the scale.

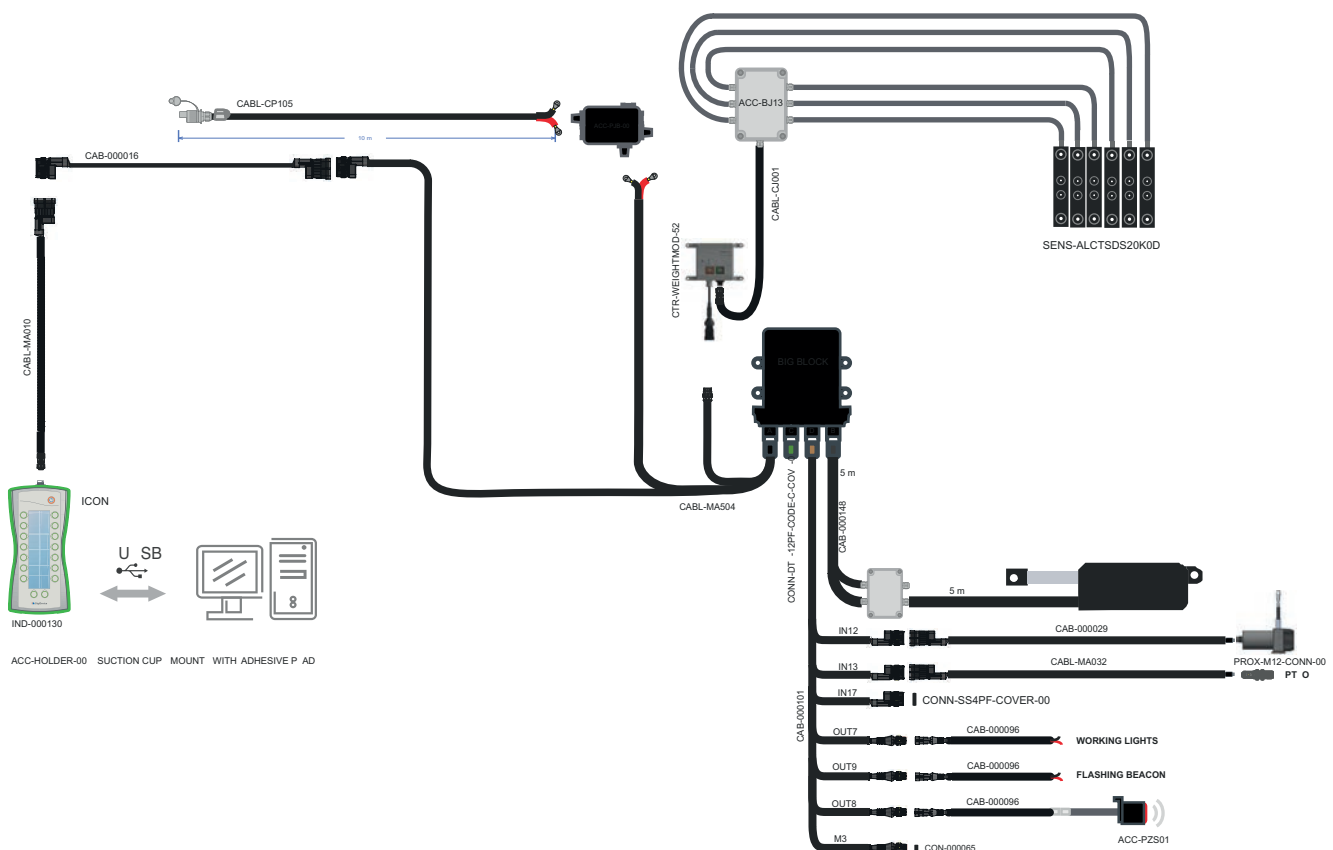


There is seen a location of the display attachment on the front of the reloading semitrailer in the photos.

2.1 GRS WEIGHT SYSTEMS

The second version of the weighing system is a weighing system consisting of 6 weighing sensors, a main control computer, a power supply unit, sensors and transducers, a control panel, connecting wires and a power cable. The power is supplied via a cable from the three pole socket of the towing vehicle. The control panel can be connected to the main computer by a cable, or it is possible to install a wireless connection between the control panel and the main control computer. This system does not have the possibility to control the hydraulic distributor, it is controlled by the hydraulic couplers with the

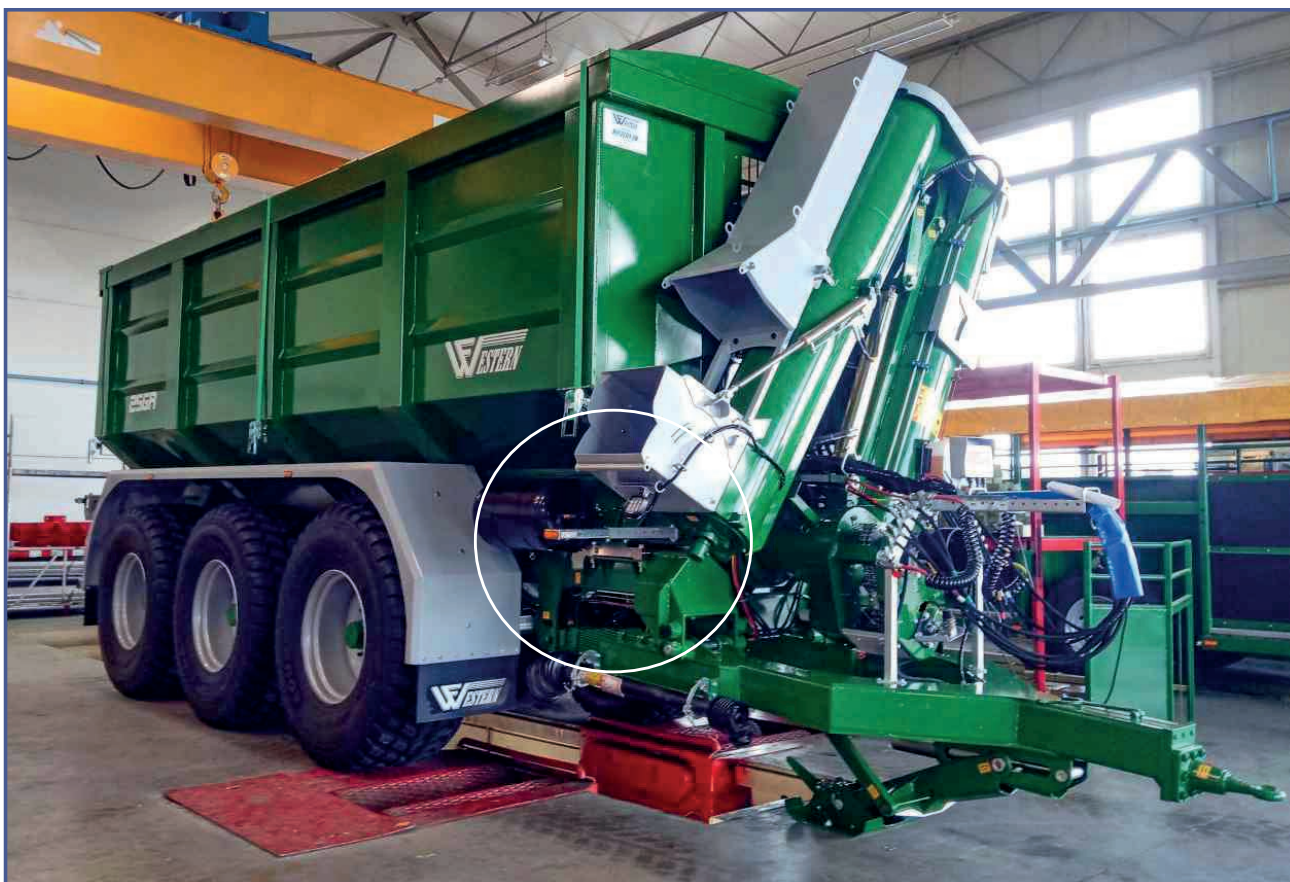
towing vehicle controls, up to 7 hydraulic couplers are required. This system collects data and via a USB connection the data can be collected and transferred to another computer. Read the operating manual of the scale manufacturer for how to use the functions of the scale. The weighing system provides information on the amount of load being loaded and unloaded, all information is visible on the control panel. The system can collect and filter data on how much was harvested from a specific field, how much was unloaded from which combines, and how much was loaded into which vehicle. It is necessary to calibrate the scale before usage.



2.11 GRS WEIGHT SYSTEMS

The third version of the weighing system is a weighing system consisting of 6 weighing sensors, a main control computer, a power supply unit, sensors and transducers, a control panel, connecting wires and a power cable. The power is supplied via a cable from the three-pole socket of the towing vehicle. The control panel can be connected to the main computer by a cable, or it is possible to install a wireless connection between

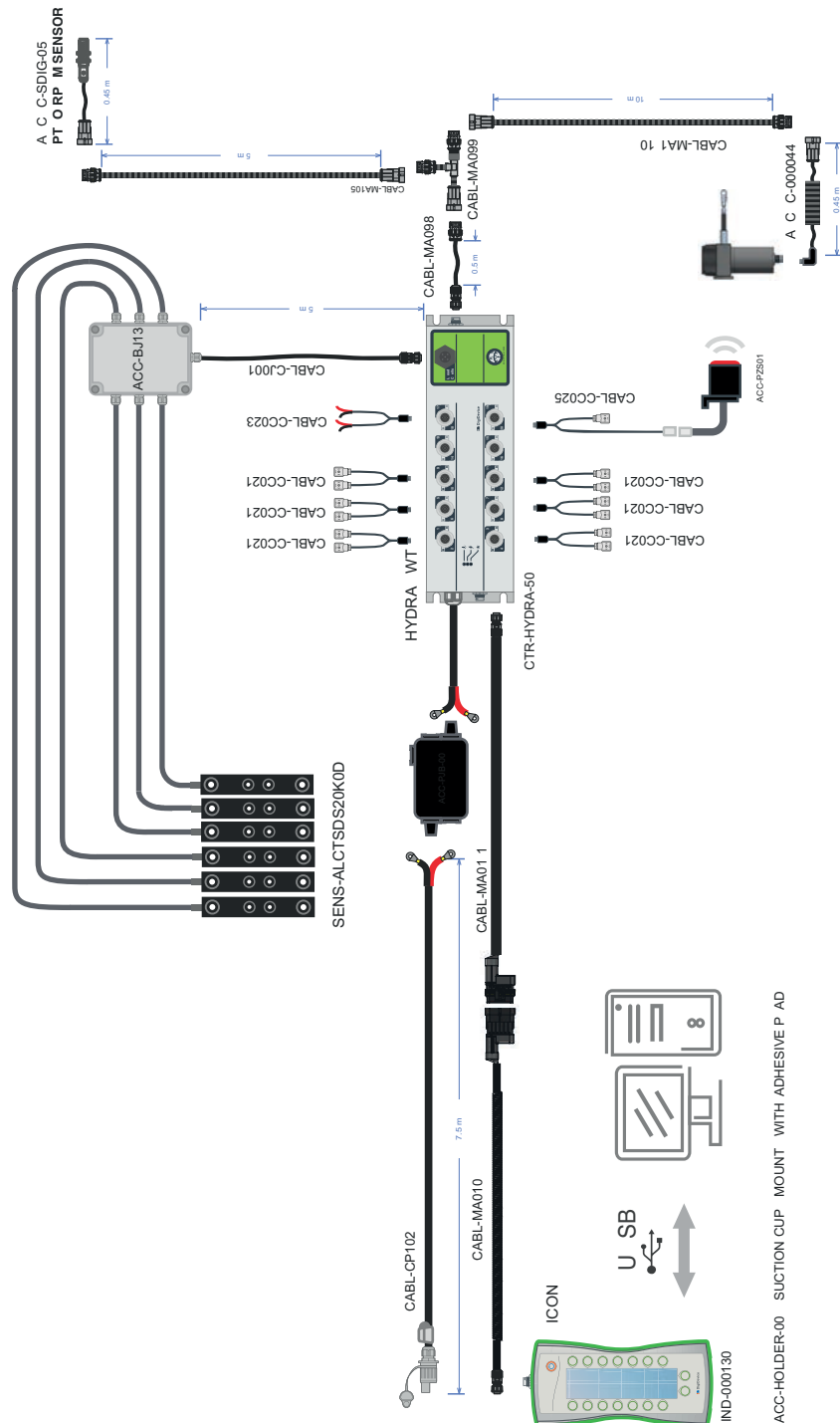
the control panel and the main control computer. This system has the possibility to control the electrically controlled hydraulic couples of the hydraulic distributor. This system collects data and via a USB connection the data can be collected and transferred to another computer. Read the operating manual of the scale manufacturer for how to use the functions of the scale.



2.1 GRS WEIGHT SYSTEMS

The weighing system provides information on the amount of load being loaded and unloaded, all information is visible on the control panel. The system can collect and filter data on how much was harvested from a specific field, how much was unloaded from which combines, and how much was loaded into which vehicle.

The third weighing system differs from the second one in that it can control the electrically controlled hydraulic couples of the hydraulic distributor. It is necessary to calibrate the scale before usage.



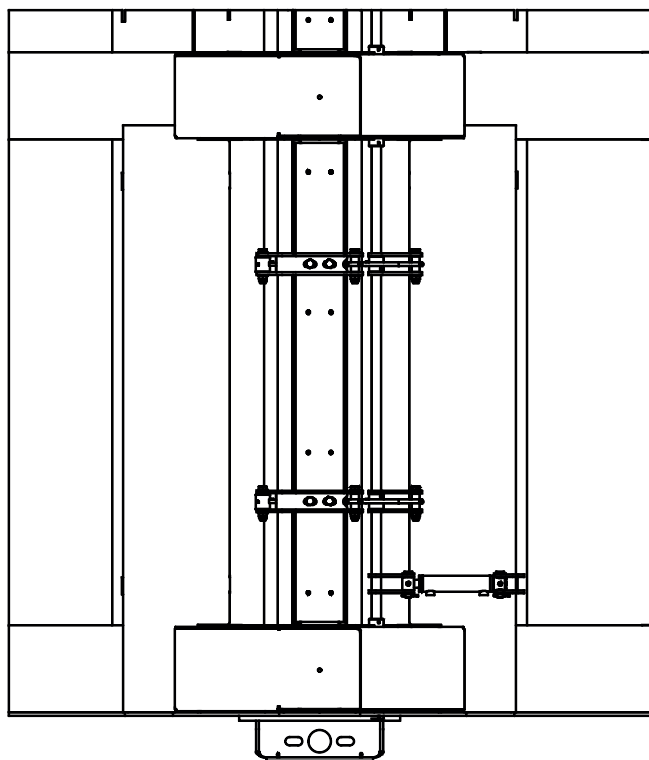
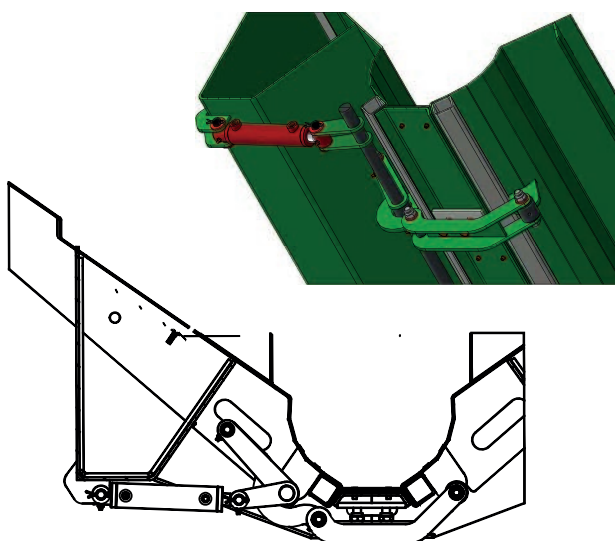
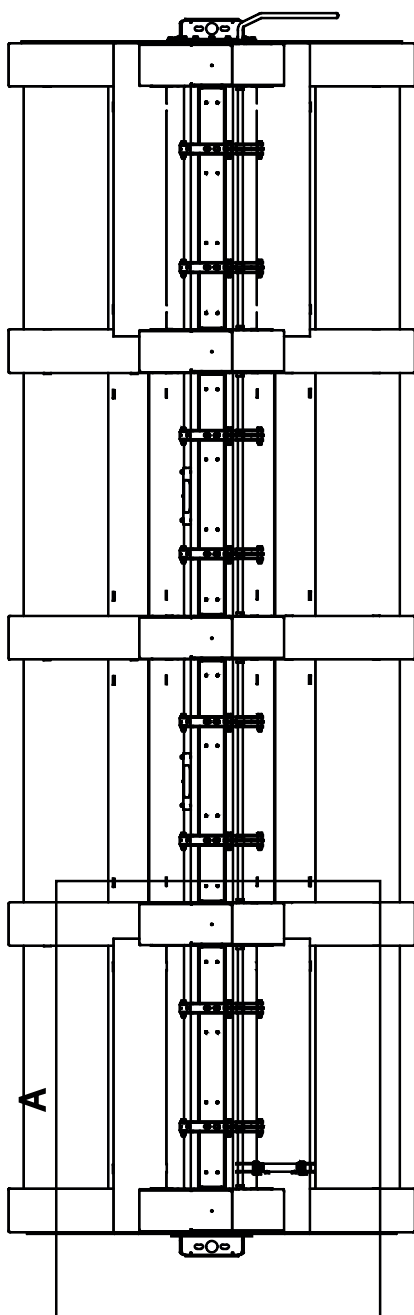
2.12 HORIZONTAL DISCHARGE AUGER SERVICE WITH HYDRAULIC CYLINDER

The reloading semitrailer can be equipped with a hydraulic cylinder operated cleaning maintaining lid of the horizontal unloading auger.

It is possible to control part of the cleaning maintaining lid or the entire lid with a hydraulic cylinder. If it is ordered that part of cleaning maintaining lid would be controlled by a hydraulic cylinder, the rest of the lid will be controlled mechanically with a handle.

If it is ordered that the entire cleaning maintaining lid would be controlled by a hydraulic cylinder, there is no longer any mechanical control. Make sure the cleaning maintaining lid is closed before using the reloading semitrailer.

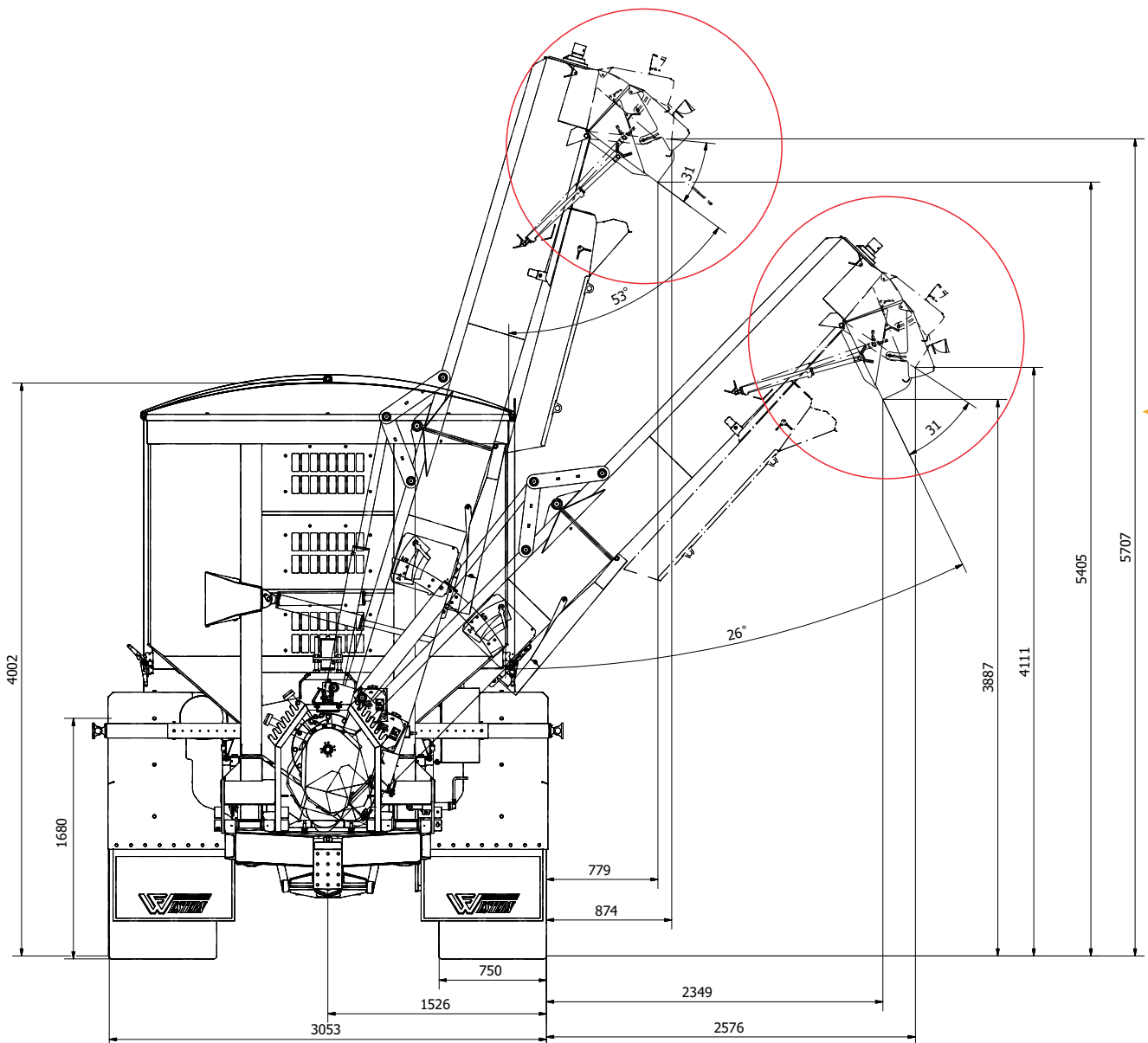
If the cleaning maintaining lid is not closed and reloading is started, the reloaded product will spill onto the ground.



