



Installation and operation manual

# LANDING GEARS

Landing gear P and Landing gear H



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### Revision summary

Date	Revision number	Comment
February 2020	01	Initial version
April 2020	02	Updated warranty commitment
September 2020	03	Updated weights Landing Leg S
May 2022	04	Updated S to P (from e-coat to e-coat + powdercoat)
June 2022	05	Updated shoe tightening torque
November 2022	06	Updated troubleshooting table

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## **Preface**

### **Use of this manual**

This Manual is intended for trained and for qualified persons to enable them to perform design, installation and repair tasks on VALX products in an efficient, safe and environmentally sound way.

**TAKE THE TIME TO READ THIS MANUAL THOROUGHLY BEFORE STARTING WORK ON THE TRAILER, LANDING GEAR AND/OR ON OTHER VALX COMPONENTS.**

**KEEP THIS MANUAL IN A SAFE PLACE, BUT READY TO USE WHEN NEEDED.**

**THIS MANUAL REPLACES ALL PREVIOUS VERSIONS, IF ANY.**



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## Pictograms in this manual

### Pictograms for general alerts

In this manual the following pictograms and symbols may be used for general alerts:



#### NOTE

Important instruction, recommendation or tip that you must always observe.



If the safety instruction is not observed, a potential hazardous situation can occur, causing personal injury or damage to the landing gear, the workshop or the environment.

### Pictograms for specific alerts

In this manual the following pictograms and symbols are used for specific alerts:



#### CAUTION

Risk of injury due to heavy weight.



#### CAUTION

Risk of injury: crushing of fingers.



#### CAUTION

Weight exceeds 25 kg.

## Symbols

Sometimes, a picture or a pictogram tells more than text can. For that reason, the maintenance, assembly and disassembly procedures in the chapters 5 through 10 mainly consist of graphical instructions.

In these graphical instructions the following pictograms may be used:

### Tools



#### Use an appropriate torque wrench

Tighten the fastener to the torque (in Nm) given in the left-hand corner.



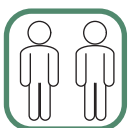
#### Welding

### Lubricants



#### Mobil XHP 222

### Miscellaneous



#### This step requires two trained and qualified service technicians



#### Measure with caliper



#### Measure with tape

## **1 General safety instructions and regulations**

### **1.1 General**

- VALX accepts no liability for any damage or physical injury caused by non-compliance with the safety instructions and regulations in this manual, or by carelessness during any maintenance or repair task on the VALX trailer landing gears.
- Depending on the trailer type, the specific repair or maintenance task(s) that have to be carried out, the workshop conditions, the environmental circumstances and the cargo that may be loaded, additional safety instructions may be applicable. As VALX has no direct control over these specific working conditions or trailer configurations, it is the workshop's sole responsibility to ensure that the national accident prevention guidelines and the local Health and Safety regulations are adhered to. Please inform VALX immediately if you have dealt with unsafe situations that have not been described.

### **1.2 This manual**

- Read this manual thoroughly before performing any maintenance or repair task on the trailer landing gears.
- Keep this manual for future reference. Retain the manual in a safe place in the workshop.
- Carry out the procedures in the order given. Do not change the order of the steps.

### **1.3 Decals and instructions on the trailer landing gear**

- Decals or instructions fitted on the trailer landing gear are part of the safety features provided. They must not be covered or removed, but must be present and legible throughout the entire life of the trailer landing gear. Damaged or illegible decals and instructions must be replaced or repaired immediately.

### **1.4 Warranty and original VALX parts**

- All products of VALX are covered by warranty as stipulated in the "VALX Warranty Conditions". The "VALX Warranty Conditions" can be downloaded from our website [www.valx.eu](http://www.valx.eu).
- Modification and / or conversion of the product without the written consent of VALX is not allowed at the risk of forfeiting all warranty rights.
- When replacing parts, ONLY use original VALX spare parts. Parts approved by VALX for use in trailer landing gears periodically undergo severe tests. As a result, VALX is able to guarantee the quality of these parts.
- VALX can not assess for every single third-party product whether it can be used for VALX trailer landing gears without any safety risk. This applies even if such products have already been tested by an accredited test authority. Therefore, the guarantee becomes null and void if spare parts other than original VALX parts are used.

### **1.5 Maintenance and repair**

- In order to maintain the safe operation and the road worthiness of the trailer, all maintenance tasks must be carried out according to the prescribed VALX service intervals (see the maintenance chart in chapter 6), and in accordance with the operation and service instructions of the trailer builder.
- Maintenance and repair is strictly reserved to trained and qualified service technicians.

#### **1.5.1 Before starting work**

- Make sure that the trailer is properly secured against rolling.
- Support the trailer close to the landing gear so it can't fall down.
- Make sure that unauthorized persons have no access to the working area.
- Make sure that the working area is sufficiently lit and ventilated.
- Dress properly. Do not wear torn or loose fitting clothes, but wear protective clothing. Remove jewelry, watches, etc. to prevent them from being caught in moving parts.
- Wear protective shoes and keep long hair out of the way.

**1.5.2 During work**

- Stay alert and watch what you are doing. Use common sense. Do not work on the trailer landing gear when you are tired or have been taking alcohol, medicine or drugs. Do not smoke.
- Use a hoist when lifting 25 kg or more. Only use suitable and technically perfect lifting devices with adequate lifting capacity built in compliance with all safety measures. Fastening of loads and instructions to the operator of the lifting device are restricted to experienced personnel who are within sight or sound of the operator of the lifting device.
- Only use tools, parts, materials, lubricants and service techniques that were approved by VALX. Do not use contaminated or used lubricants. Used lubricants, cleansing agents and expended landing gear parts must be disposed of in an environmentally safe way.
- Avoid bodily contact with lubricants.
- Never use worn tools and do not leave tools behind on the trailer landing gear or on the trailer.
- Never weld on any part of the trailer landing gear without the prior written permission of VALX.
- Never re-use self-locking fixing materials. Always replace them.

**1.5.3 When work is finished**

- Inspect the landing gear. Check for damage, leakage or defects. Any part removed for maintenance or repair purposes must be refitted and checked immediately upon completion of the work.
- Do not clear a trailer landing gear for operation unless it was established that it is absolutely safe and in perfect working order.

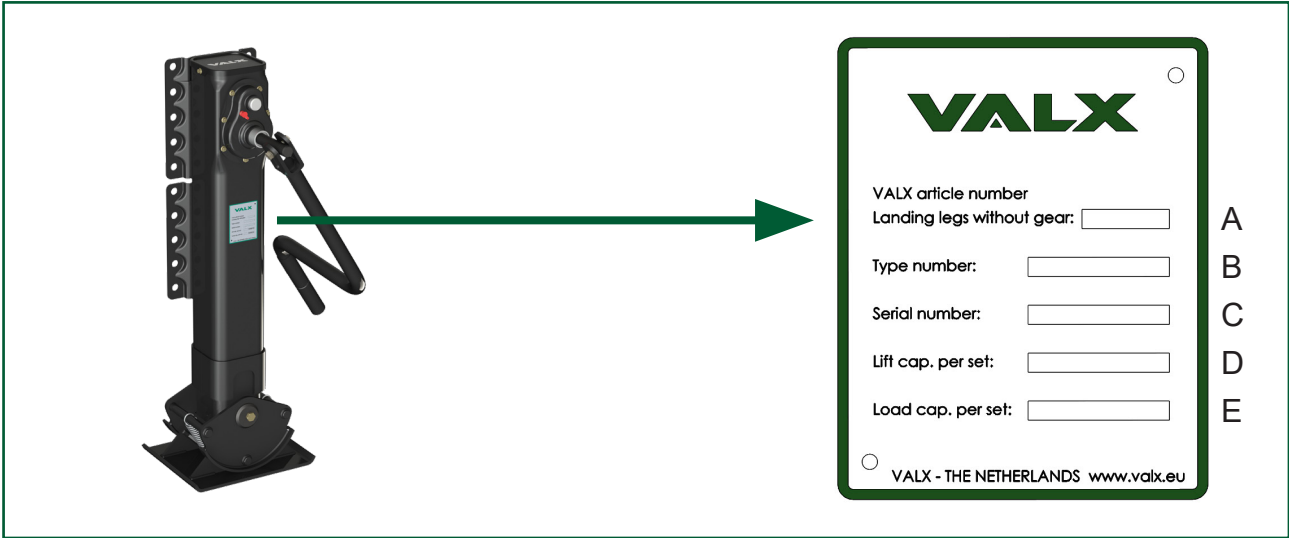
**1.6 A contribution to the protection of our environment**

Please obtain information about recycling or environmentally friendly processing of parts and materials that have been replaced during maintenance or repair tasks.

