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## USER MANUAL BOX SERIES



**Kässbohrer**

*Engineering since 1893*

# INDEX

<b>FOREWORD</b> .....	<b>5</b>
<b>1. GENERAL INFORMATION AND SAFETY INSTRUCTIONS</b> .....	<b>6</b>
1.1. About the User Manual.....	6
1.2. Meanings of Symbols Used in User Manual.....	6
1.3. Personal Protective Equipments .....	7
1.4. Terms of Use and Safety Information .....	7
<b>2. MAIN INFORMATIONS</b> .....	<b>9</b>
2.1. Vehicle Identification Plate .....	9
2.2. Brake Data Plate .....	9
2.3. VIN (Chassis) Numbers .....	9
2.4. Warranty and Responsibility .....	10
<b>3. TRAILER RUNNING GEAR AND USAGE INSTRUCTIONS</b> .....	<b>11</b>
3.1. Brake System .....	11
3.1.1. Air Couplings .....	11
3.1.2. Compressed Air Tanks.....	13
3.1.3. EBS Socket .....	14
3.1.4. Rollover Stability Support (RSS) .....	15
3.1.5. PREV (Park Release Emergency Valve).....	15
3.1.6. Brake Chambers .....	16
3.2. Suspension System.....	17
3.2.1. Manuel Control Lever .....	17
3.2.2. Auto Reset.....	18
3.2.3. Electronic Controlled Air Suspension (ECAS) .....	18
3.2.4. Second Driving Height.....	18
3.2.5. Manometer (Axle Load Indicator).....	19
3.2.6. Smartboard (Info Center).....	19
3.2.7. Tail GUARD .....	19
3.3. Electrical System.....	20
3.3.1. 15 Pin Socket .....	20
3.3.2. 2x7 Pin Socket .....	21
3.3.3. Light System .....	22
3.4. King Pin.....	23
3.5. Landing Gear.....	23
3.5.1. Front Landing Gear’s Working Principle .....	23
3.5.2. Rear Landing Gear Working Principle .....	24
3.6. Side Protection Equipment (Side Underrun Protection).....	25
3.7. Semi-Trailer Axle System.....	26
3.7.1. Self-Steering Axles.....	26
3.7.2. Axle Lifting.....	27
3.7.3. Hubodometer .....	28
3.8. Steering System.....	28
3.8.1. Mechanical Steering System .....	28
3.9. Tires .....	29

3.10. Spare Wheel Holder .....	29
3.11. Mudguards .....	32
3.12. Wheel Chock.....	32
3.12.1. Pin Type Wheel Chock Holder.....	32
3.12.2. Pocket Type Wheel Chock Holder.....	32
3.13. Boxes and Storage Units.....	33
3.13.1. Steel Toolbox.....	33
3.13.2. Steel Food Box.....	34
3.13.3. Plastic Toolbox .....	34
3.13.4. Fire Extinguisher Cabinet .....	35
3.13.5. Water Tank.....	35
3.13.6. Document Box.....	36
3.13.7. Pallet Box.....	36
3.13.8. Double Deck Bar Storage Box .....	37
3.13.9. Stainless Toolbox.....	37
3.14. Rear Bumper (Rear Protection Equipment) .....	37
3.14.1. Fixed Rear Bumper .....	37
3.14.2. C Type Rear Bumper.....	37
3.14.3. Foldable Bumper .....	37
3.14.4. Ferry Skid.....	38
3.15. The Floor.....	38
3.15.1. Phenol resin coated plywood.....	38
3.15.2. Laminated Wood + Steel Omegas .....	39
3.16. Ladders .....	39
3.16.1. Foldable Sliding Ladder .....	39
3.17. Tail Lift .....	40
3.18. Lubrication System .....	40
<b>4. UPPERSTRUCTURE COMPONENTS AND USE.....</b>	<b>41</b>
General look at the upperstructure .....	41
4.1. Front Panel .....	41
4.2. Rear Panel.....	41
4.2.1. Hidden Lock.....	41
4.2.2. Shutter Door.....	41
4.2.3. Cantilever (Tail lift) + Top Flap .....	42
4.2.4. Rear door handle.....	42
4.3. Side Panel .....	43
4.4. Pillars .....	43
4.4.1. Rear Pillars.....	43
4.4.2. Front pillar .....	43
4.5. Roof .....	43
4.5.1. Transparent Roof .....	43
4.5.2. Insulated roof.....	44
4.5.1. Interior Lighting.....	44
4.5.2. Ramp Buffers.....	44
<i>Ramp buffers</i> .....	45
4.6. Panel Inside Protection Plates.....	45

4.6.1.	Front Panel Protection Plates .....	45
4.6.2.	Side Panel Protection Plates .....	45
4.6.3.	Rear Door Protection Plate .....	45
4.7.	Ventilation Covers .....	45
<b>5.</b>	<b>TRANSPORTATION PROCESS .....</b>	<b>46</b>
5.1.	Pre-Driving Checks.....	46
5.2.	Semi-Trailer and Tractor Coupling .....	46
5.3.	Cautions During the Parking and Stopping .....	47
5.4.	Important Technical Considerations .....	47
5.4.1.	Fire Extinguisher.....	47
5.4.2.	Wheel Chocks.....	48
5.4.3.	Modifications on the Trailer .....	48
5.4.4.	Air Leakage .....	48
5.4.5.	Considerations For the Environment.....	48
5.5.	Cleaning the Vehicle .....	49
<b>6.</b>	<b>TRANSPORTATION SOLUTION.....</b>	<b>50</b>
6.1.	Load Transportation with Double Deck .....	50
6.1.1.	Rail Type Double Deck.....	50
6.1.2.	Safety Instructions .....	50
6.1.3.	Proper Terms of Use .....	50
6.1.4.	Dangerous Situations .....	51
6.1.5.	Loading the Vehicle.....	51
6.2.	Customs Legislation.....	52
6.3.	Intermodal Transportation.....	52
6.4.	Dangerous Goods Transportation (ADR).....	53
<b>7.</b>	<b>LOADING AND LOAD SECURITY .....</b>	<b>54</b>
7.3.	Safety Instructions.....	54
7.3.1.	Load Security.....	55
7.4.	Load Distribution and Load Limits of Tractor-Semi-trailer Combination.....	55
7.5.	Lashing Rings .....	56
7.5.1.	U Type Lashing Rings.....	56
7.6.	Lashing Rails .....	56
7.7.	Load Securing Profiles .....	56
7.8.	RO-RO Rings.....	57
7.9.	Extra Mechanical Lock.....	58
7.10.	Electronic Lock and Telematic.....	58
7.11.	Load Security Certification .....	59
<b>8.</b>	<b>INSPECTION AND MAINTENANCE .....</b>	<b>60</b>
8.1.	Safety Instructions.....	60
8.2.	Main Principles .....	60
8.3.	Checks to Be Performed Of The Time of the Delivery .....	60
8.4.	Cataphoresis Coating.....	60
8.5.	Galvanized Coating.....	60
8.6.	Periodic Maintenance and Controls.....	60

8.7.	Trouble Shooting .....	61
8.7.1.	Safety Regulations.....	61
8.7.2.	Spare Tire Replacement.....	61

## FOREWORD

First, thank you for purchasing a vehicle produced by us.