2.13 VERTICAL DISCHARGE SCREW AND FUNNEL ANGLE CHANGE

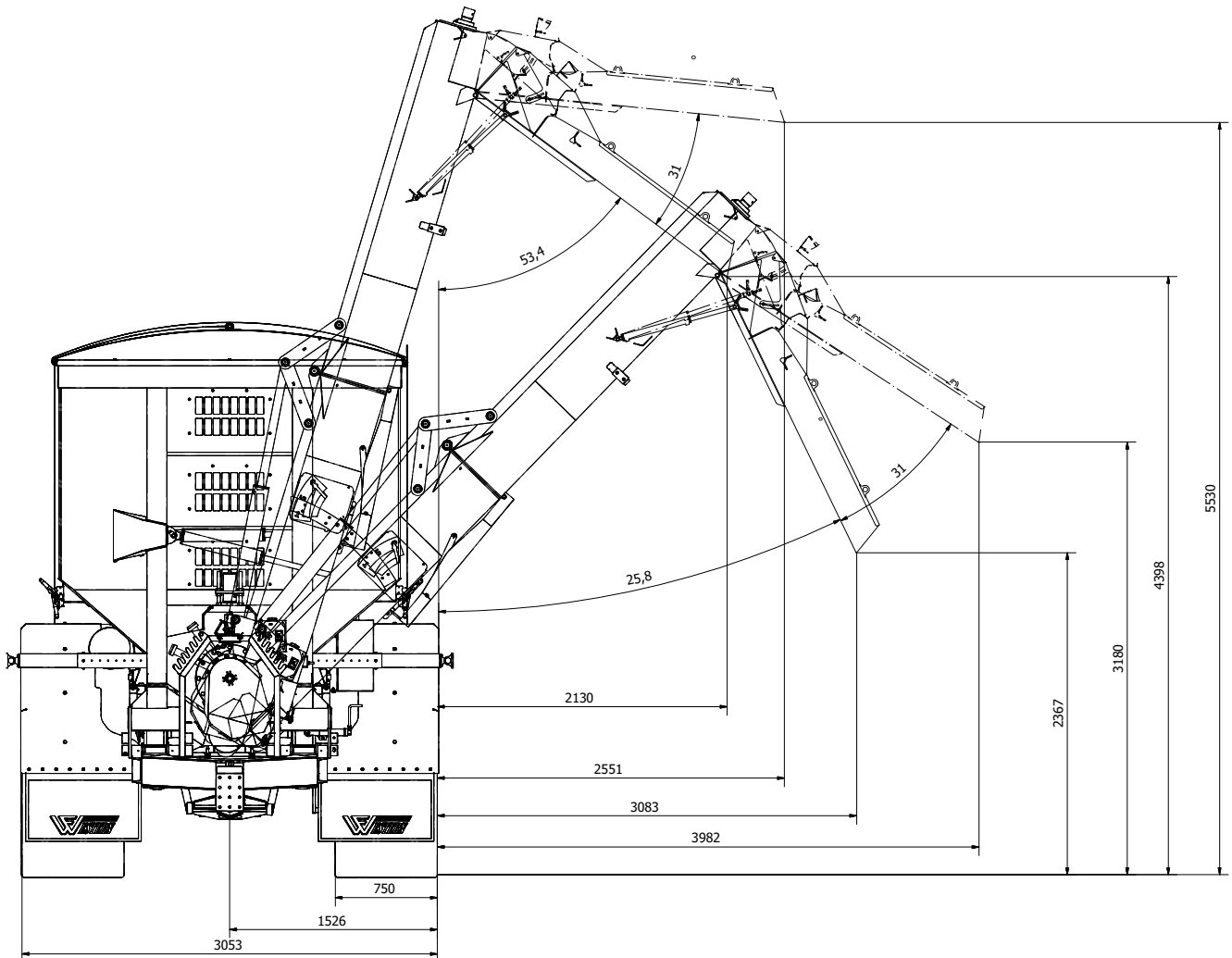
The reloading semitrailer has the possibility to change the angle of the vertical unloading auger, the angle change is carried out by a hydraulic cylinder, which greatly facilitates the operator's work when filling another vehicle.

Changing the hopper angle makes it possible to change the hopper angle of the vertical unloading auger. The angle of the hopper can be changed by a hydraulic cylinder, an electric drive and a mechanical rod. Below in the drawing you can see the possibilities of changing the angles of the vertical unloading auger and hopper.



2.14 CHANGING OF THE ANGLE OF THE VERTICAL UNLOADING AUGER WITH THE FILLING PIPE

GRS can be equipped with the additional equipment "Filling pipe". Below in the drawing you can see the possibilities of changing the angles of the vertical unloading auger with the filling pipe.



2.15 PTO SHAFT

In the PTO of the reloading semitrailer, there is installed a shear screw (8.8 M10X50 DIN 931), which protects the product from damage. A security shear screw is installed at the end of the PTO, at the connection to the unit. When the security shear screw breaks, the PTO rotates, but it does not rotate the unit.

The security shear screw may break due to jamming of the unloading screws, foreign objects entering the augers, failure of the reducer, failure of the vertical unloading auger through the interconnection. The security shear screw can break during the startup of the PTO when the unloading augers are filled with grain. The security shear screw can break when starting the PTO while the engine is running at high RPM.

When loading high-moisture grains, the possibility of breaking the security shear screw increases, so it is recommended not to open the dosing lid of the horizontal auger to the maximum. If the security shear screw breaks, remove the screw residue from the connector, position the connector so that the screw would pass through both parts of the connector, insert the screw, and tighten. The security shear screws for replacement are located in the storage area welded to the unit. It cannot be used the security shear screws of a higher or lower hardness class. If it will be used a screw of a lower hardness class, the screw will break at lower than intended loads and it will not be possible to work productively. If it will be used a screw of a higher hardness class, the screw will break under higher loads, and if a jam occurs, it can cause serious damage to the unit.



The security shear screw on the PTO.



Storage location of the security shear screw.

The PTO shaft has grease points under the guards that require periodic greasing.

WARNING 	When working in the risk area between the semitrailer and the towing vehicle, always make sure that the engine of the towing vehicle is turned off and the key is removed from the ignition switch.
--------------------	---

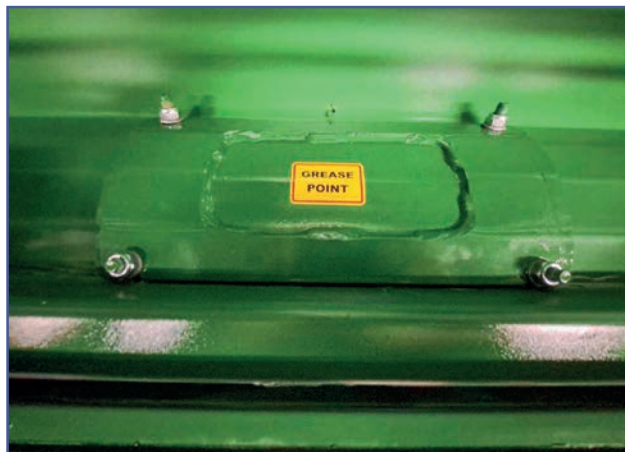
WARNING 	Always make sure that all PTO guards are installed and in good working order.
--------------------	---

WARNING 	Never enter an area where the PTO is rotating.
--------------------	--

WARNING 	Never work under any unsupported vehicle.
--------------------	---

2.16 GREASING POINTS

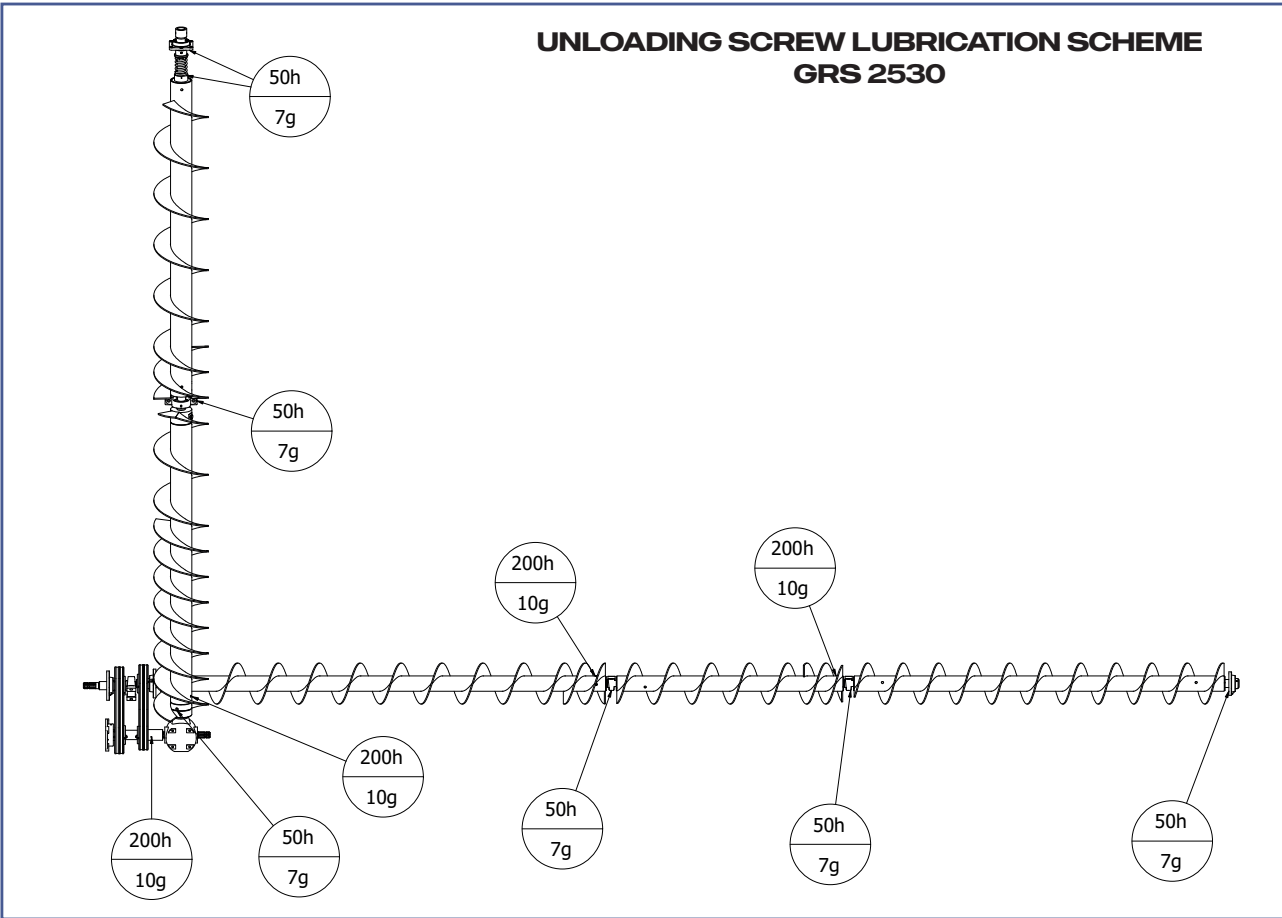
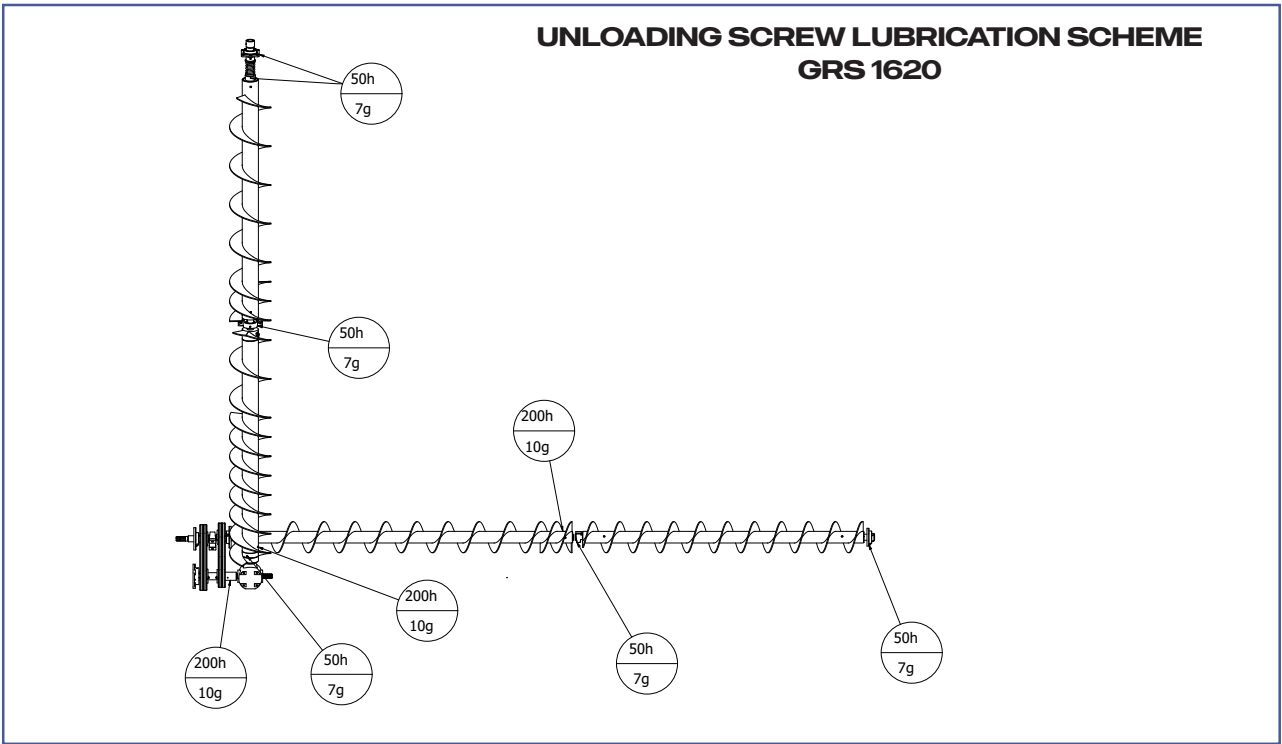
The lubrication interval of the PTO, the arrangement of the lubrication points and the recommended amount of grease are indicated in the diagrams and tables below. NLGI 2 grease is recommended for lubrication. When lubricating with a manual lubrication tool, the required amount of grease is calculated as follows: one full press is 0.8 1 gram.



Used plastic oil for lubrication ISO 12924: LXC(F) CIB2; DIN 51502: KP2K30. The amount of grease required for lubrication at regular scheduled intervals is 510 grams. When greasing with a manual greasing tool, the required amount of grease is calculated as follows: one full press is 0.8 1 gram. In the front part of the transloading semitrailer, in order to lubricate the lubrication points, so that you do not have to open the guards every time, the lubrication points are brought out with the help of tubes to a more conveniently accessible place. Please note that if the tube is damaged and the grease flows through the damaged part of the tube during lubrication, then the unit intended to be lubricated is not lubricated, it is necessary to eliminate the fault in order to relubricate the unit.



2.16 GREASING POINTS



2.17 LUBRICATION POINTS OF VERTICAL UNLOADING AUGER

The vertical unloading auger is equipped with hard-to-see lubrication points, the first three lubrication points are installed in the lower part of the auger under the cleaning maintaining lid inside the auger, it should be lubricated every 50 working hours. The amount of grease required for lubrication at regular scheduled intervals is 510 grams. When lubricating with a manual lubrication tool, the required amount of grease is calculated as follows: one full press is 0.8 1 gram.



The lid is open, the lubrication point is not visible



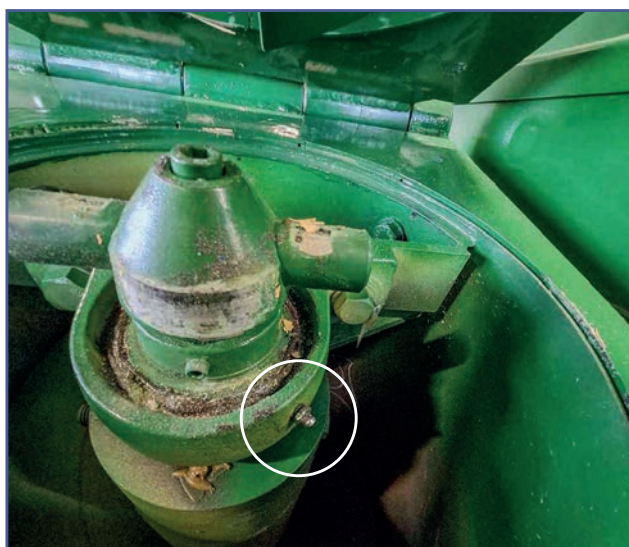
When the shaft is turned, the lubrication points are visible

A fourth hidden lubrication point is installed on top of the bottom of the vertical auger under the vertical auger cover. In order to maintain this lubrication point, it is necessary to place the vertical auger in an intermediate position, between the working and transport positions. Through the gap between the opened screw and the guard, it will be possible to lubricate the bearing installed there, it should be lubricated every 50 working hours. The amount of grease required for lubrication at regular scheduled intervals is 510 grams.

When lubricating with a manual lubrication tool, the required amount of grease is calculated as follows: one full press is 0.8 1 gram.



A vertical unloading auger is built for bearing lubrication



The fourth hidden lubrication point

2.17 LUBRICATION POINTS OF VERTICAL UNLOADING AUGER

The fifth hidden lubrication point is at the top of the vertical unloading auger, on the auger itself. It can be maintained by placing the auger in the transport position through the cavity of the grain spill, to spot the lubrication point, the shaft may need to be rotated, it should be lubricated every 50 operating hours. The amount of grease required for lubrication at regular scheduled intervals is 510 grams. When lubricating with a manual lubrication tool, the required amount of grease is calculated as follows: one full press is 0.8 1 gram.

The sixth lubrication point is at the very top of the unloading auger where is mounted a bearing that needs to be lubricated. The easiest maintenance is when the vertical unloading auger placed in the transport position, it should be lubricated every 50 operating hours. The amount of grease required for lubrication at regular scheduled intervals is 510 grams. When lubricating with a manual lubrication tool, the required amount of grease is calculated as follows: one full press is 0.8 1 gram.



The fifth lubrication point is in the upper part of the vertical discharge auger



Sixth lubrication point



2.18 LUBRICATION POINTS OF HORIZONTAL UNLOADING AUGER

The horizontal unloading auger also has lubrication points that require lubricating every 50 or 200 operating hours, some of which are also hidden under maintenance lids. One lubrication point is located at the rear of the reloading semitrailer, the horizontal shaft support bearing should be lubricated every 50 operating hours. The amount of grease required for lubrication at regular scheduled intervals is 510 grams. When lubricating with a manual lubrication tool, the required amount of grease is calculated as follows: one full press is 0.8 1 gram.



Similarly, the lubrication points are located at the bottom of the reloading semitrailer, under the cleaning-maintaining lids, the support bearing, one or two, depending on the model, should be lubricated every 50 operating hours. The amount of grease required for lubrication at regular scheduled intervals is 510 grams. When lubricating with a manual lubrication tool, the required amount of grease is calculated as follows: one full press is 0.8 1 gram.



The sticker on the maintenance lid indicates that there is a lubrication point under it.



2.18 LUBRICATION POINTS OF HORIZONTAL UNLOADING AUGER

The lubrication points are located at the connections of the horizontal auger, under the maintenance lids, there may be one or two depending on the model. Remove the maintenance lid, rotate the shaft until you find the lubrication point and lubricate it. It should be lubricated every 200 operating hours or once a year. The amount of grease required for lubrication at regular scheduled intervals is 510 grams. When lubricating with a manual lubrication tool, the required amount of grease is calculated as follows: one full press is 0.8 1 gram.



The lubrication point is located at the junction of the shaft and the reducer, maintained from below, turn the shaft until you find the lubrication point and lubricate it. It should be lubricated every 200 operating hours or once a year. The amount of grease required for lubrication at regular scheduled intervals is 510 grams. When lubricating with a manual lubrication tool, the required amount of grease is calculated as follows: one full press is 0.8 1 gram.



There are also 4 lubrication points in the front part of the horizontal unloading auger, so that you don't need to open the guards every time, the lubrication points are brought out by tubes to a more conveniently accessible place, they should be lubricated every 50 operating hours. The amount of grease required for lubrication at regular scheduled intervals is 510 grams. When lubricating with a manual lubrication tool, the required amount of grease is calculated as follows: one full press is 0.8 1 gram.

3. BEFORE OPERATION

DELIVERY AND TRANSFER THE SEMITRAILER

All "Western Fabrications" products are usually delivered ready for work, only in some cases, due to transport conditions, the extension sides or wheels are removed, which need to be installed before use.

When installing, use the information in the manual to avoid inconvenience.

