



Operation and Maintenance Manual

Container Frame with levelling system

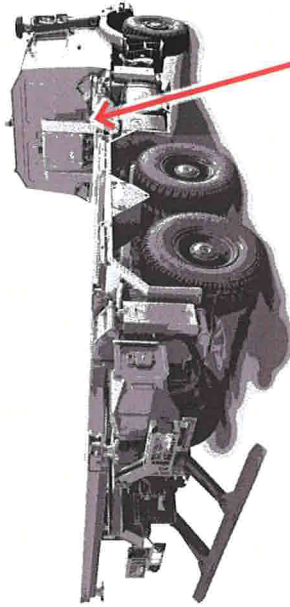


mounted on Zetros 6x6

www.empl.at



Identification



The identification plate including vehicle body number and year of manufacture is located behind the driver's cab at the protection cover of the hydraulic oil tank:

		Empl Fahrzeugwerk GmbH Deutschland Josef-Empl-Straße 1 06895 Zahna-Elster	
Typ:	Containerrahmen		
Seriennummer	8818000-001		
Aufbaunummer	516033001		
Baujahr	2016		

Manufacturer: EMPL
Product: Container Frame
Vehicle body No.: 516033001
Serial No.: 8818000-001

Container Frame with levelling system mounted on Zetros 6x6

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1.5 Customer service

Our customer service is available for technical information:

Telephone: +43 (0) 5283 501 0

Reachability: Monday to Friday | 7:30 to 16:00

Fax: +43 (0) 5283 501 909

E-Mail: info@empl.at

Internet: www.empl.at

1.6 Limitation of liability

Warranty and liability claims with respect to personal injury and material damage are excluded if they arise from one or more of the following causes:

- Improper use,
- Non-observance of this Operation and Maintenance Manual,
- Use of untrained staff,
- Unauthorised structural alterations,
- Technical alterations,
- Use of unauthorised spare parts, or
- Improper commissioning, operation and maintenance.

ATTENTION

Notice to an immediate situation leading to material and environmental damage unless avoided.

1.9 Representation of general notices

NOTICE

General notice for helpful advices and other information attention should be paid to.

1.10 Symbols and pictograms

The following symbols and pictograms are used in this manual to indicate certain situations and hazards:

Symbol	Meaning
	Drop (fall) If ignored, fall hazard from unsecured platforms is present.
	Overhead load If ignored, injuries caused by falling objects or overhead load are possible.
	Crushing of hands If ignored, hand or finger injuries are possible.
	Wear safety goggles If ignored, eye injuries are possible.
	Wear protective gloves If ignored, hand injuries are possible.

2.3 Additional provisions

In addition to the information in this manual, the legal provisions for accident prevention and environmental protection, as well as the accident prevention provisions of the operators, must be observed.

“Operators” are persons who operate the Container Frame or allow suitable and trained personnel to operate on their behalf.

2.4 Qualification of the personnel

The personnel operating the Container Frame do not need a special qualification for those work. During handing over the Container Frame and its functions are explained in detail.

Maintenance and inspection work must be carried out by authorised and qualified personnel.

The operators have to ensure that the personnel have fully understood the manual and that they follow its instructions.

2.5 Personal protective equipment

If no further provisions added, the protective equipment listed in the following table is mandatory:

Action	Protective equipment
Operation	Protective gloves 
Maintenance	Protective gloves and safety goggles  

2.6.3 Hazard caused by the hydraulic system

The hydraulic system may be under high pressure.

Fluids (hydraulic oil) escaping under high pressure may rupture the skin and cause severe injuries.

- » Only authorised and qualified personnel with experience in hydraulics are permitted to work on the hydraulic equipment.
- » Only work on the hydraulic system if the hydraulic system is not under pressure.
- » The oil temperature in hydraulic systems must not exceed 80 °C.
- » The system pressure as set on delivery must not be changed.
- » When connecting hydraulic hoses to the hydraulic system of the vehicle, ensure that the hydraulics of the vehicle and the Container Frame are not under pressure.

2.7 Hazards and preventive actions when driving

Obey the following general rules of conduct during vehicle operation:

- The driving speed must be appropriate considering the visibility, the road condition and the changing conditions of loading and towed load.
- Never drive in neutral on a downhill, since this renders the engine useless for braking. This poses the danger of overstressing and failure of the wheel brake system.

