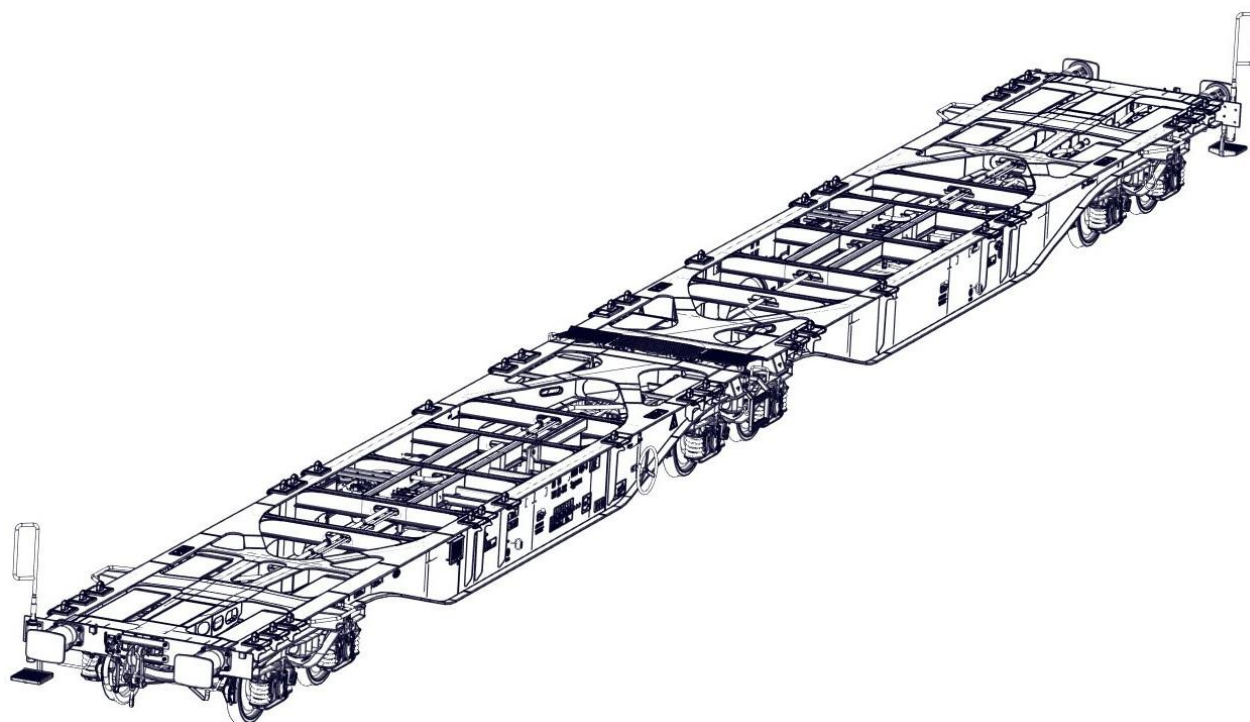


Operating manual

**Six-axle articulated container wagon
Class Sggmrs 90'
Type 9-590.0
Drawing No. S018-00-000000**



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1. Introduction

This operating manual (hereinafter „manual“) has been elaborated by the manufacturer of the railway wagon:

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Česká republika

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The manual is made for a six-axle articulated containers flat wagon class Sggmrs 90', type 9-590.0, drawing No. 1 06221041.

1.1. Intended use of the wagon

Six-axle articulated bogie containers wagon for transport of containers acc. to IRS 50592 and of swap bodies acc. to IRS 50592-3. The wagon is suited for the track gauge 1435 mm, meets the conditions of Technical Specification for Interoperability (TSI) for subsystem „Rolling Stock – Freight Wagons“ and „Noise“. Further it meets the conditions of the General Contract of Use (GCU) and UIC-Leaflets.

The wagon can be operated at maximum speed of 120 km/h up to the axle load of 20 t and can be operated with the maximum axle load of 22.5 t up to the speed of 100 km/h.

The wagon is equipped with UIC footsteps and handrails in accordance with Chapter 4 of the Technical Documentation ERA/TD/2012-4/INT resp. EN 16116-2:2021 as amended. At both ends of the wagon there is a left end step for shunters with folding handle.

The wagon is suited for passing of hump, profile of which is defined in UIC 522, excluded from loose shunting. The wagon corresponds in view of transition on ferry the UIC leaflets (up to 1° 30' at the curve radius min. 120 m).

The wagon is fitted with tow hooks, each of them is fixed to the side of the underframe of the wagon in accordance with section 1.4 of UIC 535-2:2006.

The wagon is made for the reference profile G1 for the upper part and the profile G1C1 for the lower part according to EN 15273-2:2013+A1:2016.

The wagon is compatible with Train Detection System based on track circuits, axle counters and induction loops within the meaning of the requirements of the subsystem „Control-Command and Signalling“.

The wagon is compatible with Hot axle box Detection Systems within the meaning of the requirements of EN 15437-1:2009+A1:2022.

The wagon and its components are designed with regard to open-air temperature range T3: -25 °C to +45 °C and meet without quality degradation the TSI WAG requirements for snow, ice and hail conditions as defined in clause 4.7 of EN 50125-1:2014 corresponding to the nominal temperature range above.

At each end of the vehicle, two tail lamp brackets enable the mounting of two lamps or two reflective plates acc. to TSI WAG, Appendix E at the same height above the rail, at most 2000 mm above the running surface, the dimensions and distance correspond to chapter 1 of the Technical Documentation ERA/TD/2012-04/INT resp. section 6.3.1 of EN 16116-2:2021, as amended.

To ensure as low as possible impedance between the wagon body and the running rail, all parts of the vehicle are electrically bonded in accordance with provisions of clause 6.4 of EN 50153:2014+A2:2020.

1.2. Basic technical parameters of the wagon including related technical documentation

The wagon meets the conditions of TSI, GCU, UIC

Track gauge.....	1 435 mm
Maximum operating speed empty wagon.....	120 km/h
Maximum operating speed at axle load of 22,5 t.....	100 km/h
Length over buffers.....	29 590 mm
Length over headstocks	28 350 mm
Distance between pivots	2x 12 025 mm
Maximum height (loading height above the running surface)	1 155 mm
Maximum width.....	2 970 mm
Loading length	90'
Minimum negotiable curve radius	75 m
Bogie	3xY25 Lsd
Bogie wheelbase	1 800 mm
Nominal wheel diameter	920 mm

Weights and load limits


Tare weight of wagon (average)	~27,0 t
Payload.....	~107,6 t
Gross weight	135,0 t
Max. axle load	22,5 t
Axle load when wagon empty	4,56 t

Load limits table (for average wagon weight) [t]:

Brake operating conditions:

	A	B	C	D
S	69	81	96	108

The other technical parameters are given in the Technical Conditions PO03/2023-Nb, and in the Maintenance File KU 03/2025-Nb.

	<p>This operating manual do not replace the operating order for unloading and loading of goods which is to be elaborated by the wagon operator for each workplace where the wagons are loaded, unloaded, shunted, repaired or cleaned. It also does not replace the provisions of other railway regulations and safety and labour standards.</p> <p>This manual shall be specified by the wagon operator in its own operating order for the loading, unloading, operation and maintenance of the wagon in accordance with the relevant operating and safety regulations while preserving all the conditions for the economical, safe and environmentally friendly operation of the wagon.</p>
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Workers who operate the wagon equipment must be familiar with the operating manual and the safety rules. The vehicle operator is responsible for keeping of this provision.

2. Operation of the wagon during loading and unloading

2.1. Loading the wagon

Before loading:

- the vehicle is to be secured against movement (rail stop or hand brake applying) if the wagon is not a part of the train set.
- check the completeness and intactness of the wagon.
- the hinged locking pins (spigots) must be in the correct position, i.e. the hinged locking pins on which the container or swap body are seated must be properly fitted into the frame and the other pivots must be swung away so as to avoid unwanted collision with the frame of the container, see Fig. 1 and Fig. 2. There shall be no objects or dirt on the bearing surface of the locking pins, the frame of the wagon and the lower frame of the container or swap body.