BEFORE OPERATION CHECK THE FOLLOWING

1. The towing vehicle must be equipped for operation hydraulically with at hydraulic connections, brake and electric connections.
 2. Connect the towing vehicle to the semitrailer, make sure that the coupling device is properly engaged and will not detached during operation.
 3. Before connecting the pneumatic and hydraulic systems, turn off the engine of the towing vehicle and make sure the connections are clean and properly connected.
 4. Connect the air, electrical and hydraulic lines to the towing vehicle, making sure they are secured locked and will not disconnect when the equipment is in use.
 5. Ensure that pneumatic, electrical and hydraulic lines are not touching any moving parts.
 6. Trailer Braking System. The trailer can be fitted with one of the two different types of brake systems (this may differ and be dependent on locally or nationally enforced traffic regulations):
 - Air brake system (dual-circuit system) / Hydraulically operated brake system / Dual hydraulic or air brake system. The towing vehicle brake system must be the same as that trailer brake system.
- If the trailer is equipped with a double brake system, the tractor must have at least one of the brake systems present in the trailer (pneumatic or hydraulic). Check brake operation before each use.
7. Check the operation of the electrical installation and the functioning of the lights.
 8. Grease the device before operation.
 9. Check all Bolts and Nuts are tight.
 10. Check the wheel nuts for tightness (see Specification section page 60).
 11. Check tyres for correct inflation pressures. Correct if necessary (see page 62).
 12. If a wheel is changed check the wheel nut torques after 10 hrs of operation, and every 50 hours until the torque is maintained. (see page 60).
 13. Make sure that the lifting device is of sufficient capacity and in good technical condition. Place the lifting device on a firm base and rest it on the axle square. Always use additional supports. If it is a lifting device, the support will protect against unexpected falls and injuries.
 14. Do not disconnect the machine with the body raised from the towing vehicle. Before starting to use the device, make sure that there are no loose parts or mechanisms in the semitrailer and the towing vehicle that could fall during the trip.
 15. Before starting to use the device, make sure that there are no loose parts or mechanisms in the semitrailer and the towing vehicle that could fall during the trip.
 16. Make sure there are no people in the danger areas. If any person approaches the danger areas, immediately turn off the engines of the moving vehicles and arrange for people to move to a safe area.

ATTENTION

SEMITRAILERS MUST BE WASHED AFTER DELIVERY

Every Western Fabrications semitrailer is coated with a special wax before it is shipped. Purpose of wax to protect the surface of the semitrailer from salts and other impurities during delivery. If a semitrailer transported by ferry, this wax coating will protect against direct salt contact with the body and parts.

After delivery, the semitrailer must be washed with high-pressure washing equipment. High pressure washing equipment removes the wax with all the dirt that got into it during transportation. On each semitrailer you will find a warning sticker about washing the semitrailer after delivery.



WARNING



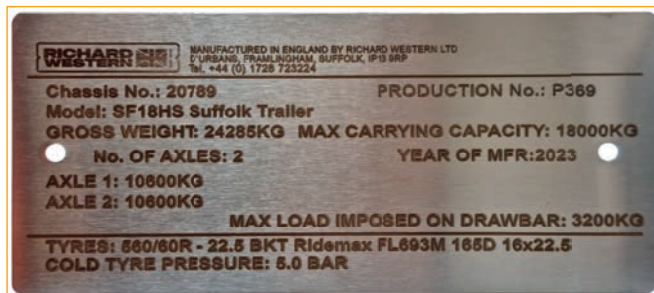
The first wash is mandatory only after receiving the semitrailer.

IDENTIFICATION PLATE

The machine number (VIN), the model are required with all orders for spare parts and technical enquiries. This is necessary in order to ensure correct delivery of spare parts.

The identification plate with the machine Number (VIN) is attached to the front right side of the machine frame (1) on all machines

Additionally an identification number is located on the forward crossbrace of the main chassis (2)



ROAD TRANSPORT

Observe the applicable road regulations in your country.



Information

It is the duty of the operator to ensure that the machine is maintained and operated in accordance with all Local and National regulations.



GENERAL SPECIFICATION

Technical data and parameters of semitrailers are presented, which are subject to change without separate notice. If there are any doubts about the given data, contact the manufacturer or the manufacturer's representative for updated information. The parameters that are provided are standard, they may change after changing the components such as tyres, upgrades or others.

General specification:

1. Electric system

Voltage 12 or 24V. Current 10A.
Current max 15A.

2. Brake system

2.1. Hydraulic, hydraulic brakes with load sensing valve, and ES – V braking system for hydraulic brakes (used as an emergency or handbrake controlled from the towing vehicle operator's seat). Nominal pressure in the system **115 bar**, maximum pressure in the hydraulic brake system **150 bar**.

2.2. Pneumatic brakes, pneumatic brakes with mechanical load valve, pneumatic with automatic load valve, pneumatic with ABS system. The working pressure of the pneumatic brake system is **6.5 bar**. The maximum allowable pressure is **8.5 bar**.

2.3. Dual brake system, pneumatic and hydraulic brakes together.

3. Speed

The standard braking system is adapted to a maximum speed of **40 km/h**.

4. Hydraulic systems

The maximum pressure of the hydraulic system is **200 bar**. Maximum oil throughput **75 l/min**.

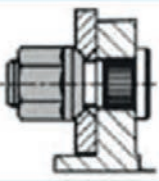
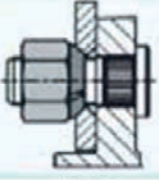
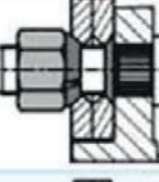
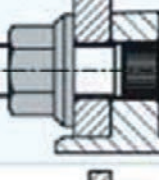
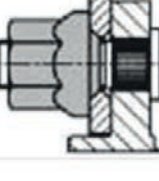
5. Noise

The noise generated by the devices is about 70 dB.

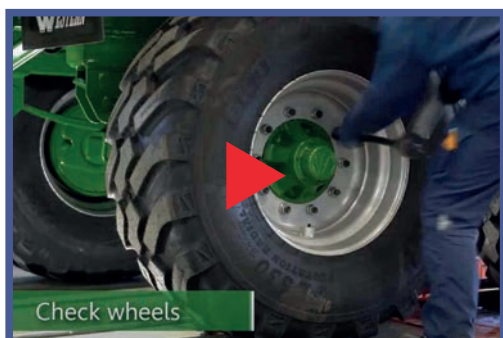
TIGHTENING TORQUE REQUIREMENTS FOR WHEEL NUTS

Always check that the taper of the hole in the rim and the nut or washer on the wheel (depending on the type of nut) are not worn and fit, only in this case you can properly tighten the wheels to the axle and use the device safely.

When wear is noticed, it is necessary to replace the worn parts. For nut type and axle stud size, use the data in the table. Use an adjustable torque wrench to check wheel torque.

NUT TYPE	Spanner	Wheel stud	Tightening torque
	mm	mm	Nm
DIN 	17	M12x1,5	90
	19	M14x1,5	130
	24	M18x1,5	270
Plain nut + washer 	24	M18x1,5	270
	27	M20x1,5	380
	30	M22x1,5	510
"Twin" 	24	M18x1,5	270
	27	M20x1,5	380
	30	M22x1,5	510
"M" 	-	-	-
	27	M20x1,5	450
	32	M22x1,5	650
"Bec" 	28	M18x1,5	270
	30	M20x1,5	380
	32	M22x1,5	510

WHEEL TIGHTENING VIDEO INSTRUCTION



Wheel tightening video instruction

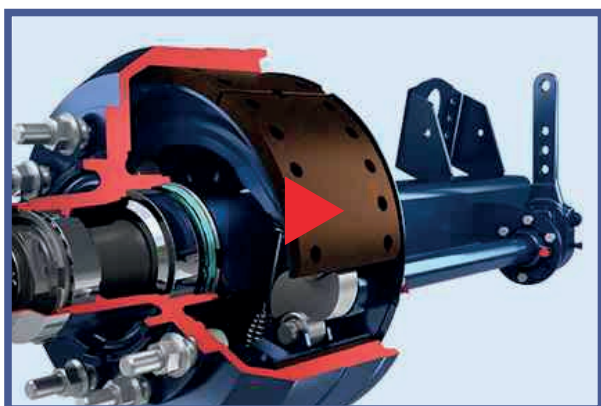


MINIMUM BRAKE LINING THICKNESS

Brake pads must be replaced with new ones when they have worn down to the minimum pad thickness specified in the table.

Minimum brake pads thickness		
Brake type	Dimensions (brake rim inner diameter) mm	Minimum lining thickness mm
256E	250x60	2
305E	300x60	2
309E	300x90	2
310E	300x100	5
314E	300x135	5
316	300x160	5
356E	350x60	2
359E	350x90	2
408E	400x80	2
406E	406x120	5
412S	406x120	5
414S	406x140	5

BRAKE ADJUSTMENT VIDEO INSTRUCTION



TYRE INFORMATION



1. Model name;
2. Tread pattern;
3. Load and speed index, pressure domains;
4. Weekly serial number;
5. Direction of rotation;
6. Tyre type;
7. Tyre dimensions;
8. Safety index;
9. Trademark;
10. Safety Warning;

TYRE DIMENSIONS	LOADING 40 km/h
385/65R22,5 (15R22,5) 160F	5400 kg.
400/R22,5 160F	5400 kg.
18/R22,5 (445R22,5) 170A8	6000 kg.
23.1-26 159A6	5250 kg.
650/75R32 172A8	6300 kg.
750/65R26 171A8	6150 kg.
800/65R32 181A8	8250 kg.
900/60R32	8250 kg.
10.0/80-12	1400kg
10.0/75-15.3	1900kg
10.0/75-15.3	2360 kg
235/75R17,5 143A8	3128 kg
400/60-15.5 145A8	2900kg
500/60R22,5 155D	5270 kg.
500/60R22,5 166A8	5300 kg.
520/50-17 159A8	4750kg
550/45-22.5 20 PR	5300 kg.
560/45R22,5 152D	4875 kg.
560/60R22,5 161D	6300 kg.
580/65R22,5 166D	7210 kg.
600/50R22,5 159D	6150 kg.
650/50R22,5 163D	6650 kg.
710/40R22.5 161D	6300 kg.
710/45R22,5 165D	7050 kg.
600/55R26,5 176A8	7100 kg.
650/55R26,5 180A8	8000 kg.
620/60R26,5 169D	7900 kg.
710/50R26,5 170D	8250 kg.
800/45R26,5 174D	9150 kg.
650/65R30,5 176D	9700 kg.
750/60R30,5 181D	11250 kg.



TYRE LOAD INDEX

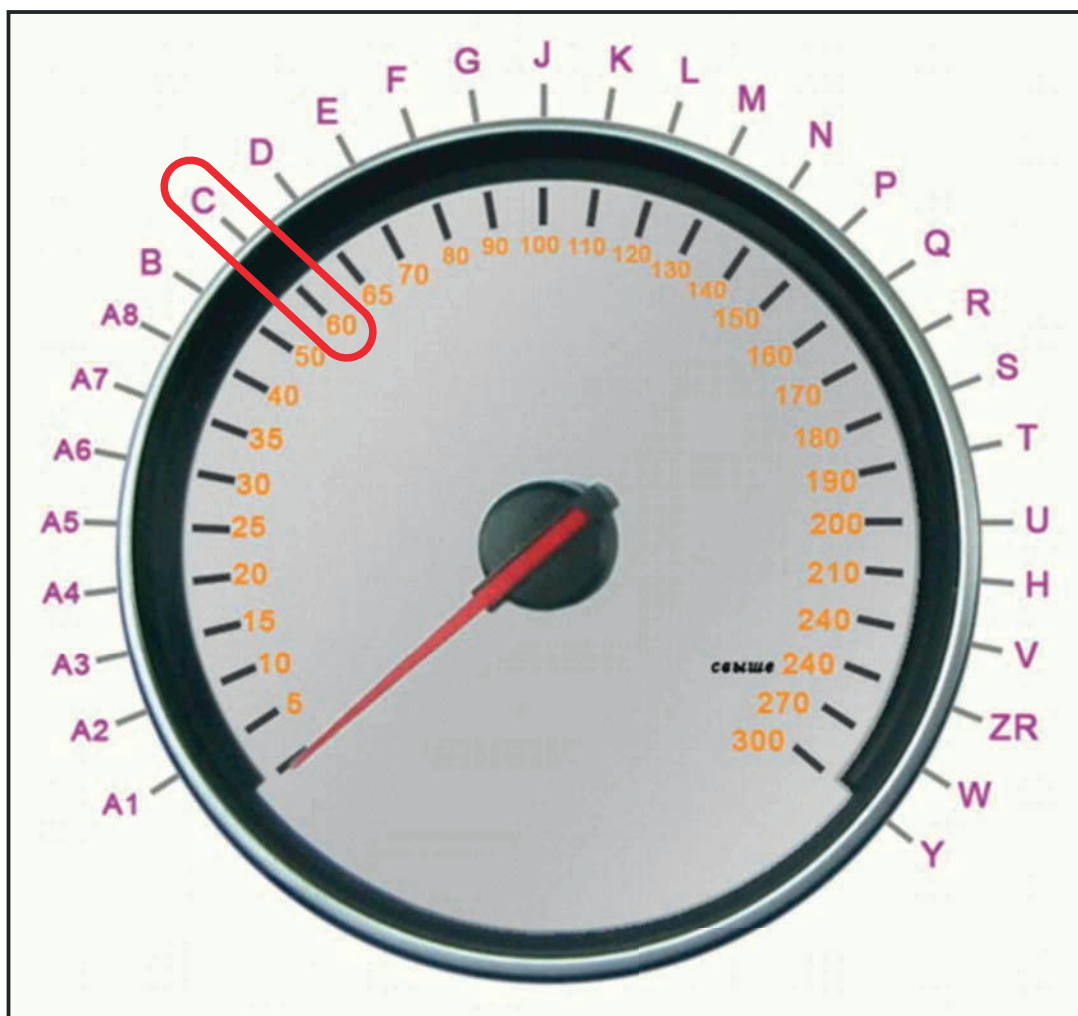
LI-Load Index											
LI	kg	LI	kg	LI	kg	LI	kg	LI	kg	LI	kg
0	45	50	190	100	800	150	3350	200	14000	250	60000
1	46	51	195	101	825	151	3450	201	14500	251	61500
2	47	52	200	102	850	152	3550	202	15000	252	63000
3	48	53	206	103	875	153	3650	203	15500	253	65000
4	50	54	212	104	900	154	3750	204	16000	254	67000
5	51	55	218	105	925	155	3875	205	16500	255	69000
6	53	56	224	106	950	156	4000	206	17000	256	71000
7	54	57	230	107	975	157	4125	207	17500	257	73000
8	56	58	236	108	1000	158	4250	208	18000	258	75000
9	58	59	243	109	1030	159	4375	209	18500	259	77500
10	60	60	250	110	1060	160	4500	210	19000	260	80000
11	61	61	257	111	1090	161	4625	211	19500	261	82500
12	63	62	265	112	1120	162	4750	212	20000	262	85000
13	65	63	272	113	1150	163	4875	213	20600	263	87500
14	67	64	280	114	1180	164	5000	214	21200	264	90000
15	69	65	290	115	1215	165	5150	215	21800	265	92500
16	71	66	300	116	1250	166	5300	216	22400	266	95000
17	73	67	307	117	1285	167	5450	217	23000	267	97500
18	75	68	315	118	1320	168	5600	218	23600	268	100000
19	77	69	325	119	1360	169	5800	219	24300	269	103000
20	80	70	335	120	1400	170	6000	220	25000	270	106000
21	82	71	345	121	1450	171	6150	221	25750	271	109000
22	85	72	355	122	1500	172	6300	222	26500	272	112000
23	87	73	365	123	1550	173	6500	223	27250	273	115000
24	90	74	375	124	1600	174	6700	224	28000	274	118000
25	92	75	387	125	1650	175	6900	225	29000	275	121000
26	95	76	400	126	1700	176	7100	226	30000	276	125000
27	97	77	412	127	1750	177	7300	227	30750	277	128000
28	100	78	425	128	1800	178	7500	228	31500	278	132000
29	103	79	437	129	1850	179	7750	229	32500	279	136000
30	106	80	450	130	1900	180	8000	230	33500		
31	109	81	462	131	1950	181	8250	231	34500		
32	112	82	475	132	2000	182	8500	232	35500		
33	115	83	487	133	2060	183	8750	233	36500		
34	118	84	500	134	2120	184	9000	234	37500		
35	121	85	515	135	2180	185	9250	235	38750		
36	125	86	530	136	2240	186	9500	236	40000		
37	128	87	545	137	2300	187	9750	237	41250		
38	132	88	560	138	2360	188	10000	238	42500		
39	136	89	580	139	2430	189	10300	239	43750		
40	140	90	600	140	2500	190	10600	240	45000		
41	145	91	615	141	2575	191	10900	241	46250		
42	150	92	630	142	2650	192	11200	242	47500		
43	155	93	650	143	2725	193	11500	243	48750		
44	160	94	670	144	2800	194	11800	244	50000		
45	165	95	690	145	2900	195	12150	245	51500		
46	170	96	710	146	3000	196	12500	246	53000		
47	175	97	730	147	3075	197	12850	247	54500		
48	180	98	750	148	3150	198	13200	248	56000		
49	185	99	775	149	3250	199	13600	249	58000		

Each tyre has a load index that indicates what the maximum permissible load of the tyre is. This load must not be exceeded, as overloading may damage the tyre.

For example: It is indicated on the tyre load index is "164" so how we see in the table, the maximum tyre the permissible load is 5,000 kg 5t. If the trailer has two axles and has four tyres with an index of 164, the total permissible load of these tyres will be 20,000 kg.



TYRE SPEED INDEX



The tyres of the semitrailers we manufacture are selected according to the speed of the towing vehicle.

Mostly agricultural machinery tractors travel at a speed of 40 50 km/h. There are exceptions when tractors drive at a speed of 70 75km/h, but agricultural trailer or semitrailer tyre manufacturers

declare the maximum speed up to 65km/h. How to check what speed is allowed for the tyres of your trailer?

For example: The speed index indicated on the tyre is the letter "C", so as we can see the maximum permissible speed of the tyre is 60 km/hour.



CONNECTING AND DISCONNECTING A SEMITRAILER

Connecting a semitrailer with a tractor complete with hydraulic hitch.



With the towing vehicle, drive up to the implement's hitch and stop in line with the implement. Release the hydraulic hitch (1) and lower to the lowest position. Reverse the vehicle slowly so that the hook is under the hole of the towing eye (2). Raise the hydraulic hitch (1) to the highest position and lock it.

Connect all brake, hydraulic and electrical connections. Connect the power take-off shaft (if it is on trailer). Remove the support leg (4) and attach it to the support leg storage area (3). Release the handbrake.

ATTENTION



Make sure the brake and hydraulic connections are clean and undamaged. Improperly connected connections can cause system failure. Always clean the connectors before connecting them.

Uncoupling the semitrailer when the tractor complete with hydraulic hitch

Make sure the body is lowered, disconnect the PTO (if equipped) and hydraulic, brake electrical connections. Make sure the support leg (4) is in the right place, lock the handbrake. Release the hydraulic hitch (1) and lower to the lowest position. Make sure the hydraulic hook is below the towing eye (2) and drive forward.

WARNING



Before reversing, make sure that all people are out of the danger zone around the towing vehicle and the semi-trailer.

WARNING



Before using the device, always check that the device is properly connected and that the safety devices are locked to the towing vehicle.

WARNING



Never disconnect the unit from the towing vehicle with the body raised.

ATTENTION



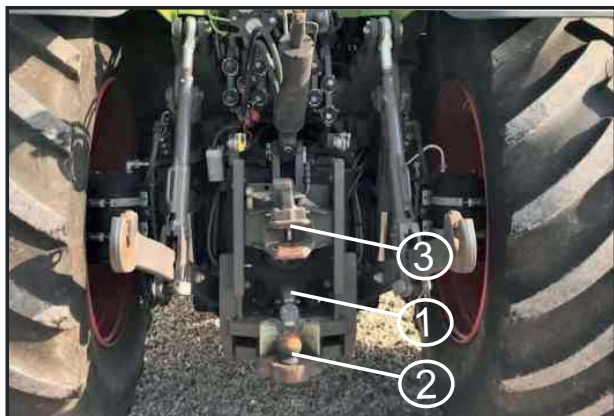
Always park the semi-trailer on firm, level ground.

ATTENTION



Periodically check the condition of the device's tension loop and replace it with a new one if you notice signs of damage or wear. It is recommended to change the loop for installation during intensive use.

TYPES AND SUITABILITY OF TRACTOR COUPLING HOOKS FOR TOWING A SEMITRAILER

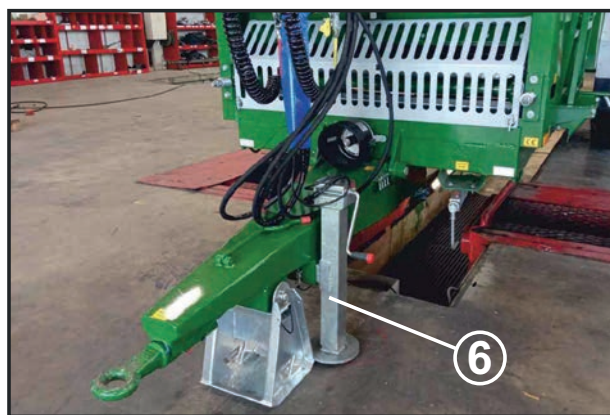
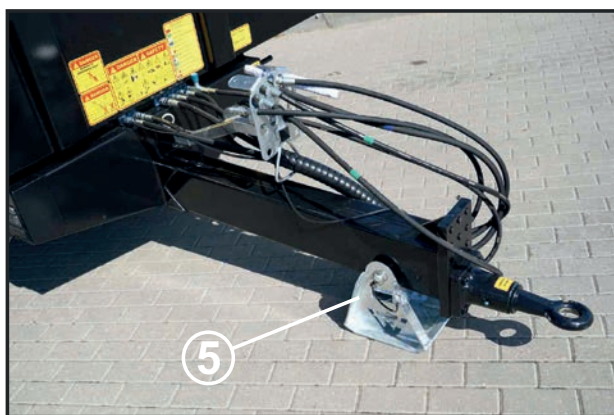


Tractors are equipped with an apple-type Ø80 mm hitch (2) or an implement towing loop (4). Can also be equipped with a fixed draw finger (1) Piton hitch and draw height hitch (3). Always make sure that the coupling systems of the tractor and the implement are compatible with each other.