NOTICE

For vehicle operation obey the instructions of the chassis manufacturer (see chapter 1.3 "Applicable manuals" on page 6).

The following table shows the hazard sources with their possible hazards and the necessary rules of conduct to avoid them.

3 Technical data

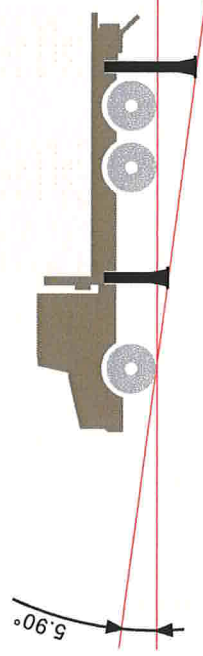
3.1 Entire vehicle

Width	2,550 mm
Height	2,900 mm
Length	9,900 mm

Max. angle (in x direction)

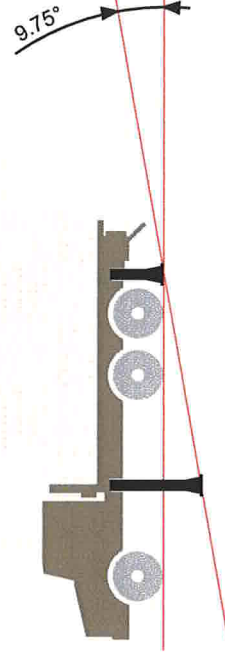
Scenario I: 5.90°

Vehicle driving up a slope
in the forward direction



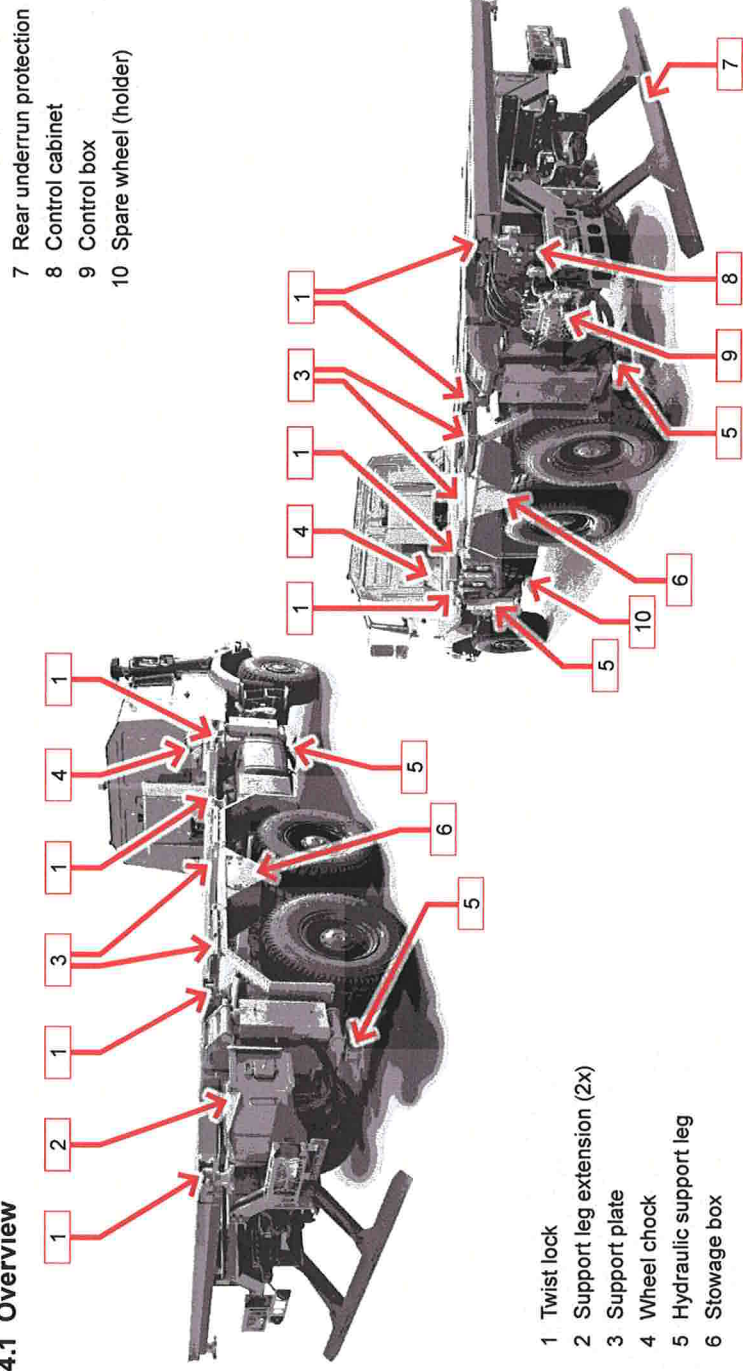
Scenario II: 9.75°

Vehicle driving up a slope
in the rearward direction



4 Description of the Container Frame

4.1 Overview



4.3.2 Support leg extensions

The four support leg extensions are stowed in pairs at the Container Frame:

- **First pair** at left front side, behind the driver's cab.



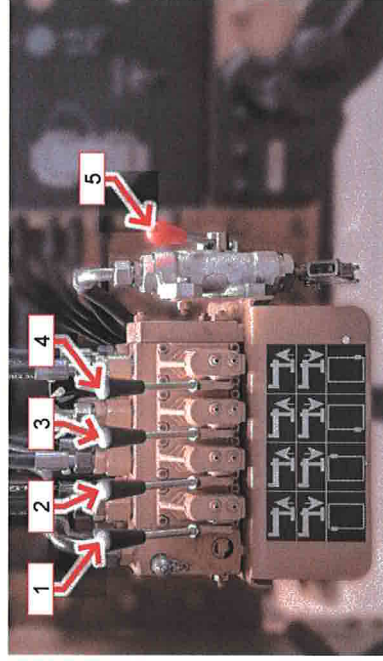
- **Second pair** at rear right side.



The support leg extensions are locked by locking bolt with cotter pin. For using the support leg extensions, they have to be mounted at the discs of the hydraulic support legs.

4.3.4 Control box for manual mode

