

# TOHACO

AIR SUSPENDED TRAILERS

## User manual

Tohaco BV

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## USER DOCUMENTATION

### IDENTIFICATION

#### Of this documentation:

This documentation is drawn up in Dutch by:

Tohaco BV Air suspended trailers

Version indication: User manual **102013\_7**

Version date: 07-11-2017

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#### Of the trailer:

This user documentation belongs to an electronic air suspension system for all Tohaco air suspended trailers.

#### Of the manufacturer:

The trailer is produced by:

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## PREAMBLE

This general user documentation describes the working of the air suspension system, how to work with it and the periodic maintenance of all types of Tohaco trailers.

If applicable, reference is also made to activities that must be carried out by qualified employees of Tohaco BV, their dealer or installation station.

**This documentation is part of the trailer! Please store this documentation carefully. It contains information that will also come in handy later or is necessary for repair and maintenance. You can for example keep the documentation with the vehicle documents.**

In addition to the provisions in this documentation, there are also legal rules for the use of trailers, for example license plate registration, license plate, maximum speeds, etc. These legal rules may vary from country to country and may change over time. Inform yourself about the local rules!

## USING THIS DOCUMENTATION.

The description of parts only applies insofar as these parts actually belong to the trailer.

The instructions in this documentation are written for the user/operator of the trailer. In chapter 2 the possible requirements for the user/operator are specified.

The figures included in the text of this documentation are only illustrative. They are only intended as an aid to the text, for example to indicate the location and function of controls or parts. The actual execution and dimensions may differ.

The passages that are important for the safety and health of people are printed in **bold**, except in the chapter on safety itself. The following warning texts can be used:

	<b>ATTENTION!</b>	Icon warns for possible damage to the load or the trailer.
	<b>WARNING!</b>	Icon warns for possible personal injury.
	<b>STOP!</b>	Icon warns that the trailer cannot be driven in the described situation

## **WARRANTY AND LIABILITY**

### **WARRANTY**

Unless otherwise agreed in writing, the following warranty provisions apply.



- The manufacturer provides warranty to the first user for up to 12 months after delivery, unless otherwise determined by law.
- Tohaco BV may require the presentation of the original purchase invoice for the provision of guarantee. You should therefore store it carefully.
- Defects on jockey wheels (if mounted) are not covered by the warranty assessment.
- Defects must be reported before the expiration of the guarantee period and within 2 months after the error or the defect has been detected at Tohaco BV.
- The warranty applies to defects that:
  - Occur during normal use of the trailer;
  - Originate through inadequate construction or materials;
  - Originate due to faulty craftsmanship of the manufacturer.
- The warranty is void in case of defects that occur due to:
  - Normal wear;
  - Incorrect, improper or wrong use;
  - Use of consumables other than prescribed.
- In the event of defects, Tohaco BV will:
  - Replace the parts. Tohaco BV becomes the owner of the replaced parts;
  - Repair the defects;
  - Choose a different replacement solution if recovery is not reasonably possible.
- The customer must give Tohaco BV the opportunity to remedy any defects.
- The warranty conditions of the relevant supplier apply to built-in third-party parts. The warranty period may differ from what is stated above.
- Tohaco BV reserves the right to change its products without prior warning.
- The warranty does not apply to:
  - Light bulbs, fuses, tyres, batteries and jockey wheels.

### **Liability**

Tohaco BV is **not liable** for unsafe situations, accidents and damage resulting from the ignoring of warnings and regulations as shown on the trailer or in this documentation, for example:

- Incorrect or improper use or maintenance;
- Use for other applications or under other circumstances than indicated in this documentation;
- The use of parts other than prescribed;
- Repairs without the manufacturer's permission;
- Changes to the trailer. These include:
  - Changes in the control system
  - Welding, mechanical processing etc.;
  - Extensions to the trailer or the controls.

Tohaco BV is **not liable**:

- If the customer has not fulfilled all his obligations towards Tohaco BV (financially or otherwise);
- For consequential damage due to breakdowns or faults of the trailer (for example damage to products (to be processed), interruption of operations, delays, etc.).

## **1. INTRODUCTION**

### **1.1 Purpose and function of the air suspended trailer**

The trailer is intended for the loading and transport of vehicles and general cargo.

## **2. SAFETY**

### **2.1 Introduction**

This trailer has been designed and constructed in such a way that it can be used and maintained safely. This applies to the application, the conditions and the instructions as described in this documentation. Reading this documentation and following the instructions is therefore **imperative** for anyone working with or on this trailer.

