

Operating manual

VTG-Pocket Wagon T3000 / T3000e

Types S232 / S233



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1. General notes and provisions

Rail tank wagons and other special freight wagons are complicated technical products. Their correct handling is a prerequisite for problem-free use. Those entrusted with handling them have a great deal of responsibility to ensure that safe filling and emptying takes place. It is therefore of great significance that clarity exists on the purpose and function of the wagon. In this respect rail freight wagons form no exception to any other technical product.

Subject of this operating manual is the correct operation of the VTG freight wagons described below. It is important for you to read this operating manual carefully and keep it in a safe place. Please note that this wagon is only allowed to be operated by persons instructed in its operation.

This operating manual reflects the current state-of-the-art in terms of best practice. However, because filling and emptying stations can be designed differently, every user of VTG freight wagons are urged to check the applicability of the provisions and recommendations by VTG in each specific situation and adapt them to the local conditions if necessary.

The object of this operating manual is the correct operation of VTG freight wagons alone. VTG points out that shipment by freight wagon is regulated by numerous laws, guidelines, ordinances, and international agreements, which impose obligations in terms of handling and conduct, particularly on those involved in the transport of such wagons and their employees. Each user is personally responsible for familiarizing themselves and complying with the pertinent legal provisions. VTG accepts no legal liability in relation.

The vehicles are to be operated according to their intended use.

Wagons must be kept in a condition that meets the requirements of safety and order and thus always guarantees the safety and efficiency of rail traffic.

WARNING!

Wagons in loaded condition may neither be driven over the hump nor pushed off! The carrier wagons may travel over the hump when empty in accordance with the UIC 522-2 profile.

The personnel in charge of operating the wagon must be technically competent and verifiably familiar with and follow the operating manual, with the generally applicable regulations and with the internal regulations of the responsible loading/unloading stations. Therefore, the responsible operator of the loading/unloading station or a person commissioned by it must carry out an annual instruction of the operating personnel. The instruction must be documented in writing and stored in accordance with national regulations.

The operator must be equipped with the necessary personal protective equipment. When handling and loading the wagons, the operating personnel must observe the inscriptions and signs directly attached to the wagons!

2. Meaning of the symbols used in this operating manual



Warning: Danger to life!



Attention: Important note



Please observe!

3. Safety instructions

3.1. General safety instructions



- Electrical flashovers or contact with overhead lines can be lethal! A distance of 3 m, if possible, but at least 1.5 m must be maintained! This also applies to objects such as ladders!



- When staying in the track area while driving or shunting, there is a danger to life!
It must therefore be ensured that for the duration of the stay of persons the corresponding track area is closed for any driving or shunting operation! This may also apply to the neighbouring track! Closure shall take place in accordance with national rules. This can be performed, for example, by means of a railway-approved sign (Sh2 discs in Germany), a track barrier or a securing bolt that is clearly visible to the shunting or driving personnel.
- Wear warning clothing/vest (bright orange or bright yellow with reflective stripes) according to DIN EN ISO 20471 (EN 471) and safety shoes S 2 according to DIN EN 345 with higher, soft shaft!



- Make sure before crossing driving areas/tracks that no shunting activities take place!
- Never walk under a wagon or climb over buffers!
- If possible, cross the wagon on a brake tester or in a designated area!
- Keep a safety distance of at least 2 m from buffers according to national regulations!
- Do not step on the rail heads or wet wooden sleepers – danger of slipping!
- Go on shunting paths between the tracks!
- Only enter track areas with good lighting!
- Watch out for unevenness, there is a risk of tripping!



- Unbraked wagons can start rolling independently!
- Approaching railway vehicles are often not noticed or too late for escape reactions!
- Fast railway vehicles on adjacent tracks can also become dangerous due to air pressure fluctuations (pressure and suction effect) caused by them!

Warnings and operating instructions attached to the wagon must always be followed!

This operating manual includes the most important operations to be carried out when using the wagons. The operating personnel must follow the occupational safety and accident prevention regulations as well as the internal safety regulations of the operator for all activities!

3.2. Climbing on wagons



- Electrical flashovers or contact with overhead lines can be lethal! A distance of 3 m, if possible, but at least 1.5 m must be maintained!
- Working at height involves the risk of falling, which can lead to serious injury or death!
- Wagon movements while persons are on the wagons can lead to serious injuries or even death!