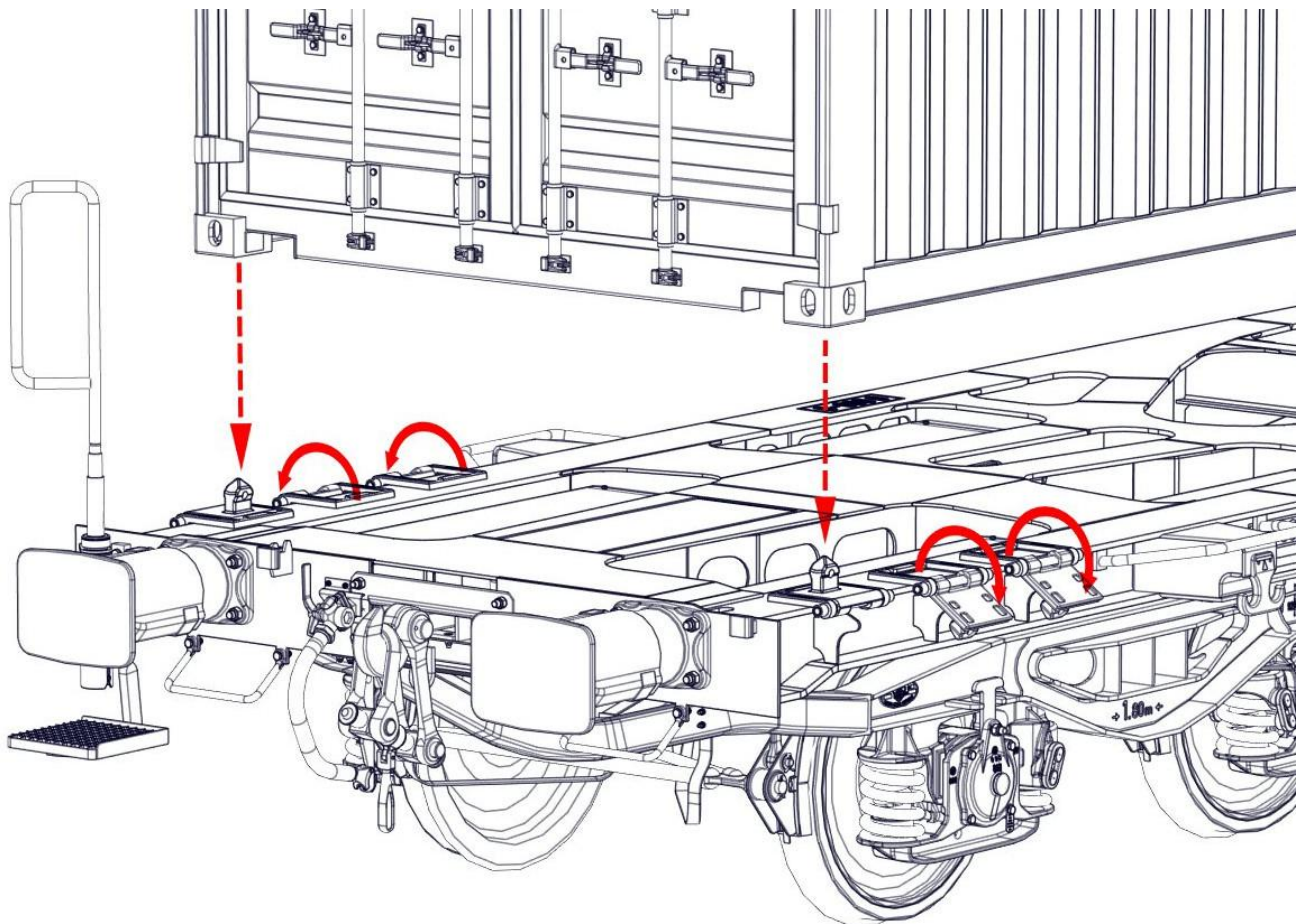


Figure 1

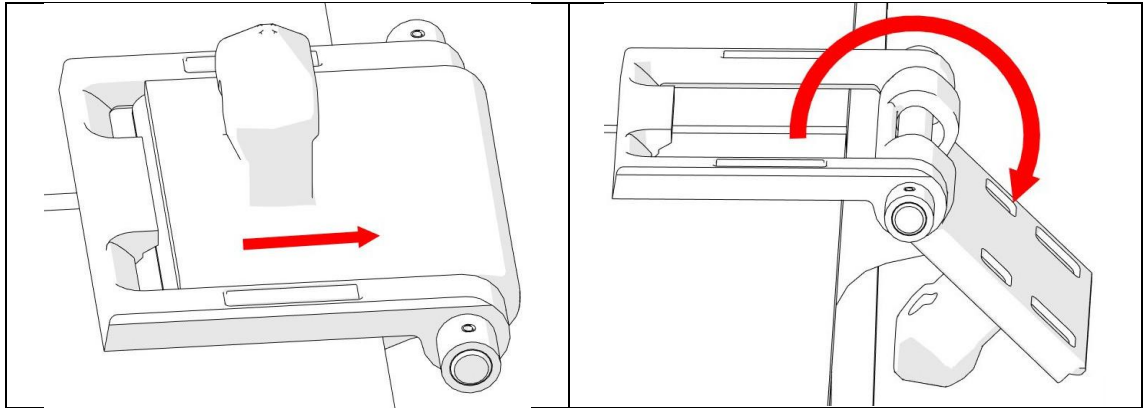


Figure 2

When loading the wagon:

- the freighter must ensure that the total weight of the wagon does not exceed a maximum total value of 107,1 t while respecting the values given in the loading plan, drawing No 1 06221040.3.4, in the load limits table and in the RIV loading regulations.
- load the wagon always with adequate means and observe always working safety
- when handling a container or swap body above the wagon, especially when lower down, pay considerable care not to damage the wagon
- lower down the container or the swap body so that the locking pins in the corner element of the container or swap body are not twisted
- after setting the container or swap body, it is always necessary to check that the container or swap body is properly seated on adequate locking pins

2.2. Unloading the wagon

Before unloading the wagon:

- the vehicle is to be secured against movement (rail stop or hand brake applying) if the wagon is not a part of the train set.

When unloading the wagon:

- there is to ensure the proper fastening of container or swap body when lifting it and to lift it always with adequate means with regard to working safety
- lift the container or swap body so that there is no twisting of the locking pins in the corner elements of the container or swap body or other parts of the wagon

3. Securing the vehicle against self-movement

The wagon is equipped with a hand brake operated from both sides of the wagon, see Fig.3. It is to operate according to the pictogram fitted on the wagon side. When releasing, it is always to check that the brake blocks are properly released and to turn the hand wheel always to the stop.

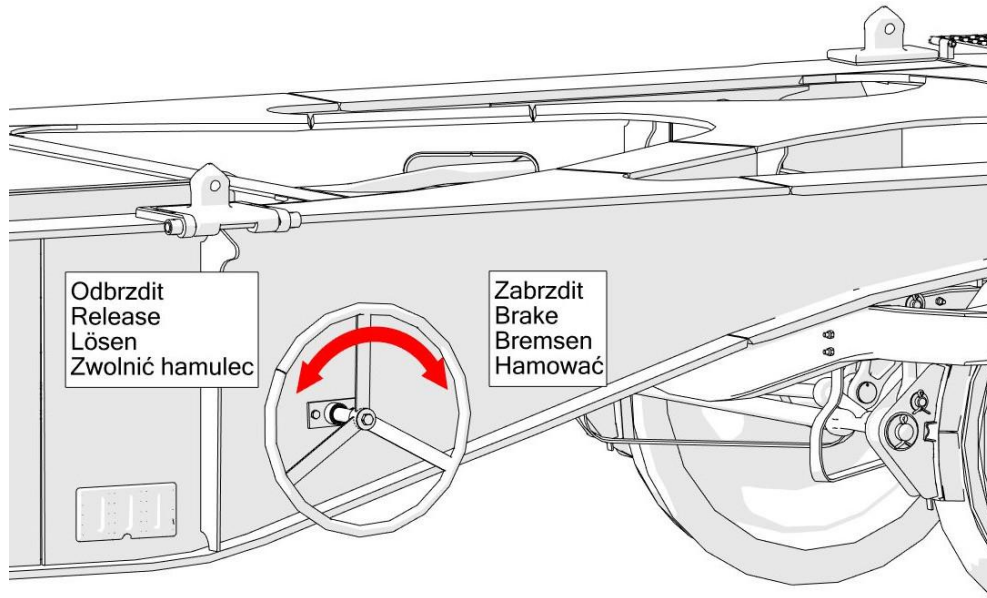


Figure 3 – Brake and Release the wagon hand brake



When releasing, it is always to check that the brake blocks are properly released and to turn the hand wheel always to the stop.

