

Operating manual VTG Grain Hopper Wagon Type Tagnpps



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1. General notes and provisions

1.1. Introduction

Rail tank wagons and other special goods 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.*

The subject of this operating manual is the safe and proper operation of the 4-axle grain hopper wagon of the type Tagnpps in the trans-European rail network by an approved railway operator. *It supplements the mandatory legal provisions and accident-prevention regulations.*

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. The regulations according to TSI, UIC, EBA, GCU, EN, DIN and VPI guidelines specified in the technical documents and the certificate of approval must be observed.

The information signs, warning signs and prohibition signs on the grain hopper wagon serve to protect life, health and the environment. They must be kept clean and legible and must under no circumstances be removed, painted or pasted over. Illegible or missing signs must be replaced immediately.

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 is 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. Each user is personally responsible for familiarizing themselves and complying with the pertinent legal provisions. VTG accepts no legal liability in relation.

1.2. Safety

1.2.1. Intended use

The Tagnpps hopper wagons, types N-405-00 (130 m³ hopper) and N-410-00 (95 m³ hopper), are designed for the transport of agricultural products, especially grain and similar moisture-sensitive bulk materials.

The permissible axle loads and the permissible total weight *must be complied with*. Overcharging must be prevented in any case.

The construction of the grain hopper wagons must not be modified. The safety of the vehicle would be impaired and the operating approval would be voided.

Intended use includes observance of these and all supplied operating instructions as well as observance of the prescribed test intervals and conditions.

1.2.2. Personal protective equipment

When working on, on and under the grain transport wagon, the persons assigned to do so must be equipped with appropriate personal protective equipment. Wearing a safety helmet, protective gloves, non-slip protective shoes and workwear according to EN 471 is mandatory.

In addition to the statutory provisions and accident-prevention regulations, the operating personnel must comply with the safety regulations of the operator or the railway operator.

1.2.3. Hazardous areas

The grain hopper wagon is built according to the latest technology and recognised safety regulations. Nevertheless, its use may endanger the health and lives of the user or third parties or impair the vehicle and other property.

Position	Hazardous areas	To be observed
1	Staying between the individual grain hopper wagons	If the vehicles are coupled and uncoupled <i>carelessly</i> , there is a risk of people being trapped or - <i>if they get between the buffers of two wagons - being crushed!</i>
2	Staying on the grain hopper wagon	<ul style="list-style-type: none"> • <i>It is prohibited for any persons to stay on the wagon while driving!</i> • <i>Before closing the roof, check that there are no persons left on the vehicle!</i> • <i>Do not climb onto the vehicle under an overhead line! Danger to life!</i> • <i>Only physically fit people who are free from vertigo are allowed to climb onto the wagon. These must be secured against falling (e.g. by carrying/attaching a fall protection device).</i>
3	Staying within a radius of 5 m of the grain hopper wagon	<ul style="list-style-type: none"> • When loading and unloading, the presence of unauthorised persons in the hazard area represents an unnecessary risk to their safety! • When closing the roof, check that all locking hooks engage in the locking lugs and the lever lock is engaged! • Driving or manoeuvring with the roof open is prohibited!

When manoeuvring wagons, no unauthorised persons are permitted on the track or in the direct vicinity of the wagons!

When manoeuvring, the safety distances to the wagons as well as the general safety regulations for the personnel when working and staying in the track area must be observed!

1.2.4. Safety when operating the wagon

The staff responsible for operating the wagon must be professionally *and individually* qualified to do so. They must have been verifiably made familiar with the operating instructions, the general safety regulations and the internal regulations of the railway operator.



Warning:

The following safety rules must be observed when carrying out the work:

- *Before loading, the wagon must be secured against rolling away!*
- *During the opening and closing of the roof and during filling, no persons may be on the wagon or inside the tank!*
- During handling of the tank and when standing on the ladders and grating bars of the working platform, safety shoes with a hard sole must be worn.
- Climbing onto the tank and standing on the tank bridge are only permitted at workplaces where platforms with railings are arranged around the wagon at the same height as the tank bridge on the wagon.
- If the workplace is not equipped with the above mentioned equipment, personal safety equipment must be used for fall protection, which is attached to the platform frame.
- In winter, any icing or snow layer must be removed from the roof, bridges and platform before handling the tank.

