



# USER MANUAL REEFER SERIES



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## FOREWORD

First of all, thank you for choosing us for your new vehicle investment.

Your vehicle is manufactured with the latest production technologies to the highest quality standards and equipped with the best safety and efficiency features.

You can find detailed information about the accessories, equipment and hardware that might be in your vehicle in this manual. The defined options in this manual can vary according to the vehicle specs.

Important information on how you can use your vehicle is explained in this user manual, please be sure that you review and understand the content. We suggest keeping this user manual available in your vehicle at all times. This information is specified in the product's user manual. We recommend you read this operating manual thoroughly to get the most out of your vehicle.

*\* Owing to the developments in product research, the manufacturer reserves the right to make any changes in the product, without any prior notice. The publication rights of this documentation belong to the manufacturer.*

# 1. GENERAL INFORMATION AND SAFETY INSTRUCTIONS

## 1.1. About the User Manual

The usage and operation information given in this manual is prepared to make sure the vehicle is used in compliance with its purpose and as desired.

The instructions here contain important recommendations to perform your operations safely, completely, and in the most efficient manner. Complying with these instructions, warnings and recommendations will prevent accidents, decrease down-time & repair costs, and make sure you use your vehicle safely, reliably and problem-free.

Please read the operating instructions in this manual carefully and completely. The manufacturer is not liable for the damages and deficiencies caused by the failure to comply with these instructions. The instructions herein must be supported by local laws, rules and regulations. Please comply with these instructions to prevent accidents and protect your surroundings and the environment.

Any usage of transportation that goes beyond the use in accordance with the rules will be considered improper use.

Transportation of the following is not allowed:

- Carrying people and live animals
- Transportations that need to be carried according to special instructions, e.g., dangerous good transportations
- Transportation of unsecured goods
- Transportation of materials that are dangerous due to their properties or that need to be carried with special equipment
- Exceeding technically and legally permissible weights of the axles or king pin load

- Exceeding of the maximum vehicle speed
- Exceeding the permissible length, width and height
- Unapproved parts like tires, accessories, spare parts and etc. by the manufacturer
- The manufacturer shall not accept any responsibility for the problems and faults that occurs that are not in compliance with the purpose of the vehicle's usage. All the risks of this issue belong to the customer.

 **It is necessary to keep the user manual available on the vehicle at all times.**

 **The vehicle can be equipped with a lot of different options. The standard or optional features will be explained in the manual. Some options may not be available for your vehicle**

 **Adhere strictly to the operating instructions when using your vehicle. When problems occur which can lead to dangerous consequences, contact the service centre immediately.**

## 1.2. Meanings of Symbols Used in User Manual

Several warnings are available in this manual to ensure maximum safety when using your vehicle. Each warning is indicated by a special symbol. These symbols and their meanings are as follows.



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.



This symbol specified in this manual indicates that critical accidents may occur when the instructions do not comply.



This symbol is used when additional information is required.



This symbol is used when chemicals and other substances can be disposed of with precautions that will not harm the environment.

### 1.3. Terms of Use and Safety Information

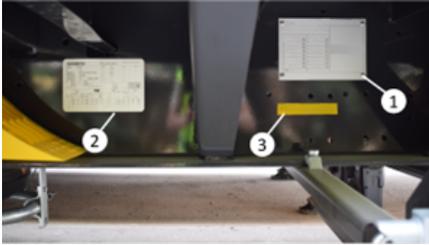
It is necessary to keep the warranty, operating and maintenance manual and other documentation about the vehicle available on the vehicle at all times.

To prevent possible accidents and environmental pollution, follow the operating instructions and binding regulations.

- Pay attention to the safety and warning signs placed on your vehicle.
- Always keep these safety and warning signs completely visible.
- Make sure that the load carrier is secured properly.
- In case of any dangerous condition in the operation of safety, stop your vehicle immediately and inform the authorized people or institutions.
- Do not modify anything on the vehicle without a written manufacturer's approval. Your vehicles guarantee terms do not cover unapproved modifications.
- The spare parts must meet the technical requirements set forth by the manufacturer company. Only the original spare part/parts meet their requirements.

## 2. MAIN INFORMATIONS

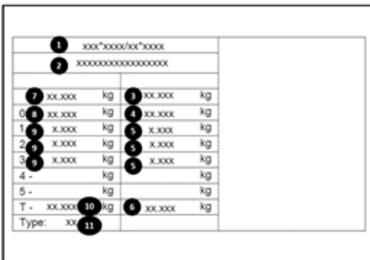
There are vehicle identification stickers on the vehicle.



### 2.1. Vehicle Identification Plate

Vehicle identification plate (1) is located on the right side of the vehicle.

You may find the following information's on this plate;



Vehicle Identification Plate

- 1- Type approval number
- 2- VIN number
- 3- Technical total capacity
- 4- Technical king pin capacity
- 5- Technical an axle capacity
- 6- Technical total axle capacity
- 7- Nationally approved total capacity
- 8- Nationally approved king pin capacity
- 9- Nationally approved an axle capacity
- 10- Nationally approved total axle capacity
- 11- Vehicle Type

### 2.2. Brake Data Plate

There is a brake data plate (2) on the vehicle which is equipped with an EBS system.

You may see this information on this plate;



EBS plate

1	Empty vehicle (without load)
2	Loaded vehicle
3	Axle lifting
4	Brake chamber data's
5	References
6	Driving height
7	Pin positions
8	IN/OUT-Connections

### 2.3. VIN (Chassis) Numbers

The VIN (chassis) number (3) is located on the right side of the vehicle and marked with a different color than the chassis color.

### 2.4. Warranty and Responsibility

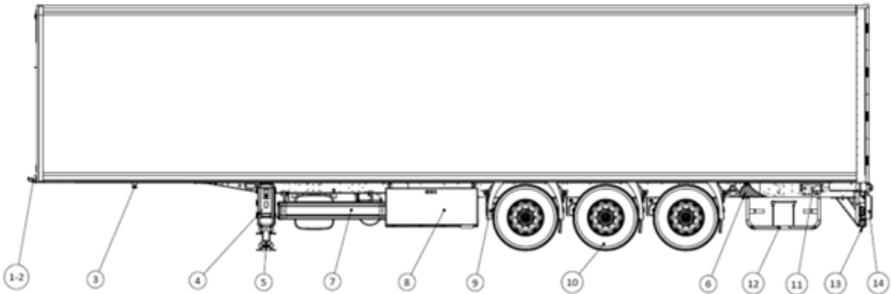
Our trailers, semi-trailers and truck on-board applications are manufactured in compliance with regulations and our

quality standards. It is necessary to perform the maintenance to ensure our products always operate in the most efficient manner in compliance with our latest directives and maintenance programs. The warranty starting date is the date that the vehicle is delivered to the customer.

The performance of maintenance and repair/servicing of the vehicle with the use of original spare parts by authorized service shall assure the client's warranty rights. This warranty is based upon the usage and maintenance conditions described herein and in the warranty book. Thus, it is important to read and understand this operation manual and warranty book.

It is necessary to keep the warranty, always operating and maintenance manual available on the vehicle to allow authorized service performing the servicing to see the warranty conditions and maintenance records. In the repairs made during the warranty period, the authorized service performing the repair will demand this. Purchasing one trailer or semi-trailer is an important investment. For the highest return on your investment, it is necessary to comply with the manufacturer's procedures and recommendations during the operation period of the vehicle. The information provided by the client/driver related to the warranty written in this manual shall be kept within our database.

### 3. TRAILER RUNNING GEAR AND USAGE INSTRUCTIONS



1- 2 Brake/Electric Connections

3 King pin

4 Landing Gear

5 Landing Gear Foot

6 Wheel Chocks

7 side Underrun Guards

8 toolbox

9 Mudguards

10 Tires

11 Driving Level Control Valve

12 Spare Wheel Holder

13 Bumper

14 Ramp Buffers

#### 3.1. Brake System

##### 3.1.1. Air Couplings

The main connection between the truck and trailers is air couplings.

Generally, 3 different types of air couplings are used in the trailers. These 3 types of air couplings have the same function but with different shapes and connections. There are 2 different air supply lines in the system.

Brake Line (Yellow)

Supply Line (Red)

**Service Line:** Pneumatically air hose which will feeds the brake line.

**Supply Line:** Pneumatically air hose which will feeds the air tanks and trailer

According to the type of vehicle, your vehicle can be equipped with one or two different types of air couplings.

- Standard Couplings (Palm)
- Duomatic Coupling
- C (UK) Couplings



If your vehicle is equipped with 2 different types of couplings, you must use only one type at the same time.



When the couplings are mounting/demounting, the parking brake of the truck and trailer must be engaged.

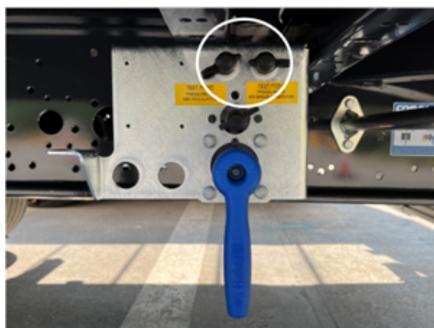


If the brake parameters are modified, your vehicle's brake calculation might be non-suitable for regulations. Only authorized services must service to the EBS modulator.



Only authorized services and personnel should make service operations for the brake system.

There might be test points on the chassis or above the air couplings. When you remove the test points rubber protection parts and push the points you can check the air pressure on the brake lines.

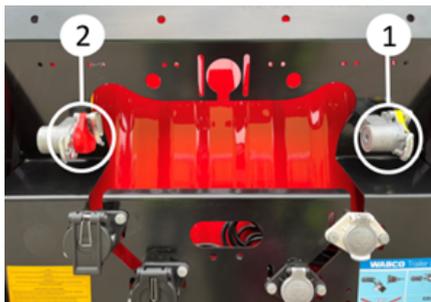


*Test point*



*Palm coupling with a test point*

### 3.1.1.1. Mounting of Standard (Palm) Couplings



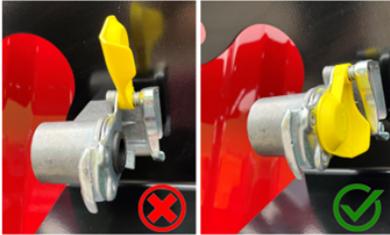
*Couplings*

- Slightly slide plastic covers to the upper side. Slide plastic covers to upper side
- Be sure that sealing surfaces are clean and durable. If necessary, clean/change the air coupling.
- The coupling which comes from the truck should be pushed slightly from the upper side to the lower side and connect the coupling. Be sure that couplings are matched correctly.
- First mount service line yellow (1).
- Mount supply line red (2).

### 3.1.1.2. Demounting of Standard (Palm) Couplings

- The coupling which comes from the truck should be pushed slightly from the lower side to the upper side and demount the coupling.

- First demount the supply line red (2).
- Demount the service line yellow (1).
- Slightly slide plastic covers to the lower side and close the plastic covers.

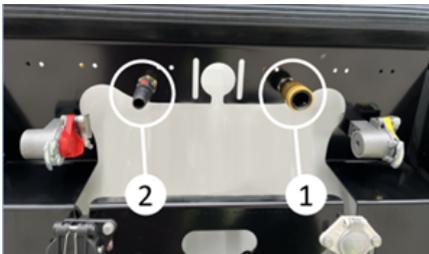


*Closing the coupling*

 **Driving with a non-suitable air connection is dangerous and forbidden**

 **Using damaged air supply parts can cause serious hazards. Torn or damaged compressed air connectors reduce the vehicle's braking performance.**

### 3.1.1.3. Mounting of C (UK) Couplings



*Mounting the C (UK) Couplings*

- Be sure that sealing surfaces are clean and durable. If necessary, clean/change the air coupling.
- First mount service line yellow (1).
- Mount supply line red (2).

- Be sure that couplings are matched correctly.

### 3.1.1.4. Demounting of C (UK) Couplings

- Push the latch from front to back side on the C couplings and remove.
- First demount the supply line red (2).
- Demount the service line yellow (1).

 **The coupling filters have to be clean regularly.**

### 3.1.1.5. Mounting of Duomatic Coupling



*Duomatic Coupling Connection*

- Be sure that sealing surfaces are clean and durable. If necessary, clean/change the air coupling.
- Push the arm and mount the coupling (1).

 **The coupling filters must be clean regularly.**

### 3.1.1.6. Demounting of Duomatic Coupling

- Push the arm and mount the coupling (1).
- Pull back the arm slightly and close the coupling cover.

### 3.1.2. Compressed Air Tanks

Pressured air can be stored in the air tanks.

The quantities and capacities of the air tanks can be changed according to your vehicle specifications.

In cold periods of the year or when the air humidity is high, the moisture in the air can be condensed and collected in the compressed air tank.

The tractors are generally fitted with air driers to prevent condensation in compressed air. The tractors are generally fitted with air driers to prevent condensation in compressed air. Even if the air driers system, the humidity in the air can be condensed. The condensed water must be drained out via the drain valve.

The water in the air tanks should be completely drained out. That's why please push the valve on the air tanks.



1. Compressed Air Tanks

2. Drain valve

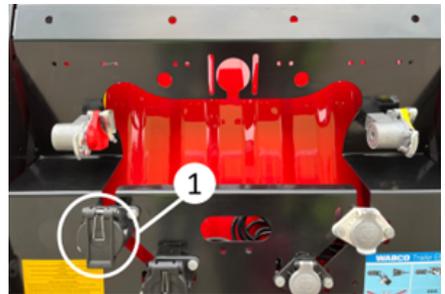
 The water in the compressed air tank can cause corrosion problems and affect the functionality of the brake system. The frozen water in the pneumatic lines can cause the failure of the brake system.

 The water in the pneumatic system should be checked more frequently in cold weather or extremely variable outside temperatures.

 When the air tank pressure is lower than 4,5 bars, the EBS warning lamp on the tractor turns on and the driver can see this situation.

 When the pressure in the service line (in the red coupling) is lower than 2,5 bars, the brakes automatically lock.

### 3.1.3. EBS Socket



*EBS Socket*

Our trailers and semi-trailers are equipped with an EBS system.

EBS is an electronically controlled brake system, that is fitted with automatic load sensing braking pressure regulation (ALB) and automatic anti-skid systems (ABS/ABV).

To activate the EBS system, your truck and trailer must be equipped with an EBS system. Please mount the EBS cable that will come from the truck to the EBS socket on the trailer.