Activities, longer stays, especially with other persons, movements outside walking areas and descending considerably increase the risk of falling.

Weather conditions are also a factor when inspecting outdoors.

The following safety instructions must be observed:

- In the area of electrical overhead lines, climbing onto containers or semi-trailers on the wagons is **FORBIDDEN!**

Special care must be taken when handling long objects (e.g. ladders) near overhead lines. A distance of 3 m, if possible, but at least 1.5 m must be maintained from the overhead line!

- No activities at height
 - without using fall protection equipment
 - under the influence of alcohol, drugs, fear of heights or health problems
 - in unfavourable weather conditions (ice, snow, storm, thunderstorm)
- For the duration of the stay at and on the wagons, the track area must be closed for any driving or shunting operation! This may also apply to the neighbouring track! The wagons must be secured against rolling away!
- Personal protective equipment such as safety shoes and catching harness must be used and checked for defects and function before use
- Attention must be paid to tripping hazards on ascents and in walking areas.
- When ascending or descending unsecured, both hands must be free for securing.
- Distracting telephone calls are prohibited.
- Ladders and steps must stand securely and be used with special care. Damage must be noted before use.

4. Technical vehicle notes

4.1. Inspection before/after loading

In order to properly prepare the wagon for operation, the following measures and checks listed in the following table must be carried out before each wagon load, at the latest after loading:

Con. no.	Part/Assembly	Requirement
01	Requisite inscriptions, pictograms and warning paints	Complete, in place and visible
02	Chassis, general:	<ul style="list-style-type: none"> – Apparently not damaged, no deformations or cracks – Condition of the lateral sliders (as far as visible) in order
03	Bogie, general:	apparently not deformed or cracked, wheelsets, axle bearings and springs in order
04	Draw-gear and buffer	<ul style="list-style-type: none"> – Apparently not deformed, – unused or hanging coupling clamps of the screw coupling are hooked into the appropriate hooks, – joint connections and steel sliding points are lubricated, dirt and encrustations are removed, – the draw hook pin can be turned and the locking device is accurate (plate and cotter pin undamaged).
05	Brake, brake components	<ul style="list-style-type: none"> – Apparently not deformed, – Bolts in the brake rigging, – Brake block shoes, release cables, shut-off valves as well as the changeover device and brake coupling are in order, – Parking brake operational and released, – unused brake hose couplings are hooked into the appropriate hooks – Brake pad thickness sufficient (> 15 mm) – Brake block shoe not overflowing, not broken
06	Container jigger pins	Complete, apparently undamaged, functional
07	Swap body supports	In place and apparently undamaged
08	Footboards, footboard brackets, handgrips, signal supports	Fixed in place, apparently undamaged
09	Cable hook	Apparently not deformed, undamaged
10	Wheelsets	Apparently undamaged
11	Buffer disks	In place
12	Time grid, railcar hitch (see maintenance instructions)	Deadlines not yet expired / Deadline work not yet due

If the specified requirements are not met, the defects must be repaired or the wagon must be sent to a workshop with no load on it.

5. Wagon operation

5.1. Wagon equipment for operation

During normal railway traffic, the operating personnel comes into contact with the wagon parts shown in Figs. 5.1 and 5.2:

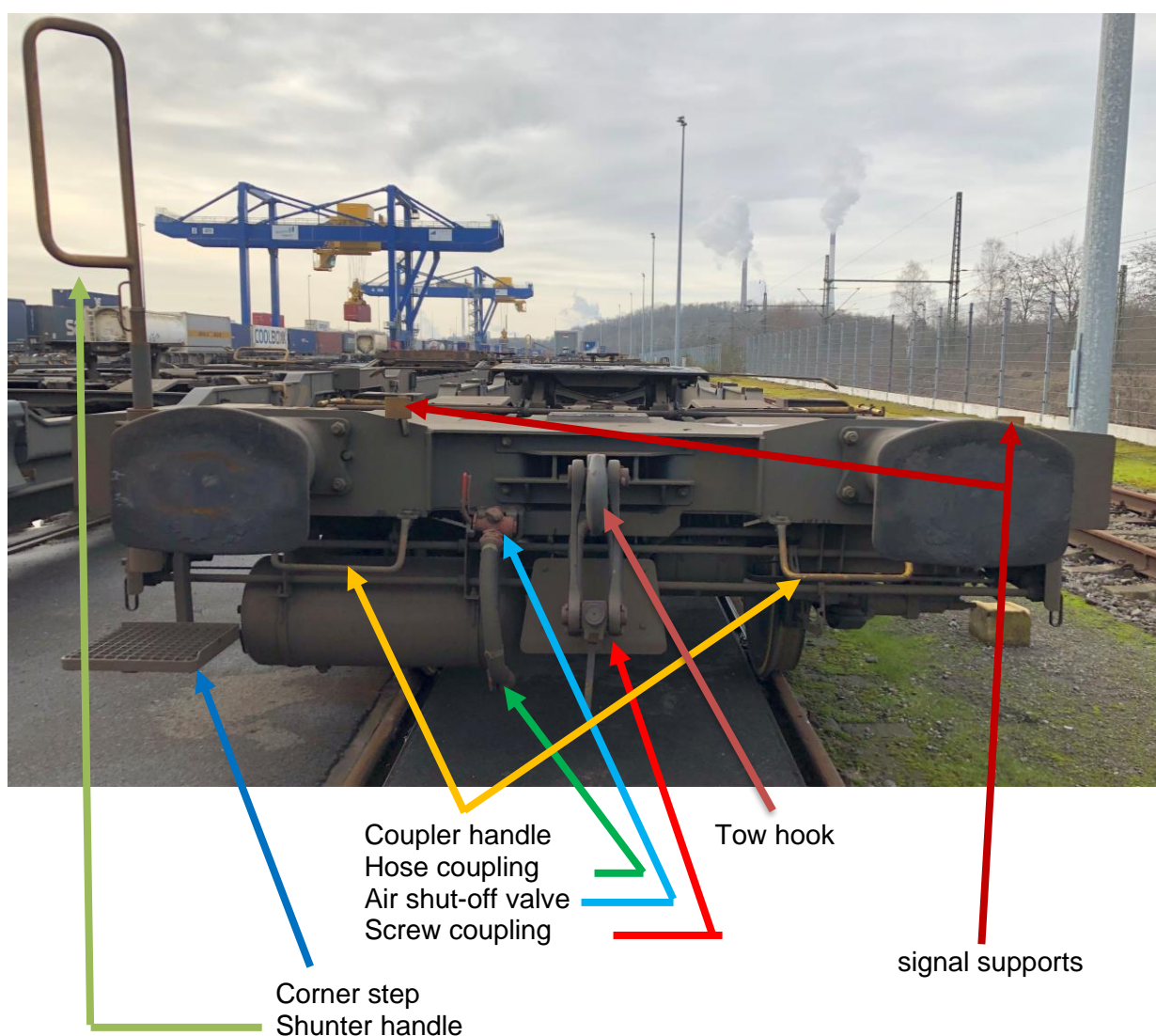


Fig. 5.1: Equipment at the wagon end

5.2. Coupling and uncoupling of wagons

The following equipment is used for coupling and uncoupling:

- Screw coupling
- Tow hook
- Coupler handles, arranged under the buffers
- Hose coupling
- Air shut-off valve



When manually coupling and uncoupling the wagons, the coupler personnel is exposed to a permanent risk of accident, therefore they must be technically competent and equipped with personal protective equipment - safety helmet, gloves, warning clothing according to EN 471 and safety shoes.

When performing their work, the coupler personnel must comply with the internal safety regulations of the operator or the railway company.

The wagons are designed in such a way that the coupler is not exposed to any unacceptable risk during the coupling or uncoupling of wagons if standing between the buffer and the tow hook. To allow the coupling personnel to have access to the appropriate positions between the wagons to be coupled, there are spaces between the buffers of the wagon ("Berne space"). The wagons are also equipped with a coupler handle under each buffer (see Fig. 5.1).



The coupler may not move between the wagons until they have come to a standstill! The wagons must not be moved again until the coupler has left the track!

In order to avoid an accident due to tripping or slipping, free and safe working space and access paths between the tracks must be created for the coupler!