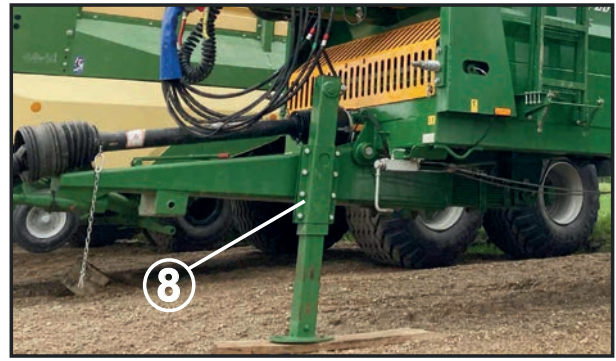
It is prohibited to hook semi-trailers to the adjustable height coupler (3). The use of different coupling systems is strictly prohibited.

Types of semitrailer parking legs Semitrailer

Parking legs: 5 no. stand pad with pin. Easy to remove and install the parking pad. Construction leg no. 6 mechanical, rotary jack.



TYPES OF HYDRAULIC BRACKET LEGS



Semitrailers can be equipped with different hydraulic legs 7 / 8 / 9. No. The 7th leg is particularly strong and functional in various situations. No. Leg 8 and 9 are installed for parking an empty semitrailer and adjusting the semitrailer hitch.



Hydraulic legs can be controlled with the help of hydraulics from a tractor or with hydraulic, manual pump. In this case, you can raise and lower the hydraulic leg without connecting the hydraulic line to the tractor.

TRACTOR COUPLING WITH A SEMITRAILER

With the towing vehicle (tractor), drive to the semitrailer coupling device and stop in line with the device. Make sure the drawbar towing eyelet is higher than the hitch (if connecting to a tractor equipped with a Piton (1) or apple type (2) hitch) or matches the height of the implement draw eye.

If the device is equipped with an implement tensioning loop (4), adjust the height so that the tensioning loop enters the implement lubrication loop and the holes coincide so that the pin can be inserted (the height can be changed by hydraulic legs (7/8/9) or mechanical legs (6)) help).

Slowly reverse the vehicle so that the Piton hook (1) is under the draw eye hole. If the device and the tractor are equipped with apple type attachments, their centres must match. Lower the semitrailer using the hydraulic (7/8/9) or mechanical (6) foot to engage properly. Lock the safety system against unhooking and ensure that the system is in good working order.

Connect all brake, hydraulic and electrical connections. Connect the power take-off shaft (if present).

Remove the mechanical leg (6) and place it in the storage area or raise the hydraulic leg (7/8/9) to the highest position. Release the handbrake.



Disengagement of the device when the tractor is equipped with fixed hooks of the lower hitch.

Make sure the body is lowered, disconnect the PTO (if equipped), all hydraulic, brake, and electrical connections, and engage the handbrake. Disengage the safety system from unhooking, raise the

attachment of the device with the help of a mechanical or hydraulic leg so that the pin can be withdrawn (if the device is equipped with an implement towing eye). If the tractor is equipped with a "Piton" or "apple" type hitch, raise it so that the tow loop of the device does not interfere with the tractor's hitch and drive forward.

WARNING



Before reversing, make sure that all people are out of the danger zone around the towing vehicle and the semi-trailer.

WARNING



Never disconnect the unit from the towing vehicle with the body raised.

ATTENTION



Always park the semi-trailer on firm, level ground.

ATTENTION

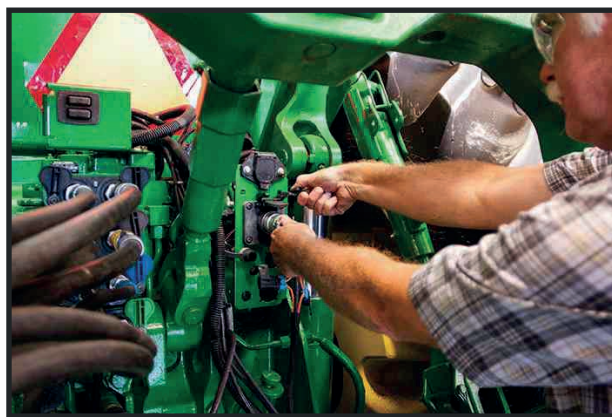


Periodically check the condition of the device's tension loop and replace it with a new one if you notice signs of damage or wear. It is recommended to change the loop for installation during intensive use.

ELECTRICAL AND HYDRAULIC CONNECTIONS

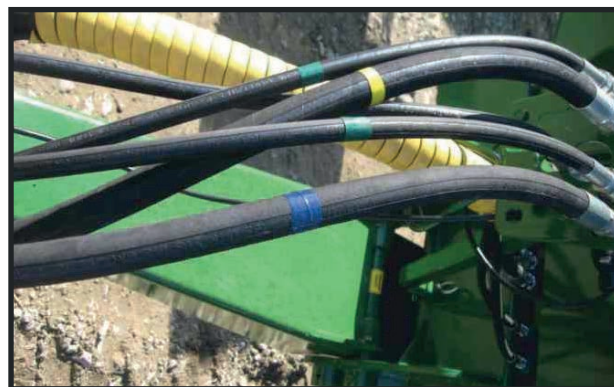
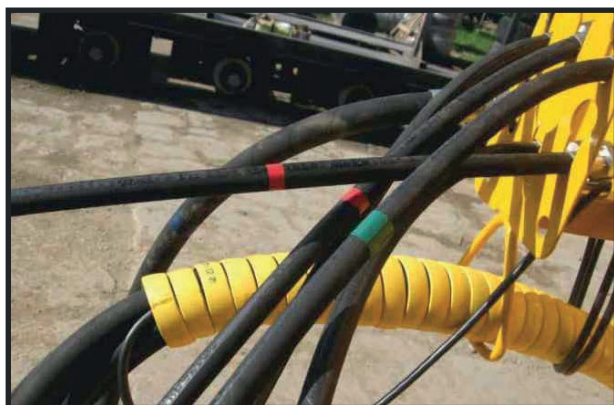
The electrical system of the trailer is connected to the system of the towing vehicle by plug to socket.

Hydraulic systems are connected with the help of hydraulic connectors.



Always make sure that only hoses that control one function connect to one section of hydraulic system control hoses. In the pictures, you can see the blue and green coloured connections of the hydraulic systems.

The marking sticker of the hydraulic hoses shows the values: blue tipping system, green tailboard system. So you connect the tipping system to one section and the tailgate system to the other.



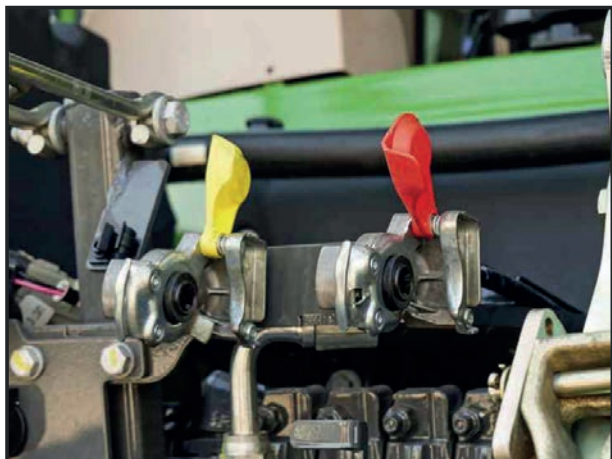
MARKING OF THE HYDRAULIC HOSES: HIDRAULISKO CAURULŲ APZĪMĒJUMS: HIDRAULINIŲ ŽARNŲ ŽYMĒJIMAS:

	HYDRAULIC JACK HIDRAULISKĀ KŌJA HIDRAULINIS DOMKRATAS
	TAILGATE GALABORTA GALINIS BORTAS
	FIXING FOR THE STEERING AXLE STŪRĒJAMĀS ASS FIKSĀCIJA VAIRUOJAMOSIOS AŠIES UŽFIKSĀVIMAS
	TIPPING PACELŠANAS ISVERTIMAS
	REAR OUTLET GALA IZVADS GALINIAI IŠVADAI
	FLOOR DRIVE GRĪDAS TRANSPORTIERIS GRINDŲ TRANSPORTERIS
	UNLOADING AUGER GLIEMEŽ TRANSPORTIERIS IŠKROVIMO SRAIGE
	HOPPER OPENING BUNKURA ATVĒRŠANA BUNKERIO ATIDARYMAS
	HYDRAULIC ELBOW HIDRAULISKĀ ROKA HIDRAULINĒ ALKŪNĒ
	HYDRAULIC TOP LID HIDRAULISKAIS VĀRS HIDRAULINIS DANGTIS VIRŠUJE
	SIDE GATE VALVE ŠĀNU VĀRSTS ŠONINĒ SKLENĒ
	REAR GATE VALVE GALA VĀRSTS GALINĒ SKLENĒ

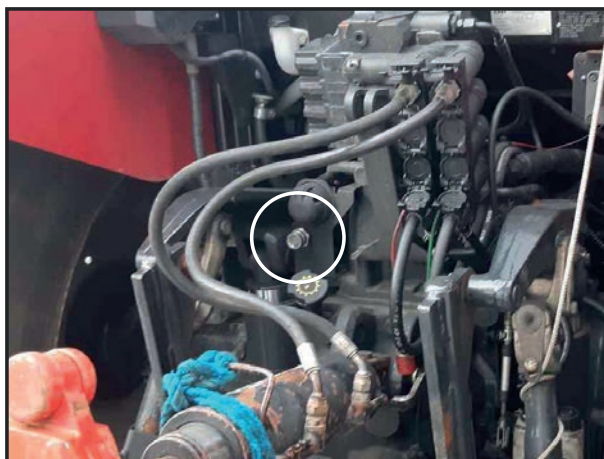
AIR AND HYDRAULIC BRAKES CONNECTIONS

Brake systems are connected with the help of connectors. The picture shows the air brake connectors marked in red and yellow. It is very important not to mix up the connectors when connecting to the towing vehicle. Brake connections may be different. Before connecting to the tractor, check the tractor coupling and compare it with the semitrailer coupling. It is very important to mention that both air and hydraulic brake connections must be clean. Dirt can contaminate the entire brake system.

Tractor air brake system connections



Tractor hydraulic brake system connections (1 line)



Air brake connection



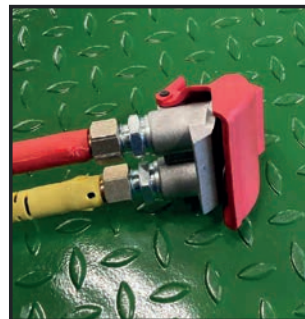
2 line hydraulic brake connections



1 line hydraulic brake connections



Duomatic connection



INFORMATION



Note! The trailer could also be equipped with dual air and hydraulic brakes, in this case need to connect just one brake system to the tractor.

WARNING



When working in the danger zone, when performing repair, adjustment or service work, make sure that the engine of the towing vehicle is turned off and the key is removed from the ignition.

WARNING



Before reversing, make sure that all people are out of the danger zone around the towing vehicle and the semi-trailer.

WARNING



When working in the danger area between the trailer and the Towing Vehicle always ensure that the Towing vehicle engine is turned off and the Key removed.

ATTENTION



Release residual Pneumatic & Hydraulic pressure before connecting or disconnecting Air & Hydraulic lines.

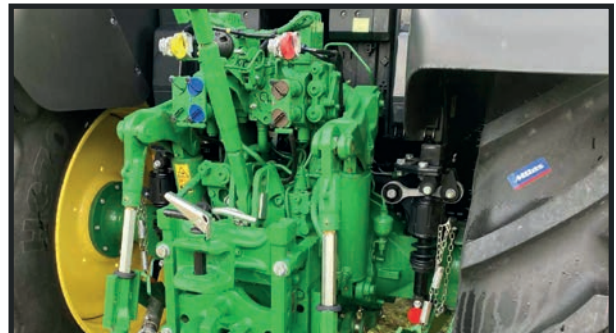
WARNING



Before connecting hydraulic, braking or electrical systems, always make sure that the connections are free of contamination and clean them if necessary.

ABS and EBS BRAKE SYSTEM CONNECTIONS

Some trailers are fitted with ABS and EBS braking, if applicable connect the ABS / EBS system plug to the relevant socket on the towing vehicle.



Connecting the steering axle hydraulics

Some trailers are fitted with a self steering axle, this allows easier turning with less damage to tyres and to the road surface. Trailer's free steered axle connections must be connected to tractor hydraulic connection. This type of axle can be mounted in two-axle and three-axle semitrailers.

When driving forward, the steered axle copies the manoeuvre and rotates according tractor turning tracks.

The hydraulic connections of the steering axle are connected to the tractor hydraulic connections. When driving forward, the control arm of the tractor hydraulic must be in neutral position on the tractor.

In this way, the hydraulic system automatically distributes the oil flow.

When driving with a semitrailer in reverse, the hydraulic axle cylinder must be "locked" and the axle becomes fixed the wheels stand straight (does not allow the wheels to steer).



WARNING



When working in the danger zone, when performing repair, adjustment or service work, make sure that the engine of the towing vehicle is turned off and the key is removed from the ignition.

WARNING



When working in the danger area between the trailer and the Towing Vehicle always ensure that the Towing vehicle engine is turned off and the Key removed.

ATTENTION

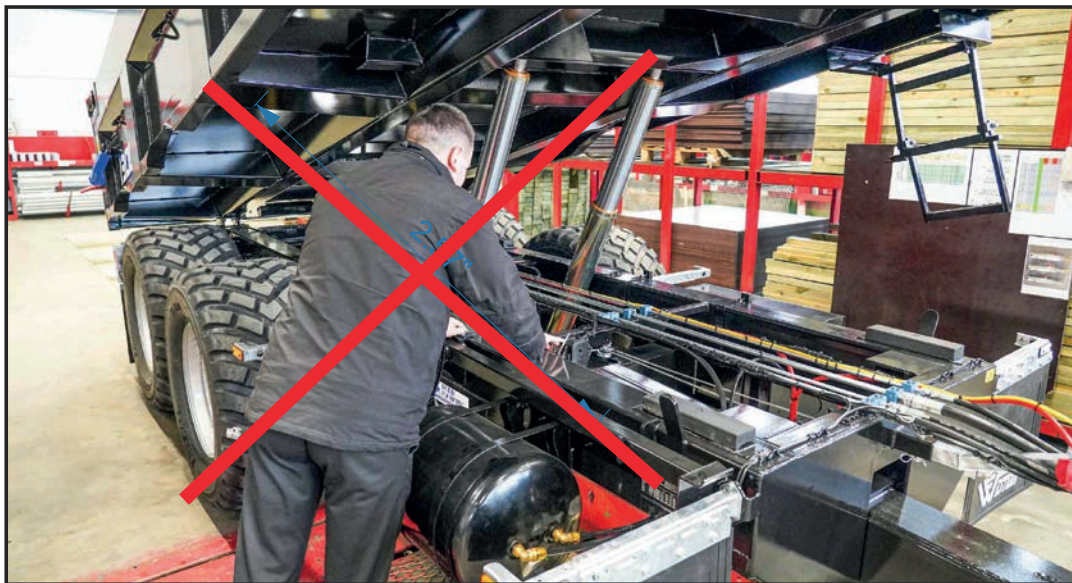


Release residual Pneumatic & Hydraulic pressure before connecting or disconnecting Air & Hydraulic lines.

WORKING BODY SUPPORT PROP

Body Props are carried on the machine as an integral part of the assembly and are located between the main chassis rails beneath the body. The prop is designed to be used to support the trailer body in the raised position should it be necessary to work beneath the raised body. Check the operation and condition of the prop regularly.

After trailer repairing, raise the body, lower the support prop to the designated place, lower the body. It is forbidden to use a damaged, bent or unsuitable body support prop.



WARNING



The raised trailer could drop suddenly and cause serious injury, always use the body prop when working beneath the raised body. Ensure that whilst fitting the Props nobody could operate the controls either accidentally or otherwise.

WARNING



Never raise the trailer body in the vicinity of overhead power cables or other aerial obstructions.

ATTENTION



Beware of the possibility of falling objects use Personal protective equipment i.e. Hard hat as required.

COUPLING THE DRIVE SHAFT (PTO) TO THE TOWING VEHICLE

Make sure the tractor engine is turned off and the ignition key is removed from the ignition lock.

Ensure the Tractor and Trailer PTO shafts are clean and suitably greased. Ensure the drive shaft is of the correct length (Refer to the drive shaft manufacturers documentation for further information).

Ensure the correct orientation of the drive shaft (IE The tractor symbol on the guard indicates the Tractor end connection). Slide back the guard sleeve and slide the shaft onto the trailer PTO, then repeat and fit to the Towing vehicle PTO. Fit safety chains where applicable. When not in use remove the drive shaft from the machine.



It is strictly forbidden to use the power supply shaft with a loose latch or damaged guards.

Connect the fuse holders (the chains that prevent the fuses from rotating). The drive shaft storage area is designed to accommodate the drive shaft during transport and storage. The working shaft is securely installed in the designated place on the frame of the semitrailer. This ensures the longevity of the working shaft.



WARNING



When working in the danger area between the trailer and the Towing Vehicle always ensure that the Towing vehicle engine is turned off and the Key removed.

WARNING



Never work beneath any unsupported vehicle.

WARNING



Always ensure all drive shaft guards are fitted and serviceable.

WARNING



Never enter an area where drive shaft is rotating.

HEIGHT ADJUSTMENT OF THE SEMITRAILER TOWER ACCORDING TO TRACTOR TRAILER HEIGHT

The chassis of the semitrailer should be horizontal, or the front of the semitrailer should be slightly raised connecting it to the towing vehicle. The height of the drawbar can be changed only for trailers which are equipped with cross spring, longitudinal spring, or have multi-position plate where the towing eyelet is screwed on.

For fixed tensioners, the height is not changed. The height of the longitudinal springs is changed by changing the positions of the pins. Always use supports and proper lifting devices when changing height. The height of the device can only be changed when the device is unloaded.



Drawbar with longitudinal spring.



Longitudinal spring drawbar height adjustment.

For the cross spring and for longitudinal spring drawbar height change bay change position of pins.



WARNING



When working in the danger area between the trailer and the Towing Vehicle always ensure that the Towing vehicle engine is turned off and the Key removed.

WARNING



Periodically check the condition of the tensioning loop of the device and replace it with a new one if you notice any signs of damage or wear. For an intensively used device, it is recommended to change the loop every year.

ATTENTION



Beware of falling objects. Use personal protective equipment. Use proper lifting equipment and supports.

ATTENTION



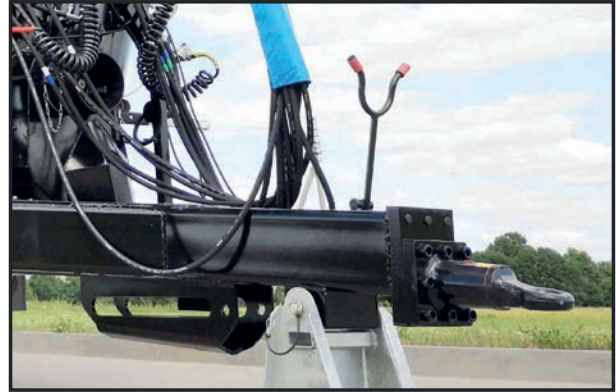
NEVER work under a trailer which is unsupported. NEVER remove more than one wheel at a time. ALWAYS stand clear of the trailer with the wheels removed.

CHANGING THE HEIGHT WITH MULTI-POSITION PLATE

In some models of our products, the drawbar is equipped with a multi-position plate, to which the towing eyelet is screwed. Towing eyelet can be different types, depending on the tractor hook. Multi-position plate is designed to adjust the height of the towing eyelet.



Four position multi-position plate.



Two position multi-position plate.

The purpose of the plate is not only to adjust the height, but also to adjust the angle of the towing eyelet, so that during transportation, the loop worn evenly.



Towing eyelet is mounted in lower position.



Towing eyelet is mounted in top position.

WARNING



When working in the danger area between the trailer and the Towing Vehicle always ensure that the Towing vehicle engine is turned off and the Key removed.

WARNING



Periodically check the condition of the tensioning loop of the device and replace it with a new one if you notice any signs of damage or wear. For an intensively used device, it is recommended to change the loop every year.

ATTENTION



Beware of falling objects. Use personal protective equipment. Use proper lifting equipment and supports.

ADJUSTMENTS BEFORE TOWING THE TRAILER



Adjust the drawbar and/or the hitch of the towing vehicle so that when towing the trailer body is slightly raised at the front.



Hitching the trailer so that the chassis is parallel to the road surface is acceptable, however this may cause additional wear to the trailer brakes and those of the Towing vehicle. When laden the rear axle wheels may lock when braking.



Hitching too low will cause unnecessary wear to the suspension and brake components of the front axle, and reduce the braking efficiency, and possibly locking the rear axle. It can also cause additional loading to be placed on the Towing vehicle, causing damage to rear axle and brake components

CALCULATION OF TRANSPORTED CARGO WEIGHT

In particular, be careful when calculating the amount of the cargo you can fill, because different materials have different densities, so the weight of a 1m³ can vary significantly, and the weight also depends on the amount of moisture. (see page 78).

To avoid charges due to possible overloading, follow the table below, which shows the maximum weight of 1m³ of cargo to be transported. According to the data presented in the table and following the formula below, you can calculate the planned weight of the material to be loaded.

