

BALHANGER

Instructions use of advice



Table of contents

1. INTRODUCTION	4
2. TECHNICAL DATA	4
3. EQUIPMENT	4
4. TRAILER OPERATION	4
4.1. Hitching (coupling to the towing vehicle)	4
4.2. Loading	5
4.3. Hydraulic principle of the OPTI and TRIMAX trailers	5
4.4. Activities to be carried out before driving	6
4.5. Driving	7
4.6. Detachment	7
5. OPERATION, MAINTENANCE	7
5.1. All trailer models	7
5.1.1. General information	8
5.1.2. Ball coupling	8
5.1.3. Suspension and wheel bearings	9
5.1.4. Correct tyre pressure	9
5.1.5. Correct tightening of the wheels	10
5.1.6. Breaking system	10
5.1.7. Support wheel	11
5.1.8. Signalling installation	11
6. USER INSTRUCTIONS	13
7. INFORMATION ON THE ENVIRONMENTALLY SOUND USE AND DISPOSAL OF THE VEHICLE	13
8. GUARANTEE	13

1. INTRODUCTION

Thank you for purchasing a BALHANGER trailer.

Using our many years of experience and modern machinery, we have made a durable and safe product for you. Before using it, please read this manual carefully and follow the instructions given therein. The constant strive to improve the quality of our products forces us to reserve the right to make changes not included in this manual and resulting from ongoing modernisation. All comments and observations resulting from the operation of the trailer can have an impact on the quality and safety of our products, so we would appreciate it if you would forward them to our company. Convinced that you will be satisfied with the product you have purchased, we wish you a wide and safe journey.

2. TECHNICAL DATA

For the technical data of your trailer, please see the enclosed "EC Certificate of Conformity of the Complete Vehicle".

3. EQUIPMENT

The trailer has been manufactured and equipped in accordance with the requirements of current legislation.

Each trailer can be optionally equipped with additional elements to meet your expectations. Should you need to change or extend the qualities of your trailer during its lifetime, it is possible to purchase additional equipment. You will find information on this in our catalogues, offer leaflets or on our website.

Feel free to contact us

NOTE!

Accessories, e.g. side extensions, tarpaulin racks, winches or other equipment purchased with the trailer or later during use must be regarded as cargo, bearing in mind that their weight reduces the trailer's load capacity.

4. TRAILER OPERATION

4.1. Hitching (coupling to the towing vehicle)

BALHANGER trailers can be fitted with either a coupling head commonly known as a ball hitch or an eye hitch. Eye couplings are fitted to a small number of trailers and the most important thing to remember when coupling with them is to carefully follow the recommendations in the instructions of the coupling device fitted to the towing vehicle.

Most of the trailers manufactured by our company are equipped with ball couplings. To hitch the trailer to the towing vehicle you need to:

1. Hook the emergency line to the pin under the hook ball:

- on non-braked trailers so as to protect the ball hitch from contacting the ground in the event of the hitch ball disengaging from the hitch ball

- on trailers with brakes so that if the hitch releases from the ball, it applies the trailer brakes. To do this, form a loop from the cable, place it on the shank under the hitch ball and fasten a snap hook on the cable in a way that prevents the cable from slipping off the shank.

2. Hitch the ball coupling of the trailer to the tow bar of the vehicle (**for the correct method of coupling, see section 5.1.2. of this manual**). The trailer is equipped with a support wheel, coupling can be done by raising and then lowering the drawbar so that the hitch hits the hitch ball exactly.

3. Connect the electrical system of the trailer to the socket of the towing vehicle (**refer to section 5.1.7. of the manual for the method of connection**).

NOTE!

The ball of the car's towing hook should be Ø50mm and its axis should be at the height of the 350÷420 mm from the ground when the car is loaded to the permitted gross vehicle weight (GVW).

