# VEGA TRAILER VEGA TRAILER REPAIR AND MAINTENANCE



Preface

First, we would like to thank you for purchasing Semi-Trailer manufactured by VEGA TRAILER,

All accessories, equipment, and hardware to be used with Semi-Trailer are described in this manual user. Depending on the model of your Semi-Trailer, not all accessories explained here may be available. This manual user covers all **products of Vega Trailer Vehicles**. The warranty period for the operations of all semi-trailers manufactured by **Vega Trailer** is one (1) year from the date of delivery to the customer without kilometer limit. This warranty is valid only if the vehicle's first year of maintenance and periodic maintenances are carried out by our authorized dealers. The warranty period of certain products constituting this vehicle(s) may

that you read this manual user thoroughly to use the full capacity of your vehicle.

To operate your vehicle in optimum condition, please read "Control and Maintenance" chapter and always follow periodical maintenance schedules.

be more or less. This information is specified in the manual user of the product concerned. We recommend

\* Due to advances in product research, **Vega Trailer** reserves the right to make changes in any product without further notice. All publication rights of this manual belongs to **Vega Trailer** 

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### 1.1 Meaning of Symbols Used in User Guide

Several warnings are available in this manual to ensure maximum safety whenusing your vehicle. Each warning is indicated by a special symbol.

These symbols and their meanings are as follows:

DANGER!	The information specified by this warning symbol is very important for health and human safety. When the given information is ignored, serious damage, injuries and even death may occur.
WARNING!	This symbol specified in this manual indicates that critical accidents may occur when the instructions are not complied with or measures are not taken.
NOTE!	This symbol will be used when additional information is required to be given.

#### 1.2 General Information

The use and operation information in this guide is prepared to provide you with the information on **VEGA TRAILER** Lowbeds and to help you use them accordingly and to your specifications.

The instructions given here include important recommendations for you tooperate the Lowbeds in a safe, complete and economical way. When theseinstructions, warnings and recommendations are followed, you can prevent accidents, reduce repair costs and time, and you can use your Lowbeds for a long time in a reliable and smooth manner.

Please read the operating instructions in the manual carefully and completely.

**VEGA TRAILER** cannot be held responsible for any damage or deficiencies that may occur due to noncompliance with these instructions. The instructions herein are subject to local rules, laws and regulations. Follow these instructions to prevent accidents and to protect the environment.



Ensure that this user manual is available and accessible in your vehicle at all times!

### 1.3 Safety Instructions and Rules for Proper Use



After the first loaded use and within the first 1,000 km, the first maintenance should be performed and wheel nuts, spring bracket nuts, axle damper connections, airbags lower and upper connection nuts must be tightened and this process must be repeated every 6 months. Wheel nuts should be checked before each service centre visit and tire pressures should be checked before each use.

### a. Purpose of Occupational Safety Procedures

The purposes of the occupational safety procedures described herein are:

- To prevent accidents and injuries to operators and persons who work in areas where the vehicle operates.
- To present safety procedures for working on the vehicle.
- To indicate the safety equipment or mechanisms on the vehicle to remove or minimise the risks.

# General Information and Safety Instructions

#### 1.4 Measures to be Taken

Keep the user manual, which contains these operating instructions and documents containing supplementary information on the Lowbed and within easy reach.

- ✓ Ensure that the warnings and measures indicated in this chapter are followed precisely.
- ✓ Follow the operating instructions and binding regulations to prevent accidents and environmental pollution.
- ✓ Pay attention to the safety and warning signs located on your Lowbed.
- ✓ Always keep these safety and warning signs complete and within sight.

### a. Safety Measures for Maintenance Personnel

- When you notice a dangerous situation in the semi-trailer's operation in terms of safety, stop the Lowbed immediately and inform the authorised person or entity.
- Ensure that the transported load is tied properly.
- Always use the appropriate equipment for maintenance.
- Always use the appropriate tools/toolkits for maintenance operations performed on the vehicle.
- Note that using improper and / or fabricated equipment may cause irredeemable damage to the components and it may cause accidents.

# **b.** Safety Instructions for Workers Working Around Vehicle

NOTE!	It is obligatory to use the following personal protective equipment when entering areas with moving parts.
WARNING!	Working on moving mechanical components during maintenance operations is strictly prohibited. To ensure the safety and protection of workers, and the social and natural environment, employees must follow the work procedures specified during maintenance operations.
WARNING!	The vehicle must always be kept clean and in a good working condition.
DANGER!	Using the vehicle with damaged and worn parts is dangerous. Replacing worn or inefficient parts is the user's duty and responsibility.

### c. Operator Position During Vehicle Maneuvers General rules

WARNING!

The operator must always stand outside the vehicle's working area during manoeuvring operations. Lifting and lowering operations must be performed with the hydraulic lever controls when the vehicle is stationary.

The external steering operations using power unit (electric pump) must be performed with wired or wireless remote control to reduce tire deformations when the vehicle is moving at 5km/h minimum. When required, external steering operations may be performed when the vehicle is stationary, provided that the brakes are completely released.

### d.Personal Protective Equipment to be Used

WARNING!	Long hair is particularly dangerous when working on the vehicle, regardless whether it is loose or tied up, and it should be protected properly to avoid tangling.
DANGER!	Wearing a tie, necklace and/or dangling jewelry when working on the vehicle is strictly prohibited. They may get caught in moving parts or mechanisms and cause injuries and even death.

#### 1.5 Pre-driving Controls

- Check if all the necessary documents are available at the semi-trailer
- All settings and loading status are appropriate
- The semi-trailer is connected to the tractor properly and is secured
- All pneumatic and electrical connections between the semi-trailer and the tractor are done properly and EBS system is in working condition
- All structural components (wedges, bicycle railing, stairs, etc.) are in place and locked or secured properly
- The load is distributed properly to prevent displacement of the load during driving
- The load weight is within the allowed limits
- The lighting and signalling system is fully operational
- Tire pressures are at the required level
- Lowbed's handbrake is released.