W - Capacity in m³ with what you are going to load.

q - material weight per 1 m³ from table.

$$\frac{W \times q}{1000} = (\text{tonos})$$

Capacity "W" you can count:

L - Length of body, m.

B - Width of body, m

H - Height of body that you are going to load m.

$$W = L \times B \times H = \text{m}^3$$

Sample: you are going to transport sand, from the table you can find the density of sand **q** - 2082 kg/m³, Trailer body length **L** - 4,1 m, width **B** - 2,39 m, height **H** - 0,4 m.,

$$W = 0,4 \times 4,1 \times 2,39 = 3,91 \text{ m}^3$$

$$\frac{3,91 \text{ m}^3 \times 2082 \text{ kg/m}^3}{1000} = 8,14 \text{ t}$$

The result is the weight of the loaded material 8.14 tons + the weight of the trailer or semi-trailer = total mass.



"Total mass" cannot exceed the "Total permissible mass" specified in the product identification plate in the "GROSS" column.

CALCULATION OF TRANSPORTED CARGO WEIGHT

The table shows the ratio of materials, according to which you can calculate the amount of each load will weigh according to the body volume of the semitrailer you have. If your body capacity is 20 cubic meters it's wheat of which one cubic meter weight is 769 kg., you will load about 15,380 kg.

Material	kg/m ³	Material	kg/m ³	Material	kg/m ³	Material	kg/m ³
Stone (common generic)	2515	Lime quick lump	849	Brick fire clay	2403	Slag, furn. granulated	961
Stone, crushed	1602	Lime quick fine	1201	Potash	1281	Slag broken	1762
Asphalt, crushed	721	Chalk lumpy	1442	Beans, castor	577	Slag crushed 10 mm	1185
Garbage, household rubbish	481	Limestone broken	1554	Beans, soy	721	Flint silica	1390
Oats	432	Limestone pulverized	1394	Earth, soft loose mud	1730	Fertilizer, acid phosphate	961
Oats, rolled	304	Chalk solid	2499	Mud packed	1906	Cinders furnace	913
Concrete, Asphalt	2243	Chalk fine	1121	Rice hulled	753	Cinders, coal, ash	641
Concrete, Gravel	2403	Corn on the cob	721	Rice rough	577	Earth, loam, dry excavated	1249
Potatoes, white	769	Silage, maize	690	Rye	705	Earth moist excavated	1442
Beets	721	Wheat	769	Malt	336	Earth, fullers raw	673
Sugarcane	272	Wheat cracked	673	Bran	256	Earth soft, loose, mud	1730
Sugar beet pulp, dry	208	Flaxseed whole	721	Silage, fresh pasture	590	Earth packed	1522
Sugar beet pulp, wet	561	Linseed whole	753	Shale solid	2675	Earth wet, excavated	1602
Clover seed	769	Alfalfa	256	Shale broken	1586	Earth dense	2002
Peat	400	Manure	400	Sand with gravel, dry	1650	Bark, wood refuse	240
Peat, moist	801	Barley	609	Sand with gravel, wet	2020	Brewers grain	432
Peat, dry	400	Flour wheat	593	Sand, water filled	1922	Fish meal	593
Peat, wet	1121	Clay dry lump	1073	Sand loose	1442	Gravel loose, dry	1522
Fullers Earth – raw or burnt	570-730	Clay dry excavated	1089	Sand dry	1602	Gravel dry 10 to 50 mm	1682
Gypsum solid	2787	Clay compacted	1746	Sand rammed	1682	Gravel, with sand, natural	1922
Gypsum broken	1290-1600	Clay wet lump	1602	Sand wet	1922	Gravel wet 10-50 mm	2002
Gypsum crushed	1602	Clay wet excavated	1826	Sand wet, packed	2082	Grain-Barley	600
Granite solid	2691	Clay fire	1362	Sandstone solid	2323	Grain-Millet	760-800
Granite broken	1650	Sewage, sludge	721	Sandstone broken	1370-1450	Corn, shelled	721
Buckwheat	657	Apples	641	Soy beans, whole	753	Grain-Wheat	780-800

BEFORE OPERATING THE SEMITRAILER

- Make sure all hydraulic connections are connected and everything is working properly.
- Make sure all air or hydraulic brake connections are connected and that the brakes are working properly.
- Make sure that all electrical connections are connected and that all lighting systems and ES-V and ABS braking systems (if fitted) are working properly.
- If an air brake system is installed, allow the air pressure to reach operating pressure.
- Make sure the parking brake is released.
- Make sure the semi-trailer body is fully lowered and the tailgate is closed and locked.

ATTENTION



Before starting work, inspect the device from all sides, especially in confined spaces.

ATTENTION



Be especially careful when reversing. If visibility is limited, use the signaller for help.



WARNING



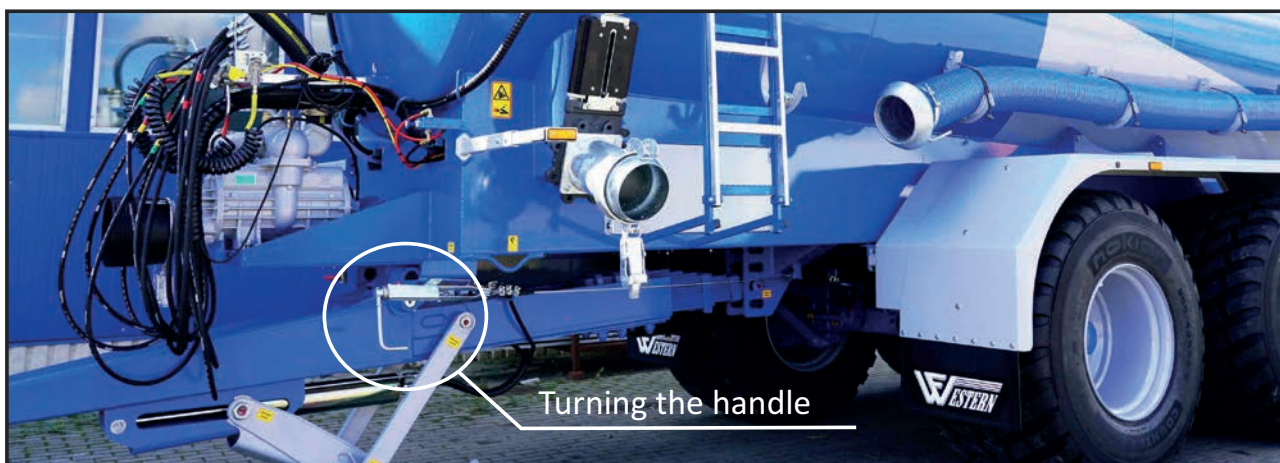
Before connecting the hydraulic, brake and electrical systems, always make sure that the connections are free of contamination and clean them if necessary.

HAND BRAKE

The hand brake is operated by a handle. Always make sure the handbrake is engaged and after stopping the handbrake, make sure that the cable is taut. It is very important when releasing the handbrake to make sure that the brake is released and the rope is free. Otherwise, you risk overheating without releasing the hand brake brakes.



The handbrake is used when the semitrailer is parked. Handbrake lever positioning the front part of the semitrailer, can be both on the right and on the left depending on the type of semitrailer. The handbrake handle turns, for this you need to press and turn the handle itself. This twist necessary so that the handle does not become an obstacle.



ATTENTION



When driving out of field, it is necessary to choose a suitable place for the exit, to avoid any risk of overturning due to loss of stability.

INFORMATION



Before connecting the hydraulic, brake and electrical systems, always make sure that the connections are free of contamination and clean them if necessary.

REAR TOWING EYELET OPERATION

The type of back loop is selected according to the customer's need. If the rear loop is semi auto, then after disembarking the handle must be folded back from the tractor and prepared for coupling. Upon arriving at the semitrailer, which you plan to hook, you aim at the centre of the trap and when the loop enters the trap, it automatically lock spin.

Connect the hydraulic connections, brake and electrical connections only after hooking the loop. When unhooking a semitrailer, we first disconnect all connections: hydraulic, brake and electrical and only then we unhook the loop.



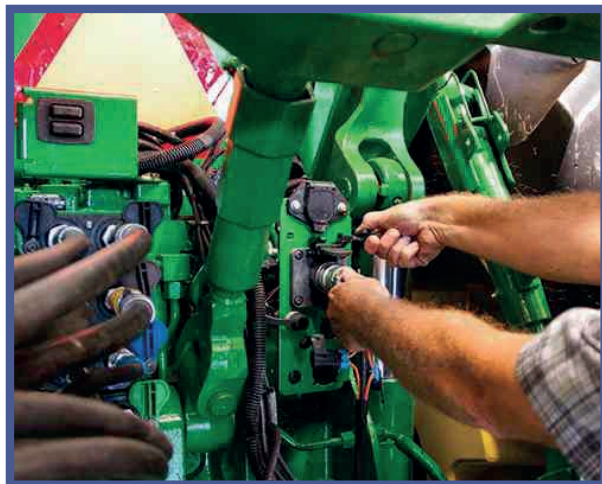
The rear loop plate is designed in such a way that the loop itself can be screwed at different heights depending onto place the drawbar of the next trailer that is planned to be attached.



ELECTRIC SYSTEM

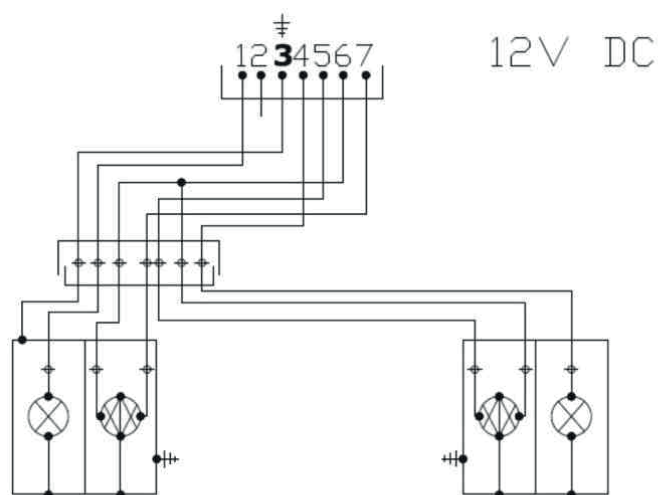


The electrical system of the semitrailer is connected into the tractor electrical outlet. After connecting available tractor semitrailer to the tractor it is necessary to check whether all trailers lighting works.



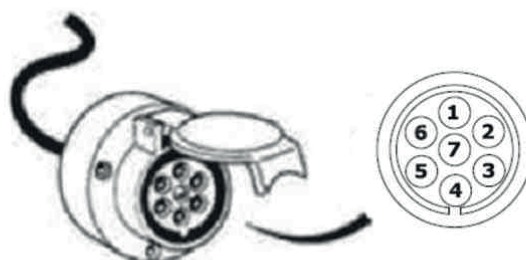
Check how many poles the electrical outlet has you have the corresponding plug in your tractor must be complete with the trailer. 7 or 13 pin sockets are available.

7 POLE SOCKET CONNECTION

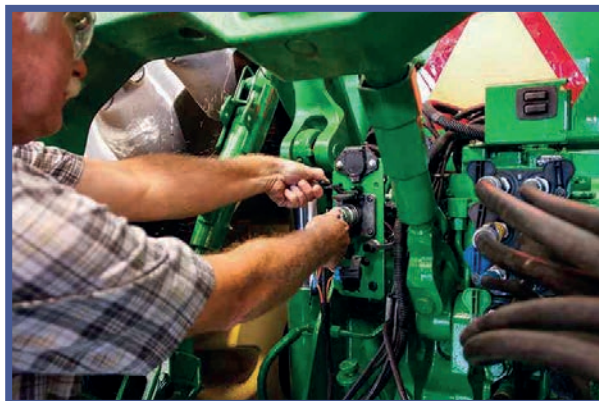


1. Left turn signal
2. Free
3. Negative (ground)
4. Right turn signal
5. Right rear light
6. Brake lights
7. Left rear light

Lights and reflectors complying with the requirements of EU directives are installed in semitrailers. This equipment is connected to the tractor with a plug socket. Lights are required on roads.



13 POLE SOCKET CONNECTION



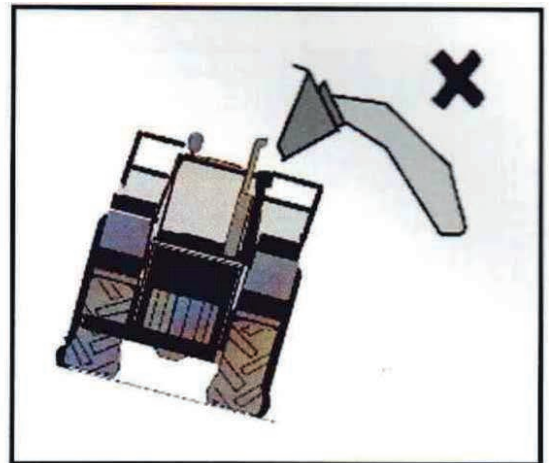
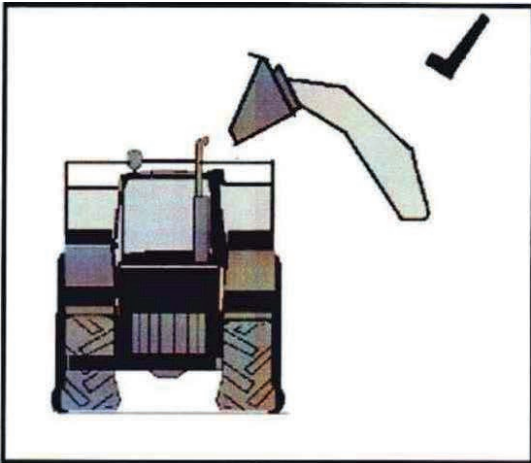
1. Left turn
2. Anti-fog
3. 1-8 contact circuit mass
4. Right turn signal
5. Right gauge and number plate lighting
6. Brakes
7. Left gauge and number plate lighting
8. Reversing light
9. Power supply chain
10. Power when the ignition is on
11. 10 contact circuit mass
12. Trailer Hitch Indicator Light Circuit (Connected to Pin 3)
13. 9 contact circuit mass

Check how many poles the electric socket has in your tractor and the corresponding plug must be complete with the trailer. 7 or 13 pin sockets are available.

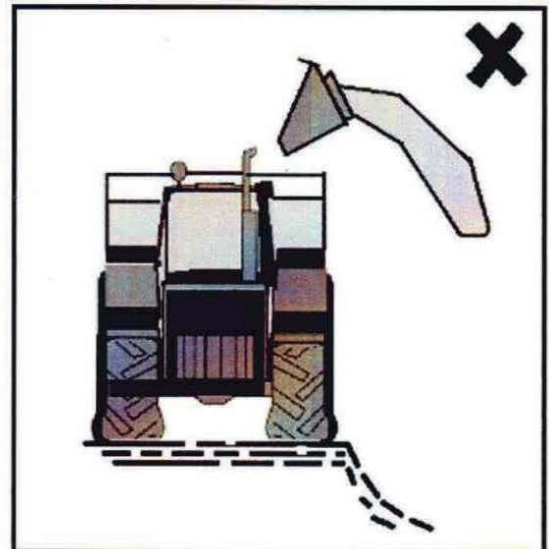
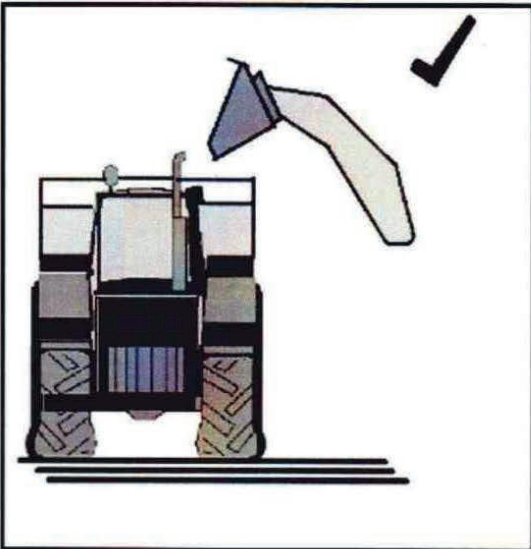


WARNINGS FOR LOADING AND UNLOADING

Load and travel on Level Ground as far as practically possible. Avoid Traversing slopes.

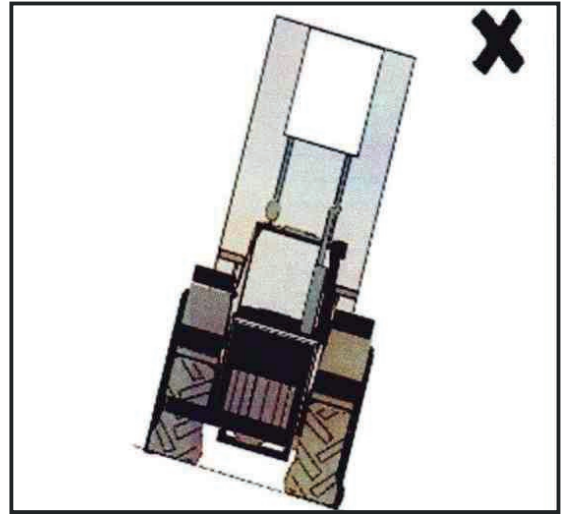
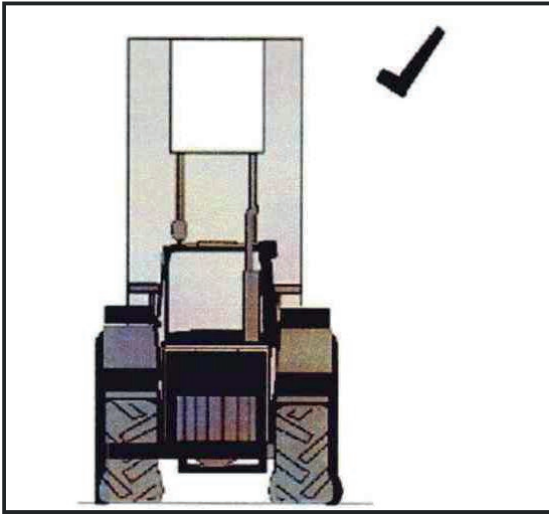


Always perform loading operations on solid ground, avoid working near or near ditches and other engineering systems.

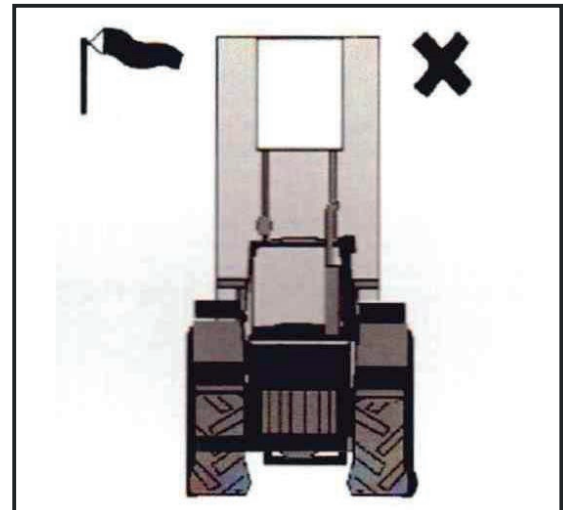
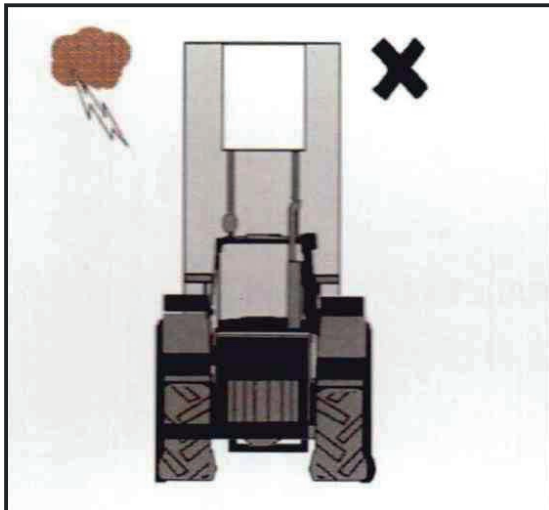


WARNINGS FOR LOADING AND UNLOADING

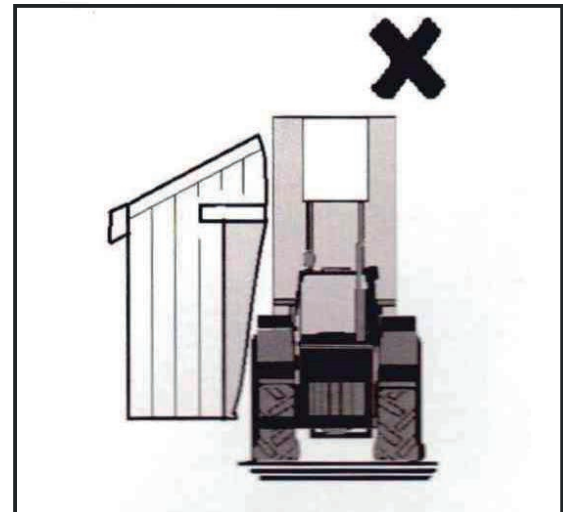
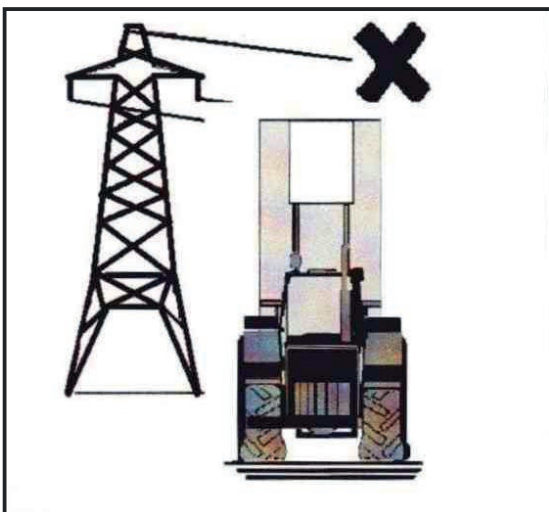
Avoid Tipping on unstable ground, avoid trenches and submerged services.