- Driving with a non-connected EBS connection is illegal.
- Drive only with an approved and well operating EBS plug connection in accordance with regulations.
- EBS connection must be made between the truck and trailer.
- When the EBS socket mounted and truck engine is activated, you will hear the noise. Please listen and check carefully.
- A system control is performed two seconds after the trailer EBS is switched on; in the meantime, the magnets may be opened and closed audibly for a short time. When plugging the EBS connector, if you cannot hear the system control, a power supply problem exists between the tractor and EBS.

When the truck engine is activated and during the travel, the EBS system will be checked automatically. If the truck screen is suitable/adjusted, the EBS failures will be shown with the EBS mistake lamp.

The EBS mistake lamp on the truck screen will be turned on when the ignition key is activated. If there is no failure on the EBS system, the lamp will be turned off in appr. 2 seconds.

After 7 km/hours speed, If there is a failure on the EBS system (Sensor mistake and etc.) EBS lamps will be flashed.

If the EBS lamp is activated, please contact with authorized services immediately.

 **The trailers equipped with a Trailer EBS E braking system may only be used with tractors with**

- ISO 7638-1996 connectors (ABS + CAN) or ISO 7638, 7 pin with CAN data line (EBS Truck)

 **If you drive without EBS connectors or if there is a problem on the EBS system, the brake system will not be worked properly. This situation may cause an accident.**

 **Trailers are equipped with an additional power supply for the EBS system. Thanks to the extra power supply from brake lamps, when the EBS connector is damaged, an extra safety function will be activated. The EBS system will be fed from brake lamps and ALB (automatic load sensing braking pressure) and ABV (anti-skid system) functions will be activated.**

### 3.1.4. Roll Stability Support (RSS)

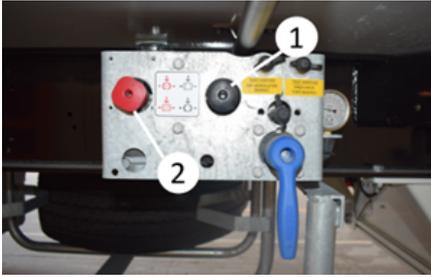
Rollover stability support (RSS) is integrated into the trailer modulator. But don't forget that this system cannot cancel the laws of physics. The vehicle's electronic control unit analyzes wheel speed, load information and transverse acceleration data to detect the likelihood of vehicle roll-over before the driver realizes there is a risk and automatically applies the brakes. But don't forget that this system cannot cancel the laws of physics.

When the roll-over risk is detected, the EBS system makes automatically brakes and tries the reduce the roll-over risk. After risk, the RSS function will be shut down automatically.

 **The RSS optimizes driving characteristics and in emergencies may help to prevent accidents. But cannot completely guarantee.**

### 3.1.5. PREV (Park Release Emergency Valve)

Generally, brake control systems will be located on the driver's side. It may be different on your vehicle according to the vehicle's construction.



PREV Buttons

**Black button (1):**Service brake button.

**Red button (2):**Park brake button



**When you are driving the trailers, the red button must be pushed position and the black button has to be pulled position.**

### 3.1.5.1. Service Brake

Thanks to the service brake, the trailer can be made maneuvers without air connections. The black button can be used only without air connections on the trailer.

When you push the black button, the service brake will be disabled. When you pull the black button, the service brake will be activated.



**If the service brake is used a lot of times, without an air connection, air pressure in the system and braking power may reduce.**

When the air connections are de-mounted, the service brake will be automatically activated. When the air connections are mounted, the service brake will be automatically disabled.



**The service brake is not suitable for braking of the semi-trailer permanently. During longer waiting periods, the semi-trailer must be secured with a spring - loaded park brake and with wheel chocks.**

### 3.1.5.2. Spring Loaded Park Brake



Spring loaded park brake

Spring loaded park brake control button is used for longer parks of semi-trailers with or without tractor on plain or inclined lands.

When the red button is pulled, spring loaded park brake will be activated. When the operator pushes the red button, spring loaded park brake is deactivated.



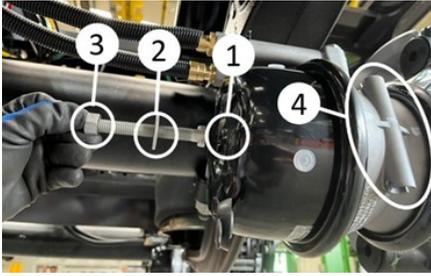
**This brake will not be deactivated automatically. Before driving, the operator must deactivate the brake.**

### 3.1.6. Brake Chambers

Your vehicle may be equipped with disc or drum brake axles according to your choice. For both brake types, the brake chambers are going to use for braking. The brake chambers will be chosen according to axles type and loading capacity. The maintenance, modification or repair operations must be performed by authorized services.

#### 3.1.6.1. Manually Deactivation of Parking Brake Spring

The Parking brake spring may be deactivated manually in emergency situations.



*Deactivation of brake chambers*

1. Boreholes
2. Release rod
3. Nut
4. Slot of the release rod

- Remove the release rod (2) from the slot (4).
- Insert the release rod (2) to boreholes (1) and screw till the rod (2) will be fitted completely.
- Completely screw in the nut (3) to the release rod (2).

The brake chambers will be deactivated after this operation. In this case, the brake chamber only works on the service brakes. Even if the trailer air tube pressure drops below 2.5 Bar, the spring brake will not be activated due to this operation.



On some brake chambers used in vehicles, the emergency release screw is located in its socket (1) behind the brake chamber, not in its socket (4) next to it. In order to disable the springs, it is allowed to come out by simply turning it with the appropriate key.

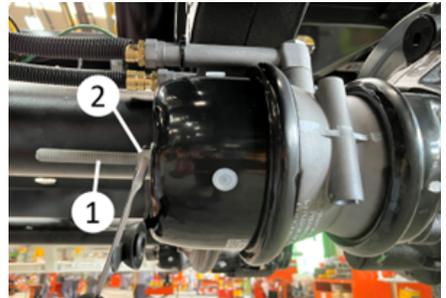


**This operation should only be used until the trailer is serviced.**

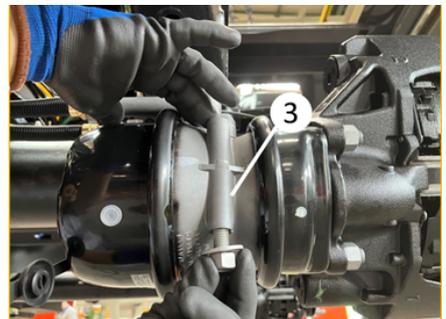


**Before this operation, the vehicle must fixed securely with wheel chocks. Serious injuries may occur.**

### 3.1.6.2. Activation of Brake Chambers



*Activation of brake chambers*



- Remove the nut (1) from release rod (2) with a spanner.
- Remove the release rod (2).
- Screw the release rod into its place on the brake chambers (3)

- Close the plastic cover on the brake chamber.

Brake chamber will be activated after this operation.

 **Before this operation, the vehicle must be fixed securely with wheel chocks. Serious injuries may occur.**

 **Don't drive without being sure that all the brake system is working properly after this operation**

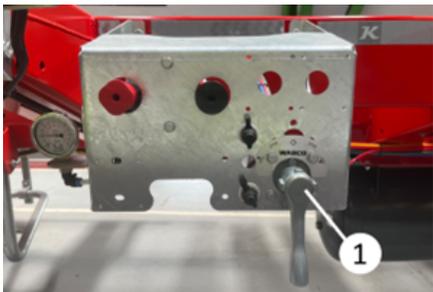
### 3.2. Suspension System

Your vehicle is equipped with air suspension system.

#### 3.2.1. Manuel Control Lever

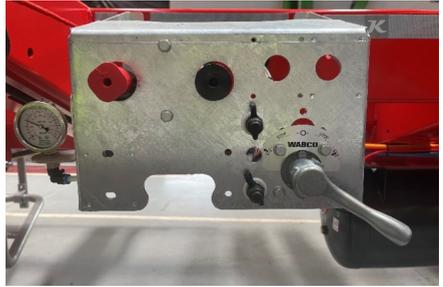
##### Operation;

In the driving position, the air suspension system keeps the semi-trailer permanently at a certain level independently from the load. The lowering/raising lever (1) at the control panel can lower or raise the semi-trailer. for ramp adjustment on the loaded position.



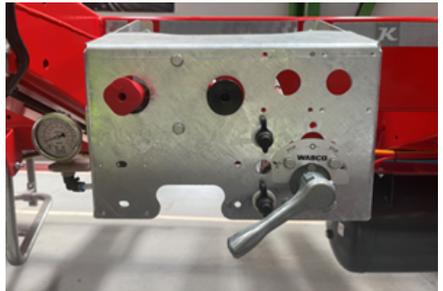
*Driving position of lever*

You may turn the lever according to anti-clockwise and raise the trailer.



*Raising of suspension*

You may turn the lever according to clockwise and lower the trailer.



*Lowering of suspension*

To fix the suspension height, you may turn the lever 45° or 135° according to the photo in below. Before driving, the lever must be switched to driving position.



*Fixing of suspension height*



If the trailer will be driven at a non-driving height, the vehicle may be damaged, or a height problem may occur.

### 3.2.2. Auto Reset

The auto reset lever can be controlled by the same method as 3.2.1. manual suspension control lever. When the EBS socket is mounted and driving at a speed defined by the producer, the lever will set the driving height automatically.



*Auto reset*

### 3.2.3. Electronic Controlled Air Suspension (ECAS)

Electronic controller air suspension (ECAS) is an optional solution. This system sets the driving height or defined different heights electronically. When the EBS socket is mounted and driving at a speed defined by the producer, the lever will set the driving height automatically.

You may push the lower or raise button and set the vehicle height.



*ECAS control panel*

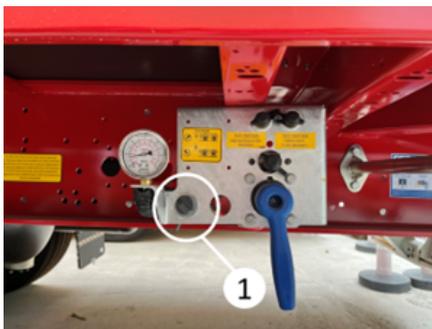
### 3.2.4. Second Driving Height

If your vehicle is equipped with this system, you may use your semi-trailer with 2 different fifth Wheel height. Please check your vehicle's technical specs to see the 5th Wheel height.

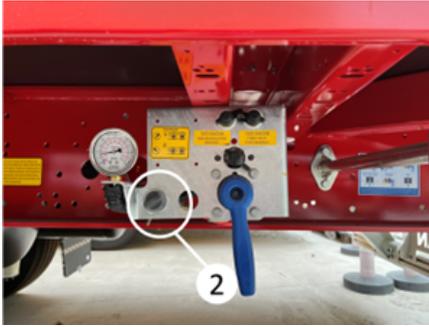
#### 3.2.4.1. Manuel Control

You may choose the fifth Wheel height with a control button which is located at the driver side.

When you set the button in position 1, you may use your semi-trailer in a lower fifth wheel height and when you set the button in position 2, you may use your semi-trailer in a higher fifth wheel height.



*Lower driving height*



*Higher driving height*

### 3.2.4.2. Controlled with Air Couplings

If your vehicle is equipped with 2 different types of air couplings, the fifth wheel height will be chosen automatically.

When you drive with standard palm-type couplings, the vehicle is positioned according to the lower fifth wheel height.

When you drive with C type or duomatic type couplings, the vehicle is positioned according to the higher fifth wheel height.

### 3.2.5. Manometer (Axle Load Indicator)

The manometer which will show the axle estimated axle load may be positioned at the driver side. The manometer will connect to fixed type axles air bags (non-steering and without axle lifting).

When the air bag pressure is bigger, you will see bigger values on the manometers.



*Manometer*



**This manometer shows only the estimated axle load. It cannot be used as a legal measurement.**

### 3.2.6. Smartboard (Info Center)

Thanks to Smartboard, the operator may see failure codes, axle load etc. information and control the axle lifting system.



*Smartboard*

If your Smartboard includes the battery, you may use some control even if the truck is not connected.



**You may check Smartboard user Manuel for the detail information.**

### 3.2.7. TailGUARD

When the truck is driving back, 2 or 3 sensors Wabco Tail GUARD detects the object behind the vehicle and improve the safety.

After 9 km/h, the system will brake automatically and inform the driver. If the object is too close, the vehicle stops automatically.



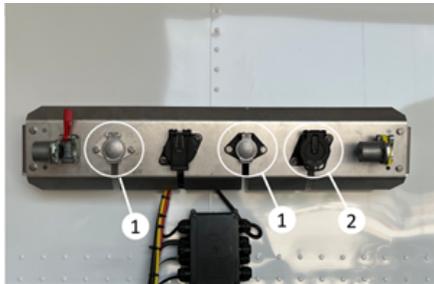
*TailGUARD*



**TailGUARD is an extra safety option. When reversing, always check the surround of the vehicle.**

### 3.3. Electrical System

15 pin (1), 2x7 pin (2) or 15 pin+2x7 pin (1+2) electrical sockets are option in our vehicles. Thanks to these sockets, electrical connections between truck and trailer will be made.



*Electrical System*



**When driving, the electrical sockets between the truck and trailer must be connected.**



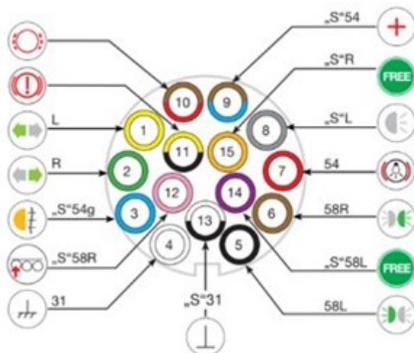
**Please be sure that the truck and trailer are suitable for the norms/standard about electrical systems. Otherwise, electrical problems will occur.**

#### 3.3.1. 15 Pin Socket

This system provides electricity for the electrical system on the vehicle like stop lamps, signal lamps etc. 15 pin socket connections are made according to ISO 12098.

Open the protection cover and mount the sockets regularly.

You may find extra information about the pins function in below.