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. Personal Protective Equipments

Personal protective equipments serves the purpose of preventing injuries and are prevents injuries and are determined by regional regulations depending on the load carried.

People who will work or perform operations on the vehicle must wear proper and appropriate protective clothing.

- Depending on the load to be carried, the eyes, ears, body, and respiratory tract must be protected with the relevant protective equipment.
- As a rule, gloves and work shoes are always used.



**It is obligatory to use appropriate personal protective equipment during the operations.**



**Long hair is particularly dangerous when working on the vehicle, regardless of whether it is loose or tied up, and it should be protected properly to avoid tangling.**



**Wearing a tie, necklace and/or dangling jewelry when working on the vehicle is strictly prohibited. They may get caught in moving parts or mechanisms and cause injuries and even death.**

#### Protective Gloves



During the operation, protective gloves must be used. Please make sure you are using the correct type of gloves when you are working with hot parts or chemicals.



**Gloves should fit snugly. Otherwise, there is a risk of them getting caught in moving parts or mechanisms.**

#### Protective Gloves



While working on the vehicle, appropriate overalls must be worn.

- Overalls should not have pleats, buttons or external pockets and their closure system should be made in such a way that they can be opened as soon as possible in case of an emergency.
- Interior pockets should have fastenings to close them up. Cuffs should be adjusted to fit the wrist.

#### Protective Helmets



When working around the vehicle, a lightweight helmet approved by an accredited institution should be worn.

#### Protective Ear Plugs



A hearing protective device (headsets or ear plugs) should always be used around self-propelled vehicles.

#### Protective Goggles



Protective goggles should be worn during all maintenance operations.

#### Protective Mask



Appropriate protective masks should be used when working with substances that are dangerous to breathe or in dusty environments.

### 1.4. 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.

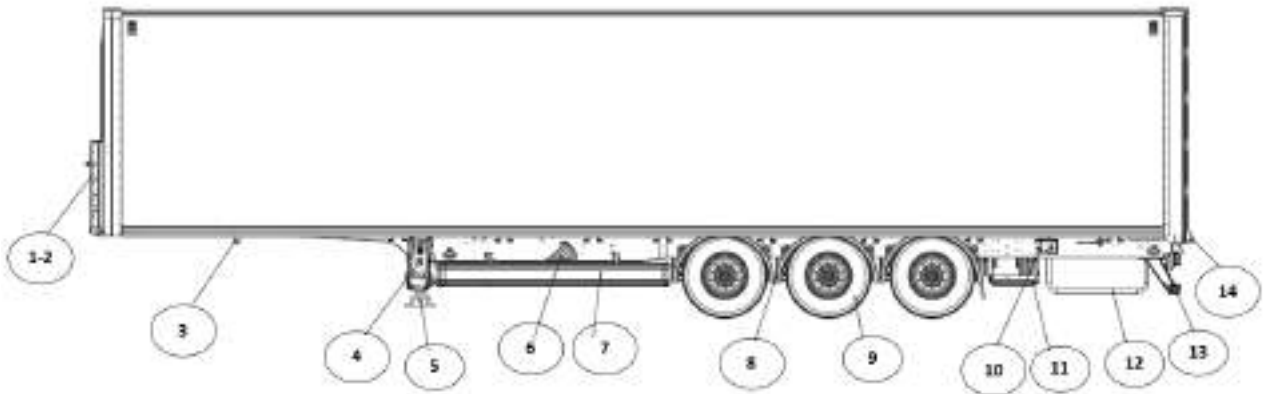


## **2.4. Warranty and Responsibility**

Our trailers, semi-trailers and truck onboard 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 registration date of the vehicle that is stated in the registration paper. 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 Legs
- 5 Wheel Chocks
- 6 Side Underrun Guards
- 7 Mudguards
- 8 Tires
- 9 Driving Level Control Valve
- 10 Spare Wheel holder
- 11 Rear Underrun Guards
- 12 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



*C (UK) kaplin bağlantısının yapılması*

- 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.

At the cold or humid weather, moisture in the water can get the

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.**

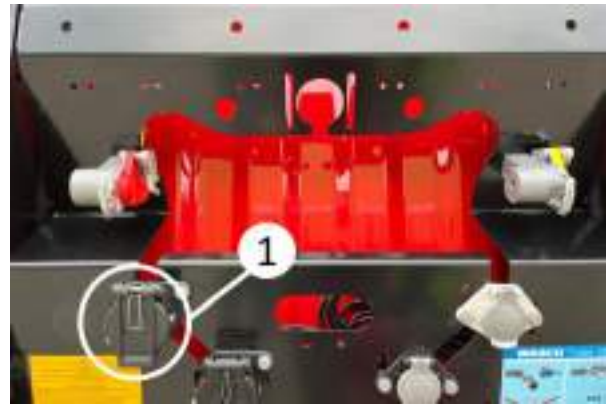


**When the air tank pressure is lower than 4,5 bars, the EBS warning lamp on the tractor turns on and the driver can see this situation.**



**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 approx. 2 seconds.

After 7 km/hour 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. Rollover Stability Support (RSS)

Rollover stability support (RSS) is integrated into the trailer modulator. 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

to 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 demounted, 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. Deactivation of Brake Chambers

The brake chambers may be deactivated manually in emergency situations.