The control box is located at the left rear side of the vehicle. It is used for manual adjustment of the hydraulic support legs while standing at the vehicle (local).



The four control levers address the hydraulic support legs as shown in the instruction scheme below them:

1	2	3	4
Front left	Front right	Rear left	Rear right

For manual mode the valve for switching between hydraulic control and emergency control (5) must stay on upper position.

4.3.5 Cable remote control

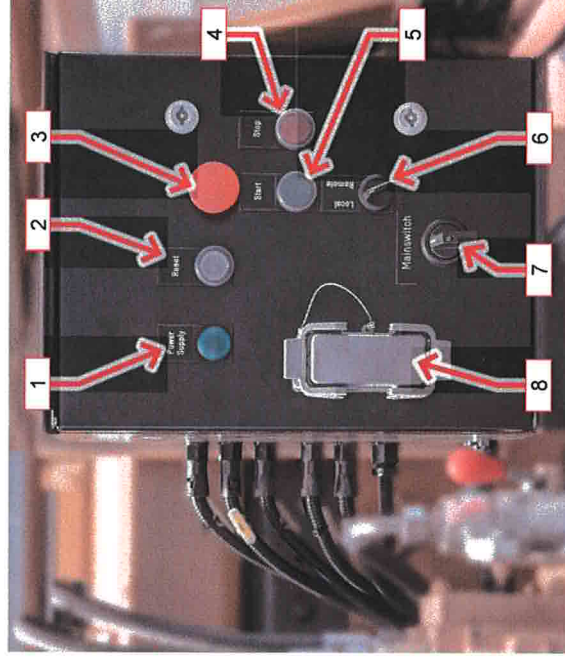
The cable remote control is used for adjustment of the hydraulic support legs while standing at a certain distance from the vehicle (remote).



The cable remote control is connected via the 16-pin plug to the control cabinet of the levelling system.

4.3.6 Control cabinet

The control cabinet of the levelling system is located at the rear left side of the vehicle.



Main switch (7): Starts or stops the levelling system.

ATTENTION

Always retract all four hydraulic support legs and turn the main switch off before vehicle operation! Otherwise material damage may result.

Power supply control lamp (1): After turn on the main switch, the power supply control lamp glows.