For coupling, the coupling bracket of one wagon is placed in the draw hook recess (see Fig. 5.2) of the other wagon. Then, by turning the coupling screw lever around the coupling screw (see Fig. 5.2), the screw coupling is tightened in such a way that the buffer plates touch each other (on a straight track) - in accordance with the regulations of the railway company or the operator. The unused coupling link of the other wagon is hooked into the hook (see Fig. 5.2).

The brake hose couplings of the two wagons must be connected and the air shut-off valves (see Fig. 5.1) of these lines must be opened.

To uncouple, turn the coupling screw lever around the coupling screw to lengthen the screw coupling so that the coupling link can be removed from the draw hook recess (see Fig. 5.2). The coupling link is removed from the draw hook recess and hung into the hook for the draw hook of the wagon to which the screw coupling belongs.

Close the air shut-off valves and disconnect the brake hose couplings. The hose couplings are to be hung in the corresponding suspension hooks for the brake coupling.

If the suspension hooks for the tow hook are damaged or missing, the coupler must tighten the loose screw coupling to the smallest possible length. In order not to fall below the boundary line, the free coupling end must not hang lower than 140 mm above the top of rail!

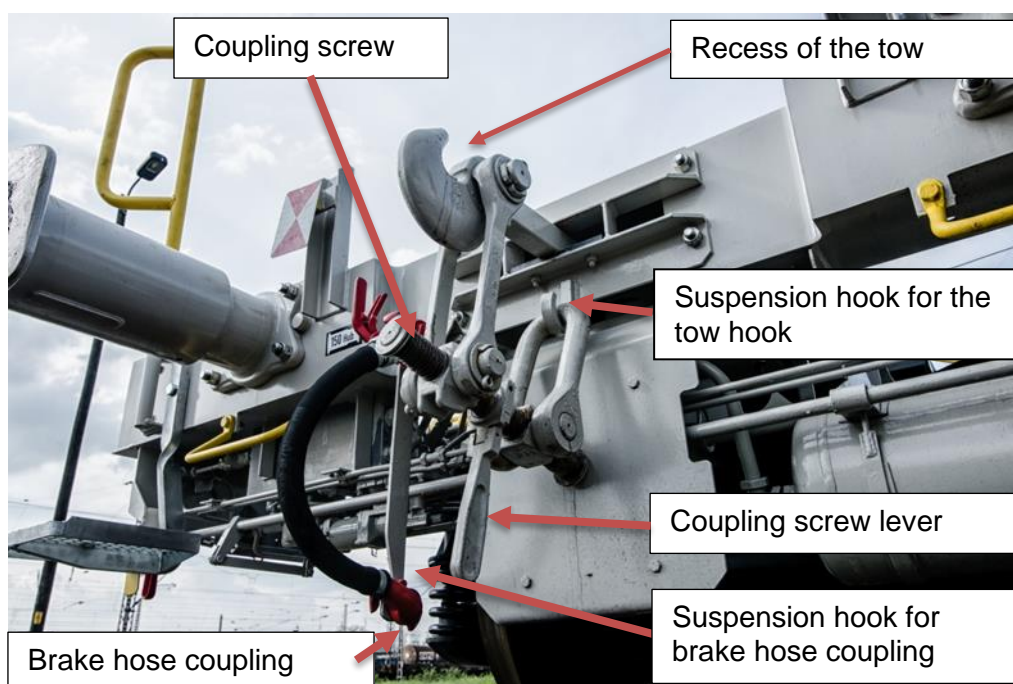


Fig. 5.2: Draw gear

5.3. Shunting

5.3.1. General

The wagons can be shunted

- by a coupled locomotive
- by a cable pull (see section 5.3.2)
- by pushing on the buffer with a vehicle. Warning: The buffer must not be damaged (e.g. by scoring)!



When shunting, there must be no unauthorised persons on the track or in the immediate vicinity of the wagons!

When shunting, the safety distances to the wagons - when shunting with cable pull also to the cable - and the general safety regulations for personnel when working and staying in the track area must be observed!

To enable shunting personnel to ride on the wagons during shunting, they are equipped with corner steps and shunter handles (see Fig. 5.1). The manoeuvring operator standing on the corner step must hold on to the manoeuvring handle during the movements of the wagon! While the shunter is on the wagon, the wagon may only be moved carefully and without shocks!