4. Control the pneumatic brake

Before using of the wagon, the adjustment of the brake must be checked properly. When adjusting the brake, always follow the pictograms on the labels of the changeover devices.



The wagon is equipped with automatic adjustment based on the load on the wagon, therefore the brake must always be adjusted on both wagons in the same way, otherwise there is a high risk of damage to the wagon!

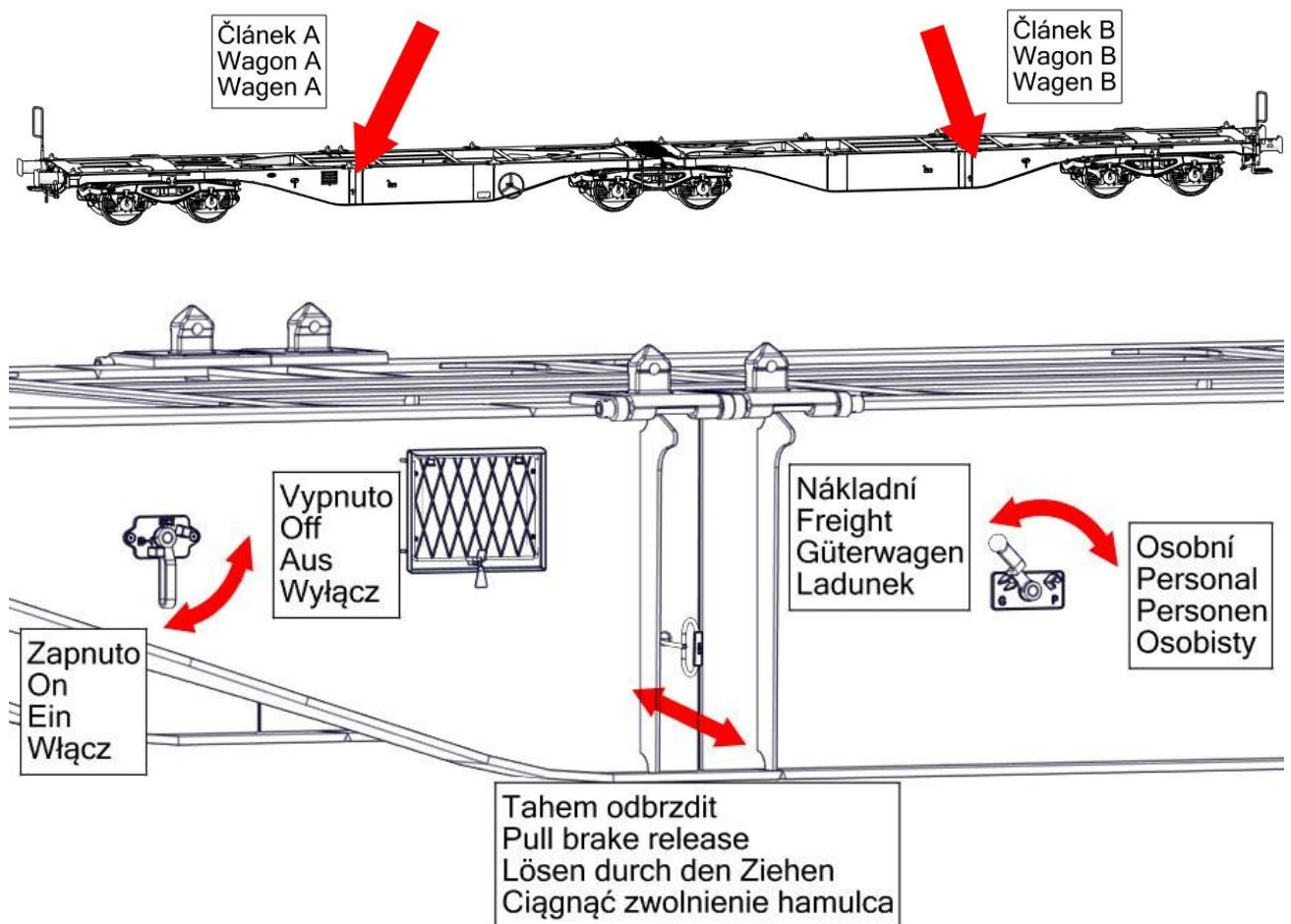


Figure 4 – Control the pneumatic brake of the wagon



This part of the text provides information on the location of the controls of the pneumatic brake on the wagon, it does not replace the operating instructions of the carriers.

5. Changing the position of the folding handle for shunters

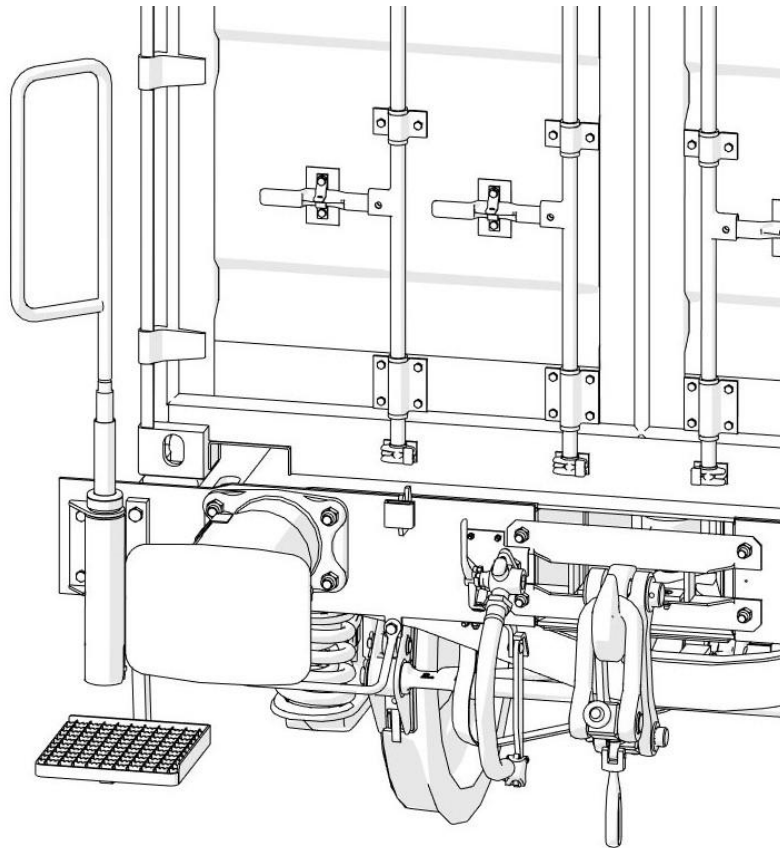


Figure 5 – Working position of the folding handle

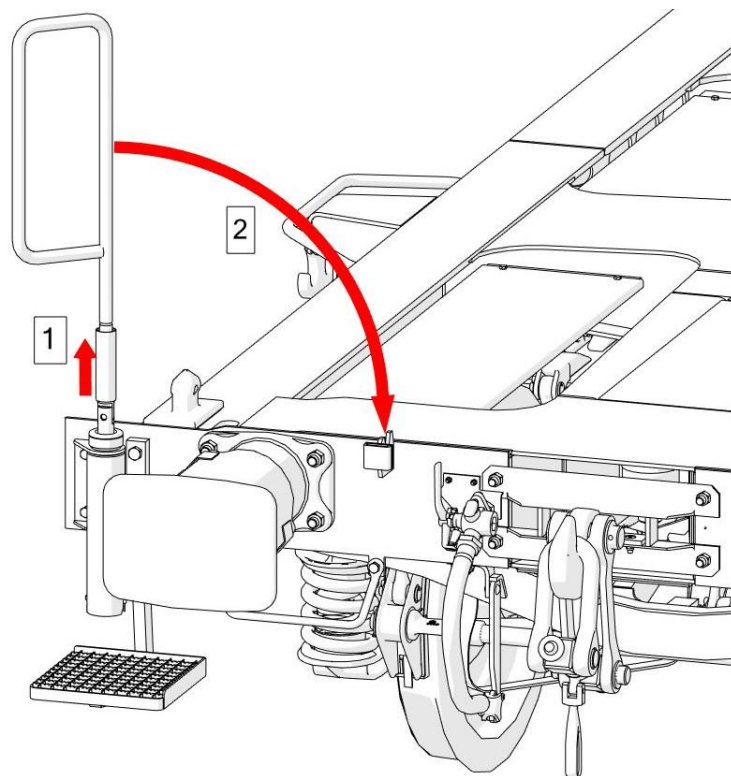


Figure 6 – Turning down the folding handle

- The folding handle must always seat in the cradle after turning down, see Fig. 6.