*Deactivation of brake chambers*

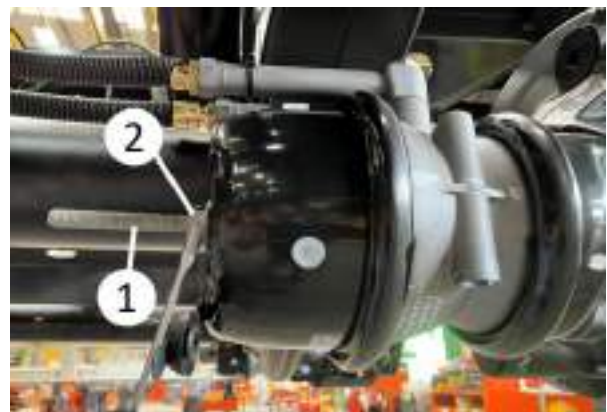
1. Boreholes
2. Release rod
3. Nut
  - Remove the release rod (2).
  - Insert the release rod (2) to boreholes (1) and screw till the rod (2) will be fitted completely.
  - Completely screw in the nut (3) to the release rod (2).

The brake chambers will be deactivated after this operation.



**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.



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. Tail GUARD

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.



Tail GUARD



**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.**



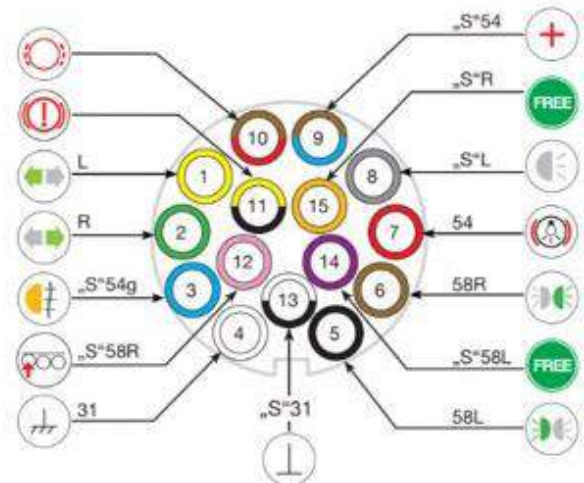
**Please be sure that the truck and trailer are suitable for the norms/standard about electrical systems. Otherwise, electrical problems will occur.**

#### 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.



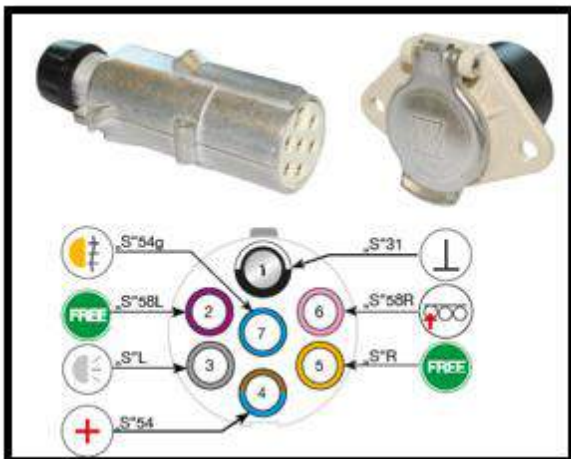
Pin	Meaning
1	Left indicator
2	Right indicator
3	Fog lamp
4	Ground
5	Left taillight
6	Right taillight
7	Brake light
8	Reverse light
9	Supply line
10	Empty
11	EBS
12	Axle lifting
13	Ground
14	Empty
15	Empty

### 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 Socket

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



ISO 1185 Socket

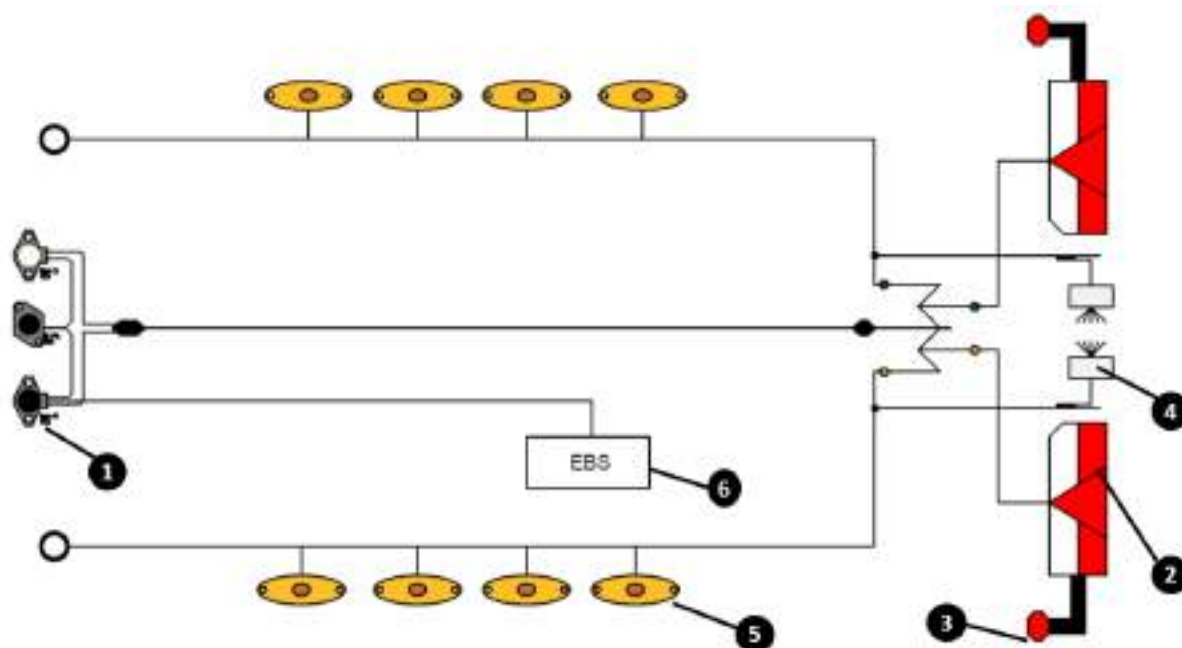
Pin	Meaning
1	Ground
2	Left taillight
3	Left indicator
4	Brake light
5	Right indicator
6	Right taillight
7	EBS



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.