Additional safety measures may be required by the company or country where the trailer is used. This concerns in particular the working conditions. This documentation does not describe how this should be fulfilled, but the necessary information from the trailer is provided. If in doubt, consult your government or your safety officer.

The simple operations mentioned in the operating instructions can be carried out by the user/operator himself. Only qualified personnel may carry out work that is not described in the operating instructions.

### **2.2 Safety rules**

- Only persons who have read and understood the operating instructions are allowed to use the trailer.
- Do not climb on the trailer if it is not connected to a towing vehicle.
- The safety features may not be removed or deactivated.
- Keep the workplace clean and free of obstacles.
- Ensure sufficient ambient lighting.
- Beware of entrapment between frame and road surface when lowering the trailer.
- Do not exceed the maximum load. (See identification plate)
- Do not exceed the maximum nose weight. (See identification plate)
- Do not exceed the maximum load on binding rail.
- Do not exceed the maximum load of any binding rings.
- Do not transport loads with too high a point load, such as forklift trucks.

### **2.3 Forbidden usage**

The trailer is **not suitable** for the transport of persons or animals.

### **2.4 Users**

The trailer can be operated by any adult who knows and follows the contents of the chapters safety and operating instructions from this documentation. No special training is required. Naturally, a relevant driving license is required for driving the trailer.

### **2.5 Warnings on the trailers**

Any warnings on the trailer must remain clearly legible. Renew if necessary.

## 2.6 Hazardous substances for people and the environment

### Discarding the trailer

If the trailer is demolished, the waste disposal regulations that apply at the location and at the time of demolition must be observed.

The tyres and the battery should be regarded as chemical waste and processed accordingly.

Suspension energy can be stored in the handbrake and shock absorbers. When disposing of the trailer, this energy should be released in a safe manner.

Furthermore, only well-known materials are processed in the trailer. At the time of construction there were waste processing possibilities and no special risks were known for the people in charge of the demolition work. Dispose of these substances according to the rules of environmental legislation.

## 3. THE AIR SUSPENSION

**Important:** To recognise your air suspension system, it is essential that you always remain in possession of the unique **VB Airsuspension identification number** consisting of 14 digits for service, warranty or maintenance.

The VB identification number can be found on the trailer at the bottom left of the Tohaco identification plate, under the lines of the website and email address. The identification plate can be found on the right-hand side of the trailer. The number is also mentioned on the compressor box at the front of the trailer under the bed and at the top right on the front page of the user manual. **Give the information with the identification number to the new owner when selling the trailer.**



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**Accurately observing the warnings can prevent personal injury and/or material damage.**

The air suspension is designed for the maximum gross weight of the trailer. Because the vehicle always stands at the same ride height regardless of the load factor, and therefore makes the visual inspection of overloading more difficult, the risk of overloading is greater. The trailer must never be overloaded, as this will damage the suspension system and other components of the trailer. If you are not sure if the trailer is overloaded, weigh the trailer. Damage caused by overloading will not be reimbursed.

In the event of a failure in the suspension system, it is not recommended to continue driving, because of damage that may arise from this. In exceptional cases, driving with adapted speed and precautions is possible.

### 3.1 System description

The air suspension system consists of air bellows in combination with an electronic control system. This system ensures that the vehicle consistently remains at the same ride height. It does not matter whether the vehicle is loaded or not. The deformation of tyres at higher loadings is not taken into account. The level control also does its job when there is a weight difference in load between left and right. Even then the trailer always remains at the same ride height.

The overall operation of the system is as follows: on both sides a height sensor is mounted underneath the chassis. These height sensors constantly measure the ride height of the trailer and send this information to the ASCU (Air Suspension Control Unit). This is located in the compressor box. The ASCU compares the information with the pre-programmed ride height and decides whether intervention is necessary. If intervention is required, the ASCU will instruct the compressor, depending on the situation, to pump extra air into the bellows, or to release air.

Depending on the situation, it may take some time before the control unit responds to a change of load. This time delay has been deliberately chosen so that the system will not react or correct excessively in undesirable situations.

The air suspension is supplied with air by an 18-bar compressor with air filter and air dryer. The air dryer works on the basis of adsorption. Air flows through the dryer, granules adsorb moisture and dry air continues into the spring system. When the trailer is lowered, all dry air leaves the system again via the air dryer, so that the adsorbed moisture is blown out and the pellets are ready to re-adsorb moisture.

