

# OPERATING CONCEPTS

## INNOWAGGON

### **Specific construction of 2 x 4-axled flat wagon**

**Type: Sggrs**

**& appendices acc. listing**

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**This document is not subject to a revision service!**

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## **Abbreviation:**

TVP Tatravagonka Poprad

TSH TS Hungaria

## 1 LIST OF CHANGES:

Number	Date	Text
001	03.07.2017	New version Type Plan

## 2 DEFINITIONS:

**InnoWaggon:**

Innovative freight wagon with interchangeable loading frames, capable of transporting various types of cargo. The loading frames are placed on top of the UIC lifting lugs of the container.

**ECM:**

„Entities Charge of Maintenance” – persons legally responsible for the maintenance and servicing of the equipment.

**Non-permanent wagon components:**

Components of the wagon which are not permanently fixed to the wagon.

**Table of loading limits:**

Table showing the maximal possible load on a wagon depending on speed and route class.

**Load limit:**

The loading limits are displayed on the wagon. The loading limit is decided by the lowest route class of a given transportation route. They must not be exceeded.

**Combined load transport (CT):**

The individual intermodal loading units are codified in the document UIC-Merkblatt 596-6. This codification guarantees the compability of the CT route with the admissible profile.

**TSI-Licence holder:**

InnoWaggon GmbH., Grazer Straße 18, 8600 Bruck an der Mur, Austria is the lawful holder of the TSI-Licence, and accordingly, responsible for the approval of all necessary documents.

### 3 SCOPES:

The operating concepts of the InnoWaggon in TEN are valid for the following wagon units:

35 81 4854 000-0 bis 219-x	Designed by TVP/TSH
31 54 4854 000-0 bis 200-x	Designed by TVP/TSH
31 79 4854 000-6 bis 100-x	Designed by TVP

### 4 LABELLING OF LOADING FRAMES:

Type „A“ loading frames do not have any special labelling. The other types of loading frame have yellow or red codification signs. Each type with red coding are to be transported via loading examples or as an exceptional transportation. The profile number given in the codification signs (e.g.C45) shows which CT profile should be used.

### 5 SPECIAL OPERATING FEATURES:

The InnoWaggon has an approval according to the TSI with the marking TEN GE. In the associated approval notice it is required that the wagon must always be used with at least one non-permanent wagon component.

To comply with this requirement, the loading frames should be marked with the international marking for non-permanent wagon components.

In accordance with EN16235, a 4-axeled freight wagon must carry a minimum load of 4 tonnes per axle.

**As the empty weight of each wagon element is 14.5 tonnes, the wagon must always be transported with the appropriate loading frame (containers, tanks, post pallets).**

**If one of the components stated on the wagon is missing, this component should be replaced. If this is not possible, use of the wagon should be suspended.**

**Part 6.1.7.7 of the document 9 of AVV should not be used.**

6.1.7.7	Loose wagon accessories missing or incomplete	M	3	!!! Do not use !!!
6.1.7.8	Loose wagon accessories not secured	Fasten	4	

The exchange of loading frames from one type to another may only be carried out by qualified and authorised personnel. The training and authorisation is done through the ECM or the TSI licence holder.

**The use of InnoWaggon loading frames to transport novel and unknown variants, which do not appear in the documentation, is also allowed. In this case, it is required that the load on each axel exceeds 4 tonnes. Additionally, the permission of the TSI licence holder must be obtained before the transportation takes place.**

Wagons are to be transported according to the regulations set out in the UIC Guidelines Band 1, paragraph 1.3.

## **6 ACTION IN THE EVENT OF DAMAGE OCCURRING ON WAGONS OR ON LOADING FRAMES**

### **6.1 Notification and handling procedures for damaged wagons**

If damage is discovered during the servicing of a wagon, the person responsible for the wagon (written on the wagon itself) must be informed

The contact details of each wagon holder can be found at the following URL:  
<http://www.gcubureau.org/welcome>

All repairs to wagons may only be carried out by approved workshops. The method of reparation is the decision of the wagon holder in coordination with the responsible ECM according to AVV.

FOR EXAPMLE:

#### **1. DE\_Details of GCU contact**

Rail Cargo Wagon - Austria GmbH

Halter

Österreich

Am Hauptbahnhof 2

Wien

1100

Österreich

ATU51274106

01. 07. 2006.

### **6.2 Notification and handling procedures for damaged loading frames („Containeraufbau“)**

If damage is discovered during the servicing of a loading frame, the Innofreight damage hotline must be informed immediately.

#### **Innofreight – Damage Hotline**

Email: [support@innofreight.com](mailto:support@innofreight.com)

Telephone: +43 / 3862 8989 242

Fax: +43 / 3862 8989 241

All repairs to non-permanent wagon components may only be carried out by approved workshops. The method of reparation is the decision of the InnoFreight damage hotline

## **7 LIST OF APPENDICIES**

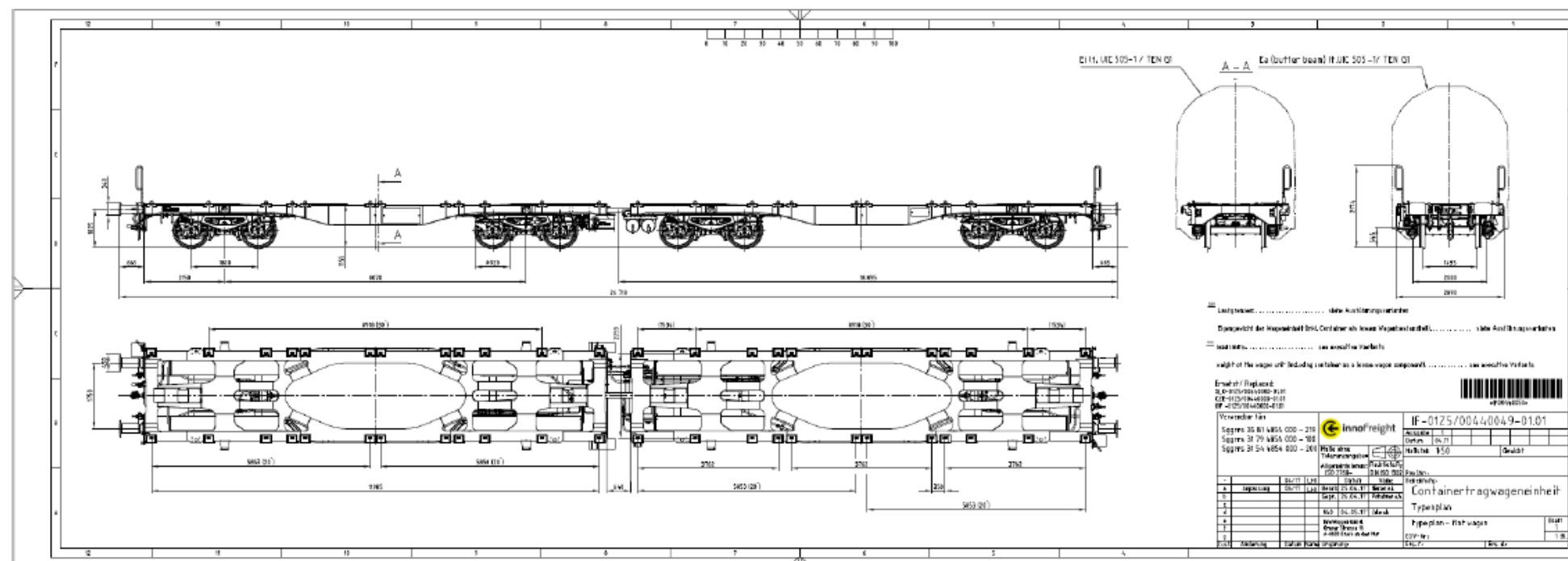
**Appendix 1:** Type plan InnoWaggon Sggrrs – Designation number 0IF - 01Z5/00440049 - 01.01

**Appendix 2:** Additional Wagon Markings

**Appendix 3:** Example Codification signs

**Appendix 4:** Stop Block

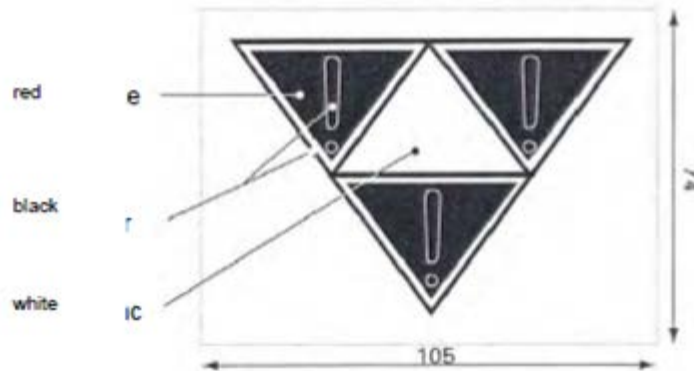
**Appendix 5:** Service manual of InnoWaggon Sggrrs



<b>Abmessungen</b> 20 ft 6051 mm x 2438 mm 40 ft 12192 mm x 2438 mm 45 ft 13716 mm x 2438 mm 50 ft 15240 mm x 2438 mm 55 ft 16794 mm x 2438 mm 60 ft 18288 mm x 2438 mm 65 ft 19782 mm x 2438 mm 70 ft 21276 mm x 2438 mm 75 ft 22770 mm x 2438 mm 80 ft 24264 mm x 2438 mm 85 ft 25758 mm x 2438 mm 90 ft 27252 mm x 2438 mm 95 ft 28746 mm x 2438 mm 100 ft 30240 mm x 2438 mm 105 ft 31734 mm x 2438 mm 110 ft 33228 mm x 2438 mm 115 ft 34722 mm x 2438 mm 120 ft 36216 mm x 2438 mm 125 ft 37710 mm x 2438 mm 130 ft 39204 mm x 2438 mm 135 ft 40698 mm x 2438 mm 140 ft 42192 mm x 2438 mm 145 ft 43686 mm x 2438 mm 150 ft 45180 mm x 2438 mm 155 ft 46674 mm x 2438 mm 160 ft 48168 mm x 2438 mm 165 ft 49662 mm x 2438 mm 170 ft 51156 mm x 2438 mm 175 ft 52650 mm x 2438 mm 180 ft 54144 mm x 2438 mm 185 ft 55638 mm x 2438 mm 190 ft 57132 mm x 2438 mm 195 ft 58626 mm x 2438 mm 200 ft 60120 mm x 2438 mm 205 ft 61614 mm x 2438 mm 210 ft 63108 mm x 2438 mm 215 ft 64602 mm x 2438 mm 220 ft 66096 mm x 2438 mm 225 ft 67590 mm x 2438 mm 230 ft 69084 mm x 2438 mm 235 ft 70578 mm x 2438 mm 240 ft 72072 mm x 2438 mm 245 ft 73566 mm x 2438 mm 250 ft 75060 mm x 2438 mm 255 ft 76554 mm x 2438 mm 260 ft 78048 mm x 2438 mm 265 ft 79542 mm x 2438 mm 270 ft 81036 mm x 2438 mm 275 ft 82530 mm x 2438 mm 280 ft 84024 mm x 2438 mm 285 ft 85518 mm x 2438 mm 290 ft 87012 mm x 2438 mm 295 ft 88506 mm x 2438 mm 300 ft 90000 mm x 2438 mm 305 ft 91494 mm x 2438 mm 310 ft 92988 mm x 2438 mm 315 ft 94482 mm x 2438 mm 320 ft 95976 mm x 2438 mm 325 ft 97470 mm x 2438 mm 330 ft 98964 mm x 2438 mm 335 ft 100458 mm x 2438 mm 340 ft 101952 mm x 2438 mm 345 ft 103446 mm x 2438 mm 350 ft 104940 mm x 2438 mm 355 ft 106434 mm x 2438 mm 360 ft 107928 mm x 2438 mm 365 ft 109422 mm x 2438 mm 370 ft 110916 mm x 2438 mm 375 ft 112410 mm x 2438 mm 380 ft 113904 mm x 2438 mm 385 ft 115398 mm x 2438 mm 390 ft 116892 mm x 2438 mm 395 ft 118386 mm x 2438 mm 400 ft 119880 mm x 2438 mm 405 ft 121374 mm x 2438 mm 410 ft 122868 mm x 2438 mm 415 ft 124362 mm x 2438 mm 420 ft 125856 mm x 2438 mm 425 ft 127350 mm x 2438 mm 430 ft 128844 mm x 2438 mm 435 ft 130338 mm x 2438 mm 440 ft 131832 mm x 2438 mm 445 ft 133326 mm x 2438 mm 450 ft 134820 mm x 2438 mm 455 ft 136314 mm x 2438 mm 460 ft 137808 mm x 2438 mm 465 ft 139302 mm x 2438 mm 470 ft 140796 mm x 2438 mm 475 ft 142290 mm x 2438 mm 480 ft 143784 mm x 2438 mm 485 ft 145278 mm x 2438 mm 490 ft 146772 mm x 2438 mm 495 ft 148266 mm x 2438 mm 500 ft 149760 mm x 2438 mm 505 ft 151254 mm x 2438 mm 510 ft 152748 mm x 2438 mm 515 ft 154242 mm x 2438 mm 520 ft 155736 mm x 2438 mm 525 ft 157230 mm x 2438 mm 530 ft 158724 mm x 2438 mm 535 ft 160218 mm x 2438 mm 540 ft 161712 mm x 2438 mm 545 ft 163206 mm x 2438 mm 550 ft 164700 mm x 2438 mm 555 ft 166194 mm x 2438 mm 560 ft 167688 mm x 2438 mm 565 ft 169182 mm x 2438 mm 570 ft 170676 mm x 2438 mm 575 ft 172170 mm x 2438 mm 580 ft 173664 mm x 2438 mm 585 ft 175158 mm x 2438 mm 590 ft 176652 mm x 2438 mm 595 ft 178146 mm x 2438 mm 600 ft 179640 mm x 2438 mm 605 ft 181134 mm x 2438 mm 610 ft 182628 mm x 2438 mm 615 ft 184122 mm x 2438 mm 620 ft 185616 mm x 2438 mm 625 ft 187110 mm x 2438 mm 630 ft 188604 mm x 2438 mm 635 ft 190098 mm x 2438 mm 640 ft 191592 mm x 2438 mm 645 ft 193086 mm x 2438 mm 650 ft 194580 mm x 2438 mm 655 ft 196074 mm x 2438 mm 660 ft 197568 mm x 2438 mm 665 ft 199062 mm x 2438 mm 670 ft 200556 mm x 2438 mm 675 ft 202050 mm x 2438 mm 680 ft 203544 mm x 2438 mm 685 ft 205038 mm x 2438 mm 690 ft 206532 mm x 2438 mm 695 ft 208026 mm x 2438 mm 700 ft 209520 mm x 2438 mm 705 ft 211014 mm x 2438 mm 710 ft 212508 mm x 2438 mm 715 ft 214002 mm x 2438 mm 720 ft 215496 mm x 2438 mm 725 ft 216990 mm x 2438 mm 730 ft 218484 mm x 2438 mm 735 ft 219978 mm x 2438 mm 740 ft 221472 mm x 2438 mm 745 ft 222966 mm x 2438 mm 750 ft 224460 mm x 2438 mm 755 ft 225954 mm x 2438 mm 760 ft 227448 mm x 2438 mm 765 ft 228942 mm x 2438 mm 770 ft 230436 mm x 2438 mm 775 ft 231930 mm x 2438 mm 780 ft 233424 mm x 2438 mm 785 ft 234918 mm x 2438 mm 790 ft 236412 mm x 2438 mm 795 ft 237906 mm x 2438 mm 800 ft 239400 mm x 2438 mm 805 ft 240894 mm x 2438 mm 810 ft 242388 mm x 2438 mm 815 ft 243882 mm x 2438 mm 820 ft 245376 mm x 2438 mm 825 ft 246870 mm x 2438 mm 830 ft 248364 mm x 2438 mm 835 ft 249858 mm x 2438 mm 840 ft 251352 mm x 2438 mm 845 ft 252846 mm x 2438 mm 850 ft 254340 mm x 2438 mm 855 ft 255834 mm x 2438 mm 860 ft 257328 mm x 2438 mm 865 ft 258822 mm x 2438 mm 870 ft 260316 mm x 2438 mm 875 ft 261810 mm x 2438 mm 880 ft 263304 mm x 2438 mm 885 ft 264798 mm x 2438 mm 890 ft 266292 mm x 2438 mm
--

## Appendix 2: Additional Wagon Markings

### 5.5 Sign for wagons that must not be fly- or gravity-shunted



**Position:** On the left of each solebar, or on parts covering the solebar or on special boards fitted at the same height as the solebars.

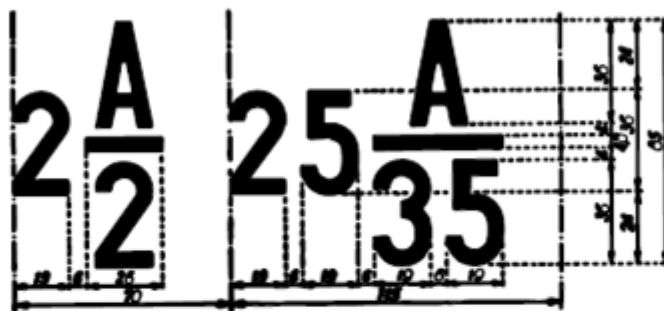
**Meaning:**

- Wagon must not be fly- or gravity-shunted,
- Wagon must be marshalled by a motive power unit,
- Wagon must not be loose-shunted and must be protected against buffing by other vehicles.

**N.B.:** Point 5.3.4.1 of the RID states that in place of the shunting label shown in model 15, the wagon may instead carry permanent shunting signs (wagon markings) providing they conform precisely to the prescribed example.

### 2.13 Sign for removable wagon accessories

Removable wagon accessories



**Position:** On the right of each side wall.

**Meaning:** The number and type of removable accessories are to be indicated. In the case of carboy wagons and wagons with removable recipients, the number of such recipients should be indicated. The figure placed before the fraction indicates the number of removable accessories belonging to the wagon.

The letter "A" indicates that the accessories are removable, and the denominator of the fraction gives the serial number assigned to the removable accessory in the list below. The names of the accessories may also be added in letters alongside these signs.

**Appendix 3:** Example Codification Signs



Example: yellow codification sign acc. UIC 596-6



Example: red codification sign

#### Appendix 4: stop block

The stop block is responsible for transferring the longitudinal forces, while transporting heavy load containers.






Appendix 5: User Manual InnoWaggon Sgrrs

# User Manual Sgrrs



Figure 1: Title picture

## InnoWaggon – Sgrrs

	Audit	Designations	Department	Name	Tel.Nr.	Date	Signature
<b>Author</b>		InnoWaggon	IF - IW	Lukas Hierzer	+43 3862 8989 242	03.05.2017	
<b>Audited</b>	Acc. AschG AM - VO	Security Contractor, Workspace Railcars	IF-PS	Pascal Trimmel	+43 676 845780860	04.05.2017	
<b>Released for Distribution</b>		PL InnoWaggon	IF - IW	Gerald Petschner	+43 3862 8989 243	05.05.2017	

Change Number	Subject /Content	Completed
001	Update 1.1 User Information	03.07.2017

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## 1 GENERAL INFORMATION

### 1.1 User Information

The following service manual contains important instructions and procedures which should be followed during the operation and servicing of vehicles. The general rules of operation of the wagon types and their rail specific modules are presumed to be known and should be carried out according to the regulations of the specific rail authority. They must be adapted to the respective state of technology. The manufacturer does not accept any claims for compensation as a result of damage to railway-specific parts which have been as a result of incorrect operation. The operation regulations therefore contain no information on this matter. The operation of the pneumatic brake is, in the same way as above, assumed to be known.



It is obligatory to comply with the loading tariff of the EVU (e.g. Rail Cargo Austria AG) according to the respective current version of the documentation.



The loading tariff does not exist in printed form. The loading tariff is accessible inside of ÖBB Holding through the intranet. For external customers, it can be accessed on the internet (<http://www.railcargo.com/de/E-Services/Tarife/Beladetarif/index.jsp>) and can be downloaded as a pdf. In this way the prompt updating of the documents is guaranteed. Implementation, modifications, and invalidation of the BT will be published in the Anzeigebblatt für Verkehr (AVP).



#### **Warning!**

Before all loading and unloading, secure the wagon against rolling away.

**Note:** The Type „E“, RockTainer INFRA during the unloading should be secured against rolling away



#### **Warning!**

The freight wagons may only be moved by the intended equipment (e.g. coupling hooks, cable hooks). Every other method of movement is prohibited.

**Note:** from wagon number: **31 81 4854 001 – 2 until 090 – 5 design TSH**, the handbrakes on the bogie are build with axles R3 and R4. From wagon number: **31 81 4854 091 – 3 until 999 – 7 design TVP**, the handbrakes on the bogie are fitted with axles R5 and R6.

**Note:** there are cutouts on Containers with ramps for Unloading to protect them from contact with the shunting rope. The longidute of the cutout is 1500mm (Container corner casting as reference surface).

## 1.2 Intended Use

The intended use of the eight-axled wagon unit is the transport of goods with the loading frames. The naming of the various loading frames of all types is shown in the following list:

Type A RWP-Wood, A2 RWP-WoodSweden bzw. A3 RWP-Steel

Type B: WoodTainer XXL with an ISO-Lenght of 20'

Type C: WoodTainer X XM with an ISO-Lenght of 13'

Type D: RockTainer ORE with an ISO-Lenght of 30'

Type E: RockTainer INFRA with an ISO-Lenght of 30'

Type F: Behälter 40' OT with an ISO-Lenght of 40'

Type G: InnoTank with an ISO-Lenght of 30'

Type H: WoodTainer XM and X XM-L with an ISO-Lenght of 13'

Type I: MonTainer XXL with an ISO-Lenght of 20'

Type J: RockTainer SAND with an ISO-Lenght of 40'

Type K: WoodTainer XL with an ISO-Lenght of 20'

Type L: WoodTainer XXL SideDoors with an ISO-Lenght of 20'

## 1.3 Scopes



The operating manual outlines the correct operation of the InnoWaggons (including loading frames) and is valid for the following wagon units:

31 81 4854 001 – 3	until	31 81 4854 999 – 7	Layout TSH, or TVP
31 79 4854 000 – 6	until	31 79 4854 100 – x	Layout TVP
31 54 4854 000 – 5	until	31 54 4854 200 – x	Layout TSH, or TVP
35 81 4854 000 – 0	until	35 81 4854 219 – x	Layout TSH, or TVP

## 1.4 Workers Protection



It is mandatory to use the personal protective equipment cited in the operating manual. This includes protective helmet, safety glasses, safety boots, and high-visibility vest. Ear protectors and dust masks are also required to be used when necessary.



In order to make employees aware of the dangers of handling wagons and the associated equipment, a safety briefing should be conducted. The briefing is to be verified, and its purpose is to ensure that employees are informed on safety.



Lifting onto the loading area of the wagon may only be done using loading ramps at the loading and unloading points. Alternatively, the installed lifting equipment on the wagon may be used.

## 1.5 Prohibitions/Restrictions



RoundWoodPallets (RWP) may only be exchanged with those of the same type.

13 Feet Container may only be exchanged with those of the same type.

20 Feet Container may only be exchanged with those of the same type.

30 Feet Container may only be exchanged with those of the same type.

40 Feet Container may only be exchanged with those of the same type.



The transport of wagons with different and varying loading frames requires a written approval in advance from InnoWaggon GmbH., Grazer Straße 18, 8600 Bruck an der Mur, Österreich.



The transport of wagons without loading frames (see Types A to L) is not allowed.