### 3.3.3. 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.

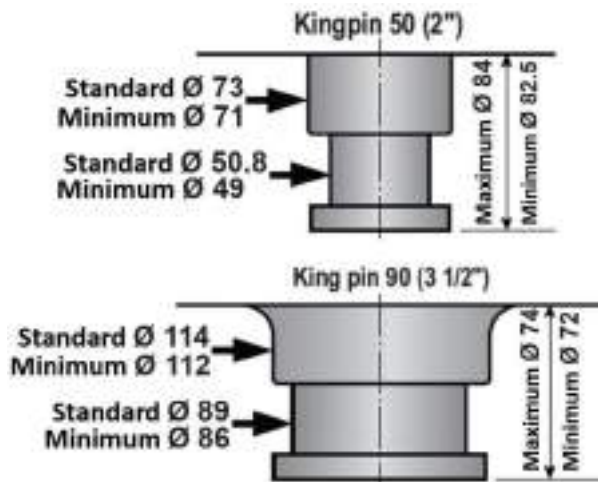
 **If you add or remove any lamps on the vehicle, your vehicle may be non-suitable for regulations.**

 **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.**

### 3.4. King Pin

King pin is a shaft which connects truck and trailer 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.



*Kingpin*



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

Your vehicle may be equipped with a double king pin slot. You can remove the bolts around the king pin and mount king pin to the other slot. Please be careful about the total length of the vehicle according to country regulations

and be sure that the total length is suitable for regulations.

### 3.5. Landing Gear

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

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

The landing gear crank handle (1) should be removed from it's 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 leg view*


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

### 3.5.2. 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.**

### 3.5.2.1. 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.

### 3.5.2.2. 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.**

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.

### 3.6. 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*




*Opened Position*



*Closed Position*

 **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.**

**Removing 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.


### 3.7. 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).**

#### 3.7.1. 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.**

##### 3.7.1.1. 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*

### 3.7.1.2. 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*

### 3.7.2. 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.**

### 3.7.3. 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.



*Hubodometer*

## 3.8. Steering System

### 3.8.1. 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*

### 3.9. 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.**

### 3.10. Spare Wheel Holder

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



**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.**

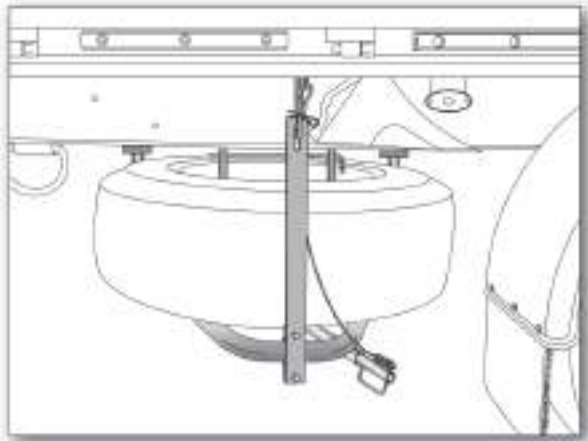


**The tires are heavy parts. Be careful about ergonomics and occupational health and safety rules during the tire replacement. There is a risk of pinching, falling, and cutting.**



**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.**

### 3.10.1.1. Swedish Type Spare Wheel Holder

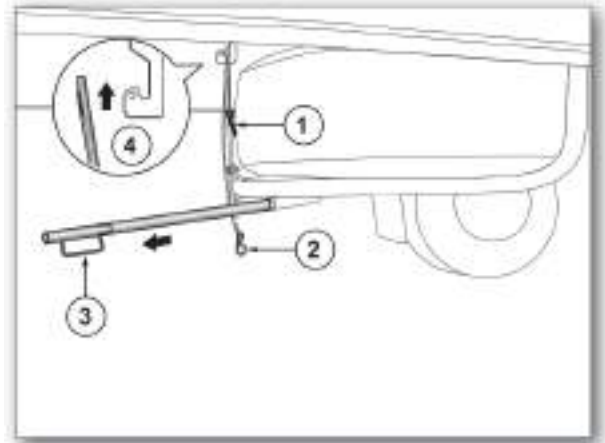


*Spare Wheel Holder*

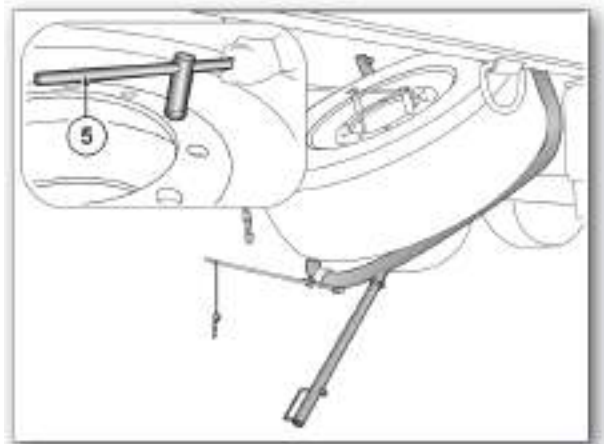
#### Removing the spare wheel:

- 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.

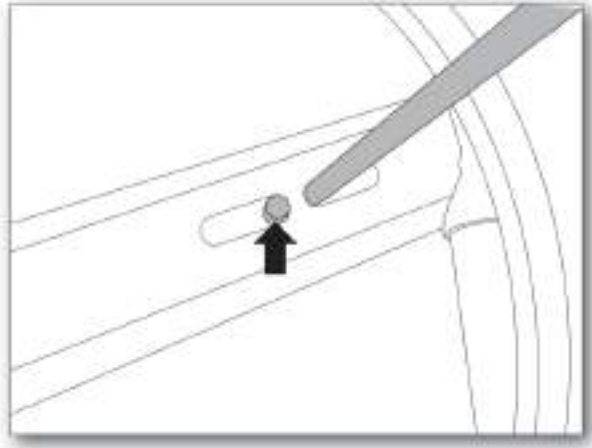


*Removing The Spare wheel*



*Removing The Spare wheel*

#### Placing the spare wheel:



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.

### 3.10.1.2. 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

- 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.