Depending on the version, the trailer has either none or one or two air tank(s). When the trailer is fitted with an air tank, a supply of air is always available to provide the system with the necessary air pressure, immediately and quickly. This stock is automatically topped up when there is too little pressure in the tank after a command.

The system is equipped with its own traction battery. The battery is recharged while driving by the towing vehicle, however this can be insufficient in some cases. It is therefore advisable to ensure that you leave with a full battery. You can do this by charging the battery before departure by means of the battery charging plug, mounted between the drawbar beams.

**In order for the air suspension system to function, it is important that the electricity circuit is connected to the battery of the towing vehicle with a 13-pole Jaeger plug. Here it is necessary that pin 9 wire brown/blue, and pin 10 wire brown/red, including the corresponding ground wires on pin 11 wire red/white and pin 13 wire black/white, are really connected respectively for loading of the trailer battery and for controlling the electronic suspension system. (See figure 14, p. 20 for connection diagram)**

 **Attention: The built-in air suspension should not be modified. Modifying the suspension system can lead to serious damage to the air suspension and cause the trailer to behave unpredictable and thus create dangerous situations, which can lead to accidents! It is therefore not allowed to make modifications to the suspension system without the permission of Tohaco BV.**

### 3.2 Advantages of air suspension

The air suspension provides more driving comfort for the driver and the load. The air suspension system filters the unevenness of the road surface.

Air suspension in combination with the mounted shock absorbers ensures that the trailer has better handling and is more consistent. Thanks to the better handling the tyre wear is less.

The electronic control ensures that, regardless of the load, the trailer always has the pre-programmed ride height and is therefore always suspended at the correct weight. With a maximum load on the vehicle, the rear will not "hang". The constant ride height has a positive influence on the handling, comfort and fuel consumption.

Loading and unloading is simplified because the rear of the trailer can be lowered or lifted by means of a manually operated switch. This makes it easy and safe to load and unload without loading ramps.

### 3.3 Safety on the road

An air suspension trailer distinguishes itself with great comfort and the absence of annoying vibrations, behaviours and noises while driving. This translates into a trailer that runs particularly well and with which you hardly notice that you are traveling with a trailer. The absence of these negative characteristics entails the responsibility to continue driving as is normally required with a trailer. Always act in accordance with the applicable traffic rules and with appropriate speed in curves and over speed bumps.



**Despite the pleasant driving characteristics of the Tohaco trailer, it is important to always respect local traffic rules. Extreme, excessive or careless use will damage the trailer or parts of it.**

### 3.4 Operation

The air suspension system always keeps the trailer on the pre-programmed ride height. The system is active when the contact of the towing vehicle is switched on. With the two push-buttons, on the inside of the right draw bar, the air suspension can be lowered or raised (Figure 1). It has 3 fixed positions: ride height, highest position and lowest position.

When the switch ↑ (arrow up) is briefly operated when it is at the lowest position or driving height, the air suspension will adjust itself to the next up position.



Figure 1

When the switch ↓ (arrow down) is briefly operated when it is at the highest position or ride height, the air suspension will adjust itself to the next down position.

It is possible to set the air suspension between these values during standstill. This is called the follow mode. Hold the switch in this position until the correct height is reached.

**Attention: When lifting and lowering, check that you have sufficient space above, below and around the vehicle. Secure the trailer against rolling away and check that there is no danger to persons or objects.**

When lifting or lowering with the handbrake applied, stresses or noises may occur in the vehicle. When the parking brake is released afterwards, there can be a light, unexpected movement up or down.

After using the lift/lower function, reset the trailer to ride height.

**When the brake or contact of the towing vehicle is operated, the trailer will automatically switch to ride height, regardless of the position it is in. The trailer may only be driven at ride height.**

#### 3.4.1 Remote control

Optionally, a trailer can be provided with remote control. A remote control is necessary for fully independent loading and unloading of cars.

The method of operation is the same as the control buttons in the right draw beam: a short press lifts or lowers to the next position. By holding the lift or lowering button, the trailer will continue to operate this function until the button is released. (Figure 2)

Button A = lifting, button B = lowering, button C and D = no function



Figure 2

#### 3.4.2 Installing and removing additional remote control

Only when equipped with remote the circuit board (figure 3) can be found in the control box in the right draw beam (figure 1).

Install additional remote control:

To program a new remote control, press the Learning Button, the indicator LED will flash, release the button, press the A button on the remote control, the relay will switch and the indicator LED will go off. The programming is now ready, remote control can be used.