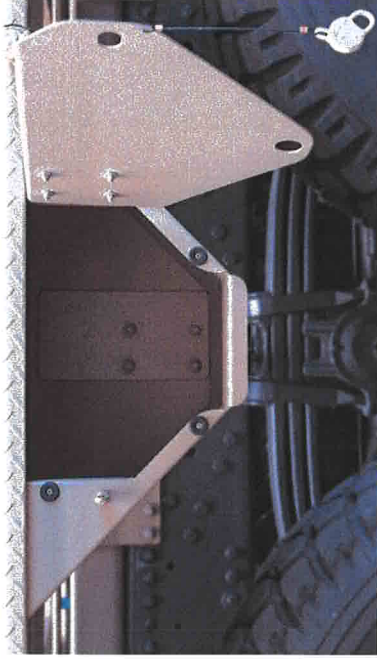
Reset button (2): After starting the levelling system or using the emergency stop button, the relay for emergency stop has to be acknowledged. This has to be done by using the reset button.

If the reset button is pressed longer than 2 seconds, all lamps will be tested on the control cabinet and on the cable remote control.

Local/remote switch (6): Switches between operation with the control box (local) and with the cable remote control (remote).

4.5 Stowage box

There are two stowage boxes on the Container Frame, one on each side. They can be used for stowage of accessories.



Upon delivery the left stowage box contains:

- Twist lock tool and
- Pump handle for emergency operation.

Each stowage box is equipped with a padlock, which has to be locked before vehicle operation.

4.6 Wheel chocks

There are two wheel chocks on the Container Frame, one on each side behind the driver's cab. They are placed closely against the vehicle's wheels to prevent accidental movement.



Both wheel chocks have to be placed correctly and locked with carabiners before vehicle operation.

5 Loading/Unloading

5.1 Loading the Container Frame

WARNING

Crushing caused by container!

Container can slip down from the Container Frame and may lead to severe injuries or death.

- » Do not start to drive before the container is properly secured by all four twist locks!
- » Fully tighten the twist locks!

The ISO containers are placed on four twist locks and then are secured.



- One ISO 20' container 

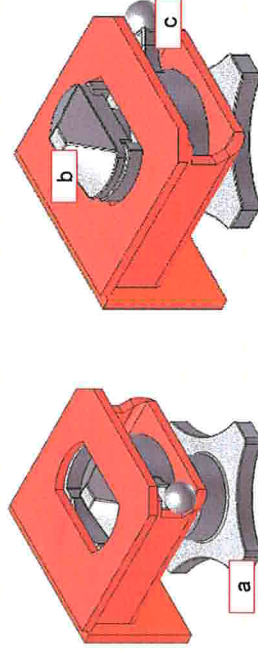
- One ISO 10' container 

Follow the instructions below when loading the Container Frame with an ISO container:

1. Take the twist lock tool from the left stowage box.



Preparing the twist locks



2. Open the nut (a) completely by turning it. Use the twist lock tool.

6 Preparing stationary operation

6.1 Correct order

Follow the correct order when preparing stationary operation of the vehicle with the Container Frame:

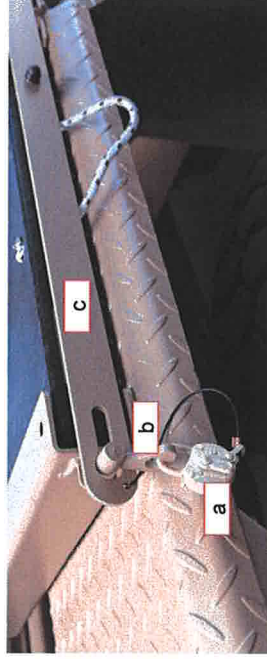
Action	Reference
1. Mount the support leg extensions.	See chapter 6.2 on page 30
2. Position the support plates.	See chapter 6.3 on page 31
3. Chose local or remote operation.	See chapter 6.4 on page 32
4. Start the levelling system.	
5. Acknowledge start procedure.	
6. Lower all four hydraulic support legs.	
7. Stabilise the vehicle in automatic mode.	

6.3 Positioning the support plates

ATTENTION

Always use all four support plates for supporting the vehicle! Otherwise material damage may result.