### 3.10.1.3. 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. 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.**

### 3.12. 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.**

#### 3.12.1. 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.

#### 3.12.2. 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.

### 3.13. 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.**

#### 3.13.1. Steel Toolbox

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

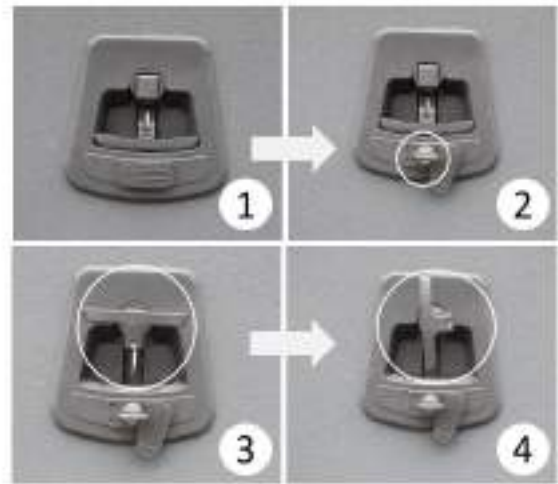
#### Opening the toolbox:

- 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*

### 3.13.2. Steel Food Box

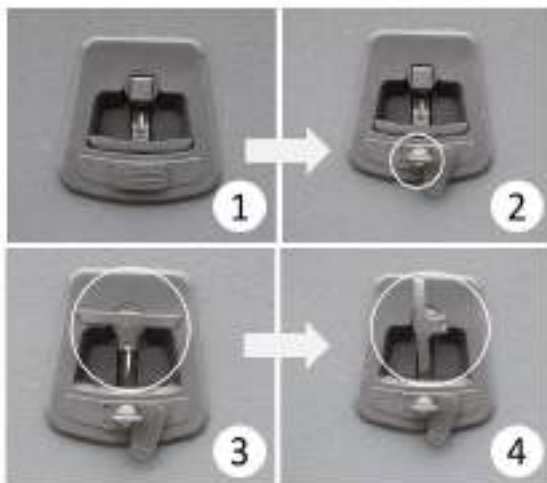
This type of toolboxes is usually positioned on the passenger side. There might be some compartments and gas cylinders for compartment for cooking.

#### 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*



*Unlocking steel food box*



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.

### 3.13.3. Plastic Toolbox



*Plastic 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.

### 3.13.4. Fire Extinguisher Cabinet

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



**Fire extinguishers must be maintained regularly, and their expiration dates must be observed.**



*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*



### 3.13.5. 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*



*Cylindric type document box*



*Plastic water tank*

### 3.13.6. 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*

### 3.13.7. 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.**

### 3.13.8. 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.

### 3.13.9. 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. 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.**

### 3.14.1. Fixed Rear Bumper



*Fixed rear bumper*

### 3.14.2. C Type Rear Bumper



*C type rear bumper*

### 3.14.3. 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 huckepack operations, the bumper must be folded before the loading.**



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

### 3.14.4. Ferry Skid

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

#### 3.14.4.1. Fixed Type Ferry Skid

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

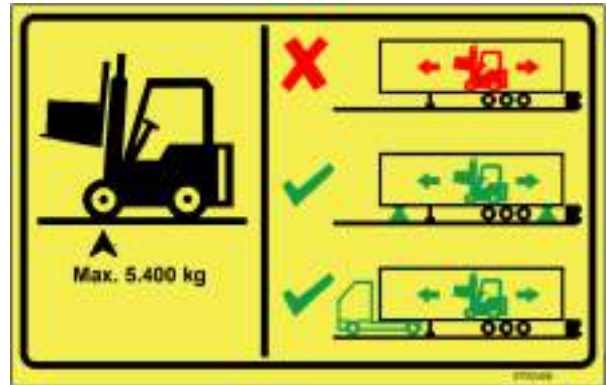


*Fixed type ferry skid*

### 3.15. The Floor

The floor of your vehicle can be made of phenol resin coated plywood, laminated wood, steel, etc. materials may be covered.

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 from the label on the vehicle or from 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.**



**In cold weather, there may be icing on the floor. Beware of slipping hazard.**



**In case of damage to the vehicle floor, it must be replaced with an original spare part. The maximum allowable forklift front axle load will be reduced if low quality materials are used.**

#### 3.15.1. Phenol resin coated plywood



*Phenol resin coated plywood*

### 3.15.2. Laminated Wood + Steel Omegas



Laminated Wood + Steel Omegas

- Break the ladder from the folding point downwards to bring it to the usage position.



Foldable sliding ladder

### 3.16. 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.**



Foldable sliding ladder, removing the pin

#### 3.16.1. 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.



Foldable sliding ladder, removing the pin



**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 counter-clockwise.



*Foldable sliding ladder*



*Foldable sliding ladder*

### 3.17. 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**

### 3.18. 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 system*

## 4. UPPERSTRUCTURE COMPONENTS AND USE

### General look at the upperstructure

#### 4.1. Front Panel

Your vehicle has a KTL coated and painted steel front panel.



*Ön panel*

#### 4.2. Rear Panel

There are 3 types of rear panels behind the vehicle.

- Hidden Lock
- Shutter Door
- Cantilever (Tail lift) + Top Flap

##### 4.2.1. Hidden Lock

To open the door, the latches on the handle at the bottom of the door are pressed. The door handles are pulled towards you and the door is separated from the vehicle body. The door handles are made parallel with the door again. The door is fixed to the side panel.



*Hidden Door*



If the door handles are not aligned with the door, damage to the side panel may occur.

##### 4.2.2. Shutter Door

By sliding the part on the door handle, the door handle is pulled upwards.

The door opens by pushing upwards. Here, it should be ensured that the door is parallel to the ground. Otherwise, the door may close and cause injury.



*Shutter door*



**Make sure that the tow rope stays inside the vehicle while the door is closed.**

#### 4.2.3. Cantilever (Tail lift) + Top Flap



*Cantilever (Tail lift) + Top Flap*

- For tail lift use, turn on the tail lift by referring to the manufacturer's manual.
- With the help of the rope on the top flap, the top flap is pulled back slightly and goes upwards with the help of pistons.
- To close the door, close the top flap by pulling the rope down and then close the tail lift.



**Due to the pistons in the top flap, the cover can be opened quickly. Beware of the possibility of an accident.**

#### 4.2.4. 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*

### 4.3. Side Panel

Your vehicle has a side panel manufactured using glass reinforced polyester (GRP) – plywood – glass reinforced polyester (GRP).



*Side panel*

### 4.4. Pillars

Two different types of pillars are used in vehicles.

- Rear pillars
- Front pillars

#### 4.4.1. Rear Pillars

There are rear pillars made of steel at the rear of the vehicle. Cables of roof lamps or position lamps can pass through the rear bollards.