Learning Button



Figure 3

Remote control removal: Press the Learning button for about 8 seconds. The indicator light goes off automatically, this means that the remote control has been removed successfully.

The remote control is equipped with a 12v battery, type A27.

### 3.5 Lowering protection

The trailer is fitted with a mechanical lowering protection that prevents the rear of the trailer from lowering to the road surface if a defect in the suspension system would occur. For example, due to damage to the air suspension system from the outside. The lowering protection consists of 2 metal rods that slide between the rear axle, left and right. By pulling the steel cable between the draw bars the lowering protection is unlocked and the trailer can be lowered to the road surface. (Figure 5)



Figure 4

**Important:** The lowering protection must always be unlocked while lowering to the lowest position in order to be able to lower the trailer to the road surface. (Figure 5) Keep the lowering protection pulled out until you no longer hear any air and the rear of the trailer is on the road surface. When it is set at ride height, the lowering protection automatically returns to the locked position. (Figure 4)



Figure 5

Trailers equipped with remote control for car transport are fitted with a bolt in the front beam where the lowering protection loop can be attached to keep the lowering protection device unlocked (figure 6). This is necessary to be able to operate the trailer with the remote control from the vehicle to be loaded/unloaded.



Figure 6

 **Important: remove the lowering protection from the bolt after loading/unloading, so that it is locked again (figure 4). It is not allowed to drive with an unlocked lowering protection**

 **If a defect occurs in which the air suspension can no longer be moved to the ride height, it is only permitted to drive at low speed (maximum 30 km/h) with the rear axle on the lowering protection to the nearest parking place or repair shop. Driving at higher speeds can damage other parts! First contact Tohaco BV to ensure that the defect cannot be managed where you are.**

### 3.6 Emergency valves

The Tohaco trailer is fitted with an emergency valve system (Figure 7). In the event of a failure in the electronic suspension system, or when the battery is empty, it is possible to set the trailer with the 2 emergency valves (left and right) at (ride) height. In the case of trailers with 2 axle lines, only the bellows in the 2nd axle line can be supplied with air in emergency situations. In this way, when the trailer is fully lowered on the road surface, it can still be moved in emergency situations. The air bellows can be supplied with air through the valves, for example by a (manual) pump or portable compressor. The emergency valves are only intended for emergencies, adding air through the emergency valves may allow polluted/humid air into the system. Moisture in the system can cause damage in the event of frost.



Figure 7

 **It is not permitted to drive with a load when a trailer with 2 axle lines has been raised to height via the emergency valves. This can lead to damage to the trailer.**

### 3.7 Connection external battery charger

The battery under the trailer is, when the 13-pin connector is correctly connected, charged by the towing vehicle while driving. In some cases this may be too little. The battery can be charged by an external battery charger via the plug on the front of the trailer. (Figure 8). The matching socket and cable lugs for mounting on the battery charger are included. The cables are marked on the connectors: red is + and black is -. **Make sure that you leave with a full battery at all times.**



Figure 8

### **3.8 Maintenance air suspension**

Regular cleaning and visual checks help reduce natural wear. The following components must be checked for wear, leakage or damage during periodic maintenance:

- Air bellows
- Air lines
- Shock absorbers
- Mechanical “lowering” protection
- Visually inspect the air filter for contamination

#### **3.8.1 Storing your air-suspended trailer for a longer period of time**

If you store your air-suspended trailer for a longer period of time, this will not affect the air suspension system. You can park the trailer at driving height or lowered on the fall protection. This way you can always move the trailer manually. Do not lower the trailer completely in the garage, this could deform the bellows. When you park the trailer at driving height, the trailer may have lowered a little when you're getting it out of storage. See 3.9.

When you store a trailer for a long time, make sure that the traction battery is recharged regularly, or permanently connect a maintenance charger. A battery that is not used for a long period of time runs down slowly and eventually breaks down.

### **3.9 Identifying defects in the air suspension**

 **Attention: Occurring defects in the air suspension system can negatively affect driving stability. This may result in the vehicle starting to sway or swing out. In the event of possible defects, it is not allowed to continue driving. This can cause consequential damage to other parts. The trailer can also exhibit unexpected behaviour and thus create dangerous situations, which can lead to accidents!**

Leaning. It may happen that when you find your trailer, it is slightly leaning to one side. Various causes can be at the bottom of this and it does not have to be a problem. A cause of misalignment may be that the load was changed after the air suspension was switched off. It can also be caused by the changing of the ambient temperature or a small leak which is within the tolerance values. A small tolerance is set in the automatic control to the ride height. This tolerance can cause misalignment. This has no consequences for the driving behaviour or safety of the trailer. In this situation, we recommend that you put the towing vehicle in ignition and allow the air suspension to automatically adjust itself to the ride height.