## 2 TECHNICAL DATA

### 2.1 Details & Loading Scheme of Type "A" – RWP-Wood

Category code	Sggrs									
Type number	4854									
Number of axles	8									
Axles, Pivot distance                      m	2 x 8,07									
max. distance above the buffer            m	26,71									
Unladen weight                                t	34,70									
Route class		A	B1	B2	C2	C3	C4	D2	D3	D4
Load limit t	s	93,3	98,9	109,3	129,3			136,2	145,3	
Load length = L                                m	2 x 40'									
Load width = B                                 m	2,617									
Load height = H                                m	Acc. UIC-Loading guidelines									
Load area                                        m²	--									
Load volume                                    m³	--									
Floor height above SO                        m	1,420									
Other notes	contact level of container 1155 mm;  C in triangle (for standard containers)									
Specific details	Wagon must not be transported without loading frame									

Ausführung: Variante "A", RWP-Wood

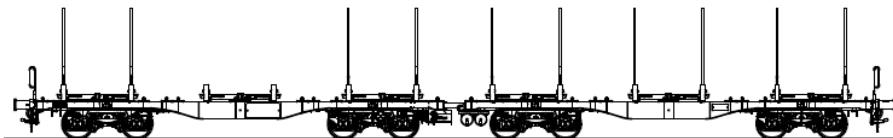
Eigengewicht: 34 700 kg

Lastgrenzen:



	A	B1	B2	C2	C3	C4	D2	D3	D4
S	93,3	98,9	109,3	129,3	136,2	145,3			

★★★



6 <sup>A</sup>/<sub>49</sub> 3 pro  
Wagenelement

## 2.2 Details & Loading Scheme of Type "A2" – RWP-WoodSweden

Category code	Sgrrs										
Type number	4854										
Number of axles	8										
Axles, Pivot distance	m	2 x 8,07									
max. distance above the buffer	m	26,71									
Unladen weight	t	37,90									
Route class		A	B1	B2	C2	C3	C4	D2	D3	D4	
Load limit t	s	90,1	95,7	106,1	126,1			133,0	142,1		
Load length = L	m	2 x 40'									
Load width = B	m	Acc. HR170041									
Load height = H	m	Acc. HR170041									
Load area	m <sup>2</sup>	--									
Load volume	m <sup>3</sup>	--									
Floor height above SO	m	1,420									
Other notes	contact level of container 1155 mm;  C in triangle (for standard containers)										
Specific details	Wagon must not be transported without loading frame										

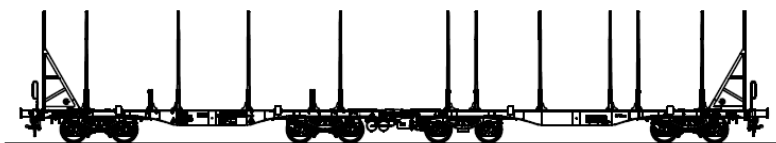
Ausführung: Variante "A2" RWP-WoodSweden

Eigengewicht: 37 900 kg

Lastgrenzen:



	A	B1	B2	C2	C3	C4	D2	D3	D4	
S	90,1	95,7	106,1	126,1	133,0	142,1				★ ★ ★



18  $\frac{A}{49}$

9 pro  
Wagenelement

Category code	Sgrrrs
Type number	4854
Number of axles	8
Axles, Pivot distance m	2 x 8,07
max. distance above the buffer m	26,71
Unladen weight t	36,30
Route class	A B1 B2 C2 C3 C4 D2 D3 D4
Load limit t	s 91,7 97,3 107,7 127,7 134,6 143,7
Load length = L m	2 x 40
Load width = B m	2,617
Load height = H m	Acc. UIC-Loading guidelines
Load area m²	--
Load volume m³	--
Floor height above SO m	1,420
Other notes	contact level of container 1155 mm; C in triangle (for standard containers)
Specific details	Wagon must not be transported without loading frame

Ausführung: Variante "A3" RWP-Steel      Lastgrenzen:

	A	B1	B2	C2	C3	C4	D2	D3	D4
S	91,7	97,3	107,7	127,7	134,6	143,7			

▲
★★★

Eigengewicht: 36 300 kg



$\frac{6}{49} A$

3 pro Wagenelement  
↓

## 2.4 Details & Loading Scheme of Type "B" - WoodTainer XXL

Category code	Sggrrs									
Type number	4854									
Number of axles	8									
Axles, Pivot distance                      m	2 x 8,07									
max. distance above the buffer            m	26,71									
Unladen weight                                      t	40,90									
Route class		A	B1	B2	C2	C3	C4	D2	D3	D4
Load limit t	s	87,1	92,7	103,1	123,1			130	139,1	
Load length = L                                      m	4 x 20'									
Load width = B                                      m	For ILU up to 2,6 m Width									
Load height = H                                      m	--									
Load area    m²	--									
Load volume    m³	--									
Floor height above SO                            m	1,155									
Other notes	contact level of container 1155 mm;  C in triangle (for standard containers)									
Specific details	Wagon must not be transported without loading frame									

Ausführung: Variante "B", WoodTainer XXL Lastgrenzen: 

A	B1	B2	C2	C3	C4	D2	D3	D4
S	87,1	92,7	103,1	123,1	130,0	139,1		

 ★★ ★

Eigengewicht: 40 900 kg



4  $\frac{A}{49}$  2 pro  
Wagenelement

Category code	Sgrrrs										
Type number	4854										
Number of axles	8										
Axles, Pivot distance m	2 x 8,07										
max. distance above the buffer m	26,71										
Unladen weight t	42,30										
Route class		A	B1	B2	C2	C3	C4	D2	D3	D4	
Load limit t	s	85,7	91,3	101,7	121,7			128,6	137,7		
Load length = L m	6 x 13'										
Load width = B m	For ILU up to 2,6 m Width										
Load height = H m	--										
Load area m <sup>2</sup>	--										
Load volume m <sup>3</sup>	--										
Floor height above SO m	1,155										
Other notes	<p>contact level of container 1155 mm;</p> <p>C in triangle (for standard containers)</p>										
Specific details	Wagon must not be transported without loading frame										

Ausführung: Variante "C", WoodTainer X XM Lastgrenzen:

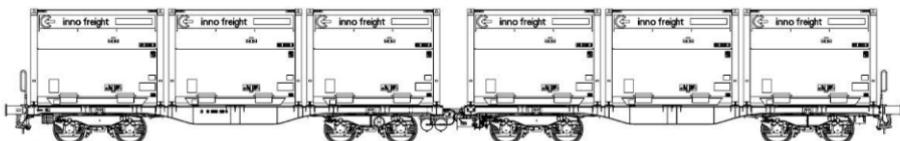
A	B1	B2	C2	C3	C4	D2	D3	D4
85,7	91,3	101,7	121,7			128,6	137,7	

Eigengewicht: 42 300 kg



S	85,7	91,3	101,7	121,7			128,6	137,7	
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★★★



6

A

49

3 pro

Wagenelement

## 2.6 Details & Loading Scheme of Type “D” - RockTainer ORE

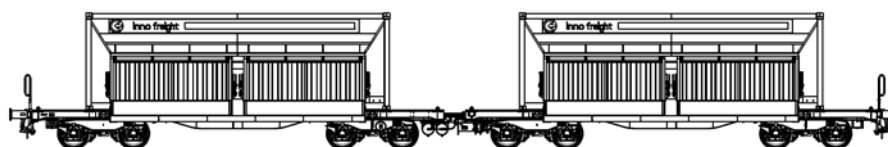
Category code	Sggrs										
Type number	4854										
Number of axles	8										
Axles, Pivot distance	m	2 x 8,07									
max. distance above the buffer	m	26,71									
Unladen weight	t	42									
Route class		A	B1	B2	C2	C3	C4	D2	D3	D4	
Load limit t	s	86	91,6	102	122			128,9	138		
Load length = L	m	2 x 30'									
Load width = B	m	For ILU up to 2.6 m width									
Load height = H	m	--									
Load area	m²	--									
Load volume	m³	--									
Floor height above SO	m	1,155									
Other notes	contact level of container 1155 mm;  C in triangle (for standard containers)										
Specific details	Wagon must not be transported without loading frame										

Ausführung: Variante „D“, RockTainer ORE Lastgrenzen: 

A	B1	B2	C2	C3	C4	D2	D3	D4
S	86,0	91,6	102,0	122,0	128,9	138,0		

 ★★★

Eigengewicht: 42 000 kg



2  $\frac{A}{49}$  1 pro  
Wagenelement

## 2.7 Details & Loading Scheme of Type "E" - RockTainer INFRA

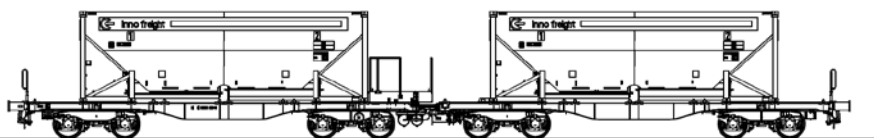
Category code	Sggrs										
Type number	4854										
Number of axles	8										
Axles, Pivot distance	m	2 x 8,07									
max. distance above the buffer	m	26,71									
Unladen weight	t	44									
Route class		A	B1	B2	C2	C3	C4	D2	D3	D4	
Load limit t	s	84	89,5	100	120			126,5	136		
Load length = L	m	2 x 30'									
Load width = B	m	For ILU up to 2,6 m Width									
Load height = H	m	--									
Load area	m²	--									
Load volume	m³	--									
Floor height above SO	m	1,155									
Other notes	contact level of container 1155 mm;  C in triangle (for standard containers)										
Specific details	Wagon must not be transported without loading frame										

Ausführung: Variante „E“, RockTainer INFRA Lastgrenzen: 

A	B1	B2	C2	C3	C4	D2	D3	D4
S	84,0	89,5	100,0	120,0	126,5	136,0		

 ★ ★ ★

Eigengewicht: 44 000 kg



2  $\frac{A}{49}$  1 pro Wagenelement

## 2.8 Details & Loading Scheme of Type "F" - Container 40' OT

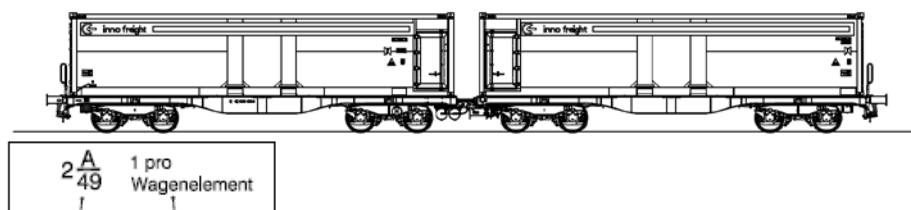
Category code	Sggrs									
Type number	4854									
Number of axles	8									
Axles, Pivot distance	m	2 x 8,07								
max. distance above the buffer	m	26,71								
Unladen weight	t	40								
Route class		A	B1	B2	C2	C3	C4	D2	D3	D4
Load limit t	s	88	93,5	104	124			130,5	140	
Load length = L	m	2 x 40'								
Load width = B	m	For ILU up to 2,6 m Width								
Load height = H	m	--								
Load area	m²	--								
Load volume	m³	--								
Floor height above SO	m	1,155								
Other notes	contact level of container 1155 mm;  C in triangle (for standard containers)									
Specific details	Wagon must not be transported without loading frame									

Ausführung: Variante „F“, Container 40' OT Lastgrenzen: 

A	B1	B2	C2	C3	C4	D2	D3	D4
S	88,0	93,5	104,0	124,0	130,5	140,0		

 ★ ★ ★

Eigengewicht: 40 000 kg



## 2.9 Details & Loading Scheme of Type "G" - InnoTank

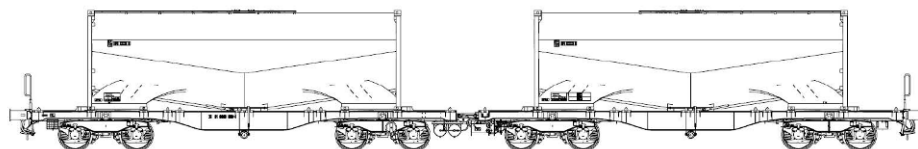
Category code	Sggrs									
Type number	4854									
Number of axles	8									
Axles, Pivot distance                      m	2 x 8,07									
max. distance above the buffer            m	26,71									
Unladen weight                                t	42,30									
Route class		A	B1	B2	C2	C3	C4	D2	D3	D4
Load limit t	s	85,7	91,3	101,7	121,7			128,6	137,7	
Load length = L                                m	2 x 30'									
Load width = B                                 m	For ILU up to 2,6 m Width									
Load height = H                                m	--									
Load area                                        m²	--									
Load volume                                    m³	--									
Floor height above SO                        m	1,155									
Other notes	contact level of container 1155 mm;  C in triangle (for standard containers)									
Specific details	Wagon must not be transported without loading frame									

Ausführung: Variante "G", InnoTank

Eigengewicht: 42 300 kg

Lastgrenzen:

	A	B1	B2	C2	C3	C4	D2	D3	D4	
S	85,7	91,3	101,7	121,7	128,6	137,7	★★★			



2 <sup>A</sup>/<sub>49</sub> 1 pro Wagenelement

## 2.10 Details & Loading Scheme of Type „H“ - WoodTainer XM and WoodTainer XXM-L

Category code	Sgrrrs									
Type number	4854									
Number of axles	8									
Axles, Pivot distance	m	2 x 8,07								
max. distance above the buffer	m	26,71								
Unladen weight	t	40,90								
Route class		A	B1	B2	C2	C3	C4	D2	D3	D4
Load limit t	s	87,1	92,7	103,1	123,1			130	139,1	
Load length = L	m	6 x 13'								
Load width = B	m	For ILU up to 2,6 m Width								
Load height = H	m	--								
Load area	m <sup>2</sup>	--								
Load volume	m <sup>3</sup>	--								
Floor height above SO	m	1,155								
Other notes	contact level of container 1155 mm;  C in triangle (for standard containers)									
Specific details	Wagon must not be transported without loading frame									

Ausführung: Variante "H", WoodTainer XM/ <sup>a</sup>  
WoodTainer XXM-L  
Eigengewicht: 40 900 kg

Lastgrenzen:

	A	B1	B2	C2	C3	C4	D2	D3	D4
S	87,1	92,7	103,1	123,1		130,0	139,1		



★★★



$6 \frac{A}{49}$  3 pro  
Wagenelement

Category code	Sgrrrs									
Type number	4854									
Number of axles	8									
Axles, Pivot distance m	2 x 8,07									
max. distance above the buffer m	26,71									
Unladen weight t	42,70									
Route class	A	B1	B2	C2	C3	C4	D2	D3	D4	
Load limit t	s	85,3	90,9	101,3	121,3		128,2	137,3		
Load length = L m	4 x 20'									
Load width = B m	For ILU up to 2,6 m Width									
Load height = H m	--									
Load area m²	--									
Load volume m³	--									
Floor height above SO m	1,155									
Other notes	<p>contact level of container 1155 mm;</p> <p>C in triangle (for standard containers)</p>									
Specific details	Wagon must not be transported without loading frame									

Ausführung: Variante "I", MonTainer XXL

Eigengewicht: 42 700 kg

Lastgrenzen:

	A	B1	B2	C2	C3	C4	D2	D3	D4
	S	85,3	90,9	101,3	121,3	128,2	137,3	★★★	



4  $\frac{A}{49}$  2 pro  
Wagenelement

## 2.12 Details & Loading Scheme of Type „J“ - RockTainer SAND

Category code	Sggrs									
Type number	4854									
Number of axles	8									
Axles, Pivot distance	m	2 x 8,07								
max. distance above the buffer	m	26,71								
Unladen weight	t	45,70								
Route class		A	B1	B2	C2	C3	C4	D2	D3	D4
Load limit t	s	82,3	87,9	98,3	118,3			125,2	134,3	
Load length = L	m	2 x 40'								
Load width = B	m	For ILU up to 2,6 m Width								
Load height = H	m	--								
Load area	m²	--								
Load volume	m³	--								
Floor height above SO	m	1,155								
Other notes	contact level of container 1155 mm;  C in triangle (for standard containers)									
Specific details	Wagon must not be transported without loading frame									

Ausführung: Variante "J", RockTainer SAND Lastgrenzen:

Eigengewicht: 45 700 kg

	A	B1	B2	C2	C3	C4	D2	D3	D4
S	82,3	87,9	98,3	118,3	125,2	134,3			

★★★



2 <sup>A</sup><sub>49</sub> 1 pro Wagenelement

Category code	Sggrs									
Type number	4854									
Number of axles	8									
Axles, Pivot distance m	2 x 8,07									
max. distance above the buffer m	26,71									
Unladen weight t	38,60									
Route class		A	B1	B2	C2	C3	C4	D2	D3	D4
Load limit t	s	89,4	95	105,4	125,4			132,3	141,4	
Load length = L m	4 x 20'									
Load width = B m	For ILU up to 2,6 m Width									
Load height = H m	--									
Load area m²	--									
Load volume m³	--									
Floor height above SO m	1,155									
Other notes	<p>contact level of container 1155 mm;</p> <p>C in triangle (for standard containers)</p>									
Specific details	Wagon must not be transported without loading frame									

Ausführung: Variante "K", WoodTainer XL
 Lastgrenzen:

	A	B1	B2	C2	C3	C4	D2	D3	D4
S	89,4	95,0	105,4	125,4		132,3	141,4		

▲
★★★

Eigengewicht: 38 600 kg

4

A

49

2 pro Wagenelement

## 2.14 Details & Loading Scheme of Type „L“ - WoodTainer XXL SideDoors

Category code	Sgrrs										
Type number	4854										
Number of axles	8										
Axles, Pivot distance	m	2 x 8,07									
max. distance above the buffer	m	26,71									
Unladen weight	t	41,30									
Route class		A	B1	B2	C2	C3	C4	D2	D3	D4	
Load limit t	s	86,7	92,3	102,7	122,7			129,6	138,7		
Load length = L	m	4 x 20'									
Load width = B	m	For ILU up to 2,6 m Width									
Load height = H	m	--									
Load area	m <sup>2</sup>	--									
Load volume	m <sup>3</sup>	--									
Floor height above SO	m	1,155									
Other notes	contact level of container 1155 mm;  C in triangle (for standard containers)										
Specific details	Wagon must not be transported without loading frame										

**Ausführung:** Variante "L", WoodTainer XXL SD (Side Door) **Lastgrenzen:**

**Eigengewicht:** 41 300 kg



	A	B1	B2	C2	C3	C4	D2	D3	D4	
<b>S</b>	86,7	92,3	102,7	122,7	122,7	129,6	138,7			★★★



4  $\frac{A}{49}$  2 pro  
Wagenelement

### 3 OPERATING REGULATIONS

#### 3.1 General Notes

##### Movement of wagon

- Use the intended equipment to move the wagon (e.g. cable hooks). Do not use buffer heads (or similar) to move! (Figure 2)



**Figure 2: Operating regulations-1**

##### Shunting

- Use the intended equipment – (coupling hooks, cable hooks)
- Max. load of each cable hook (240t wagon total weight)

Handbrake can be found on bogie axel 3 and 4, or 5 and 6 – depending on type.

(Figure 4)







**Figure 3: Operating regulations-2**









**Figure 4: Operating regulations-3**

### 3.2 Foldable Handle

Procedure	Figure/Diagram
<p><b>Before every loading/unloading fold down the foldable handle. (Figure 5)</b></p>	 <p><b>Figure 5: Operating regulations -4</b></p>
<p><b>General</b></p> <ul style="list-style-type: none"> <li>The wagon is equipped with two foldable handles. (Figure 6)</li> </ul>	 <p><b>Figure 6: Operating regulations -5</b></p>
<p><b>Folding of the handle</b></p> <ul style="list-style-type: none"> <li>After lifting the casing, it is possible to fold the handle towards the center of the wagon axis. (Figure 7)</li> </ul>	 <p><b>Figure 7: Operating regulations -6</b></p>
<p><b>Stowing of the Handle</b></p> <ul style="list-style-type: none"> <li>The folded down handle lies in the support bar. (Figure 8)</li> </ul>	 <p><b>Figure 8: Operating regulations -7</b></p>

### 3.3 Loading / Unloading

Procedure	Figure/Diagram
<p>Before every loading/unloading of the vehicle it should be secured against rolling away using the hand-brake or other method. (Figure 8)</p>	<div data-bbox="821 582 917 660"></div> <div data-bbox="989 510 1295 734"></div> <div data-bbox="1388 571 1484 649"></div> <p>Figure 9: Operating regulations -8</p>
<p>Before every loading/unloading, the foldable handle should be folded down. (Figure 10)</p>	<div data-bbox="821 873 917 952"></div> <div data-bbox="989 795 1295 1019"></div> <div data-bbox="1388 873 1484 952"></div> <p>Figure 10: Operating regulations -9</p>

## 4 SPECIAL LOADING FRAMES

### 4.1 Type “A” – RWP-Wood



Figure 11: Type A

#### 4.1.1 Intended Use

The Type „A“ InnoWaggon Sggrs is intended for the transport of logs and other long goods. It consists of 6 loading frames. Each loading frame has 4 stanchions, whereby each pair of stanchions is connected with a crossbar. Between these crossbars there is an additional cross section on each loading frame. This protects the floor of the loading frame from unloading claws, eg LogStackers.

Depending on the design, the centrally arranged cross section can carry a tensioning winch with a suspended tensioning belt fixed at one end. The other end of the crossbar receives the triangular hooks of the tensioning belt with its receptacles.

The loading floor is located between the crossbars and is interrupted by the centrally arranged cross section.



**The loading floor is only intended for the load of foot traffic.**

Loading and unloading are carried out from above. After unloading, the floor (cover plates) should be cleared of residual material (Figure 12)



Figure 12: Type A, Intended Use

#### 4.1.2 Servicing

The following points are described and explain stepwise the safe and correct servicing:

A – Loading

B – Unloading

##### **A – Loading:**

**A.1.** – The loading is carried out from above with, for example, wheel loaders or claws (Figure 13).



**Figure 13: Variante A, Loading A.1.**

**A.2.** – The maximal net load per loading frame is 24.216 kg.

**A.3.** – The minimum length of long goods per loading frame is 2,5 m. Exceeding this length, and also having a distribution of lengths on several loading frames, is allowed. The maximal net load per half-wagon is 72.650 kg.



**A.4.** – Loading must take place without contact or collision between the loading frame and the loading machine.

**A.5.** – The goods are to be secured according to 4.1.3. loading security, **B - securing the load after loading.**

## **B – Unloading:**

**B.1.** – The means by which the load has been secured are, where applicable, to be removed according to 4.1.3 loading safety, **C – undoing of safety before unloading.**

**B.2.** – The loading is carried out from above with, for example, wheel loaders or claws (Figure 14).



Figure 14: Variante A, Unloading B.2



**B.3.** – Loading must take place without contact or collision between the loading frame and the loading machine.

**B.4.** – The means by which the load has been secured are, where applicable, to be safely stored according to 4.1.3 loading safety, **C – undoing of safety before unloading.**

**B.5.** – The loading floor is to be cleared of remnant goods according to 4.1.4 Clearing of remnant goods.

### **4.1.3 Secure loading**

Securing a load is only necessary with certain configurations of the post pallet. Securing of the load is then carried out with the fastening winch and security strap mounted on the post pallet. If one or both of these are missing or damaged, the loading frame may only be used when replacements of the following specifications are available. Otherwise, as stated in chapter five „Action in the Event of Damage“, the InnoFreight Damage Hotline is to be immediately informed.

The following points are described and explain stepwise the safe and correct course of action during the securing of a load. For post pallets without means to secure the load, the following points are not relevant:

A – Specification of the security strap

B – Securing of the load after loading

C – Undoing of safety before loading

**A – Specification of the security strap:**

**A.1. – Material**

Polyester

**A.2. – Compliant and appropriate to the norm**

EN 12195-2

**A.3. – Dimension**

Loose end 10.000 mm long and 50 mm wide

**A.4. – Layout of the ends:**

At one end with triangle hooks and the other end with a loop

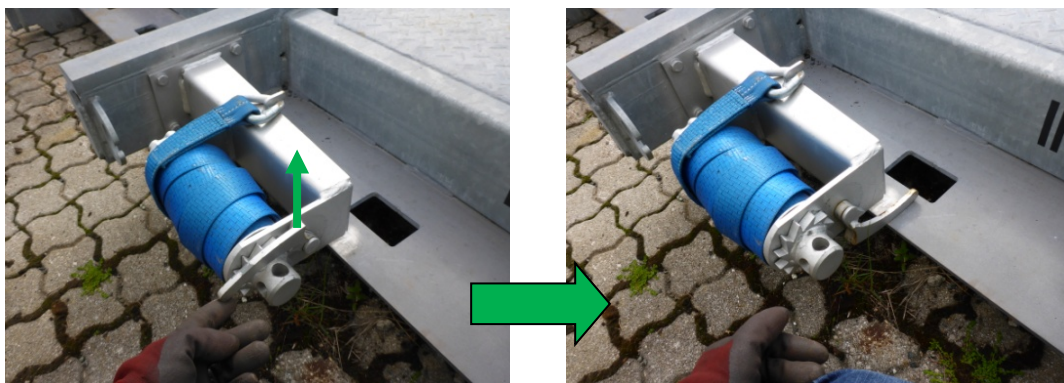
**A.5. – Permissible forces**

With straight pull: 25 kN.

With a doubled-up strap: 50 kN.

**B – Securing the load after loading:**

**B.1. – Unfold the security hooks on the fastening winch (Figure 15).**



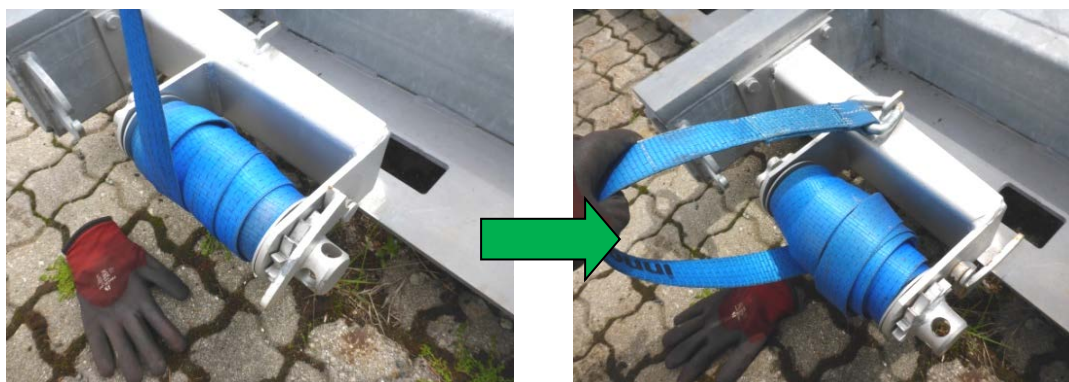
**Figure 15: Type A, Securing the load B.1.**

**B.2. – Turn the fastening winch by hand to loosen the security strap (Figure 16).**



**Figure 16: Type A, Securing the load B.2.**

**B.3. – Unwind the security strap away from the fastening winch by hand and unhinge the triangle hooks and pull them upwards. This is possible only with open security hooks (Figure 17).**



**Figure 17: Type A, Securing the load B.3.**

**B.4.** – Pull the security strap with triangle hooks over the goods to the opposite side of the post pallet and connect it to the holding fixture (Figure 18).



**Figure 18: Type A, Securing the load B.4.**

There is a version of this holding fixture in the form of a C-Ring open at the side (Figure 19):



**Figure 19: Type A, Securing the load B.4.**

There is a version of this holding fixture in the form of a C-Ring open at the bottom. This version requires that the triangle hook is initially inserted from below. The subsequent rotation through 180 degrees upwards achieves the required end position (Figure 20).