Almost all used lubricants are considered to be chemical waste. For the disposal of these a specialized company must be contacted.

2 Explanation of the landing gear type code

2.1 Location of the identification plate



2.2 Information on the identification plate

The identification plate consists of the following fields:

- A VALX article number Landing leg
- B Type number (see table next page)
- C Serial number
- D Lift capacity per set
- E Load capacity per set

2.3 Ordering of parts

See [www.valx.eu](http://www.valx.eu) or contact at +31 (0)88-40 58 800.

	Exclusively use genuine spare parts!
	Otherwise, warranty regulations might be violated and product liability risks incurred.

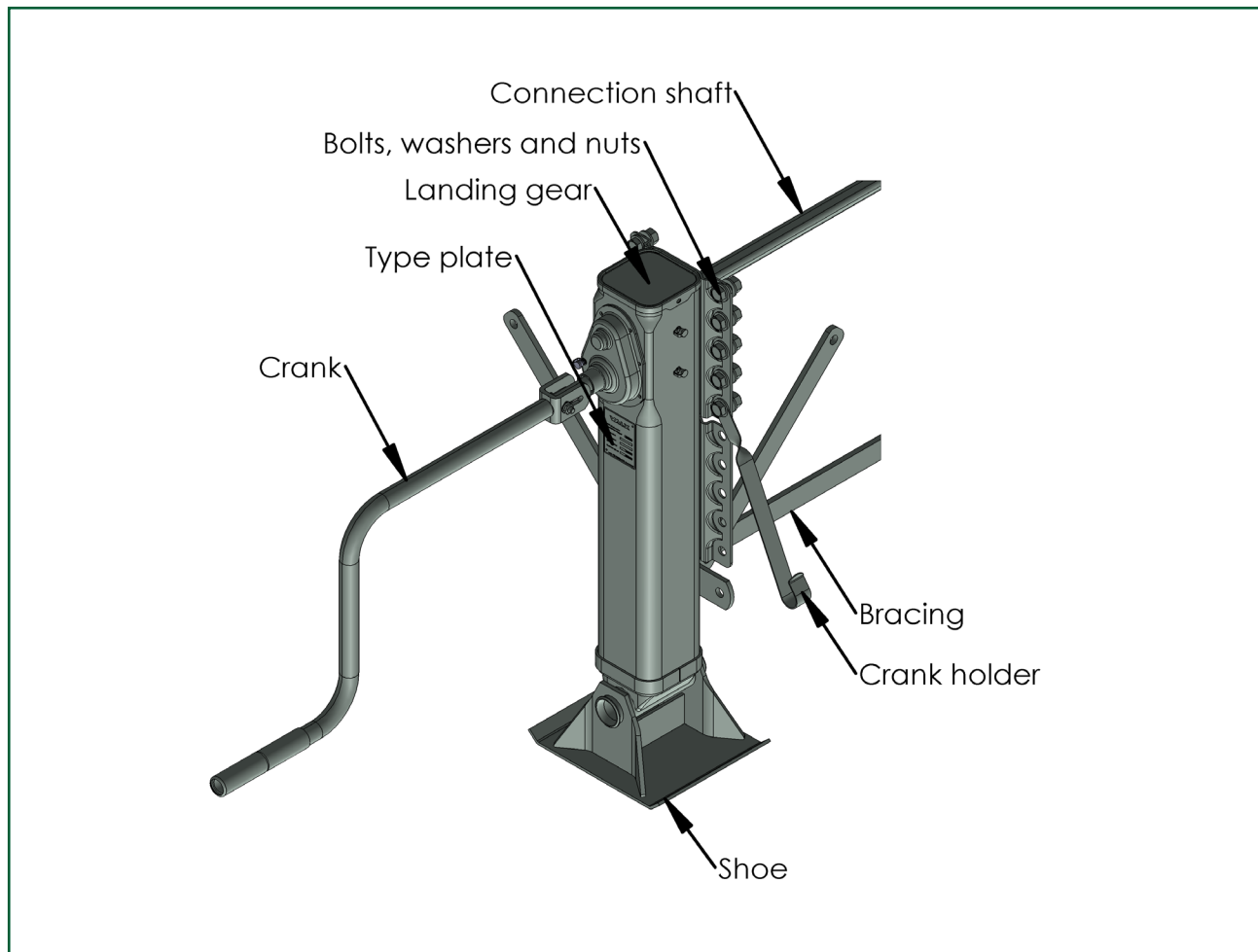
**Landing leg type code**

The landing leg type code is built up as shown in the table below.

Description	Type	Stroke	Mounting plate	Gear	-	Shoe	-	Connection shaft	-	Crank
Heavy duty (80.000 kg) / e-coating	H									
Standard (60.000 kg) / e-coating + powdercoating	P									
Stroke 350 mm		350								
Stroke 400 mm		400								
Stroke 430 mm		430								
Stroke 450 mm		450								
Stroke 470 mm		470								
Stroke 500 mm		500								
Stroke 520 mm		520								
Stroke 550 mm		550								
Stroke 560 mm		560								
Top mounting plate			T							
Bottom mounting plate			B							
Full mounting plate			F							
Landing leg set										
Landing leg with gear				G						
Landing leg without gear				W						
Rocking shoe						A				
Roller shoe						R				
Compensating shoe						S				
Sand shoe						T				
Low sand shoe (= LT)						L				
No shoes										
Connection shaft								1500		
Crank										465
Example	P	450	F	G	-	S	-	1500	-	465

### 3. Landing gears complete

#### 3.1 Overview



#### NOTE

The landing gears are intended for installing on a trailer vehicle. They provide support during the coupling and uncoupling, as well for adjusting the height of the laden or unladen trailer.

The landing gear may only be used if the relevant operating and service regulations of the vehicle manufacturer and the landing gear are observed. Operating the vehicle with a damaged landing gear is prohibited.

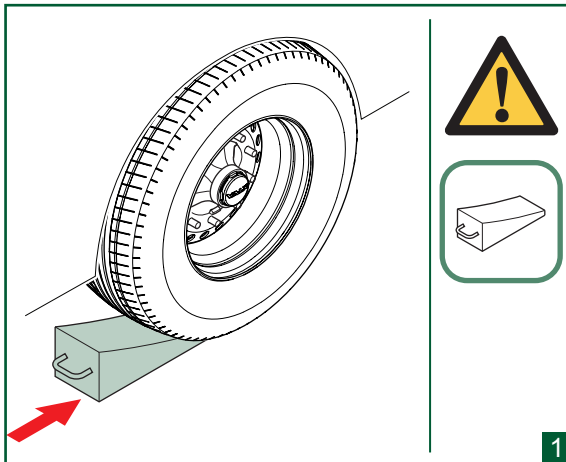
Safe operating and functioning can only be guaranteed if all the instructions, settings and performance limits for the product will not be exceeded.