Pin	Meaning
1	Left indicator
2	Right indicator
3	Fog lamp
4	Ground
5	Left taillight
6	Right taillight
7	Brake light
8	Reverse light
9	Supply line
10	Empty
11	EBS

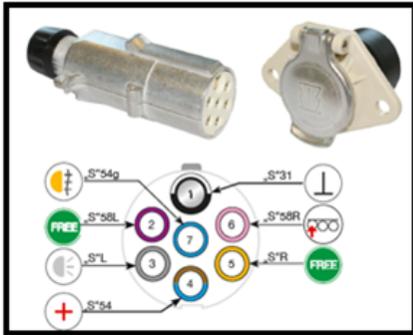
12	Axle lifting
13	Ground
14	Empty
15	Empty

### 3.3.2. 2x7 Pin Socket

This system provides electricity for the electrical system on the vehicle like stop lamps, signal lamps etc. 2x7 pin socket pin connections are made suitable for 24S ISO 3731 and 24N ISO 1185 norm.

Open the protection cover and mount the sockets regularly.

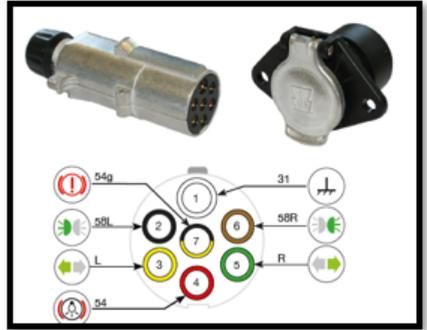
You may find extra information about the pins function in below.



ISO3731 Soket

Pin	Meaning
1	Ground
2	Left taillight
3	Left indicator
4	Brake light
5	Right indicator

6	Right taillight
7	EBS



ISO 1185 Soket

Pin	Meaning
1	Ground
2	Empty
3	Reversing lamp
4	Supply line
5	Empty
6	Axle lifting
7	Fog lamps

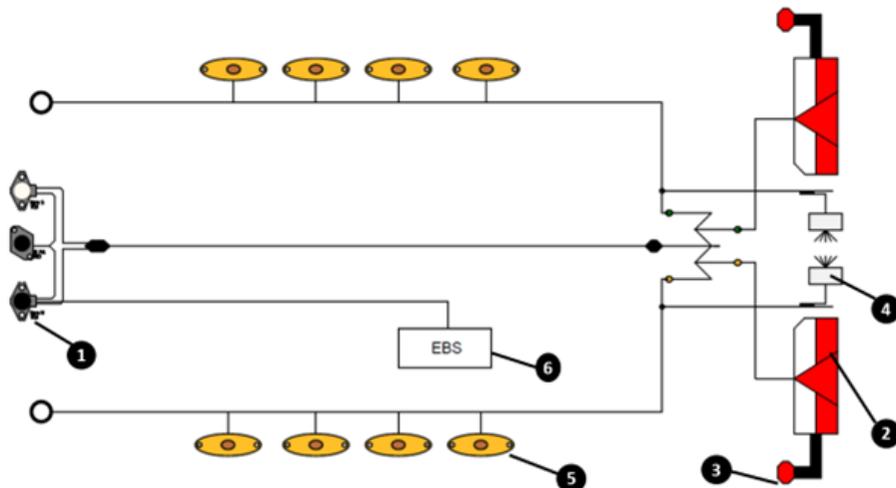


Please be careful with the color of the sockets. The black socket is suitable for ISO 1185 and the white socket is suitable for ISO 3731. If the vehicles are suitable for norms, the

black socket on the truck will be connected to the black socket on the trailer and the white socket on the truck will be connected to the white socket on the trailer.

### 3.4. Light System

The vehicle is equipped with a light system which is suitable for the regulations.



1	Electrical Sockets
2	Stop Lamps
3	End Outline Markers
4	License Plate Lamps
5	Side Position Lamp
6	Modulator

The lamps must be checked regularly. If there is any problem with the electrical system, it must be repaired immediately. In a repair operations, only original and approved sockets or parts must be used.



If you add or remove any lamps on the vehicle, your vehicle may be non-suitable for regulations.



Vehicles with LED electrical systems consume very low energy. For this reason, although there is no problem in the system, it may cause the failure lamp to come on in old tractors.



Repairing operations of the electrical system have to be made by only authorized services. Otherwise, electrical problems may occur or your vehicle may be out of warranty.



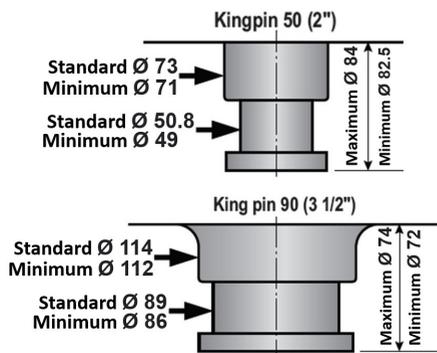
Kingpin



If the wearing on the king pin is bigger than 2 mm, the king pin must be replaced.

### 3.5. King Pin

King pin is a shaft which connects truck and railer together. Your vehicle may be equipped with 2" or 3.5" diameter pins. Please check the king pin diameter before connecting the truck.



If you match the truck and trailer with a different diameter king pin, injuries may occur.

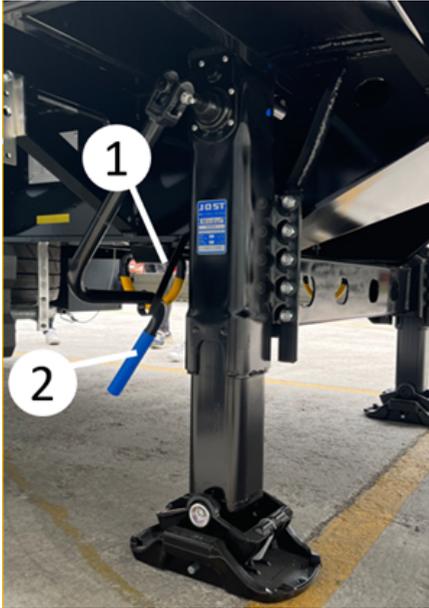
The flanged king pin is used on the vehicle. That's why king pin can be replaced easily.

### 3.6. Landing Gear

There is a front landing gears behind the vehicle's gooseneck area so that your vehicle can stop in park without truck.

#### 3.6.1. Front Landing Gear's Working Principle

The landing gear crank handle (1) should be removed from its holder (2) and brought to a perpendicular position to the vehicle.



Landing Gear

**Low Speed (A):** When the crank handle (1) is turned in the fully pressed position, it raises / lowers at low speed.

**High Speed (B):** It performs high speed lifting / lowering when the lever turned in the fully extended position. The position is used to quickly lower the gear until the foot (plates) touch the ground during the process of separating the semi-trailer from the tractor, or to raise the gear quickly after the semi-trailer is connected to the tractor.



The landing gear crank handle is usually located on the passenger side of the vehicle.

 In all conditions, secure the semi-trailer against tipping with correctly positioned wheel wedges. If the vehicle is not properly secured, the landing gear or the vehicle may be damaged.

 If the loading / unloading operation is performed while semi-trailer is not paired with the tractor, the front or rear of the vehicle may raise. Serious accident and damaged may occur. For this reason, the semi-trailer must be paired with the tractor during the loading and unloading operations.

 If the tractor leaves from the loaded trailer, be sure that the load is distributed homogeneously in the vehicle. Otherwise, the front or rear section of the vehicle may be raised due to centre of gravity, and accident may occur.

In order to protect the landing gear, be sure that there won't be any lateral movements on your vehicle. For this reason give attention to the following criteria:

- Disconnect the semi-trailer from the tractor only when the landing gear are in the middle (neutral) position.
- If you will park for a long time without the coupled tractor, be sure that air suspensions are lowered and after that adjust the landing gears. Thus, the loading area will be parallel to the ground.



*Landing gear view*

Optionally, an aluminum landing gear can be supplied.

 **Before you start to drive operations, make sure that the landing gear is turned off (highest position).**

### 3.6.2. Rear Landing Gear Working Principle

Foldable or fixed type mechanical landing gears are optionally offered at the rear of the vehicle. These gears can be opened during the loading/unloading operations to fix the vehicle. Thanks to these legs, movement caused by the air suspension will be minimum.

 **When the semi-trailer is loading with heavy cargo from the rear (forklift, pallet trucks, you must support the rear of the semi-trailer with the rear landing gears.**

 **Vehicle height (ramp height) must not be changed with the help of the rear landing gear. After the vehicle is brought to the desired height with the help of the suspension, the landing gear should be activated.**

 **Before you start to drive operations, make sure that the landing gear is turned off.**

#### 3.6.2.1. Fixed Type Rear Landing Legs



*Fixed Type Rear Landing Gear*

The usage of the fixed type rear landing gear is the same as the use of the front landing gear described in section 3.5.1.

#### 3.6.2.2. Foldable Type Rear Landing Gear



*Foldable Type Rear Landing Gear*

Activation of the foldable type of rear landing gear.

- Pull locking pin (1) towards you and open the landing gear carefully.

**There is a danger of the landing gear falling suddenly towards the ground. For this reason, it should be opened carefully by holding the landing gear with one hand.**



*Opened Position*

- When the landing gear is vertically positioned, the locking pin(1) should be closed and the landing gear will be fixed.

After this stage, the usage of the landing gear is the same as the usage of landing gear described in section 3.5.1.

Closing of the foldable type landing gear:

- Pull locking pin(1) towards you and lift the landing gear carefully.
- When the landing gear will be parallel to the ground, use the locking pin(1) and fix the landing gear.



*Closed Position*

### 3.7. Side Protection Equipment (Side Underrun Protection)

The underrun protection must be in the off position during the travel. Some underrun protection equipment can be opened upwards for easier service operations such as accessing the spare wheel holder.



*Side Underrun Protection*

**Travelling with the lifted side underrun protection is dangerous and illegal. In this case, there may be serious injuries, including death, in road accidents that may occur. Before travel, make sure the side underrun protection is lowered and properly secured.**

**Lifting Underrun Protection:** Turn the side underrun protection locking pin (shown) on both sides 180° clockwise or counterclockwise. The locking pin will be locked (1) You may open or close the side underrun protection when the pins are positioned like this. After opening the locking pins, lift the side underrun protection upwards. When the side underrun protection is lifted, return the pins to the locking position (2). After making sure that both pins are locked securely, you may release the side underrun protection.



**If the underrun protection is not fixed properly, it may fall and cause injury.**

### **Lowering The Underrun Protection:**

Lift the underrun protection slightly upwards, unlock the locking pins and lower the side underrun protection carefully. When the underrun protection is lowered, use the locking pins and fix the side underrun protection.

## **3.8. Semi-Trailer Axle System**

Axle with disc or drum type brake mechanism are used in your vehicles.

Semi-trailer axles may only be loaded with the maximum legally permissible axle load indicated on the vehicle identification plate. The user is responsible for use of the trailer in accordance with its purpose and capacity and for its maintenance.

The healthy operation of the brake system of the semi-trailer depends on the usage of the semi-trailer with the same system and/or compatible tractor. For this reason, it is obligatory for the buyer to make the brake adjustment at the authorized service of the tractor company to which these semi-trailer/trailers are to be matched. If you use the unadjusted truck-trailer combination, the producer doesn't take any responsibility for the damage/failure that may occur in the brake system or vehicles. All responsibility belongs to the customer.



**For more information about the axles, please check the axle's user manual which was delivered with your vehicle.**



**If the axles are used other than the conditions specified in the manufacturer's manual or if their maintenance is not made properly, your vehicle may be out of warranty.**



**If the vehicle is equipped with emergency brake chambers, apply the parking brake after checking the drum temperature. Never use the parking brake when the drums are very hot (the drum may crack).**

### **3.8.1. Self-Steering Axles**

Your vehicle may be equipped with a self-steering axle to increase the maneuverability capacity during forwarding driving. This type of axle is usually positioned at the rear axle of the vehicle and has a locking mechanism.



**The turning radius of the vehicle which is equipped with a self-steering axle is different from standard vehicles. In addition, there will be differences in the maneuverability of the vehicle in cases where the self-steering axle is locked or unlocked. Please be careful about the self-steering axles.**

#### **3.8.1.1. Locking The Steering Axle**

For vehicles with Electronic Braking System (EBS), the self-steering axle can be locked automatically when the reverse gear is engaged in order to reverse. It is also possible to lock this axle manually.

Drive the vehicle straight ahead so that the steering axle is in a straight position before the steering axles will be locked.

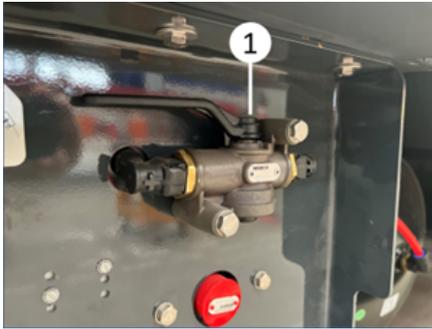
If the automatic axle locking function is active in your vehicle, the steering axle

will be locked automatically when you engage reversing gear.

If you want to lock axles manually, make sure that the steering axle is in a straight position and close the valve (1) or turn the button to the off position.

The locking valve will be positioned towards you when the self-steering axle is locked manually.

 **Reversing with unlocked steering axles is dangerous. The semi-trailer can be separated from the tractor. Before going backwards be sure that self-steering axle is locked.**



*Self-Steering Axle Release Valve*

### 3.8.1.2. Unlocking The Self-Steering Axle

The self-steering axles, which lock automatically when reverse gear is engaged, will automatically unlock when the vehicle is moving forward.

To release the manually locked self-steering axle, turn the valve handle 90° (2) clockwise or move the button to the open position.

 **When the self-steering axle is locked manually, the axle will not be unlocked automatically. It must be unlocked manually.**



*The Self Steering Axles Release Valve*

### 3.8.2. Axle Lifting

Axle lifting feature is optionally available in different quantities and location in your vehicle. Thanks to this feature tire wear is minimized and a more balanced load distribution on the tractor can be provided. The EBS connection must be active for the axle lift load to work.

The axle lifting function is controlled automatically due to the legal regulations. When the speed limit is exceeded and the EBS is active, some axles can be lifted automatically, if the load on the axles is less than the maximum allowable axle load.

The driver may control the axle lifting manually for the maneuvering aid or traction help.

 **For the active traction help (raising the axle), the vehicle must be slower than 30 km/h and the technical capacity of the axles on the ground must not exceed 30%.**

When the trailer is in a park position, you may push the brake pedal 3 times and traction help (axle lifting) might be activated.