4.2. Loading

When loading, care must be taken to ensure that the load is evenly distributed on the trailer, providing the correct pressure on the ball of the tow bar. The load must be secured against movement. It is not permitted to carry cargo with the sides open. Hitch ball pressure should be approximately 10% of the actual loaded trailer weight, but not more than a maximum of 150kg. Negative pressure on the ball hitch is dangerous and can cause driving and trailer problems and cause the hitch to disengage from the hitch ball. Overloading is not permitted as it leads to serious damage to the trailer and thus directly compromises driving safety.

NOTE!

Damage caused by overloading the trailer entails the loss of the guarantee, warranty or the Special Terms and Conditions of Consumer Sales Act.

4.3. Hydraulic principle of the OPTI and TRIMAX trailers

Lowering and raising trailers with a single-acting pump	
1. Remove pins. Unfasten the side hitches.	
2. Close the drain valve.	

<p>3. Insert the handle into the hole and move it up and down until the bumper bumpers rest on the ground. ATTENTION: Avoid detaching the wheels from the ground, detaching the wheels from the ground may result in damage to the trailer.</p>	
<p>4. To lower the platform slowly unscrew the drain valve.</p>	
<p>5. Fasten safety catches. Insert safety pins.</p>	

4.4. Activities to be carried out before driving

1. Check that the hitch is correctly coupled to the vehicle hitch.
2. Check that the trailer lights are working properly.
3. Check that the load is correctly positioned and secured against movement.
4. Check the tightness of the bolts securing the running wheels.
5. Pull the support wheel (recommended) up as far as possible, lock in this position.
7. Check that all sides are properly closed (optional with sides).
8. Check that additional power sources are switched off (with optional equipment e.g. hydraulic pump - by means of a dedicated switch).
9. check lighting elements - if necessary secure (with optional lighting variant).

4.5. Driving

When driving, remember that:

- the braking distance of the car-trailer combination is longer than that of the car alone,
- care must be taken when driving downhill, especially in wet conditions.

The stability of the load being carried must be ensured.

4.6. Detachment

1. Disconnect the electrical system.
2. Disconnect the emergency cord.
3. Uncouple the trailer from the tow bar of the car.

On trailers with a support wheel, use it to raise the drawbar and unhook the hitch from the hitch ball. Special care must be taken when lifting the drawbar if the trailer remains loaded.

5. OPERATION, MAINTENANCE

5.1. All trailer models

Remember to check the bolted connections from time to time, especially the fixing of the running gear and drawbar assembly as well as the overrun device, hitch and wheels. Inspect the chassis frame from time to time. During the inspection, pay attention to the joints, the visual condition of the protective coatings and whether there are any cracks. Keep the trailer clean during operation. When stationary, the trailer body should be level.

NOTE!

Modifications to the construction of the trailer are not permitted, under penalty of forfeiting rights under the guarantee, warranty or the Act on special conditions of consumer sale. If the trailer is stored outside during the winter, excess snow should be removed.

5.1.1. General information

In the table below, we have listed the minimum actions that will allow you to use your BALHANGER trailers safely for a long time

Time period	Type of activity:
Ongoing	Keeping the caravan clean. Ensuring that the inner parts of the ball hitch are clean and lubricated and that the ball socket is coated with grease.
After 500 km or 6 months	Wheel bearing adjustment check. Lubrication of the bearing bushes of the overrun device Inspection of the brake system (shoes, springs, cleaning), adjust if necessary.
After 5,000 km or 12 months thereafter	Brake system check. If necessary: - replace the brake pads, - adjust the brake system
Every 10,000 km or 12 months	Wheel bearing adjustment check. Lubrication of the bearing bushes of the overrun device. Maintenance of the brake system.
Every 10 ÷ 15,000 km or every 12 months	Changing the grease in the tapered wheel bearings. Lubrication of brake cables and other brake components.

In addition to routine maintenance, it is advisable to have other work carried out in specialised service workshops or by the manufacturer. Chassis components and the sides of some trailers are hot-dip zinc coated.