Follow the instructions below when positioning the support plates beneath the hydraulic support legs:

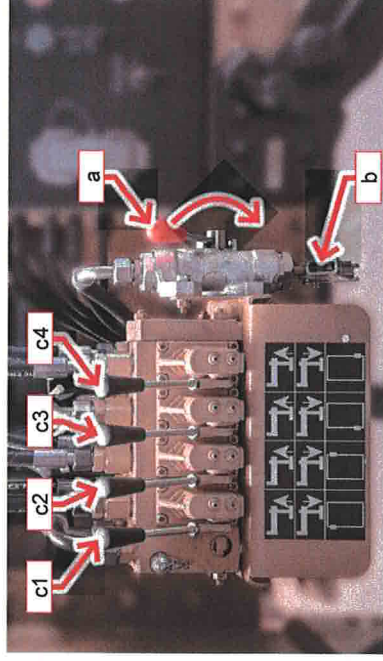


1. Open and remove the padlock (a).
2. Turn the turning bolt (b) to the right and open the flap (c).
3. Remove the support plate.
4. Turn the turning bolt to the right and close the flap.

5. Turn the turning bolt downwards.
 6. Insert the padlock in the turning bolt and lock it.
 7. Repeat steps 1. to 6. for the other support plates.
 8. Position the front support plates beneath the front support legs (correct dimensions see chapter 4.3.3 "Support plates" on page 20).
 9. Position the rear support plates beneath the rear support legs.
- Support plates are properly positioned.

6.5 Emergency operation

If the hydraulic pump does not work, it is possible to use the hand pump. Follow the instructions below when using the hand pump:



1. Push the valve (a) down to the lower position to switch from hydraulic control to emergency control.
2. Mount the pump handle from the left storage box to the connection (b) beneath the valve.
3. Operate the pump handle up and down and press the respective control lever (c) at the same time.

7.2 Adjusting the rear underrun protection

When driving off-road the rear underrun protection can be lifted up to avoid touching the ground.

CAUTION

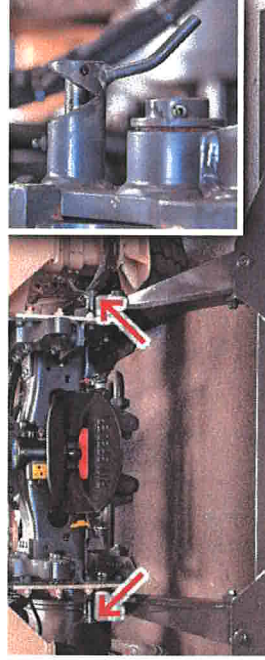
Crushing caused by heavy parts!

Carelessness may lead to injuries.

- » Lift and lower the rear underrun protection carefully with two persons!
- » Wear protective gloves!

Follow the instructions below when lifting up the rear underrun protection with two persons:

1. Turn both spring bolts downwards to open it.



2. Slightly lift the rear underrun protection and turn one spring bolt upwards.
 3. Lift the rear underrun protection completely. The spring bolt locks in place.
 4. Turn the second spring bolt upwards. If necessary, slightly lift up and down the rear underrun protection until the spring bolt locks in place.
- The rear underrun protection is properly lifted up.

NOTICE

Follow the instructions in the same order to lower the rear underrun protection, but instead of lifting up lowering the rear underrun protection.

9 Maintenance and service

9.1 Safety notes

The operators have to ensure that all maintenance and inspection work are carried out by authorised and qualified personnel.

Observe the following safety measures:

- Only do maintenance work if the vehicle remains at a standstill and the vehicle as well as the levelling system is switched off.
- Mount parts again if they were removed during inspection or maintenance work.

9.2 If repair is necessary

This chapter describes action steps to properly maintain and service the Container Frame. If the Container Frame has to be repaired, contact the manufacturer's customer service (see chapter 1.5 "Customer service" on page 7).

9.4 Cleaning the Container Frame

Obey the following advices for cleaning the Container Frame:

- Observe environmental stipulations.
- Wash the Container Frame with enough water.
- Avoid direct solar irradiation.
- Avoid water temperatures higher than 60 °C.
- Do not use aggressive cleaning agents.
- Rinse the sponge frequently and thoroughly to avoid scratching the paintwork.
- Ensure that no water remains in the Container Frame.