**If the compressor regularly and briefly kicks in to keep the air suspension at ride height, we advise you not to drive the trailer. Probably there is an air leak. Contact Tohaco BV in such cases.**

On the next page, you will find information on how detected faults or defects can be solved. If you do not manage to solve the problem, please contact Tohaco BV.

Description	Cause	Solution
Trailer is leaning	leaning within allowed values	Switch on the air suspension and allow it to reach ride height.
	Load change after disengaging air suspension	Switch on the air suspension and allow it to reach ride height.
The controls do not respond	13-p. plug (correctly) connected?	Re-insert the plug and check whether pins 9 and 10 have voltage
	Towing vehicle is in ignition?	Start the engine of the towing vehicle
	Battery voltage too low?	Charge the battery of the trailer
	Fuse 7.5A defect?	Replace the fuse in the junction box
Compressor does not switch on	Towing vehicle in ignition?	Start the engine of the towing vehicle
	Battery voltage too low?	Charge the battery of the trailer
	Fuse 40A defect?	Replace the fuse in the junction box
Compressor does not switch off	Compressor relay defect?	Remove the 40A fuse and contact Tohaco BV.
Air suspension does not lower, not even slowly	Battery voltage too low?	Charge the battery of the trailer
	Fuse 7.5A defect?	Replace the fuse in the junction box
Air suspension does not lift, even with the compressor running	Overloaded vehicle?	Reduce load
Battery does not charge	13-P. plugged in?	Insert the plug and start the towing vehicle
	Do pin 9 and 10 of the 13-P. plug have voltage?	Rewire the 13-p. plug on the car correctly
	Fuse 30A defect?	Replace the fuse in the junction box
	Charging current relay faulty?	Replace the relay in the junction box

**Ensure you have a sufficiently charged battery before looking for other defects.**

In case of a defect you always have the possibility to bring the trailer to a repair point by means of the emergency valves, fall protection and the battery charging point.

**Support with defects:**

**Tohaco BV: +31 (0)493-380639**

**VB Airsuspension after sales: +31 (0)315-257200**

In the event of leakage, immediately drive to a nearby Tohaco dealer or VB service station in the area. Be extra careful, and drive with a considerably reduced speed (max 30 km / h).

European VB locations, partners or service points can be found on the website of VB Airsuspension. See [www.vbarsuspension.com](http://www.vbarsuspension.com)

## 4 OPERATING INSTRUCTIONS

### 4.1 Construction and controls

For the parking brake, breakaway cable, grease nipples and for the coupling see figure 9:

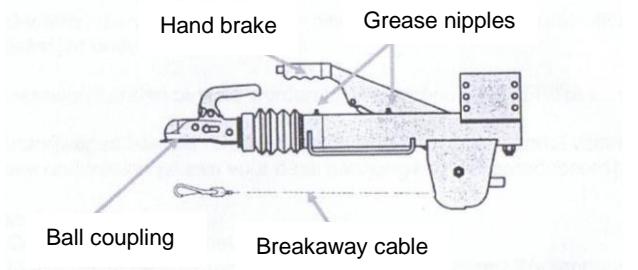


Figure 9

### 4.2 Working with the trailer

#### 4.2.1 Coupling and uncoupling the trailer

##### Coupling:

To couple the trailer, the opened ball-and-socket coupling (X-position) is placed on the ball of the towing vehicle and is clearly audibly locked. The pointer jumps after the correct locking of the ball coupling to the green field of the marking marked with a "+". After coupling, check the pointer to see if the ball coupling is correctly locked on the ball. If the pointer is in the green "+" field, then the ball coupling is correctly closed and the ball on the car still has enough wear reserve. (Figure 10). **Only in this case is a safe connection between your vehicle and the trailer made, and will you be allowed to participate in traffic.**

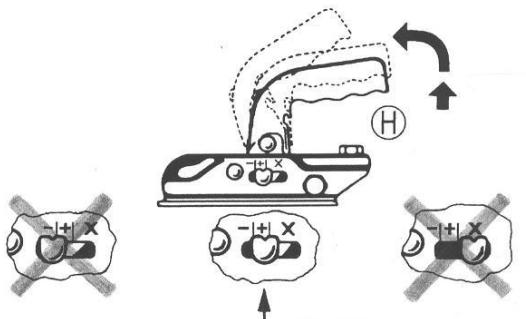


Figure 10

Fasten the breakaway cable with the carbine to the provided mounting point, never with a loop around the neck of the ball (figure 11). Connect the plug to the towing vehicle. Retract the jockey wheel and secure it parallel to the driving direction. (The jockey wheel must not obstruct the brake rod). Do not forget to release the parking brake before taking off.