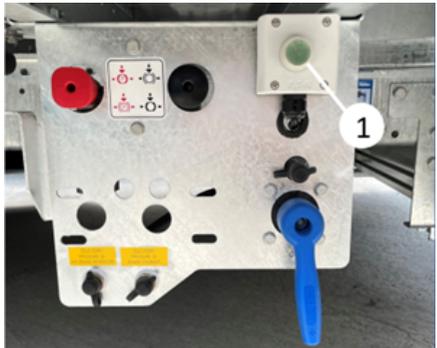
If your vehicle has optional axle lifting control from the tractor cabinet, it is

possible to manually lower/raise the axle with a spring loaded button to be installed in the tractor cabin. For this function, your tractor must be adjusted according to the trailer.

It is also possible to activate /deactivate the axle lifting function with a button on the trailer. Traction help can be activated by pressing and holding this button (1) for less than 5 seconds. If it is pressed more than 5 seconds, the axle can be lowered to the ground.

You can also find information about the axle lifting system stickers on the vehicle.

**If you change the axle lifting configuration, your vehicle may be out of regulation. For this reason, the EBS modulator should not be checked or repair except by authorized services.**



Spring button on the suspension control valve plate



Axle Lifting

**There might be a pinching risk during the axle lifting or lowering.**

### 3.8.3. Hubodometer

Hubodometers show the distance traveled by the vehicle in kilometers or miles.

The unit of the hubodometer is written on the hubodometer. It is adjusted according to the tire diameter.



Analog Hubodometer



Digital Hubodometer

### 3.9. Steering System

#### 3.9.1. Mechanical Steering System

Your vehicle may have a mechanical steering system that increases maneuverability, reduces tire wear and fuel consumption by being mechanically steered.

The mechanism located on the king pin table moves the steering movements to the steering mechanism above the axles with a tie rod. The lubrication and maintenance process has to do according to the user manuals of the steering system.

**If the steering system is not used according to the user manual or maintenance operation is not made according to the user manual, your vehicle might be out of the warranty conditions.**



*Mechanical Steering System*

**Semi-trailer with steering system has a different maneuverability characteristic than standard vehicles. Be careful while driving**



*Mechanical steered rear axle*

### 3.10. Tires

When you are choosing tires, the first criteria are the load capacity index. Be sure that the load capacity index is suitable for your vehicle.

Tire manufacturers produce different types of tires according to the purposes of their use such as highway use, off-road or mixed-use. Please choose the correct type of tires according to the road conditions that you will use the vehicle. Choose the low decibel as soon as possible version. Tires as possible as having to Class A fuel efficiency level and braking on wet surfaces according to EU tire label stickers.

**You can see the EU tire labels of the tires which were used in your vehicle on our website.**



In dual/twin line wheeled vehicles, the tires must be matched properly according to their diameters. The tread depths on the adjacent tires shall not be different more than 5 mm. Furthermore, the newly coated tires and partially worn tires shall not be used side-by-side in relation to the structure and type of the vehicle. Otherwise, driving safety will be disrupted. In such tires, though the tread depths are seen, it must be deduced that the tire diameters are different and the tires exceeding the radius differences by 10 mm must not be used side-by-side.

Wrong matching will lead to excess shape deformation of the larger tire by carrying more load than necessary. In such a case, the wearing will accelerate and reveal the risk of early wearing of the tire. This case must be considered whenever radial and transverse layered tires are used side-by-side.



In some countries, M+S (Mud and Snow) or 3PMSF (3 Peak Snowflake) labelled stickers can be mandatory according to season. Please observe the regulations and rules.



*M+S and 3PMSF Symbol*



Very serious accidents may occur if unsuitable or worn tires are used.



Make sure that you put the necessary warning signs and take the safety precautions during the tire change.



Driving with insufficiently secured spare tire(s) can occur accidents.



The tires are heavy parts. Be careful about ergonomics and occupational health and safety rules during the tire replacement. There is a risk of pinching, falling, and cutting.

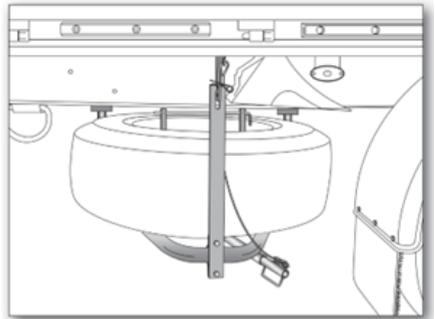


Spare wheel holder carriers are designed for special tires dimensions. Follow the rules and regulations when removing/mounting or maintaining the spare tire or spare wheel holder.

### 3.11. Spare Wheel Holder

Different type of spare wheel holders is optionally offered in our vehicles.

#### 3.11.1. Swedish Type Spare Wheel Holder

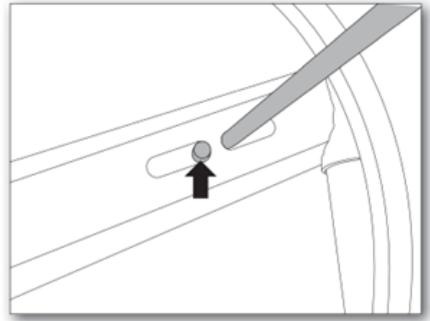


*Spare Wheel Holder*

#### Removing the spare wheel:

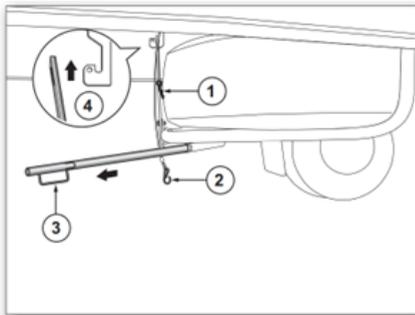
- Remove the pin (1) holding the upper retaining ring of the spare wheel holder.
- Remove the pawl hook fixing the spare wheel removal lever from the rings (2).
- Pull back the lowering arm (3) from the slot, released from the hook.

- Lift the holder slightly with the arm and release the top retaining ring from the hook (4).
- After releasing, lower the holder by means of arm slowly downwards.
- Release the arm by removing the pin of nut tightening/loosening arm (5) and pull it backwards and loosen the nuts by turning them anti-clockwise.
- After loosening the nuts, slide the spare wheel from the stopping pins and take it.



*Mounting the spare wheel*

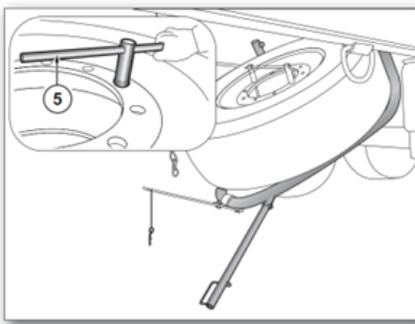
- Put the tire onto the holder, position the stoppers to their seats and tighten both nuts by means of nut tightening/loosening arm.
- Then lift the holder with the arm and install the top retaining ring to the hook.
- Push the spare wheel lowering arm into the slot, firstly insert the hook then the top retaining ring and fix it to holder.



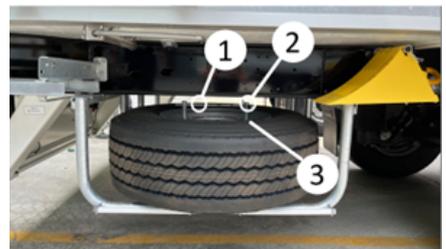
*Removing The Spare wheel*

### 3.11.2. Basket Type Spare Wheel Holder

Single or double basket type spare wheel holders may be optionally provided. Both spare wheel holder working instructions are similar.



*Removing The Spare wheel*



### Placing the spare wheel:

### Removing the spare wheel:

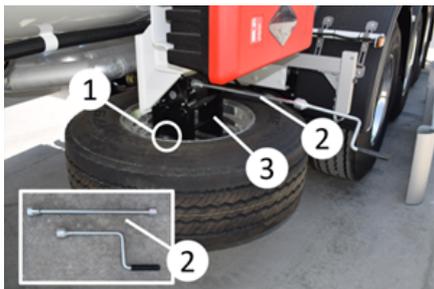
- The pin (2) should be removed on the fixation cane (1).
- The fixation cane (1) and the pin (3) will be removed.

- The tire should be slightly moved towards outside of the vehicle.

### Placing the spare wheel:

- The tire will be slid slightly into spare wheel holder.
- The fixation cane (1) and pin (3) will be attached.
- The pin (2) will be mounted.

### 3.11.3. Crane Type Spare Wheel Holder



*Crane type spare wheel holder*

### Removing the spare wheel:

- Remove the screws (2).
- Mount the lever (3) and turn it counterclockwise slowly. The spare wheel will be lowered.
- Remove the fixation parts (4) and take the spare wheel.

### Placing the spare wheel:

- Mount the fixation parts (4) to the tire.
- Lift the tire upwards by turning the handwheel (3) clockwise.
- Turn the lever (3) clockwise and the tire will be lifted.
- Mount the screws (2) and fix the tire.
- Remove the lever (3) and store in the toolbox or cabinet.

### 3.11.4. Rear Entry Spare Wheel Holder

Rear entry (on bumper) spare wheel holder with double tire carrying capacity is optionally available.



*Rear entry spare wheel holder*

### Lowering the spare wheel:

- The locking mechanism (1) is opened, and the cover (2) is removed.
- The cotter pin at the end of the fixing handle is removed.
- The wheel is lowered by slowly sliding it towards the outside of the vehicle.

### Placing the spare wheel:

- The wheel is slid into the spare wheel holder.
- Fixing handle is attached.
- Cotter pin is attached.
- The cover (2) is put in place and fixed with the help of the locking mechanism (1).

### 3.12. Mudguards

Your vehicle is equipped with mudguards and/or mudflaps which are suitable for regulations. The water will be splashed from the ground etc. will be minimized thanks to these mudguards and mudflaps.

Some vehicles may have foldable mudflaps in order to prevent mudflaps from damage. This type of mudflap has to be folded (1) during the huckepack operations.



 When you are driving, the foldable mudflaps must be opened.

### 3.13. Wheel Chock

There are two units wheel chocks and holders in the vehicle.

 The vehicle must be secured with wheel chocks when parked on a slope area, during the loading and unloading operations or when parked without a tractor.

 Only place wheel chocks on wheels on fixed axles, never on idle/steer axles.

 When the wheel chocks is fixed inside the holder, be sure that the pins will be mounted properly.

 After driving operations, place the wheel chocks properly.

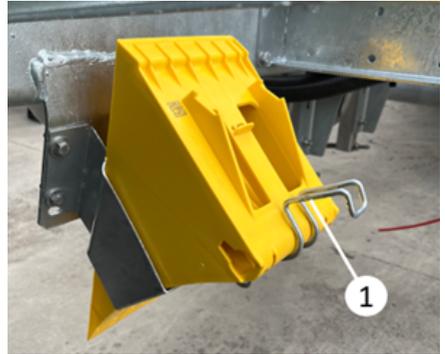
#### 3.13.1. Pin Type Wheel Chock Holder

**Removing the wheel chock from holders:** Pull out the cotter pin (1) located at the end of the wheel chock holder. Then take the wheel chock from its slot by pulling it sideways from the wheel chock holder.



**Placing the wheel chock from its holder:** Place the wheel chocks on the holders and mount the cotter pin (1) to pin.

#### 3.13.2. Pocket Type Wheel Chock Holder



**Removing the wheel chock from holders:** Remove the wheel chocks by pushing the handle (1) which is located at the end of the chock's holder from the wheel chock to the other side.



*Removing the wheel chock from holders:*

**Placing the wheel chock from its holder:** Insert the wheel chock by pulling the handle (1) which is located at the end of the wheel chock's holder.

### 3.14. Boxes and Storage Units

 Be sure that the boxes and storage units are properly closed and that the materials inside of these storage units are fixed properly before driving. Otherwise, the accident may occur.

 Be sure that the necessary safety measurements are taken while using the cabinets and storage units.

#### 3.14.1. Steel Toolbox

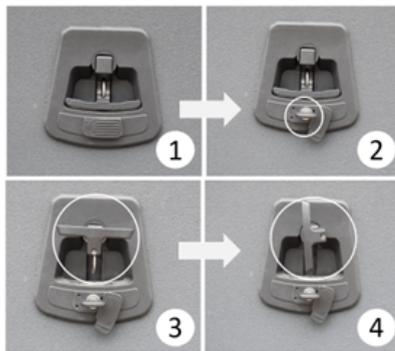
Tools and repair sets can be stored in the steel toolboxes. The toolboxes are generally mounted on the driver's side.

##### Opening the toolbox:

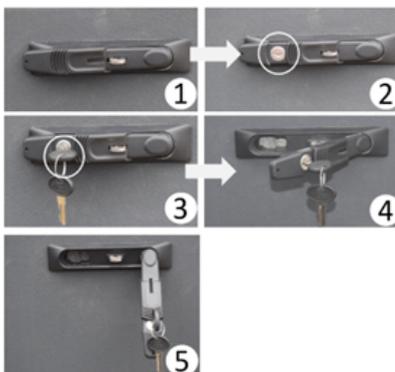
- Insert the key into the lock and switch it to the unlocked position.
- Pull the lock arm back and open the cover by turning it.



*Toolbox*



*Unlocking the toolbox*



*Unlocking the toolbox*

#### 3.14.2. Steel Food box

This type of toolboxes is usually positioned on the passenger side. There might be some compartments and gas cylinders for compartment for cooking.

##### Unlocking the Food box:

- Insert the key into the lock and switch it to the unlocked position.
- Pull the lock arm back and open the cover by turning it.

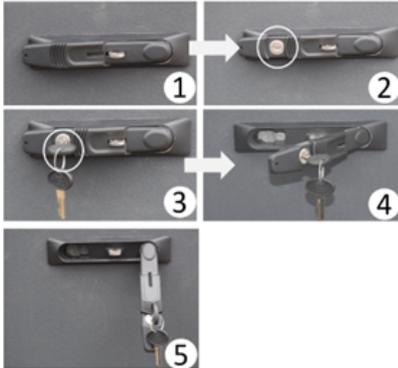


*Steel food box*

**i** Some boxes may have a sliding shelf. You can pull the sliding shelf towards you by opening the locking mechanism of the sliding shelf. After the sliding shelf is closed, it must be locked.

**Lamps:** The box might be equipped with lamps. These lamps are connected to the parking lamps. When the parking lamps are on, you may push the on/off switch and turn on or turn off the lamps.