**Figure 20: Type A, Secure the load B.4.**

**B.5.** – Fold back the safety hooks so that the fastening winch is engaged with the toothed disc. Afterwards tighten the security strap with a round pipe. For this, use the holes on the winch provided (Figure 21).

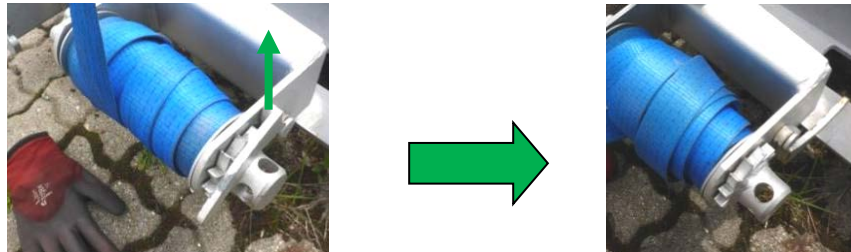


**Figure 21: Type A, Secure the load B.5.**

**B.6.** – Securing of the load is completed when the security hooks are engaged with the toothed disc. The round pipe can now be pulled out of the holes. After this, the strap can no longer lose tension.

**C – Undoing of safety before unloading:**

**C.1.** – Release the safety hooks from the toothed disc by tilting them upwards and fold them away (Figure 22).



**Figure 22: Type A, Securing the load C.1.**



**Risk of injury:** To release the safety hooks from the toothed disc **DO NOT** use a round pipe to turn the fastening winch.

**C.2.** – Loosen the security strap and make it free of tension (Figure 23).



**Figure 23: Type A, Secure the load C.2.**

**C.3.** – Take each security strap with triangle hooks out of the holding fixture. The holding fixture can be one of two types as seen in **B.4.**

**C.4.** – Roll up the security strap on the fastening winch. Use the hand wheel or round pipe for this (Figure 24).



**Figure 24: Type A, Secure the load C.4.**

**C.5.** – Release of the load after unloading is completed when the tringle hooks are brought to their intended position on the fastening winch and the safely hooks are engaged with the toothed disc. The security strap must be tightened so that the triangle hooks cannot come free from their supports (Figure 25).



**Figure 25: Type A, Secure the load C.5**

#### **4.1.4 Cleaning**

The cleaning is done from the floor outwards using the correct equipment, for example, a broom or pressurised air.

## 4.2 Type “A2” – RWP-WoodSweden



Figure 26: Type A2 RWP-WoodSweden

### 4.2.1 Intended Use

Type “A2” RWP-WoodSweden of the InnoWaggon Sggrs is intended for the transport of logs and other long goods. It consists of 24 stanchions, and each pair of stanchions are connected with a crossbar. On both buffer ends there is a front/rear wall. Between each pair of stanchions there is a lift-lock which protects the wagon from unloading claws, eg LogStackers.



The loading and unloading is carried out from above. After unloading the wagon is to be cleared of residual material.

### 4.2.2 Servicing

The following points are described and explain stepwise the safe and correct servicing:

A – Loading

B – Unloading

**A – Loading:**

**A.1.** – The loading is carried out from above with, for example, wheel loader or claw (Figure 27).



**Figure 27: Type A2 , Loading A1.**

**A.2.** – The maximal mass per loading packet is 35 525 kg.

**A.3.** – The minimal length of a loading packet is 5, 0 m. Exceeding this loading length is allowed as so the cargo should be distributed over several loading frames. The maximal net load per half-wagon is 71 050kg.



**A.4.** – Loading must take place without contact or collision between the container and the loading machine.

## **B – Unloading:**

**B.1.** – The unloading is carried out from above with, for example, wheel loaders or claws (Figure 28).



**Figure 28: Variante A2 , Unloading B.1**



**B.2.** – The unloading must take place without contact or collision between the container and the loading machine.



After unloading, the wagon is to be cleared residual material according to 4.2.3 Cleaning.

### **4.2.3 Cleaning**

The cleaning is carried out from the ground, using a suitable working means, e.g. compressed air lance or broom.

### 4.3 Type “A3” – RWP-Steel



Figure 29: Type A3 RWP-Steel

#### 4.3.1 Intended Use

Type “A3” RWP-Steel of the InnoWaggon Sgrrs is intended for the transport of steel and other long goods. It consists of 6 loading frames. Each loading frame has 4 stanchions, and each stanchion pair is connected with a crossbar. Between these crossbars, each loading frame has an additional cross-section which protects the floor of the loading frame from unloading claws, eg LogStackers.

Depending on the design, the centrally arranged cross section can carry a tensioning winch with a suspended tensioning belt fixed at one end. The other end of the crossbar receives the triangular hooks of the tensioning belt with its receptacles.

The loading floor is located between the crossbars and is interrupted by the centrally arranged cross section.



**The loading floor is only intended for the load of foot traffic.**

Loading and unloading are carried out from above. After unloading, the floor (cover plates) should be cleared of residual material (Figure 30)



Figure 30: Type A3, Intended Use

#### 4.3.2 Operation

The following points are described and explain, stepwise, the safe and correct operation:

A – Loading

B – Unloading

##### **A – Loading:**

**A.1.** – The loading is carried out from above with, for example, wheel loaders or claws (Figure 31).



**Figure 31: Variante A3, Loading A.1.**

**A.2.** – The maximal net load per loading frame is 23.950 kg.

**A.3.** – The minimal length of a loading packet is 2, 5 m. Exceeding this loading length is allowed as so the cargo should be distributed over several loading frames. The maximal net load per half-wagon is 71 850kg.



**A.4.** – Loading must take place without contact or collision between the loading frame and the loading machine.

**A.5.** – The cargo is to be secured according to 4.1.3 Securing the load, **B – Securing the load after loading.**

**B – Unloading:**

**B.1.** – The means by which the load is secured are, where available, according to 4.1.3 Load securing, **C –Undoing of safety before unloading** to be removed.

**B.2.** – The loading is carried out from above with, for example, wheel loaders or claws (Figure 32).



Figure 32: Varainte A3, Unloading B.2



**B.3.** – The unloading must take place without contact or collision between the loading frame and the loading machine.

**B.4.** – The means by which the load is secured are, where available, according to 4.3.3 Load securing, **C –Undoing of safety before unloading** to be orderly and safely stowed away.

**B.5.** – The loading floor is to be cleared of residual material according to 4.3.4 Cleaning.

#### **4.3.3 Load securing**

The load securing is carried out with a tensioning winch and tensioning belt mounted on the loading frames. In the absence or damage of either of the two or both, the affected loader may only be used if the replacement is in accordance with the following specification. Otherwise the "Innofreight" damage hotline is to be immediately informed in accordance with chapter "**5 Action in the Event of Damage**".

The following points are described and explain, stepwise, the safe and correct course of action for the load securing. For loading frames without the means to secure the load, the following points are not applicable:

A – Specification of the security strap

B – Securing of the load after loading

C – Undoing of safety before loading

##### **A – Specification of the security strap:**

###### **A.1. – Material**

Polyester

###### **A.2. – Compliant and appropriate to the norm**

EN 12195-2

###### **A.3. – Dimension**

Loose end 10.000 mm long and 50 mm wide

###### **A.4. – Layout of the ends:**

At one end with triangle hooks and the other end with a loop

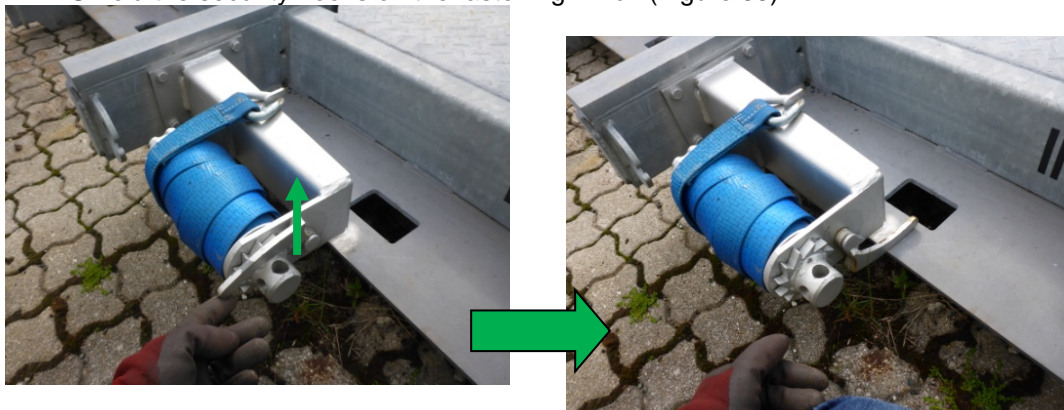
###### **A.5. – Permissible forces**

With straight pull: 25 kN.

With a doubled-up strap: 50 kN.

**B – Secure the load after Loading:**

**B.1. – Unfold the security hooks on the fastening winch (Figure 33).**



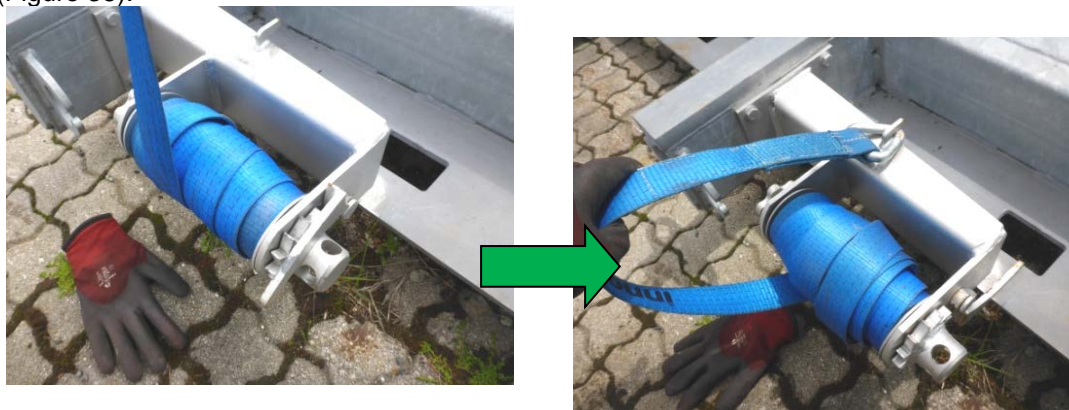
**Figure 33: Type A3, Secure the load B.1.**

**B.2. – Turn the fastening winch by hand to loosen the security strap (Figure 34).**



**Figure 34: Type A3, Secure the load B.2.**

**B.3. – Unwind the security strap away from the fastening winch by hand and unhinge the triangle hooks and pull them upwards. This is possible only with open security hooks (Figure 35).**



**Figure 35: Type A3, Secure the load B.3.**

**B.4.** – Place the tensioning belt with triangle hooks over the cargo on the opposite side of the loading frame in the receptacle provided for this purpose (4.3.3 Load securing).

There is a version of this holding fixture in the form of a C-Ring open at the side (Figure 36):



**Figure 36: Type A3, Secure the load B.4.**

There is a version of this holding fixture in the form of a C-Ring open at the bottom. This version requires that the triangle hook is initially inserted from below. The subsequent rotation through 180 degrees upwards achieves the required end position (Figure 37).



**Figure 37: Type A3, Secure the load B.4.**

**B.5.** – Fold back the safety hooks so that the fastening winch is engaged with the toothed disc. Afterwards tighten the security strap with a round pipe. For this, use the holes on the winch provided (Figure 38).

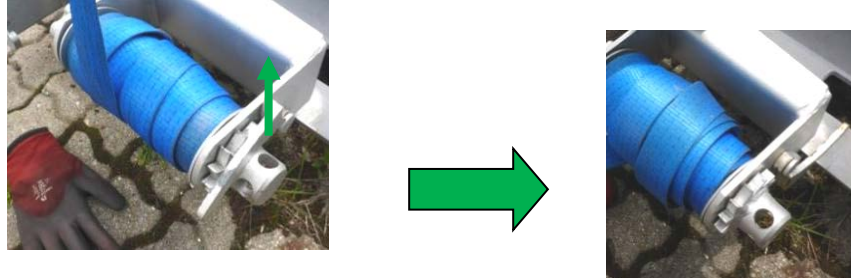


**Figure 38: Type A3, Secure the load B.5.**

**B.6.** – Securing of the load is completed when the security hooks are engaged with the toothed disc. The round pipe can now be pulled out of the holes. After this, the strap can no longer lose tension.

**C – Undoing of safety before unloading:**

**C.1.** – Release the safety hooks from the toothed disc by tilting them upwards and fold them away (Figure 39).



**Figure 39: Type A3, Secure the loading C.1.**



**Risk of injury:** To release the safety hooks from the toothed disc **DO NOT** use a round pipe to turn the fastening winch

**C.2.** – Loosen the security strap and make it free of tension (Figure 40).



**Figure 40: Type A3, Secure the load C.2.**

**C.3.** – Take each security strap with triangle hooks out of the holding fixture. The holding fixture can be one of two types as seen in **B.4.**

**C.4.** – Roll up the security strap on the fastening winch. Use the hand wheel or round pipe for this (Figure 41).



**Figure 41: Type A3, Secure the load C.4.**

**C.5.** – Release of the load after unloading is completed when the triangle hooks are brought to their intended position on the fastening winch and the safety hooks are engaged with the toothed disc. The security strap must be tightened so that the triangle hooks cannot come free from their supports (Figure 42).



**Figure 42: Type A3, Secure the load C.5**

#### **4.3.4 Cleaning**

The cleaning is done from the floor outwards using the correct equipment, for example, a broom or pressurised air.

#### 4.4 Type “B” – WoodTainer XXL or Type „I“ MonTainer XXL



Figure 43: Type B/I

##### 4.4.1 Intended Use

The Type „B“ & „I“ InnoWaggon Sggrs are for the transport of bulk freight. For example, sawdust, wood chips, plaster, sand, coke, coal, or similar. They are comprised of 4 open-top loading frames of type „WoodTainer XXL“ or „MonTainer XXL“ which have fixed side, front, and rear walls.

The differences between Type „B“ WoodTainer XXL and Type „I“ MonTainer XXL are found in their unladen weight and the maximal allowable load.



**The ladder on every front wall may only be used when the loading frame is not mounted on the InnoWaggon Sggrs.**

A loading frame may only be manipulated with a large forklift-truck using the fork pockets. The forklift-truck used must be either owned or approved by the owner of the loading frame.

As an equivalent alternative, loading frames may also be manipulated with a ReachStacker or a portal crane using the upper corner metal fittings.

##### 4.4.2 Servicing

The following points are described and explain stepwise the safe and correct servicing:

A – Loading

B – Unloading

###### A – Loading:

**A.1.** – – Loading is carried out from above, for example, with wheel loaders directly from the silo or with the use of conveyor belts.

**A.2.** – The maximal net load per loading frame is 34.775 kg for Type „B“ WoodTainer XXL and 34.325 kg for Type „I“ MonTainer XXL.

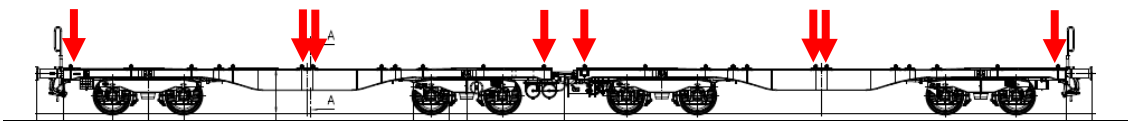
**A.3.** – For loading, the loading frame can be unmounted using a large forklift-truck. The forklift-truck used must be either owned or approved by the owner of the loading frame.

As an equivalent alternative, loading frames may also be unmounted with a ReachStacker or a portal crane using the upper corner metal fittings.



**A.4.** – The Loading must take place without contact or collision between the loading frame and the loading machine

**A.5.** – – For replacement of the loading frame, the 20 ft – pins on the wagon frame must be used (Figure 44):



**Figure 44: Type B/I, Loading A.5.**

With the completion of these steps, the loading is completed. The following should be noted:



**Mounting of differing types on InnoWaggon Sgrrs loading frame is not allowed.**



**It is forbidden to transport an InnoWaggon Sgrrs without loading frames.**

## **B – Unloading:**

**B.1.1.** – The unloading is carried out by lifting the loading frame from the wagon. For unloading the fork pockets are to be used. The unloading can be done using either equipment designed and built by the loading frame owner, or using equipment approved by the loading frame owner. Alternatively, this can be done using a large forklift-truck owned or approved by the loading frame owner.

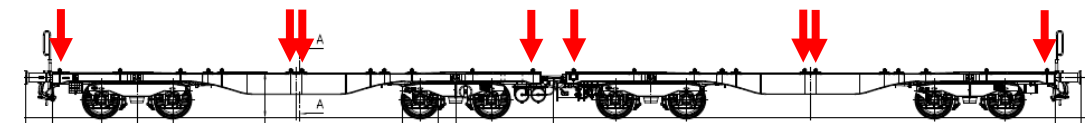
**B.1.2.** – Specialist tuition from the loading frame owner is required for the unloading using a large forklift-truck. The correct manner of driving with a large forklift-truck and the correct manipulation of containers is conveyed during the tuition (Figure 45).



**Figure 45: Type B/I, Loading B.1.2.**

**B.1.3.** – After lifting, the loading frame is to be turned upside down using an appropriate rotation.

**B.1.4.** - For replacement of the loading frame, the 20 ft – pins on the wagon frame must be used (Figure 46):



**Figure 46: Type B/I, Loading B.1.4.**

With the completion of these steps, the unloading is completed. The following should be noted:



**Mounting of differing types on a InnoWaggon Sggrrs loading frame is not allowed**



**It is forbidden to transport an a InnoWaggon Sggrrs without loading frames.**

#### **4.4.3 Cleaning**

The loading frame is brought into the unloading position for cleaning. Appropriate work equipment, for example, pressure washers, should be used.

Cleaning is necessary under the following conditions:

- If a new/different material is to be loaded.
- If the container will be used by a new sender/receiver.
- If such third parties explicitly request the cleaning.

#### 4.5 Type “C” – WoodTainer XXM, or WoodTainer XXM-L, Type “H” – WoodTainer XM



Figure 47: Type C/H

##### 4.5.1 Intended Use

The types „C“ & „H“ of the InnoWaggon Sgrrs are intended for transport of bulk freight such as plaster, ore, coke, coal, or similar.

They are comprised of 6 open-top loading frames of types „WoodTainer XXM“, and „WoodTainer XM“ which have fixed side, front, and rear walls.



**The ladder on every front wall may only be used when the loading frame is not mounted on the InnoWaggon Sgrrs.**

A loading frame may only be manipulated with a large forklift-truck using the fork pockets. The forklift-truck used must be either owned or approved by the owner of the loading frame.

As an equivalent alternative, loading frames may also be manipulated with a ReachStacker or a portal crane using the upper corner metal fittings.

##### 4.5.2 Servicing

The following points are described and explain stepwise the safe and correct servicing:

A – Loading

B – Unloading

##### **A – Loading:**

**A.1.** – Loading is carried out from above for example with wheel loaders directly from the silo or with the use of conveyor belts.

**A.2.** – The maximal net load per loading frame is 22.950 kg for Type „C“ – WoodTainer XXM „H“ and 23.180 kg for Type „H“ – WoodTainer XM.

**A.3.** – For loading, the loading frame can be unmounted using a large forklift-truck. The forklift-truck used must be either owned or approved by the owner of the loading frame.

As an equivalent alternative, loading frames may also be unmounted with a ReachStacker or a portal crane using the upper corner metal fittings.



**A.4.** – Loading must take place without contact or collision between the loading frame and the loading machine.

**A.5.** – For replacement of the loading frame, the 13 ft – pins on the wagon frame must be used (Figure 48):

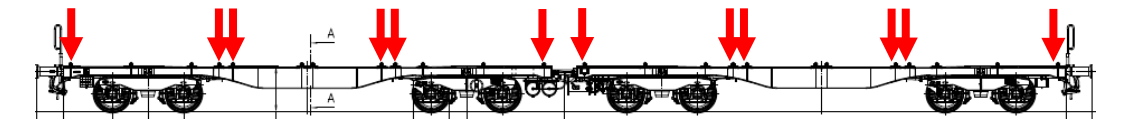


Figure 48: Type C/H, Loading A.4.

With the completion of these steps, the loading is completed. The following should be noted:



**Mounting of differing types on a InnoWaggon Sggrrs loading frame is not allowed.**



**It is forbidden to transport an InnoWaggon Sggrrs without loading frames.**

## **B – Unloading:**

**B.1.** – The unloading is carried out by lifting the loading frame from the wagon. For unloading the fork pockets are to be used. The unloading can be done using either equipment designed and built by the loading frame owner, or using equipment approved by the loading frame owner. Alternatively, this can be done using a large forklift-truck owned or approved by the loading frame owner.

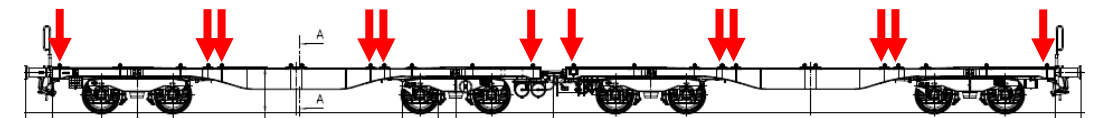
**B.2.** – Specialist tuition from the loading frame owner is required for the unloading using a large forklift-truck. The correct manner of driving with a large forklift-truck and the correct manipulation of containers is conveyed during the tuition. (Figure 49).



**Figure 49: Type C/H, Unloading B.2.**

**B.3.** – After lifting, the loading frame is to be turned upside down using an appropriate rotation.

**B.4.** – For replacement of the loading frame, the 13 ft – pins on the wagon frame must be used (Figure 50):



**Figure 50: Type C/H, Loading B.4.**

With the completion of these steps, the unloading is completed. The following should be noted:



**Mounting of differing types on a InnoWaggon Sggrrs loading frame is not allowed.**



**It is forbidden to transport an InnoWaggon Sggrrs without loading frames.**

#### **4.5.3 Cleaning**

The loading frame is brought into the unloading position for cleaning. Appropriate work equipment, for example, pressure washers, should be used.

Cleaning is necessary under the following conditions:

- If a new/different material is to be loaded.
- If the container will be used by a new sender/receiver.
- If such third parties explicitly request the cleaning.

## 4.6 Type “D” – RockTainer ORE



Figure 51: Type D

### 4.6.1 Intended Use

Type „D“ of the InnoWaggon Sgrrs is intended for transport of bulk freight which is not sensitive to moisture. They are comprised of 2 open-top loading frames of type „RockTainer ORE“ with swing-out side walls and fixed front and rear walls.

The loading is always done from above. Unloading via the side walls takes place abruptly and the load is released below the wagon and to the side.



**The ladder on every front wall may only be used when the loading frame is not mounted on the InnoWaggon Sgrrs.**

A loading frame can only be manipulated using a ReachStacker or a portal crane using the top corner fittings.

### 4.6.2 Servicing

The following points are described and explain stepwise the safe and correct servicing:

A – Before Loading

B – Loading

C – Unloading

D – After Unloading

## A – Before Loading:

**A.1.** – Check whether the flaps and the locking system are completely and securely closed: On each end of chamber 1 and chamber 2 there is a safety lever (1). This safety lever must be in a completely closed position for each chamber.

To ensure that this is the case, the rod-shaped indicators (2) on the safety levers are slid into position on each side of the container (Figure 52).

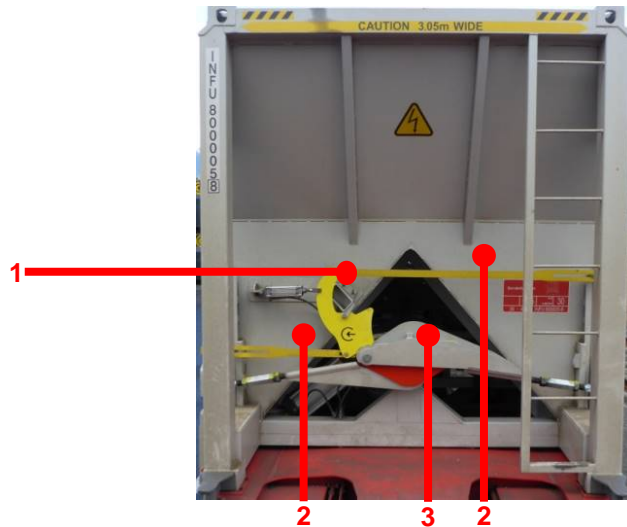


Figure 52: Type D, Before Loading A.1.

The completely closed position of the safety lever (1) is achieved when the indicators (2) are in their fully retracted positions and the main shaft (3) is turned completely over the „dead point position“. In this retracted position, the ends of the indicators do not protrude past the outer edge of the container, as shown in the following pictures (Figure 53):



Figure 53: Type D, before Loading A.1.

Additionally, there is a marking with contrasting colour on the main shaft of the mechanism. This indicates if the main shaft is completely rotated and that the „dead point position“, which is necessary for the correct flap locking, has been reached. In the fully closed position, only the marking in contrast colour is visible under the shear joint, as shown in the following figure (Figure 54).



Figure 54: Type D, Before Loading A.1.



Loading must not begin if the safety lever is in the open position and/or the indicators are in their extended positions. Equally important is that the main shaft of the flap locking system has exceeded the „dead point position“ and is completely rotated!

