ALK

OTOMOTiV

REPAIR AND MAINTENANCE MANUAL

Table of contents

Table of contents

1 Important Information

Dear Customer,

These operating instructions are intended to help you use your "First-Class Trailer" optimally. Following these instructions will ensure that you can use your trailer safely for a long time.

This trailer has been developed and designed to the latest state-of-the-art and has been thoroughly tested to ensure perfect functioning prior to despatch.

1.1 Operating Instructions

– Please retain these operating instructions for future reference. If you sell or lend your trailer to a third party please always give the operating instructions to the new user.
– Please read the operating instructions completely before using the trailer for the first time.
– Disregard of these operating instructions may lead to injuries or damage to the trailer.

1.2 Representation Conventions

1.2.1 Safety Notices and Warnings

In these operating instructions different level system is used to indicate different hazard severities.

⚠WARNING

Indicates that death or serious bodily injury will probably occur if the specified precautionary measures are not taken.

⚠CAUTION

Indicates that minor to moderate bodily injury will occur if the specified precautionary measures are not taken.

NOTICE

Indicates that material damage will occur if the specified precautionary measures are not taken.

The following markings are also used:

NOTE

Points out particularly important information about the trailer, handling of the vehicle or the respective part of the operating instructions.

TIP

Indicates a user tip.

1.2.2 Text Distinctions

The following text markings are used in these operating instructions:

A Version variants are indicated by the respective capital letters.

1.3 Trailer Versions and Accessories

All trailers are available in different versions. You can also retrofit your trailer with additional accessories (see "Spare Parts and Accessories").

Due to the large number of versions and accessory parts, not all trailer versions are described.

Familiarise yourself with the version, options and accessories of your trailer to identify the corresponding version variants in these operating instructions that apply to your trailer.

1.4 Third-Party Documentation

If the trailer is fitted with purchased parts the corresponding operating instructions from the third-party manufacturers are supplied with the trailer documents.

Please heed the information regarding operation, maintenance and care of the purchased part in the corresponding operating instructions.

1.5 Trailer Approval

Trailer approval is country-specific. Please find out how and where you can obtain approval for your trailer.

1.5.1 Speed Limit of 100

The maximum allowable speed for towing the trailer is 100 kph.

1.5.2 Vehicle Inspection

The regulations for vehicle inspections are country-specific. Please find out

– when a vehicle inspection is required and
– where a vehicle inspection can be carried out for your vehicle.

1.6 Driving Licence

Depending on the country, a specific driving licence may be needed for towing a trailer. Please find out about the requirements in your country.

2 Safety

2.1 Intended Use

The trailer is designed to transport goods in the range of the corresponding gross weight rating (see "Technical Data"), and is intended to be used in combination with towing vehicles whose rear overhang (dimension from the centre of the rear axle to the ball coupling) is no more than 160 cm.

If the towing vehicle's rear overhang exceeds 160 cm, a trailer with a reinforced frame or a height-adjustable overrun mechanism must be used.

If you have any questions, contact your dealer.

The following uses are prohibited:

– transport of people
– transport of animals

2.2 Basic Safety Instructions

2.2.1 Inspections

– The delivery inspection must be carried out by the dealer and recorded in the inspection schedule (see "Cleaning, Maintenance and Inspection").
– The wheel bolts must be inspected after the first 50 km using a torque wrench (see "Cleaning, Maintenance and Inspection").
– All further inspections must be carried out in accordance with the inspection schedule (see "Cleaning, Maintenance and Inspection").

2.2.2 People

– Trailers are not toys. Do not allow children to play unattended in the vicinity of a trailer. They may injure themselves when playing with the trailer.
– People working with or driving the trailer must have read and understood these operating instructions.

2.2.3 Trailer

– Never use a defective trailer. Defective trailers conceal unforeseeable risks.
– The rear lights of the trailer must be visible at all times. If the rear lights are covered by a protruding load, open ramps or dirt please mount an easily visible rear lighting unit to mark the end of the trailer.

2.2.4 Load

– Do not exceed the total weight rating (see "Loading").
– Do not exceed the edge load capacity (see "Loading").
– The trailer must be loaded carefully and correctly. Incorrectly loaded trailers can easily start skidding. See "Loading" to find out how to load the trailer correctly.