2. Technical vehicle notes

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

Con. No.	Part/Assembly	Requirement
01	Requisite inscriptions	Legible
02	Requisite pictogram	Present and legible
03	Painted warning signs	Recognizable
04	Chassis, general:	Apparently not deformed
05	Bogie, general:	Apparently not deformed, wheelsets, axle bearings and springs in order
06	Draw-gear and buffer	Apparently not deformed, unused or hanging coupling clamps of the screw coupling are hooked into the appropriate hooks
07	Brake, brake components	Apparently not deformed, bolts in the brake rods, brake block shoes, release cables, shut-off valves as well as the changeover device and brake clutch are in order; Handbrake functional and released, unused brake hose couplings are hooked into the appropriate hooks
08	Footboards, footboard brackets, handgrips, ladders, signal supports	Fixed in place, apparently undamaged
09	Rope hook, becket, conduit	Apparently not deformed, undamaged
10	Wheelsets	Apparently undamaged
11	Brake-shoe inserts	Thickness > 10mm; NOT overflowing, not broken
12	Buffer disks	In place
13	Check overhaul deadlines	For validity
14	Check other deadlines.	For validity
15	Pivots	Check securing of the pivot and condition of the lateral sliders
16	Steps and Handles	Firm, apparently not deformed,

When coupling, the coupler must tighten the screw coupling so that the buffer plates touch each other.

3. Filling and emptying the tank

3.1. Wagon series N-405-00 (130 m³ tank)

3.1.1. Filling the tank

(Fig. 1 - left side of the wagon, Fig. 2 - right side of the wagon)

Before loading, the wagon must be secured against rolling away!

During the opening and closing of the roof and during filling, no persons may be on the wagon roof (Bridge) or inside the tank!

During loading, the operator must observe the maximum wagon load according to the load limit pattern attached to the wagon for individual track classes!

- Before loading, check the technical condition of the wagon and/or tank. If defects are found, they must be repaired or the vehicle sent to a repair workshop for professional repair.
- Before filling, check that all hoppers are closed and that the operating devices for the hoppers are sealed (11). (The controls of the hoppers are sealed only on the side of the wagon where the shut-off ratchet is located).
- If present, sealings on the handwheel must be removed.

Important notice: Seals are present on both sides of the Wagon.

- Open the roof (A) by turning the handwheel (2) in the direction “OPEN” (Öffnen).
- Visually check whether the roof is open.
- Fill the tank with goods.
- Close the roof (A) by turning the handwheel (2) in the direction “CLOSE” (Schließen).
- Visually check whether the roof is closed.
- If required, secure the handwheels by sealing them to the plate (7).
- Before moving the wagon, remove securing devices (brake shoes, wheel chocks) and release the handbrake.

Please note: A handwheel for opening and closing the roof is located on each side of the wagon. The respective direction of rotation for opening and closing is indicated by inscriptions and arrows.

3.1.2. Emptying the tank

Before each unloading, the wagon must be secured against rolling away!

No persons may be inside the tank during the emptying process!

- Check the technical condition of the wagon and/or tank. If defects are found, they must be repaired or the vehicle sent to a repair workshop for professional repair.
- Before unloading is started, the seals must be removed from all three hopper controls in area (11) (the hopper controls are sealed only on the side of the wagon where the shut-off ratchet is located).
- Grab the shut-off ratchet (12) by the handle (13) and turn it by approx. 180°. This first releases the ratchet nose (14) from the notch (15) and then the tothing (16) engages in the tothing of the ratchet wheel.
- Then grab the handle (18) and turn *the lever* step by step. The *position of the lever can be fixed* in any position *by means of the ratchet* (12). The *lever handle* can be rotated by approx. 180°. The unloading device is opened by operating the lever.
- *The tank is emptied by opening the unloading devices.*
- Closing the unloading hopper: Grab the shut-off ratchet (12) by the handle (13) and turn it back by approx. 180°. This causes the ratchet nose (14) to touch the surface of the cam track (19). Then grab the handle (18) and turn back *the lever* by approx. 180°. By operating the *lever* (18), the surface of the cam track (19) is rotated until the ratchet nose (14) engages (15). After closing the hopper, it can be sealed in area (11).
- Repeat this procedure for all hoppers.
- Before moving the wagon, remove securing devices (brake shoes, wheel chocks) and release the handbrake.

Please note: The controls for opening and closing the hoppers are located on both sides of the wagon, but the positions concerning the shut-off ratchets (11, 14, 15, 16, 19) are located only on the left side of the wagon. The direction of rotation of the levers used to operate the discharge hoppers is indicated by symbols located above the operating levers.