Loaded container wagons may travel over humps, but may not be pushed off or run onto other vehicles! The wagons must also be protected from the impact of other vehicles. Markings according to GCU, Annex 11, points 5.1 to 5.5 must be observed!

5.3.2. Shunting the wagon with cables

For this purpose, the wagons are equipped with cable hooks on both sides (Fig. 5.3).



To move the wagons, only equipment intended for this purpose may be used. Sudden disconnection of the cable hook from the wagon during shunting work may result in injury to the operating personnel. Pulling the wagon at the buffers is prohibited.



Fig. 5.3: Cable hook

5.4. Fixing of signal lamps

For this purpose, the wagons are equipped with signal supports (see Fig. 5.1) at both ends with openings for signal lamps.

5.5. Attachment of accompanying documents

The wagons are equipped diagonally on both sides with sheet holders (Fig. 5.4) into which the accompanying documents are inserted.

Opening the document holder: Turn the locking lever (pos. 1 in Fig. 5.4) upwards, lift the grid (pos. 2 in Fig. 5.4) and insert or remove the document.

Closing the document holder: Move the grid to the vertical position and secure it with the locking lever.

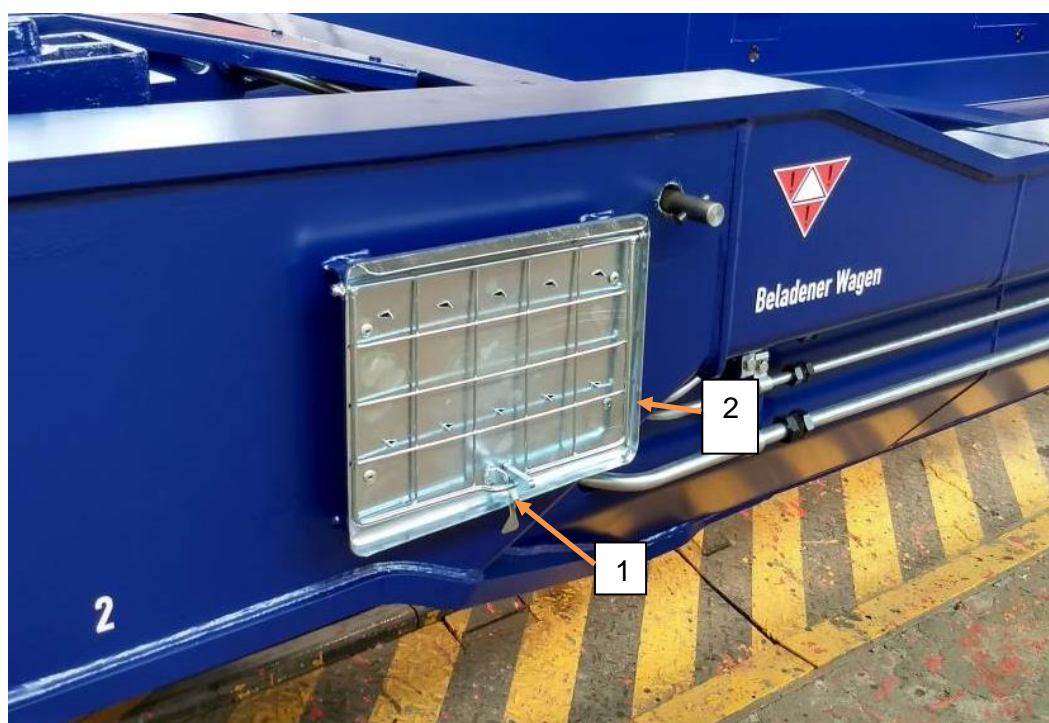
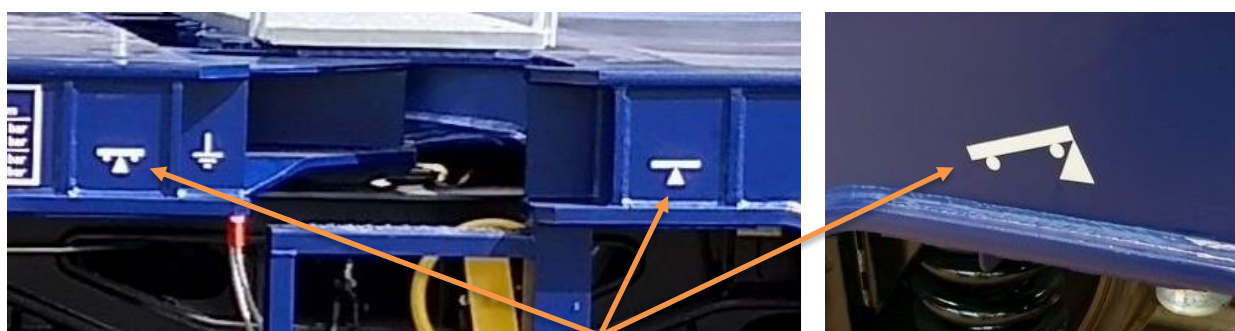