**For this reason, cutting/drilling should not be done except the authorized service.**



*Rear pillar*

#### 4.4.2. Front pillar

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



*Front pillar*

### 4.5. Roof

#### 4.5.1. Transparent Roof

A transparent roof made of galvanized steel omega and glass-reinforced polyester sheet is optionally offered, allowing daylight to enter the vehicle and allowing easier loading and

unloading operations.



*Transparent roof*

#### **4.5.2. Insulated roof**

Your vehicle has an insulated roof made of sandwich panels.



*Insulated roof*

#### **4.5.1. Interior Lighting**

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



*Interior lighting*

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

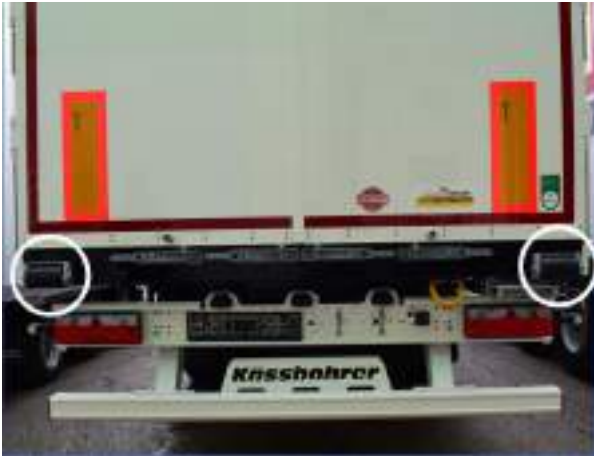


*Interior lighting switch*

In vehicles with a taillift, the interior lights may be connected to the control panel of the taillift. In this case, the interior lights will be controlled via the rear taillift's control panel.

#### **4.5.2. Ramp Buffers**

In order to prevent damage to the doors or door lock systems by hitting the loading ramp or any obstacle while the vehicle is reversing, a ramp buffer can be placed at the rear of the vehicle, just below the doors, depending on the customer's request.



*Ramp buffers*

## 4.6. Panel Inside Protection Plates

### 4.6.1. Front Panel Protection Plates

There are protection plates and / or plywood to protect the front panel.



*Front panel protection plates*

### 4.6.2. Side Panel Protection Plates

At the bottom of the side panel, there is a protection plate that protects the side panel from impacts.



*Side panel protection plate*

### 4.6.3. Rear Door Protection Plate

There is an optional protection plate on the rear door of the vehicle that protects the rear door from impacts.

## 4.7. Ventilation Covers

There are ventilation covers on the side panels that allow air to enter the vehicle.



*Ventilation covers*



**Pressurized water directly on the ventilation covers during washing may cause water to enter the vehicle.**

## 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.



**If your vehicle is driven at the wrong 5th wheel height, malfunctions may occur in the vehicle. You may have height problems.. The vehicle must be driven at the correct fifth wheel height.**

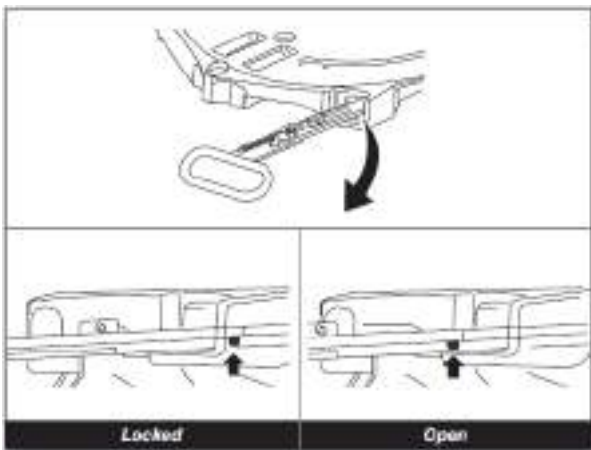
Apply the following steps to uncouple the semi-trailer with the tractor:

- 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.**



*Fifth wheel locking system*

### 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.

## **5.5. 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.



**Do not use flammable liquids or toxic substances for cleaning.**

## 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).

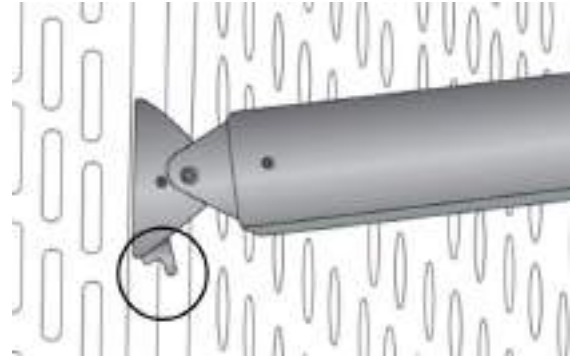


*Rail Type Double Deck*

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

- Before the installation and use of the double-deck loading system, carefully read the user manual and load in accordance with these rules.
- Do not load without making sure that the double deck profile tips are fully seated. The profile may become dislodged and cause serious injury or damage.
- Make sure that both ends of the double deck profile fit into the opposite holes and are parallel to the floor. Otherwise, you may damage the movable mechanism while removing the profile.
- Make sure that the load on the second floor is fixed.

#### 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.



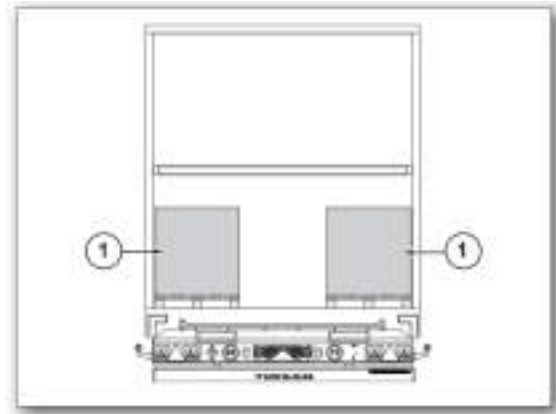
*Non equal divided freight*

#### 6.1.5. Loading the Vehicle

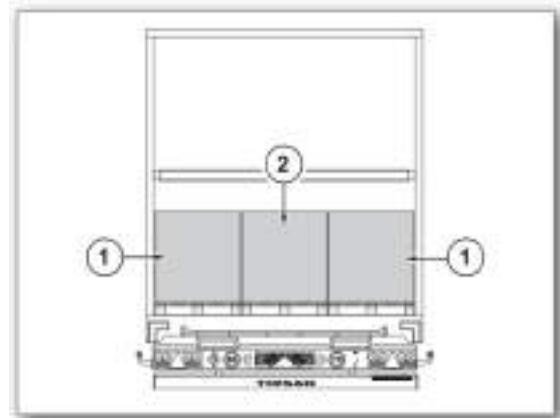
##### Loading Order of Lower Floor.