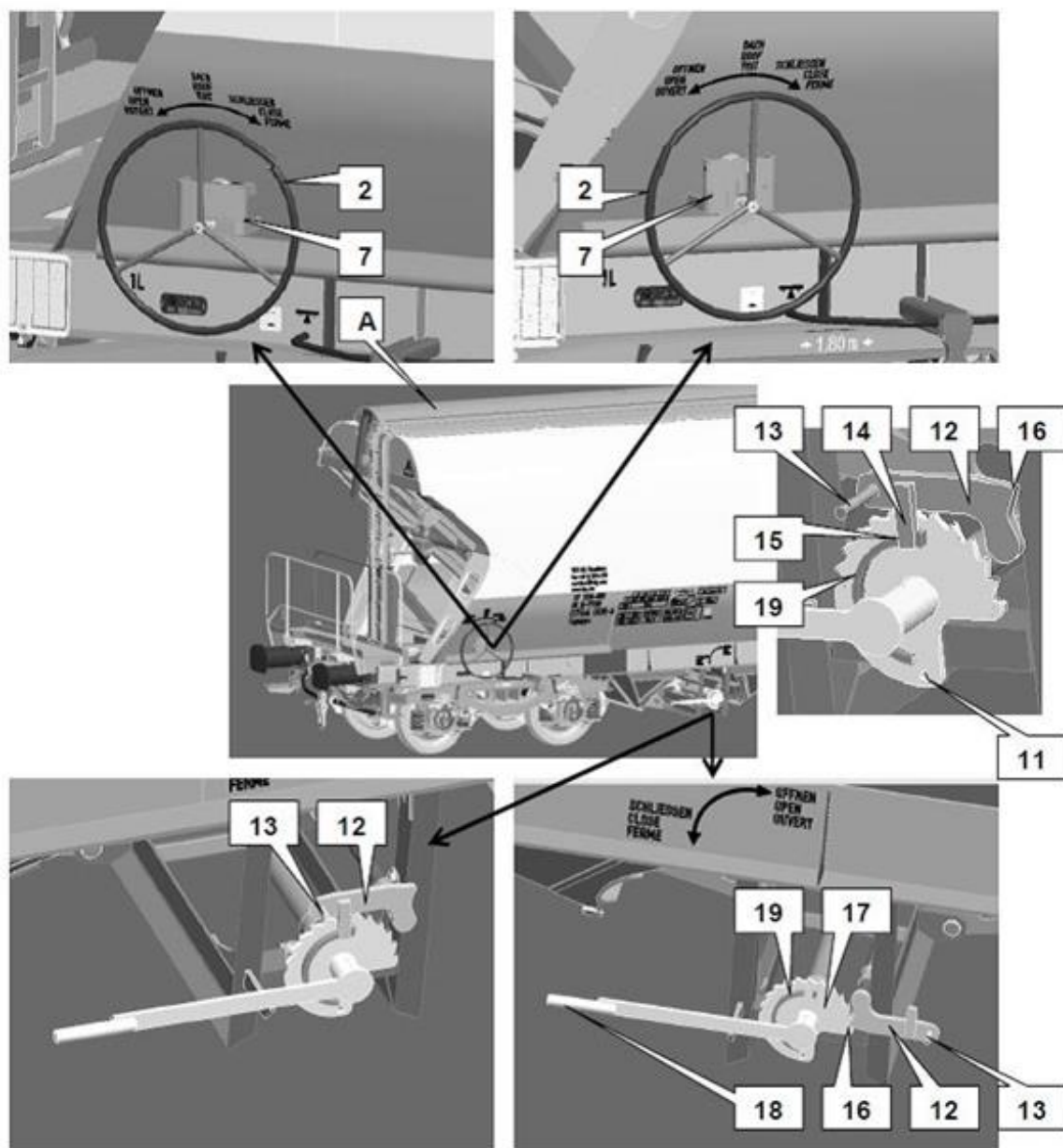


Figure 1: Left side of the wagon

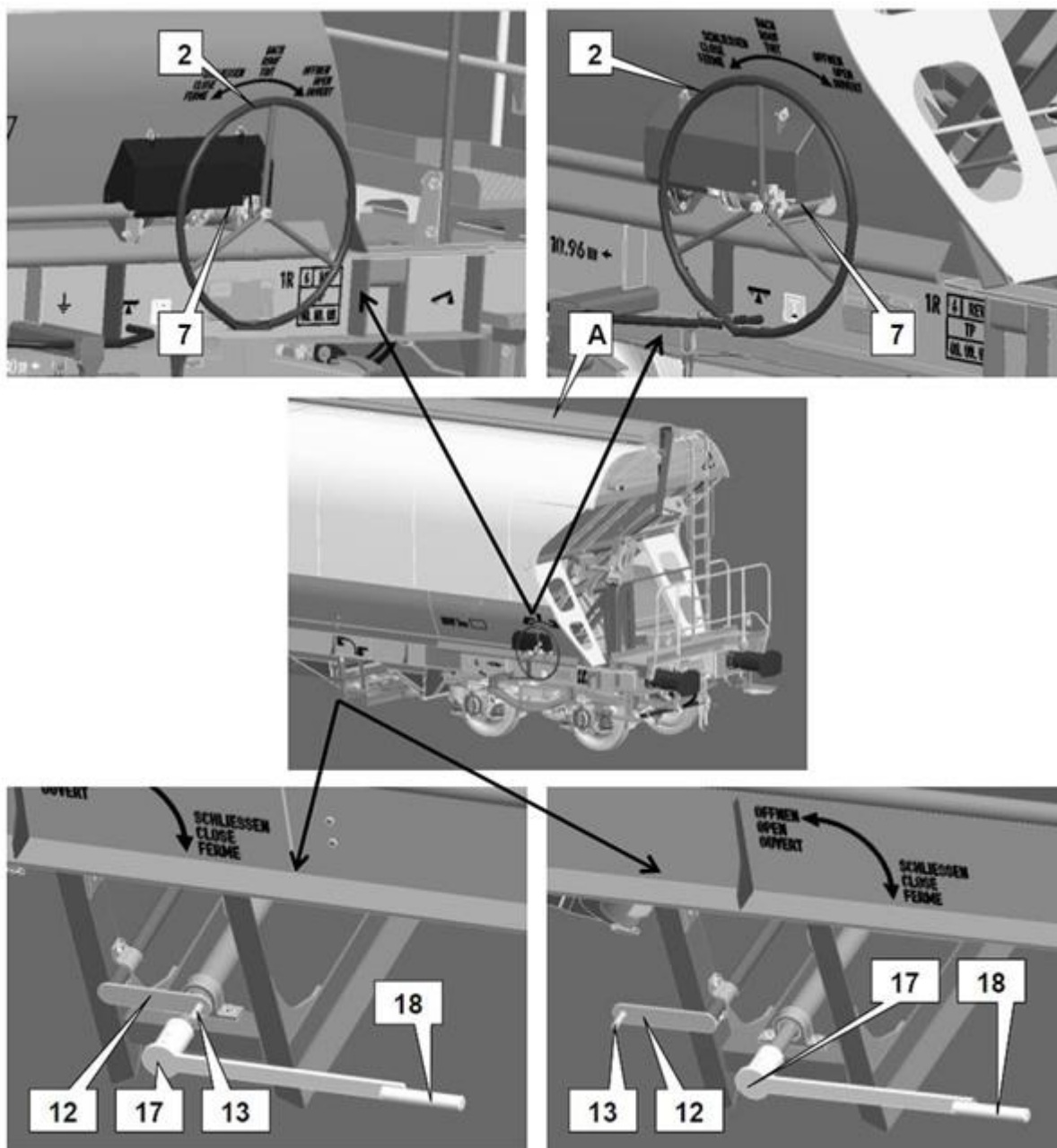


Figure 2: Right side of the wagon

3.2. Wagon series N-410-00 (95 m³ tank)

3.2.1. Filling the tank

(Fig. 3 - left side of the wagon, Fig. 4 - right side of the wagon)