2.2.5 Driving

– Before starting a journey you must complete the pre-drive checklist (see "Driving").
– Familiarise yourself with the driving and braking characteristics (see "Driving") of the trailer in difficult road and weather conditions, for example inclines, rough roads, storms, side wind and snow.
– Your driving behaviour and speed must always be adapted to the given road and weather conditions.
– At all times during the journey you must be able to see the road behind you through the two exterior mirrors.

2.2.6 Repair

Note the following for repairs:

– Repairs may only be carried out at service

2.2.7 Environmental Conditions

– Protect the trailer and accessories as well as possible from adverse weather conditions such as rain, snow and hail.
– Ensure adequate lighting when working on the trailer at dusk or in the dark.

2.3 Labels

The following labels are affixed to the trailer:

2.3.1 Hand Injuries

Fig. 1: "Hand injuries" label

This indicates that handling trailers may result in hand injuries with possibly permanent damage from crushing.

2.3.2 Read Operating Instructions

Fig. 2: "Read instructions" label

This indicates that you should read the operating instructions before using the trailer.

2.3.3 Replace Spring Clip

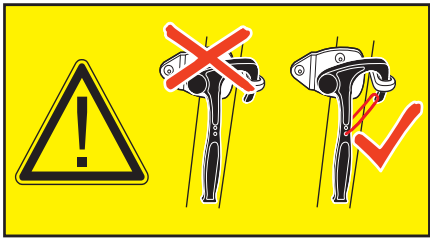

Fig. 3: "Lock using spring clip" label

This indicates that you may only use locks with spring clips.

If a spring clip is missing from a lock you must immediately replace the spring clip.

2.3.4 Lubrication Points on the Coupling

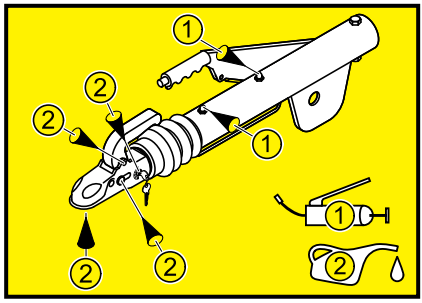

Fig. 4: "Lubrication points on coupling" label

This indicates the places where you must lubricate the coupling.

2.3.5 Edge Load Capacity

This indicates the ma... allowable load on the loading edge with and without a rear support leg.

2.3.6 Lashing Points on the Trailer

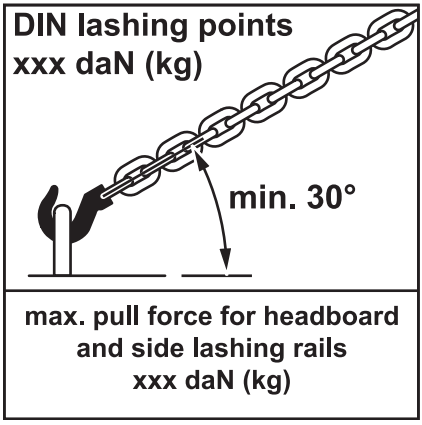

Fig. 6: "Lashing points on trailer" label

This indicates the lashing capacity of each lashing point on the trailer.

2.4 Disposal

The trailer owner must dispose of the trailer and all associated components in accordance with national disposal regulations.

Waste electrical and electronic equipment

Devices marked with this symbol are subject to the European Directive 2002/96/EG. All old electronic and electric devices must be disposed of separately from normal house waste. Ask your local authority how to properly dispose of old devices.

Batteries

Batteries may contact toxic heavy metals and must be treated as hazardous waste. Dispose of old batteries at the appropriate collection point.

Hydraulic oil

Hydraulic oil must be disposed of properly. Please observe local regulations.

Old tyres

Dispose of old tyres in accordance with local regulations.

3 Technical Data

The technical data for your trailer can be found in the following places:

– in the vehicle documents for your trailer
– on the trailer's rating plate
– in the type identification information for the trailer.

3.1 Rating plate

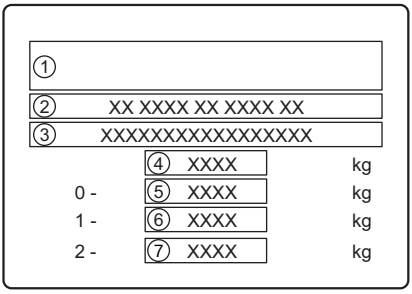

Fig. 1: Rating plate

1 Manufacturer
2 General operator's licence (ABE) number for the approved trailer type
3 17-digit trailer identification number
4 Total weight rating
5 Coupling device load
6 Total weight rating for axle 1
7 Total weight rating for axle 2

4 Trailer Features

4.1 Electrical Connections

The following connectors are distinguished:

– 7-pin connector

– 13-pin connector.