1. First and second pallet

##### 2. Third Pallet

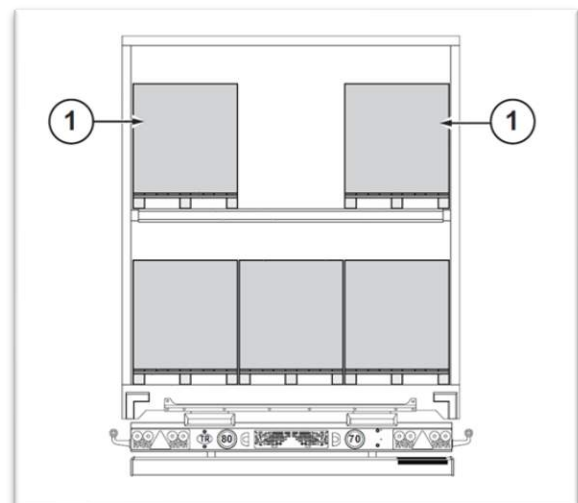


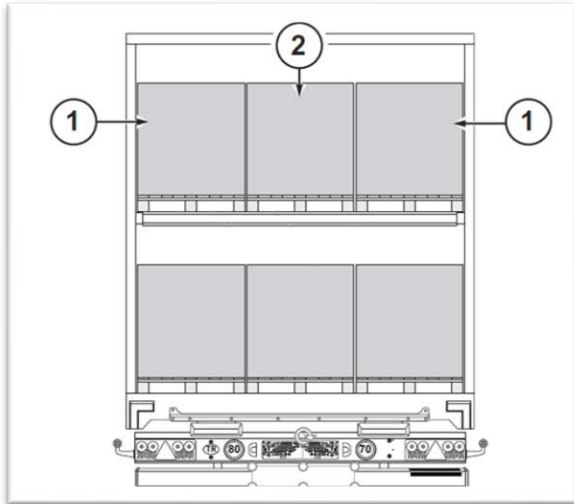
*2 pallet lower floor*



*3 pallet lower floor*

##### Loading Order of Upper Floor





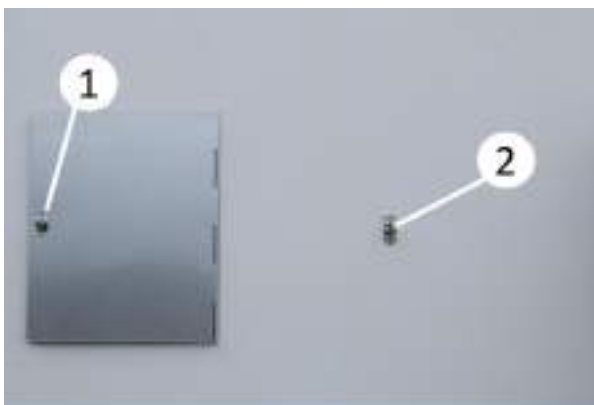
## 6.2. Customs Legislation

Your vehicle may optionally be produced in accordance with the standards specified in the TIR legislation.

Door handles have a suitable structure for customs stamping.

The TIR plates that can be found on the vehicle should be opened during customs transportation and should be closed again at the end of the operation.

**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.



*Opening TIR plate*



*TIR plate*

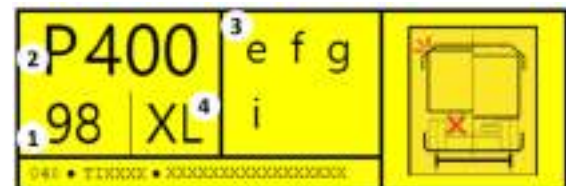
## 6.3. Intermodal Transportation

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.**



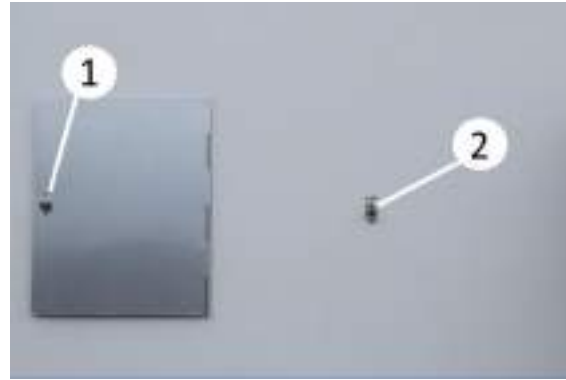
**Be sure that airbags are discharged completely and the vehicle is at the lowest level while loading the vehicle to train.**



**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.**

## 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

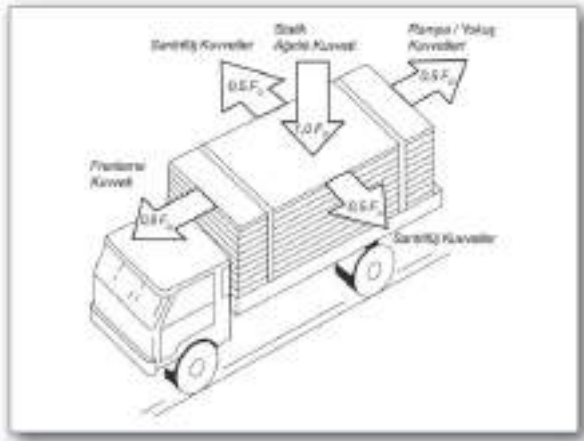


**Accident hazards arising from loading and unloading and load securing process performed not professionally.**

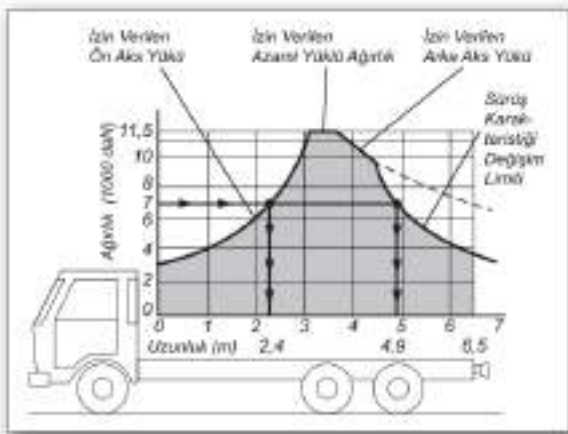
- Make sure that the cargo is properly distributed and in accordance with all laws, rules, and regulations. Check the loading limits, total weight, and axle load capacities. Do not exceed the weight limits which are defined in the user manual and identification plate. Comply with all national/international 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.