Any other usage requires the written approval of Valx B.V.



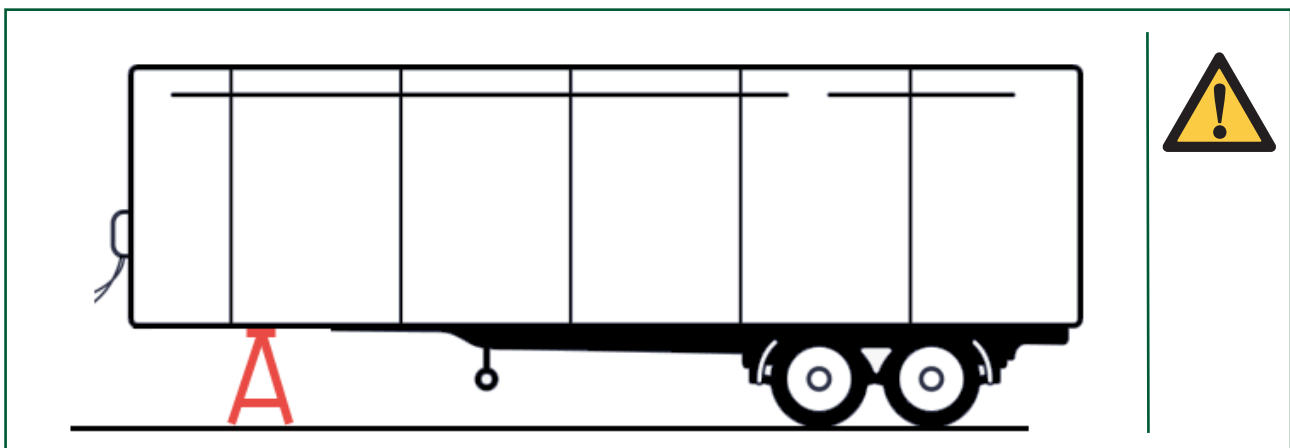
## 4. Installation

### 4.1 Place the wheel chocks



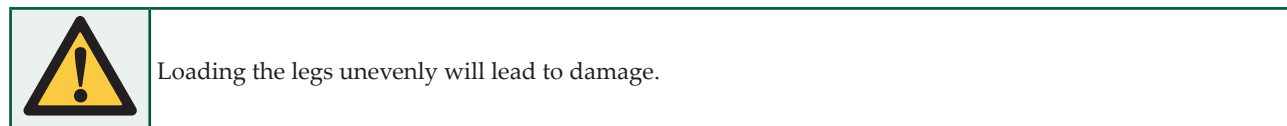
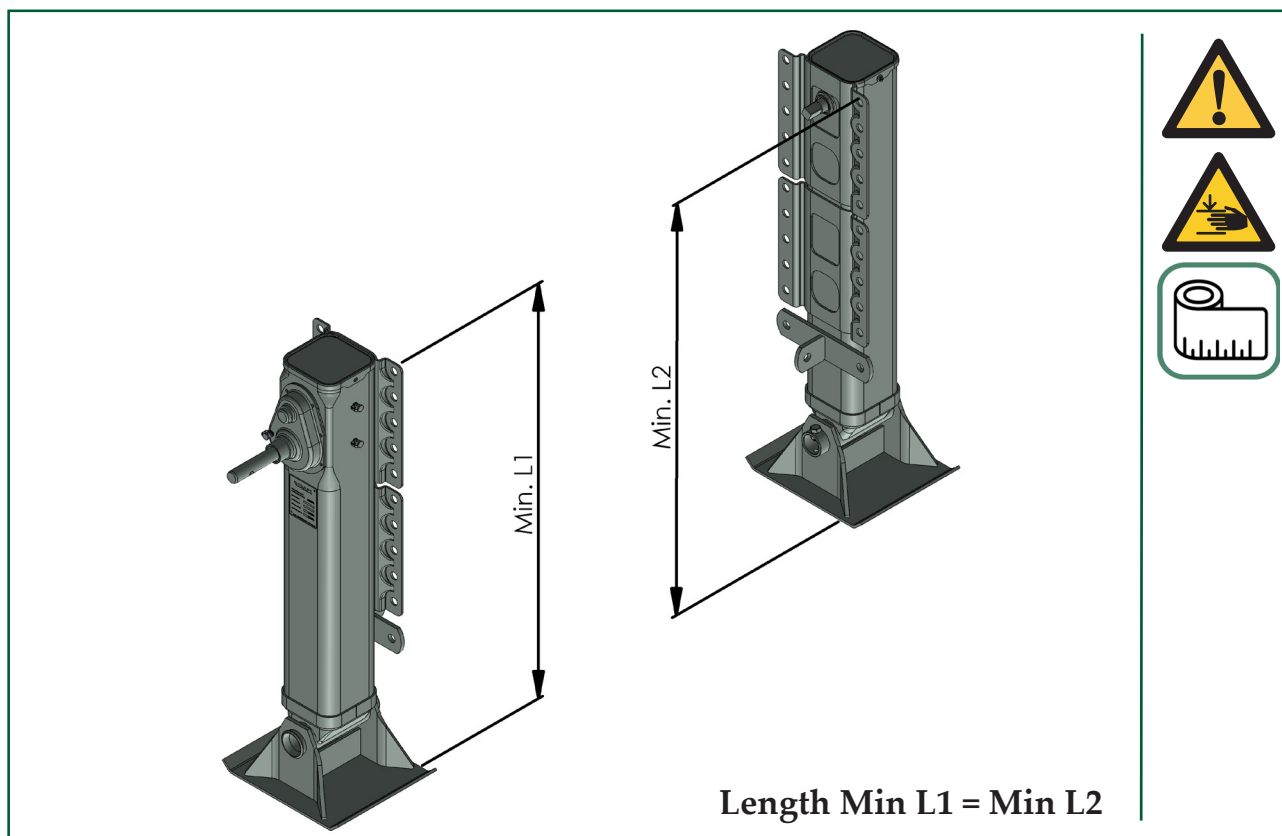
Position the trailer on an even surface and use wheel chocks to secure the trailer against rolling away.