Before loading, the wagon must be secured against rolling away!

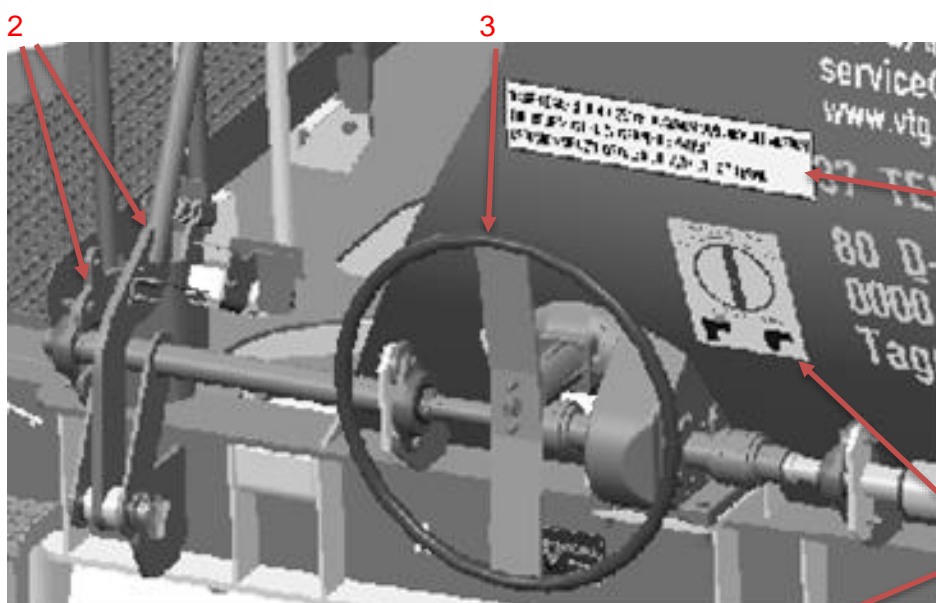
During opening and closing of the roof and during filling, no persons may be on the operating platform or inside the tank!