### 1.6 Low-bed - Tractor Matching



DANGER!

There is an injury risk if the loading and unloading operations are carried out unprofessionally.

# **Safety reminders**

- > Set the parking brake and place the wheel chokes properly during loading unloading operations to avoid sliding.
- > Park the vehicle on a hard surface to avoid shifting, tilting or sinking.
- ➤ Comply with all laws, rules and regulations related to the load and axle load limits and ensure that you have the correct load distribution. In particular, comply with national laws and regulations of the country you are travelling to.

- > Distribute any load on the floor as low as possible. The center of gravity of the load should always be on the vehicle's center line. Comply with all national / international laws, rules and regulations related to the loading safety.
- Follow the height limit during loading and unloading operations. Always consider this limit when entering tunnels and passageways.

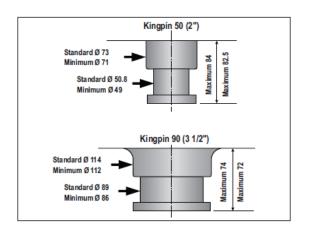


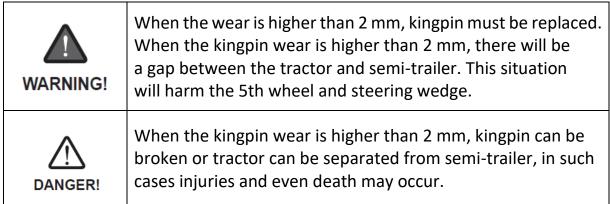
#### a. Key Components

- Kingpin
- 5. Wheel
- Steering Wedge
- Carrier wedges

#### Kingpin:

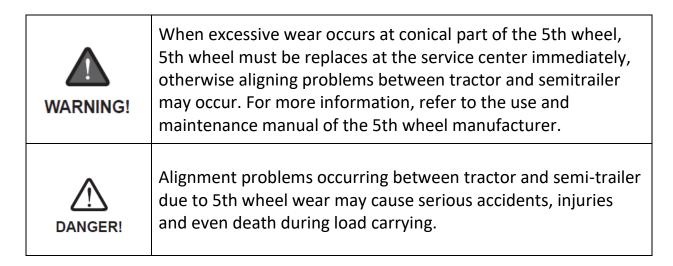
Kingpin is a shaft connecting the vehicle to the tractor. Flanged kingpins with diameters 2" (50,8 mm) and 3,5" (88,9 mm) are used in Vega trailer Lowbeds.

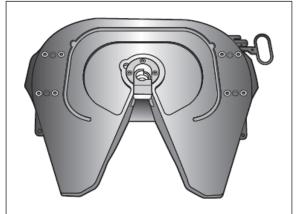




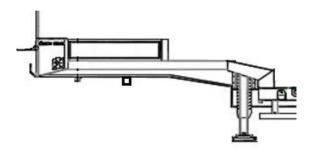
#### Wheel

The 5th wheel is mounted on the rear of the tractor chassis. It connects the Lowbed to tractor through kingpin and supports the front of the Lowbed, and it allows automatic steering by locking the steering wedge of Lowbed vehicles mechanically. Lowbed's kingpin is locked to 5th wheel with a snap lock mechanism.





### **b.** Lever Mechanical Legs



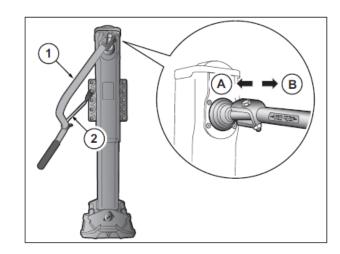
Support Legs are composed of two floor legs, that can be lifted or lowered vertically by means of a conical gear assembly, and extended telescopically. Movement of the drive shaft is provided with a lever rotated manually over a two-speed reducer. For more information on the support legs, please refer to the manufacturer's user guide.

### c. Lever and Reducer Assembly

**Low speed (A):** When the lever (1) is rotated by being pushed inwards completely, it will lift at low speed. This position is used to remove the load from the leaf springs of the tractor when the semi-trailer is lifted lightly and detached from the tractor after the ground pads (plates) has touched the ground.

**High speed (B):** When the lever (1) is rotated by being pulled outwards completely, it will lift at high speed. This position is used to lower the ground pads (plates) quickly until they touch to the ground or to lift the legs quickly after the semi-trailer was attached to the tractor during the detachment of semi-trailer from the tractor.

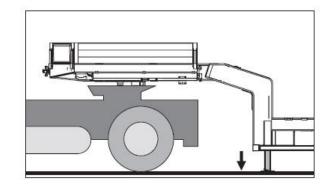
Support leg lifting lever is locked to the holder (2) located next to the right support leg, while the vehicle is moving. This holder may be located in front of the support leg depending on the vehicle construction.

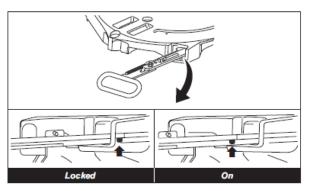


### d. Disconnecting Lowbed from Tractor

Follow the below mentioned steps to remove the Lowbed from the tractor:

- Bring the tractor and the Lowbed to the parking space in a horizontal and aligned position.
- Set the parking brake and secure the vehicle against sliding using wheel wedges.
- Lower the mechanical legs
- All electrical, hydraulic and pneumatic connections between the semitrailer and the tractor must be disconnected.
- Set the 5th wheel locking system to "On" position.
- Disconnect the tractor from the semi-trailer by slowly pushing the tractor forward to 500 mm. Disconnect the tractor from the semi-trailer by lowering the suspension bellows.





#### 1.7 Important Technical Issues

#### a. Fire Extinguisher

Have the fire extinguishers checked every year periodically and fill them up if necessary. After using a fire extinguisher, fill it up immediately. Measures to be taken in case of fire: Some seals may leak gas when they are burned and when these gases are combined with water, corrosive acids may be formed, therefore do not touch the fire extinguisher water with your bare hands.