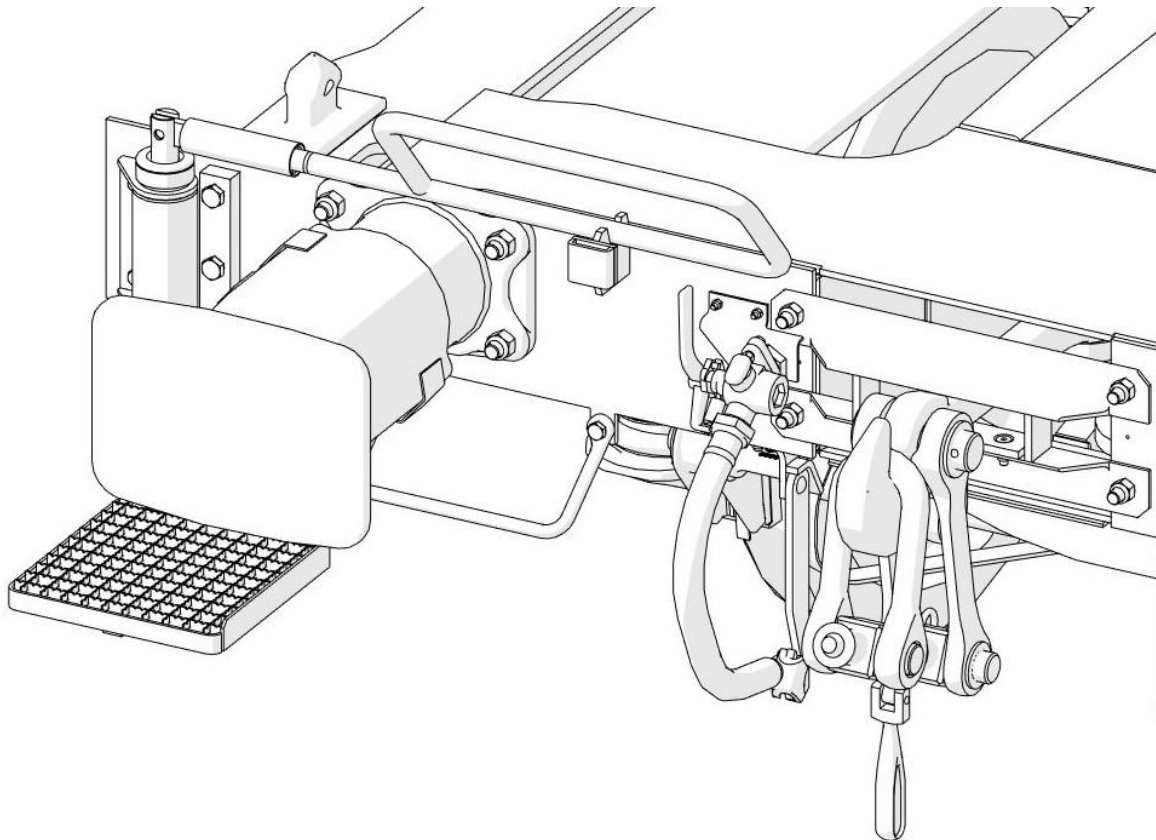


Figure 7 – Positioning of folding handrail after turning down



When lifting the folding handrail into the working position, always ensure that it is properly secured against the self-movement folding of the handle of the folding handrail.

6. Manipulation with middle platform

The wagon is equipped with a middle platform for the possibility of moving to the other side of the wagon

This middle platform is tiltable, because is it here access to articulated link of the wagon and its control.