**A.2.** – On each longitudinal side near a corner post on chamber 1 of a loading frame there are two hand valves. The total of 4 hand valves (2 on both sides) must be in the position „FAHRT“/„TRANSPORT“ (= in upright / vertical position) (Figure 55).

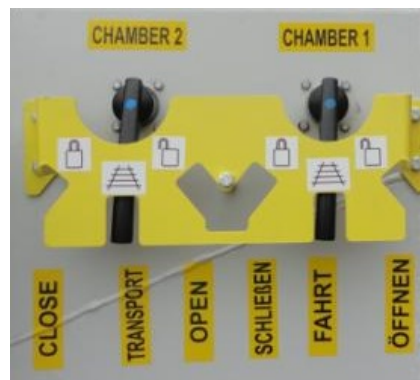
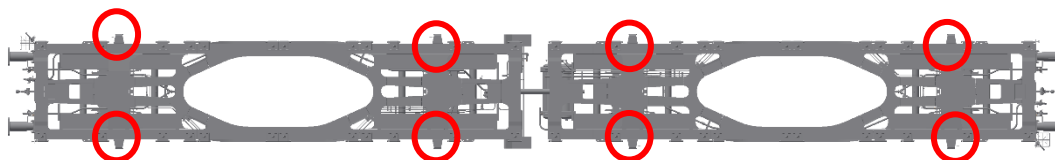
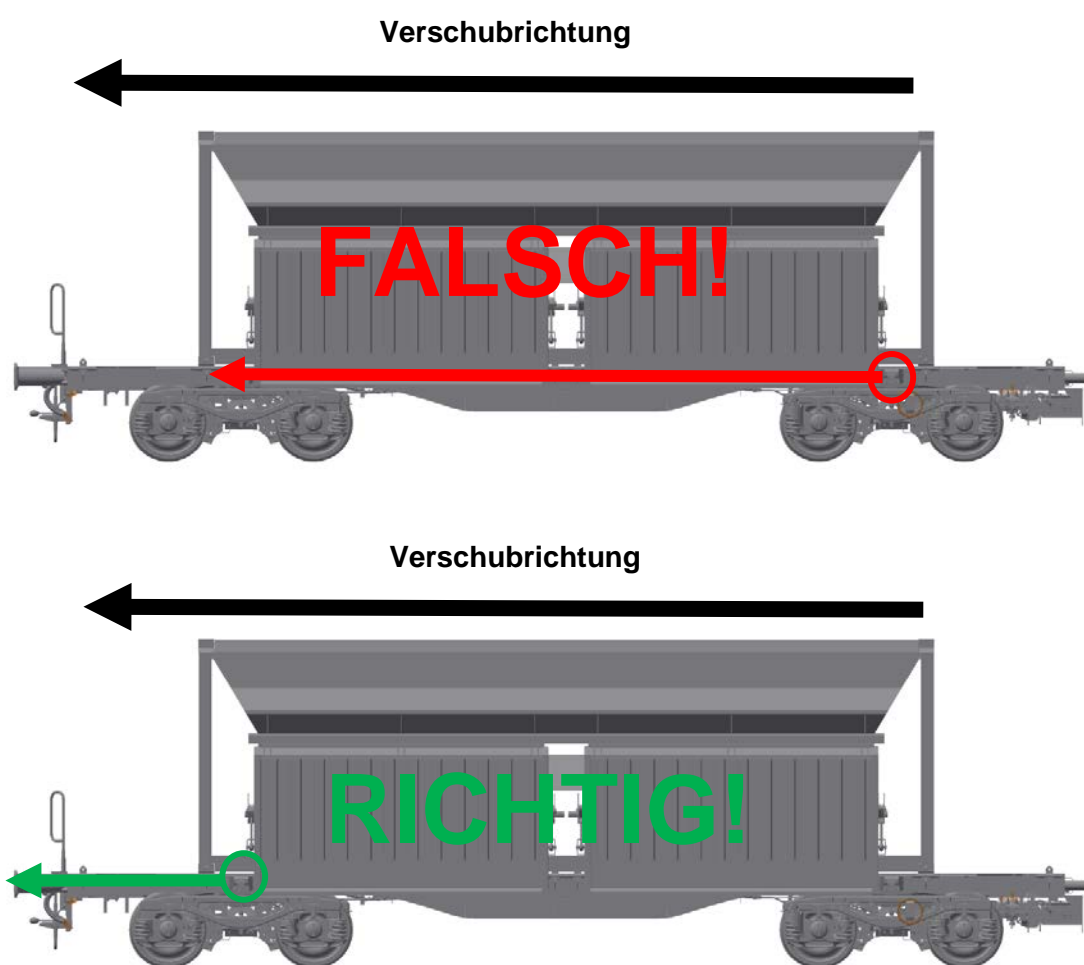


Figure 55: Type D, Before Loading A.2.

**A.3.** – When shifting an InnoWaggon with 8 rope hook brackets (see figure 56, marked in red) by a tensioning cable in the longitudinal direction, ensure that the tensioning cable is not stretched over the loading flaps of the loading frame. A schematic illustration of a correct displacement by a tensioning cable is shown in Figure 57.



**Figure 56: Type D, Before Loading A.3.**



**Figure 57: Type D, Before Loading A.3.**

**B – Loading:**

**B.1.** – All steps **A.1.** – **A.2.** in “**A – before loading**” must be followed.

**B.2.** – The loading is carried out from above with, for example, with a portal crane, directly from a silo, or by using a grab dredger from the side (Figure 58).



**Figure 58: Type D, Loading B.2.**



**B.3.** – The loading must take place without contact or collision between the loading frame and the loading machine.

**B.4.** – The net load per loading frame must not exceed 69.000 kg.

**B.5.** – The load must be equally distributed between both chambers (chamber 1 and chamber 2) (Figure 59).



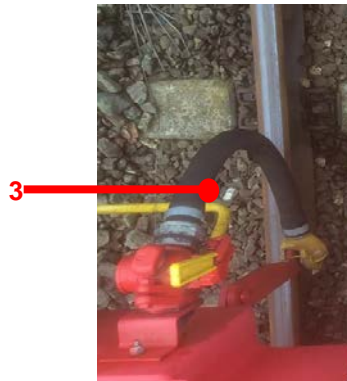
**Figure 59: Type D, Loading B.5.**

**C – Unloading:**



**C.1. – Only to be carried out by authorised and trained personnel:**

The main air reservoir pipe (HBL, **3**) of the wagon is to be attached to the locomotive and vented (Figure 60).

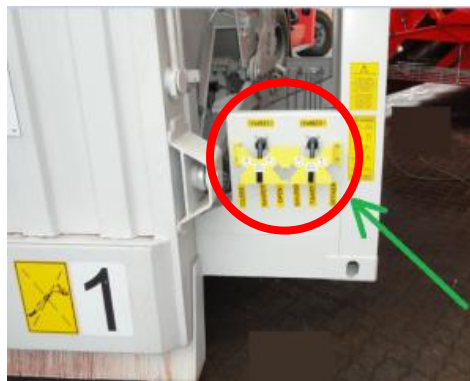


**Figure 60: Type D, Unloading C.1.**

**C.2. – For opening and closing, only one operator front (**4**) per loading frame on a longitudinal side next to the buffer ends of the InnoWaggons Sgrrs may be used (Figure 61/Figure 62).**



**Figure 61: Type D, Unloading C.2.**



**Figure 62: Type D, Unloading C.2.**



**C.3. – It is forbidden to stand in the area where the side flaps open. This means that, for the safety of the operator and the unloading personnel, a minimum distance of 1,5m from the closed loading frame should be kept (Figure 63).**

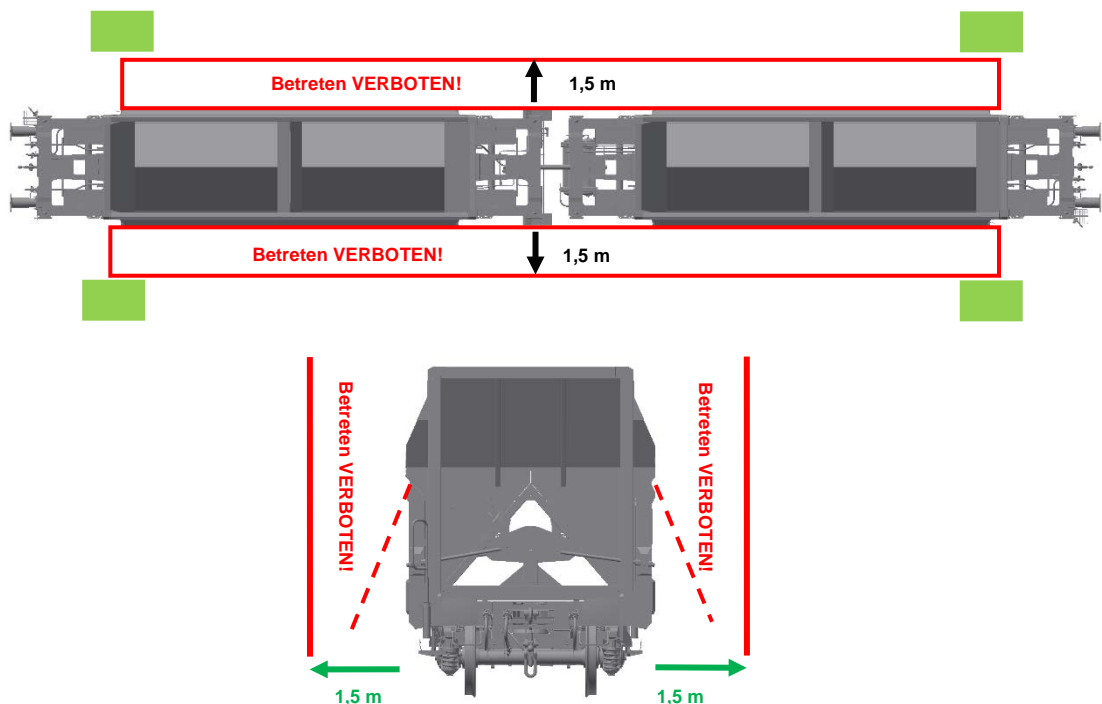


**Figure 63: Type D, Unloading C.3.**

During unloading, the danger area (marked in red) must not be entered by the unloading personnel. The unloading personnel may only be located in the marked safety area (marked in green). The minimum distance of 1.5 meters between the closed loading frame and the operator must be observed (see Figure 64). Side loading is also prohibited with the loading flap open.



**Staying in the marked danger area is forbidden.**



---

**Figure 64: Type D, Unloading C.3.**

**C.4.** – In order to keep this safe distance, a tool with a correspondingly long handle should be used. Its end has a shape such that the hand valves on the operator front can be operated.

The tool is either provided by the owner of the loading frame or, according to the provided schematics, to be procured by the unloader him/herself (Figure 65).



---

**Figure 65: Type D, Unloading C.4.**

**C.5.** – Chamber 1 and chamber 2 are separated from each other and are to be unloaded one after the other. This means that simultaneous opening of both chambers using only one tool is not possible. Only one chamber can be opened with one hand valve.

The following picture shows the horizontal start position of the tool at the beginning of the unloading of a chamber. The order in which the chambers are opened can be arbitrarily chosen (Figure 66).



Figure 66: Type D, Unloading C.5.

**C.6.** – To open the flaps of chamber 1 or chamber 2, the hand valve with the label „CHAMBER 1“ / „KAMMER 1“ or „CHAMBER 2“ / „KAMMER 2“ should be moved from position „FAHRT“ / „TRANSPORT“ first into position „SCHLIESSEN“ / „CLOSE“, respectively (Figure 67).

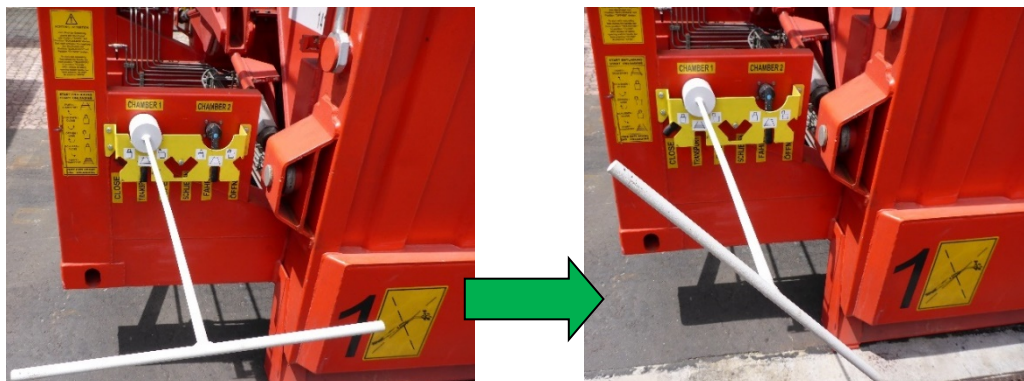


Figure 67: Type D, Unloading C.6

Stay in this position („SCHLIESSEN“ / „CLOSE“) until the indicators are extended to both sides and the following situation is reached (Figure 68).



Figure 68: Type D, Unloading C.6.

**C.7.** – Afterwards, turn from position „SCHLIESSEN“ / „CLOSE“ directly to position „ÖFFNEN“ / „OPEN“. The flaps of the corresponding chamber will now open. Leave the tool and also the rotary slide valve for the duration of the unloading (Figure 69).



Figure 69: Type D, Unloading C.7.



It is forbidden to stand in the area where the side flaps open. This means that, for the safety of the operator and the unloading personnel, a minimum distance of 1,5 m from the closed loading frame should be kept.

**C.8.** – Clear the contact area between the under-edge of the flap and the sliding plate of residue using, for example, compressed air (Figure 70).

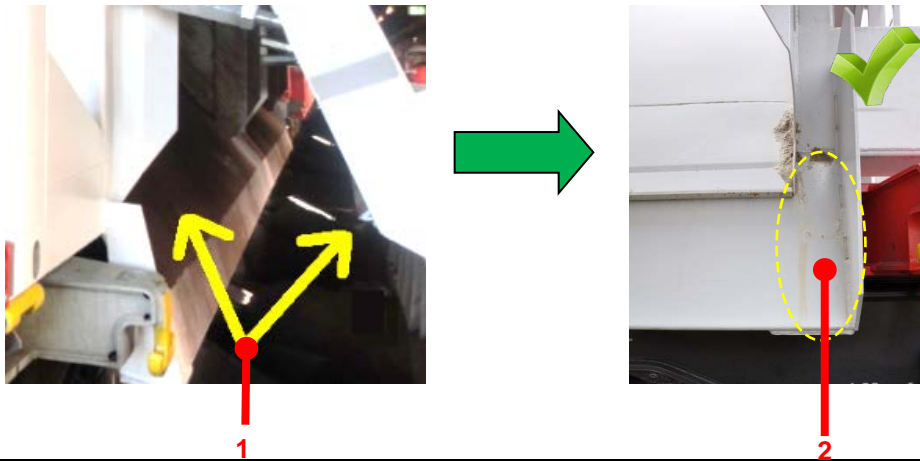


Figure 70: Type D, Unloading C.8.



For the cleaning of the contact surfaces (1), do not reach into the swivel range of the flaps with the hands. There is a risk of crushing due to unexpected closing of the flaps.



After the unloading, no clogging of material residues in the container and the flaps is allowed, in particular in the area of the containers and flap contact surfaces (1 and 2). Possible residues could lead to an impairment of the correct locking of the flaps!

For the cleaning from above, appropriately long compressed air lances are suitable. (3)  
(Figure 71):

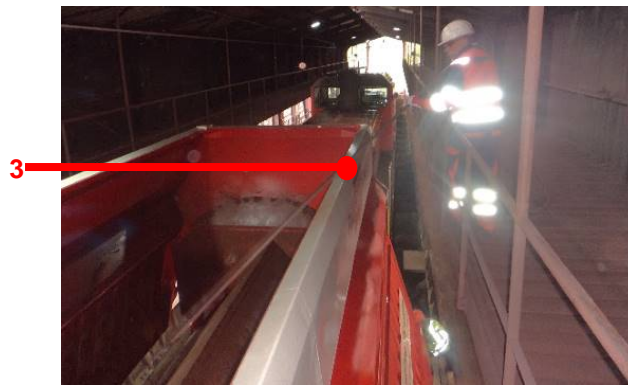


Figure 71: Type D, Unloading C.8. (Cleaning)



For the cleaning from above, only use appropriate and stationary platforms.

**C.9.** – For closing the flaps of chamber 1 or chamber 2, rotate the hand valve with the label „CHAMBER 1“ / „KAMMER 1“ or „CHAMBER 2“ / „KAMMER 2“ from position „ÖFFNEN“ / „OPEN“ to the position „SCHLIESSEN“ / „CLOSE“, respectively (Figure 72).

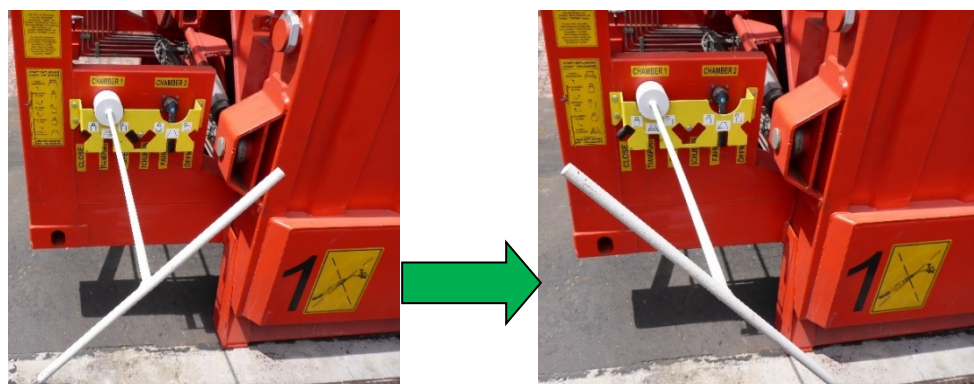
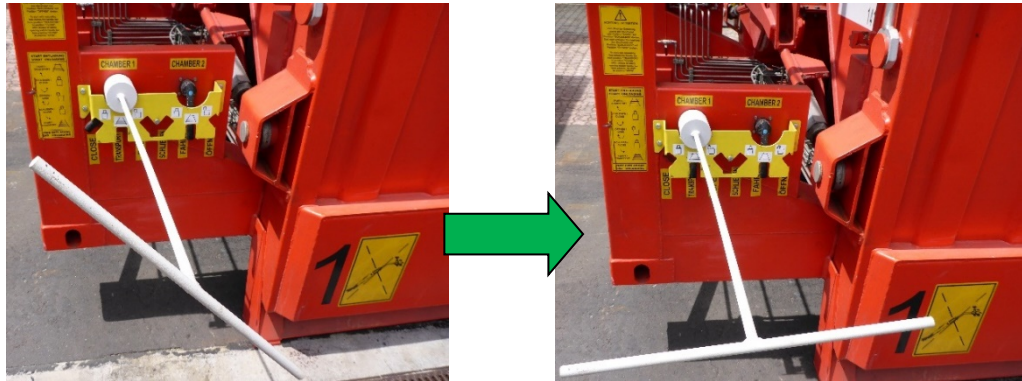


Figure 72: Type D, Unloading C.9.

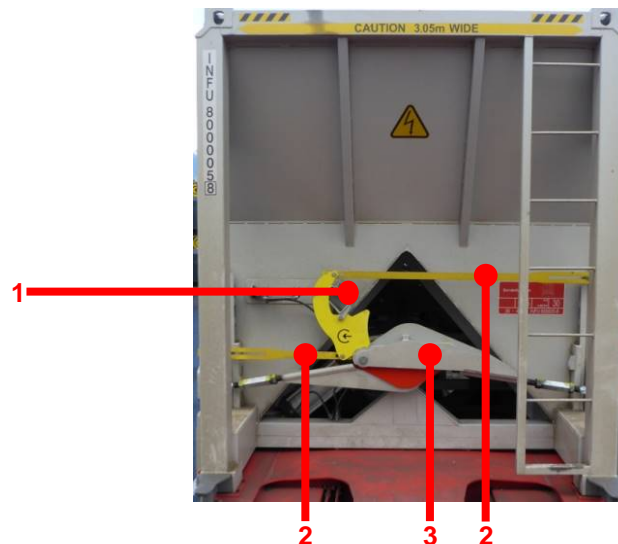
**C.10.** – After the complete locking of all flaps and the entire interlocking system, the hand valves for both chambers are to be turned from position „SCHLIESSEN“ / „CLOSE“ to the position „FAHRT“ / „TRANSPORT“ (= upright/vertical position) (Figure 73).



**Figure 73: Type D, Unloading C.10.**

**C.11.** – Remove all tools from the hand valve and check to ensure that the flaps and the entire interlocking system are locked.

To ensure that this is the case, the rod-shaped indicators (2) on the safety levers are slid into position on each side of the container (Figure 74).



**Figure 74: Type D, Unloading C.11.**

The completely closed position of the safety lever (1) is achieved when the indicators (2) are in their fully retracted positions and the main shaft (3) is turned completely over the „dead point position“. In this retracted position, the ends of the indicators do not protrude past the outer edge of the container, as shown in the following pictures (Figure 75):



**Figure 75: Type D, Unloading C.11.**

Additionally, there is a marking with contrasting colour on the main shaft of the mechanism. This indicates if the main shaft is completely rotated and that the „dead point position“, which is necessary for the correct flap locking, has been reached. In the fully closed position, only the marking in contrast colour is visible under the shear joint, as shown in the following figure (Figure 76).



**Figure 76: Type D, Unloading C.11.**



**C.12. – Only to be carried out by authorised and trained personnel:**

The main air reservoir pipe (HBL, 4) of the wagon is to be decoupled from the locomotive and evacuated. There must not be any pressurised air left in the system (Figure 77).

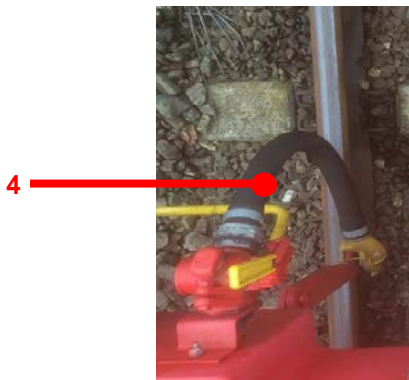


Figure 77: Type D, Unloading C.12.

**C.13. – All steps D.1. – D.2. under “D – after unloading” must be followed.**

This procedure „**C – Unloading**“ is also described on the corner post beside the operator front (Figure 78):

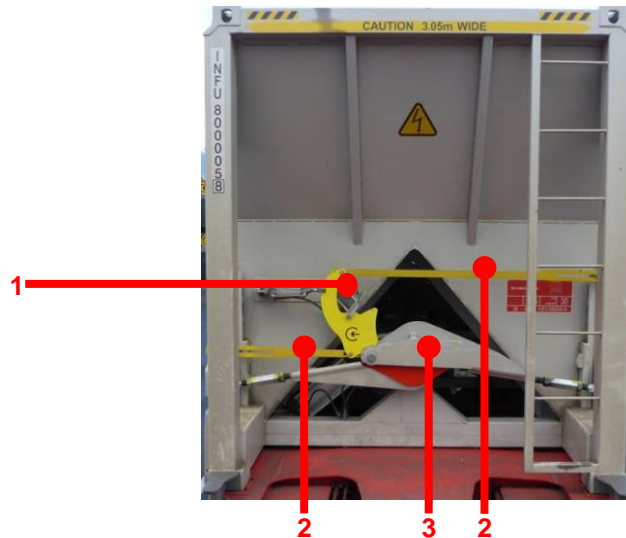


Figure 78: Type D, Unloading C.13.

## D – After Unloading:

**D.1.** – Check whether the flaps and the locking system are completely and securely closed: On each end of chamber 1 and chamber 2 there is a safety lever (1). This safety lever must be in a completely closed position for each chamber.

To ensure that this is the case, the rod-shaped indicators (2) on the safety levers are slid into position on each side of the container (Figure 79).



**Figure 79: Type D, After Unloading D.1.**

The completely closed position of the safety lever (1) is achieved when the indicators (2) are in their fully retracted positions and the main shaft (3) is turned completely over the „dead point position“. In this retracted position, the ends of the indicators do not protrude past the outer edge of the container, as shown in the following pictures (Figure 80):



**Figure 80: Type D, After Unloading D.1.**

Additionally, there is a marking with contrasting colour on the main shaft of the mechanism. This indicates if the main shaft is completely rotated and that the „dead point position“, which is necessary for the correct flap locking, has been reached. In the fully closed position, only the marking in contrast colour is visible under the shear joint, as shown in the following figure (Figure 81).

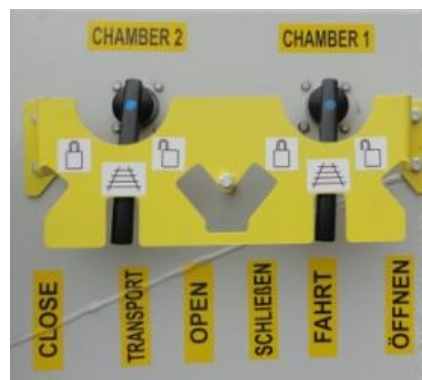


**Figure 81: Type D, After Unloading D.1.**



**Loading is not completed as long as the safety lever is in the open position, both indicators are in their extended positions, or the main shaft is not rotated over its “dead point position”.**

**D.2.** – On each longitudinal side near a corner post on chamber 1 of a loading frame there are two hand valves. The total of 4 hand valves (2 on both sides) must be in the position „FAHRT“ / „TRANSPORT“ (= in upright / vertical position) (Figure 82).