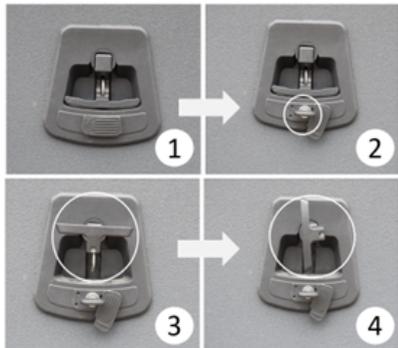
### 3.14.3. Plastic Toolbox



*Unlocking the toolbox*



*Plastic toolbox*



*alternative unlocking the toolbox*



*Plastic toolbox*

#### Unlocking The Toolbox:

- Remove the lock cover.
- Unlock by turning the key.
- Pull the lever towards you.
- Turn the lever and open the cabinet door.

### 3.14.4. Fire Extinguisher Cabinet

Fire extinguisher cabinets are used to protect fire extinguishers from the external environmental factors.



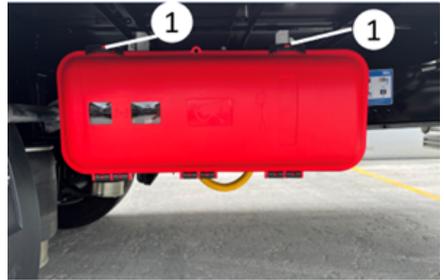
*Fire extinguisher cabinet*

#### Opening The Cover:

- Open the 2 plastic latches (1) which are holding the cover.
- Lift the latches up and back and open the cover.
- Remove the re-closable fasteners (black tape) in the fire extinguisher box and take the fire extinguisher.

#### Closing The Cover:

- Insert the fire extinguisher and fix it with re-closable fasteners (black tape).
- Close the cover first and after that put the latches to the top of the cover.
- Close the latches and lock the cover.



*Unlocking The fire extinguisher cabinet*



*Unlocking The fire extinguisher cabinet*

### 3.14.5. Water Tank

The vehicle may have a water tank for general cleaning purposes. You can turn the tap and open the water. You can fill the water tank with the help of the filling neck which is located at the top of the tank.

There may be a soap dispenser on the water tank. You can disassemble and fill the soap dispenser by turning it counterclockwise.



Please be careful about the hygienic rules and regulations. The wastewater must be disposed of in accordance with the regulations of the country that you will be in.



The water in the water tank should not be drunk. It should be only used for cleaning purposes.



In cold weather, the water tank should be emptied. Otherwise, the water tank may be cracked because of the freezing water.



*Stainless steel water tank*



*Stainless steel water tank*

### 3.14.6. Document Box

You may store your non-valuable documentation in the round or square type document box.

You can turn the cover of the round type document box counterclockwise and open the document box.

You may lift the pin of the square type document box and remove the pin. The cover of the square type document box may be opened.



Store the locking pin and the document box cover properly. Otherwise, it might be lost.



*Square type document box*



*Cylindric type document box*

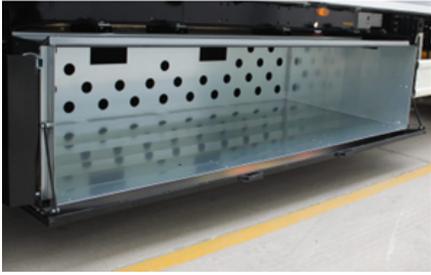
### 3.14.7. Pallet Box

Wooden or plastic Euro pallets may be stored in the pallet box.

Unlock the pallet box cover. The cover of the pallet box should be slightly slide to down and you may reach the pallet box.



*Pallet box*



*Pallet box*



**Make sure that the cover will not hit anything when you are sliding the cover.**



**Pallet boxes can be positioned closer to the ground than other accessories. Please be careful about the pallet box, especially in the rural terrain.**

### 3.14.8. Double Deck Bar Storage Box

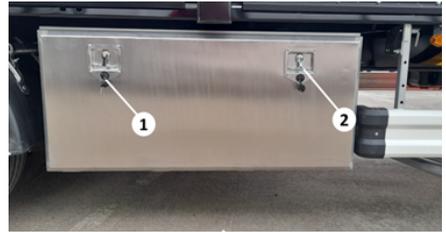
Double deck bar storage box, which allows the transportation of double deck bars under the vehicle, is offered as an option.

#### Unlocking Box:

- Insert the key into the lock and switch it to the unlocked position.
- Pull the lock arm back and open the cover by turning it.
- Pull the lock lever backwards, open the cover by turning the lever
- When the cover is opened, double deck bars must be regularly stored in the box.



### 3.14.9. Stainless Toolbox



*Stainless toolbox*

#### Unlocking The Box:

- First remove/ slide the lock's cover (1).
- Switch the key and unlock the locking mechanism.
- Pull the lever (2) towards you.
- Turn the lever (2) and open the box cover.

### 3.14.10. Fuel Tank

The different types of fuel tanks which are going to feed the cooler unit are optionally available on your vehicle. The filling neck of the fuel tank is generally positioned on the right side of the vehicle. Please unlock the cap with a key. After that, you may turn the fuel tank cap counterclockwise and open the cap.

If the fuel tank or cooler will be mounted by the customer, you may see 1 unit of red and 1 unit of black-colored plastic hoses on the front wall. These hoses can use to connect the fuel tank and cooler

together. The connection must be made at the fuel tank or cooler unit authorized services.



*Ful tank*



*Plastic fuel tank*

 Please obey the rules and regulations about the fuel tank. In case of any leakage, you should follow the regulations and rules that the country you are in.

### 3.15. Rear Bumper (Rear Protection Equipment)

Your vehicle has a rear bumper (rear protection equipment) in accordance with legal regulations.

 If you drive with a damaged bumper, traffic safety is to be compromised. And if anyone hits your vehicle from the rear side, the size of the accident will be bigger. That's why, the damaged bumper must be replaced with the original one quickly.

#### 3.15.1. Fixed Rear Bumper



*Fixed rear bumper*

#### 3.15.2. C Type Rear Bumper



*C type rear bumper*

#### 3.15.3. Foldable Bumper

Your vehicle may be equipped with the foldable bumper to use in huckepack, ferry operations etc.

Please pull the fixation pin of the bumper towards you. Lift the bumper carefully and close the fixation pin when the pin and fixation points will be in a line.



Foldable bumper

 For some wagon types of huckpack operations, the bumper must be folded before the loading.

 The bumper must be locked and in the driving position in the traffic way.

### 3.15.4. Ferry Skid

Ferry skids are optionally available to protect the rear bumper, especially at ferry operations.

#### 3.15.4.1. Fixed Type Ferry Skid

The bolted type ferry skid can be mounted also after the delivery of vehicle.



Fixed type ferry skid

### 3.16. The Floor

The floor of your vehicle is made of insulated sandwich panel. The upper surface of the base is covered with aluminum chequer plate.

There may be regional discharges on the wheel compartment, called wheel emptiness, in order to prevent the wheel from hitting the floor.

For forklift entries into the vehicle, there may be a maximum forklift front axle load that has been defined specifically for your vehicle and tested according to a norm. You can find this information on the label on the vehicle or in the sales contract.

 If a forklift heavier than the permitted forklift front axle load enters the vehicle, the floor covering may be damaged, causing the forklift to tip over. There is a danger of slipping when walking on wet ground. There may be icing on the floor in cold weather or during cold chain transportation. Pay attention to the risk of slipping. In case of damage to the vehicle floor, it must be replaced with the original spare part.

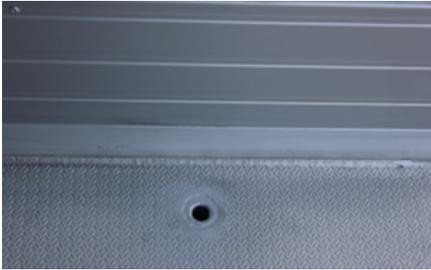
 The maximum allowable forklift front axle load will be reduced if low quality materials are used.

#### 3.16.1. Water Drainage Hole

There can be optionally different numbers of water discharge holes on the vehicle floor. Thanks to this hole, the water accumulated in the vehicle during washing or transportation is discharged.

In order to use this water drainage hole, it is necessary to remove the rubber cover on the bottom surface and turn the valve to the open position.

When water drainage is not needed, the rubber cover should be closed by turning the valve to the closed position.



Water drainage hole



 This hole should not be used to discharge substances that may harm the environment or that are prohibited by regulation.

### 3.17. Ladders

Vehicle may have ladders which allow us to reach some areas of the vehicle more easily.

 Driving with a ladder which is not completely secured has serious hazards. During the driving operation, the ladder may way and injure the people. Use your vehicle with a completely secured ladder.

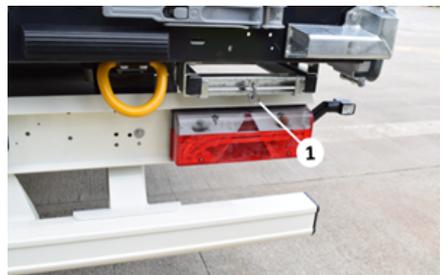
 Slips from the ladder may lead to accident. Polished, cleaned ladder must be used very carefully. Never use inappropriate means and tools to climb over or climb down the vehicle. Do not jump from the vehicle.

#### 3.17.1. Foldable Sliding Ladder

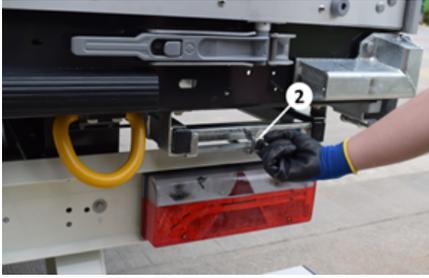
The foldable sliding ladder (1) is generally located at the rear side of the vehicle and above the bumper. However, the location may vary according to the construction of the vehicle.

##### Opening of Foldable Sliding Ladder:

- Pull back the ladder outwards from the ring (2) on the fixing pin of the ladder as indicated in the picture.
- Release the ladder from the pin (3) by turning the ring counterclockwise or clockwise.
- Pull out the ladder upwards.
- Break the ladder from the folding point downwards to bring it to the usage position.



Foldable sliding ladder



*Foldable sliding ladder, removing the pin*



*Foldable sliding ladder, removing the pin*

**i** Some of the vehicles may be equipped with a hand grip on the right-side rear pillar. You may enter the vehicle easier thanks to the hand grip.

### Closing the Foldable Sliding Ladder:

Upon use of the ladder, fold the ladder upwards and bring it to a straight position and push the ladder into the slide to its location. Pull out the fixing pin from the ring and fix the ladder by turning the pin clockwise or counterclockwise.



*Foldable sliding ladder*

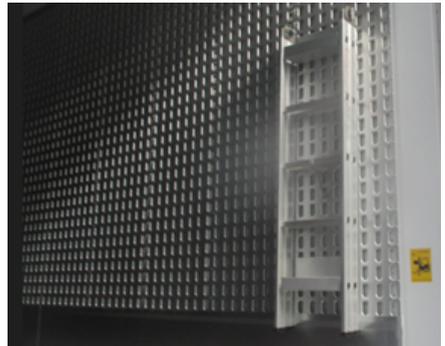


*Foldable sliding ladder*

### 3.17.2. Foldable Ladder Inside the Panel

A foldable ladder which is mountable to Talfix is optionally offered. You may remove the bungee cords and use the ladder.

**!** The coating of Talfix must not be damaged when removing or fixing the ladder.



*Foldable ladder inside the panel*

### 3.17.3. Front Panel Ladder

A ladder is optionally available on the left side of the front panel for easier access to the front panel ventilation cover or the cooler.



Front Panel Ladder

- The bolt number (1) is loosened.
- Ladder opens by pulling to the front of the vehicle.

### 3.18. Tail Lift

Your vehicle may have different brands and types of tail lifts. Please check the user manual of the tail lift producers for maintenance and usage.

 If the tail lift is used or maintained outside the conditions which are specified in the manufacturer's manual, the lift may be out of warranty.

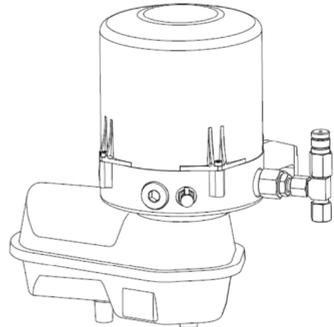


Foldable type tail lift

 The tail lift will act like a bumper. That's why the tail lift must be closed properly.

### 3.19. Lubrication System

Your vehicle may have an automatic lubrication system which may lubricate the axles, steering system and/or tail-lift. For more information about the lubrication system, please check the manufacturer's manual.



Lubrication

## 4. UPPERSTRUCTURE COMPONENTS AND USE

### 4.1. Overview of Trailer Superstructure Components

There is a superstructure made of sandwich panel and maintaining its insulation ability for many years.

### 4.2. Front Panel

Your vehicle has an insulated front panel made of sandwich panel. See the cooler section for mounting the cooler on the front panel.

### 4.3. Rear Panel



*Rear panel*

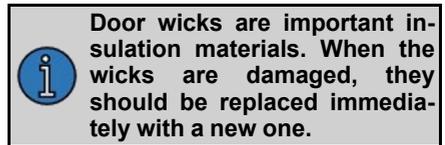
### Basic Components

- Door leaves
- Hinges
- Door Handles
- Extra Mechanical Locks



*Door handle*

Press and pull the marked latch towards you to open the door. The latch is released. After the door is opened, the door handle is put back into place and the door leaf side panel is fixed.



#### 4.3.1. Rear door handle

The rear door handle is used to fix opened rear doors for safety and to prevent damage. They are located just behind the right and left rear wheels.

#### Fixing the door:

Hold the handle, pull outward in the direction of the arrow (1). Turn it 90° counterclockwise (2) so that it touches the door. At this point the door is fixed.

#### Unlocking the fixed door:

The arm is kept in its original position by being pulled back from the fixed point and turned 90° clockwise.



Allowing the door to swing back and forth can cause accidents. Always secure the open door with the door handle. Never drive with an open door. Secure the door before departure.



To fix the door in the open position, pull the rear door fastener from a point close to the exit while bringing the door retaining pin to the open position. This will both allow the pin to come out more easily and prevent it from being damaged.



Be careful not to squeeze your hand between the door and the side panel.

In trailer models, different door fixing elements can be used according to the customer's request. (1,2)



*Fixing the door*



*Fixing the door*

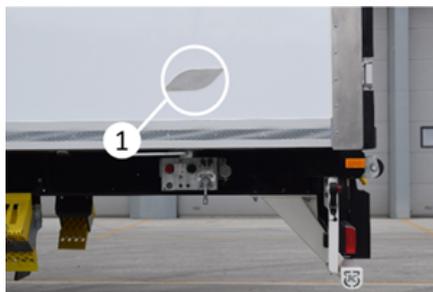
#### 4.4. Side panel

Your vehicle has insulated side panels made of sandwich panels.