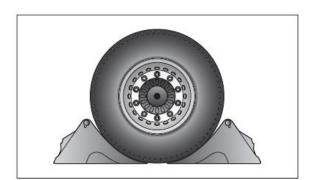
#### b. Vehicle Load

- Secure the load so that it will not move when the vehicle is moving or stops suddenly, and ensure that the load is safe.
- Ensure that the load weight is within legal limits.
- Note that accessories such as side walls, partitions and wooden headers are not manufactured to withstand high forces.
- Note that the vehicle may become unbalanced due to the load, the braking distance may be extended and a larger return radius is required.
- During loading, consider the local laws and the laws applicable in the countries you are travelling to.
- Pay attention to the maximum axle weight and total weight.
- Secure the load with load securing straps and load holders and ensure that the load is safe.

•

#### c. Wedges

Keep the wheel wedges in place and place them under the wheels in park. Do not forget the wedges on the ground.



### 1.8 Welding

Never perform welding on the vehicle chassis. Welding wire and current misused in the welding operations on the vehicle chassis may reduce the material strength and cause the breakdown of the electronic circuit elements on the vehicle.

The vehicle warranty will be void if welding is performed on the vehicle chassis.

### 1.9 Spare Tires

Keep the spare tires in the vehicle always ready to use.

#### 1.10 Air Leak

If the air pressure in the air tubes drops suddenly when the engine is stopped, this means that there is a leakage in the pressurised air system. In this case, go to the nearest service centre. Air leakage not only affects the safety of the braking system, but also adversely affects the load-carrying capability of the bellows.

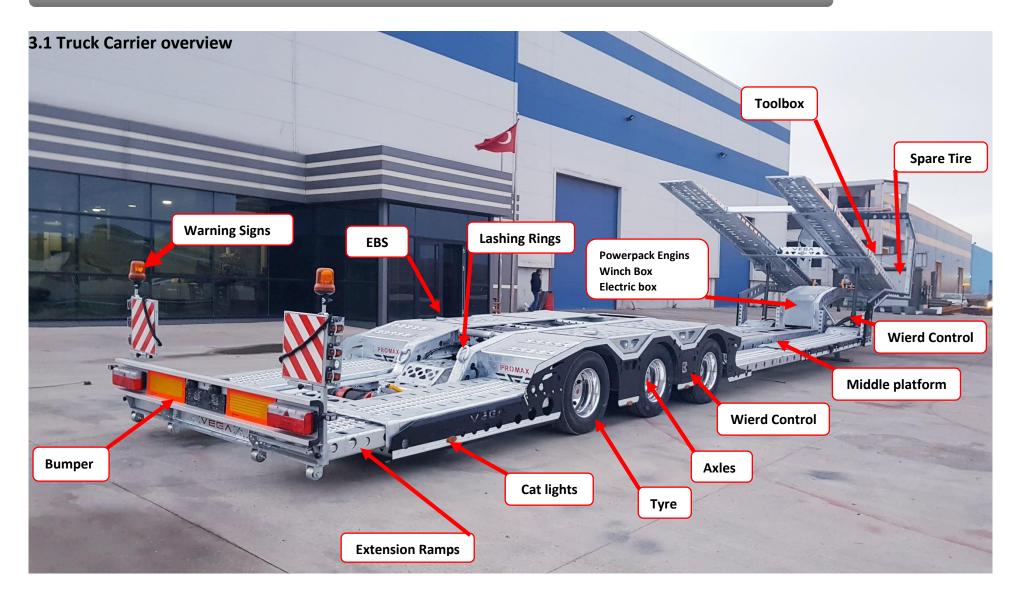


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### 2. Warranty and Liability

All semi-trailer applications manufactured by **VEGA TRAILER** are in accordance with Vega Trailer quality standards. To ensure the proper function of Vega Trailer products, the products should be maintained in accordance with Vega Trailer 's up-to-date instructions and maintenance programs. The warranty starts from the date on which the vehicle is delivered to the customer. To ensure that the warranty rights are secured, maintenance and repair works should be carried out by Vega Trailer authorised service centres using the original spare parts. This warranty depends on the use and maintenance requirements as described herein. Therefore, it is important to read and understand this user manual carefully.

The warranty and maintenance manuals should be kept in the vehicle at all times to ensure that they are at the disposal of the authorised Vega Trailer service centre which carries out repair works. The authorised Vega Trailer service centre that carries out the repair works within the warranty period will request those manuals. To buy a semi-trailer is an important investment. To achieve the highest return from this investment, Vega Trailer procedures and recommendations should be observed during the vehicle's operating period. The information provided by the customer/driver about the warranty written in this manual will be stored in a database by Vega Trailer .



### 3.2 Semi-Trailer Purpose and Scope

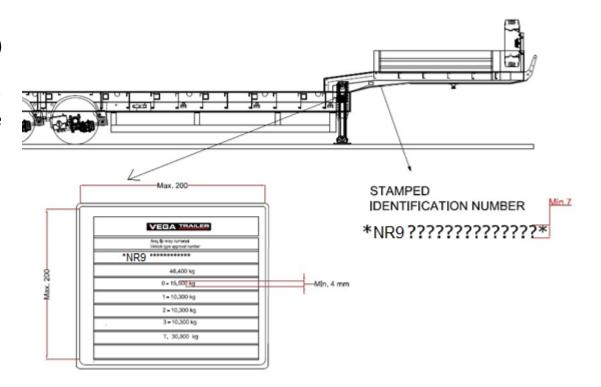
Lowbed vehicles defined in this manual are semi-trailers with fixed or telescopic loading platform. The vehicle contains a control panel and a power unit (electric or diesel-motor-driven pump) which allows lifting and lowering of the gooseneck and performing rotating operations. Therefore it requires a tractor to move.

#### 3.3 Vehicle Chassis Number

The vehicle is defined by the chassis number (VIN) engraved on the rightside of the gooseneck.