During loading, the operator must observe the maximum wagon load according to the load pattern attached to the wagon for individual track classes!

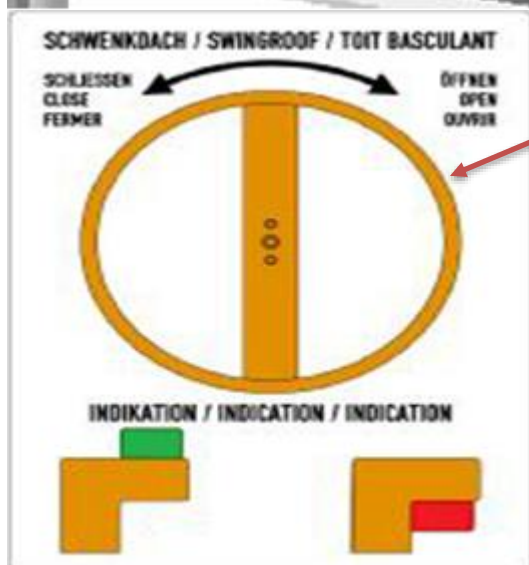
- *Before loading, check the technical condition of the wagon and/or tank. If defects are found, they must be repaired or the vehicle sent to a repair workshop for professional repair.*
- *Before filling, check that both hoppers are closed and that the operating devices for the hoppers are sealed at points (1). Important notice: The controls of the hoppers are sealed only on the side of the wagon where the shut-off ratchet is located.*
- *Remove the seal from position (2).*
- *Open the roof (4) by turning the handwheel (3) in the direction of the arrow "OPEN" – according to the corresponding pictogram (A1).*
- *Visually check whether the roof has swung open and is in its end position: The arm of the roof (4) is supported by the stops on the front ends (5) (Fig. 5), the indicator (6) is in the position according to (Fig. 6).*
- *Fill the tank with goods.*
- *Close the roof (4) by turning the handwheel (3) in the direction of the arrow "CLOSE" until it reaches the end position – according to the corresponding pictogram (A1).*
- *Visually check whether the roof is closed.
The indicator (6) must be in the position according to (Fig. 7), the arm (7) has touched down on the stop (8) (Fig. 5).*
- *Seal the sealing point (2).*
- *Before moving the wagon, remove securing devices (brake shoes, wheel chocks) and release the handbrake.*

THE ROOF MUST BE CLOSED WHILE MOVING – Pictogram (B) (Fig.3).

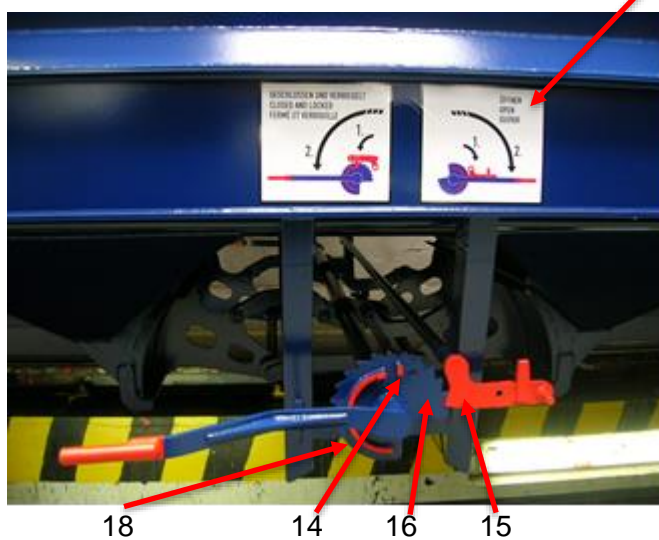
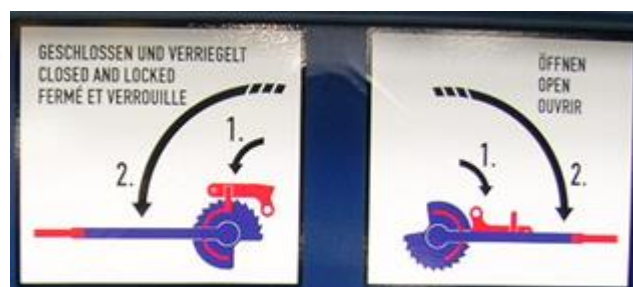
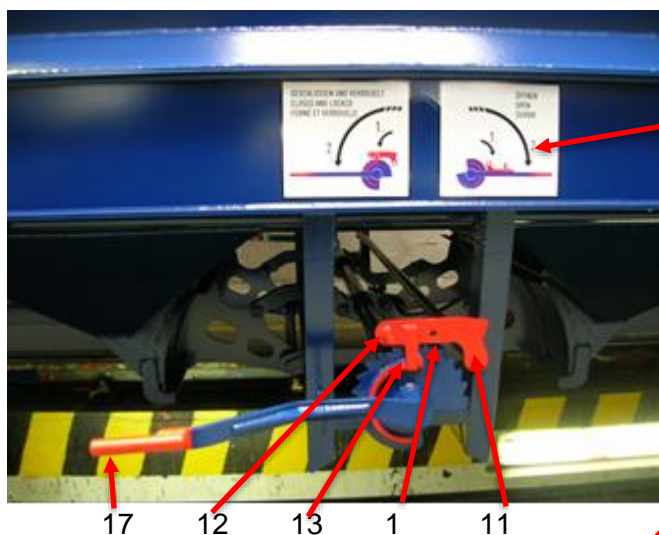
A handwheel for opening and closing the roof is located on each side of the wagon. The respective direction of rotation for "OPEN" and "CLOSE" is shown in the pictograms (A1) and (A2).