Fig. 5.4: Document holder

5.6. Lifting the wagon

If wagons have to be lifted, this is only permitted at lifting points. The lifting points are identified by symbols in accordance with GCU, Annex 11, Sections 7.1 to 7.3 (Figs. 5.5 and 5.6).



Figs. 5.5 to 5.6: Marking of the lifting points

5.7. Operating the parking brake

The Handbrake is used to fix the wagon, e.g. in the parking area or in the workshop.



The brake must be released when driving, otherwise the wheelsets will be damaged!
During braking with the pneumatic brake, braking with the parking brake is prohibited!

The wagons are equipped with a hand-operated parking brake that can be operated from the ground and acts on the central bogie (Fig. 5.7). It serves to secure the parked wagon.

Prior to commissioning parked wagons, check that the parking brake has been released completely before departure.



Fig. 5.7: Centre bogie with parking brake wheel

The slope of the parking brake indicates the maximum gradient on which the parking brake can hold the fully loaded wagon at a standstill. Fig. 5.8 shows the slope of the parking brake of a T3000e wagon. For T3000 wagons, this value is 1.9 % (see Fig. 5.9).



Fig. 5.8: Slope of the parking brake for a T3000e wagon.



Fig. 5.9: Slope of the parking brake for a T3000 wagon.

5.8. Operating elements of the pneumatic brake

The air brake can be switched on or off with the changeover lever (Fig. 5.10). The brake is engaged when the lever is pointing downwards.

By pulling the release cable (Fig. 5.11), the brake is released with the main air line vented, e.g. to release the brake in shunting operation.

To vent the brake, the release cable must be pulled until no more air exhaust noise can be heard.

Warning: In the case of wagons with swivels, the release cable must be pulled on each part of the wagon!

The wagons can be driven with a slow or fast acting brake.

The adjustment is made with the G-P changeover lever (Fig. 5.10).

G = slow-acting brake,

P = fast-acting brake

It is important that all wagons of a trainset have the same brake setting (G or P). This must be checked on departure! Exception: So-called "long locomotive" on long and heavy trains, where the first wagons are driven in G and the rest in P (see train formation instructions of the railway company responsible for transport).

Warning: For wagons with central bogies, each part of the wagon has a lever for G-P changeover and both should be in the same position.

The weighing valves automatically adjust the brake pressure to the load weight.



Fig. 5.10: Changeover lever G-P and changeover lever on-off



Fig. 5.11: Release cable

6. Loading and Unloading

6.1. General

Containers can be loaded and unloaded using a crane or reach stacker, semi-trailers can only be loaded using a crane. Semi-trailers for a hitch height of 88 cm, 98 cm and 113 cm can be loaded.



Loading and unloading of the wagon on tracks under the overhead power line is prohibited! Risk of electric shock!

A sufficient safety distance (at least 2 m) must be maintained between the loading devices and the overhead power line!

The loading and unloading area must be closed to all rail traffic during loading and unloading!

No unauthorised persons are allowed in this area!

Only a fully functional and undamaged wagon may be provided for loading (see chapter 4). Before each loading and unloading, a visual check must be made to ensure that the jigger pins or other parts of the wagon are not damaged. Also, there must be no loose parts on the wagon.

For loading containers, the hitch height must be set to 88 cm (for operating the hitch, see Section 6.2).

For loading semi-trailers, the foldable container jigger pins must be folded away (see Section 6.3).