### 4.2 Support trailer

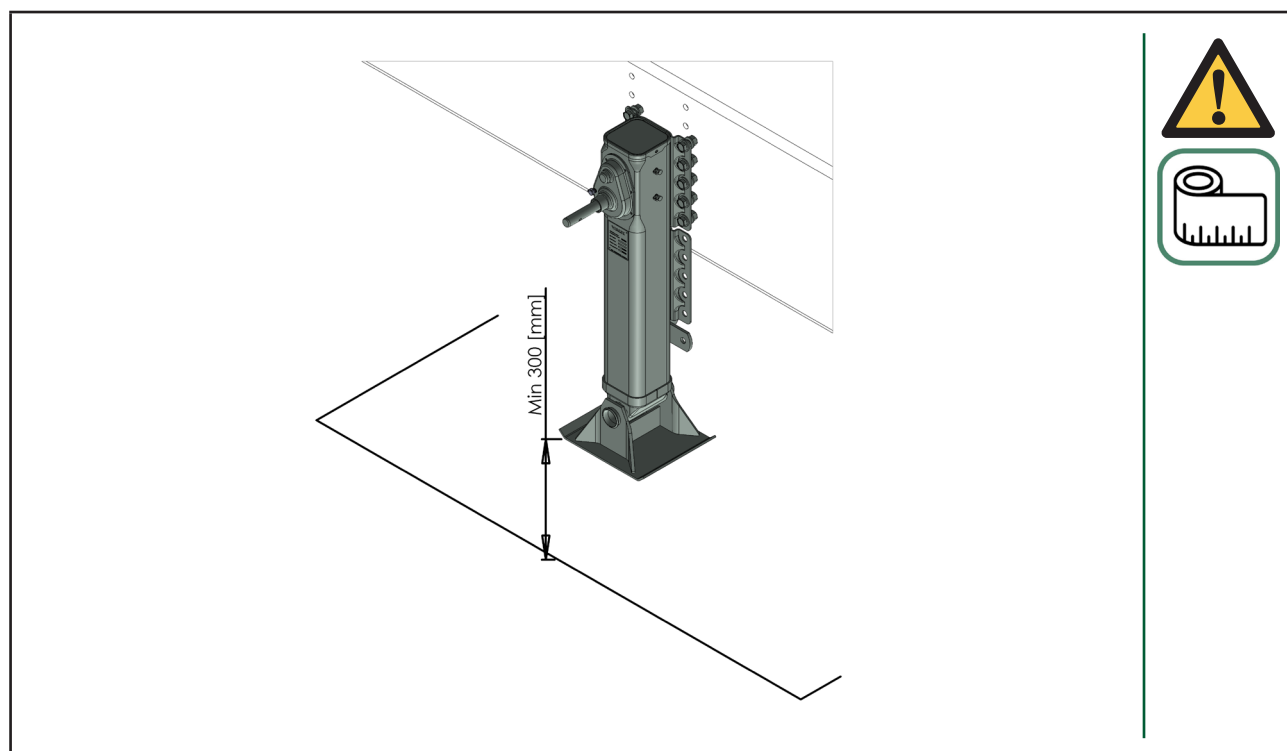


Support the trailer so it cannot fall down.

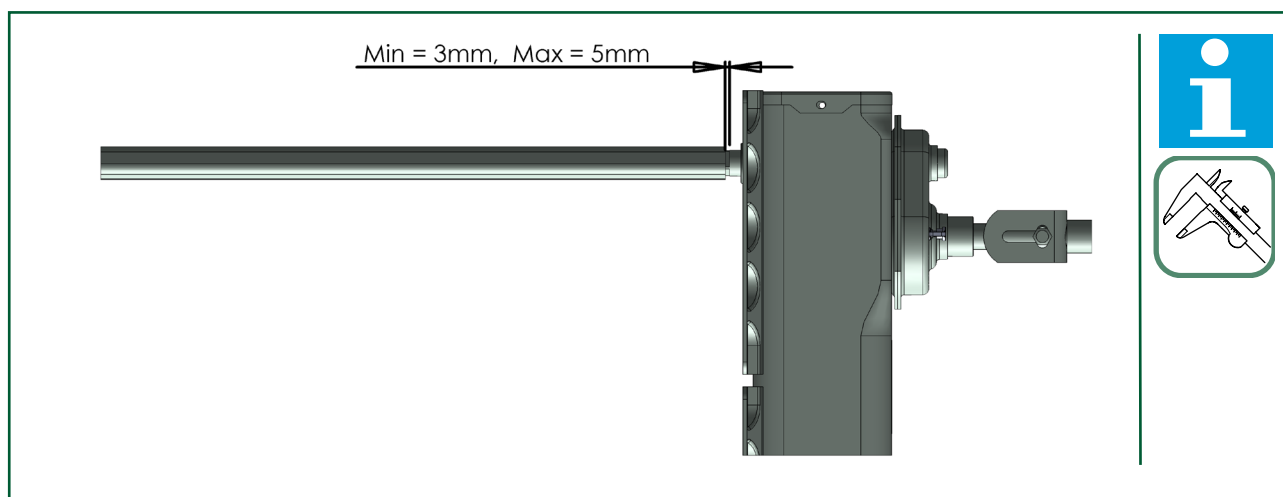
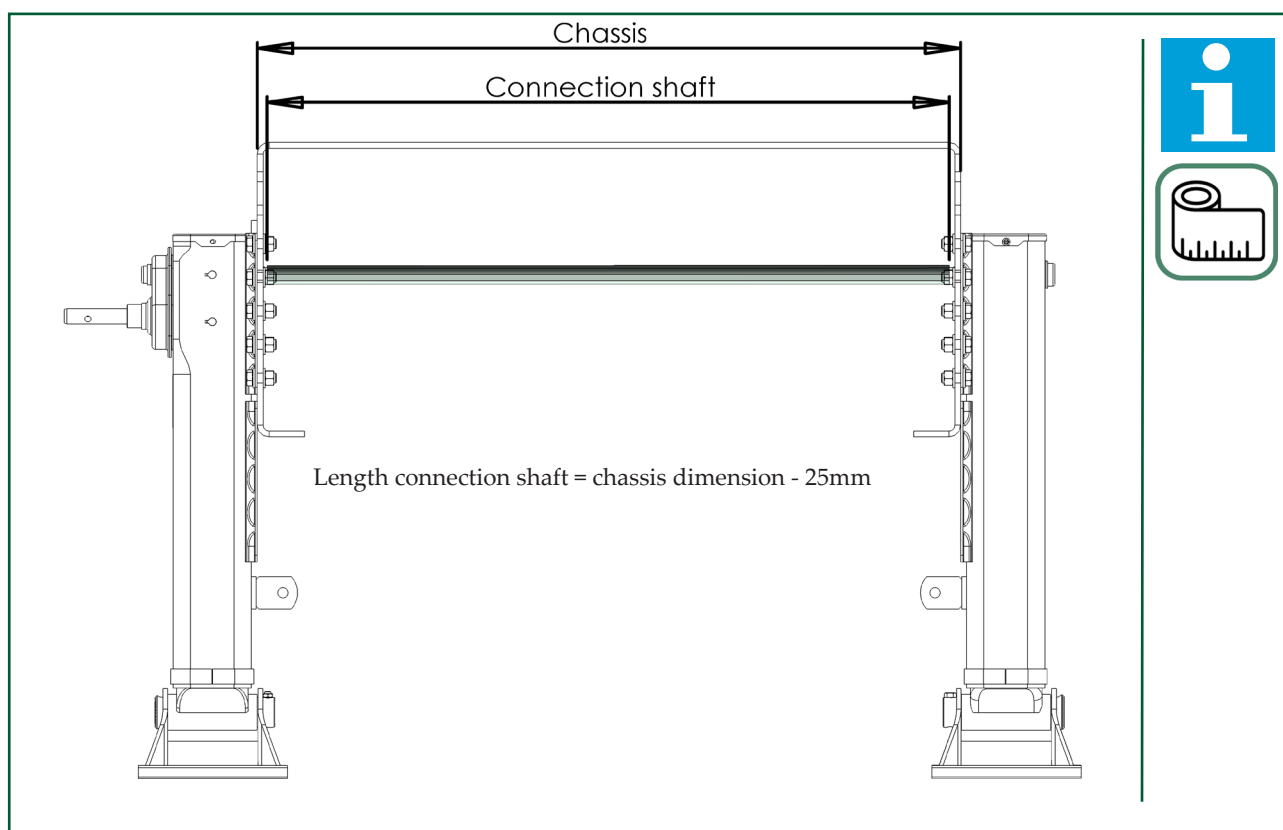
## 4.3 Retract both landing legs