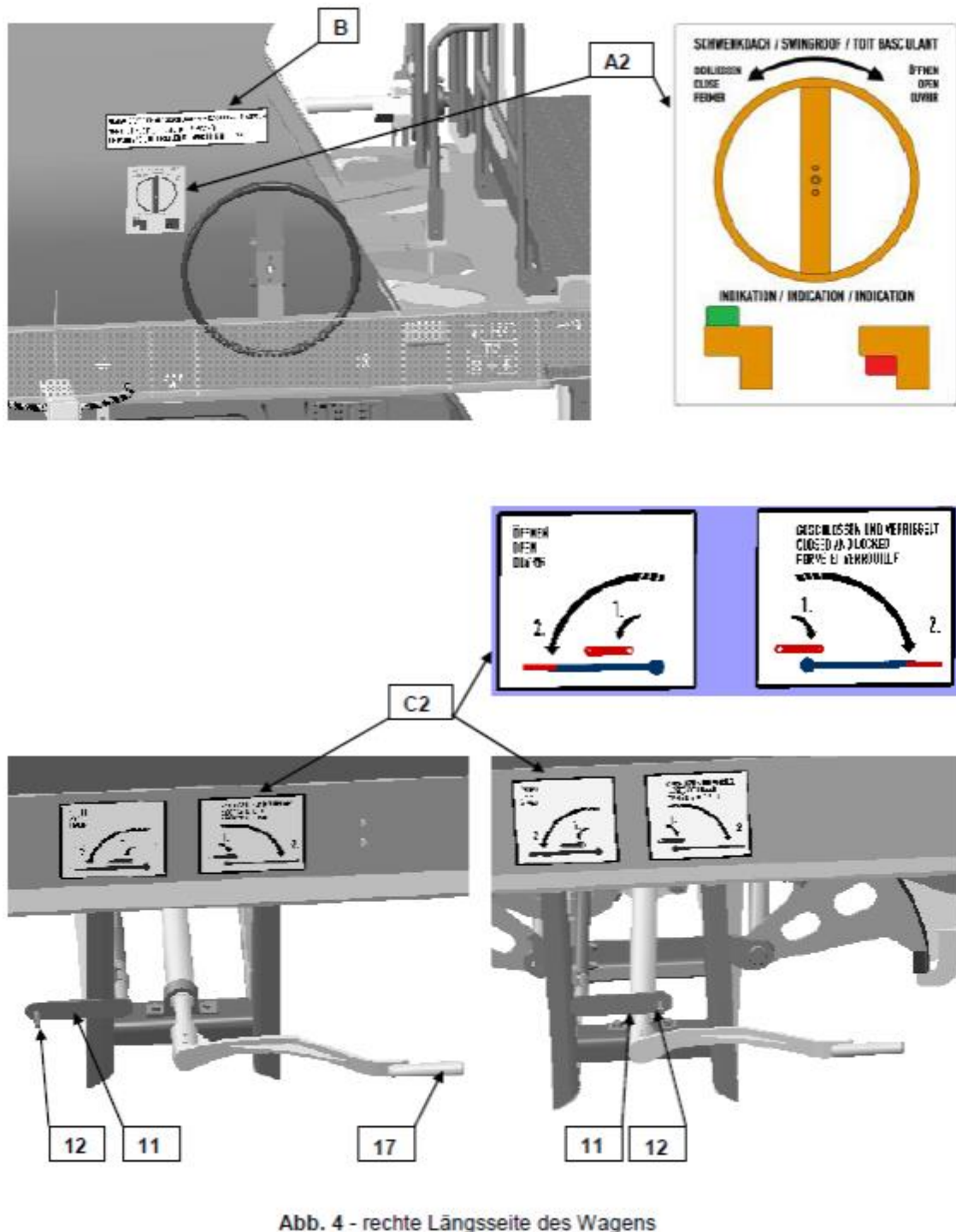


B
 WAGEN DARF NUR MIT
 GESCHLOSSENEM DACH
 BEWEGT WERDEN
 THE ROOF MUST BE
 CLOSED WHILE MOVING
 LE WAGON NE DOIT
 CIRCULER QUE AVEC LE
 TOIT FERMÉ