NOTE

Please use an adapter if the socket of the towing vehicle does not match the trailer plug.

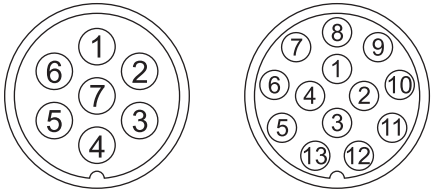

Fig. 1: Plug versions

Contact no.	Function	Connected load	Wire colour
1	Direction indicator left (flash light)	1.5 mm^2	yellow
2	Rear fog light	1.5 mm^2	blue
3[a)]	Ground for contacts no. 1 to 8	2.5 mm^2	white
4	Direction indicator right (flash light)	1.5 mm^2	green
5	Right-hand tail lights, outline marker lights, limiting lights and plate light[b)]	1.5 mm^2	brown
6	Brake lights	1.5 mm^2	red
7	Left-hand tail lights, outline marker lights, limiting lights and plate light[b)]	1.5 mm^2	black
8	Reversing light	1,5 mm^2	grey[c)]
9	Power supply (continuous positive)	2.5 mm^2	brown/blue[c)]
10	The power supply is controlled via the ignition	2.5 mm^2	brown/red[c)]
11[a)]	Ground for circuit from contact no. 10	2.5 mm^2	white/red[c)]

Contact no.	Function	Connected load	Wire colour
12	Reserved for future applications	---	Not used
13[a)]	Ground for circuit from contact no. 9	2.5 mm^2	black/white[c)]

a) The three ground wires must not be connected to any functional electrical conductor on the trailer.
b) The plate light must be connected in such a manner that no lamp of this device is connected with contacts no. 5 and 7.
c) The colour assignment is determined by the manufacturer. Differences may occur.

4.2 Towing Devices

The following towing device is distinguished:

– A-frame drawbar (A)

A A-frame drawbar

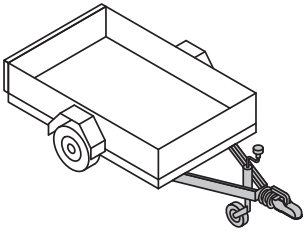

Fig. 2: A-frame drawbar

NOTE
See additional operating instructions and / or third-party documentation.

4.3 Coupling

The following couplings are distinguished:

– standard coupling version (A),

A Standard coupling version (also available lockable, A2)

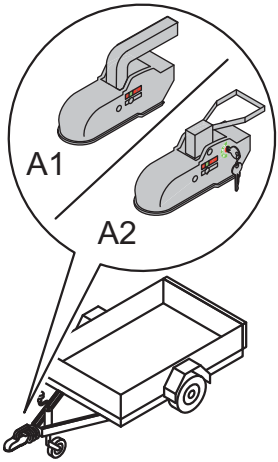

Fig. 5: Standard coupling version A1

B Anti-sway coupling and towing eyes

NOTE

See additional operating instructions and / or third-party documentation.

4.3.1 Indication of the coupling status with standard couplings

A distinction is made between two standard coupling variants as regards indication of the coupling statuses.

4.6 Parking brake and wheel chocks

NOTE

Parking brakes and wheel chocks can only be found on braked trailers.

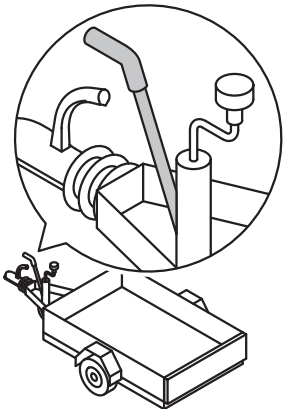

Fig. 14: Parking brake with spring energy accumulator

⚠CAUTION

Sticking and frozen brake pads

Personal injury through delayed braking action

- The trailer should not be secured by means of the parking brake in frost conditions or when not in use for long periods.
- Secure the trailer using wheel chocks.