Protection against corrosion occurs through oxidation of the top layer of zinc. During this time, dulling of the surface can occur, which can last for several months. The so-called white corrosion, which sometimes occurs on the zinc coating, is only a deterioration of the external appearance and cannot be claimed, as it occurs independently of the manufacturer. Galvanised parts are not resistant to acids, salts and some chemicals. Wash the trailer thoroughly with clean water after driving on salted roads or after carrying, for example, fertiliser or other acidic materials.

Places where the zinc coating has been damaged should be cleaned, degreased and, after drying, applied with at least two coats of cold spray galvanizing agent. At all times when the trailer is in use, care must be taken to ensure that exposed bolt and linkage threads in the chassis and axles, hinges or locking components are lubricated with grease.

5.1.2. Ball coupling

The correct fastening of the hitch should be carried out as follows:

1. Unlock the striker lever by pressing the projection on it (or, in some striker varieties, pulling upwards),
2. Rotate the hitch lever vertically towards the front,
3. Place the hitch on the hitch ball and press lightly, the hitch locks and secures itself.

When the ball hitch is engaged, there should be no appreciable play between the hitch and the hitch ball. If there is play, this is a sign of wear on the hitch ball or coupling ball and should not be driven.

5.1.3. Suspension and wheel bearings

The suspension system does not require maintenance, but should be inspected at least once a year. If damage is detected, have it repaired or replaced by a specialised service or contact the manufacturer. The axles used on our trailers with a load capacity of up to 1200 kg can be fitted with tapered roller bearings.

These bearings must be checked for play after approx. 2,000 km as follows:

- raise the trailer so that the wheel is not in contact with the ground,
- check that the wheels turn easily without any noise or side play, and if in doubt, have them adjusted.

Lubricate the bearings with bearing grease every 10000÷15000 km. Due to their long service life and lack of maintenance, damage to these bearings does not occur under normal operating conditions. If you notice a noisy bearing or an easily perceptible play in the bearing, contact the manufacturer for adjustment or possible repair. Tyre treads should wear evenly during the operation of the trailer. If accelerated, uneven tread wear is found, the trailer suspension must be inspected.

NOTE!

Once the self-locking nut securing the drum to the wheel axle has been unscrewed, it must not be reapplied. A new nut must be used for re-tightening.

5.1.4. Correct tyre pressure

The running wheels fitted to BALHANGER trailers are adjusted to the permissible gross vehicle weight (GVW) of the trailer. The prerequisite for correct and safe driving is that all trailer wheels have the same pressure. Trailers are sold with wheels that do not exceed the nominal pressures indicated by the manufacturer on the tyre. In the table below, we provide examples of pressure ranges that can be considered optimum for trailers loaded to their maximum permissible gross vehicle weight. Please note that these are selected examples for some tyres and example GVW values.

Recommended tyre pressures:

Tyres size	Recommended pressure at max load	
	[Bar]	[kPa]
155/70 R13	3	300
165/70 R13	2,5	250
165 R13 C	4,5	450
195/55 R10C	6	625
185 R14 C	4,5	450
195/50R13C	6,5	650

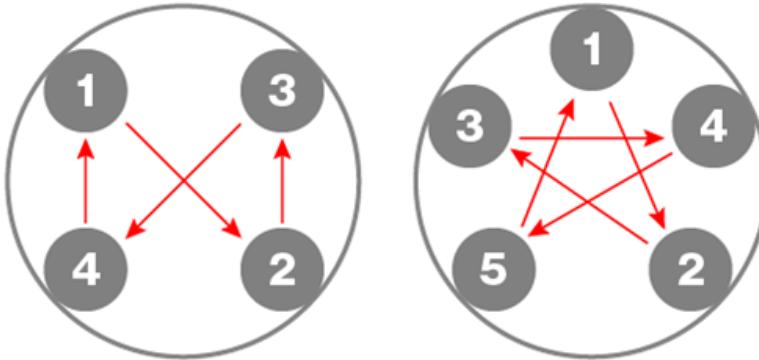
If you want to ensure a long service life for your tyres, you should:

- maintain the required wheel pressure,
- when storing the trailer for a long time, support it so that the wheels do not touch the ground; smaller trailers can be positioned vertically,
- avoid prolonged static loading.