*Side panel*

There may be extra protection plate (1) on the side panel to prevent the door from hitting the GRP.



*Side panel protection plate*

#### 4.5. Pillars

Two different types of pillars are used in vehicles.

- Rear pillars
- Front pillars

##### 4.5.1. Rear Pillars

There is a single-piece rear frame made of stainless steel at the rear of the vehicle.



*Rear pillar*

#### 4.5.2. Front pillar

There are pillars connecting the side panel and the front panel at the front of the vehicle.



*Front pillar*

#### 4.6. Roof

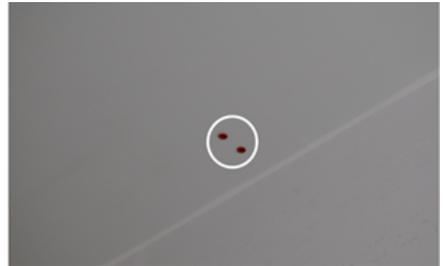
##### 4.6.1. Insulated Roof

Your vehicle has insulated roofs made of sandwich panels.



*Insulated roof*

There are integrated cable channels on the roof of the vehicle for pulling the temperature sensor and interior lighting cables. With the help of the red plugs on the roof, these cable channels can be accessed and the sensor can be mounted.



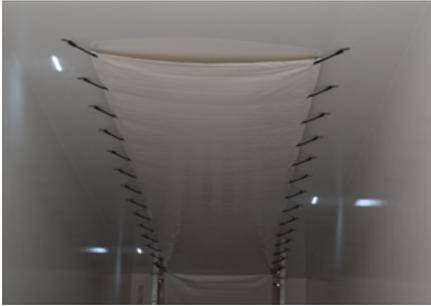
*Sensor channel*

##### 4.6.2. Interior Lighting

There are LED interior lights integrated into the vehicle roof to facilitate loading/unloading operations integrated into the vehicle roof.

These lightings are connected to the vehicle parking lamps. After the parking lamps are turned on, these lamps are controlled with the help of the mechanical switch located in the vehicle rear right or vehicle bumper area.

In vehicles with a tail lift, the interior lights may be connected to the control panel of the tail lift. In this case, it can be controlled via this button.



*Interior lighting*

### 4.6.3. Ramp Buffer Chocks

Ramp buffer chocks; It is used to protect the rear of the vehicle against collisions when the vehicle approaches the loading ramp.

In reefer vehicles, roller ramp buffers and fixed ramp buffers can be placed at the rear of the vehicle, just below the doors.

In addition, there are buffers mounted on the rear panel stainless frame in order to protect the superstructure from impacts when approaching the ramp.



*Ramp buffer chocks*

## 4.7. Panel protection plates

### 4.7.1. Front Panel Protection Plates

In order to protect the cooler on the front panel, there are aluminum protection plates (1), omegas (2) and evaporator protector (3) on the inner surface of the front panel. If these omegas are damaged, contact the authorized service and have them replaced.



*Front panel protection plate*

### 4.7.2. Side Panel Protection Panels

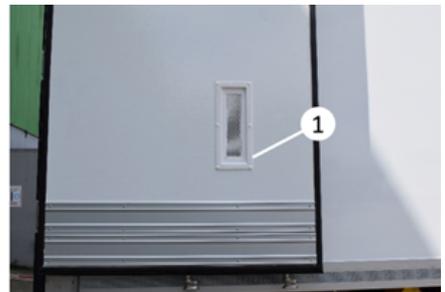
There is an impact sheet at the bottom of the side panel that protects the side panel from impacts. Optionally, impact plates in different numbers and heights can be offered.



*Side panel protection plate*

### 4.7.3. Rear Door Protection Plate

There is an optional protection plate (1) on the rear door of the vehicle, which protects the rear door from impacts.



*Rear door protection plate*

## 4.8. Ventilation Covers

There are fixed type ventilation covers on the front panel and rear doors of non-insulated vehicles that allow air to enter the vehicle.



*Ventilation cover*

In insulated vehicles, there are two ventilation holes, one on the front panel of the vehicle and the other on the rear door. The parts of the ventilation holes that open to the outside are covered with a closable cover to prevent rainwater, dust and dirt from entering.

**Opening the cover:** The handle at the bottom of the cover is secured with a plastic holder. To open the cover, release the handle from the holder, open the cover by pulling it towards you and fix the handle with the help of the holder.

 Carefully snap the open cover into the holder. Incorrect attachment of the cover to the holder may cause the cover to fall and become damaged.

 Do not open the door without closing the rear vent cover. Otherwise, damage to the side panel may occur.

**Closing the cover:** Release the handle attached to the holder from the holder, push the lid in the other direction and snap it into the other holder.

Opening and closing the outer cover of the front panel vent is the same as opening and closing the outer cover of the rear door vent.

 Care should be taken not to trap the hand between the handle and the latch when closing and opening the ventilation.

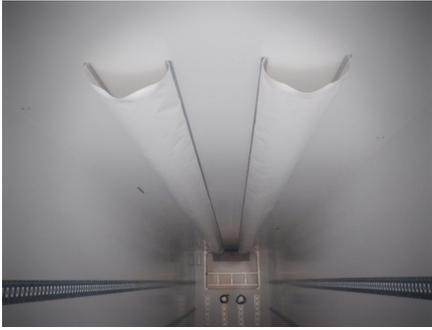
 Before opening the door, the ventilation cover must be closed. Otherwise, damage to the side panel or vent cover may occur.

## 4.9. Ventilation Tunnel

There may be a ventilation flap to optimize the air distribution inside the vehicle.



*Ventilation tunnel*



*Pipe type ventilation tunnel*

## 4.10. Cooler Unit and Temperature Recorder

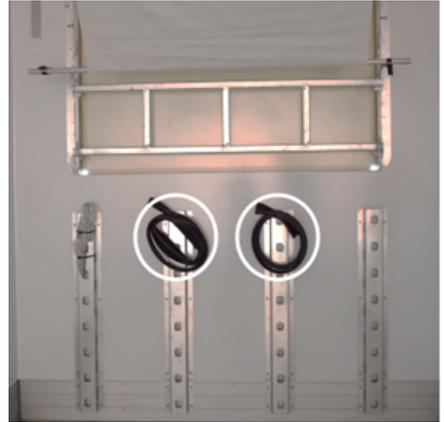
### 4.10.1. Cooler Units

The front panel of the vehicle has been manufactured in such a way as to allow the installation of certain types of cooling units.



*Cooler unit*

The FRP sheet on the outer surface of the front panel can be cut by the authorized service and made suitable for the cooling unit assembly. A wick may have been supplied with the vehicle to protect around this drain on the front panel.



*Front panel protection wicks*

 For more detailed information about the cooling unit, see the manufacturer's manual.

### 4.10.2. Cooler Solar Panel

The cooler solar panel is offered as an option. It reduces fuel consumption by enabling the refrigerant battery to be charged via solar energy. In addition, it prevents the battery from being discharged and ensures a longer life. See the manufacturer's manual for more detailed information.



*Cooler solar panel*

### 4.10.3. Temperature Recorder

The temperature recorder, which provides reporting of the temperature inside the vehicle, is optionally available. With the help of the cable channels on the ceiling, the sensor cables of your temperature logger can be integrated into the ceiling. See the manufacturer's manual for more detailed information.



Temperature Recorder

## 5. TRANSPORTATION PROCESS

### 5.1. Pre-Driving Checks

- Make sure that all necessary documentation is available at the vehicle
- Make sure all necessary adjustments and loading condition are properly made
- The vehicle is coupled and secured with the tractor properly and safely
- Make sure that all pneumatic and electrical connections between the tractor and the vehicle are properly made and that the EBS system is operational
- All structural hardware (wheel chocks, side underrun guards, ladder and etc.) are in their place and locked or secured properly
- The load is distributed evenly to prevent any displacement during driving.
- The weight of the load is within the permissible limits,
- Comply with the regulations of the country you are in,
- Make sure that the lighting and signal system is fully operational,
- The tire air pressures are at the required level
- The parking brake of the semi-trailer is released.

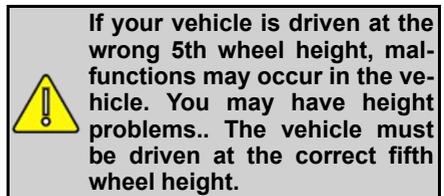
### 5.2. Semi-Trailer and Tractor Coupling

Apply the following steps to couple the semi-trailer with the tractor:

- Check that kingpin and its couplings are normal . Make sure that there is an adequate amount of grease oil on the fifth wheel, top-connection plate and kingpin that will prevent damage when coupling and that it

does not contain any dust and contaminant.

- Lower the height of the rear suspension airbags of the tractor until it can be inserted in the king pin section of the semi-trailer.
- Set the 5th wheel locking system on the tractor to the "On" position.
- Adjust the height of the semi-trailer to insert it into the tractor. The height of the semi-trailer can be adjusted with the mechanical landing gear. Prevent the movement of the semi-trailer by using the parking brake. Put wheel chock at the rear of the wheels for safety.
- Move the tractor, fifth wheel until it touches the top-connection plate of the semi-trailer and moves backwards slowly on the same level. The fifth wheel will slide smoothly under the top-connection plate and enter the kingpin's shoes and lock automatically with the intensity of impact.
- Raise the landing legs of the semi-trailer and insert the landing legs arm to its place.
- Connect the air, electrical and EBS cables and hoses to their places on the tractor. Be sure that all the functions are working properly.
- If the vehicle has a parking brake, release the parking brake.



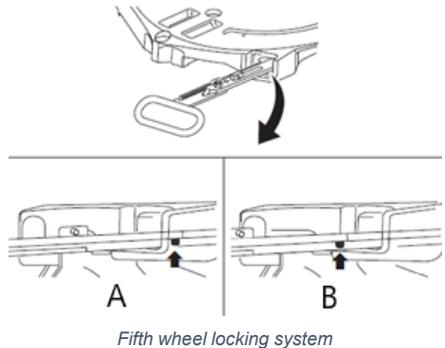
Apply the following steps to uncouple the semi-trailer with the tractor:

- If the vehicle is equipped with service type brake chambers, apply the

parking brake after checking the brake drum. Never apply the parking brake when the brake drums are very hot. (The drum may crack.)

- If the vehicle has a hand-brake type brake, put a wheel chock in front of the vehicle. Apply the handbrake.
- Disconnect the brake air lines, the brake will be applied automatically. Disconnect the semi-trailer electrical connections.
- Lower the mechanical landing gear of semi-trailer (use high speed). When the mechanical landing gear feet or wheels touch the ground, switch the mechanical landing gear crank handle to low-speed position to raise the semi-trailer.
- Unlock the fifth wheel lock. Separate the tractor from the semi-trailer about 500 mm by slowly moving the tractor forward. Lower the level of the rear suspension airbags of the tractor and leave the semi-trailer's bottom.

**To ensure that that the king pin is locked properly, engage the first gear of the tractor, and press the gas pedal, when you are slowly releasing the clutch, you will feel that the tractor strives to move the semi-trailer, this indicates that the connection is made properly. During the travel, this connection must be checked carefully to prevent separation of the semi-trailer from the tractor accidentally.**



A- Locked

B- Unlocked

### 5.3. Cautions During the Parking and Stopping

- Involuntary trailer movements, unstable posture and insufficient safety at night may occur serious accidents and injuries.
- Use the parking brake and wheel chocks while stopping.
- If you are going to park the vehicle in a public traffic area, you must use the necessary marking plate in accordance with legal regulations.

### 5.4. Important Technical Considerations

#### 5.4.1. Fire Extinguisher

Please check fire extinguishers periodically every year and fill them up if

necessary. In case of any usage of the fire extinguishers, fill it up immediately.

#### **Precautions to be taken in case of fire:**

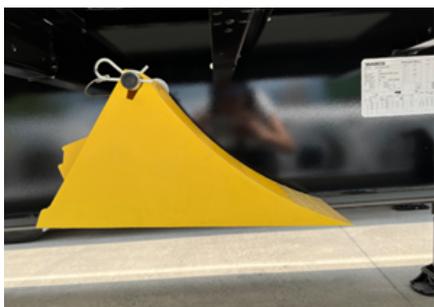
Some sealing materials let out gas when burned and these gases may become abrasive acid in contact with water. Thus never touch the fire extinguisher liquid accumulations without wearing protective gloves.



*Fire extinguisher box*

#### **5.4.2. Wheel Chocks**

Keep the wheel chocks in their place and place them under the wheels during parking. Do not forget to remove the wheel chocks before setting off.



*Wheel chocks*

#### **5.4.3. Modifications on the Trailer**

Repairing and modification operations must be made by only authorized services. Otherwise, your vehicle may be out of warranty.

#### **5.4.4. Air Leakage**

In case the air pressure in the air tubes drops instantly with the engine stop, this means that there is a leakage in the pneumatic system. Contact the nearest authorized service in such a case. The air leakage not only affects the safety of the braking system but also negatively affects the load lifting capacity of air-bags.

#### **5.4.5. Considerations For the Environment**

Pollution in all its forms poses a threat to the environment. To keep the pollution at a minimum, collect the waste materials carefully and dispose of them in accordance with the regulations of your country.

**ENVIRONMENT** - Disposal of the battery in an inappropriate place may harm the environment and human health. If you need to dispose of the battery, follow local regulations. If you do not know how to dispose of it, take it to the most appropriate service point. The symbol on the battery indicates that this product should not be disposed of.



#### **Health and Safety**

- Keep sparks and fire away from the battery. The battery emits explosive gas that can cause an explosion.
- Wear eye protection and rubber gloves while working on the battery, otherwise the battery hand-control may cause burn and serious damage including blindness in your eyes.
- Under no circumstances allow children to handle the battery. Make sure that anyone dealing with the

battery is familiar with the proper use of the battery and its hazards.

- Pay close attention to the battery electrolyte as it contains diluted sulfuric acid. Contact with your skin and eyes may cause burns or loss of eyesight.
- Carefully read and understand this manual before working on the battery. Failure to follow instructions may result in injury and vehicle damage.
- Do not use the battery if the electrolyte level is at or below the recommended level. Using the battery with a low electrolyte level can cause explosion and serious injury.