**Figure 82: Type D, After Unloading D.2.**

#### **4.6.3 Cleaning**

The loading frame is brought into the unloading position for cleaning. Appropriate work equipment, for example, pressure washers, should be used.

Cleaning is necessary under the following conditions:

- If a new/different material is to be loaded.
- If the container will be used by a new sender/receiver.
- If such third parties explicitly request the cleaning.
-

#### 4.7 Type “E” – RockTainer INFRA



**Figure 83: Type E**

##### 4.7.1 Intended use

Type “E” of the InnoWaggon Sggrs is intended for transport of bulk freight which is not sensitive to moisture, for example: gravel for railroad construction. They are comprised of 2 open-top loading frames of type „RockTainer INFRA“. The floor of the funnel shaped loading frames have swing-out flaps. The loading frames have fixed front, rear, and side walls.

The loading is done from above. The unloading is performed downward using the unloading flaps and can be dosed.

A gravel distribution system is found beneath the loading frame. This system can be set to distribute bulk cargo left or right of the centre of the rails or the railroad track.

A container can only be manipulated using a ReachStacker or a portal crane using the top corner fittings

##### 4.7.2 Servicing

The following are described:

- A – Overall structure
- B – Loading
- C – before unloading
- D – unloading
- E – after unloading

This chapter explains the individual components with respect to the overall structure and their safe and correct operation.

#### A – Overall structure:

The following figure shows the overall structure of the type "E" - RockTainer INFRA on an InnoWaggon Sgrrs. This complete set-up includes a RockTainer INFRA (**a and b**) per half-wagon. Each RockTainer INFRA (**a and b**) is divided into 2 loading chambers. These are marked by appropriate labelling.

The loading chamber with the number 1 is always next to the operating platform with the roof (**c**) for the operator. This stage for the operator is located next to the short coupling between the two loading frames (Figure 84).



Figure 84: Type E, Overall structure

The stage for the operator is equipped with all of the elements necessary for operation (Figure 85):



Figure 85: Type E, Overall structure

Included in these elements are all of the hydraulic operating components for the unloading and their operation is described in chapter „D – Unloading“. During the unloading, the stage is occupied by trained unloading personnel. Additionally, hydraulic conduits complete with quick couplings and screw couplings for use with both RockTainer INFRA and gravel distribution system are found on the stage.

## **B – Loading:**

**B.1.** – Loading may only commence after checking that the ground-facing unloading flaps are completely closed. For this, a visual inspection from a suitable viewing angle from below or above is sufficient.

If one looks in the direction of the end wall from the ground, it can be seen that the inner edges of the pair of unloading flaps are in contact with each other (Figure 86):



**Figure 86: Type E, Loading B.1.**

The second pair of unloading flaps can be checked by looking from the same position but on the opposite end wall.

Alternatively, the second pair of unloading flaps can also be checked using the indicator rods on the container. The dipsticks are located on the pair of unloading flaps of chamber 2. The position of the unloading flaps can be determined by comparison with the scale closest to the nearest corner post. If the pair of unloading flaps are completely closed, the dipstick is in the following position (Figure 87):



**Figure 87: Type E, Loading B.1.**

**B.2.** – The Loading is done from above.

For this, the wagon is moved directly (for example) under a silo using a conveyor belt (Figure 88):



**Figure 88: Type E, Loading B.2.**

Alternatively, the loading can be done using a wheel loader.



**B.3.** – **The loading must take place without contact or collision between the loading frame and the loading machine.** This means that, regardless of the method used for loading, contact between the loading machinery (conveyor belt, boom wheel loader...) and the loading frame is forbidden.

**B.4.** – The maximal net load per loading frame is 68.000 kg.

**B.5.** – The load must be distributed equally between both chambers (chamber 1 and chamber 2 (Figure 89).



**Figure 89: Type E, Loading B.5.**



**B.6. – In the case of contamination by loose gravel from the wagon (wagon component, stage, stage canopy, etc.), this must be removed before leaving the loading area or at the very latest, before travelling on public railways!**

## **C – Before Unloading:**

### **C.1. – Working in darkness**

In order to increase safety during working at night, the installation of LED hand lamps which have magnetic feet is required (Figure 90).

	Produkteigenschaften	Technische Daten	
	<p>Kleiner LEDStrahler mit symmetrischer Lichtcharakteristik. Die ILED 5 hat eine schlanke Bauform, ist schwarz pulverbeschichtet mit 3 m Zuleitung 2x1 mm<sup>2</sup>.</p> <ul style="list-style-type: none"> <li>• voller Lichtstrom steht sofort zur Verfügung</li> <li>• geringer Energieverbrauch bei hoher Lichtausbeute</li> <li>• minimale Temperaturentwicklung</li> <li>• extrem schaltfest (&gt;1 Mio)</li> <li>• wartungsfrei</li> <li>• keine UV/IR-Strahlung</li> <li>• stoß- und vibrationsunempfindlich</li> </ul> <p>Einsatzbereich</p> <p>Geeignet für alle Bereiche, die eine flächige professionelle Ausleuchtung erfordern.</p> <ul style="list-style-type: none"> <li>• Industrie</li> <li>• Baumaschinen</li> <li>• Fahrzeuge</li> <li>• Maschinenbau ...</li> </ul>	<p>LED Leistung Elektrische Leistung Spannung Lichtstrom CRI-Index Lichtaustrittswinkel Ø LED Lebensdauer bei 20°C Lichtstromverlust LED Schaltfestigkeit Lichtfarbe Farbtemperatur Temperatur-Einsatzbereich Material Gehäuse Farbe Abdeckung Schutzart / Schutzklasse Leuchte Gewicht Abmessungen L x B x T</p>	<p>5x3W 24V DC 0,42A 11-36V DC / 24 V AC 900lm Ra&gt;80 Flood / Spot &gt;50.000h &lt;10% &gt;1Mio. cool white 6.500K -30°C bis +50°C Aluminium schwarz Kunststoffglas IP67/69K/II 0,56 kg 125 x 85 x 39 mm</p>

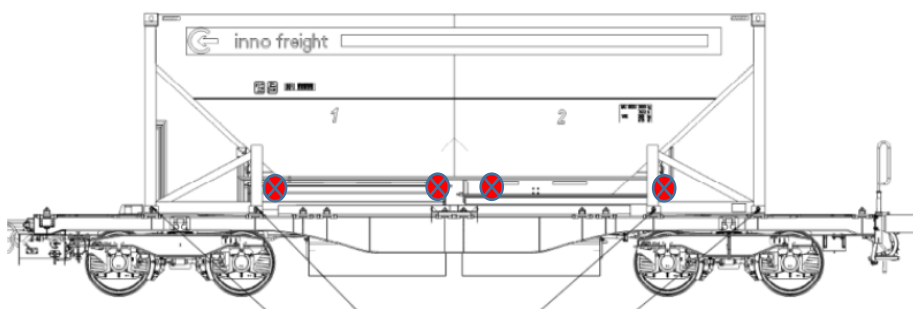
**Figure 90: Type E, Working in darkness C.1.**

### **C.2. – Attachment of hand lamps**

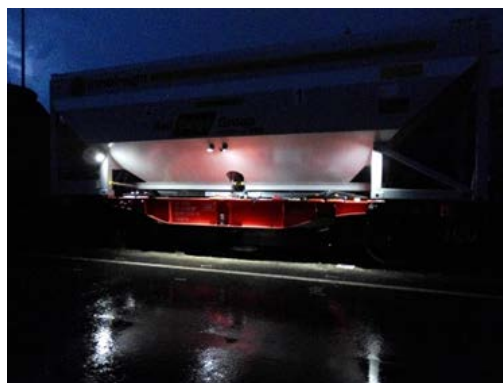
For the attachment of hand lamps, there are two methods:

### **C.2.1. –Type 1:**

The hand lamps (4 per container) are attached to the intended positions shown in the following figures (Figure 91/Figure 92).



**Figure 91: Type E, Attachment of hand lamps C.2.1.**



**Figure 92: Type E, Attachment of hand lamps C.2.1.**

### C.2.2. – Type 2

3 hand lamps are attached to the wagon frame as shown in the following figures (Figure 93/ Figure 94).

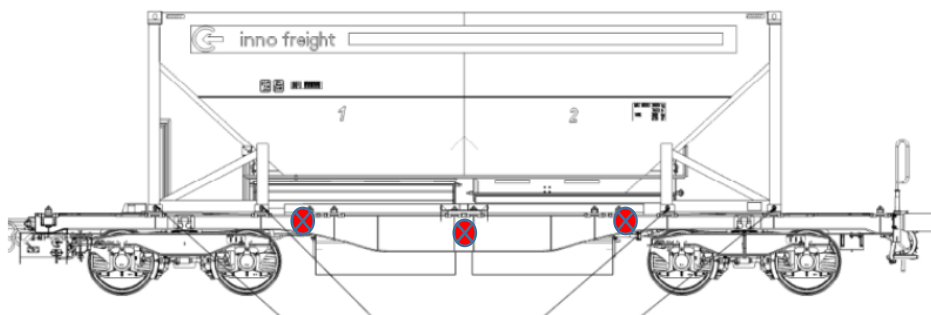


Figure 93: Type E, Attachment of hand lamps C.2.2.



Figure 94: Type E, Attachment of hand lamps C.2.2.

The main thing to be noted for illumination is that the outlets and the pouring are well lit (Figure 95).

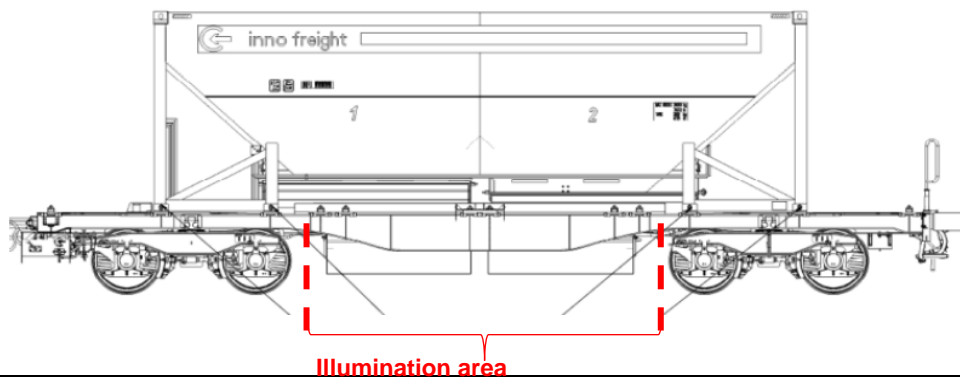


Figure 95: Type E, Attachment of hand lamps

At the platform, a hand lamp can be attached next to the operators desk. This must enable the operator to achieve the best possible viewing conditions (Figure 96).



**Figure 96: Type E, Attachment of hand lamps**



**After the operation, the hand lamps must be properly dismantled.**

### **C.3. Adjustment of the baffle plate**

For spreading of ballast, the ejection distance can be influenced by means of manual adjustment of the baffle plate. The adjustment of the baffle plate must always be made before the work has started.

**C.3. – Enter the stage using one of the ladders (1) provided for this purpose, using the one of the hand rails (Figure 97):**



**Figure 97: Type E, Adjustment of baffle plate C.3.**

**C.3.** – When on the operating platform, close both safety clips, which are attached to the left and right of the stage. It is important to ensure that both brackets are placed in the safety recess and that the safety mechanism blocks the bracket in the closed position so that it cannot be opened without moving the safety mechanism.

First open the safety mechanism and flip the bracket approximately 90° with the other hand (1). Then press the bracket outwards (2) or lower it approximately 3cm into the safety recess (3). The securing mechanism must block it in the safety trough after proper locking of the bracket (Figure 98).



Figure 98: Type E, Adjustments of the baffle plate C.3.

Proper locking of the the safety bracket (Figure 99):



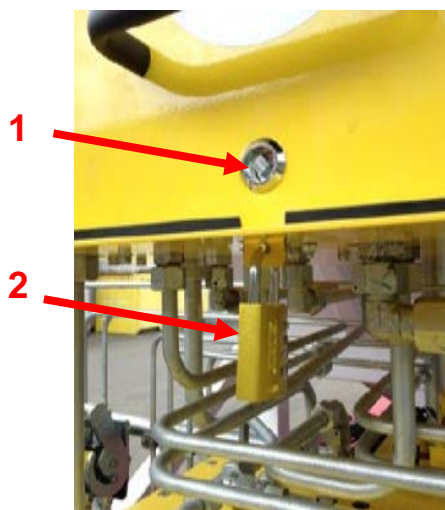
Figure 99: Type E, Adjustment of the baffle plate C.3.

**C.4.** – To use the operator panel, the cover (1) of the console must be opened. The procedure is explained in steps **C.5** – **C.7** (Figure 100).



**Figure 100: Type E, Adjustment of the baffle plate C.4.**

**C.5.** – The square lock (1) on the front of the console is opened with a suitable square key. Subsequently, the padlock (2) is opened by inserting the number combination and removed from the tab. The number combination for the padlock always consists of the last four digits of the wagon number of the wagon on which the operating platform is located (Figure 101).



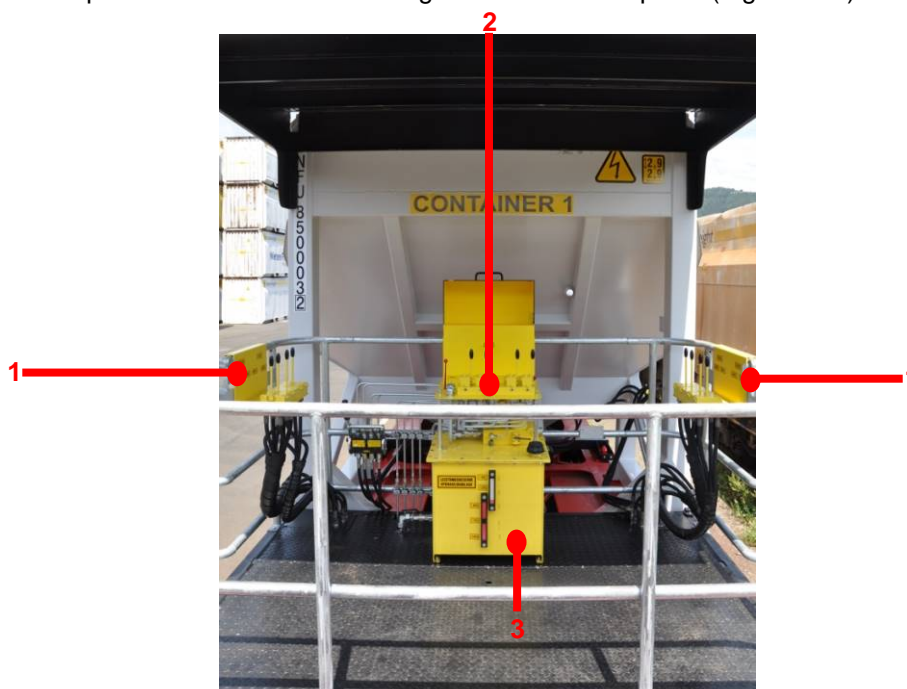
**Figure 101: Type E, Adjustment of the baffle plate C.5.**

**C.6.** – The padlock is removed as described in point **C.5**. The cover is now in the open, unfolded position (Figure 102).



**Figure 102: Type E, Adjustment of the baffle plate C.6.**

**C.7.** – The operator now has the following view of the work place (Figure 103):



**Figure 103: Type E, Adjustment of the baffle plate C.7.**

**These are the functional groups:**

1 – the control consoles (1) for controlling the loading frame flaps are located on the two longitudinal sides.

2 – In the middle is the control panel (2) for the control of the ballast distribution systems and for positioning their flaps.

3 – underneath is the hydraulic oil tank (3) with the gauge glasses.

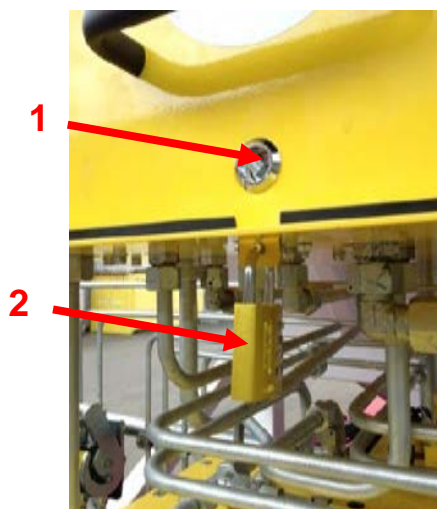
**C.8.** – After ending work, the operating panel must be secured against unauthorised opening by means of safety devices. The procedure is explained in steps (**C.9 to C.10**).

**C.9.** – The lid (1) must be in the closed position (Figure 104).



**Figure 104: Type E, Baffle plate setting C.9.**

**C.10.** – In the following, the square lock (1) on the front of the console must be closed with a suitable square wrench. Next, the padlock (2) is inserted through the tab and secured by turning the number combination (Figure 105).



**Figure 105: Type E, Baffle plate setting C.10.**

### **C.11. – Haydraulic storage capacity display**

The available storage capacity is shown on the gauge glasses of the hydraulic oil tank.

The gauge glasses are to be read from the bottom (100%, full power - left picture) to the top (0%, no power). The actual storage capacity can be read as follows. If one or both gauge glasses are filled, this level corresponds to the power consumed. (Right picture - about 30% used) (Figure 106)



**Figure 106: Type E, Baffle plate setting C.11.**

### **C.12. – Switching on the reserve power.**

In normal working conditions there is maximum 75% of the power available.

The red lever on the left side of the operating panel must always be in a vertical position before unloading.

The correct use of this lever is described in **D-Unloading**. The correct position of this lever is shown in the following picture (Figure 107):



**Figure 107: Type E, Baffle plate setting C.12.**

Turning this shut-off valve to an upright position is necessary since this serves as a protective mechanism for an unintended complete unloading of the hydraulic system.

**C.13.** – Use the hand pump for the back-up mode.

This is located on the hydraulic oil tank on the right. The pumping movements must be carried out with the round tube provided, which is located on the inner side of the lid (Figure 108):



**Figure 108: Type E, Baffle plate setting C.13.**

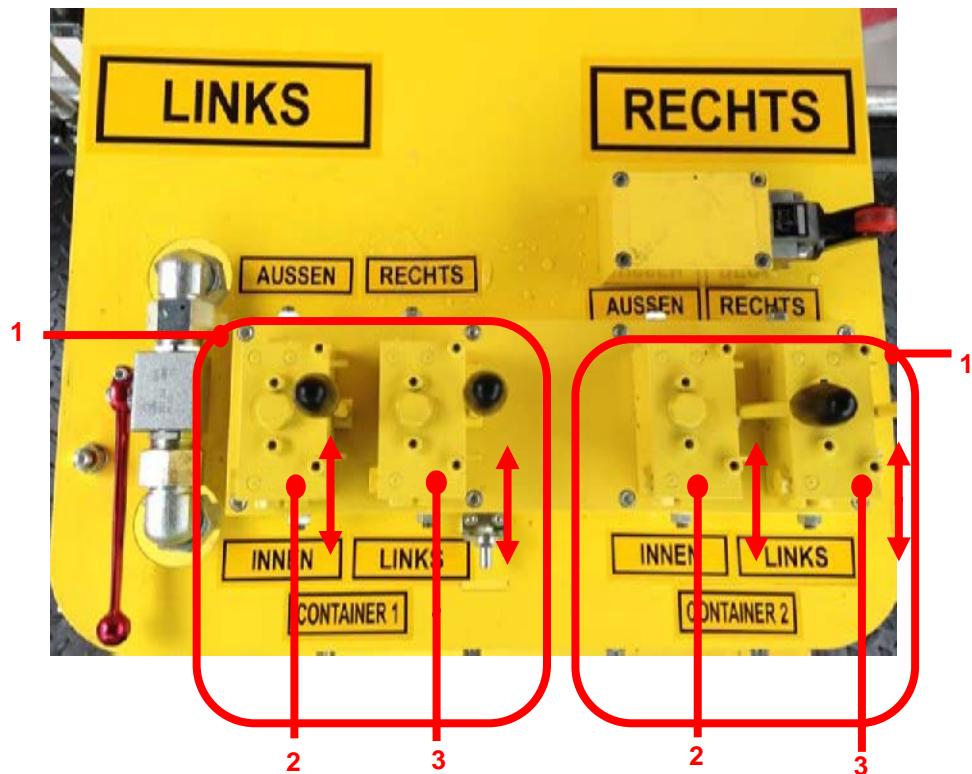
Back-up mode occurs when the pressure tanks are not sufficiently full

## **D – Unloading:**

**D.1.** – Choice of ballast position on operating panel for the control of the ballast distribution system:

This is done with the two lever pairs (shown in 1). All 4 levers automatically take the vertical output-/zero-/middle- position when the desired ballast position is not used and when the desired ballast position has been set. The desired ballast position/direction is set by pulling the lever toward the operator or pressing the lever away from the operator.

Each pair of levers is used to control the ballast distribution system on a half-wagon and thus only for one loading frame. This means that a half-wagon with the corresponding loading frame only provides a ballast position (Figure 109).



**Figure 109: Type E, Unloading D.1.**

The left lever (**2**) is used to select the unloading position "outside" or "inside" (= between the rails).

The right lever (**3**) is used to select the unloading position "Left" or "Right".

If a discharge is required on both sides, the "Left" position on a semi-trailer and the "Right" position on the second half-wagon must be selected. For all settings, the flaps of the ballast distributing systems must be brought into their final position.



Setting the ballast distribution system to a position in between „Left“ and „Right“ or „Inside“ and „Outside“ is not allowed.

**D.2.** – Operation of the loading frame flaps on the operating panel for control of the flaps (Figure 110).



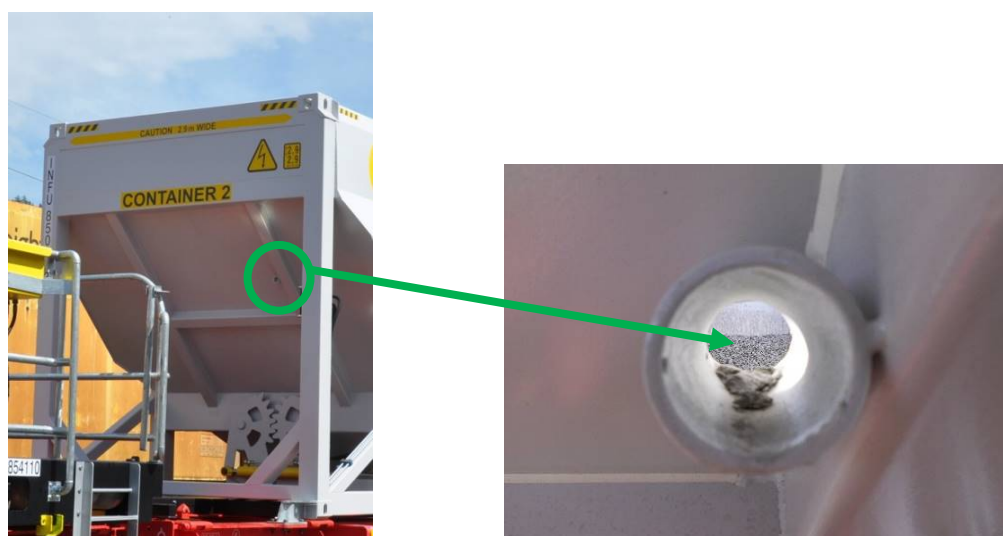
**Figure 110: Type E, Unloading D.2.**

For this, two pairs of levers (1) are available, thus one pair of levers per loading frame. Each lever is used to open and close one of the two loading compartments per loading frame.

All 4 levers automatically take the vertical output-/zero-/middle- position when the desired ballast position is not used and when the desired ballast position has been set. The desired ballast position/direction is set by pulling the lever toward the operator or pressing the lever away from the operator.

**D.3.** – Overview of the fill level.

For this the viewing tube on the end wall of a loading frame is to be used (Figure 111):



**Figure 111: Type E, Unloading D.3.**

The loading frame has a partition wall between its two loading chambers up to approximately half the height. In order to have an overview of the fill level, it is recommended to start the unloading with loading chamber 1 which is next to the operating platform. The viewing tube opens directly into loading chamber 1.

After loading chamber 1 is empty, there is a clear view through the viewing tube, and through the empty loading chamber 1 on to the still full loading chamber 2.

If the unloading takes place in the reverse order – that means, it starts with the unloading of chamber 2, which is further away from the operating platform – then there is no line of sight to the fill level of this chamber.



It is forbidden to climb on to the loading frame, roof, or any other part of the InnoWaggon Sggrs with RockTainer INFRA to check the fill level.

**D.4.** – For checking the folding position of the loading chamber next to the operating platform, a direct line of sight to the end wall and the visible flap ends is sufficient. These must be in direct contact with each other when they are closed (Figure 112).



Figure 112: Type E, Unloading D.4.

**D.5.** – To check the folding position of the loading chamber, which is turned away from the operator platform, dip sticks are used on the outer edges of the flaps (Figure 113):



Figure 113: Type E, Unloading D.5.

Each side of the yellow end of the rod (1) is visible from the operator's platform when viewed along the longitudinal side. To assess the flap position, compare the position of the rod with the yellow fixed markings (2) at the nearest corner post of the loading rack.

#### **D.6. – Activation of the backup power of 25%**

As a protection mechanism against the complete emptying of the pressure storage, the last 25% of the power of the pressure storage must be opened using the „red“ lever on the operating panel (1) (Figure 114).



**Figure 114: Type E, Unloading D.6.**

To switch the last 25%, the lever must be brought into a horizontal position (2). This will make the last capacity of the system available.

After ending the backup power, the lever must be brought back to a vertical position.