This 17-digit alphanumerical chassis number (VIN) includes information regarding the country where the vehicle is manufactured, the manufacturer, factory, vehicle type, engine type, chassis type, year of manufacturing and vehicle count of the factory. Legally, all vehicles must have a chassis number.

Each vehicle has a unique chassis number and this number cannot be changed.



### **3.4 Vehicle Technical Compliance Certificate**

A document specifying that the vehicle has relevant approvals and containing registration information. This document is issued separately for each vehicle by the manufacturer pursuant to Type Approvals of the vehicle and vehicles cannot be registered without this document. All semi-trailers are produced according to European Type Approval Document.

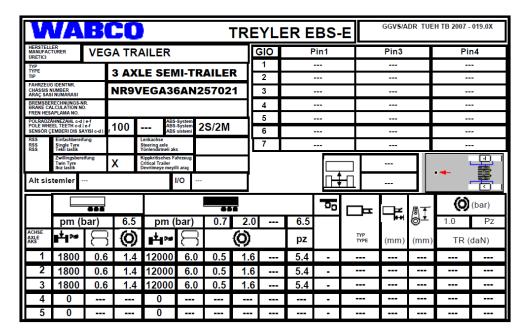
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#### 3.5 Vehicle Identification Plate

The vehicle identification plate is located on the right longeron of the gooseneck. The vehicle identification plate contains information regarding the manufacturer, type approval number, vehicle identification number, maximum vehicle weight, maximum kerb weight, maximum axle load, maximum kingpin load, vehicle length and width and distance.

#### 3.6 Brake Label

Vehicles equipped with EBS have brake labels instead of brake plates. This label contains information such as type approval number, chassis number, brake pressure, axle load and suspension pressure.



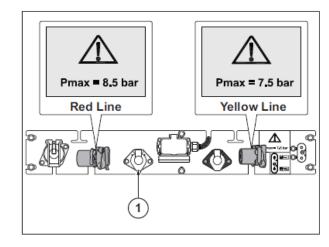


### 3.7 Pneumatic Brake System

The pneumatic brake system consists of 2 lines: Red (Supply) and Yellow (Control). The red line fills the tanks with the pressurised air from the tractor. The yellow line detects the control signal required to calculate the total brake power of the semi-trailer's braking system.

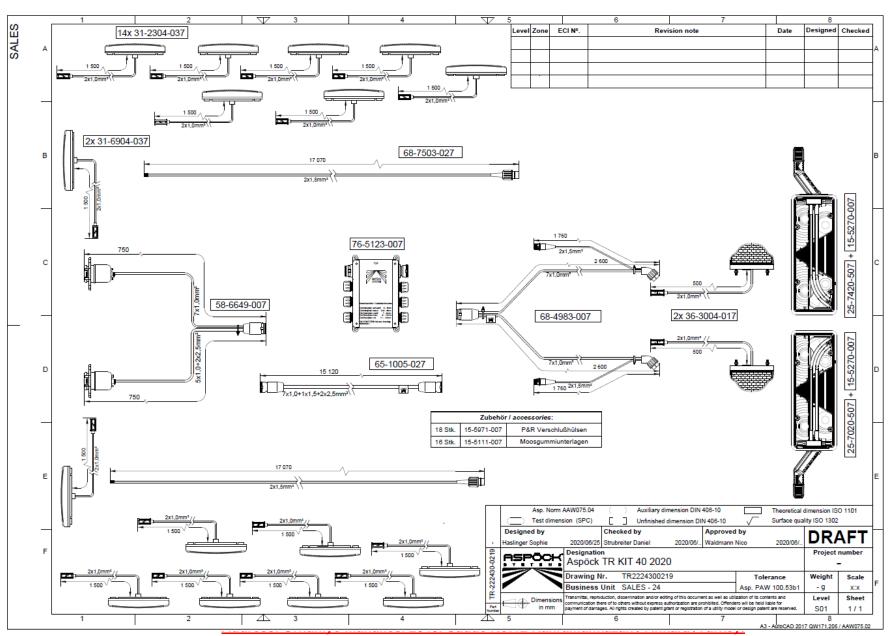
### 3.8 Electrical System

The purpose of the electrical system is to take the power from the tractor and deliver it to the semi-trailer to power the lightning system, power unit, EBS and other auxiliary units. To use the functions of the semi-trailer such as automatic alignment and remote control, 4th pin of the 7S socket between the tractor and the semi-trailer must be powered with (+)24 volt.





Some tractor manufacturers leave 4th pin of the 7S socket (1) of the tractor empty at the manufacturing stage for external electrical system functions of the semi-trailer. If the 4th pin of the 7S socket (1) of your tractor does not have a +24 volt power supply, please visit the nearest tractor service centre and have the 4th pin energised with +24 volt.



Phone: +90 312 354 12 42 / Mobile: +90 530 547 90 40

### 4.1 Lifting and Lowering

Height Adjustment of the Air Suspension System

As standard, **Semi-Trailer of Vega Trailer** air suspension system requires only air suspension lifting/lowering valve or electronic control for lifting/lowering operations. Air suspension valve controls the air bag pressure according to the trailer load to maintain a constant ride height in every load condition. The air suspension valve is fixed to the trailer chassis with bolts and attached to the axle via shaft connection (valve lever and adjustment pipe). The air suspension valve is composed of 3 main elements.

- 1) Shut-off valve
- 2) Level valve
- 3) Lifting-lowering control

#### **Drive Level Selection in Multiple-Level Vehicles**

If your vehicle is a two-level vehicle, a level selection box is available. When the level selector is in flat position the vehicle is in upper level and when the level selector is in right position the vehicle is in lower level. Levels selected determine the driving level and the vehicle is driven with the selected level.

# Driveline Components of Lowbed and Their Use

#### a. Shut-off Valve

The pneumatic connections on the suspension system of each air bag can be shut off. This operation is performed with a valve located on the air bag.