## 4.4 Set minimum ground clearance

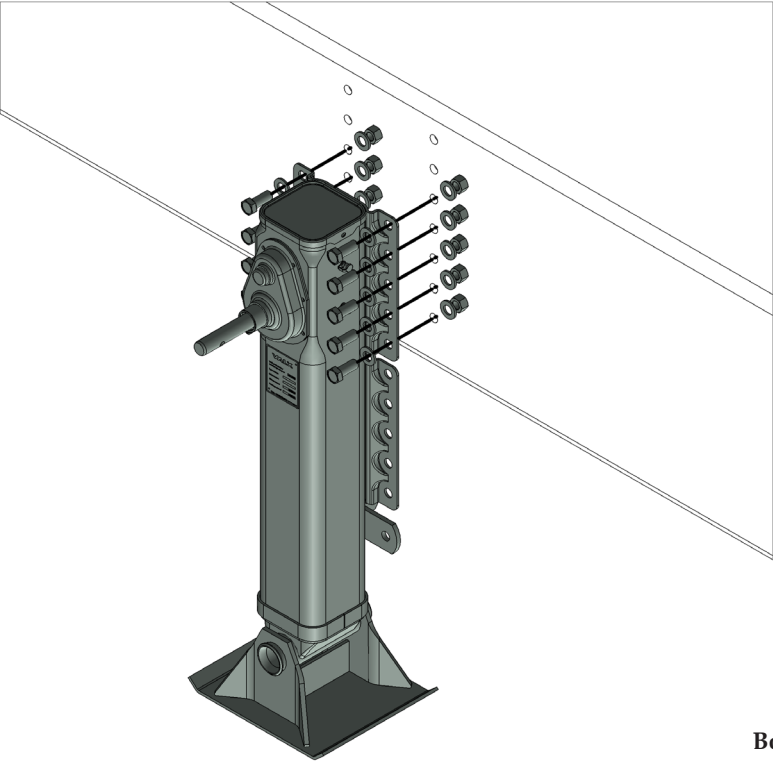







#### 4.5 Measure and adjust the connection shaft



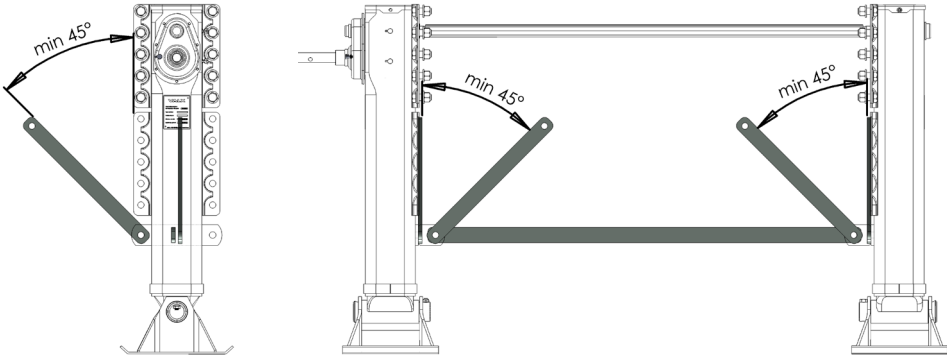
	Check/measure the length of the connection shaft and adapt if necessary.
	A sliding gap of 3-5mm must be maintained.



4.7 Mounting the landing legs






**Bolt amount: 2x10**





**Bolt amount: 18**



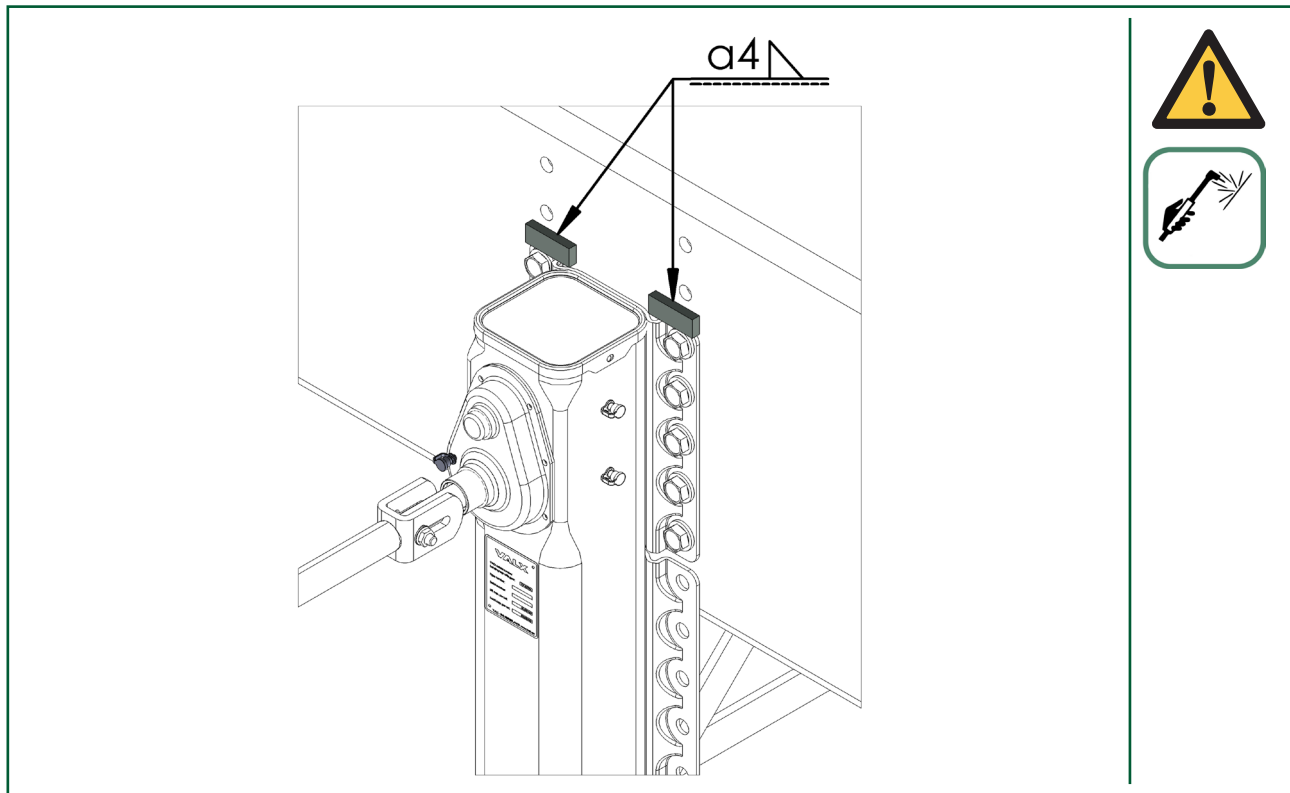
Use at least 10 bolts per landing leg.

All bolts, nuts and washers must be class 10.

Torques

Item	Size	Amount	Width across flats	Torque (Nm)
Landing legs	M16 x 1.5	2x10	24	300 Nm ± 10 Nm
Bracing	M16 x 1.5	1x8	24	300 Nm ± 10 Nm
Shoe fastener for tapered cap	M12 x 1,75	2	19	100 Nm ± 10 Nm
Shoe fastener for straight cap	M14 x 2	2	22	135 Nm ± 10 Nm