C 1





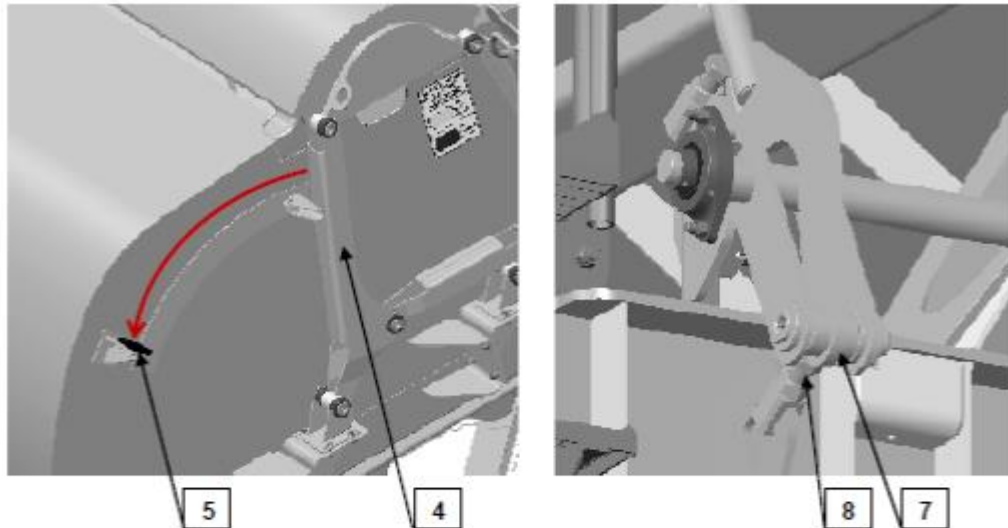


Abb. 5 – Anschläge für ein aufgeschwenktes Dach



Abb. 6 – Stellung des Anzeigers (6) bei geöffnetem Dach

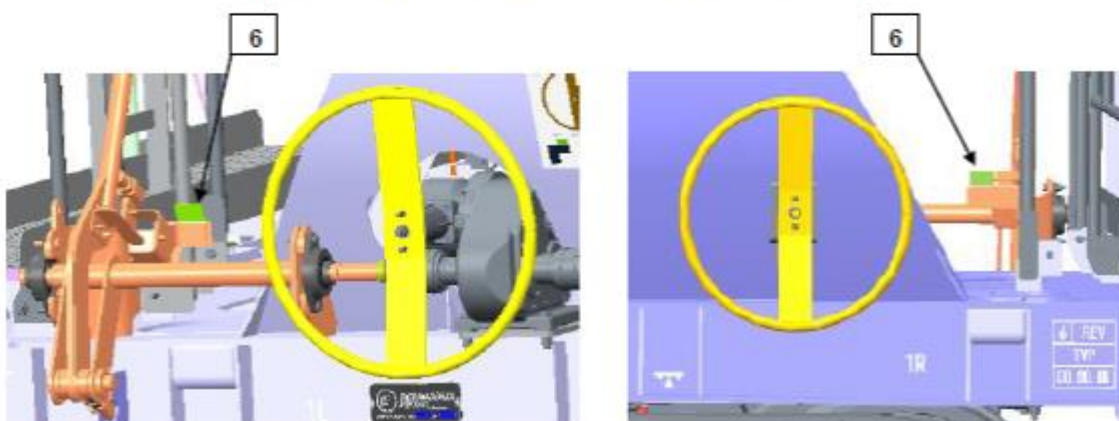


Abb. 7 – Stellung des Anzeigers (6) bei geschlossenem Dach

3.2.2. Emptying the tank

(Fig. 3 - left side of the wagon, Fig. 4 - right side of the wagon)

Before each unloading, the wagon must be secured against rolling away!

No persons may be inside the tank during the emptying process!

- Check the technical condition of the wagon and/or tank. If defects are found, they must be repaired or the vehicle sent to a repair workshop for professional repair after an emergency unload.
- Before starting to unload, the seal must be removed from the control mechanism of each hopper at position (1).

Important notice: The controls for the hoppers are sealed only on the side of the wagon where the shut-off ratchet is located.