#### **E – after unloading including transport preparation:**

##### **E.1. – Close a loading frame flaps**

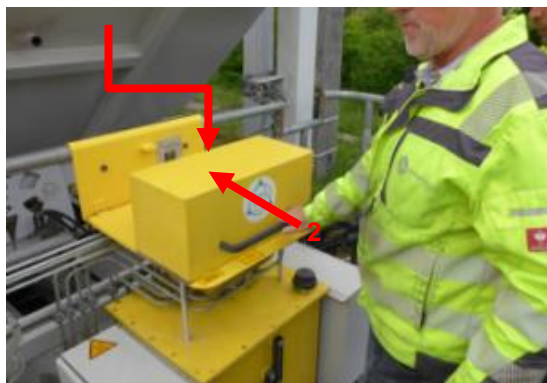
**E.2. –** Check whether the lever for switching the last capacities of the accumulators is in the vertical position. If it is not in this position, the lever is to be raised and placed in its correct position.

**E.3.** – Remove the square key from the tab from "Position 2 - Open" (Figure 115).



**Figure 115: Type E, after unloading including transport preparation E.3.**

**E.4.** – Close the cover (Figure 116)



**Figure 116: Type E, after unloading including transport preparation E.4.**

**E.5.** – Use a square wrench to close the square lock on the front of the control panel. In addition, attach the padlock to the tab of the cover of the control panel, so that the cover is locked. The number combination for the padlock consists of the last four digits of the wagon number on which the operating platform is located (Figure 117).



**Figure 117:** Type E, after unloading including transport preparation E.5.

**E.6.** – The securing clips on each side are to be opened by actuation of the safety mechanism.

**E.7.** – Leaving the platform using the ladder (1) using the provided handrails (Figure 118):



**Figure 118:** Type E, after unloading including transport preparation E.7.

#### **4.7.3 Cleaning**

In order to clean the loading frame, bring it into the unloading position and use suitable working means, e.g. Use compressed air or high pressure cleaner.

## 4.8 Type “F” – Container 40’ OT

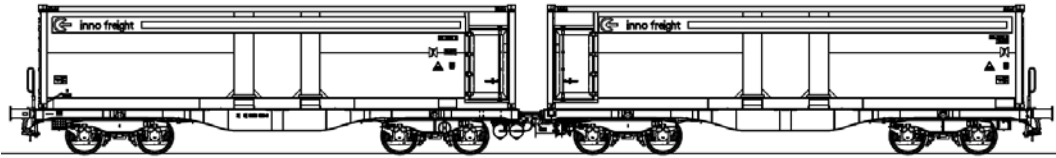


Figure 119: Type F

### 4.8.1 Intended Use

Type „F“ of the InnoWaggon Sgrrs is intended for the transport of logs, gravel, coke, or similar bulk goods. It consists of 2 open-top loading frames of type „Container 40’ OT“ with 2 fixed front/rear walls or one fixed front wall with one rear hatch or two rear/front doors. The side walls are fixed or there can be a side door integrated into each side wall.



**The ladder on the fixed side wall may only be used when the loading frame is not on the InnoWaggon Sgrrs.**

A loading frame may only be manipulated using a ReachStacker or portal crane using the top corner fittings.

### 4.8.2 Servicing

The following points are described and explain stepwise the safe and correct servicing:

A – Loading

B – Unloading

#### A – Loading:

**A.1.** The loading frame is ready for loading after checks have been made to ensure that all side, front and rear doors are properly closed and locked. The safe operation of the side doors is explained in section 4.4.3 S and rear doors and flaps are explained in section 4.4.3 Sidedoors and 4.4.4 Back flaps and doors.

**A.2.** – Loading is carried out from above for example with wheel loaders or grabbers directly from the silo or with the use of conveyor belts.

**A.3.** – The maximal net load per loading frame is 70,000 kg.



**A.4.** – Loading must take place without contact or collision between the loading frame and the loading machine.

**B – Unloading:**

**B.1.** – Unloading is done using, for example, by dredging or using a lifting magnet.



**B.2.** – Unloading must take place without contact or collision between the loading frame and the loading machine.

#### **4.8.3 Side doors (Figure 120)**



**Figure 120: Type F, Unloading B.2.**

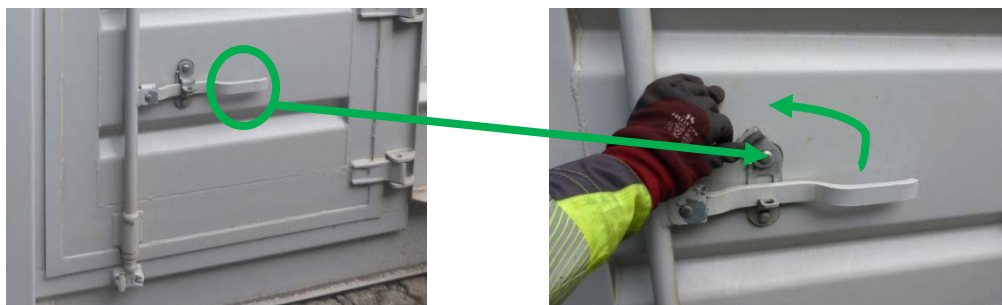
The following points describe and explain the operation of the side doors:

C – Opening

D – Closing

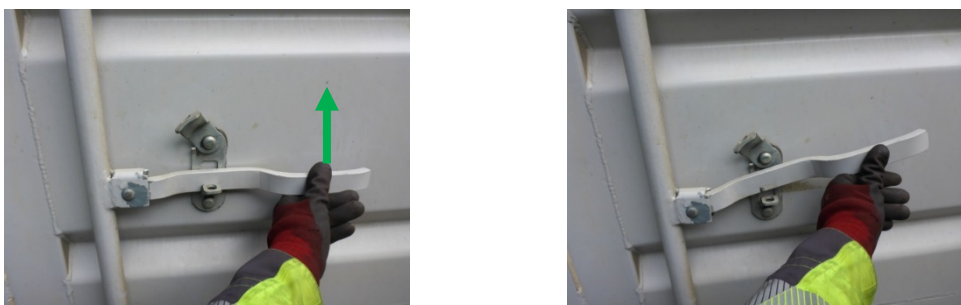
**C – Opening:**

**C.1.** – Turn the security latch anti-clockwise (Figure 121).



**Figure 121: Type F, Opening the side door C.1.**

**C.2.** – Grab the hand lever and pull it up (Figure 122).



**Figure 122: Type F, Opening the side door C.2.**

**C.3.** – Turn the hand lever towards the operator until the side door is unlocked (Figure 123).



**Figure 123: Type F, Opening the side door C.3.**

**C.4.** – After the complete unlocking, the side door can now be opened (Figure 124).

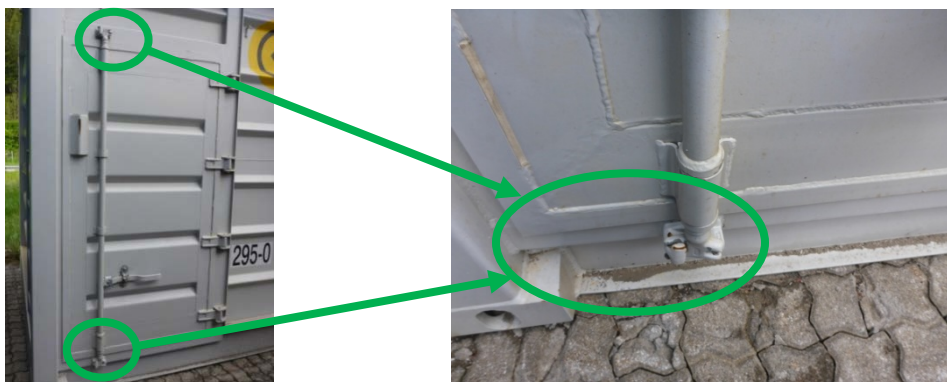


**Figure 124: Type F, Opening the side door C.4**

**D – Closing:**

**D.1.** - In order to close the side door follow steps **C.1. – C.4.** in „**A – Opening**“ in the reverse order.

**D.2.** – Check and ensure that the locking clips at the top and bottom are fully engaged (Figure 125).



**Figure 125: Type F, Closing the side door D.2.**

#### 4.8.4 Back flaps and doors

Depending on the design, the second fixed front wall is replaced by a rear flap or two rear doors (Figure 126):



**Figure 126: Type F, Back flaps and doors**

The rear flap is equipped with a horizontal locking unit. A vertical locking unit is installed for each door in the design. All installed locking units work according to the same principle, so that the following description is applicable for both designs.

The following points describe and explain the operation of the back flaps and back doors:

E – Opening

F – Closing

**E – Opening:**

Opening of the design with back doors is done according to the known ISO-Container “right-before-left” principle. That means that the right door must first be opened, followed by the left.

### E.1. – Checking the security hooks

Every container design has 2 security hooks (1) in the cross beam (2) under the back flap (3) or under the back doors (4) (Figure 127).

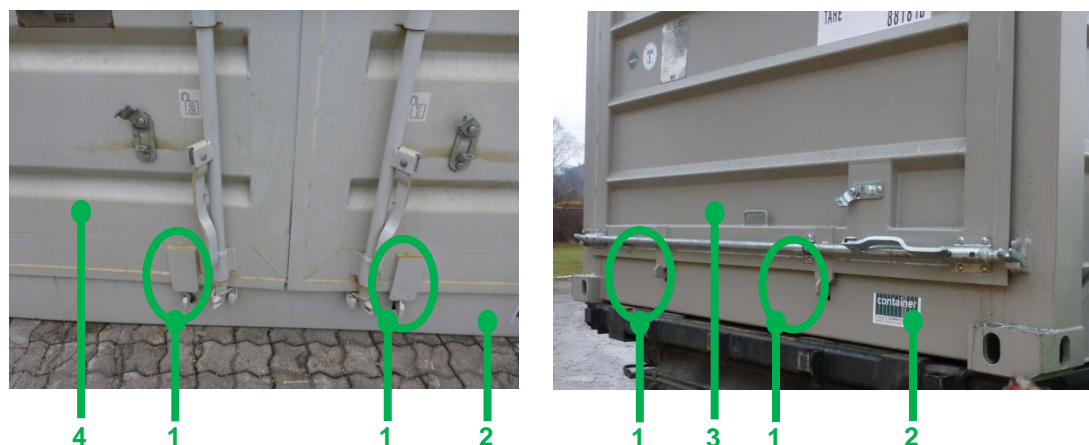


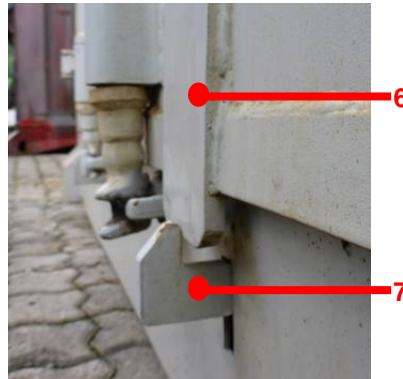
Figure 127: Type F, Opening back flaps and doors E.1.

Both safety hooks are to be activated simultaneously using an unlocking lever (5) next to the corner post (Figure 128).



Figure 128: Type F, Opening back flaps and doors E.1.

The following basic set-up is self-adjusting by spring force. It makes it possible for the tab (6) to be received by the securing hooks (7) at the bottom edge of the back flap or side doors by means of their mutual engagement (Figure 129).



**Figure 129: Type F, Opening the back flaps and doors E.1.**

The downward tilted position (8) can be achieved by pressing the unlocking lever (5) upwards against spring force. It prevents the flap (6) from being accommodated at the lower edge of the back flap or side doors, since no mutual intervention can occur (Figure 130).



**Figure 130: Type F, Opening the back flaps and doors E.1.**



Without the mutual engagement of the securing hooks and the tab, there is a risk that during or after the next steps E.2. - E.4. the back doors or flap, due to the pressure of the load, start to oscillate in an uncontrolled manner.

**E.2.** – Turn the security latch anti-clockwise (Figure 131).



**Figure 131: Type F, Opening the back flaps and doors E.2.**

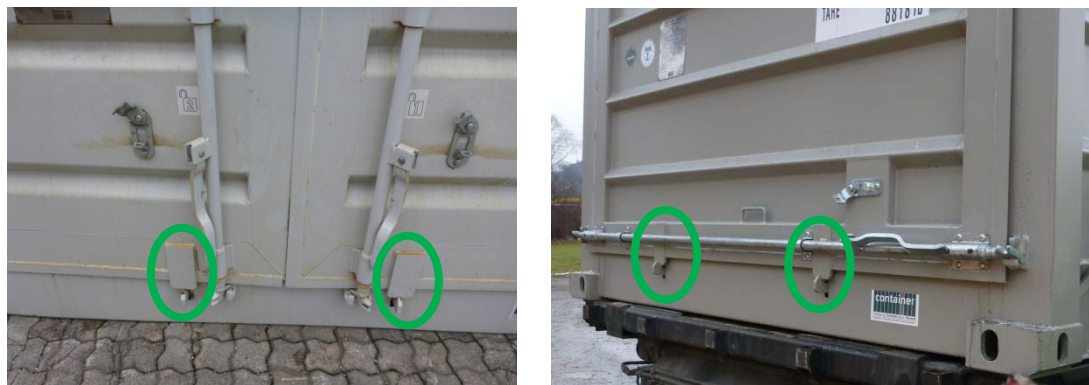
**E.3.** – Grab the hand lever and pull it upwards out of the holder (Figure 132).



**Figure 132: Type F, Opening the back flaps and doors E.3.**

These two steps **E.2.** and **E.3.** should be followed first for the right door then the left door.

After these two steps, both the doors or flaps are held by the security latches (Figure 133):



**Figure 133: Type F, Opening the back flaps and doors E.3.**

**E.4.** – To unlock the safety latches, the area at the back of the container where the doors swivel open should be cleared and one should stand beside the unlocking lever at the right close to the corner post.

This unlocking lever must be pushed upwards against a spring force. Consequently, the safety latches will pivot downwards and the back doors/flaps will open under the pressure of the contents of the container and allow unloading.



**The back doors/flaps can swing open due to the pressure of the load (Figure 134/Figure 135).**



**Figure 134: Type F, Opening back doors and flaps E.4.**



**Figure 135: Type F, Opening back doors and flaps E.4.**

## **F – Closing:**

**F.1.** – To lock the back doors/flaps, follow steps **E.1. – E.4.** in „**E – Opening**“ in the reverse order.

**F.2.** – Check and ensure that the locking clips at the top and bottom are fully engaged for both the left and right doors/flaps (Figure 136).



**Figure 136: Type F, Closing the back doors and flaps F.2.**

### **4.8.5 Cleaning**



**Cleaning and entering the loading frame may only occur if the loading frame is not on the InnoWaggon Sggrs.**



**The exit ladder on the fixed back wall may only be used if the loading frame is not on the InnoWaggon Sggrs.**

A loading frame may only be manipulated using a ReachStacker or portal crane using the top corner fittings.

For the lifting of the empty loading frame from the InnoWaggon Sggrs and the subsequent storage on the floor by means of upper corner fittings, a ReachStacker or other suitable container lifting device such as a portal crane should be used.

Alternatively, using a large forklift-truck owned or approved by the loading frame owner, the empty loading frame can be lifted and placed on the ground using the fork pockets.

For cleaning, open an appropriate door of the loading frame and use suitable equipment such as a brush or high pressure washer (Figure 136).



**Figure 137: Type F, Cleaning**

The loading frame is brought into the unloading position for cleaning. Appropriate work equipment, for example, pressure washers, should be used.

Cleaning is necessary under the following conditions:

- If a new/different material is to be loaded.
- If the container will be used by a new sender/receiver.
- If such third parties explicitly request the cleaning.

## 4.9 Type „G“ – InnoTank



**Figure 138: Type G**

### 4.9.1 Intended use

Type “G” of the InnoWaggon Sgrrs is intended for the transport of high viscosity liquids. It consists of 2 closed containers of type „InnoTank“with fixed front/rear walls.

Filling is possible from above using a filling nozzle. Emptying is done via an emptying nozzle found on the underside of the container.



**The container may only be mounted with sufficient external security measures, otherwise climbing onto the container is strictly forbidden.**

A loading frame may only be manipulated using a ReachStacker or portal crane using the top corner fittings.

### 4.9.2 Servicing

The following points are described and explain stepwise the safe and correct servicing:

**A – Overall Structure**

**B – Cleaning**

**C – Filling**

**D – Emptying**

## A – Overall structure:

In the following picture the overall structure of the Type „G“ – InnoTank mounted on an InnoWaggon Sgrrs is shown. This overall structure consists of an InnoTank (1) per half-wagon (Figure 139).



Figure 139: Type G, Overall structure

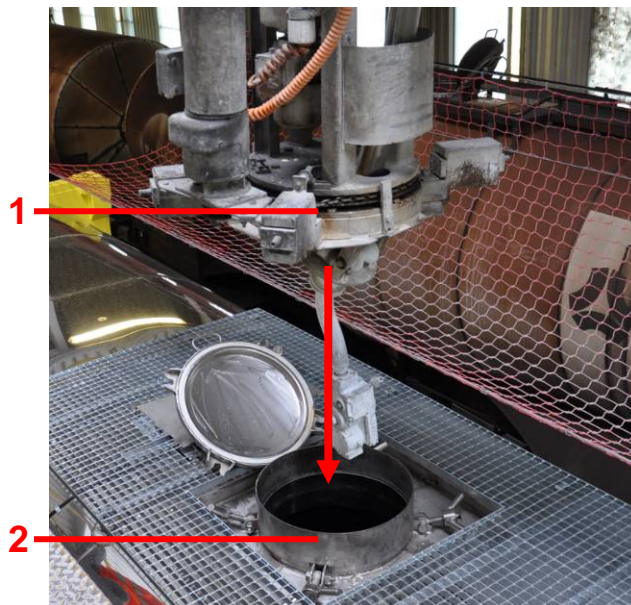
**Note:** The recesses on the corner fitting bottoms of the container are enlarged. Load transmission of the longitudinal forces are therefore carried out exclusively via the stop blocks.

**Note:** The side shift lever (outer shut-off device) has been brought nearer to the longitudinal beam. The safety risk from any protruding lever is therefore prevented

## **B – Cleaning**

Cleaning takes place from above, for example, through a cleaning nozzle or by a high pressure washer. These are introduced into the opening of the container. Care should be taken not to damage the container.

Furthermore, the cleaning apparatus (1) must fit to the opening of the InnoTank. If this is not the case, fitting adapters (2) must be used (Figure 140).



**Figure 140: Type G, Cleaning**



**The cleaning process is to be carried out only by trained and authorised personnel.**

## **C – Filling**

Filling of the container is possible from above using a filling nozzle. The complete filling process must be overseen by a trained person.

The InnoTank is filled using a filling nozzle (1). This is inserted into the opening of the container. Collisions between the nozzle and container should be avoided (Figure 141).



**Figure 141: Type G, Filling**



**Filling may only be carried out after the points described in B.1.1 are completed.**

**C.1** – The maximal net load per container is 68.850 kg.

### C.1.1 – Before filling



Before filling, the following points are to be checked:

1. The container and all parts of the equipment must be in a technically flawless condition (visual inspection).
2. The central displacement lever (1) of the internal shut-off device must be in a closed, horizontal position on both sides. Care must be taken to ensure that no leaks can be detected (visual inspection) (Figure 142).

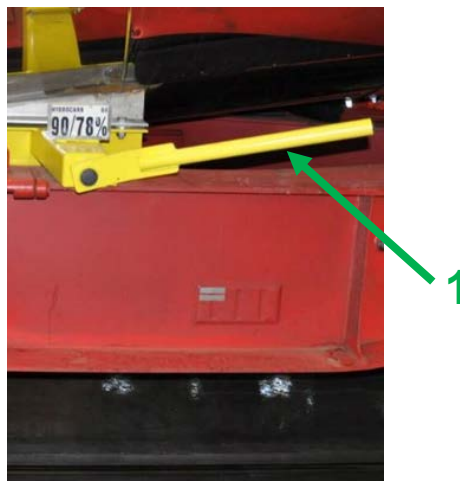


Figure 142: Type G, Before filling C.1.1.

3. The lateral displacement lever (1) of the external shut-off device must be secured on both sides in a closed position facing the carriage and protected against unwanted opening using the securing device (2). In this case, the securing device (2) must be folded down in the clockwise direction. Care must be taken to ensure that no leaks are visible (visual inspection) (Figure 143).

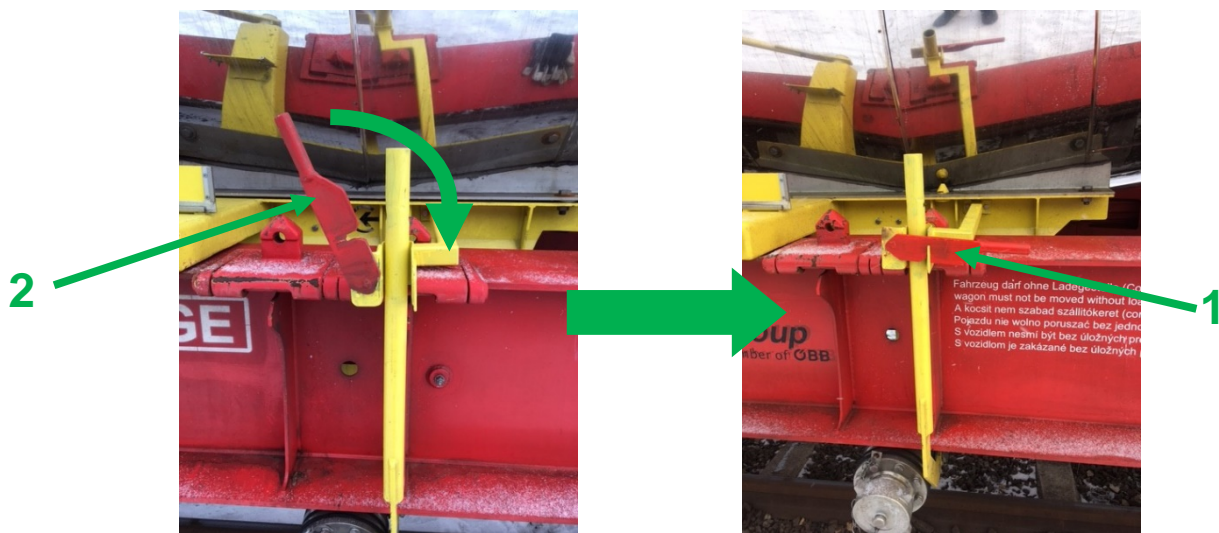
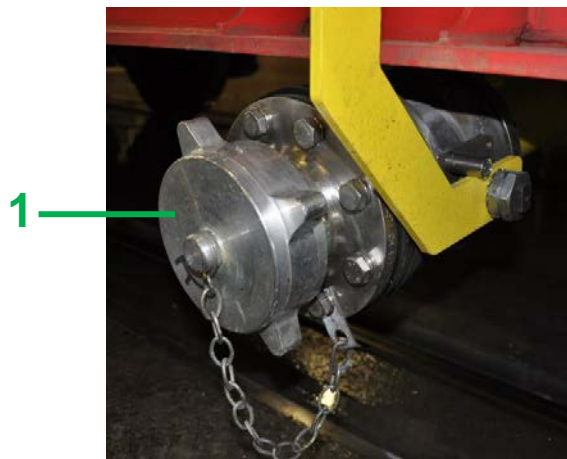


Figure 143: Type G, Before filling C.1.1.

4. The closing devices (1) (screw cap, blind flange) must be locked at both sides (Figure 144).



**Figure 144: Type G, Before filling C.1.1.**

5. All operable openings (container caps) are to be inspected visually to ensure they are in good condition. If openings show signs of leakage or damage, they must be replaced immediately.

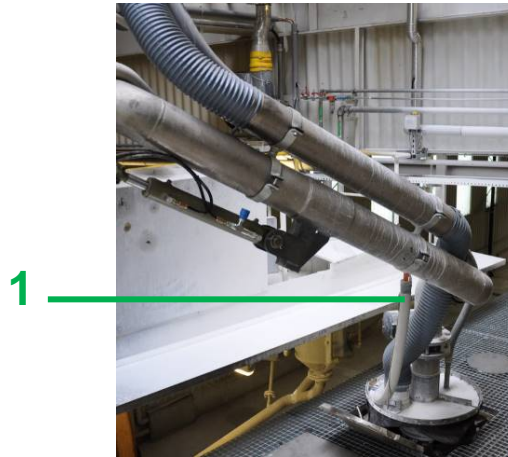


**Filling may only be started when the above points have been checked for correctness and found to be in order.**

### C.1.2 – During filling

The filling process can be started after the points listed in **B.1.1 – „Before filling“** have been carried out.

The InnoTank is filled from above with, for example, a filling nozzle (1), which is introduced into the container opening. This should be carried out without collision with the container (Figure 145).



**Figure 145: Type G, During filling C.1.2.**

The filling operation of the container must be monitored continuously. The degree of filling must be strictly adhered to. This is indicated by an approved volume / mass acquisition system.

Alternatively, the degree of filling can be monitored by weighing the container with a calibrated weighing balance (Figure 146).



**Figure 146: Type G, During filling C.1.2.**



Filling of the container is to be carried out exclusively by trained and authorised personnel.

#### C.1.3 – After filling:



After filling, the following points are to be checked:

1. Shut-off devices (1) (central shift lever and lateral shift lever) and locking devices (blind flange, screw cap) must be tight and sealed on both sides (visual inspection) (Figure 147).



Figure 147: Type G, After filling D.1.