5.1.5. Correct tightening of the wheels

An important element in the safe use of trailers is the correct screwing of the wheels to the hub. Use a socket spanner of the correct size to screw the wheels on. The correct installation is described below:

1. The fixing screws must be screwed in by hand as far as possible according to the order shown in the figure (1 to 5 - in the case of fixing with five screws, 1 to 4 - in the case of fixing with four screws).



2. Then, in the order previously adopted, tighten the screws to 40 Nm using a torque spanner.
3. Again, using a torque spanner, tighten the bolts in the previous order, this time to 70 Nm.
4. Tighten the bolts one last time, in the same order as before, using a torque spanner, this time at 100 Nm.
5. When you have finished tightening, mark the position of the bolt relative to the rim with a marker so that you can check their position relative to the rim after 50 km. If you notice that they have moved, retighten them.
6. The steps described above apply to both the initial fitting of wheels to the trailer and the replacement of old wheels with new ones.

5.1.6. Breaking system

Braked trailers are equipped with overrun-type braking systems. Such a system consists of:

- overrun device,
- transmission system,
- wheel braking mechanisms.

When braking the vehicle, the inertia force of the trailer exerts pressure on the overrun device which, via the transmission linkages, actuates the braking mechanisms in the trailer wheels. The design of the braking mechanisms allows reverse travel without additional maintenance. When switching from reverse to forward travel, the braking system is automatically ready to brake. The trailer has a parking brake system, which is activated by a hand lever next to the overrun device and ensures that the trailer is braked on gradients of up to 16%.

The parking brake is only effective when:

- the handbrake lever is pulled beyond the so-called "dead centre" and is in the rear position,
- on devices fitted with a ratchet lever, the lever is pulled to the last tooth.

Too little lever tension causes the trailer to brake in the forward direction without providing adequate braking in the rearward direction. It is recommended that, in addition to applying the handbrake, wheel chocks are placed under the wheels if the vehicle is parked on a slope for an extended period. Trailer braking system requires maintenance and adjustment by service or manufacturer. First after 500km or after 6 months, then after 5000km or after 12 months, and then every 10000 km or every 12 months, the brake shoes should be lubricated, cleaned and adjusted for play. When operating the trailer, pay attention to the insertion depth of the ball hitch. If it needs to be pushed in more than 60 mm to achieve braking, an adjustment must be made by the manufacturer or by a service centre. Check brake shoe wear and adjust brakes every 10000÷15000 km. Lubricate the contact area of the adjusting nut and the overrun device. These works should be carried out in service centre or directly by manufacturer.

NOTE!

The trailer brake is subject to more wear when driving in hilly terrain. Earlier adjustment may be necessary for commercial trailers.

5.1.7. Support wheel

It is designed to carry a vertical load and can be used for:

- raising the front of the trailer when coupling and uncoupling with the car,
- rolling an unloaded trailer,
- to support, if necessary, a trailer standing with its load (without rolling),
- support when replacing the running wheel.

Ensure that the bolt on the support wheel is always lubricated with grease.

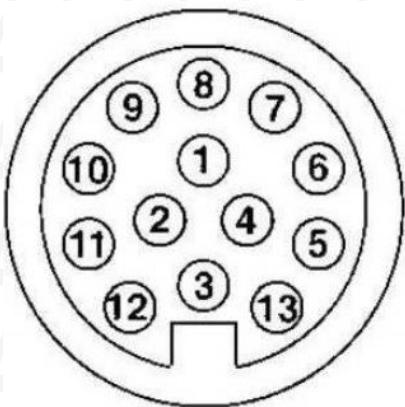
NOTE!