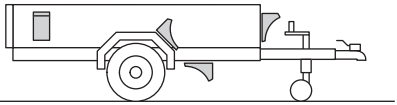

Fig. 15: Positions of the wheel chocks

⚠WARNING

Delayed braking action with the spring energy accumulator

Pinching of body parts, material damage

When the parking brake is applied, the trailer is secured against rolling. After applying the parking brake, the trailer can still be moved backwards approx. 25 cm. Only then does the full braking effect come into play. The forwards braking effect is immediately effective.

- Ensure that the full braking power is applied.

Applying the parking brake

- Pull the hand lever up until the braking action is applied.

Releasing the parking brake

- Push the hand lever down.

4.7 Rear prop stands

The following rear prop stands are distinguished:

– adjustable support leg
  – basic version (A)
  – reinforced version (B)
– fold-out support leg (LINNEPE support leg) (C)
– telescopic crank-down support leg (D).

5 Coupling

5.1 Nose Weight

The nose weight is defined as the weight on the towing device of the towing vehicle when a trailer is coupled.

- Ensure that:
  - the nose weight is at least 4% of the actual laden weight of the trailer. However, it need not be more than 25 kg.
  - the maximum nose weight for the towing vehicle is not exceeded.

The nose weight specifications are located with the towing vehicle:

– on a label in the rear area,

– in field 13 of part I (vehicle registration certificate) of the approval certificate.

⚠WARNING

Danger of Skidding

Bodily injury or material damage

- Do not overload the trailer at the rear.
- The load at the front of the trailer should be slightly higher than at the rear.

5.2 Coupling

Coupling must be done in a safe and well-lit location.

The ground or support surface must be firm, strong and level.

Traffic must not be restricted. Drivers and other people must not be hindered or endangered.

Before hitching or unhitching secure the towing vehicle to prevent it rolling away.

5.2.1 Hitching the Trailer

1. Open the coupling completely.
2. Hitch the trailer.
3. Check that the coupling is firmly seated.

5.2.2 Unhitching the Trailer

1. Pull up the parking brake to prevent the trailer rolling away.
2. Place wheel chocks in front of the tyres.
3. For braked trailers remove the break-away cable from the tow bar of the towing vehicle.
4. Lower the jockey wheel to unload the coupling.
5. Pull the plug out of the socket.
6. Open the coupling.
7. Lift the coupling up off the tow bar of the towing vehicle.

5.3 Parking the Trailer

NOTE

For the trailer to be stable the ground or support surface should be firm, level and flat.

To park the trailer stably you must do the following (depending on the model):

– lower the jockey wheel after unhitching,
– place the wheel chocks in front of the tyres,
– place the rear prop stands (if supplied) in position.

NOTE

If possible tilt a trailer with an open box slightly when parking. This will allow rainwater to drain off the bed.

6 Driving

6.1 Pre-drive Checklist

Component	Check
Ball coupling	Correctly engaged and secured?
Breakaway cable	Positioned over tow bar of towing vehicle?
Manual parking brake	Released?
Connector	Firmly connected and secured?
Jockey wheel	Fully raised and secured?
Side walls, ramps, doors etc.	Closed and secured?
Canvas cover	In place?
Tyres	Filled with the correct air pressure?
Wheel chocks	Removed and stored safely?
Rear prop stands	Raised and secured? Crank removed and stored safely?
Lighting system	Undamaged and working?
Drive-on rails	Stored and secured?
Load	Weight correctly distributed? Secured against slipping?

6.2 Driving Precautions

Please read the following information carefully so that you are prepared for different driving conditions.

6.2.1 General Driving Precautions

– The stability of the vehicle-trailer combination decreases with increasing speed. Adapt your speed to the given road and weather conditions to ensure that you can stop the vehicle and trailer without problems at any time.
– Slow down while driving a loaded trailer on an incline to ensure that you can stop the vehicle and trailer without problems at any time.
– Note that the turning radius of long trailers is unusually large.
– Note that long trailers follow the vehicle in a smaller radius when turning.

– If protruding or overhanging loads cover the lights you must attach an additional easily visible lighting unit.
– Trailer snaking may result if the tyre pressure is too low. Before making a trip check the air pressure in all tyres on the trailer. If necessary, adapt the tyre pressure to the weight of the load.

6.2.2 Tips for Driving in Rain, Frost and Snow

– Note that on icy and slippery roads the driving and braking characteristics are poorer because the tyres have less traction.
– Before making a trip remove any water, snow or ice from the roof of the trailer to avoid endangering other drivers.