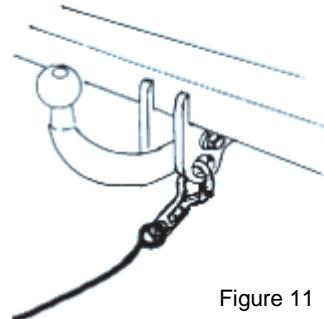


Figure 11

**If the indicator is in the red "-" field, the coupling is closed incorrectly and the trailer should not, under any circumstances, be driven. There can be three causes for this:**

1. The ball on the towing vehicle is already badly worn and does not provide the ball coupling with sufficient grip. The ball on the towing vehicle must be replaced and may no longer be used.
2. The coupling itself is very worn and does not offer sufficient grip on the ball. The coupling must be replaced at a qualified garage.
3. The closing mechanism of the ball coupling was activated, but there is no ball in the coupling. The ball coupling is loose on the ball and has no fixed connection. The coupling falls off the ball as soon as you start driving. Open the ball coupling as described below under "uncoupling" and again try to lock the ball coupling correctly on the ball.



**When the pointer is in the red "X" field, the ball coupling is not closed. The coupling is loose on the ball and would fall off the ball as soon as you start driving.**



**The trailer may not, under any circumstances, be driven in this situation.  
The coupling mechanism is possibly stiff due to insufficient lubrication.**

See the maintenance and lubrication instructions (page 16) and then try the coupling again.

### **Uncoupling:**

Turn the jockey wheel down. Disconnect the breakaway cable and plug. Pull the handle up and forwards. (The coupling remains automatically in the "open" position) with the pointer pointing to the red field with the large "X". (Figure 10)



**Stop! Under no circumstances should the trailer be driven in this mode.**



**Attention! Never insert your fingers in the open ball coupling. Even slight pressure on the sphere can trigger the spring-load closing mechanism and result in injury to the fingers.**

Pay attention when uncoupling on a slope. Use the parking brake or use wheel chocks if available.

### **4.2.2. Loading the trailer**

#### **Maximum load**

Do not exceed the gross weight. The gross weight is equal to the empty weight of the trailer plus the load capacity.

Gross weight = empty weight + load capacity

Empty weight: the weight of the trailer in running order, in other words with spare parts and tools that belong to the normal equipment, but without load.

Load capacity: maximum load, in other words the maximum weight of the cargo.

#### **Weight distribution**

For good braking and handling, the centre of gravity of the load must be as close as possible above the axle:

- Place heavy objects as much as possible above the axle.
- Evenly distribute lighter objects.
- Distribute the load as evenly as possible over the left and right half of the trailer.
- Avoid point loads, such as those of forklifts.
- The load must always be secured, preferably with straps and in no case with chains. Every country has its own regulations, consult the applicable regulations.
- When loading and unloading the trailer, it must always be coupled to the towing vehicle.

#### **Maximum load jockey wheels**

For the static maximum load of the jockey wheels a maximum of 250 kg applies. The maximum load may not be exceeded.

**Attention!** The trailer has been designed, calculated and tested for the loads as stated in the documents belonging to the trailer and the identification plate fitted at the front right of the trailer. Overloading can result in permanent damage, for this Tohaco cannot accept liability as a manufacturer.

#### **Binding rail**

If applicable, you can use the provided binding rail for securing the load.

#### **Fasten/secure load**

A load must always be firmly anchored to the vehicle with tools suitable for the load. Use only suitable lashing straps that comply with EN-12195-2 for lashing. Use of chains is not allowed, these will damage the binding rail.

### **Nose pressure:**

The maximum permitted nose pressure must not be exceeded (see specifications of your tow ball or vehicle and the identification plate of your trailer). The nose pressure can be increased or reduced by moving the load further forwards or backwards respectively. The optimum nose pressure is close to the maximum nose pressure.



**A negative ball pressure (i.e. an upward force on your towing ball) is strictly forbidden and very dangerous.**

There is a risk of slipping or swaying when the trailer is loaded carelessly. Also adjust your speed, the condition of the road surface and the load. This applies in particular to curves. Make sure that the wheels do not have a wobble and that the tyres are not in imbalance. Driving with respect for the material ensures durability.