It is not permitted to roll (manoeuvre) on the support wheel when the trailer is loaded - especially on soft or loose ground. Making small movements with the trailer, on sufficiently firm ground, is permissible to the extent that it is possible to hitch or unhitch the trailer.

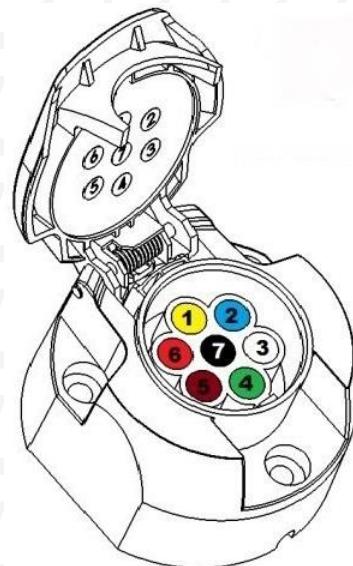
5.1.8. Signalling installation

As standard, the trailer has a signalling system suitable for 12V. Depending on the version, a seven- or thirteen-pin plug can be used to connect it to the vehicle. Below we show how the wires are connected to the plug terminals and the colours of the wires that should be connected to the corresponding lights. If your vehicle is equipped with a socket outlet other than the trailer plug, a suitable adapter connector ("adapter") must be used. Please note that on a trailer with a 13-pin installation (with reversing light) connected to a 7-pin vehicle installation, the reversing light will not illuminate.

Connector 13-contact



Connector 7-contact



No (designation) clamp	Cable colour
1 L	Yellow (z)
2 +	Blue (n)
3 31	White (b)
4 R	Green (t)
5 58R	Brown (o)
6 54	Red (k)
7 58L	Black (c)
8 -	Grey (s)
9 -	Brown-blue (o/n)
13 31	Black and white (c/b)

Connection

Left-hand traffic light
 Fog light
 mass
 Right-hand traffic light
 Position, marker and illumination lamps right-hand number plate
 Brake light
 Position, marker and illumination lamps number plate left
 Reversing light
 Current (plus) - free
 Ground for pins 9÷12

NOTE!

It is not permissible to use the trailer with unsecured drawbar fastenings or to winch the vehicle in when the wheels of the vehicle being winched are not turning. It is not permissible to use a winch to secure a load while the vehicle is in motion (the rope should be unhooked from the vehicle being pulled).

6. USER INSTRUCTIONS

Trailers shall be used in accordance with their intended use

- A reserve of speed and distance from the vehicles ahead should be maintained so that a trailer slip can increase the speed of travel,
- Increased caution should be exercised on descents, especially in wet weather,
- The braking distance of a car-trailer combination is longer than that of the car alone,
- When the trailer is parked on sloping ground, put wheel chocks under the wheels and, if the trailer is equipped with a brake system, apply the brakes using the hand lever.
- The maximum permissible weight of the trailer must not exceed the value stated in the towing vehicle's documents even if higher values are permitted by law.

7. INFORMATION ON THE ENVIRONMENTALLY SOUND USE AND DISPOSAL OF THE VEHICLE

BALHANGER trailers are multi-material products. Some components are made of plastics. With the exception of minor repairs, we advise you to have them carried out by a specialist workshop or by the manufacturer. After use, the trailer must be taken to a company authorised to dispose of vehicles.

8. GUARANTEE

BALHANGER guarantees the proper functioning of the trailer and the correct quality of the anti-corrosion coating for the period stated on the warranty card without any limitation on the number of kilometres driven. The warranty gives the right to rectify a defect in design, material or workmanship that has arisen during normal operation of the trailer in accordance with the instructions for use and the law. The right to warranty repair does not cover the effects of wear and tear during normal use (e.g. tyre tread, brake linings or bulbs) or defects caused by improper use of the trailer, the use of incorrect spare parts, the user's negligence in servicing and claims for repairs carried out by unauthorised workshops.