6.2.3 Tips for Driving in Side Wind

– Side wind can cause the trailer to snake or tip over.

  Side wind gusts often occur suddenly and unexpectedly, e.g. on rough terrain or bridges, when you are changing lanes or passing etc.

  Slow down immediately if you notice a side wind.

6.2.4 Tips for Handling Snaking

– If the vehicle-trailer combination starts snaking carefully take your foot off the gas pedal and counter-steer gently. Do not speed up.

  Do not make any hectic or abrupt steering motions.

  Stop as soon as the vehicle and trailer have stabilised. The most frequent causes of snaking are, apart from incorrect driving behaviour and excessive speed, incorrect load distribution or insufficient nose weight. For this reason please ensure correct load distribution, nose weight and lashing of the load.

6.3 Brakes

⚠WARNING

Non-functioning brake system

Bodily injury or material damage

A poorly functioning or non-functioning brake system cannot promptly stop the trailer.

- Before each journey a brake test must be carried out with the trailer.
- Brake early.

⚠WARNING

Braking distance too short

Bodily injury or material damage

The braking distance of the trailer increases with increasing load.

- Note that the ABS system of the towing vehicle does not control the overrun mechanism of the trailer.
- The driver of the towing vehicle must initiate braking early.

NOTE

For trailers with overrun brakes full braking may cause the overrun brake to block the wheels. brake the trailer first brake gently to avoid blocking the wheels. Then brake hard.

TIP

Inexperienced drivers should first practise braking on suitable terrain.

6.3.1 Checking the Brake System

The trailer's brake system must be checked regularly.

- Check whether:
  - the guides, Bowden cables or yokes are damaged,
  - other components are restricting the Bowden cables,
  - the joints on the yokes and the rods are free-moving, but secure,
  - the exteriors of the dust seals or gaskets are damaged.
- Ensure that any defects are repaired promptly.

NOTE

If the brake pads need to be replaced make sure the wheel bearings are also checked for wear and damage.

6.4 Reversing

⚠WARNING

Blind spot

Running over people or objects

- Have an experienced person teach you how to reverse safely to ensure you will not endanger other drivers.
- Make sure no one is between the towing vehicle and the trailer while reversing.
- Instructors must maintain a safe distance to the trailer and must always be visible in the exterior mirrors when the trailer is being reversed.

6.5 Manoeuvring

NOTE

The trailer can be more easily manoeuvred if the air pressure in the tyres is not too low. If the trailer is difficult to manoeuvre check the tyre pressure (see "Tyre inflation pressure" table).

7 Cleaning, Maintenance and Inspection

Cleaning, maintenance and inspection of the trailer are essential for driving safety as well as retention of the value of your trailer and the validity of your warranty.

NOTE

Late or skipped inspections or maintenance and cleaning work may result in damage to the trailer and consequent injury. This also voids the warranty.

7.1 Care and Cleaning

You may carry out cleaning work yourself.

NOTE

All parts and surfaces must be checked for dirt and, if necessary, cleaned before and after use.
Also, long-term dirt accumulation leads to reduced driving safety and value of the trailer.

Salt and acids

Avoid contact with salt, acids and caustic agents. After driving in road salt conditions or after transporting fertilisers or other acid-containing substances immediately clean the trailer inside and out with water.

White rust

White rust forms on zinc surfaces which are corroded by prolonged wetness or exposed to chlorides such as those found in road salt. White rust is not a galvanisation quality defect. A thin surface layer of white rust does not damage the galvanised layer.

Brush off areas with heavy white rust formation using a nylon or wire brush and, if necessary, galvanise again.

Paint damage

Repair immediately before rust is able to form.

Damage to galvanised layer

Immediately galvanise again with a standard commercial zinc spray.

Canvas covers

Canvases are easy-care products. Clean with soap and water.

Wood surfaces

Treat regularly with a commercial wood care product.

Treat damaged areas with wood protection paint.

Protect from prolonged wetness.

Rear lights and lighting elements

Rear lights and lighting elements must always be intact, unobstructed and clean. Wash or clean regularly.

Rims, wheel guards and mudflaps

Clean regularly.

7.2 Maintenance

Maintenance work should only be carried out by suitably qualified personnel.

Ensure that maintenance intervals are maintained. The maintenance intervals are given in the following table.