#### 4.8 Weld stop blocks (only for H landing legs)



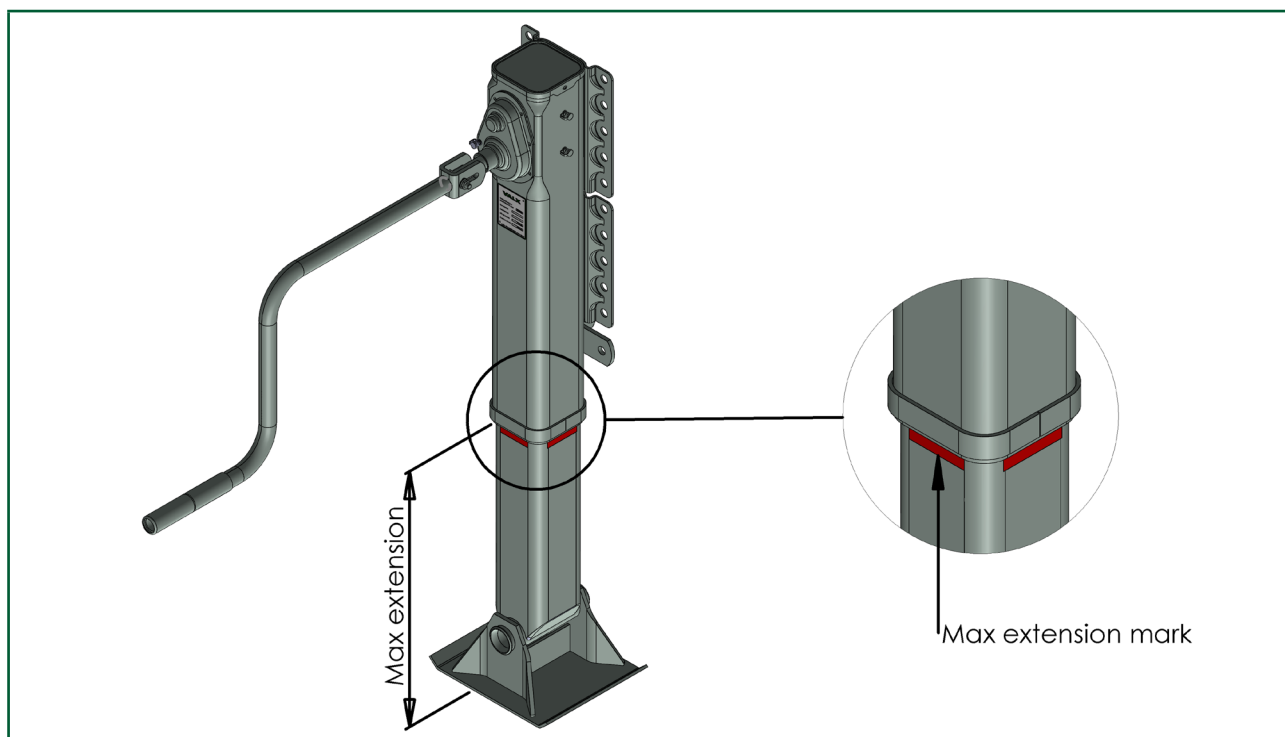
For H landing legs with a static capacity of 80 [t] per set, weld 2 stop blocks on the mounting bracket of the trailer.

## 5. Operation

### 5.1 Safety instructions

Carry out the following safety instructions before taking the landing gear into operation.

- The landing gear must only be operated by authorized personnel.
- Before operating the landing gear, the vehicle has been secured to prevent it rolling away.
- Make sure no person is under the trailer vehicle when coupling and uncoupling.
- Make sure no person is under the trailer vehicle when it is being supported.
- Make sure no person is under the trailer vehicle during operating the landing gear.
- Only park the trailer vehicle on a even surface
- When supporting the vehicle, make sure the ground underneath is sufficiently firm, with a suitable base being provided if necessary.
- The landing gear shoe must be freely movable.
- Low or high gear must always be engaged.
- When releasing the crank, remember it may recoil.
- The landing legs always need to be fully retracted before the vehicle comes in motion.
- When the vehicle is in motion, always place the crank in the crank holder.
- The landing gear must be in proper condition, driving with a damaged landing gear is prohibited.
- Do not exceed the lower lifting limit of the landing legs (red line).



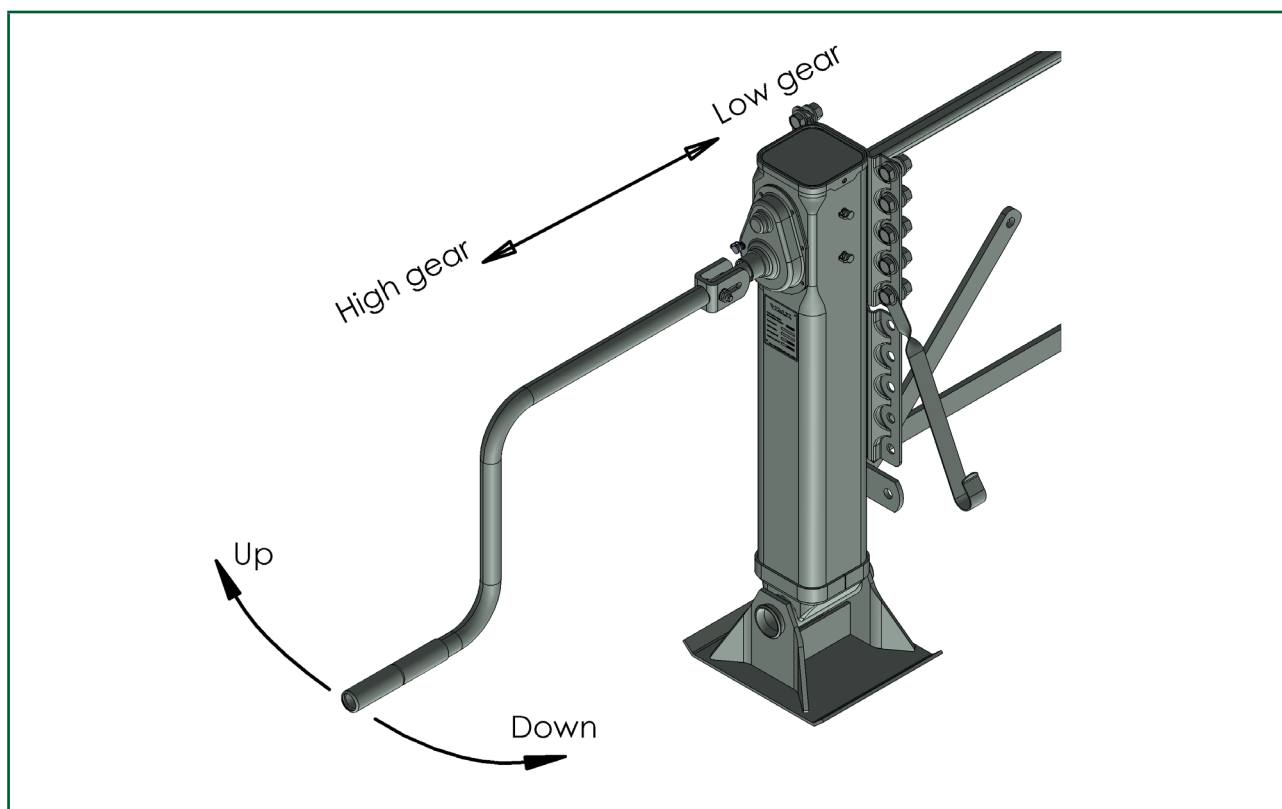
## 5.2 General operations

### High gear

- Function: To lower and retract the landing gear quickly and to bridge ground clearance.
- Gear change: Pull out the crank fully until the gear engages, a slightly turning motion facilitates the gear change.

### Low gear

- Function: To raise and lower the laden and unladen trailer vehicle.
- Gear change: Push the crank in fully until the gear engages, a slightly turning motion facilitates the gear change.



## 5.3 Un coupling the trailer vehicle

- Check the landing gear for damage and have any damage repaired before use.
- Park the trailer on a firm and level surface, using a base if necessary.
- Secure the vehicle from rolling away.
- Engage high gear and wind down until it touches the ground.
- Switch to low gear and adjust height if needed.
- Mount the crank handle in the crank holder.
- Uncouple the towing vehicle.