**If there are wasted oil and wasted oil contact materials in your vehicle, pay attention to the following warnings.**

When disposing of products/wastes such as used oil, hydraulic oil, do not discharge into channels, sewers, landfills, or soil. This is against the legislation of all countries.

This rule also applies to empty containers in contact with oil, chemical materials, and waste of cleaning cloths. Take these wastes to the relevant authorities or the most appropriate service point for disposal.

**If your vehicle tire has expired;**

The end-of-life tire must be disposed of in accordance with the regulations. For this, take your expired tire to the relevant authorities or appropriate service points.

**If you carry dangerous chemicals in your vehicle;**

In case of an accident or emergency that may occur during transportation, act in

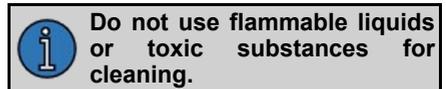
accordance with the Written Instructions of the ADR Legislation.

From the trailer's life-cycle perspective, it is important to recycle the end-of-life vehicle in an environmentally friendly manner. A large part of the trailer consists of recyclable materials. Contact the approved company and appropriate service for the recycling of the trailer that has expired.

**5.4.6. Cleaning the Vehicle**

Before starting to clean the vehicle, check the hub and axle lifter for leaks. These may not be visible after the cleaning process is complete. Pay special attention to the following when washing with pressurized water:

- Do not hold the hose nozzle directly to the felts while washing with pressurized water.
- Do not hold pressurized water to the electrical components and connections of the vehicle.
- The vehicle should be washed by holding a maximum 240 bar pressure washer at a minimum distance of 1 m and at a maximum angle of 45 degrees in order not to damage the vehicle logo and paint.
- After cleaning the vehicle, carefully lubricate the greasing points with a grease gun. This is important to prevent dirt and moisture from entering various parts of the vehicle.
- Clean the interior and exterior of the vehicle every time you return.



## 6. TRANSPORTATION SOLUTION

### 6.1. Load Transportation with Double Deck

Double deck transportation is optionally offered for the transport of pallets at low height, and which cannot be carried on top of each other.

 Do not carry more than 700 kg in the 1 meter long area along the side panel and a total of 10,000 kg on the double deck rails. If the average pallet weight is 280 kg, the load will be distributed uniformly.

#### 6.1.1. Rail Type Double Deck

The vehicle side panel may have vertical double deck rails for transporting a certain type of pallet (usually Euro pallet).

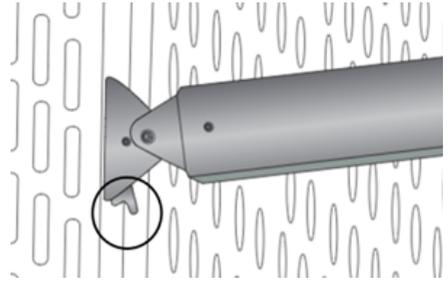


*Rail Type Double Deck*

You can put the pallets that you will carry on the second floor on the profiles by taking the profiles with the rails attached to the desired height. Profiles must be parallel to the ground. Otherwise, the load may tip over.

You can use the handle to move the profiles upwards.

To slide the profiles downwards, the latch on the lower side of the profiles must be pushed. When this latch is pushed, the profile will slide down.



*Double profile latch*

 Profiles with loads on them should not be moved.

#### 6.1.2. Safety Instructions

- Read the user manual carefully before assembling and using the double deck loading system.
- Before using the double deck loading system, make sure that you will install and install the system correctly.

#### 6.1.3. Proper Terms of Use

The user manual should be read carefully for the proper use of the double deck loading system.

Double deck loading system and its parts only.

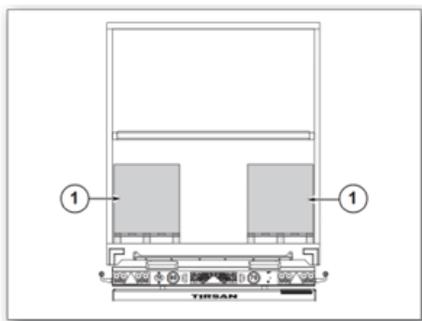
- Read the double-layer loading system guide,
- Traffic Regulations,
- Traffic Compliance Regulation,
- Should be used by people who have knowledge of Load Safety in vehicles.



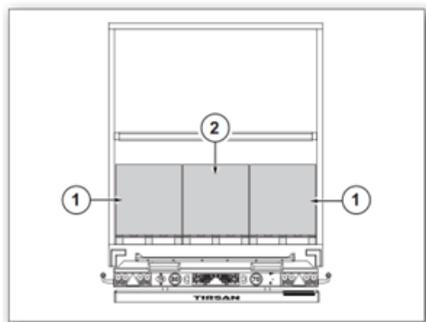
**Comply with accident prevention regulations, laws, safety instructions, traffic regulations.**

### 6.1.4. Dangerous Situations

- The application of the double deck loading system is only possible with the original load beams and with appropriate length settings.
- In partial loads, additional safety measures should be taken to prevent the load from slipping and falling (tow, beam, etc.).
- To keep the vehicle's center of gravity low, the upper floor should only be loaded if the lower floor is fully loaded. If the pallet weights are variable, light pallets should be placed on the upper floor and heavy pallets should be placed on the lower floor.
- Users should note that the total center of gravity of the vehicle varies depending on the loaded condition. This change in the center of gravity affects the roll stability of the vehicle.

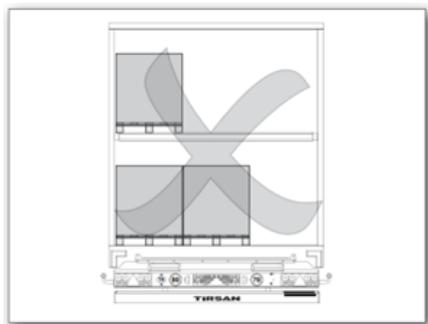


*2 pallet lower floor*



*3 pallet lower floor*

### Loading Order of Upper Floor

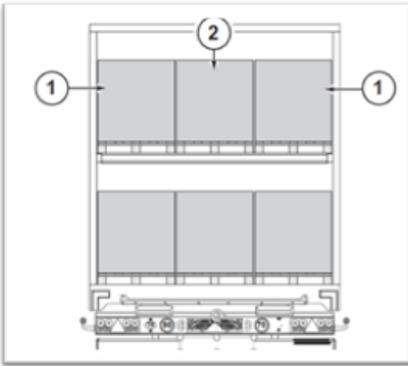
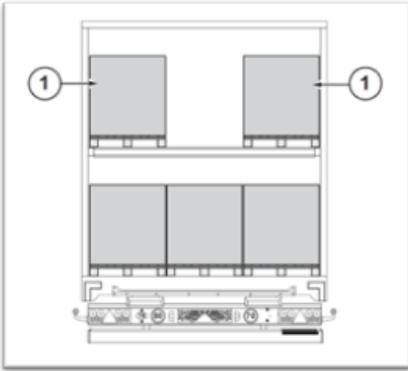


*Non equal divided freight*

### 6.1.5. Loading the Vehicle

#### Loading Order of Lower Floor

1. First and second pallet
2. Third Pallet



### 6.1.6. Partition Wall

A rail-type folding partition wall, which allows transportation at two different temperatures, is optionally available. The partition wall is shifted with the help of the rail on the ceiling, allowing the vehicle to be divided into two in the desired dimensions. Thus, loads can be carried at two different temperatures in the vehicle at the same time.



*Partition Wall*

### Operating the partition wall:

- The lock mechanism is opened by pulling the two ropes (1) hanging from the ceiling. The partition is lowered to the chest level.
- By pulling the steel rope (2) on the partition, the partition is brought to the desired position.
- After reaching the desired position, the partition wall is brought to a completely perpendicular position.
- Intermediate partition is fixed by pressing the locking mechanism (3) downwards.



*Partition wall closed*

### Folding down the partition wall back:

- The locking mechanism (3) opens.
- The partition wall is lifted upwards.
- With the help of the handle (4) located at the bottom, the partition wall is pushed upwards, and the partition is locked to the ceiling.
- The handle (4) snaps into place.



*Partition wall opened*

 **There is a risk of injury if the partition is not properly fixed.**

 **When removing the partition, the ventilation on the partition wall must be in the closed position.**

 **Pay attention to the load and objects inside the vehicle while sliding the partition.**

## 6.2. Customs Legislation

Your vehicle may have produced suitable to standards that stated in TIR legislation optionally.

There might be customs closure pieces to prevent the door from opening after the vehicle door is cleared. Also, some bolts are centered or closed with closure pieces due to customs legislation. Door handles have appropriate structure for customs seal.



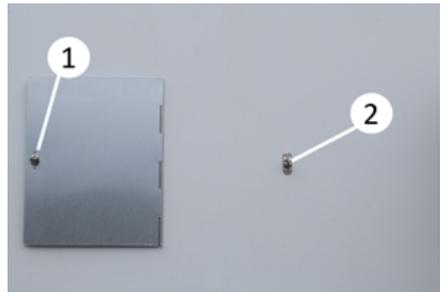
*Bolt closure piece*



*Custom seal*

TIR plates that located on the vehicle should be open through the operation and then should be closed afterwards.

**Opening the plate:** Open the closed plate sideways with switching the lock (1) 90° clockwise or counterclockwise, then fix the wing which opened with affixing to the lock (2) other side.



*TIR plate opening*



*TIR plate*

## 6.3. Intermodal Transportation

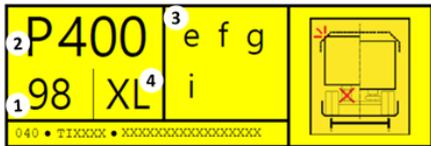
Semi-trailers can be carried on a train. These types of trailers are equipped with

4 units of huckepack brackets, special axles and air suspensions. Trailer is lifted and loaded to train with a crane.



Train loading brackets

You can reach the information about which wagon types of your vehicle can be loaded on from the sticker located at front of side panel.



Train loading sticker

- (1) 5th wheel height that must be used at the wagon which trailer loaded.
- (2) Height of lowest level of vehicle when it connected suitable 5th wheel.
- (3) Suitable wagon types.
- (4) Load safety certification that vehicle has.

 Be sure that the vehicle is loaded to suitable wagon type and height code.

 Fold upwards the foldable mudflaps before train loading.

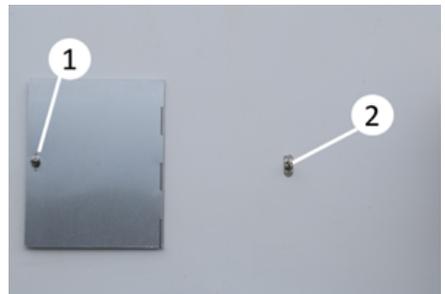
 Foldable bumper must be lifted in order to load the vehicle to some A1 type etc. wagons. Be sure to check wagon requirements before train loading.

 Be sure that airbags are discharged completely and the vehicle is at the lowest level while loading the vehicle to train.

 After the train loading operation, make sure that the airbags are properly seated, the mudflap and bumper are brought to the driving position, and the vehicle is taken to the driving height.

#### 6.4. Dangerous Goods Transportation (ADR)

Vehicles carrying dangerous goods should keep this plate in open position while driving. This plate is usually located at the rear of the vehicle, but its exact location may vary depending on the vehicle's construction. Approved vehicles in accordance with ADR legislation must have an ADR identification plate.



ADR plate opening



ADR plate locks

**Opening the plate:** Open the closed plate sideways with switching the lock (1) 90° clockwise or counterclockwise, then fix the wing which opened with affixing to the lock (2) other side.



**Dangerous materials that can be transported in the vehicle vary according to the vehicle structure and options. Make sure that the loads that comply with the regulations and your vehicle type are carried due to this.**

### 6.5. Transportation Compliant with ATP Legislation

Our vehicles may have been produced in accordance with the ATP legislation in order to preserve the quality and improve the conditions of perishable foodstuffs, especially during international trade.

If your vehicle has an ATP certificate, there are stickers showing the expiry date of the ATP certificate on the top of the side panel.



Side panel ATP label

You can also access detailed information from the ATP label on the front panel.

**ATP** APPROVED FOR TRANSPORT OF PERISHABLE FOODSTUFFS  
Zugelassen zur Beförderung leicht verderblicher Lebensmittel

**APPROVAL NUMBER:**   
Zulassungsnummer

**EQUIPMENT NUMBER:**   
Aufbau oder Fahrgestell-Nr.

**ATP MARK:** XXX  
ATP-Untersuchungszeichen

**VALID UNTIL:**   
gültig bis

Front panel ATP label

If your vehicle complies with the ATP certificate, you can get a manufacturer's declaration by contacting authorized services.



**Any changes to the vehicle body may cause your vehicle to be covered by the ATP legislation.**

### 6.6. Pharmaceutical Transportation

Your vehicle may have a 'pharma' certificate that allows you to transport drugs. Vehicles with this certificate have extra labels on the rear door and side panel.



Pharma label

### 6.7. HACCP Certificate

The purpose of this certification, named and defined by the Codex Alimentarius Commission as Hazard Analysis and Critical Control Points; is to document the compliance of the vehicles used in transportation with the hygiene criteria to transfer the food to the next point in the food chain.



*HACCP label*

## 7. LOADING AND LOAD SECURITY

### 7.1. Loading – Unloading Operations

#### Safety Reminder

- During the loading/unloading operations, the parking brake must be activated, and the vehicle must be fixed with Wheel chocks.
- To prevent slipping, tipping or sinking of the vehicle, the vehicle must be parked on a flat and firm surface.
- Ensure that you made a proper load distribution in compliance with all laws, rules and regulations.
- The suspension of the vehicle may be raised during the loading/ unloading process. Because of this reason, the vehicle height may be bigger than the permitted height limits. Always set the trailer in the driving position after loading and unloading. Always check height limits when entering tunnels and passages.
- Make sure that the weight or dimensions of the load do not exceed the technical and legal limits.
- Note that vehicle stability may be affected by the load distribution, the braking distance may be longer and a larger turning radius may be required.
- During loading, consider the laws of the countries you are going to and passing through, as well as the laws.
- Give attention to the maximum axle weight and total weight.
- Comply all national/international laws, rules, and regulations about loading and occupational safety.

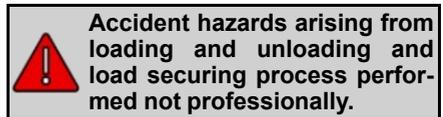
### 7.2. Loading

- The load must be fixed properly. Otherwise, the load may be moved

during transportation or emergency brakes.