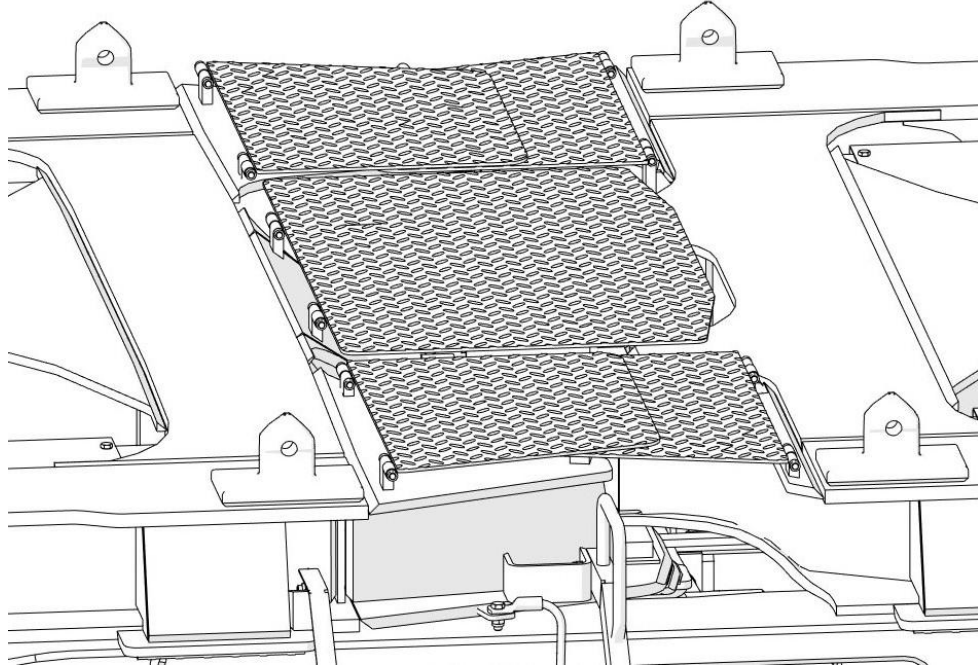


Figure 8 – Working position of middle platform

The principle of tilting the middle platform

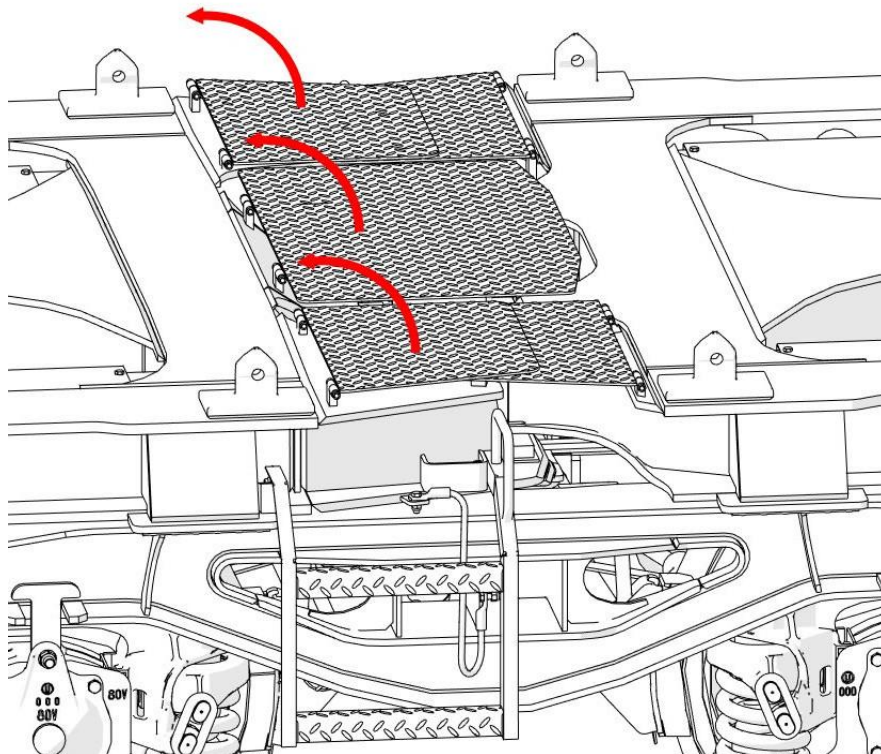


Figure 9 – Step 1: Folding the upper edge plates and the middle plate

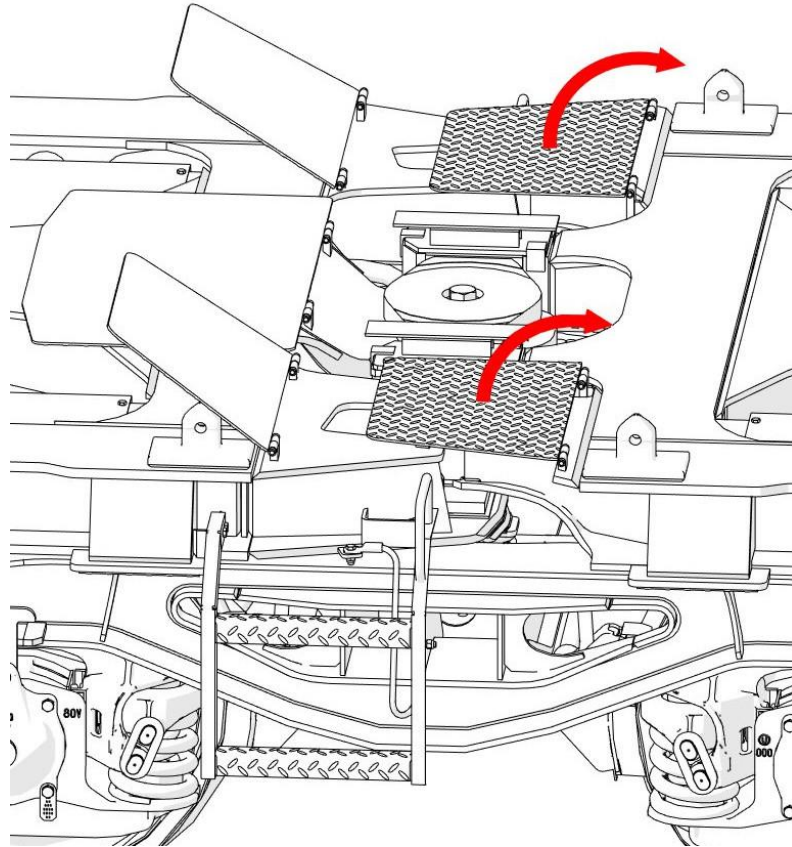


Figure 10 – Step 2: Folding the remaining outer sheets

Plates of middle platform must be return to the working position in reverse order than opening

A ban on the operation of a wagon with open plates of middle platform, risk of damage to the wagon and injury to the operator!



During winter and wet weather, care must be taken to avoid slipping when passing through to the middle platform!

7. Lifting and re-railing the entire wagon (both parts) in six-points

- lifting of the wagon is always to carry out in intended points with adequate means and with regard to working safety
- Lifting of loaded wagon only in exceptional cases

The lifting points are always marked by pictograms according to EN 15 877-1

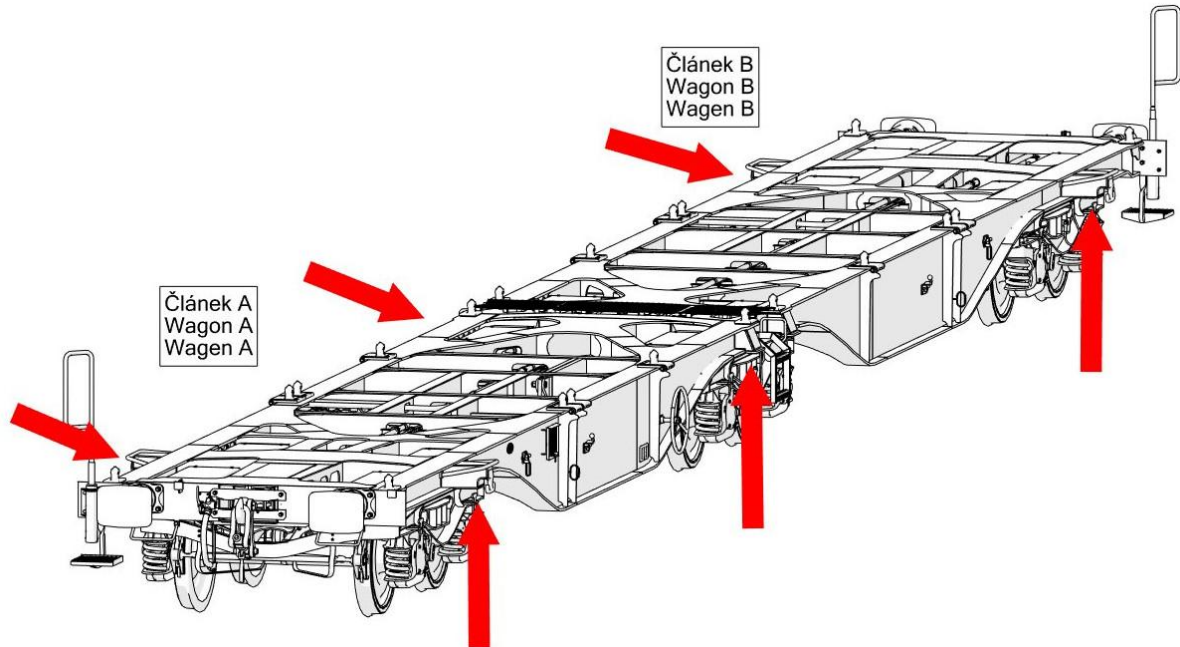


Figure 11 – Scheme of the places for lifting the entire wagon in the lifting device

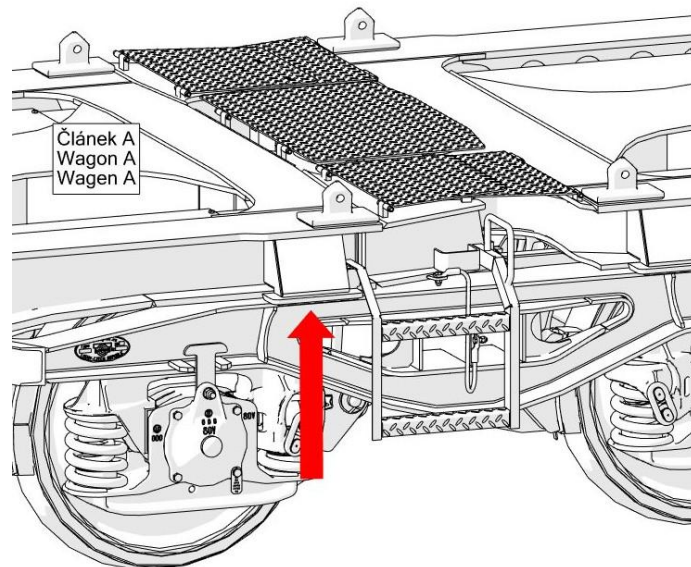


Figure 12 - Detail of the space for lifting the entire wagon (both parts) in the center of the wagon



Raise the whole wagon only when the whole wagon is in the horizontal position. Strict prohibition of lifting the wagon in places other than those intended (risk of damage to the parts of the wagon).

8. Lifting and re-railing at the end of the wagon

- carry out the wagon re-railing always in points intended for this purpose with adequate means and with regard to working safety
- re-railing of loaded wagon only in exceptional cases