*Forces may affect the vehicle*

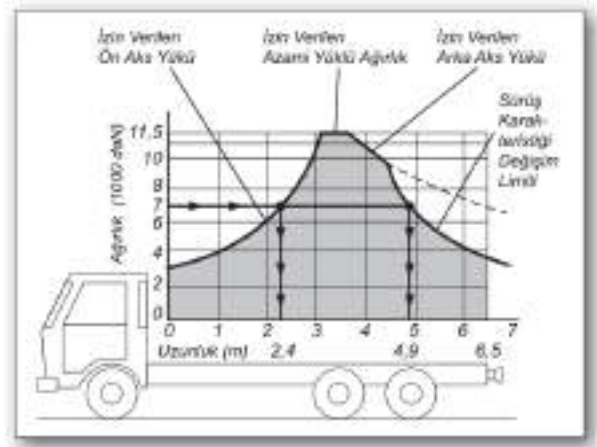


*Load distribution*

### 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.



*Load Distribution*

### 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. Lashing Rings

Your vehicle may be equipped with lashing rings which will allow fixing the cargo to the floor.

### 7.5.1. U Type Lashing Rings

These parts will be positioned on the side rive of chassis. You may fix the Cargo with U type lashing rings.

You may pull the rings and mount the straps.



*U type lashing rings*

## 7.6. Lashing Rails

Lashing rails on the side Wall, roof and front panel may be provided optionally. These rails may be produced integrated or non-integrated types according to the vehicle construction.



**These rails cannot be used for a double deck or garment transportation.**

## 7.7. Load Securing Profiles

Fast fixation of the load can be achieved by attaching load securing profiles between the load securing 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*



Square type load securing profiles



If load securing profiles are tightened too much or if too many load securing profiles are used in a small area, the panels may be damaged.

### 7.8. RO-RO 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. Both types are used for the same purpose.



Ferry rings



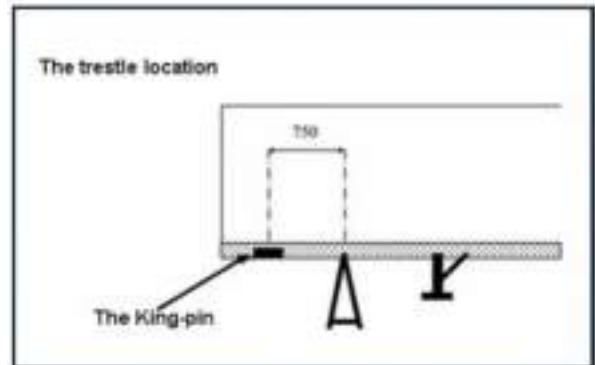
Fixed type ferry rings



These rings must not be used to lift the vehicle.



Your vehicle may have been manufactured for ferry operations. In this case, ferry transportation should be carried out in accordance with the ISO 9367 norm.



Ferry stand and ferry rings

## 7.9. 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.

## 7.10. 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*

## 7.11. 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		
Fahrzeuganbau entspricht Vehicle body in compliance with	<b>EN 12642-XL</b>	

*Front Wall load securing sticker*

## 8. INSPECTION AND MAINTENANCE

### 8.1. Safety Instructions



**There is a risk of accident that may arise in terms of a vehicle that is not built or built insufficiently. Read the following safety instructions carefully.**

- 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.



**If the EBS warning lamp comes on for any reason in the vehicle, immediately park the vehicle in the appropriate place and contact the nearest authorized service.**

### 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.



**After the ferry operation, when muddy or salty roads are used, when it is parked at the seaside for a long time, or when it meets a corrosive substance (salt, chemical liquids,**

**etc.), the vehicle should be washed with plenty of water.**

### 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.



**If there is any damage on the cataphoresis coated areas, it should be repaired quickly by an Authorized Service.**

### 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



**There is a risk of accidents due to unprofessional troubleshooting.**

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!



**In cold weather, ice may form on the floor. Care should be taken while walking.**



**For the repair process of the malfunctioning product, follow the instructions given by the manufacturer of that product in the user manual**

### 8.7.2. Spare Tire Replacement



**Wheel nuts that are not tightened properly will loosen. This may cause accidents. Tighten the wheel nuts to the specified torque. You can find the torque values in the manufacturer's manual for "Axles".**

**Check the tightness of the nuts immediately after each tire change.**

#### 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 spring-loaded parking brake. (See: "Construction Components and Use of Semi-trailer" for detailed information.)



**Lock the tractor securely to prevent spontaneous or unintentional movement of the tractor during tire changing.**

- 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:

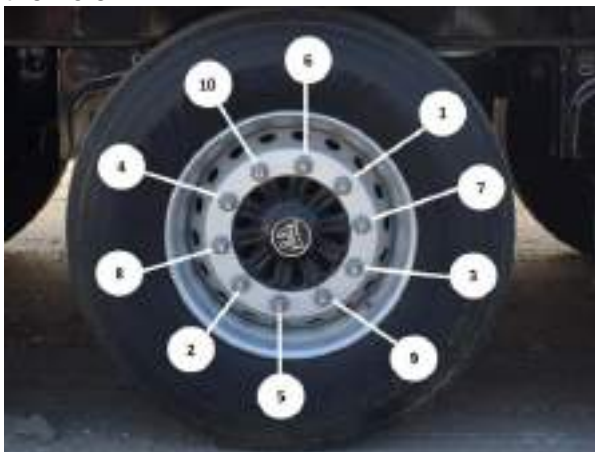
- Position the spare tire as close to the wheel hub as possible.
- Lightly oil the nut threads when re-fitting the wheel.
- Insert a bar directly under the tire and push the wheel bolts into the holes of the rim by leveraging. Be careful not to damage the threads of the studs during this process.

- 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.**

# K



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