The wagons provided for loading or unloading must be carefully secured against rolling away i.e. by using brake shoes.

Loading or unloading must only be carried out in sufficient lighting conditions!

The personnel in charge of operating the wagon must be technically competent and verifiably familiar with and follow the operating manual, with the generally applicable safety regulations and with the internal regulations of the responsible loading/unloading stations. Therefore, the responsible operator of the loading/unloading station or a person commissioned by it must carry out an annual instruction of the operating personnel. The instruction must be documented in writing and stored in accordance with national regulations. The operators must be equipped with safety equipment.

When handling and loading the wagons, the operating personnel must observe the inscriptions and signs indicated directly on the wagon and in the corresponding drawing documentation for the wagon!

Before loading and unloading, folding shunting handles must be folded away (Fig. 6.1) so that they cannot be damaged during loading or unloading. After loading or unloading, they must be returned to the shunting position so that they can be used by the shunting personnel (Fig. 5.1).



Fig. 6.1: Folded-away shunter handle

6.2. Handling and maintenance of the railcar hitches

See separate instructions.

6.3. Loading and unloading with containers and swap bodies

For loading with containers and swap bodies, the wagon is equipped with

- fixed container jigger pins (Fig. 6.2),
- Folding container jigger pins in the bogie area (Figs. 6.3 and 6.4),
- Folding container jigger pins in the pocket area (Fig. 6.5).



Fig. 6.2: Fixed container jigger pins on the cross member of the central bogie

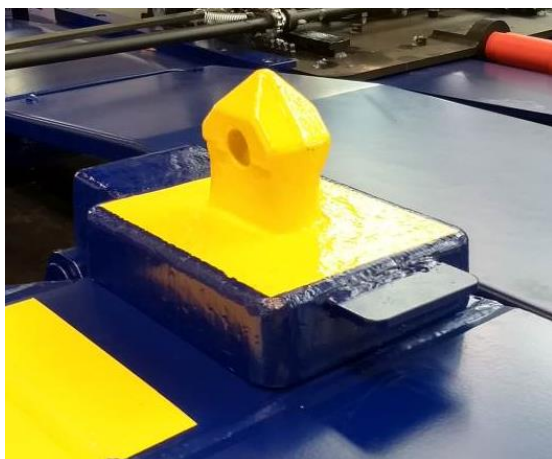


Fig. 6.3: Jigger pin in working position



Fig. 6.4: Jigger pin folded away



Fig. 6.5: Container jigger pin and foldable swap body support in working position

The specifications in section 6.1 must be observed!

The wagons are designed for the transport of standard ISO containers and swap bodies.

For loading, the maximum sizes and weights specified in the loading diagram (see Section 7) must be observed. The permissible load limits (see load limit pattern on the wagon) must not be exceeded under any circumstances.

Also, It must be ensured that the weight is distributed evenly over the wheelsets/bogies and that central bogies, for example, are not overloaded!

For each container or interchangeable container, 4 container jigger pins are always required for attachment to the wagon. The required foldable container jigger pins must be folded in the working position (Figs. 6.3 and 6.5). Unused jigger pins must be folded away.

Additional swap body supports are shown in Figs. 6.5 and 6.6. The supports as shown in Fig. 6.6 can be folded up using the lever. Make sure that the supports are then locked.

The UIC loading guidelines must be observed.



Fig. 6.6: Swap body support

7. Loading scheme

The loading schemes show how the wagons are to be loaded, depending on the container size, the container weight and the number of containers.

Weight limits according to the load limit pattern or loading scheme and according to the s/ss braking regime must be observed!

Also, It must be ensured that the weight is distributed as evenly as possible over the wheelsets/bogies and that central bogies, for example, are not overloaded! See also the loading specifications in the GCU.

The loading schemes can be retrieved from the following VTG directory:

F:\VTG Hamburg\SL-K\K-Allgemein\KR-Anweisungen\Deutsch\00 - 8.4 -Beladeschema bzw. ConSense – 8.4 – Beladeschema.

You can obtain access authorisation from Ms Wilke (bettina.wilke@vtg.com).

8. Damage reports and repairs

Repair and maintenance work is only allowed to be carried out by specially trained technicians.

Please contact:

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