## 5.4 Coupling the trailer vehicle

- Engage low gear.
- Adjust the coupling height by rotating clockwise (raise) or counter-clockwise (lower).
- Couple the towing vehicle.
- Fully retract the landing gear, low gear till shoe is free from the ground, then high gear.
- Mount the crank handle in the crank holder.



Please observe the general safety instructions before operation!

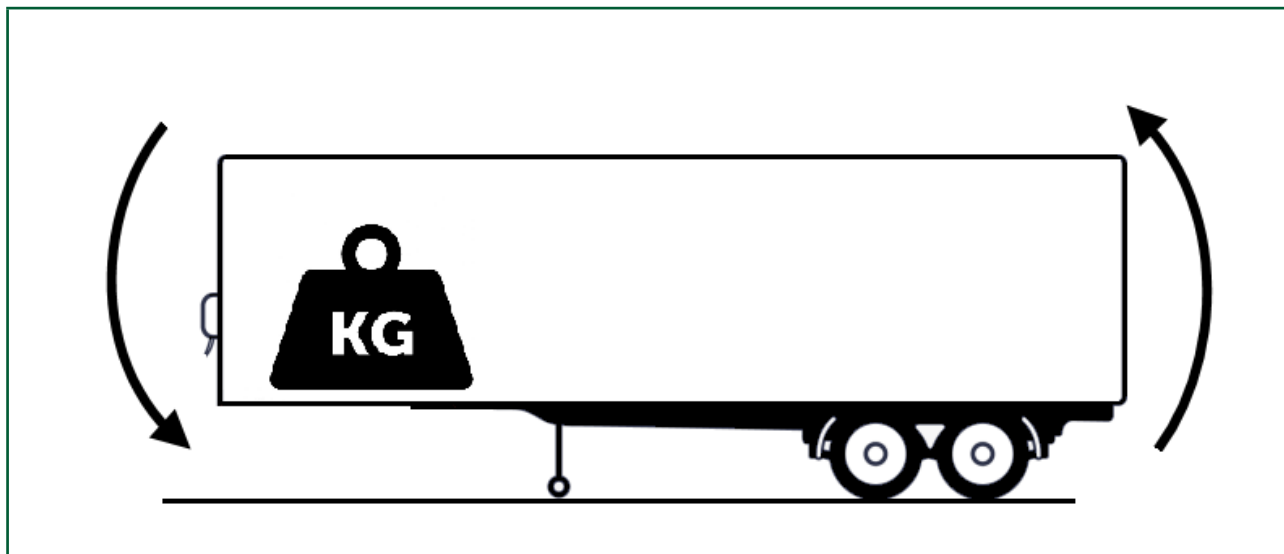
Always check the landing gear for damage before use.

Beware of recoil when releasing the crank handle.

Do not move the uncoupled trailer.

**5.5 Loading the supported vehicle**

The supported trailer vehicle may only be loaded using a crane or forklift. Do not exceed the centre of gravity of the vehicle during the loading procedure.





## 6. Maintenance

### 6.1 Periodic maintenance and inspection



#### NOTE

As road conditions may vary from one country to another, and specific use of the trailer landing gear may differ per haulier, the maintenance intervals given below are only indicative. The maintenance tables differentiate between normal use (X) and frequent- or off road use (0).

On-road use is when a vehicle drives on roads with sealed and metalled surfaces (like concrete or asphalt). Off-road use is when a vehicle is leaving the road with sealed and metalled surfaces (like a gravel road), even if it is for a short period of time.

Frequent use is when the the landing legs are turned up and down more than once a day.

The specified maintenance intervals are reference values. They must be adhered to as minimum values. External influences as a result of use or climatic conditions may make it necessary to shorten these intervals.

Inspection item	Maintenance task	maintenance interval				
		every use	every 3 months	every 6 months	every year	Annually after the first 3 years
Landing gear complete	Visual check for cracks an deformation	X/0				
Crank handle and bolts	Check for loss	X/0				
Spindle and spindle nut	Check for play, wear and damage			0	X	
Spindle and spindle nut	Grease the spindle and spindle nut				0	X
Transmission	Grease the transmission				0	X
Securing bolts	Torque check			0	X	



Damaged landing gear must be repaired or replaced immediately.

Operating with defective landing gear is not permitted.

In case of hard turning, the spindle and spindle nut must be relubricated immediately.

### 6.2 Cleaning

The landing gear is cleaned along with the vehicle, no special cleaning is required. Do not aim high-pressure cleaner directly at the area around the gear. After cleaning the vehicle with high-pressure, all lubrication points must be re-lubricated.



Any loose stones and course dirt must be removed from the landing gear immediately.

After cleaning the vehicle with high-pressure, all lubrication points must be re-lubricated.

## 6.3 Lubricants

### Greasing the transmission.

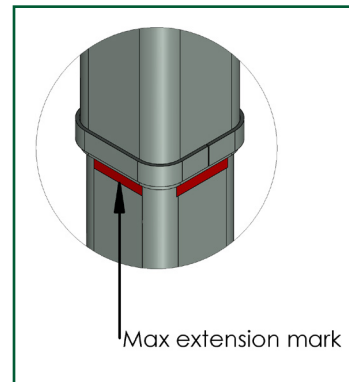
Initially after 3 years, then annually.

- Remove the grease nipple cover (1 and 2).
- Fill the lubrication point (1 and 2).
- Re-attach the grease nipple cover (1 and 2).

### Greasing the spindle and spindle nut.

Initially after 3 years, then annually.

- Screw out the leg as far as possible, till the red line.
- Remove the grease nipple cover (3).
- Fill the lubrication point (3).
- Wind the spindle in as far as it will go, then out and in again.
- Re-attach the grease nipple covers on both lubrication points (3).