Maintenance schedule

Vehicle part	Interval	Maintenance work
Tyres	Before every long journey	Check tyre pressures (see "Tyre inflation pressure" table)
		Check the tyre tread depth and exchange the tyres if necessary (note wear marks in the tyres' contact surfaces)
		Check wheel bolts and tighten if necessary (see "Tightening torques" table)
Brake, bowden cables	Every 5000 km or annually	Lubricate lubrication points
Parking brake	Every 5000 km or annually	Lubricate lubrication points
Height-adjustable drawbar	See third-party documentation	
coupling	Regularly	Clean
	Every 5000 km or annually	Lubricate lubrication points
Antirock coupling	See third-party documentation	

Lubricant

Use a multipurpose grease in accordance with DIN 51625 KTA 3K for lubrication.

7.3 Tyres and Changing Wheels

⚠WARNING

Incorrectly repaired tyres

Bodily injury or material damage

- Only trained and qualified personnel may repair the tyres.
- Do not repair tyres yourself.

7.3.1 Tread Depth

According to the German Road Traffic Licensing Regulations (StVZO) the tread depth of the tyres must not be less than 1.6 mm.

7.3.2 Wheel Bearings

The wheel bearings are maintenance-free. In severe loading conditions the wheel bearings must be checked for play.

7.3.3 Changing Wheels

⚠WARNING

Rapidly lowering bed

Death by crushing, serious bodily injury

- Do not stand under the raised trailer.

Wheel changing must be done in a safe and well-lit location. Traffic must not be restricted. Drivers and other people must not be hindered or endangered.
The trailer must be secured with wheel chocks or similar aids to prevent it rolling away.

- After changing wheels tighten wheel nuts to the correct torque (see "Tightening torques" table).

7.3.4 Wheel Bolts

The tightness of the wheel bolts must be checked after the first 50 km. Also after a wheel change the wheel bolts must be checked after 50 km. The tightening torques for the wheel bolts are given in the following table.

Tightening torque tabelle

Rim type	Tightening torque
Steel	90 Nm to 100 Nm
Aluminium	110 Nm

7.3.5 Tyre pressure

If the tyre pressure is too low or too high it will have a negative effect on the handling of the vehicle-trailer combination, the fuel consumption and the life of the tyres.

7.4 Inspection

⚠WARNING

Incorrect or missing inspection

Danger of death, material damage

- Inspections must be carried out by authorised specialist shops.
- Work on brake systems as well as on electrical and hydraulic systems must be carried out according to the respective manufacturer's specifications.

7.4.1 Delivery Inspection

Vehicle part	Test criterion	Work to be performed
Brake system	Braking effect	Check and adjust if necessary
Tyres	Inflation pressure	Check and adjust if necessary
Lighting	Lights	Check and repair if necessary
Wheels	Wheel Bolts	Check after 50 km (see "Wheel Bolts")
Overrun brake	coupling	Check after 100 km

7.4.2 First Inspection (at the latest 1000 km after delivery)

Vehicle part	Test criterion	Work to be performed
Overall trailer	Screwed connection	Check and tighten if necessary
	Corrosion protection, damage	Check and touch up if necessary
Tyres	Inflation pressure	Check and adjust if necessary
Wheel Bearings	Play	Check and renew if necessary
Brake system	Braking effect	Check and renew if necessary

7.4.3 Inspection Schedule

Vehicle part	Test criterion	Work to be performed
Brake system	Brake pads	Check and renew if necessary
	Brake mechanism	Check and repair if necessary
	Friction points of the brake mechanism	Grease
	Overrun mechanism	Lubricate, check brake fluid
	Brake	Adjust
Wheel Bearings	Seals	check and replace bearing if necessary
	Play	check and replace bearing if necessary
Axle	Damage	Carry out visual inspection and repair if necessary
	Mount	Check and repair if necessary
Rims	Damage	Check and renew if necessary
Tyres	Damage	Check and renew if necessary
	Excessive ageing	Check and renew if necessary
	Tread	Check and renew if necessary
	Run-out	Check and balance if necessary
	Inflation pressure	Check and correct if necessary
Drawbar / overrun mechanism	Screwed connections	Check and replace if necessary
Lighting	Connectors, cables, lights	Check and repair if necessary
	Reflectors and rear lights	Check and renew if necessary
Floor	Damage	Check and renew if necessary
Rubber floor	Sealing	Check and renew if necessary
Information signs	Completeness and legibility	Check and renew if necessary
Accessories	Connections	Check and repair/renew if necessary