#### b. Level Valve

Level valve stabilise the vehicle level by adjusting the pressure at suspension bellows according to the load. There are 2 different level types.

- ✓ Conventional level valve
- ✓ Electronically-controlled level valve (ECAS)

### c. Lifting-Lowering Control

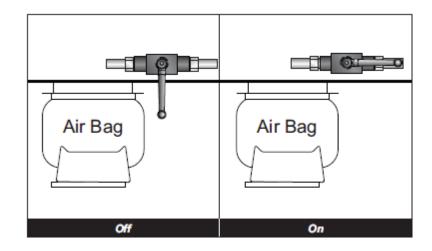
Lifting/lowering valve is used to manually change the level of the trailer during operations such as loading and unloading. There are 2 different control types.

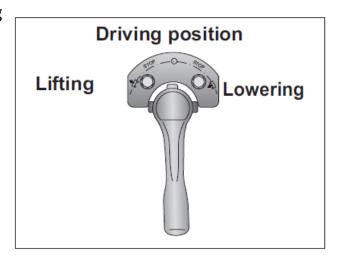
- ✓ Lifting-lowering valve
- ✓ Electronic lifting-lowering box



NOTE!

Before starting the vehicle, the liftinglowering valve must be in the driving position to operate the level valve.





### 4.2 Braking system

Trailer EBS E braking system is an electronically-controlled braking system with load-dependent brake pressure adjustment and automatic anti-lock braking system (ABS) features.

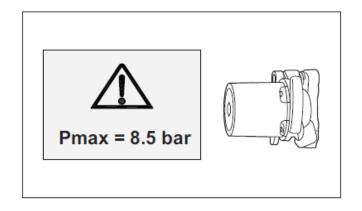
Trailer EBS was switched on. In the meantime, the magnets may be opened and closed audibly for a short time.

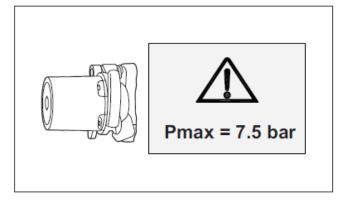
When plugging in the 7- or 5-polarity connector, if you can't hear the system control, a power supply problem exists between the tractor and EBS. If you are certain that the EBS connector is plugged in, take the vehicle to the nearest service centre, paying attention to the speed.

### 4.3 Warnings and system messages

The pressure at red coupling must be between 6.5 and 8.5 bar.

WARNING!	The trailers equipped with a Trailer EBS E braking system may only be used with the tractors with extended connector (tractors with 7-polarity, 24V, CAN data link) or connector (tractors with 5-polarity, 24V, without CAN data link).
DANGER!	Driving the vehicle with inappropriate pressurised air and electrical/circuit connections is dangerous and illegal. Ensure that all electrical connections between the Lowbed and the tractor are connected completely and accurately.





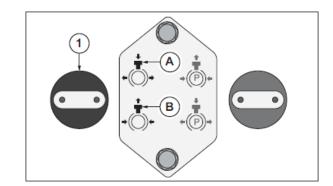
### 4.4 Reserved pressure control

When the reserved pressure goes below 4,5 bar in the trailer, the driver will be warned by a warning light/indicator (red and yellow). The warning light/indicator will go off when the reserved pressure goes above 4,5 bar.

WARNING!	Accident risk due to very low reserved pressure When the air tube pressure is below 4.5 bar, the vehicle cannot be stopped with service brakes. When the pressure at red coupling is below 2.5 bar, the vehicle will be stopped via spring-type brake actuators automatically.  • When the warning lights/indicators (red and yellow) are on, the vehicle must be stopped and parked to a safe location.  • The supply pressure should be checked and if necessary, a repair service must be called.
WARNING!	When system faults which require all system (partially) are to be switched off occur, EBS will be deactivated and braking system will stop the vehicle using conventional methods. In this case, the braking-according-to-load function cannot be performed. ABS function is maintained to the extent possible. Red warning light/indicator will come on to warn the operator.
WARNING!	Low pressure cannot guarantee adequate braking in all conditions. High pressure may cause a braking that may block the axles, therefore friction, overheating and consequently damage in the components may occur. Check periodically if this pressure supplied by the tractor is within the limits described above.

### 4.5 Brake-releasing Valve

It allows applying or releasing the service brakes of a disconnected vehicle. When the red coupling between the tractor and the trailer is disconnected, the vehicle applies the automatic brakes. When the red coupling is disconnected, push the button  $(A, \clubsuit)$  shown in the picture to release the trailer brakes and to manoeuvre the trailer. When the manoeuvre is completed, pull the button  $(B, \spadesuit)$  for the brakes of the semi-trailer to be re-applied. This button cannot be used when the red coupling between the tractor and the trailer is connected.





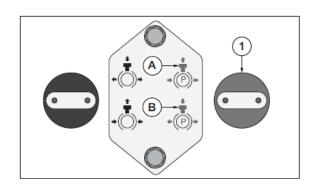
Long-term parking is not safe with the service brake. In this case, parking brake should be used.

### 4.6 Parking Brake

The parking brake allows the Lowbed to remain motionless on flat and inclined surfaces. When the parking brake is activated, the Lowbed cannot be moved. To move the Lowbed, release the parking brake.

To apply parking brake: Pull red activation button to the direction specified with an arrow in the pictogram ( , A). In this case, parking brake is activated and semi-trailer cannot be moved.

To release the parking brake: Push red activation button (1) to the direction specified with an arrow in the pictogram (♣, ฿). At this moment, the parking brake is released and there is no braking in the semi-trailer.



### 4.7 Warnings Regarding Electrical Components

The electrical components of the vehicle should not get wet.

#### 5.1 Gooseneck Structure

Gooseneck is the part to connete the semi trailer to the truck head.

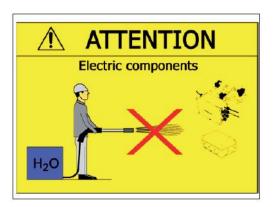
#### **5.2 Fixed Gooseneck**



In the vehicles with fixed gooseneck, the fixed gooseneck is welded to the platform area. The gooseneck of this kind of vehicles cannot be moved.