2. All openings for the correct operation (container cover) must be closed with the provided closing equipment (1) and must be tight. If openings are leaking or damaged, they must be repaired / replaced immediately (Figure 148).



Figure 148: Type G, After filling C.1.3.

1. The container must be kept free from any filling residue (visual inspection) on the outside. If dirt or residues are present on the outsides, the container must be cleaned by trained personnel at a suitable washing place.



**Check leaks, that is, there should be no drips on the shut-off devices or sealing devices. If this is not the case, a repair must be initiated immediately.**

## **D – Emptying**

Emptying of the container is possible using a pump system. The entire emptying process is to be supervised by trained personnel.

### **D.1. – Before emptying**



**Before emptying, the following points are to be checked:**

1. The container and all equipment must be in a technically perfect condition (visual inspection).
2. The outer and inner shut-off devices (1) (central shift lever and lateral shift lever) must be in a closed, horizontal or vertical position, so that unwanted leakage of liquids is prevented (Figure 149).



**Figure 149: Type G, Before emptying D.1.**

3. Furthermore, the lateral shifting lever of the external shut-off device (1) must be secured against unintentional opening by the securing device (2). In this case, the securing device (2) must be folded back in the clockwise direction (Figure 150).

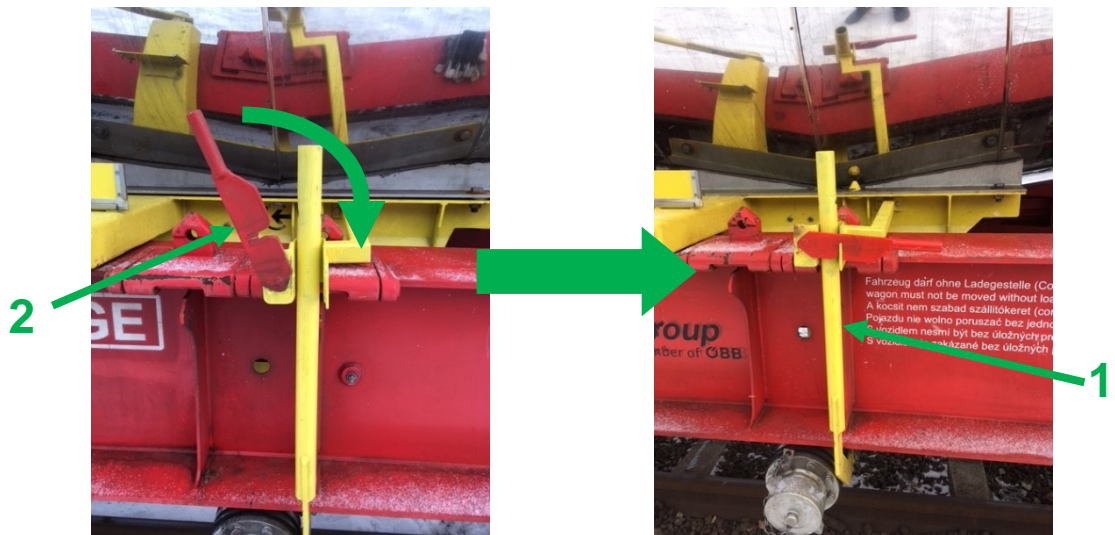


Figure 150: Type G, Before filling C.1.1.

4. If all operable openings (container covers) show no signs of leakage or damage, the emptying device can be connected.



**The emptying may only be started when the above described points are checked for correctness and found to be in order.**

### D.1.2 – During emptying

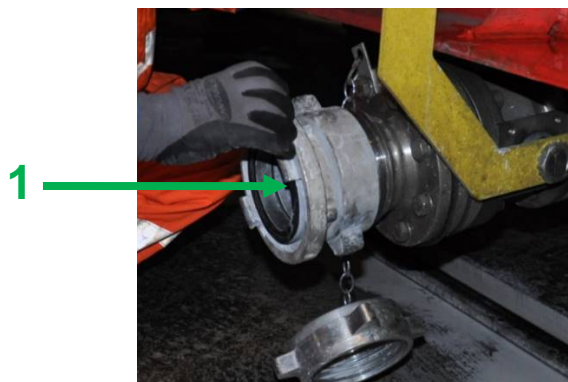
After carrying out the points in **C.1. – „Before emptying“**, the emptying process can be started. A given order is to be observed:

1. Open the closing device (1) (screw cap, blind flange) on the emptying side (Figure 151).



**Figure 151: Type G, Before emptying D.1.2.**

2. Install the coupling adapter (1). In this case, no signs of leakage (dripping) can be detected (Figure 152).



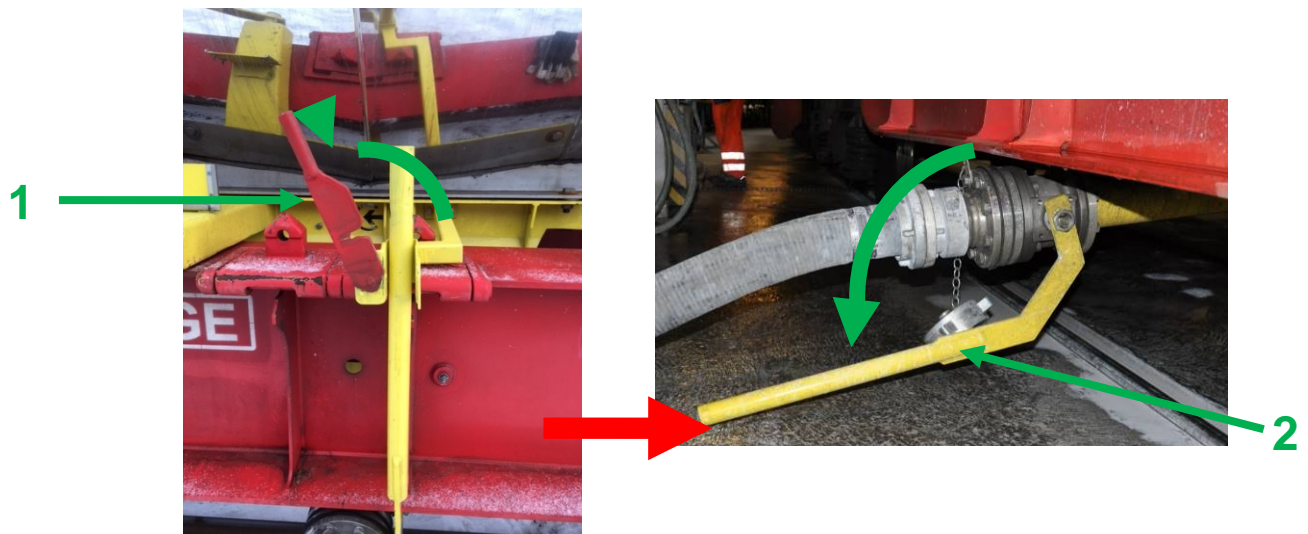
**Figure 152: Type G, Before emptying D.1.2.**

3. Connect the hose coupling (1) to the adapter (2). A suitable tool (3) must be used. There should be no signs of leakage (dripping) (Figure 153).



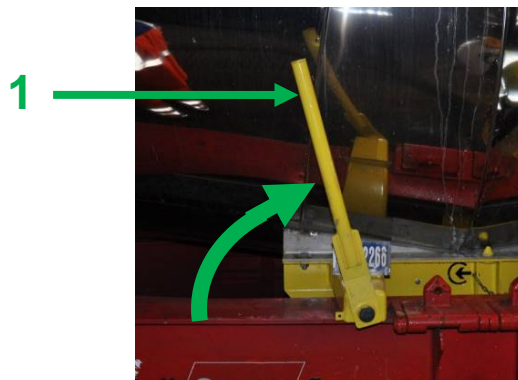
**Figure 153: Type G, Before emptying D.1.2.**

4. Remove the securing device (1) and open the external shut-off device. To open, the side shift lever (2) is pulled away from the carriage. The negative pressure escapes through a valve on the top of the container. This is automatically opened by pressing the side shift lever (2) (Figure 154).



**Figure 154 : Type G, Before emptying D.1.2.**

5. Open the internal shut-off device. For opening, the central shift lever (1) is moved upwards or to a vertical position (Figure 155).



**Figure 155: Type G, Before emptying D.1.2.**



**The emptying of the container is to be carried out exclusively by trained and authorised personnel.**

### D.1.3 – After emptying



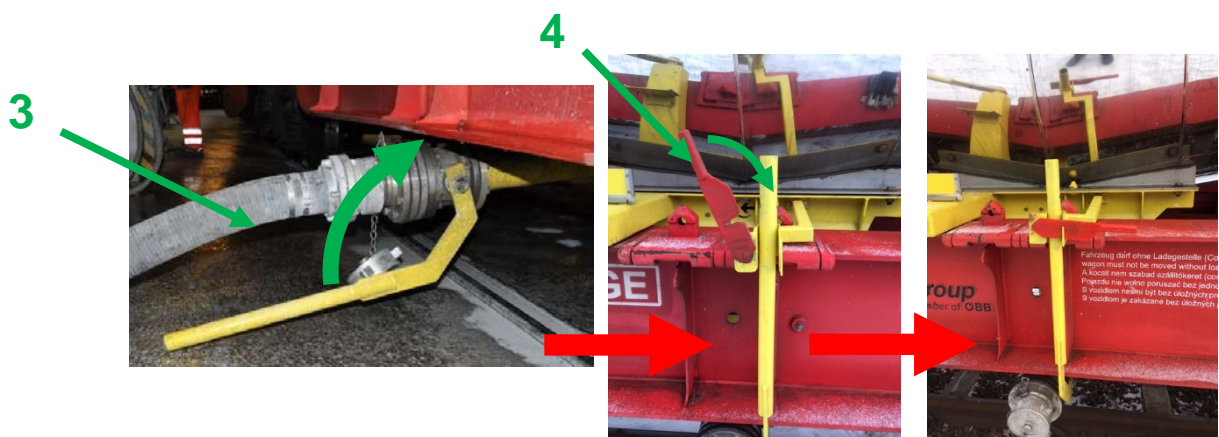
**After emptying, the following points are to be checked:**

1. The container must be emptied completely. Check by measuring the flow rate or measuring the weight.
2. The inner and outer shut-off devices are then closed. The correct sequence must be observed. First, the central shift lever (1) must be brought into a closed, horizontal position (Figure 156).



**Figure 156: Type G, Before emptying D.1.**

Subsequently, the lateral shift lever (3) is brought into a closed position, which is directed towards the carriage. Furthermore, the side shift lever must be secured against unintentional opening by a securing device (4) (Figure 157).



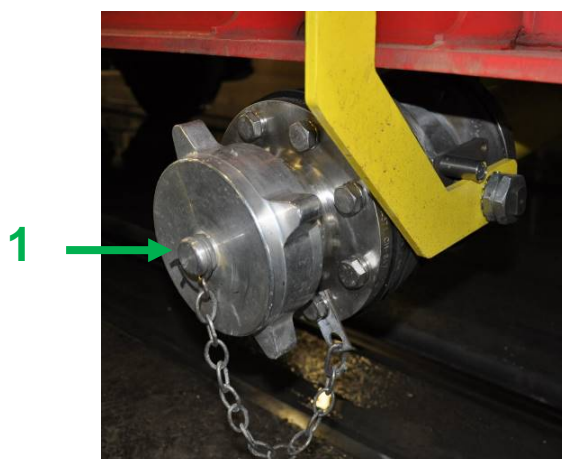
**Figure 157 : Type G, Before emptying D.1.2.**

3. The couling adapter must be unmounted (Figure 158).



**Figure 158: Type G, Before emptying D.1.3.**

4. The locking devices (1) (screw cap, blind flange) must be correctly installed and tight on both sides (Figure 159).



**Figure 159: Type G, Before emptying D.1.3.**

5. The container should not be walked/climbed on! Any entering the loading frame during loading and/or unloading must be carried out under external safety precautions. If an external backup is not available or insufficient, the entering of the container is strictly prohibited! All openings for the correct operation (container cover) must be closed with the provided closing equipment (1) and must be tight. If openings are leaking or damaged, they must be repaired / replaced immediately (Figure 160).

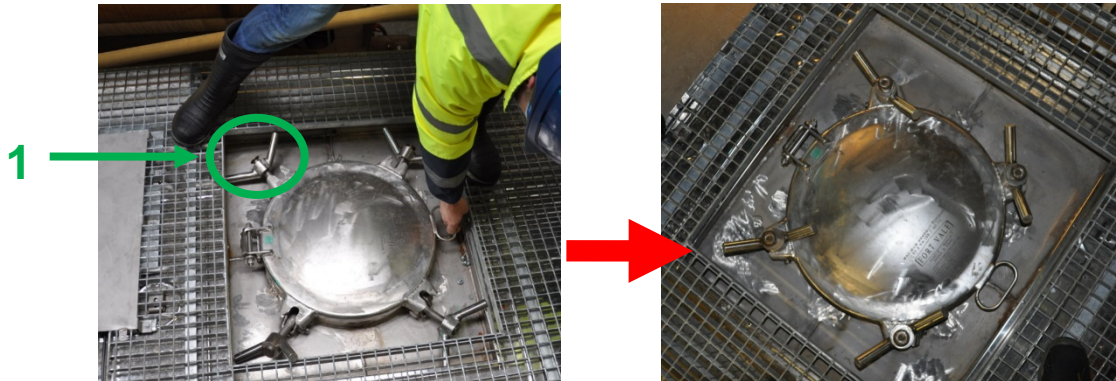


Figure 160: Type G, Before emptying D.1.3.

6. The container is to be free from any filling residue (visual inspection) on the outside surfaces. If dirt or residues are present on the outer sides, the container must be cleaned by trained personnel at a suitable washing site.



**There must be no leaks, that is, there should be no drops at the shut-off or closing devices.**

## 4.10 Type “J” – RockTainer SAND



Figure 161: Type J

### 4.10.1 Intended Use

The type “J” InnoWaggon Sgrrs is intended for the transport of moisture sensitive bulk materials. It is composed of 2 open-top loading frames of type „RockTainer SAND“ with swing-out side flaps and fixed front and rear walls.

The loading is always done from above. Unloading takes place suddenly and downwards at the side of the wagon frame.



**The ladder on each side-wall may only be used when the loading frame is not mounted on the InnoWaggon Sgrrs.**

A loading frame may only be manipulated using a ReachStacker or portal crane using the top corner fittings.

### 4.10.2 Servicing

The following points are described and explain stepwise the safe and correct servicing:

A – before loading

B – Loading

C – Unloading

D – after unloading

## A – Before Loading:

**A.1.** – Check whether the flaps and the locking system are completely and securely closed: On each end of chamber 1 and chamber 2 there is a safety lever (1). This safety lever must be in a completely closed position for each chamber.

To ensure that this is the case, the rod-shaped indicators (2) on the safety levers are slid into position on each side of the container (Figure 162).

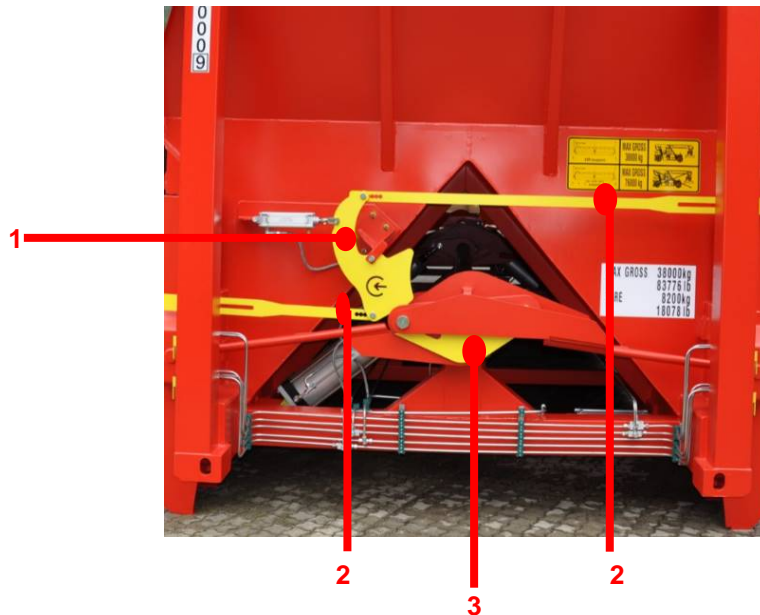


Figure 162: Type J, before loading A.1.

The completely closed position of the safety lever (1) is achieved when the indicators (2) are in their fully retracted positions and the main shaft (3) is turned completely over the „dead point position“. In this retracted position, the ends of the indicators do not protrude past the outer edge of the container, as shown in the following pictures (Figure 163):



Figure 163: Type J, before Loading A.1.

Additionally, there is a marking with contrasting colour on the main shaft of the mechanism. This indicates if the main shaft is completely rotated and that the „dead point position“, which is necessary for the correct flap locking, has been reached. In the fully closed position, only the marking in contrast colour is visible under the shear joint, as shown in the following figure (Figure 164).



**Figure 164: Type J, before loading A.1.**



**Loading must not begin if the safety lever is in the open position and/or the indicators are in their extended positions. Equally important is that the main shaft of the flap locking system has exceeded the „dead point position“ and is completely rotated!**

**A.2.** – On each longitudinal side near a corner post on chamber 1 of a loading frame there are two hand valves. The total of 4 hand valves (2 on both sides) must be in the position „FAHRT“ / „TRANSPORT“ (= in upright / vertical position) (Figure 165).

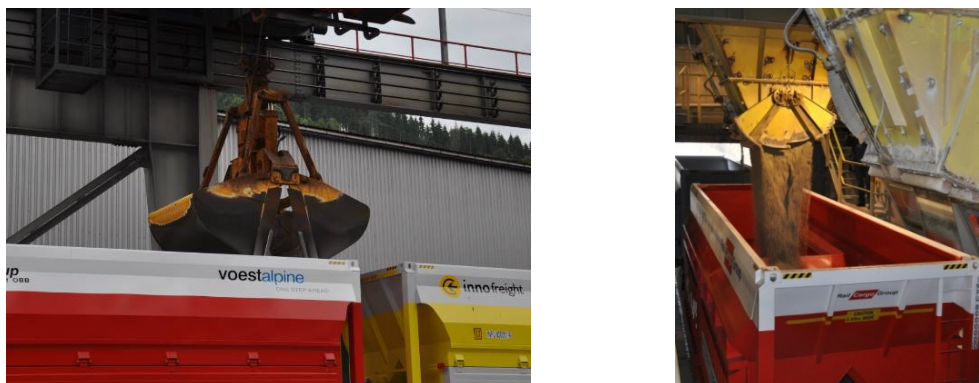


**Figure 165: Type J, before loading A.2.**

## **B – Loading:**

**B.1.** – All steps **A.1.** – **A.2.** in “**A – before loading**” must be followed.

**B.2.** – The loading is carried out from above with, for example, with a portal crane, directly from a silo, or by using a grab dredger from the side (Figure 166).



**Figure 166: Type J, Loading B.2.**



**B.3.** – Loading must take place without contact or collision between the loading frame and the loading machine.

**B.4.** – The maximal net load per loading frame is 67.150 kg.

**B.5.** – The load must be equally distributed between both chambers (chamber 1 and chamber 2) (Figure 167).



Figure 167: Type J, Loading B.5.

**C – Unloading:**



**C.1.** – Only to be carried out by authorised and trained personnel:

The main air reservoir pipe (HBL, 3) of the wagon is to be attached to the locomotive and vented (Figure 168).



Figure 168: Type J, Unloading C.1.

**C.2.** – For opening and closing, only one operator front (4) per loading frame on a longitudinal side next to the buffer ends of the InnoWaggon Sggrs may be used (Figure 169 Figure 170).



Figure 169: Type J, Unloading C.2.



Figure 170: Type J, Unloading C.2.

**Note:** Instructions for the operation of the RockTainer SAND operator console follows. The order of operation is identical to that of the RockTainer ORE.



**C.3.** – It is forbidden to stand in the area where the side flaps open. This means that, for the safety of the operator and the unloading personnel, a minimum distance of 1,5m from the closed loading frame should be kept (Figure 171).

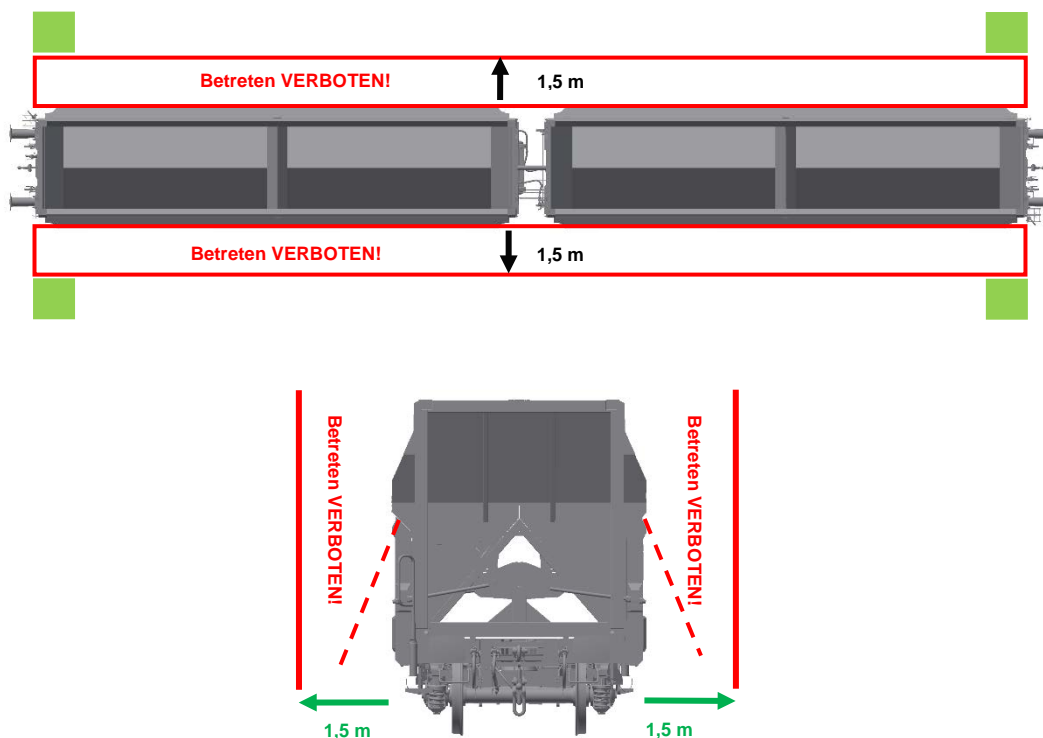


**Figure 171: Type J, Unloading C.3.**

During unloading, the danger area (marked in red) must not be entered by the unloading personnel. The unloading personnel may only be located in the marked safety area (marked in green). The minimum distance of 1.5 meters between the closed loading frame and the operator must be observed (see Figure 172). Side loading is also prohibited with the loading flap open.



**Staying in the marked danger area is forbidden.**



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**Figure 172: Type J, Unloading C.3.**

**C.4.** – In order to keep this safe distance, a tool with a correspondingly long handle should be used. Its end has a shape such that the hand valves on the operator front can be operated.

The tool is either provided by the owner of the loading frame or, according to the provided schematics, to be procured by the unloader him/herself (Figure 173).



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**Figure 173: Type J, Unloading C.4.**

**C.5.** – Chamber 1 and chamber 2 are separated from each other and are to be unloaded one after the other. This means that simultaneous opening of both chambers using only one tool is not possible. Only one chamber can be opened with one hand valve.

The following picture shows the horizontal start position of the tool at the beginning of the unloading of a chamber. The order in which the chambers are opened can be arbitrarily chosen (Figure 174).



Figure 174: Type J, Unloading C.5.

**C.6.** – To open the flaps of chamber 1 or chamber 2, the hand valve with the label „CHAMBER 1“ / „KAMMER 1“ or „CHAMBER 2“ / „KAMMER 2“ should be moved from position „FAHRT“ / „TRANSPORT“ first into position „SCHLIESSEN“ / „CLOSE“, respectively (Figure 175).

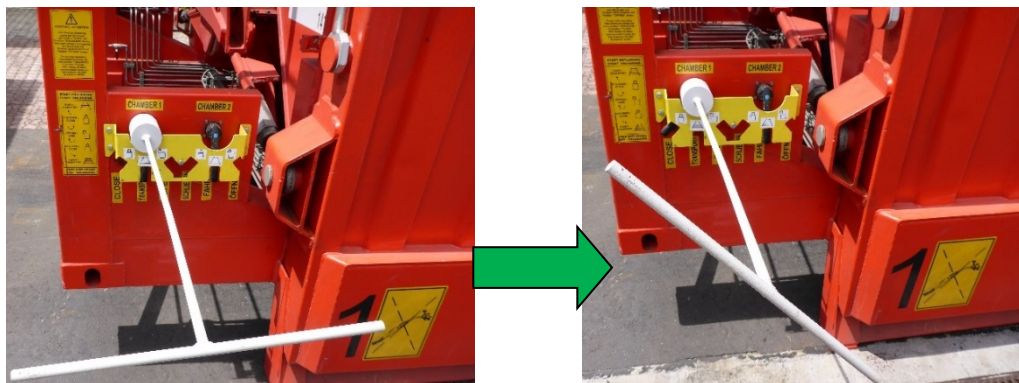


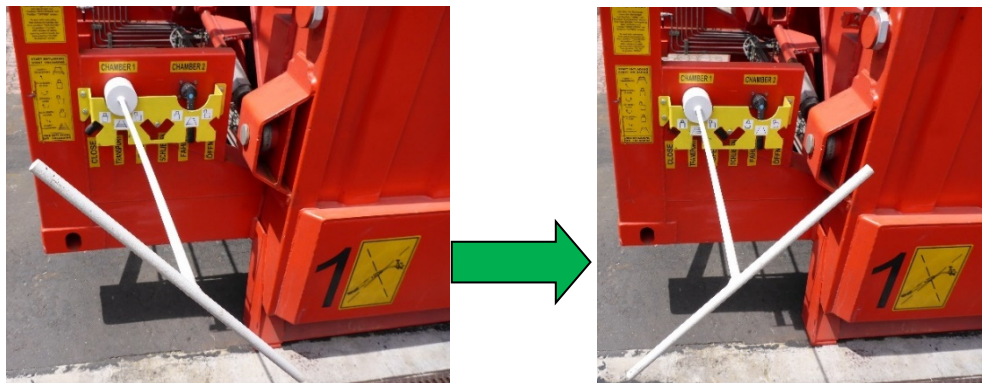
Figure 175: Type J, Unloading C.6.