The lifting points are always marked by pictograms according to EN 15 877-1

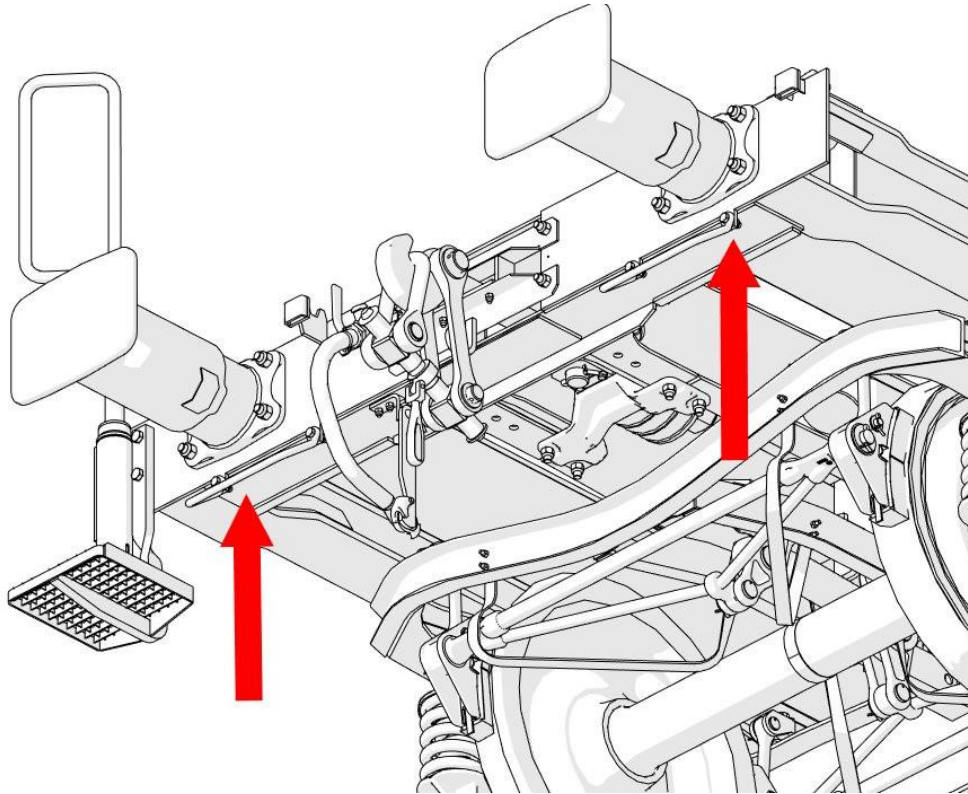


Figure 13 – Plan of points for lifting or re-railing at one end



When lifting or re-railing the wagon at one end, it is necessary to always observe the maximum horizontal angle of the inclination between the both parts max. 1° 30' and check for eventual collision of parts of the wagon. Strict prohibition of lifting the wagon in places other than those intended (risk of damage to the parts of the wagon).

9. Shunting the wagon by tow rope

- carry out the wagon shunting always in points intended for this purpose with adequate means and with regard to working safety
- towing the wagon in places other than intended for this purpose is prohibited (risk of damage of wagon parts)

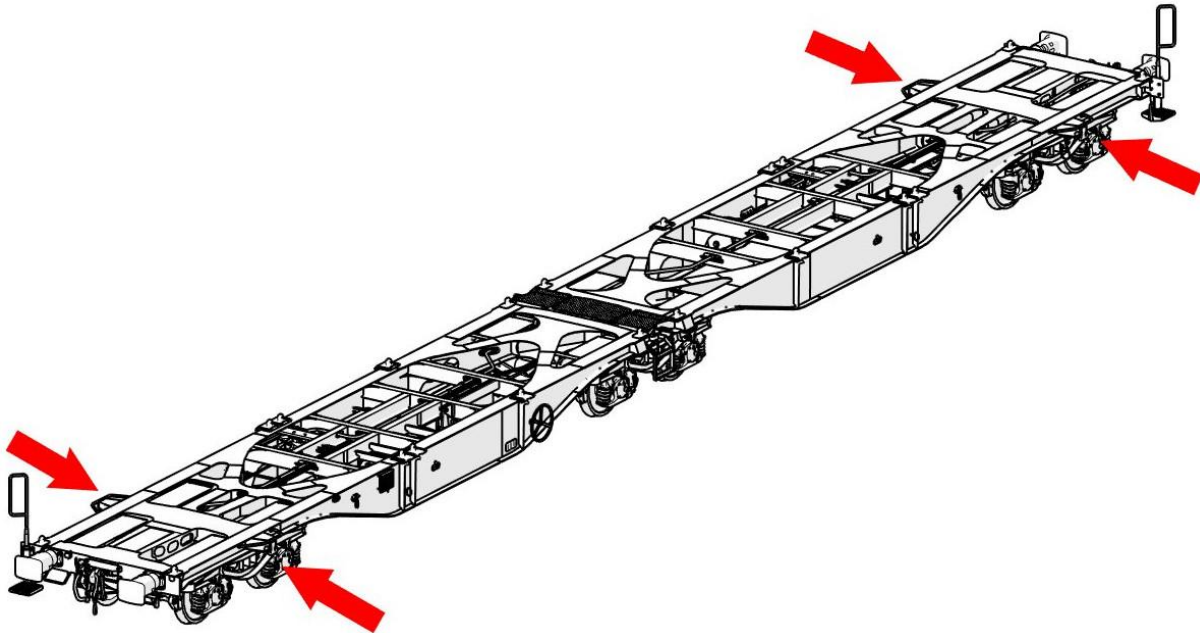


Figure 14 – Plan of the points for towing

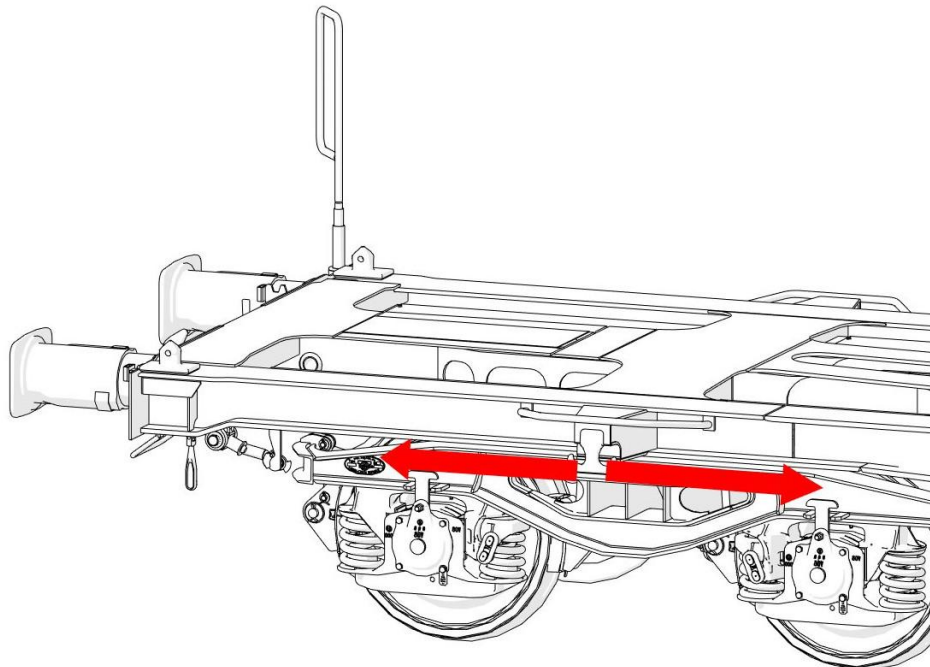


Figure 15 – Detail of the point for towing



Towing of the wagon at points not intended for towing is strictly prohibited (risk of damage to the wagon parts)