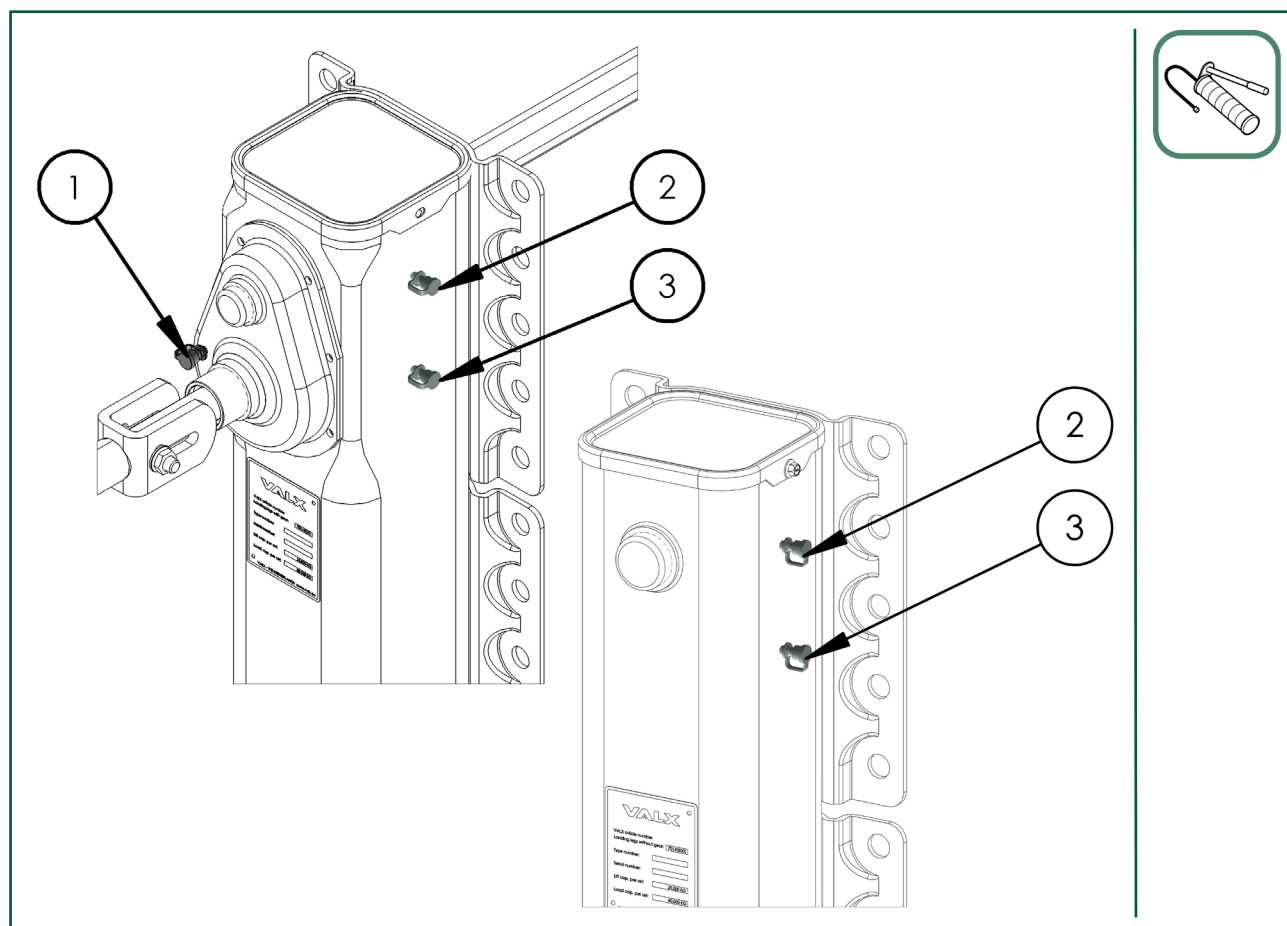


### Greasing amount:

- Lubrication point 1: 100 [g]
- Lubrication point 2: 200 [g]
- Lubrication point 3: 100 [g]



Do not open the gearbox!



## 6.4 Troubleshooting

Problem	Specification	Possible cause	Solution	Part number
The landing leg cannot be extended or retracted	Only not working in high gear but working in low gear	Defect gear shaft	Replace the gear shaft	70109043
		Defect small gear wheel	Replace the small gear wheel	70109048
	Only one leg doesn't work	Defect connection rod	Replace the connection rod	70109044
		Connection inner leg to spindle nut failed	Replace the defect landing leg	
	Not working in high and low gear	Defect gearbox	Replace the landing leg with gearbox	
		Bended landing leg or spindle	Replace the bended landing leg	
		Defect spindle or spindle nut	Replace the defect landing leg	
The landing leg can only extend or retract with difficulty	Check for noise, dirt or other issues that could explain the problem	Too much friction between spindle and nut	Lubricate the spindle and gearbox	
		Dirty landing leg	Clean the landing leg	
		Bended landing leg or spindle	Replace the defect landing leg	
		Connection rod to tight	Shorten the connection rod	
		Bearing bush landing leg is pushed in and clamping the gearshaft	Set the bearing bush back in it's original position	
The landing leg foot is hanging loose or is lost		Bolt cap broken, cap lost	Remove broken bolt and assemble new bolt and cap	
		Bolt and cap lost	Assemble new bolt and cap	
		Foot lost	Remove broken bolt and assemble a new foot using new bolts and caps	

## 7.1 Landing gear P

Technical drawing of the VAK 1500 P landing gear, showing side and front views with dimensions in mm.

**Side View Dimensions:**

- Total length: 1500 mm
- Main body length: 1429 mm
- Tail section length: 77 mm
- Bracing length: 1500 mm
- Bracing diameter:  $\varnothing 17.5$
- Bracing offset: 53.5 mm
- Main body diameter:  $\varnothing 28 \times 4$
- Main body offset: 148 mm
- Main body offset: 37.5 mm
- Main body offset: 445 mm
- Main body offset: 70.5 mm
- Main body offset: 68.2 mm
- Main body offset: 375 mm
- Main body offset: 195 mm
- Main body offset: 300 mm

**Front View Dimensions:**

- Total width: 558 mm
- Main body width: 273 mm
- Main body width: 273 mm
- Main body width: 190 mm
- Main body width: 17.5 mm
- Main body width: 57 mm
- Main body width: 9x57 = 513 mm
- Main body width: 133 mm
- Main body width: 110 mm
- Main body width: 79 mm

**Other Dimensions:**

- Stroke: 190 mm
- Stroke: 110 mm

**Labels:**

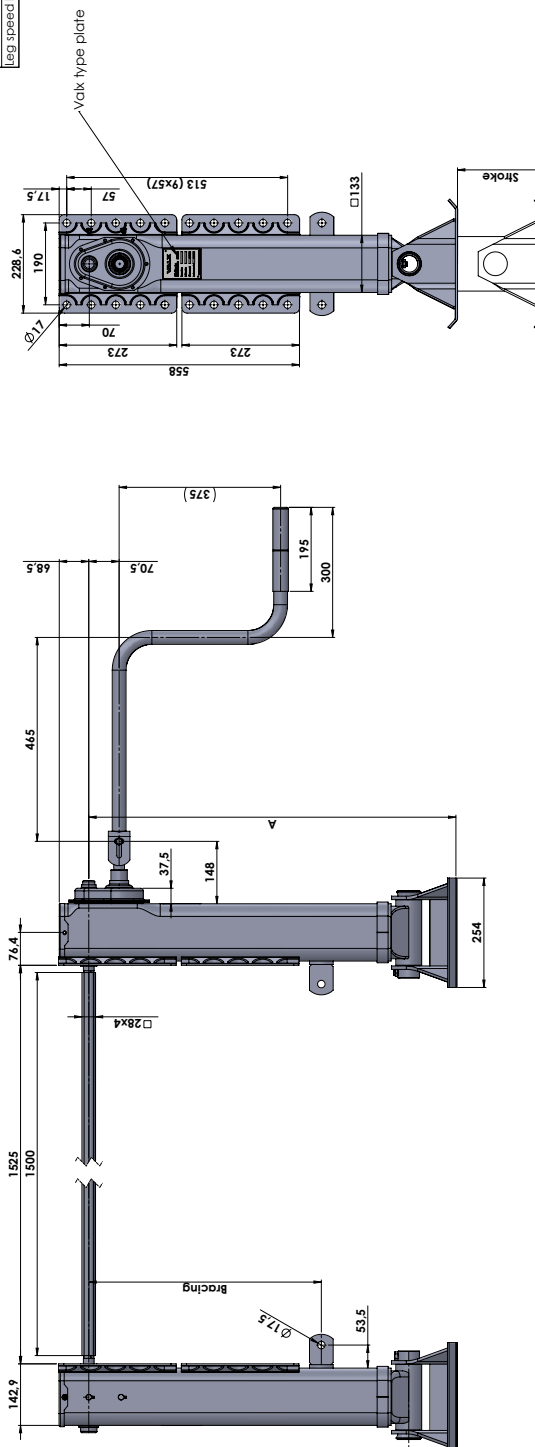
- Vak type plate
- Stroke

**Technical Specifications:**

- Part: Landing gear P
- Material: P = e-coat + powdercoat
- Version: 10/2020
- Standard: Landing gear P Green Book

**Dimensions are in mm**

Lift capacity	25T
Static load capacity	80T
Leg speed low gear	0.87 mm/r
Leg speed high gear	11.64 mm/r



information purpose only

1110	Landing gear H	1901/09/92
1110	Landing gear H	1901/09/92

Dimensions are in mm



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