#### **4.2.3 Before taking off**

- Turn the jockey wheel up and secure it. The jockey wheel must always be parallel to the direction of driving. (Support jockey must not interfere the brake rod)
- Check the coupling. The coupling must close well around the ball. Attach the break-off cable to the towing vehicle.
- Check the tyre pressure. (See page 19 for optimum tyre pressure)
- Check the even distribution and secure the load.
- Check the function of the lighting: direction indicators, rear lights, brake lights. (The lighting must never be covered by the load)
- Before taking off, release the parking brake.
- Make sure the license plate holder is folded open.

The trailer is equipped with an automatic brake release for reversing. To back-up, the overrun brake does not have to be locked.



**Note!** With motor transporters the license plate holder is kept open using a gas spring. Only load this gas spring in a linear way. The gas spring may bend due to other loads, which will lead to dysfunction.

#### 4.3 Maintenance

In case the trailer is used only little, the maintenance measures must be carried out at least once a year.

Perform the maintenance according to the following schedule:

Frequency	Maintenance area	Special attention for
After the first ride, no later than 50 kilometres.	Wheel mounting	Check the wheel bolts and tighten if necessary
Every time after the first ride after a wheel has been released	Wheel mounting	Check the wheel bolts and tighten if necessary
Check regularly at least every six months	Ball coupling	Cleaning and lubricating with machine oil or any other lubricating oil (figure 12)
Every 5000 km or at least once a year	Overrun brake	Lubricate both grease nipples with grease, sliding parts with machine oil (figure 13)
Check regularly	13-p. plug/lighting	Check for dirt, corrosion or damage
Every 5000 kilometres at least once a year	Wheel bearings	Approved trailer company or dealer, check lateral play bearings.
Every 5000 kilometres at least once a year	Brakes and brake lining	Approved trailer company or dealer, adjusting brakes, if necessary replace brake lining.
Check regularly	Tyres	Pressure, wear and damage
Every 5000 kilometres or at least once a year	Overrun brake	Approved trailer company or dealer, if necessary adjust brake system. Check response and, if necessary, adjust.
Check regularly	Gas spring at handbrake lever	Check for flexibility, damage and leakage. In case of damage or leakage, to be replaced by qualified garage.
Every 5000 kilometres or at least once a year	Air suspension system	Visual inspection air bellows, airline, shock absorbers, "lowering" protection and air filter.

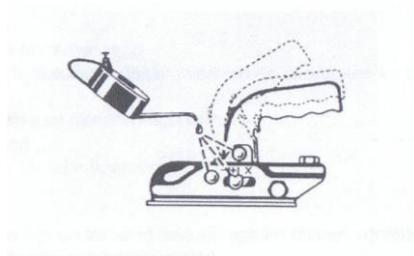


Figure 12

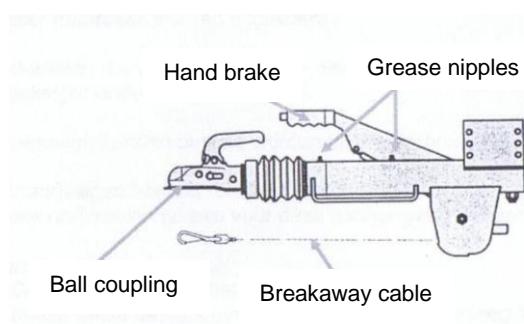


Figure 13

Tohaco BV recommends an annual inspection/maintenance to be performed by Tohaco or a recognized trailer company.