# 5.3 Extending and Shrinking/Closing the Telescopic Chassis

WARNING!	cause damages will be avoided.  Telescopic structures are not designed to carry load. This is indicated by special labels.  As a general rule, only self-standing loads can be carried on telescopic semi-loaders.
WARNING!	The following maneuvers should be performed on a flat surface and when the tractor is approaching at a low speed and is perfectly aligned with the semi-trailer. Thus, squeezing that may cause the telescopic chassis to bend abnormally and



### a. Control Components

- 1: Indicator Arm
- 2. Pneumatic Locking Pin Key

### b. Extending the Vehicle

Apply semi-trailer parking brake by pulling the releasing valve (red button) on the vehicle.

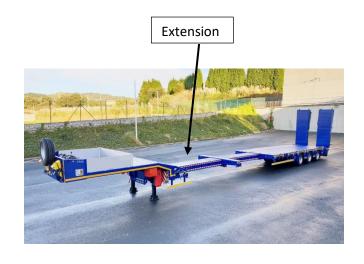
To remove the pneumatic locking pin on the vehicle chassis from its slot, turn the pneumatic locking pin key (2) to on position. This key pulls the pins from their slots and allows the internal telescopic chassis to extend. Indicator arm (1) will come out from the semi-trailer and can be seen from the cabin.

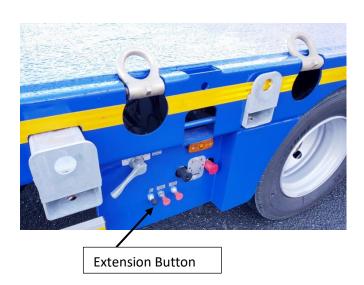
Extend the telescopic platform with the tractor to the desired position.



Apply semi-trailer parking brake by pulling the releasing valve (Black button) on the vehicle.

To remove the pneumatic locking pin on the vehicle chassis from its slot, turn the pneumatic locking pin key to on position. This key pulls the pins from their slots and allows the internal telescopic chassis to extend. Indicator arm (1) will come out from the semi-trailer and can be seen from the semi-trailer and can be seen from the cabin.





### **5.3 Loading Structures**

If heavy loads are carried, wooden support blocks must be placed horizontally between loading platform and the load. These blocks must be placed transversally to the chassis cross.

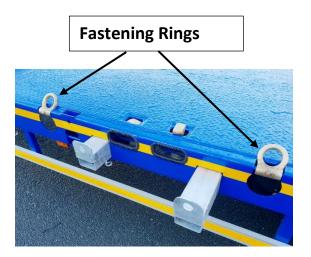
### a. Load Fastening Rings

Fasten the load using the rings on the modules and platform beams. The diagram shows how a 90° ring supports a maximum of 4000 kg fastening load. Permissible maximum fastening load will be 5.000 kg at 35°. Under 35°, the permissible maximum load will not change.

Maximum load lifting value is the value written on the load rings in each direction. The load must be fastened to the points indicated with appropriate systems be met.



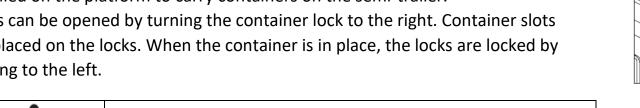
Inappropriately fastened load may harm the people, animals and property seriously.



### 5.4 Container Lock (Option)

An optional container lock can be available in the vehicle. These locks are installed on the platform to carry containers on the semi-trailer.

Locks can be opened by turning the container lock to the right. Container slots are placed on the locks. When the container is in place, the locks are locked by turning to the left.





Containers should be carried with proper cranes and special equipment.

Otherwise serious damage, injuries and even death may occur.

#### 5.5 Side Extension Brackets

If necessary, the vehicle must be extended with expansion brackets according to the load width to be moved.

Expansion brackets have 2 stages.

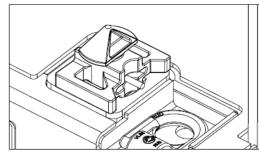
. Unlock by lifting the latch in the expansion bracket.

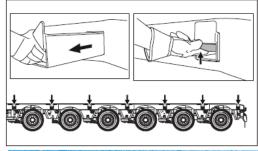
Keep pushing the latch and pull it toward yourself.

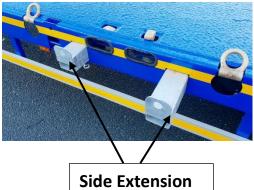
. When the bracket is at desired stage, release the latch. When the lock goes into the slot, the bracket will be fixed.

Place expansion boards on the brackets and extend the vehicle.

. Open red and white warning signs in the front and at the rear of the vehicle.







#### **5.5 Side Panel Covers**

The gooseneck area is covered with covers made of aluminium profiles. If necessary, these covers and their posts may be removed from the vehicle.

- Pull the aluminium plates upwards and remove them from the guides
- Remove the posts by loosening the nuts on the slots.

#### 5.6 Warning Signs

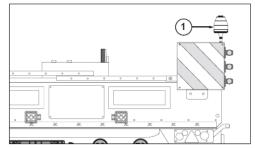
When a load wider than the trailer is being carried, the warning signs are used to warn other drivers. Loosen 2 butterfly bolts on the brackets to use the expansion labels. Extend the expansion label as much as you want, and slide the expansion label until the holes on the expansion label profile and fixing bracket match. When the holes are matched, tighten the butterfly bolt. Then, tighten the lock nut on this bolt for safety. This way you will secure the expansion label. Then tighten the other butterfly bolt and lock nut. This way you will reduce the vibration by removing the gap in the expansion label.

#### **5.7 Rotating Warning Light**

When the vehicle is loaded, a warning light is used to warn other drivers. When the parking lights on the tractor go on, the rotating warning light also goes on. There are 4 rotating warning light connectors on the vehicle warning signs.