10. Dismantling the articulated joint of the wagon

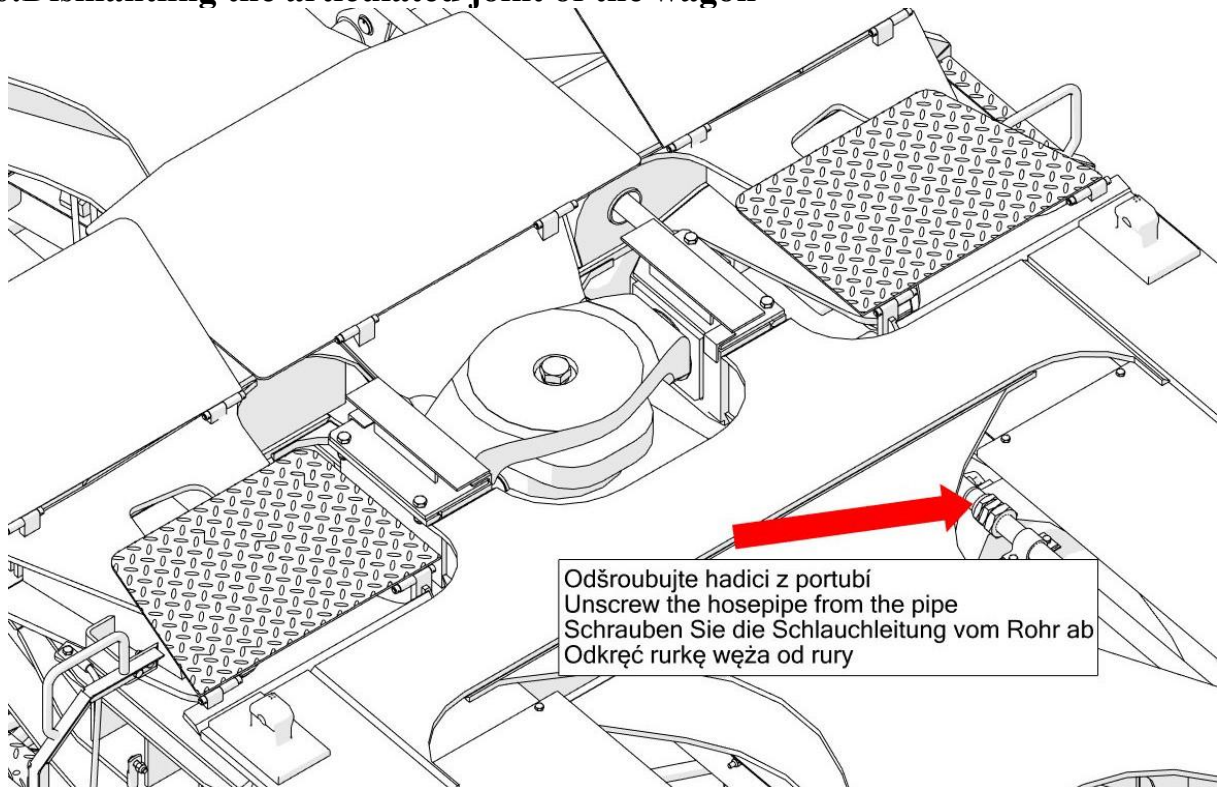


Figure 16 – Removing the hosepipe of the brake

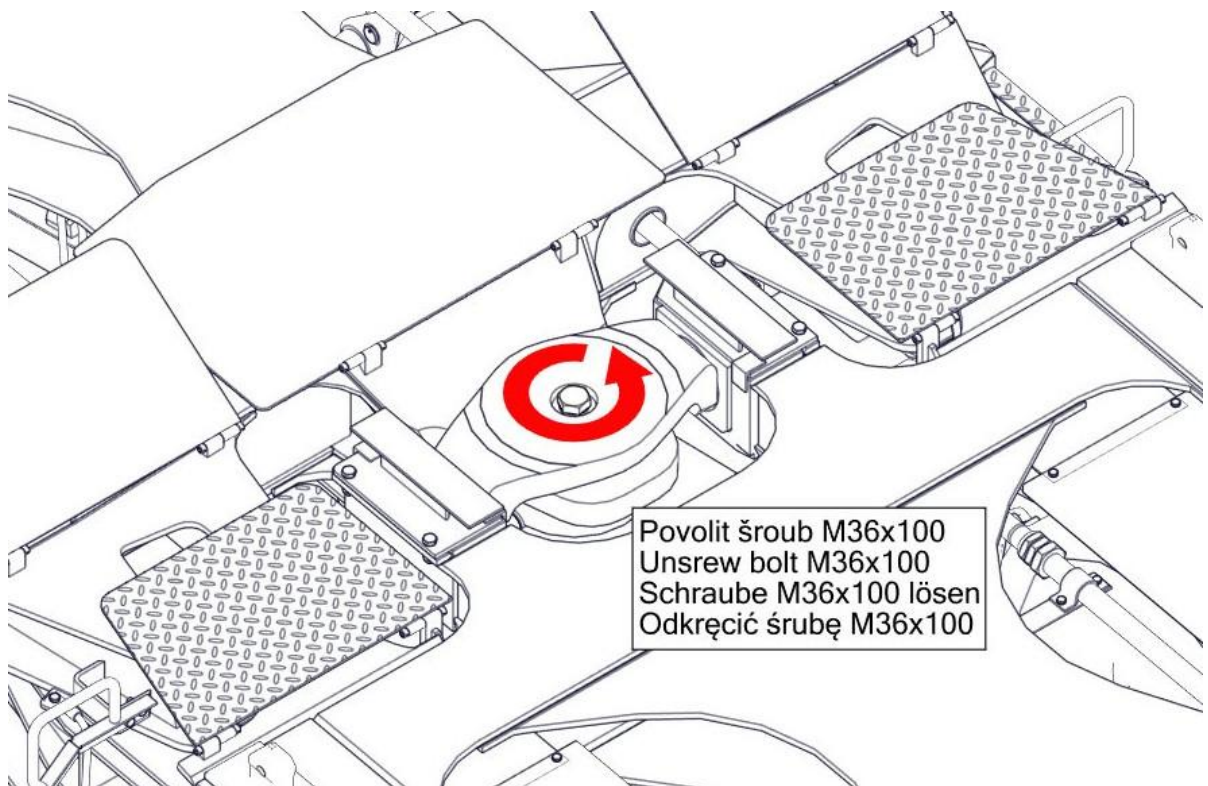


Figure 17 – Loosening the safety bolt M36x100 from the articulated joint

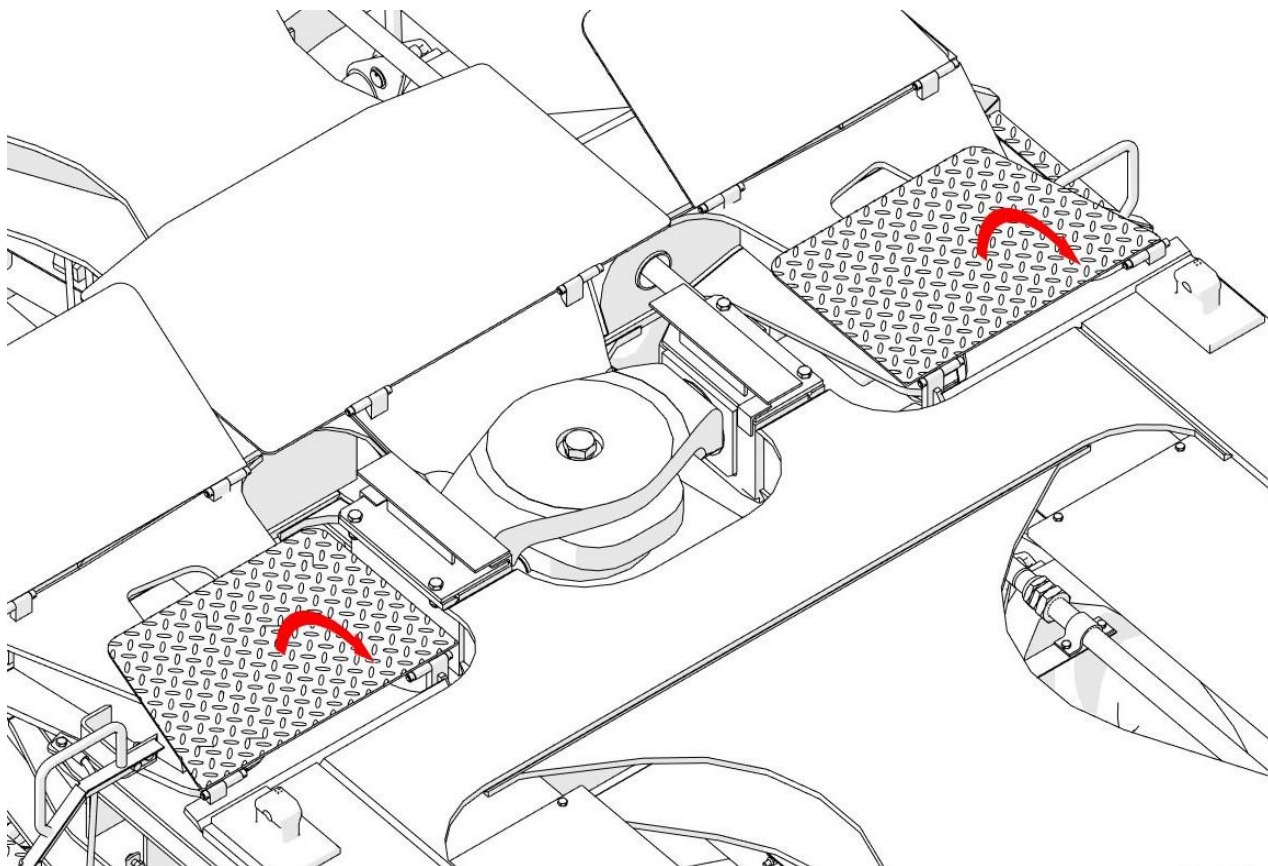


Figure 18 – Folding the remaining outer sheets

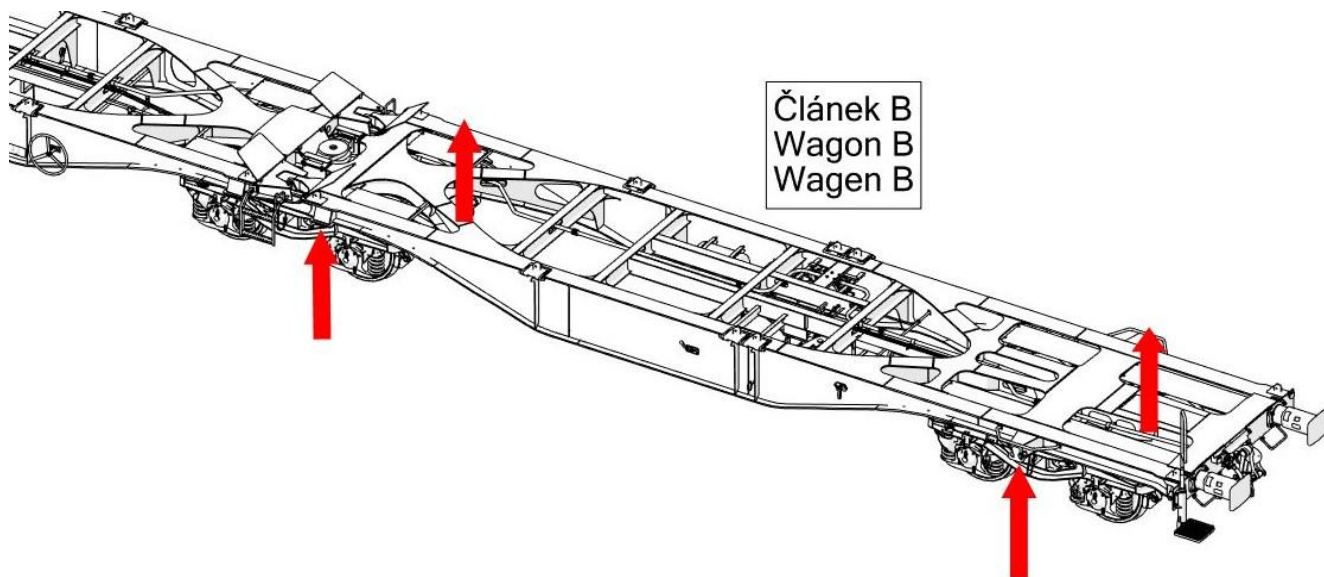


Figure 19 – Plan of the points for lifting of the wagon part B

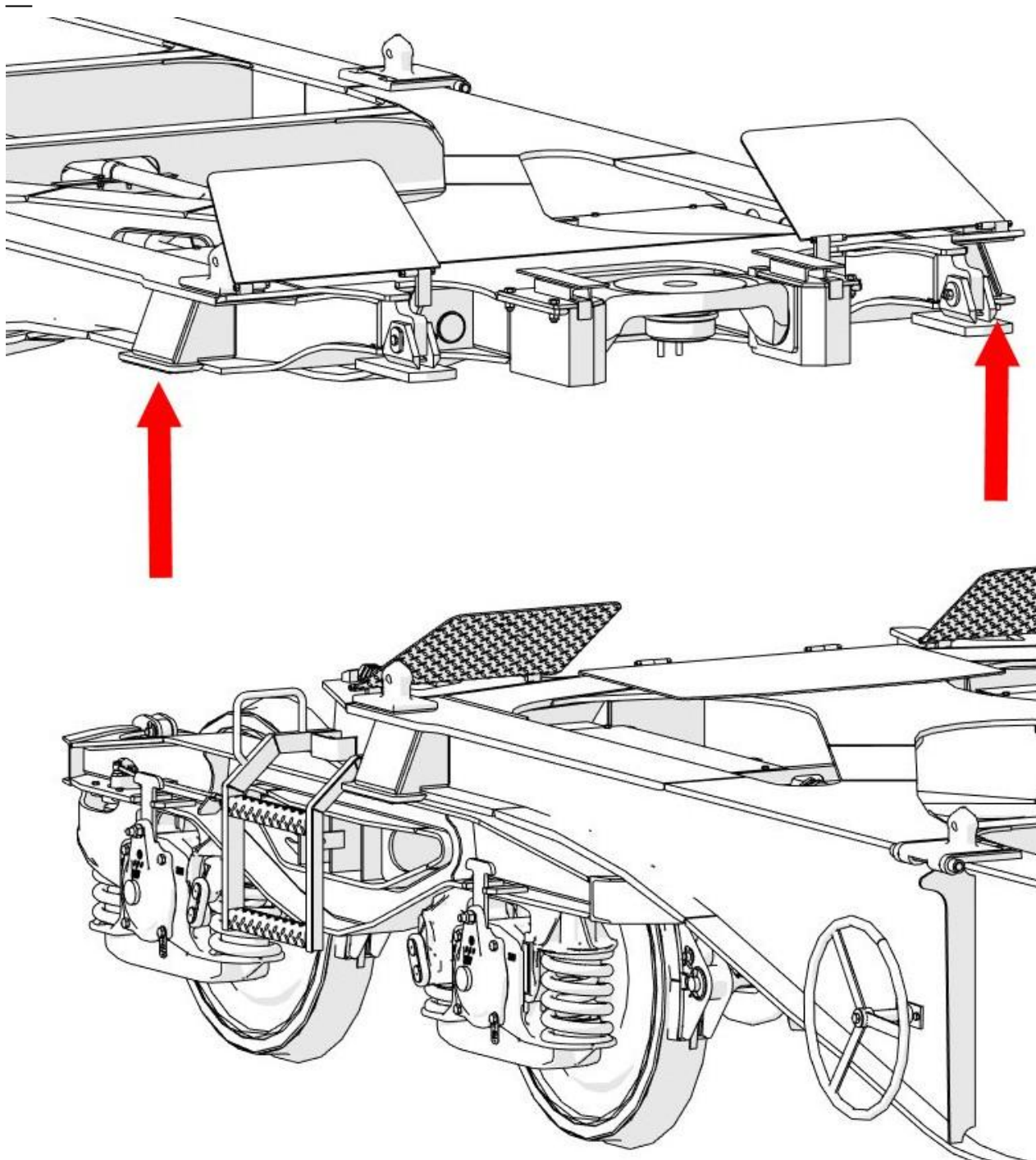


Figure 20 –Lifting of the wagon part B



When dismantling and lifting the wagon part B, care must be taken to avoid collision of the wagons parts A and B. Reconnection of the wagons parts is performed in the reverse order.

11. Lubrication plan

The lubrication plan is developed in detail in the user's rules of service with regard to these determined lubricants and periods for individual construction units and components – see the table below.

Bogies Y25 Lsd

See the specifications in the Maintenance file KU 01/2022-Nb.

WARNING! The following must not be lubricated:



1. sliding insert pressed onto the pivot centre casting bottom body
2. surface of the top body of the pivot centre, which is in contact with the sliding insert
3. manganese plates of the bearing box guide and the friction surface of the buffer piston – any grease must be removed before mounting!
suspended plastic slides on the contact area

Underframe:

	Name of the wagon parts	Lubricating grease	Kg	Frequency	Note
1	Tube buffer Buffer head – front surface	Grease according to regulation or ECM	0,75	During usual maintenance and regular review of the wagon	During inspection: Old grease remove
2	Draw gear Moving screws and nuts of the screw coupling pin, fork end of the draw gear, hook pin, hook draw guide	Grease according to regulation or ECM	0,4 0,1 0,05	During usual maintenance and regular review of the wagon	During inspection Old grease remove
3	Brake Pins in the mechanical part Brake lever Brake cylinder Slack adjuster Handbrake gears , spindle, bearing, rocker arm Changeover devices G/P, - gearing, pins	Grease according to regulation or ECM	0,8 0,4 0,1 0,4 0,2	During mounting During review	Old grease remove
4	Articulated joint of the wagon parts Pins in the wagon part A Pins in the wagon part B	Grease according to regulation or ECM	0,4 0,05	During mounting During review	During inspection Old grease remove



ATTENTION! The manganese friction surface of the articulated joint of the wagon part B and the contact area of the articulated joint of the wagon part A - no lubrication