#### 4.4 Faults in the brake system and the ball coupling and the possible remedy

Defect	Cause	Resolve
1. Trailer brakes too weak	Too much slack in the brake system  Brake linings have not been driven in  Brake linings glassy, because of oil, polluted or damaged  Overrun brake is too stiff  Brake rods jammed or bend  Brake cables are rusted or kinked	Only by qualified garage  Apply handbrake slightly, drive 2 to 3 km  Only by qualified garage  Lubricate the overrun brake  Only by qualified garage  Only by qualified garage
2. Trailer brakes shocking	Too much slack in the brake system  Shock absorber of the overrun brake defective	Only by qualified garage  Only by qualified garage
3. Trailer brakes only on one side	Wheel brakes brake unilaterally	Only by qualified garage
4. Trailer already brakes when lifting the throttle	Shock absorber of the overrun brake defective	Only by qualified garage
5. Trailer reverses difficult or not possible	Braking system set too tight  Brake cables pre-stressed  Backmat brake pads brake in the brake pad holder	Only by qualified garage  Only by qualified garage  Only by qualified garage
6. Handbrake too weak	Wrong setting	Only by qualified garage  Apply handbrake lever as far as possible
7. Wheel brakes get hot	Wrong setting of the brake system  Wheel brakes polluted  Transfer lever of the overrun brake clamps  Spring accumulator is pre-stressed in zero position Nuts "G" turned too far  Handbrake lever was not/only partially released	Only by qualified garage  Only by qualified garage  Disassemble, clean and lubricate transfer lever.  Only by qualified garage  Move handbrake lever to zero position
8. The ball coupling does not lock after being placed on the coupling ball	Internal parts polluted  Ball on the towing vehicle too large	Clean and lubricate well  Measuring the ball: the trailer ball on the towing vehicle may have a maximum diameter of 50 mm in new condition. And according to DIN 74058 it must have a minimum diameter of 49.5 mm. If the diameter of the ball falls below 49.0 mm, the ball must be replaced. The ball must not be round.

#### **4.5 Cleaning**

The trailer chassis can be sprayed off with water and if needed soap solution. We certainly do recommend this if the trailer has been in contact with salt (brine) or acids, as zinc coating can be permanently affected by these substances. Although, the stains that arise do not reduce the protective effect of the zinc layer.

Always make sure that the electrical components do not get in contact with water or other liquids.

### **5 USE OF (ORIGINAL) PARTS**

During the warranty period, repairs may only be carried out under the direction of Tohaco BV, their dealer or installation station.

All parts that are replaced must at least meet the specifications of the original parts.

All parts can be ordered from Tohaco BV or their dealer.

The trailer consists of standard parts (commercially available) and specific parts (only produced for this trailer).

Standard parts: Preferably use the original product. If there is any doubt about the specifications, consult Tohaco BV or their dealer.

Specific components: Only spare parts supplied by Tohaco BV or their dealer may be used.

Deviating from the above regulations may have consequences for the safety of the trailer. Tohaco BV or their dealer cannot accept any liability for this.

## 6 SPECIFICATIONS

### 6.1 Trailer

#### 6.1.1. Wheels and tyres

##### Tightening torques for wheel bolts:

Thread mm	Wrench width mm	max. tightening torque nm
M 12 x 1,5	19 (17)	80 – 90

##### Optimal tyre pressure

The optimal tyre pressure depends on the type of tyre and this information can be given at any garage. Do not use any other tyres than those used by Tohaco BV or inform them or their dealer first.

Tyre size	Tyre pressure bar/psi	max. load kg.
195/50R13C	6,2/ 94	900 per wheel

##### Changing a wheel



**The air suspension must not be used to lift the wheels off the ground during service work.**

Always use a jack or lift bridge for changing a wheel.

Before changing a wheel always first switch off the suspension system by disconnecting the 13-pin plug.

If possible, place the trailer on a non-sloping surface,

Apply parking brake,

Loosen the wheel nuts slightly,

Push the jack under the swing arm or the air bellows bracket,

Raise the wheel suspension.

Loosen the wheel nuts and change the wheel.

After changing, carry out all actions in reverse order.

After 20 to 25 kilometres, check the wheel nuts again to be sure that they are properly tightened.

### 6.1.2 Electrical installation

Wiring diagram 13-pole Jaeger plug, connection side of towing vehicle



Figure 14

1	Indicator left	Yellow
2	Rear fog light	Blue
3	Mass for contacts 1 through 8	White
4	Indicator right	Green
5	Taillight, position lamp right	Brown
6	Brake lights	Red
7	Taillight, position light left, license plate light	Black
8	Reverse light	Grey
9	<b>Constant +, recharge battery</b>	Brown/blue
10	<b>Switched +, ASCU, enable air suspension system</b>	Brown/red
11	<b>Mass for pin 10</b>	White/red
12	No function	
13	<b>Mass for pins 9 and 12</b>	Black/white

### 6.1.3 Fuses spring system

The suspension system has 4 fuses that are placed under the trailer in the junction box.

7.5A fuse, for the ASCU (Air Suspension Control Unit)

40A fuse, for the compressor

40A fuse, for the optional 2nd compressor

30A fuse for charging the battery

## 6.2 Applicable guidelines and standards

This trailer has been approved in accordance to European type approval and thus complies with the requirements of the 'Wegenverkeerswet 1994', the Rijksdienst voor het Wegverkeer granted the necessary approval.