Stay in this position („SCHLIESSEN“ / „CLOSE“) until the indicators are extended to both sides and the following situation is reached (Figure 176):



**Figure 176: Type J, Unloading C.6.**

**C.7.** – Afterwards, turn from position „SCHLIESSEN“ / „CLOSE“ directly to position „ÖFFNEN“ / „OPEN“. The flaps of the corresponding chamber will now open. Leave the tool and also the rotary slide valve for the duration of the unloading (Figure 177).



**Figure 177: Type J, Unloading C.7.**



It is forbidden to stand in the area where the side flaps open. This means that, for the safety of the operator and the unloading personnel, a minimum distance of 1,5 m from the closed loading frame should be kept.

**C.8.** – Clear the contact area between the under-edge of the flap and the sliding plate of residue using, for example, compressed air (Figure 178).



Figure 178: Type J, Unloading C.8.



For cleaning the contact surfaces (1) do not reach into the swivel range of the flaps with your hands. There is a risk of crushing due to unexpected closing of the flaps.



After unloading, there should not be any residue stuck to the container or the flaps. In particular, the contact area between the container and the flaps (1 & 2) should be clean. Any residue could impair the correct interlocking of the flaps!!

Only use stationary platforms while cleaning from above (3) (Figure 179):

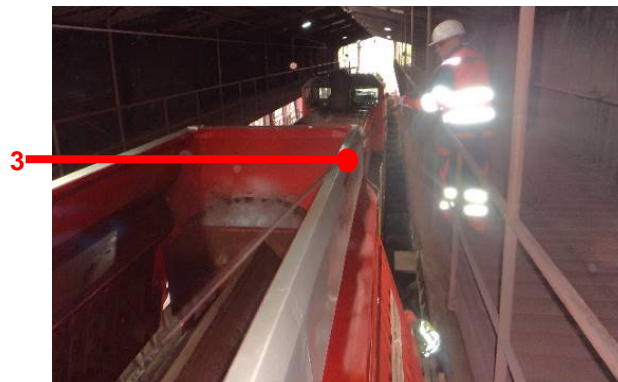
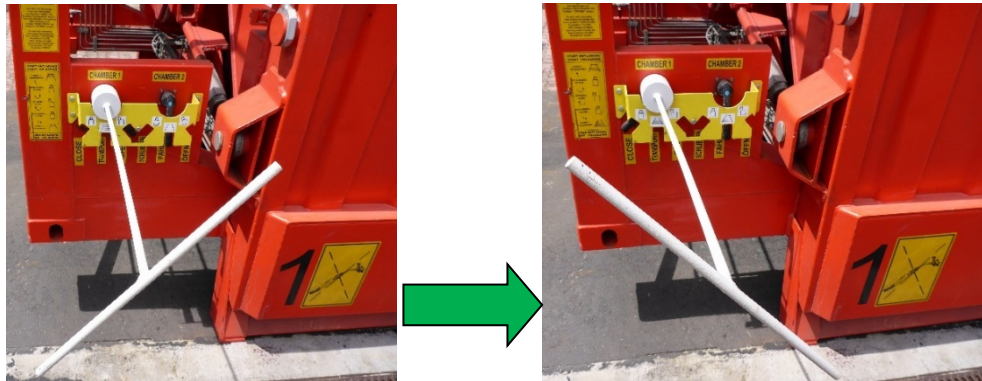


Figure 179: Type J, Unloading C.8.



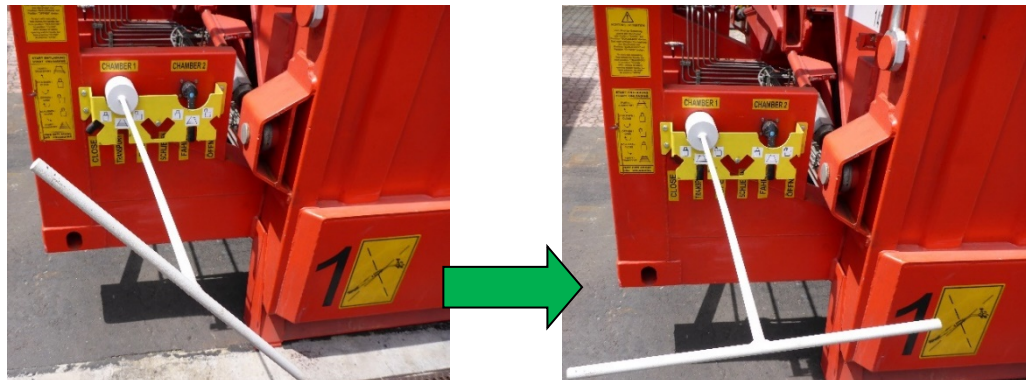
Only use stationary platforms while cleaning from above.

**C.9.** – For closing the flaps of chamber 1 or chamber 2, rotate the hand valve with the label „CHAMBER 1“ / „KAMMER 1“ or „CHAMBER 2“ / „KAMMER 2“ from position „ÖFFNEN“ / „OPEN“ to the position „SCHLIESSEN“ / „CLOSE“, respectively (Figure 180).



**Figure 180: Type J, Unloading C.9.**

**C.12.** – After the complete locking of all flaps and the entire interlocking system, the hand valves for both chambers are to be turned from position „SCHLIESSEN“ / „CLOSE“ to the position „FAHRT“ / „TRANSPORT“ (= upright/vertical position) (Figure 181).



**Figure 181: Type J, Unloading C.12.**

**C.13.** – Remove all tools from the hand valve and check to ensure that the flaps and the entire interlocking system are locked.

To ensure that this is the case, the rod-shaped indicators (2) on the safety levers are slid into position on each side of the container (Figure 182).



**Figure 182: Type J, Unloading C.13.**

The fully closed position of the safety lever (1) occurs when the indicators (2) have assumed their retracted position, the main shaft (3) has been rotated completely over the "dead point position". In this retracted position, the ends of the indicators do not project beyond the container, according to the following images (Figure 183):



**Figure 183: Type J, Unloading C.13.**

Additionally, there is a marking with contrasting colour on the main shaft of the mechanism. This indicates if the main shaft is completely rotated and that the „dead point position“, which is necessary for the correct flap locking, has been reached. In the fully closed position, only the marking in contrast colour is visible under the shear joint, as shown in the following figure (Figure 184).

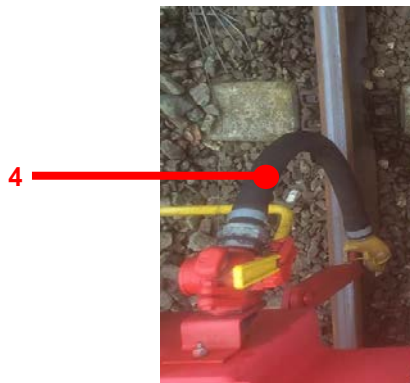


**Figure 184: Type J, Unloading C.13.**



**C.14. – Only to be carried out by authorised and trained personnel:**

The main air reservoir pipe (HBL, 4) of the wagon is to be decoupled from the locomotive and evacuated. There must not be any pressurised air left in the system (Figure 185).



**Figure 185: Type J, Unloading C.14.**

**C.15.** – All steps **D.1.** – **D.2.** under “**D – after unloading**” must be followed.

This procedure „**C – Unloading**“ is also described on the corner post beside the operator front (Figure 186):



Figure 186: Type J, Unloading C.15.

#### **D – After Unloading:**

**D.1.** – Check whether the flaps and the locking system are completely and securely closed: On each end of chamber 1 and chamber 2 there is a safety lever (1). This safety lever must be in a completely closed position for each chamber.

To ensure that this is the case, the rod-shaped indicators (2) on the safety levers are slid into position on each side of the container (Figure 187).

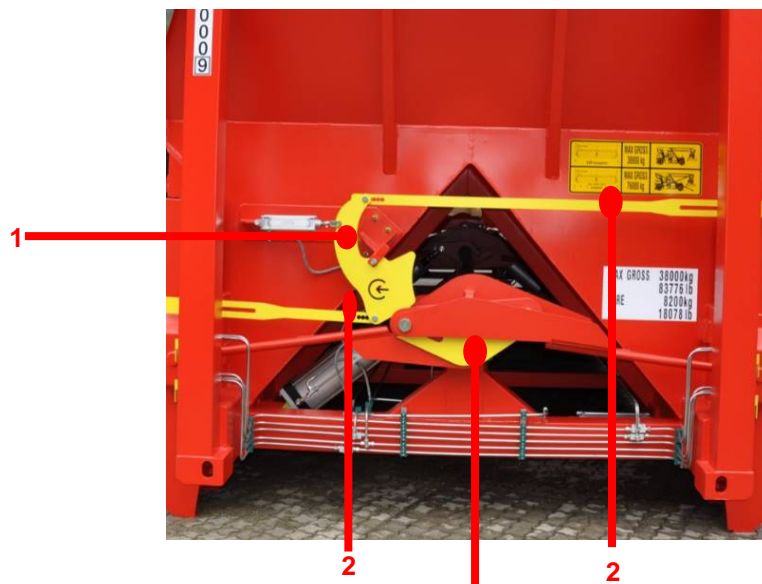


Figure 187: Type J, After Unloading D.1.

The completely closed position of the safety lever (1) is achieved when the indicators (2) are in their fully retracted positions and the main shaft (3) is turned completely over the „dead point position“. In this retracted position, the ends of the indicators do not protrude past the outer edge of the container, as shown in the following pictures (Figure 188):



**Figure 188: Type J, After Unloading D.1.**

Additionally, there is a marking with contrasting colour on the main shaft of the mechanism. This indicates if the main shaft is completely rotated and that the „dead point position“, which is necessary for the correct flap locking, has been reached. In the fully closed position, only the marking in contrast colour is visible under the shear joint, as shown in the following figure (Figure 189).



**Figure 189: Type J, After Unloading D.1.**



**Loading is not completed as long as the safety lever is in the open position, both indicators are in their extended positions, or the main shaft is not rotated over its „dead point position“.**

**D.2.** – On each longitudinal side near a corner post on chamber 1 of a loading frame there are two hand valves. The total of 4 hand valves (2 on both sides) must be in the position „FAHRT“ / „TRANSPORT“ (= in upright / vertical position) (Figure 190).



**Figure 190: Type J, After Unloading D.2.**

#### **4.10.3 Cleaning**

The loading frame is brought into the unloading position for cleaning. Appropriate work equipment, for example, pressure washers, should be used.

Cleaning is necessary under the following conditions:

- If a new/different material is to be loaded.
- If the container will be used by a new sender/receiver.
- If such third parties explicitly request the cleaning.

#### 4.11 Type “K” – WoodTainer XL



Figure 191: Type K

##### 4.11.1 Intended Use

The Type „K“ InnoWaggon Sgrrs are for the transport of bulk freight. For example, sawdust, wood chips, plaster, sand, coke, coal, or similar. They are comprised of 4 open-top loading frames of type „WoodTainer XL“ which have fixed side, front, and rear walls.



**The ladder on every front wall may only be used when the loading frame is not mounted on the InnoWaggon Sgrrs.**

A loading frame may only be manipulated with a large forklift-truck using the fork pockets. The forklift-truck used must be either owned or approved by the owner of the loading frame.

As an equivalent alternative, loading frames may also be manipulated with a ReachStacker or a portal crane using the upper corner metal fittings.

##### 4.11.2 Servicing

The following points are described and explain stepwise the safe and correct servicing:

A – Loading

B – Unloading

###### A – Loading:

**A.1.** – Loading is carried out from above for example with wheel loaders directly from the silo or with the use of conveyor belts.

**A.2.** – The maximal net load per loading frame is 35.350 kg.

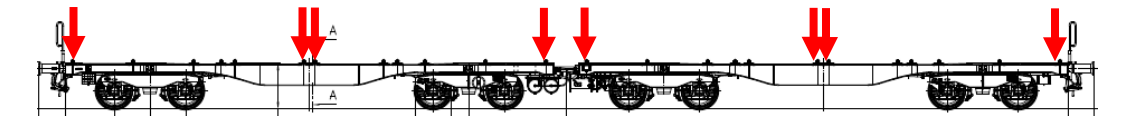
**A.3.** – For loading, the loading frame can be unmounted using a large forklift-truck. The forklift-truck used must be either owned or approved by the owner of the loading frame.

As an equivalent alternative, loading frames may also be unmounted with a ReachStacker or a portal crane using the upper corner metal fittings.



**A.4. – – Loading must take place without contact or collision between the loading frame and the loading machine.**

**A.5. – For replacement of the loading frame, the 20 ft – pins on the wagon frame must be used (Figure 192):**



**Figure 192: Type K, Servicing A.5.**

With the completion of these steps, the unloading is completed. The following should be noted:



**Mounting of differing types on a InnoWaggon Sggrs loading frame is not allowed**



**It is forbidden to transport an InnoWaggon Sggrs without loading frames.**

## **B – Unloading:**

**B.1.** – The unloading is carried out by lifting the loading frame from the wagon. For unloading the fork pockets are to be used. The unloading can be done using either equipment designed and built by the loading frame owner, or using equipment approved by the loading frame owner. Alternatively, this can be done using a large forklift-truck owned or approved by the loading frame owner.

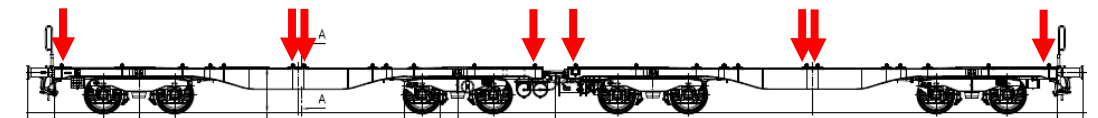
**B.2.** – Specialist tuition from the loading frame owner is required for the unloading using a large forklift-truck. The correct manner of driving with a large forklift-truck and the correct manipulation of containers is conveyed during the tuition (Figure 193).



**Figure 193: Type K, Unloading B.2.**

**B.3.** – After lifting, the loading frame is to be turned upside down using an appropriate rotation.

**B.4.** - For replacement of the loading frame, the 20 ft – pins on the wagon frame must be used (Figure 194):



**Figure 194: Type K, Unloading B.4.**

With the completion of these steps, the unloading is completed. The following should be noted



**Mounting of differing types on a InnoWaggon Sggrs loading frame is not allowed.**



**It is forbidden to transport an InnoWaggon Sggrs without loading frames.**

#### **4.11.3 Cleaning**

The loading frame is brought into the unloading position for cleaning. Appropriate work equipment, for example, pressure washers, should be used.

Cleaning is necessary under the following conditions:

- If a new/different material is to be loaded.
- If the container will be used by a new sender/receiver.
- If such third parties explicitly request the cleaning

## 4.12 Type “L” – WoodTainer XXL SideDoors



Figure 195: Type L

### 4.12.1 Intended Use

The type „L“ InnoWaggon Sgrrs is for the transport of sugar beet and for bulk cargo with a density of  $\sim 500 \text{ kg/m}^3$ . It consists of 4 open-top loading frames of type “WoodTainer XXL-SideDoors” with fixed side, front, and rear walls.

The side doors and the level floor allow for alternative unloadings, for example, washing of the cargo with water. The loading of the WoodTainer XXL-SideDoors is identical to the WoodTainer-XXL. The opening and closing processes are described in point **B – Unloading**, subpoint **B.2. – Unloading through the side door**.



**The ladder on every front wall may only be used when the loading frame is not mounted on the InnoWaggon Sgrrs.**

A loading frame may only be manipulated with a large forklift-truck using the fork pockets. The forklift-truck used must be either owned or approved by the owner of the loading frame.

As an equivalent alternative, loading frames may also be unmounted with a ReachStacker or a portal crane using the upper corner metal fittings.

### 4.12.2 Servicing

The following points are described and explain stepwise the safe and correct servicing:

A – Loading

B – Unloading

**A – Loading:**

**A.1.** – Loading is carried out from above for example with wheel loaders directly from the silo or with the use of conveyor belts.

**A.2.** – The maximal net load per loading frame is of Type „L“ WoodTainer XXL-SideDoors 34.675 kg.

**A.3.** – A loading frame may only be manipulated with a large forklift-truck using the fork pockets. The forklift-truck used must be either owned or approved by the owner of the loading frame.

As an equivalent alternative, loading frames may also be manipulated with a ReachStacker or a portal crane using the upper corner metal fittings.



**A.4.** – Loading must take place without contact or collision between the loading frame and the loading machine.

**A.5.** – For replacement of the loading frame, the 20 ft – pins on the wagon frame must be used (Figure 196):

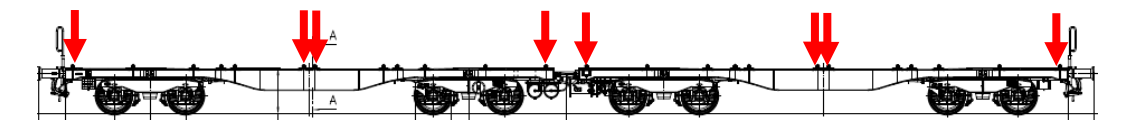


Figure 196: Type L, Loading A.5.

With the completion of these steps, the unloading is completed. The following should be noted:



**Mounting of differing types on a InnoWaggon Sggrrs loading frame is not allowed.**



**It is forbidden to transport an InnoWaggon Sggrrs without loading frames.**

## B – Unloading:

### B.1 – Unloading by lifting

**B.1.1.** – Unloading is carried out by lifting of the loading frame from the wagon, or through washing out the cargo with water using a high pressure injector (see **B.2. – Unloading through the side door**). For lifting, the fork pockets are to be used. The lifting can be done either with equipment designed and constructed by the loading frame owner, or with equipment which has been authorised for use by the loading frame owner. Alternatively, the lifting can be done with a large fork-lift truck which is owned or authorised by the loading frame owner.

**B.1.2.** – Specialist tuition from the loading frame owner is required for the unloading using a large forklift-truck. The correct manner of driving with a large forklift-truck and the correct manipulation of containers is conveyed during the tuition (Figure 197).



Figure 197: Type L, Unloading B.1.2.

**B.1.3.** – After lifting, the loading frame is to be turned upside down using an appropriate rotation.

**B.1.4.** - For replacement of the loading frame, the 20 ft – pins on the wagon frame must be used (Figure 198):

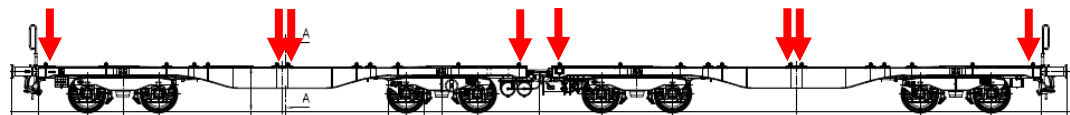


Figure 198: Type L, Unloading B.1.2.

## **B.2. – Unloading through the side doors**

The following describes the unloading process through the side door. First, the side door must be unlocked and opened so that the bulk cargo (density ~ 500 kg/m<sup>3</sup>) can be washed out using water as a carrier medium.

Opening and closing of the side doors (1) is described in the following steps (Figure 199).



**Figure 199: Type L, Unloading through the side door B.2.**

### **B.2.1. Opening:**

**B.2.1.1. – Turn the security latch anti-clockwise (Figure 200).**



**Figure 200: Type L, Open side door B.2.1.1.**

**B.2.1.2.** – Grab the hand lever and pull it up (Figure 201).



**Figure 201: Type L, Open side door B.2.1.2.**

**B.2.1.3.** – Turn the hand lever towards the operator until the side door is unlocked (Figure 202).



**Figure 202: Type L, Open side door B.2.1.3.**

**B.2.1.4.** – After the complete unlocking, the side door can now be opened (Figure 203).

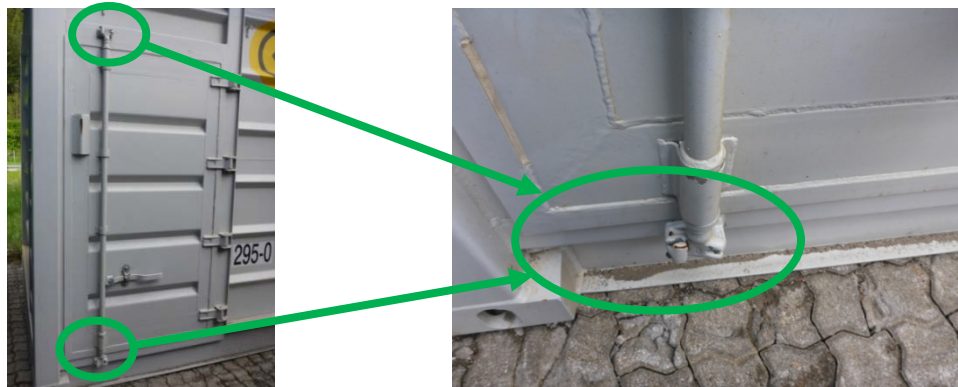


**Figure 203: Type L, Open side door B.2.1.4.**

### **B.2.2. Closing:**

**B.2.2.1.** – For closing the side door, steps **B.2.1.1** to **B.2.1.4.** in „**B 2.1 – Opening**“ should be carried out in the reverse order.

**B.2.2.2.** – Check and ensure that the locking clips at the top and bottom are fully engaged (Figure 204).



**Figure 204: Type L, Closing side door B.2.2.2.**

With the completion of these steps, the unloading is completed. The following should be noted:

### **B.2.3. Washing out of bulk cargo:**

**B.2.3.1.** – After the side door has been opened, the sugar beet is washed out using a high pressure water jet, as shown in the picture (Figure 205).



**Figure 205: Type L, Washing out of bulk cargo B.2.3.1.**

**B.2.3.2** – During the rinsing process, accessing the container is forbidden. The unloading process may only be started when there is no people in the container (Figure 206).



**Figure 206: Type L, Washing out of bulk cargo B.2.3.2.**

**B.2.3.3.** – After unloading, the wagon chain is moved forward. The wagons must be positioned so that unloading using the high pressure water jet is guaranteed (Figure 207).



**Figure 207: Type L, Washing out of bulk cargo B.2.3.3.**

**B.2.3.4.** – After the unloading process, the side doors are closed as described in point **B – Unloading** subsection **B.2. – Unloading through the side door**.



**Mounting of differing types on a InnoWaggon Sggrs loading frame is not allowed.**



**It is forbidden to transport an InnoWaggon Sggrs without loading frames.**

#### **4.12.3 Cleaning**

The loading frame is brought into the unloading position for cleaning. Appropriate work equipment, for example, pressure washers, should be used.

Cleaning is necessary under the following conditions:

- If a new/different material is to be loaded.
- If the container will be used by a new sender/receiver.
- If such third parties explicitly request the cleaning.

## 5 ACTION IN THE EVENT OF DAMAGE OCCURING ON WAGONS OR ON LOADING FRAMES

### 5.1 Notification and handling procedures for damage wagons

If damage is discovered during the servicing of a wagon, the person responsible for the wagon (written on the wagon itself) must be informed

The contact details of each wagon holder can be found at the following URL:  
<http://www.gcubureau.org/welcome>

All repairs to wagons may only be carried out by approved workshops. The method of reparation is the decision of the wagon holder in coordination with the responsible ECM according to AVV.

For Example:

#### 1. DE\_Details of GCU contact

Rail Cargo Wagon - Austria GmbH

Halter

Österreich

Am Hauptbahnhof 2

Wien

1100

Österreich

ATU51274106

01. 07. 2006.

#### 5.1.1 Procedere in the case of third party ownership of wagon

##### Example ÖBB (RCW):

If damage occurs to a wagon and the owner/holder of the wagon is ÖBB, the RCA – Damage hotline should be informed immediately.

##### RCA – Damage hotline

Tel.: +43 (0) 1 93000 – 31713

E-Mail: [emw-schadwagen.flotte@railcargo.at](mailto:emw-schadwagen.flotte@railcargo.at)

All repairs to a wagon may only be carried out by authorised workshops. The decision as to which form the repairs should take is in the hands of Rail Cargo Austria according to AVV.

## **5.2 Notification and handling procedures for damaged loading frames („Containeraufbau“)**

If damage is discovered during the servicing of a loading frame, the Innofreight damage hotline must be informed immediately.

### **Innofreight – Damage Hotline**

Email: [support@innofreight.com](mailto:support@innofreight.com)

Telephone: +43 / 3862 8989 242

Fax: +43 / 3862 8989 241

All repairs to non-permanent wagon components may only be carried out by approved workshops. The method of reparation is the decision of the InnoFreight damage hotline

## **5.3 Lose Wagon Components Consideration**

Die am Wagen vorhandenen Ladegestelle (am Wagen als lose Wagenbestandteile angeschrieben) müssen vorhanden sein (siehe Pkt. 4. ff).

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