- Place the Cargo as close as possible to the loading area's floor. The center of the gravity of the load must always be on the center line of the vehicle.
- The load must be fixed with straps or load securing profiles. Be sure that the load is fixed safely.
- After the loading operations, be sure that all the components are suitable for the transportation.

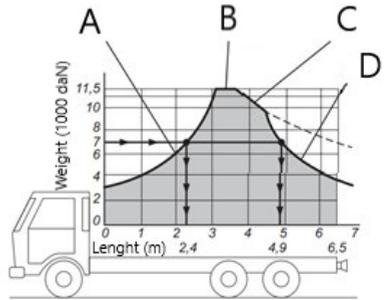
### 7.3. Safety Instructions



- Make sure that the cargo is properly distributed and in accordance with all laws, rules, and regulations. Check the loading limits, total weight, and axle load capacities. Do not exceed the weight limits which are defined in the user manual and identification plate. Comply with all national/international laws, rules and regulations about loading and occupational safety.
- Place the Cargo as close as possible to the loading area's floor. The center of gravity of the load must always be on the center line of the vehicle. Be all the regulations and laws about load security.
- While all vehicles are being designed, except for specific ones, it is assumed that the load will be distributed evenly on the load carriage surface and the calculations are done accordingly. Thus, the load up to the maximum carrying capacity of your vehicle must be distributed to ensure that equal weights are at the unit areas over the utilized carriage area. When the point loads are to be carried, a rigid distribution platform

must be placed under the load that will place the load up to the unit area capacity of the semi-trailer.

- While loading by crane or forklift, make sure that there is no one under and around the load.
- During the loading operation, do not exceed the permissible maximum height. A loading performed within the specified loading limit will ensure that you keep away from traffic accidents.
- It is dangerous and prohibited to fix the load to the vehicle surface via a tool apart from the permissible equipment.



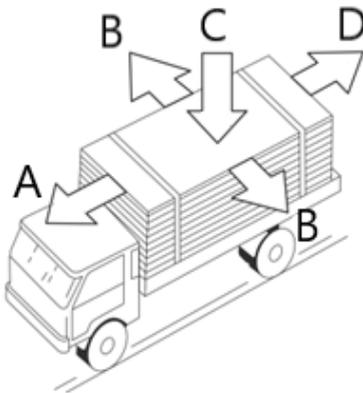
Load distribution

- A- Permissible front axle weight
- B- Permissible maximum weight
- C- Permissible rear axle weight
- D- Driving characteristic change limit

### 7.3.1. Load Security

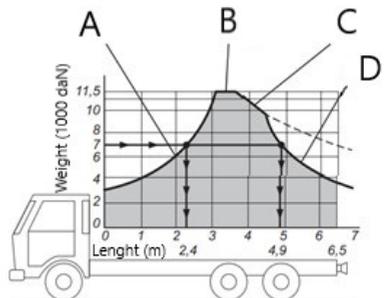
The international Highways Regulations specify the maximum loading capacities of tractors, trucks, trailers, semi-trailers along with how and how much of the tonnage and dimensions of these loads are to be secured.

For instance, here, the distribution of the load amount that can be carried by a 6x2 truck per its axle, to the vehicle's weight center according to its horizontal and vertical distance.



Forces may affect the vehicle

- A- Brake Force
- B- Centrifugal Force
- C- Static Weight Force
- D- Ramp / Hill Force



Load Distribution

- A- Permissible front axle weight
- B- Permissible maximum weight
- C- Permissible rear axle weight

D- Driving characteristic change limit

#### 7.4. Load Distribution and Load Limits of Tractor Semi-trailer Combination

- Ensure that you made a proper load distribution in compliance with all laws, rules, and regulations.
- In the loading process, take the loading limits, total weight, and axle load capacities into the account.
- Ensure that you have performed the loading in compliance with the laws and regulations of all countries where you drive the vehicle.

The axle loads of the tractor/semi-trailer combination may vary in a broad range in relation to the various loading conditions. Comply with the permissible axle loads specified in the operation manual or the axle manufacturer's manual.

Whenever you are in doubt, have your loads checked at a proper weighing station.

**\*Axle load: This is the load conveyed by an axle or an axle group.**

#### 7.5. Load Securing Rails

Your vehicle has optional load securing rails on the side panel, roof and front panel. These rails can be mounted on the panel or integrated into the panel.



*Load securing rails*



#### 7.6. Load Securing Profiles

Fast fixation of the load can be achieved by attaching load fixing profiles between the load fixing rails. These profiles should only be used for the purpose of securing the load.

The transported load should be fixed from both the front and the back with the help of these profiles so that there is no gap in between.



*Round type load securing profile*

In some vehicles without load securing rails, load securing profiles made of rubber/polyamide material on both ends are optionally offered. Panels must not be damaged during the fixing of these profiles. These profiles can be stored in the area located at the rear entrance of the vehicle and seen in the photo below.



*Profile stocking area*



Damage to the panels or the box may occur if the load securing profiles are tightened too much or if too many load retaining profiles are used in a narrow space.

### 7.7. Ferry Rings

During ferry operations, ferry rings are used to fix the vehicle to the ship. A movable or fixed type (welded) ferry ring can be used in your vehicle. Used for the same purpose in both types.



*Ferry ring*



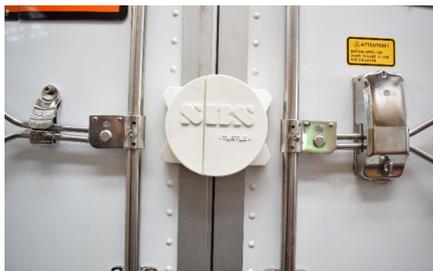
*Fixed type ferry ring*



These rings must not be used to lift the vehicle.

### 7.8. Extra Mechanical Lock

The extra mechanical lock can be mounted on the rear door. These locks are produced from stainless steel and provide extra cargo security. Our extra mechanical lock options are suitable for TAPA norms.



*SBS Turtle housing*

Please use the key and separate the padlock's body and U part of the padlock.



*Padlock*

U part will be positioned above the Turtle lock housing and padlock's body will be positioned below the Turtle lock. Lock the padlock body and U part together with key.



*Padlock*

Remove the key and be sure that padlock is locked properly.

The padlock will be delivered to you with a key card. If you lose the key, you can buy a new key with the key card.

If you buy a “Key Different” padlock, that padlock has a unique key and each padlock has only 1 type key.

If you buy a “Key Alike” padlock, your fleet has a unique key and all padlock in your fleet has only 1 type key. Each key in your fleet may open the other padlocks in your fleet. Another key cannot open your padlocks.

### 7.9. Electronic Lock and Telematic

Telematics that allows you to monitor your vehicle remotely or electronic locks that provide extra security are optionally available. Telematic and electronic locks should be used and maintained according to the manufacturer’s manual. You can contact the manufacturer’s authorized services for your warranty requests about the electronic lock or telematic.



Telematic

### 7.10. Load Security Certification

The vehicle superstructure may have been produced in accordance with the DIN EN12642 legislation. This legislation indicates that in case of a possible accident if the load carried inside the vehicle hits the panels, no permanent damage will occur to the panels.



Load security certification sticker

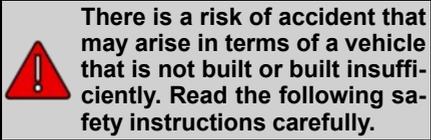
For the maximum allowable panel strengths, you can check the load security label on the front panel.

Geprüfte Aufbaufestigkeit / Confirmed Bodystrength		
Vorderwand / Frontwall	0,5 P	xx.xxx kg
Seitenwand / Sidewall	0,4 P	xx.xxx kg
Seitenwand Doppelstock / Sidewall Doubledeck	0,5 P	xx.xxx kg
Rückwand / Rearwall	0,3 P	x.xxx kg
P = xx.xxx kg		
Fahrzeugaufbau entspricht	<b>EN 12642-XL</b>	
Vehicle body in compliance with		

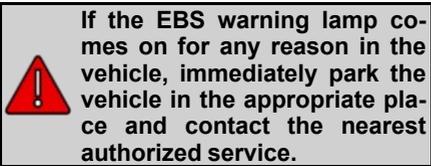
Front Wall load securing sticker

## 8. INSPECTION AND MAINTENANCE

### 8.1. Safety Instructions



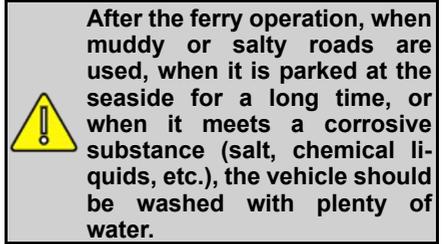
- Obey all traffic laws, rules and regulations.
- Comply with all environmental regulations. When removing operation, maintenance and cleaning residues, act according to these rules.
- Maintenance operations should be carried out by authorized services.



### 8.2. Main Principles

The purpose of the maintenance operations on the vehicle is to provide the following:

- Always maintain the operating status of the semi-trailer,
- To prevent unexpected breakdowns and to extend the life of the vehicle,
- To prevent permanent damage to the semi-trailer,
- To ensure that the semi-trailer maintains its value,
- Reducing repair time for unavoidable repairs,
- The vehicle should be regularly cleaned and kept clean.



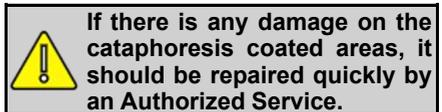
### 8.3. Checks to Be Performed Of The Time of the Delivery

- Check that the electrical system and connections and all lighting elements, brake and signal lamps are working properly.
- Check that the documents of the vehicle are in the vehicle.
- Grease the wheel plate and king pin.
- Check the tightness of the wheel nuts.
- Check that the landing gear works in both speed ranges.

### 8.4. Cataphoresis Coating

Your vehicle chassis or components may be cataphoresis coated.

Electro-coating (Cataphoresis) method is a coating method based on the accumulation of paint on the part with electric current. The most complicated parts and assemblies that require a high level of performance in terms of painting quality are covered.



### 8.5. Galvanized Coating

Your vehicle chassis or components may be galvanized.

White mottling on the hot-dip galvanized surface of new vehicles during the winter is normal and does not affect the quality

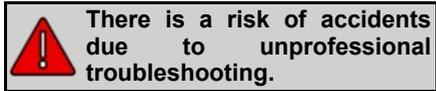
or life of the coating. Galvanized surfaces can be washed with water at a maximum temperature of 50 °C for the first 3 months.

## 8.6. Periodic Maintenance and Controls

For periodic maintenance and checks, see the warranty and maintenance manual.

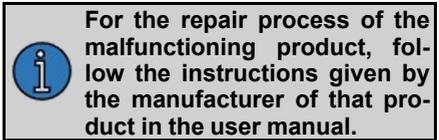
## 8.7. Trouble Shooting

### 8.7.1. Safety Regulations

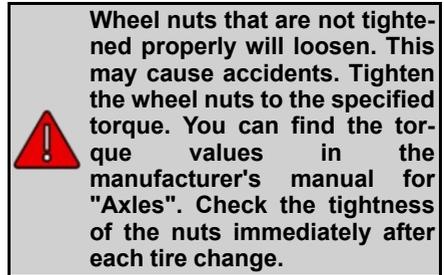


Read the following safety regulations.

- Comply with all laws, rules, and regulations to prevent accidents.
- Comply with all environmental protection rules. Dispose of process residues, cleaning aids and other residues in accordance with these rules.
- Troubleshooting work should only be carried out by trained personnel.
- Before troubleshooting, park the vehicle on a firm, and even surface and level it, and make sure that it is secured against sliding/tipping.
- Upon completion of the repair, ensure that all protective devices are correctly placed and secured.
- Only use original spare parts!

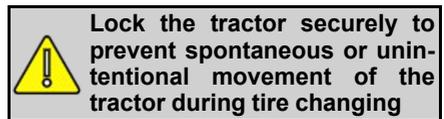


### 8.7.2. Spare Tire Replacement



#### Removing the tire:

- Park the vehicle in a safe place away from traffic.
- Secure the vehicle with wheel chocks against rolling away or tipping over.
- Apply the springloaded parking brake. (See: "Construction Components and Use of Semi-trailer" for detailed information.)



- Loosen the wheel nuts only one turn.
- Place the lever jack under the axle as close as possible to the tire to be replaced.
- Raise the axle until the tire to be replaced is no longer in contact with the ground. Remove the wheel nuts.



**Take the damaged wheel off the axle, grab the wheel only by the right and left cheeks, never remove it by holding the top or bottom.**

Remove the spare tire from its holder. See spare tire holder section for detailed information.

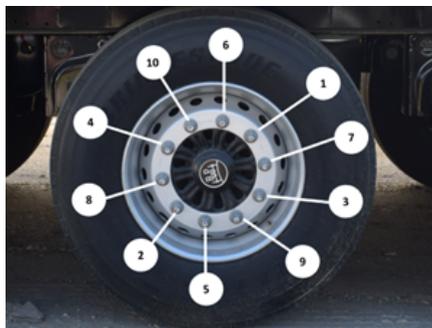
### **Fitting The Spare Tire:**

- Position the spare tire as close to the wheel hub as possible.
- Lightly oil the nut threads when refitting the wheel.
- Insert a bar directly under the tire and push the wheel bolts into the holes of the rim by leveraging. Be careful not to damage the threads of the studs during this process.
- Tighten the wheel nuts as much as possible by hand tightening.
- Tighten the nuts with the wrench in the order shown in the picture.
- Lower the jack and tighten the wheel nuts in the same sequence with the required torque. Repeat this process after the first 80 km and daily for the first week.
- Check the wheel nuts for torque every week.



**Possible problems that may arise in the future can be prevented by checking all the bolt holes on the rims against ovalization at regular intervals.**

Excessive tightening of the nuts of the wheel bolts will cause radial deformations around the hole, and if not tightened enough, it will cause deformations around the hole.



*Bolt Holes In Rimes*



**Follow all maintenance instructions, including those of the manufacturer of the vehicle parts, and always keep these instructions in your vehicle.**



**The manufacturer cannot be held responsible for wear and defects caused by excessive force, or for malfunctions caused by unauthorized modifications. Irregularities or functional faults in the braking system must be rectified immediately! Only use vehicles whose brake system is functioning properly.**



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**Kässbohrer**

*Ingenuity, since 1893*