Take extra care when tipping during electrical cables, storms and high wind conditions.



Do not tip within overhead wires. Do not travel with the body raised and avoid low and overhanging buildings and structures.

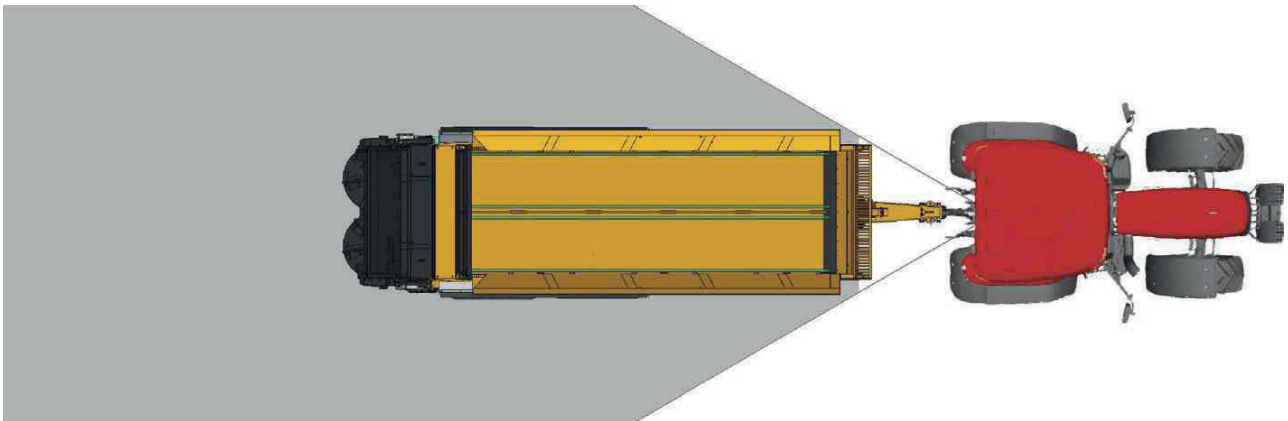


REVERSING THE TRAILER

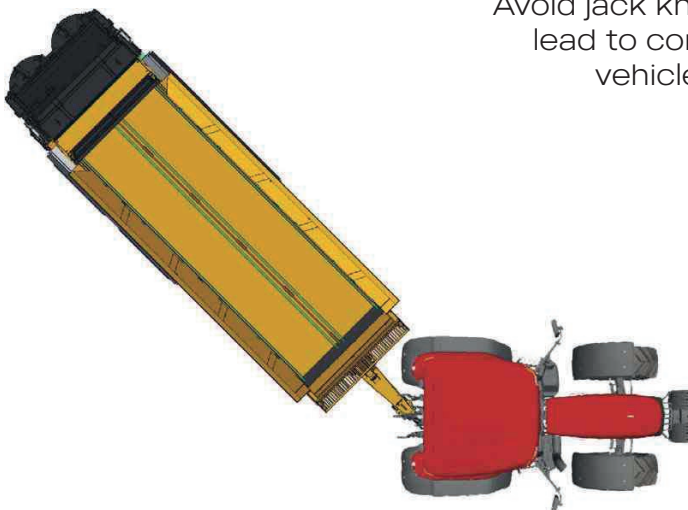
Blind Spots

Appropriately trained and experienced personnel recognise the dangers when reversing, less experienced operators may not. When reversing, even small trailers can have significant blind spots where visibility is reduced both behind and to the sides of them.

Failure to spot an obstruction can endanger the life of personnel or damage the trailer. Consider the use of audible reverse warning aids and additional lighting especially in low light conditions.



Avoid jack knifes when reversing as this will inevitably lead to contact between the trailer and the towing vehicle, resulting in damage to both the towing vehicles tyres and the trailer drawbar.



ATTENTION



Always check behind when reversing to ensure the area is clear of obstructions and personnel.

WARNING



If in any doubt employ the services of a banksman to assist you with your manoeuvre.

4. MAINTENANCE & SERVICE SCHEDULES

The service and maintenance schedule must be adhered to ensure the optimum availability and efficiency of the machine is maintained. Failure to adhere to these schedules may cause damage to the machine and possibly endanger the operator and others. The warranty given for the machine will become void if the maintenance schedule is not followed.

The instructions in this section are general information that is necessary for the personnel operating the device to know



WARNING



Ensure all personnel are outside of the danger area between the Towing Vehicle and Trailer before use.

WARNING



Ensure the control panel or Joystick power is in the off position before maintaining the machine.

WARNING



When working in the danger area between the trailer and the Towing Vehicle always ensure that the Towing vehicle engine is turned off and the Key removed.

WARNING



Wear the correct personal protective clothing. The brake linings may contain asbestos, a respirator should be worn whilst handling brake components.

WARNING



When working in the danger area between the trailer and the Towing Vehicle always ensure that the hydraulic and Pneumatic controls are in Neutral.

WARNING



Carry out all maintenance at the correct intervals and in accordance with the instructions in this manual.

WARNING



Ensure that decals are clearly visible. Replace damaged or missing decals immediately.

WARNING











Ensure tyre pressures are correct. Incorrect tyre pressures can cause stability and handling problems for the trailer and Towing vehicle.












WARNING










Release residual Pneumatic & Hydraulic pressure before connecting or is connecting Air & Hydraulic lines.




Service Schedule









	GRS
Perform task	
 Check	
 Maintenance Task	
Daily	
Inspect for damage due to the load or loading machine	
Check Brake operation	
Check Park brake operation	
Grease Tipping Cylinder Pivots	
Grease Body Tipping Pivots	
Grease Hydraulic Cylinder Pivots	
Grease Tailboard Pivots	
Drain Water from Air reservoir (if fitted)	
Grease floor transporter bearings	
Grease drive shaft, and support bearings	
Grease rotor top bearings	
Check gearbox oil level	
Grease PTO shaft	
Check Oilers	







	GRS
Perform task	
 Check	
 Maintenance Task	
Weekly	
Check Lights	
Check wheel nut torque	
Check for oil leaks	
Grease all grease points	
Grease Sprung Drawbar grease points (if fitted)	
Inspect the machine for loose nuts and bolts	
Check Hydraulic hose condition	
Check air line condition	
Adjust floor chain tension	
Check Brake operations	

Service Schedule






	GRS
Perform task	
 Check	
 Maintenance Task	
Weekly	
Grease brake linkages	
Check connection to towing vehicle	
Check towing eye condition	
Check tyre pressures	
Grease all nipples on running gear	
Check tank oil level	
Check operation of valves	









	GRS
Perform task	
 Check	
 Maintenance Task	
Every Month	
Check operation of overfill valve	
Lubricate PTO	
Clean valves	





	GRS
Perform task	
 Check	
 Maintenance Task	
Every 3 Months	
Check brake clearance & wear	
Adjust brakes	
Grease steering axle kingposts (if fitted)	
Changes overgear oil	
Tighten all nuts and bolts	
Check machine parts for worn and Damage	





	GRS
Perform task	
 Check	
 Maintenance Task	
Every 6 Months	
Check axle hubcaps	
Check wheel bearing wear	
Tighten all suspension U-bolts	
Tighten all spring draw U-bolts	
Check blade wear	

Service Schedule






	GRS
Perform task	
 Check	
 Maintenance Task	
Every Year	
Clean the oil tank	
Clean the lubrication pump	
Change the oil in gearbox	
Check the spring in suspension	




	GRS
Perform task	
 Check	
 Maintenance Task	
Laying Up Protection	
Protect all electrical connections	
Clean down machine	
Repair any areas where paint has been removed	
Replace worn or damaged parts	
Grease all grease points and bright parts	
Cover ends of all quick release connectors	




	GRS
Perform task	
 Check	
 Maintenance Task	
Every 2 years	
Lubricate wheel bearings	
Change towing eye	

	GRS
Perform task	
 Check	
 Maintenance Task	
Every Months ABS Brake system maintenance	
Check all system components for signs of damage	
Test whole system for air leakage	

Service Schedule

	GRS
Perform task	
 Check	
 Maintenance Task	
Every Year	
Check electrical wiring for damage	
Check pipping for damage & security	
Check sensor for wear & readjust as required	

	GRS
Perform task	
 Check	
 Maintenance Task	
WHEN HUB IS REMOVED	
Check and readjust exciter & sensor	

	GRS
Perform task	
 Check	
 Maintenance Task	
Every 2 years	
Replace modulator & solenoid	

GREASE POINTS

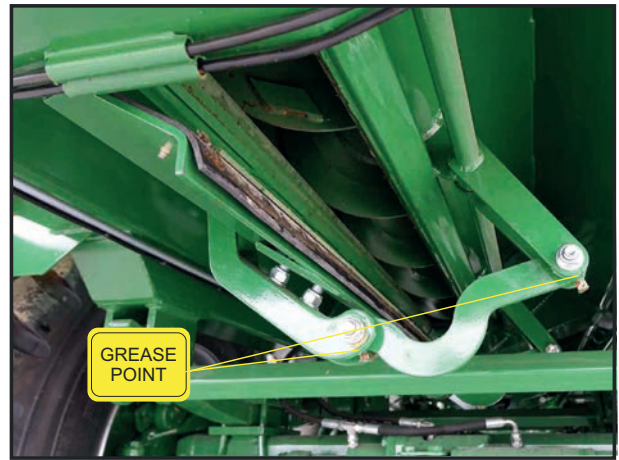
Use grease oil for grease points L-XCCIB2 (Din 51502 NLGI-2); (ISO 6743/9; KP2K-30).



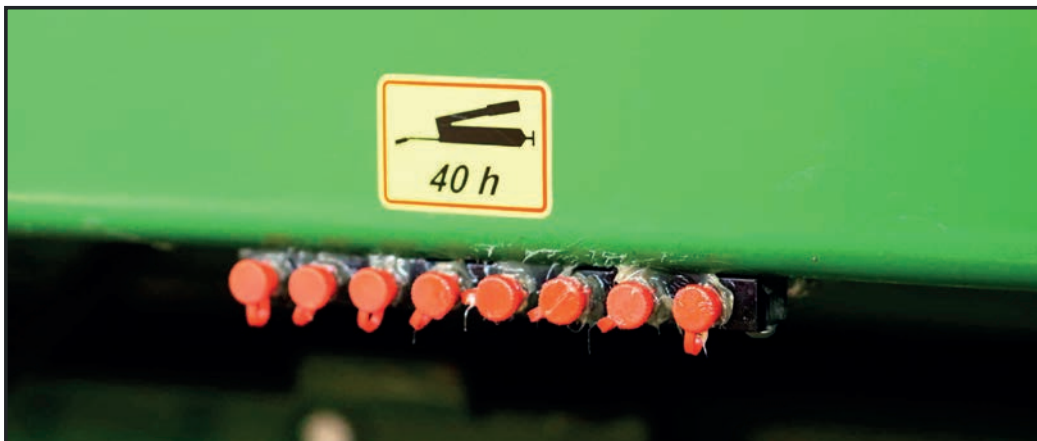
Grease points are marked with stickers „ Grease Point“.

GREASE POINTS

The power take-off shaft has lubrication points under the guards that require periodic greasing.

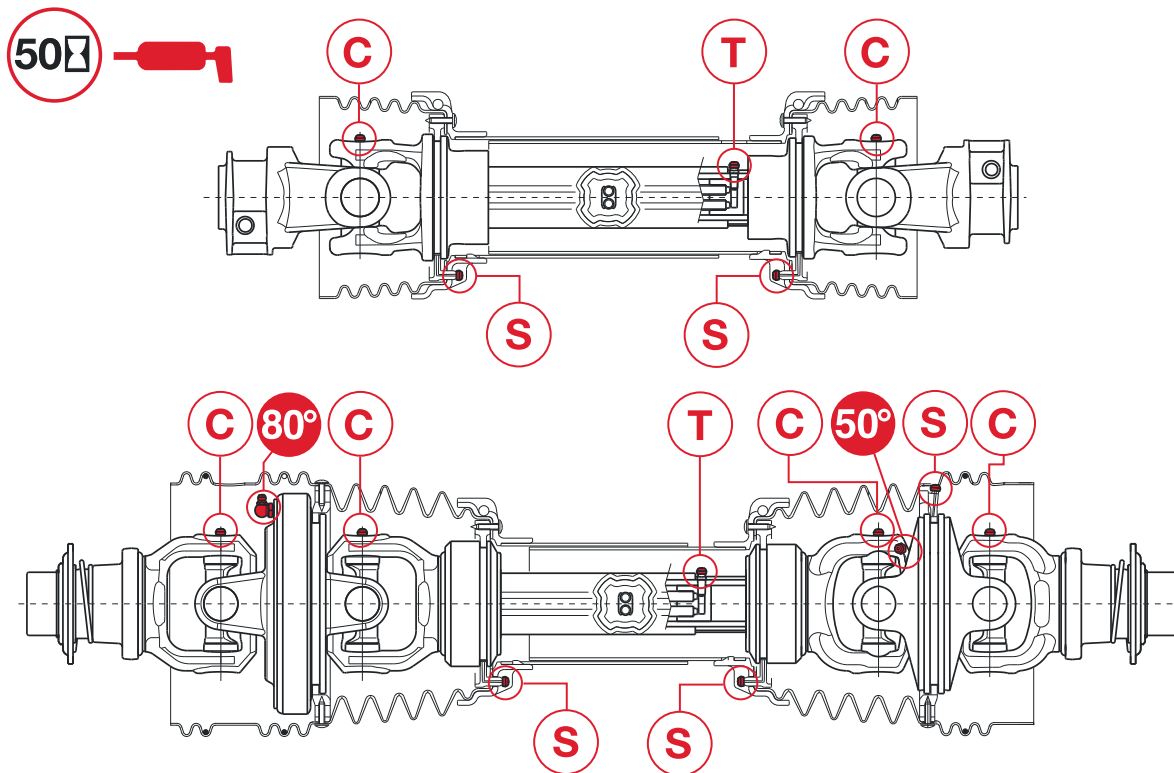


An additional option is a greasing system with grease points in one place. The advantage of this system all grease points in a greasing block that is mounted to the trailer frame. You will be able to do a lot of faster and you don't have to look for all the grease points.




POWER TAKE-OFF GREASING

The lubrication interval of the power supply shaft, the location of the lubrication points and the recommended amount of grease are indicated in the diagrams and tables below. It is recommended to use grease NLGI 2. When applying with a manual grease tool, the required amount of grease is calculated as follows: one full press is 0.8 1 gram.



PTO type	S1	S2	S4	S5	S6	H7	S8	H8	S9	SH	S0
Cross (C)	4 g	7g	10g	13 g	18 g	22 g	26 g	28 g	30 g		
Shield bearings (S)	6 g										
T elescopic members (T)	12 g	20 g					32 g				
80° CV -joint (80°)		20 g	30 g		60 g	80 g	100 g	160 g			
50° CV -joint (50°)			5 g		6 g	7 g	8 g				

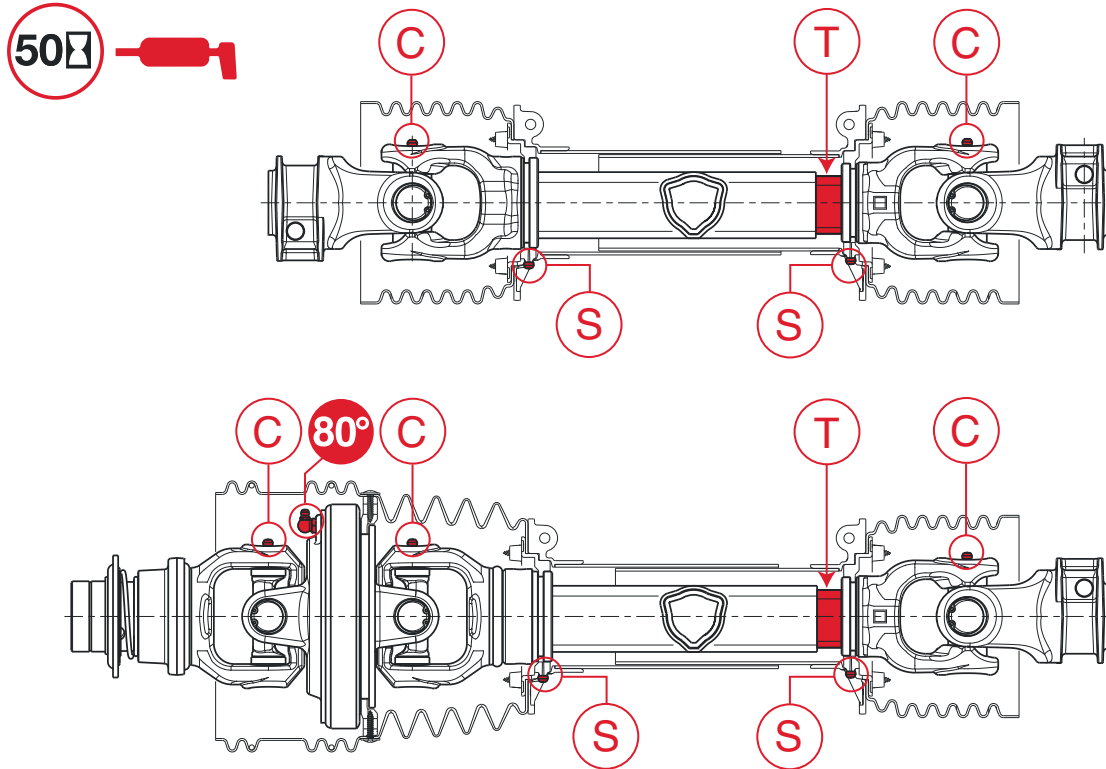
In the top row of the table "S1; S2; H7; SH and others" refers to the type of power take-off shaft. You can identify which type of power supply shaft is installed in a specific product on the power supply shaft identification plate.

WARNING


When working in the danger zone, performing repair, adjustment or service work, make sure that the engine of the towing vehicle is turned off and the key is removed from the ignition.


POWER TAKE-OFF GREASING

For the Global series PTO shaft, the lubrication interval, location of lubrication points and recommended amount of grease are shown in the diagrams and tables below. It is recommended to use grease NLGI 2. When applying with a manual grease tool, the required amount of grease is calculated as follows: one full press is 0.8 1 gram.



PTO Type		G1	G2	G3	G4	G5	G7	G8
Cr osses (C)		4 g	7 g	10 g		13 g	18 g	22 g
Shield bearings (S)					6 g			
T elescopic members (T)		12 g			20 g			32 g
80° CV -joint (80°)			20 g		30 g	60 g		80 g

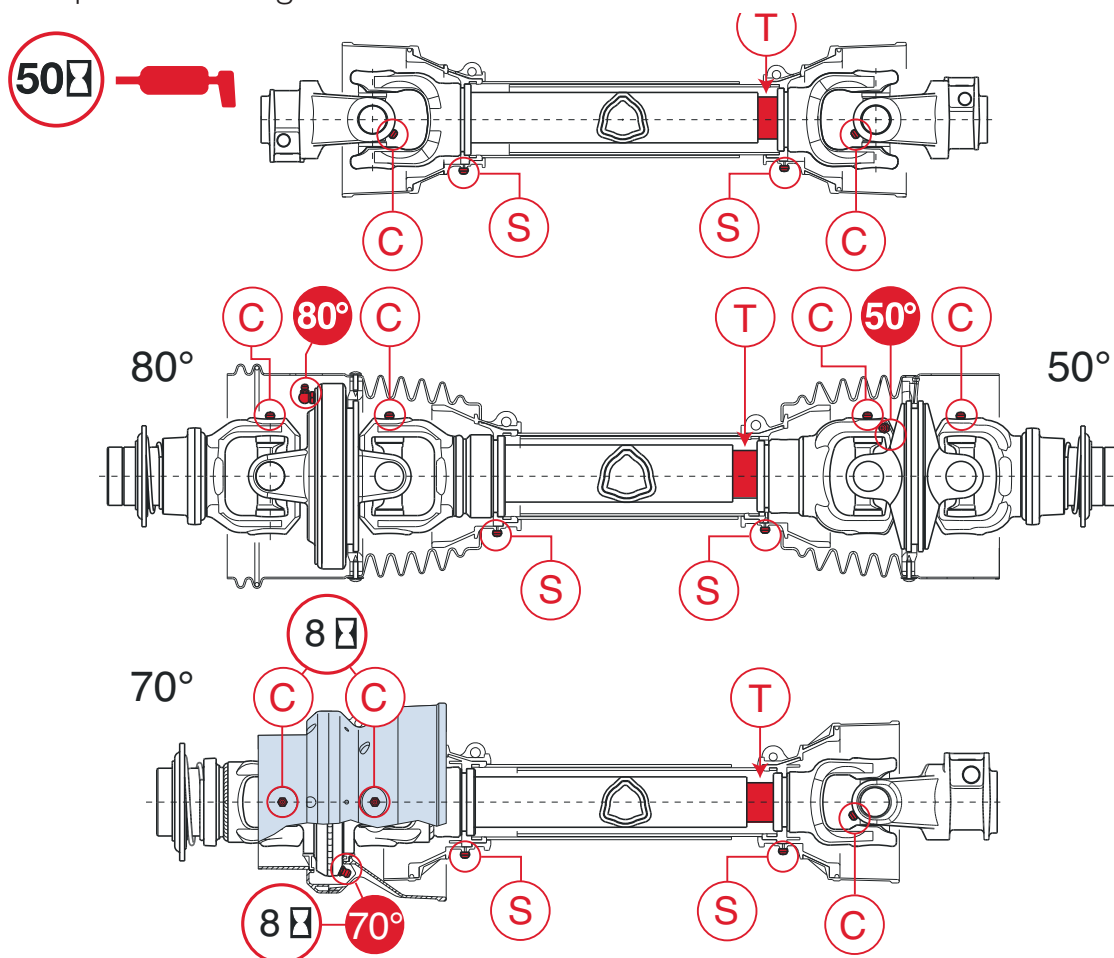
In the top row of the table "G1; G2; G3 and others" refers to the type of PTO shaft. You can identify which type of power supply shaft is installed in a specific product on the power supply shaft identification plate.