Hold the lever of the ratchet (11) by the handle (12) and turn it slightly by approx. 180°. This first releases the ratchet nose (13) from the notch (14) and then the tooth of the ratchet (15) engages in the tothing of the switching wheel (16).

- Then grab the handle (17) and gradually turn the lever slightly, whereby the tooth of the ratchet (15) can fix the switching wheel (16) and thus the lever in any position in the tothing. The lever can be rotated by approx. 180° at handle (17). This opens the unloading device.
- The tank is emptied.
- Closing the hopper: grasp the lever of the ratchet (11) by the handle (12) and turn it back by approx. 180°, whereby the nose of the ratchet (13) touches the curved surface (18). Then grasp the handle (17) of the lever and turn it back by approx. 180°. By turning the lever, the curved surface (18) rotates and the nose of the ratchet (13) sinks into the notch (14). After closing the discharge hopper, the discharge hopper can be sealed in place (1).
- Repeat the procedure for the other hoppers.
- Before moving the wagon, remove securing devices (brake shoes, wheel chocks) and release the handbrake.

The controls for opening and closing the hoppers are located on both sides of the wagon, but the positions concerning the shut-off ratchets (13, 14, 15, 18) are located only on the left side of the wagon.

The direction of rotation of the levers used to operate the discharge hoppers is indicated by pictograms (C1) (Abb. 3) and/or (C2) (Fig. 4) located above the operating levers.

4. Climbing onto the wagon

At each end of the wagon there are side steps and an crossover platform with railing for the operating personnel.

Access to the wagon is possible from the sides of the wagon via the lateral step (2) to the transition platform (1) and via the ladder (3) to the roof platform on the tank (4) (Fig. 8). If necessary, after the roof (5) has been swung open, the inside of the tank can be accessed from the roof platform via the interior ladder (6) and via 4 interior steps (7) (Fig. 9 - illustration without roof).

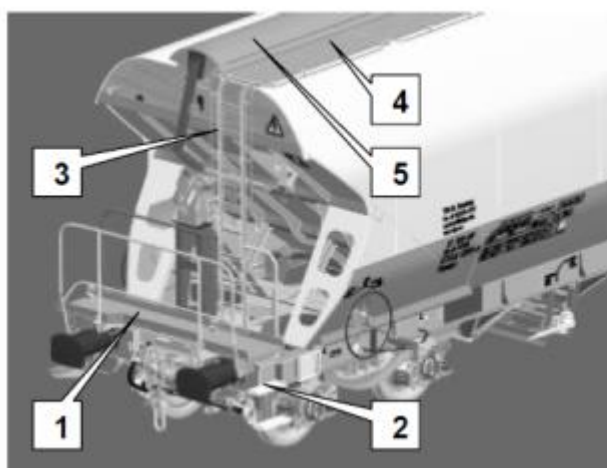


Figure: 8

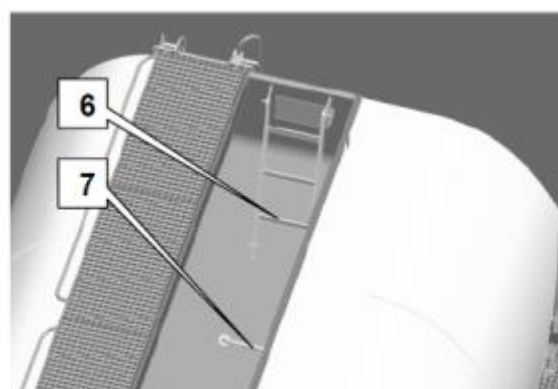


Figure 9

WARNING!

During the opening and closing of the roof no person may stay on the roof platform!

During ascent and descent to/from the wagon or when entering and exiting the tank, the operating personnel must pay attention to their safety and pay increased attention so that no accidents occur as a result of:

- *impaired balance (e.g. due to wind or carelessness)*
- slipping on the stairs, ladders or stage bridges (especially in winter).
- Stumbling or hitting fixed parts of the wagon or other obstacles in the vicinity of the access means.

[When descending from the car, the operating personnel must face the car (as when ascending), always using the steps and handles. When climbing up or down the ladder it is mandatory to convince yourself visually of the correct stepping!].

5. Damage reports and repairs

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

6. Abbreviations and explanations

GCU	General Contract for the use of Railway Freight Cars
DIN	German Industrial Standard (Deutsche Industrienorm)
EBA	Federal Railway Office (Eisenbahnbundesamt)
EBO	Ordinance on the Construction and Operation of Railways" / railway regulations (Eisenbahn-Bau- und Betriebsordnung)
EN	European Standard
RO	Railway operator
TSI	Technical specifications for interoperability
UIC	Union internationale des chemins de fer, International Railway Union
VPI	Verband der Güterwagenhalter in Deutschland e. V.
VPIL	VPI - Guidelines