ATTENTION

Do not treat hydraulic hoses with solvents, petrol, benzol, petroleum or mineral oils! This could damage the hydraulic hoses.

If high-pressure cleaners or steam-jet cleaners are used, obey the following advices in addition:

- Keep a 30 cm minimum distance between the nozzle and the painted surface.
- Constantly move the water jet whilst cleaning.
- Do not aim the jet directly at door cracks, electrical parts and plug connections or seals.
- All lubrication points must be lubricated afterwards.

NOTICE

New paint should be washed frequently and only with water during the first 6 weeks, until the surface has hardened.

NOTICE

Wash the Container Frame more frequently during winter to remove road salt and salt-containing mud residues.

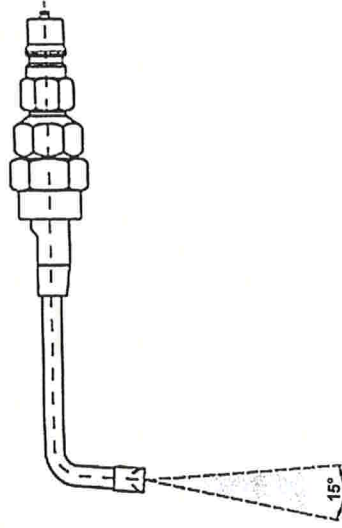
Only use products for cavity and area conservation as described in chapter 9.7 on page 42.

Use the following tools for conservating the Container Frame:

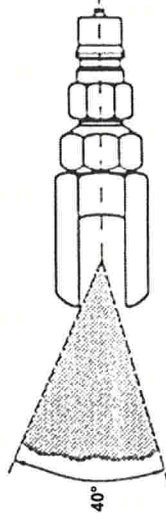
- **Paint-brush**



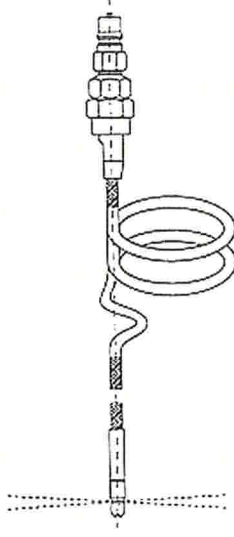
- **Hook probe 15°**



- **Area probe 40°**



- **Flexible probe 360°**



10 Storage

10.1 Storage conditions

The following storage conditions must always be respected:

Environmental characteristics
Storage temperature

-45 °C up to +70 °C

10.2 Storing the Container Frame

NOTICE

Storage of the Container Frame is done when it is mounted on the chassis.

Follow the instructions below when storing the Container Frame on the chassis:

1. Clean the Container Frame (see chapter 9.4 "Cleaning the" on page 39).
2. Lubricate all lubrication points (chapter 9.5 "Lubricating the lubrication points" on page 40).

3. Clean the twist locks and lubricate them with water-repellent grease.
4. Oil all moving parts (e.g. lockings, padlocks).
5. Conserve the Container Frame (chapter 9.6 "Conserving" on page 40).
6. Additionally, conserve the extended support legs.
7. Retract all 4 hydraulic support legs.

ATTENTION

Always retract all four hydraulic support legs before storage! Otherwise material damage may result.

11 Spare parts

11.1 Ordering spare parts

NOTICE

Only original parts and accessories approved by the manufacturer may be fitted. No claims for compensation will be accepted if other parts are used!

When ordering spare parts, please provide the following information:

- Fully filled delivery or order note,
- Vehicle body number and year of manufacture,
- If possible, vehicle type and chassis number,
- Accurate description of the part required or photo of the spare part,
- Number of items required and
- Dispatch mode (parcel, express, freight etc.). If this information is not provided, we shall dispatch the goods at our discretion.

If possible, include individual parts (with tag bearing the part number and address) and indicate whether the old part should be returned. Otherwise they will be disposed of.

Telephonic orders must be confirmed in writing.

11.2 Sources of supply

There are the following possibilities to order spare parts:

Telephone: +43 (0) 5283 501 0

Reachability: Monday to Friday | 7:30 to 16:00

Fax: +43 (0) 5283 501 909

E-Mail: info@empl.at

Internet: www.empl.at