Warning


When working in a danger zone, performing repairs adjustment or service work, make sure that the engine of the towing vehicle off and the key removed from the ignition switch.

POWER TAKE-OFF GREASING

The lubrication interval, location of lubrication points and recommended amount of grease for the 100 series PTO shaft with universal joint drive are shown in the diagrams and tables below. It is recommended to use grease NLGI 2. When applying with a manual grease tool, the required amount of grease is calculated as follows: one full press is 0.8 1 gram.



PTO Type	1	2	43	4	5	6	7	8
Crosses (C)		2 g			4 g		5 g	
Shield bearings (S)				1 g				
80° CV -joint (T)	12 g			20 g			32 g	
50° CV -joint (80°)		20 g		20 g		30 g		40 g
70° CV -joint (50°)				3 g		4 g		4 g
(70°)		20 g						

In the top row of the table, "1; 2; 43 and others" refers to the type of power take-off shaft. You can identify which type of power supply shaft is installed in a specific product on the power supply shaft identification plate.

POWER TAKE-OFF GREASING

Lubrication interval, arrangement of lubrication points and recommended amount of grease for the special joints of the power supply shaft. It is recommended to use grease NLGI 2. When applying with a manual grease tool, the required amount of grease is calculated as follows: one full press is 0.8 1 gram.

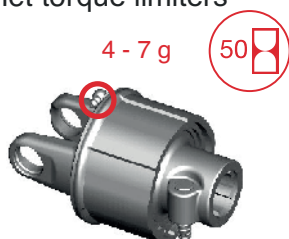
RA1 Overrunning clutches



RA2 Overrunning clutches



SA Ratchet torque limiters



LN Ratchet torque limiters



LC Ratchet torque limiters



seasonal
4 - 7 g

LT Ratchet torque limiters



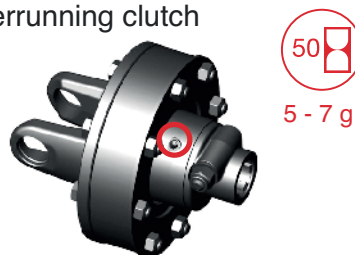
seasonal
4 - 7 g

LB Shear bolt torque limiters

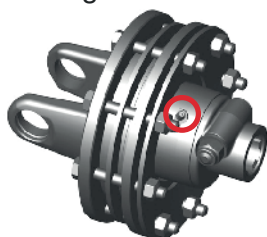


seasonal
1 - 2 g

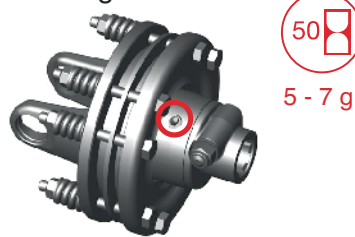
FNT Friction torque limiters and overrunning clutch



FNV Friction torque limiters and overrunning clutch



FFNV Friction torque limiters and overrunning clutch



POWER TAKE-OFF GREASING

In the absence of a lubrication point



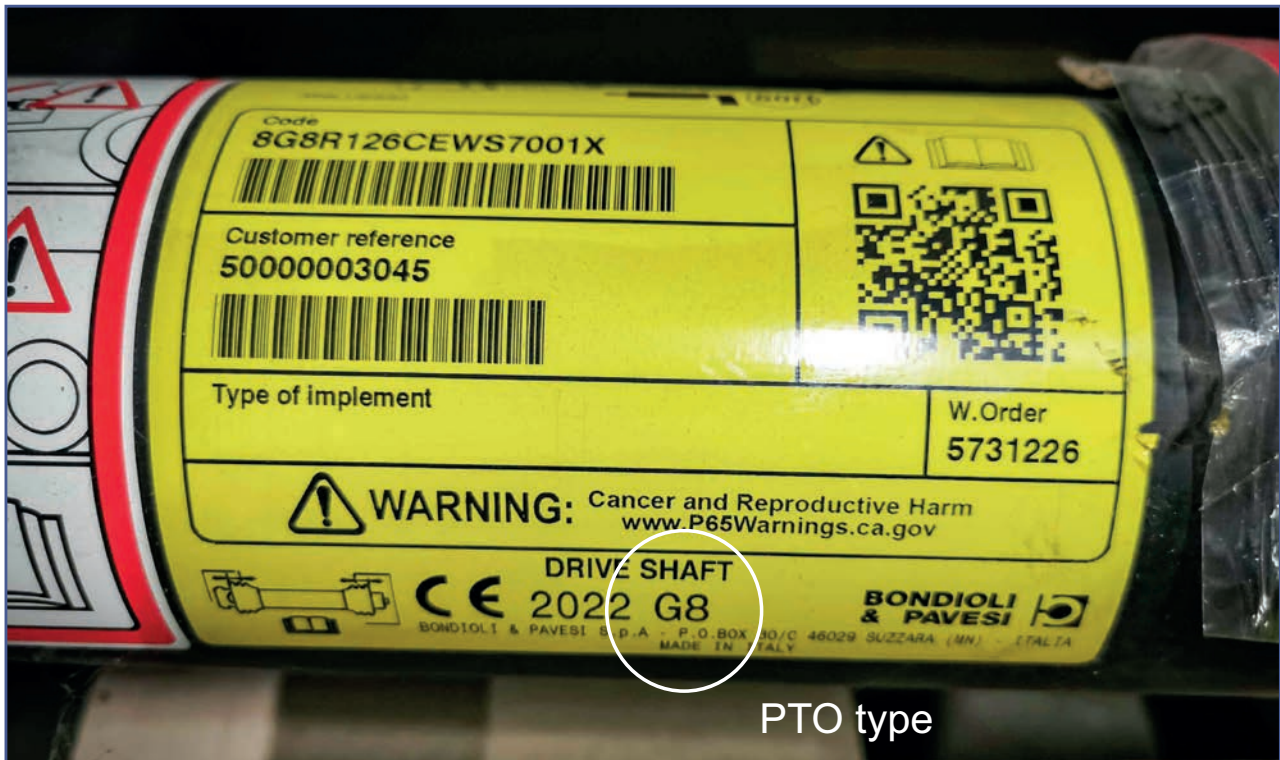
If the power supply shaft does not have a lubrication system in the telescopic joint, it is necessary to disassemble the power supply shaft and lubricate it manually as shown in the photo.

At the lubrication point



The picture shows the power supply shaft with the lubrication system in the telescopic joint, then it is not necessary to disassemble the power supply shaft, it is enough to lubricate the lubrication point, the above amount of grease and the lubrication interval.

The power take-off nameplate indicates the type of power take-off, in this photo of the nameplate the type is "G8". Refer to the tables above for information on the G8 power take-off shaft and refer to the specified lubrication intervals and recommended amounts of grease for that particular type of power take-off shaft.



ELECTRICAL SYSTEM MAINTENANCE

The electrical system components of the semitrailer are connected and disconnected with special connectors. If you need to change the component of the lighting system the lamp, you disconnect the lamp connector, turn away lamp and replace it with a new one. Damaged parts of the metal structure must also be replaced with new ones.

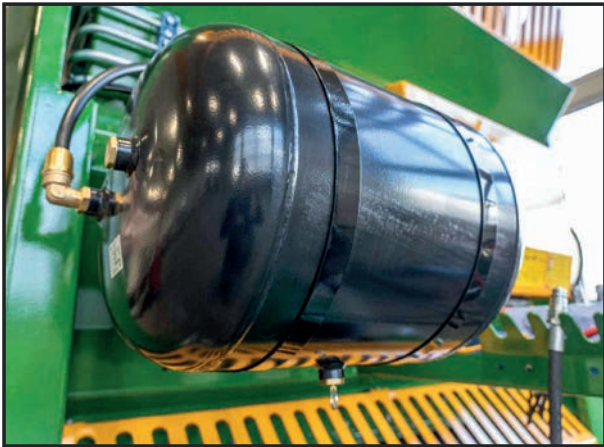


The connectors and cables on the front of the product are most often damaged. In case of violations, damaged parts must be replaced with new ones. A damaged cable can be repaired or replaced with a new one.



DRAINING OF CONDENSATE

Drain the water condensate formed from the air reservoir of the pneumatic system. Pneumatic system condensate drain valve is installed at the bottom of the tank. Pull the existing ring and let the water go out.



TYRE PRESSURE CHECK

Measure the tyre pressure and adjust if necessary according to the information on page 3.7. Tyre pressure is selected based on working conditions, driving speed and load weight.



TIGHTENING WHEEL NUTS

Before use, after the first use, do not puncture the wheel and check the torque of the wheels every 6 months. An adjustable torque wrench should be used to check wheel tightness. In the absence of such a key, use the table data (L length of the key, F force acting on the key). For example, your axle stud is M22x1.5, and the nut type is "nut + washer" so the force you need is 510 Nm. According to the table, the length of the key is 800 mm, and the force is 60 kg. Be careful and do not over-tighten.



ATTENTION

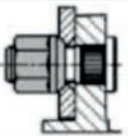
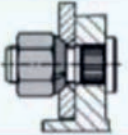
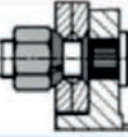
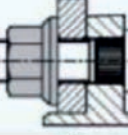
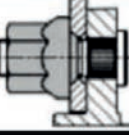


Do not use Impact Tools to tighten the Wheel Nuts.

ATTENTION



Various wheel nut and stud combinations may be used. Always select the correct nut type from the table before checking wheel nut tightness.

NUT TYPE	Spanner	Wheel stud	Tightening torque	Leverage (*L)	Force (*F)
	mm	mm	Nm	mm	Kg
DIN 	17	M12x1.5	90	300	30
	19	M14x1,5	130	300	40
	24	M18x1,5	270	450	60
Plain nut + washer 	24	M18x1,5	270	450	60
	27	M20x1,5	380	600	60
	30	M22x1,5	510	800	60
"Twin" 	24	M18x1,5	270	450	60
	27	M20x1,5	380	600	60
	30	M22x1,5	510	800	60
"M" 	-	-	-	-	-
	27	M20x1,5	450	800	55
	32	M22x1,5	650	1000	65
"Bec" 	28	M18x1,5	270	450	60
	30	M20x1,5	380	600	60
	32	M22x1,5	510	800	60

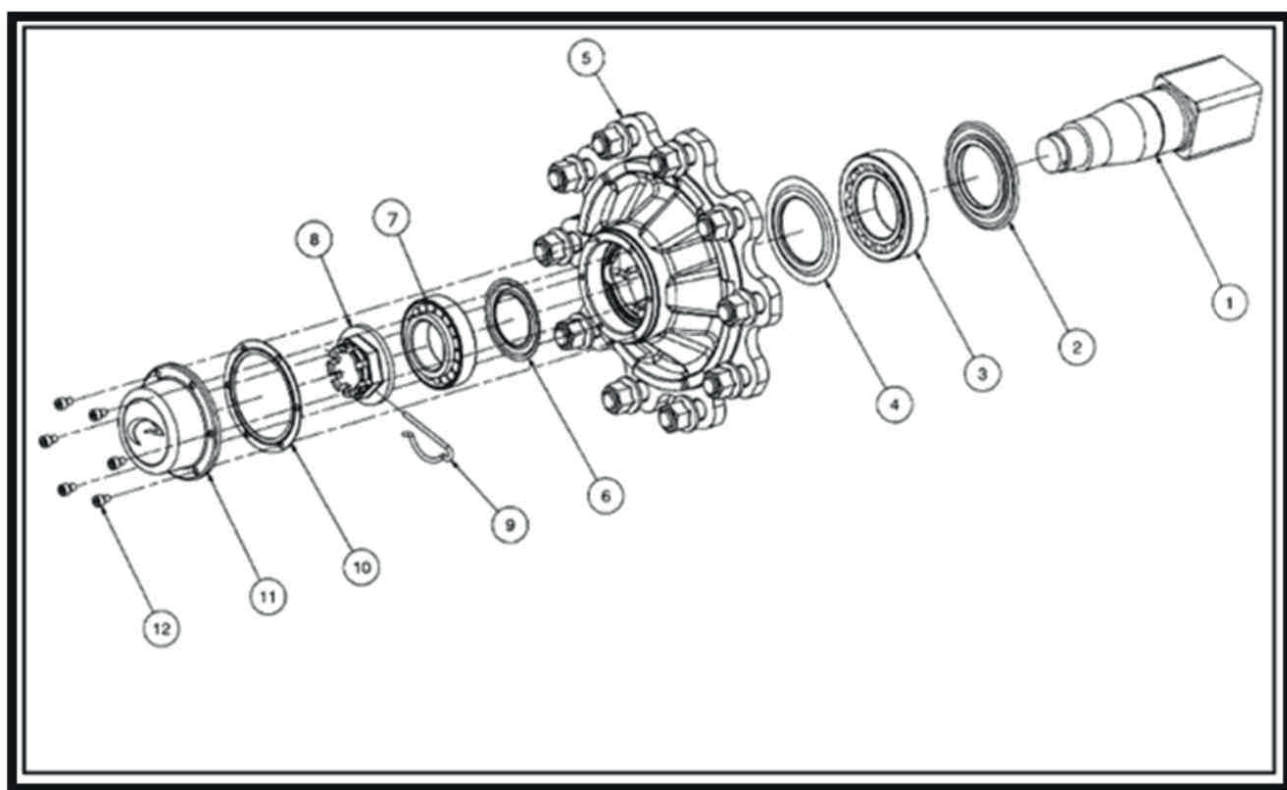
AXLE MAINTENANCE

Every 6 months, adjust the bearings. Make sure all lubrication points are lubricated. Lost or damaged axle covers should be replaced immediately to prevent dust and dirt from getting inside and damaging the bearings, so wash and clean the installation before inspection. Remove the axle covers, check that the covers are healthy and undamaged. Deformed covers must be smoothed. If you cannot do this, replace with new ones. Make sure the axle housing gasket is intact. If damaged, replace with a new one.

All removed parts must be perfectly clean before reassembly. When the axle cover is removed, the bearings should be adjusted if necessary. Axle bearings wear and their service life depends on the conditions of use, load, speed, adjustment and maintenance intervals.

Before carrying out maintenance and repair work, raise the wheel off the ground with a suitable lifting mechanism. Spin the wheel and listen for extraneous noise. Then move the wheel with the lever to determine the bearing clearance. In the presence of extraneous sounds, it is likely that the bearings are worn. After determining the looseness of the bearings, it is necessary to release the lock (9) and tighten the nut (8). Tightening should be done carefully, excessive tightening of the bearings can damage the bearings. After tightening, check whether the wheel rotates easily. The wheel must not wobble and rotate easily.

Be careful not to get dust and dirt. Lock the retainer, add grease and close the axle cover. If the bearings are replaced, it is also necessary to replace the oil seals, clean the grease residues, and wash them. Make sure new bearings are lubricated, properly adjusted.



- | | |
|--------------------------------|------------------------|
| 1. Axle; | 7. Outer bearing; |
| 2. Seal; | 8. Nut; |
| 3. Inner bearing; | 9. Fixer; |
| 4. Inner bearing grease plate; | 10. Seal; |
| 5. The hub; | 11. Cover of the axle; |
| 6. Outer bearing grease plate; | 12. Cover bolts. |

AXLE MAINTENANCE

In normal operating conditions, lubricate the bearings every 2 years or every 50,000 km and when the brake shoes are replaced. In harsh conditions, the bearings should be lubricated more frequently.

Use a general-purpose EP grease formulated for lubricating plain, ball and roller bearings, subject to heavy loads and impacts typical of HGV, agricultural vehicle hubs, etc.

All parts (hub, spindle, bearings, seals, castle nuts, hubcap, cotter pin) should be decrease and perfectly clean before reassembly.

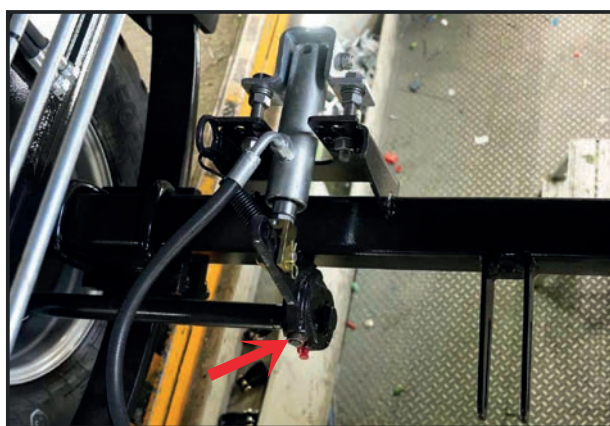
The work should be carried out in a clean environment with appropriate tools as the slightest bit of dirt can Damage the bearings or even the spindle. When carrying out maintenance on the bearings, check the brake linings, drum and return springs, clean the brakes, clean and lubricate the brake camshaft.



BRAKE MAINTENANCE AND ADJUSTMENT

Brakes should be tested before first use. Also re-checked and adjusted after the first run with cargo:

- Check the actuator handle and return spring devices. Check the travel and return operation of the drive handle and check trailer brakes and hand brake are working and can be released properly.
- Tighten bolts and nuts (cover, support points, etc.), check locking wire pins, spring rings, etc.
- Check for hydraulic fluid and air leaks;
- Adjust the brakes so that the gap between the brake linings and the brake drum is minimal (wheel should turn easily when raised).
- Brake adjustment is recommended every three months. The adjustment is made with the help of screws, which you can see in the photos.



Check and test the brakes before intensive use and every 3 months:

- Visually check the wear of the brakes and the gap between the brake linings and the drum;
- It is likely that the lining is worn and the stroke of the brake lever has increased slightly;
- Check the thickness of the brake lining (page 3,6). Brake pads should be replaced as soon as the minimum pad thickness is reached.
- Check that the brakes are clean, clean them if necessary.

WARNING

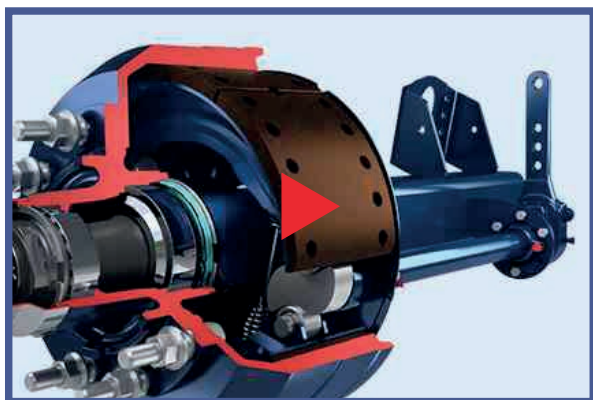


Failure to follow these instructions may affect the performance of the brakes and axles and may result in injury.