### 5.8 Ramp Lowering/Lifting Instructions

### a. Lowering the Ramp

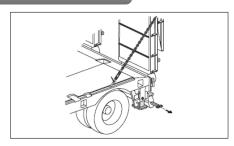
- 1) Remove the rear mechanical leg pin.
- 2) Lower the mechanical leg to the desired position and insert the pin to the slot.
- 3) Remove the warning signs on the ramp.
- 4) Loosen the tensioning rod and remove from the hook. Perform the same operations for the other side.
- 5) Separate the rope from the slot on the ramp chassis and insert the hook to the previous slot. Perform the same operations for the other side.
- 6) Connect the receiver of the wireless remote control to the front or rear of the vehicle.
- 7) Turn the ramp activation key to ramp mode.
- 8) Activate the receiver of the wireless remote control.
- 9) Activate the remote control by pushing "ON" button.
- 10) Bring the ramp to the loading position using the buttons on the remote control.

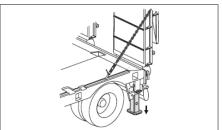
Buttons 1 and 2 control ramp lifting and lowering operations,

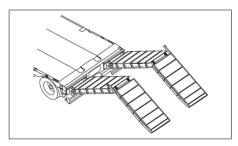
Buttons 3 and 4 control ramp extending operation.

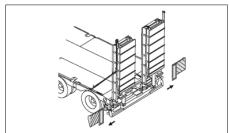
### **b** Lifting the Ramp

- 1) Lift the ramp with the remote control.
- 2) If the ramp width is different from the trailer width, set the ramp to its initial position.
- 3) Remove the receiver of the wireless remote control.
- 4) Turn the ramp activation key to steering mode.









#### **6.1 DAILY CONTROLS THAT MUST BE MADE**

Before using the vehicle airpressure of the tyres and nuts must be checked if there is loosening or not . The vehicle must not be used unless if the needed adjustments are made.

General controll must be made on tyres and walking accents for durability, wear ,tightness,corrosion and demage. (Also in air suspansion systems missing air pressure in airbags can couse demages ,therefore the air presure must be checked .)

#### **6.2 FIRST MEINTANANCE AND CONTROLS**

After fisrt loading at least 2000 km ,U bolts,pin nuts,shock absorber and axle connections,axle lift nuts, air spring bottom and top connection nuts, must be checked according to the specified torque that shown in the picture.

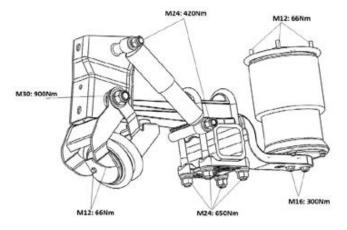
#### **6.3 PERIODIC MEINTANANCE AND CONTROLS**

#### a. TORQUE CONTROLLS

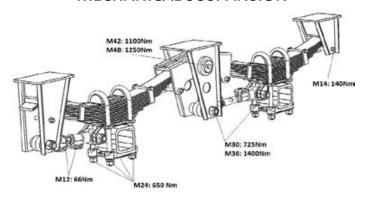
As mentioned in 3.2 connection nuts should be controlled according to speicified torque in picture below In case of meeting different specified torque they must be retightened properly.

The nuts and pins whic are not retightened properly can cause problems suh as deforming, tearing and rupture while using the vehicle. It is important to controll for long usage. These controlls are responsibility of user, faults that occures becouse of disruption of controlls are accepted unwarrantable.

#### **b.AIR SUSPANSION**



#### - MECHANICAL SUSPANSION

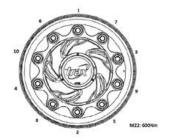


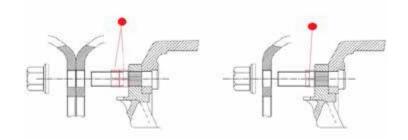
#### c. BOLT NUT

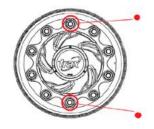
Bolt nuts must be tightened in order that mentioned in mounting rim. Bolts must torqued and after first loading ,torque controll must be made when the vehicle is unloaden. Foutls that accures beacuse of loose nuts are accepted as unwarrantable.

Rim centering ring must be used in mounting double tyres and single tyres. The rims must be mounted by using centering ring regardless of how many bolts rims have.

The mounting withour centering ring will couse disproportionate load on hub center. In double tyre mounting double ring must be used and both rims must be centered.



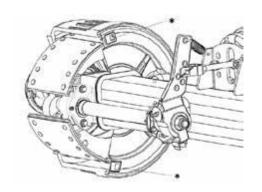




Address: Orhaniye mahallesi 2040. Cadde No:12 Kahramankazan / Ankara /Turkey.

#### d. CONTROL OF THE BRAKE LINING THICKNES

The brake linings can be consumed up to 5 mm thichness. (up to dusky colored area that shown in picture Thinner brake lining damages brake drum. If the thichness of the linings becomes less than 5 mm, the linings must be changed without waiting the time of periodic maintanance.





#### e. GREASING

The axles and suspansion parts must be greased from oil inlets that shown in picture.

Lubrication period of continuous running vehicles must be determined as 2 months .S-cam shafts and sluck adjusters semi annualy greased and also greased up to new lubricant is seen at sides of stays when brake linings are changed by using Lityum Komplex Soap Bease Special Grease .

All greasing areas must be greeased when the vehicle is unloaden.

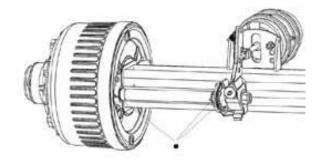
**f. LUBRICATING HUB AND BEARING:** Grease must be impregnated inside and outside of bearings and Grease must be put iner bowls of hub.

Oil seal must be greased and also extra Grease must be added to the gap between beraings .