INFORMATION



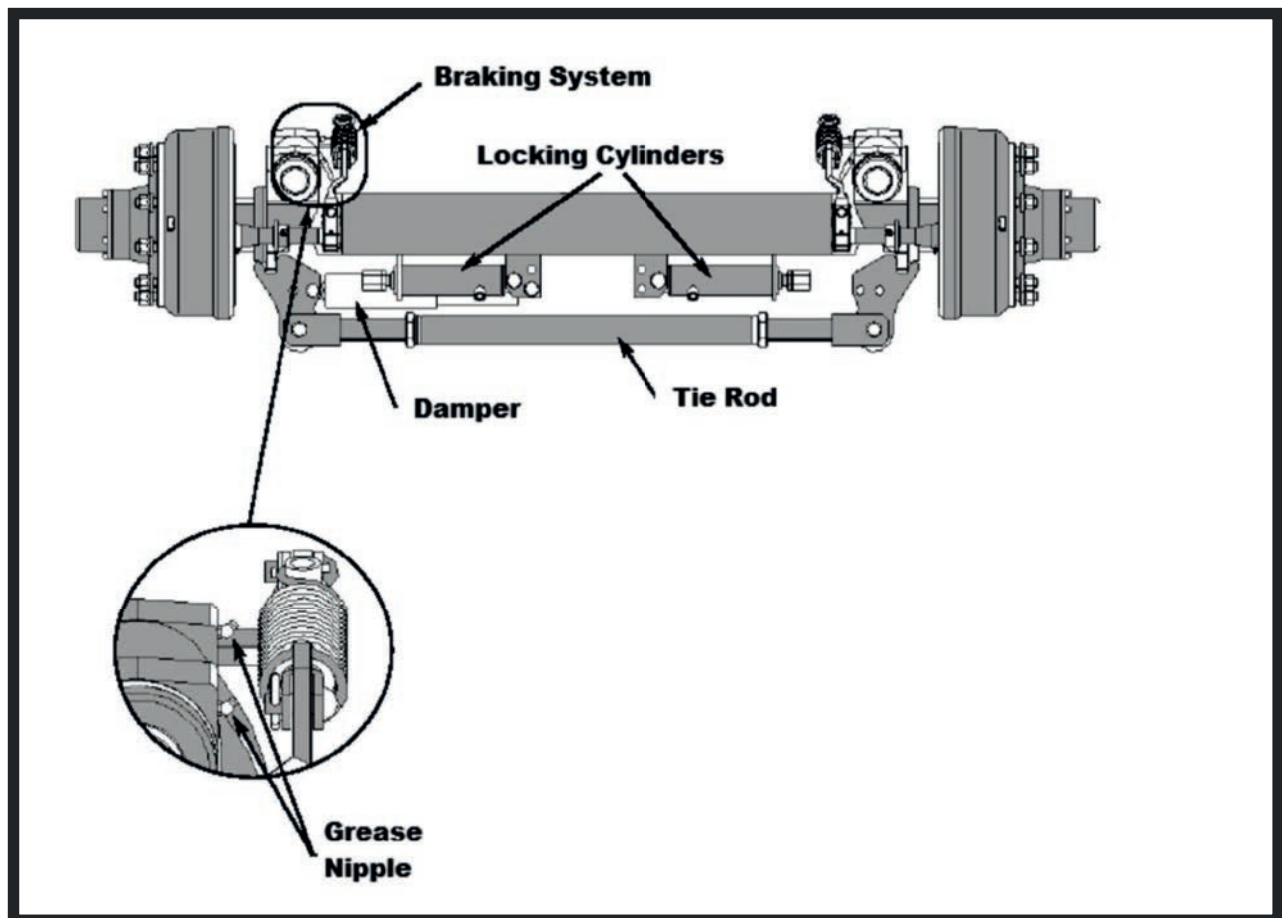
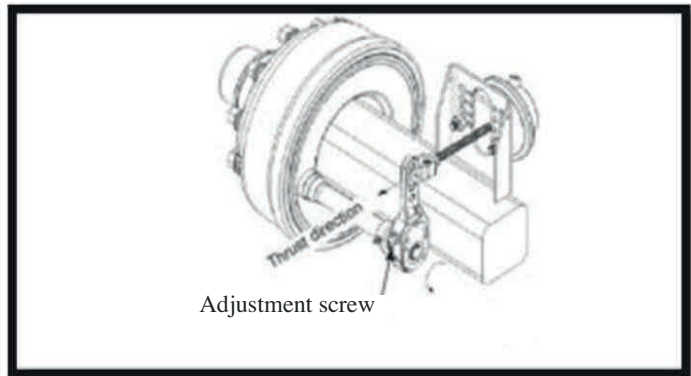
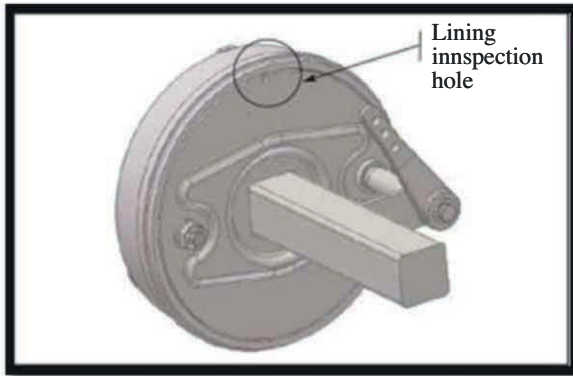
See axle manufacturer information for additional information.



Video instruction for brake adjusting.



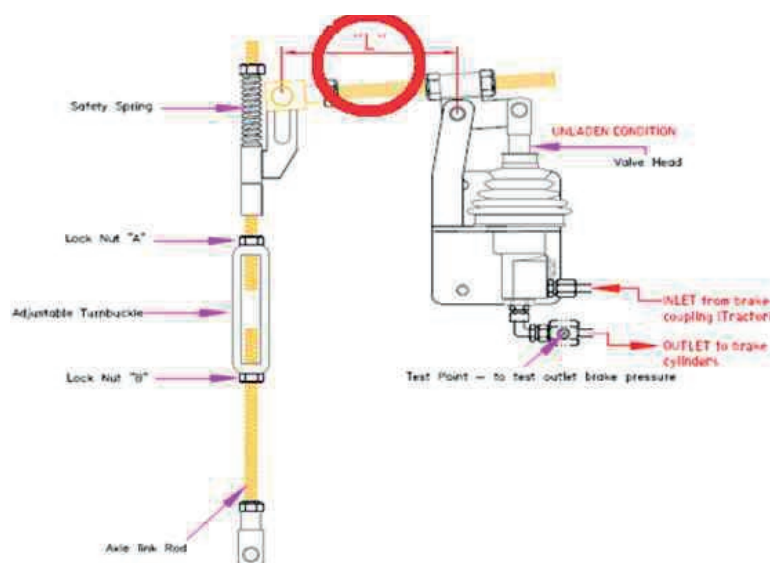
BRAKE MAINTENANCE AND ADJUSTMENT



Steering axles should be maintained in the same way as standard axles. The following additional maintenance is required for steering axles.

- Grease the bushings of the steering rod, the lubrication points of the steering joints, brake shafts;
- Check whether the steering rod is not mechanically damaged or bent. If so, a wheel alignment adjustment is required;
- Check the tightening of screws and nuts;
- Check the steering rod and shock absorber bushing for wear. If necessary, replace them with new ones.

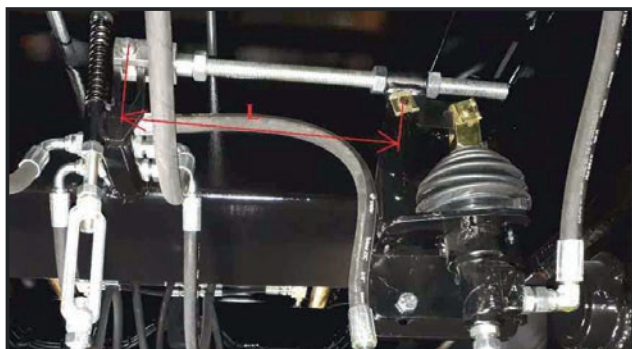
ADJUSTMENT OF AUTOMATIC LOAD SENSING VALVE FOR HYDRAULIC BRAKES



Hydraulic brake load valve

The automatic loading valve of the brakes must be linked to the height of the semi-trailer, that is, the valve must change the braking force depending on how much the semi-trailer is loaded.

The adjustment must be made when the semitrailer is empty and standing on a horizontal base. The semi-trailer must be attached to the tractor.



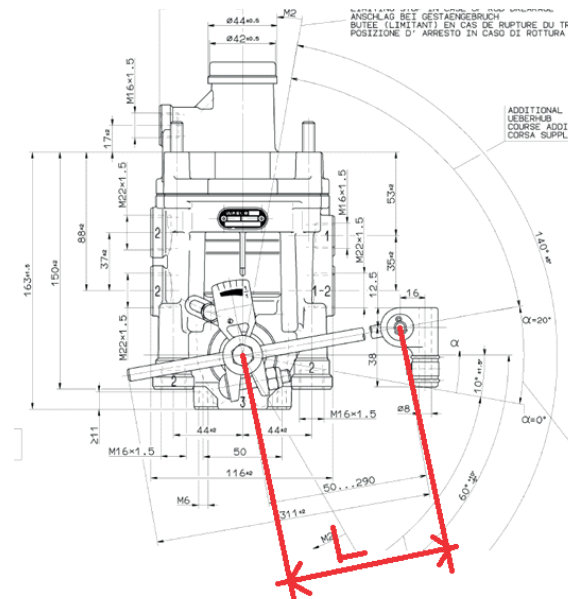
Make sure the semi-trailer is empty and on a horizontal base. Adjust the horizontal lever according to the "Information table for determining the length of the lever (L, mm)". Measure the distance between the centres of the fixing points. Tighten the horizontal lever with the help of the vertical lever to close the automatic load valve. Place the vertical lever at a 90° angle to the horizontal pipe.

Connect the monometer. Apply hydraulic pressure to the brake line (by depressing the tractor's brake pedal). Raise the pressure up to 40 bar using the vertical lever. Once the pressure has reached 40 bar, the adjustment is complete, remove the monometer. Lock the horizontal and vertical lever with the help of lock nuts.

ADJUSTMENT OF AUTOMATIC LOAD SENSING VALVE FOR AIR BRAKES



Air brake load sending valve



Adjustment for Automatic Load sensing Valve Air Brakes



BRAKE LOAD SENSING VALVE DATA SHEET

Brake Automatic Load sensing Valve Data is on metal plate that lists each trailer brake adjustment data. The plate is mounted under trailer, to the main frame of the trailer next to the load sensing valve. If your trailer has air brakes, then the adjustment data will be provided next to the air brakes section. If your trailer has hydraulic brakes, then the adjustment data will be provided a section of hydraulic brakes.



AUTOMATIC LOAD SENSING DEVICE	PNEUMATIC BRAKE SYSTEM	HYDRAULIC BRAKE SYSTEM	
VALVE NO.	n.a.	WF12 Hyd Lsv	
INPUT PRESS., BAR	n.a.	115	
AXLE LOAD, KG	OUTPUT PRESSURE, BAR	60	SUSPENSION SPRING TYPE
3000	n.a.	115	450U006ZA70
8000	n.a.		MAXIMUM AXLE LOAD, KG
	n.a.	L= 125 MM	10667
	n.a.	S= 11 MM	
MODEL WF8.5-24BT PIN<WFL8.4BTTR4AN8950>			

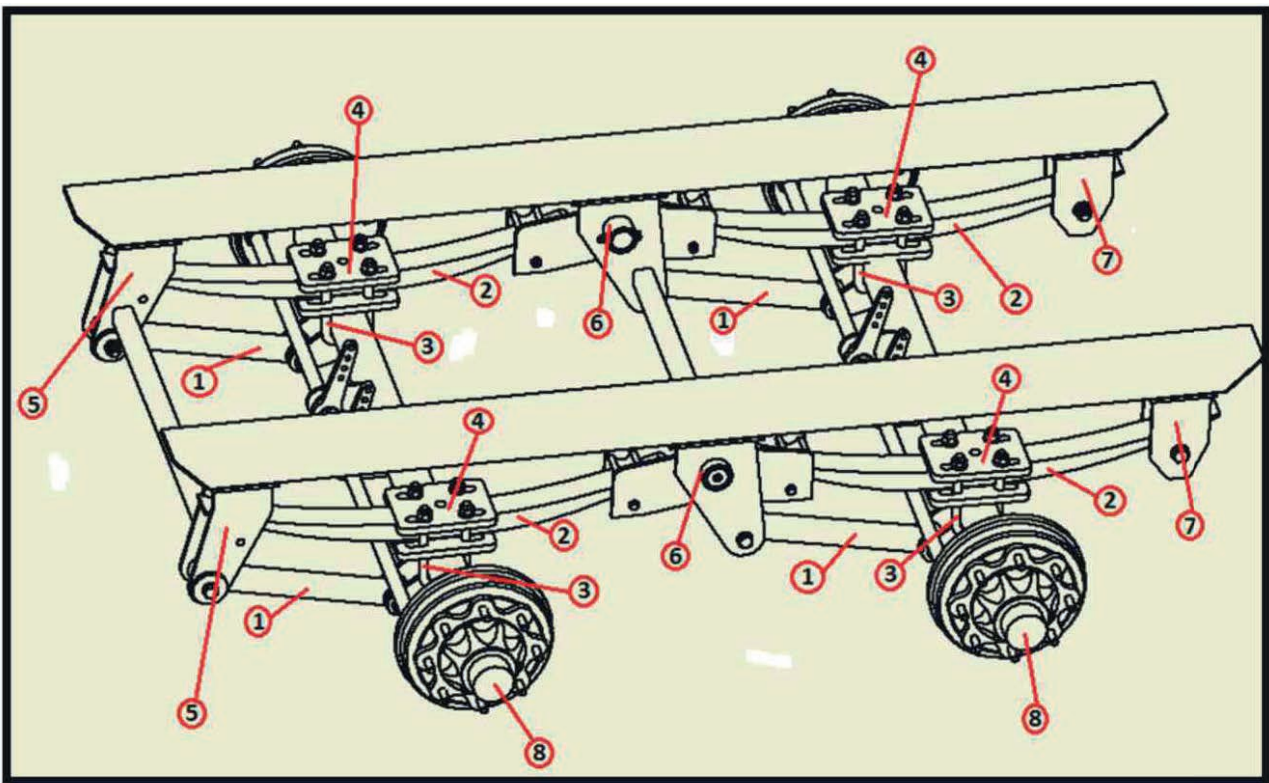
The position of the data plate under the trailer frames from below.



SUSPENSION MAINTENANCE

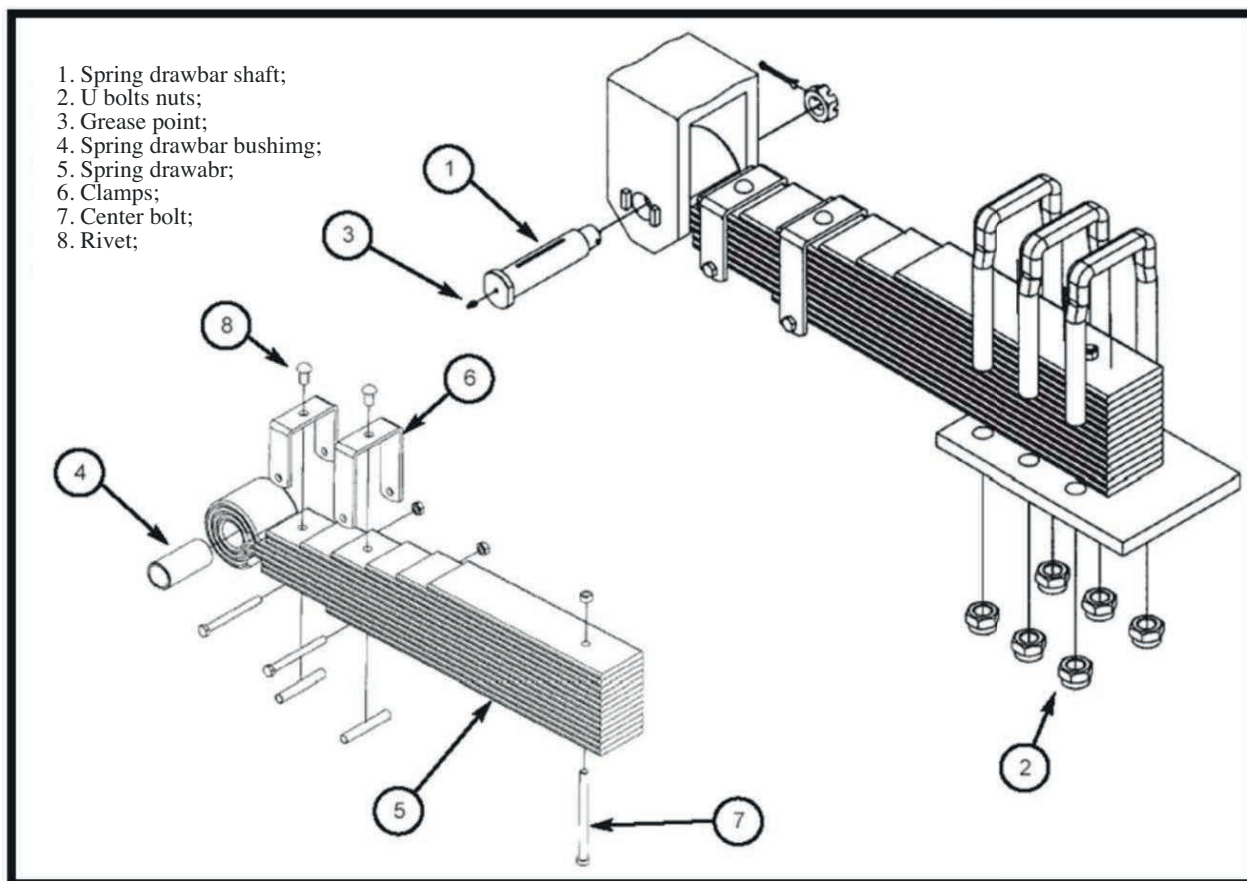
Suspension should be checked before first use and after first ride. Recheck after charging, then every 6 months. Intensive use:

- Check if the axle „U“ bolts (3) are properly tightened, and also make sure that there are no loose screws and nuts.
- If the axle „U“ bolts were loose, then the plastic spacers between the hinge plates (4) and the hinge (2) may be damaged (total two units per spring), in which case they must be replaced with new ones.
- Check the condition of the bushings of the rods, if wear is noticed, replace them with new ones.
- Check the spring condition (2), the condition of the suspension front bracket (5). Also check condition of the chassis middle bracket (6) and condition of the rear chassis bracket. In case of heavy wear, it is necessary to change the hinges (2) and chassis brackets (5, 6, 7).
- Check middle (6) undercarriage bracket bushings condition and replace pins and bushings if necessary.
- Check the alxes, for cracks and are they not bended.



U bolts	Tightening force	Bolts	Tightening force
mm	Nm	mm	Nm
M 22	620	M 12	85
		M16	215
		M30	730

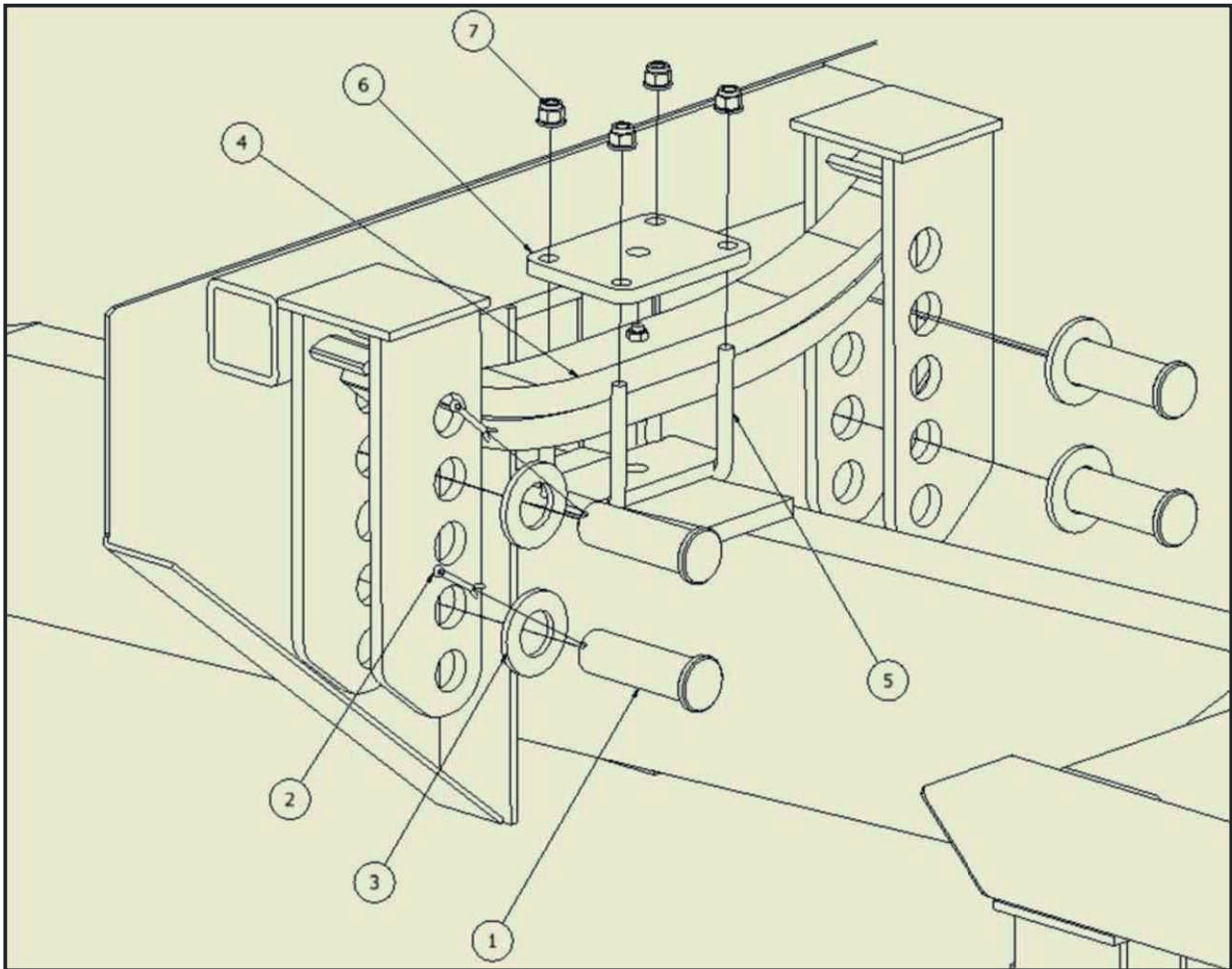
DRAWBAR WITH LONGITUDINAL SPRING MAINTENANCE



- After the first laden journey, and before intensive use. Every six months retighten all the mounting U-bolt nuts (2) to the recommended torque lubricate the attachment shaft (3)
- Check the play between the bushing (4) and the spring drawbar shaft (1) and, if there is excessive play, replace the worn parts.
- Check the general condition of the spring (5) clean it thoroughly and brush the sides of the springs to check for cracks.
- Check the condition of the clamps (6).
- Check that the central screw is not broken. (7).



DRAWBAR WITH CROSS SPRING MAINTENANCE



- Check the tightness of the „U“ (5) clamps every 6 months.
- Check the spring (4) and pins (1), if wear is noticed, replace the spring and pins.
- Carefully clean the sides of the spring (4) and check for cracks, if you notice any cracks, need to replace the Ispring;
- Check that the central screw is not broken.

U type bolts	Tightening power
mm	Nm
M16	270
M 30	1067

Data presented in the table
clamp tightening forces.



NOTES

NOTES



CALL US
+44(0)1728 723224
www.richardwestern.com