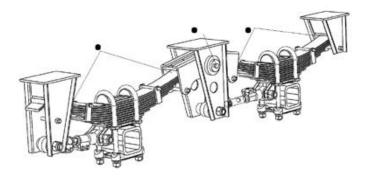
#### **GREASING AXLE:**

Grease nipple of s-cam shaft and sluck adjuster.

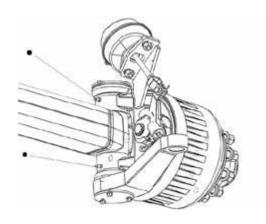


#### **GREASING MECHANICAL SUSPANSION:**

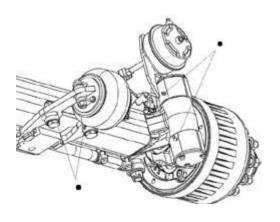
Slots of leaf spring and pin stays



**GREASING STEERING AXLE:** Axle steering body bushing and beraings, additing mechanizm bushing.



HYDROLIC STEERING AXLE



SELF STEERING AXLE

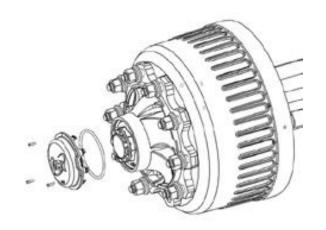
#### **CONTROL OH HUB CAP**

Hup cap mounting is made toothed and pronged .Metal caps are mounted by screwing and plastic caps are mounted by bead seats. In case of any crash of any prong or defromation of oring they must be replaced immediatly.

Plastic caps must be checked daily in case of any oil leakage or crack.

Driving must not be made if the cap is

cracked or has any deformation. The faults



#### **MANUAL OF STEERING AXLE**

Lockinng sytem of steering axle works with air. To fasten up air must be given to picking bellow and locking piston. The air that coming to piston must be less than the air coming to picking air bellow.

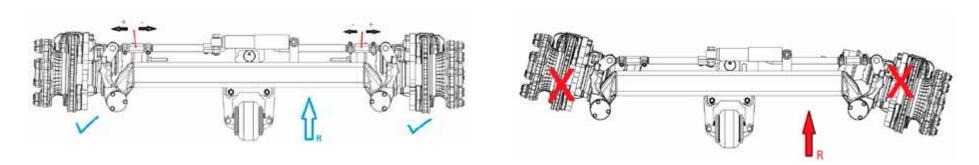
Locking piston:1 bar Picking air bellow: 5 bar (are suitable values)

Axle rot adjustments are made by left and right collars on the axle. While making this adjustment axle must be at locked position. Turning(steering angle) is adjusted by stop bolts.

If the rot adjustment is not correct and the angle of steering is spoilt, it couses faults on axle. In maintenance these controlls must be made without interruption. The faults because of these reasons are accepted as unwarrantable.

The axle turns with the movement of the vehicle according to driving direction . While driving the air of locking piston must be release.

Before back movement the tha axle must be fastened by givin air to locking piston. Ceratainly back movement must not be made before locking the axle. The foults while back movement without locking are accepted nonwarrantable.



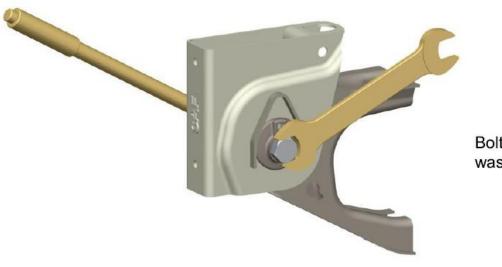
### **SAF Axles Tightening**

Installation and welding instructions

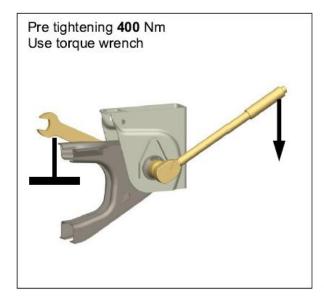


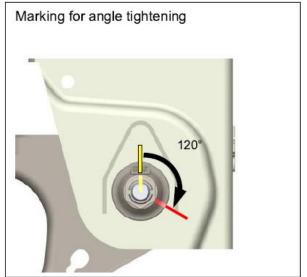
# Tightening instructions for adjustable pivot bolt

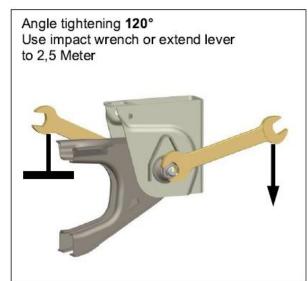
Attention always within the specified ride height range! No paint residues between eccentric washer and hanger bracket!

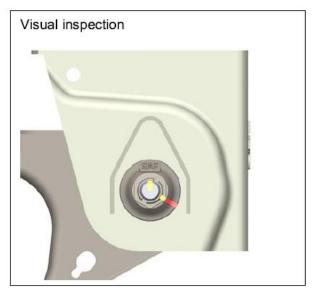


Bolt head always on the eccentric washer side









OPERATION SYSTEM
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### **Hydraulic Operations**

- a. Front Wierd Remote Control: There'are 3 wierd Remote Control
  - Keep pressing Green electric button and pull \*1\* Control for Extending the gooseneck platform. Keep pressing Green electric Button and push \*1\* Control for closing gooseneck platform.
  - Keep pressing Green electric button and pull \*2\* Control for Lifting the gooseneck platform. Keep pressing Green electric Button and push \*2\* Control for lowering gooseneck platform.
  - Keep pressing Green electric button and pull \*2\* Control for Lifting the Middle front platform. Keep pressing Green electric Button and push \*2\* Control for lowering Middle front platform.



- 4. Keep pressing Green electric button and pull \*4\* Control for Lifting the Middle rear platform. Keep pressing Green electric Button and push \*4\* Control for lowering Middle rear platform.
- Keep pressing Green electric button and pull \*5\* Control for Extending rear ramps. Keep pressing Green electric Button and push \*5\* Control for Closing rear ramps.

