

U ***SER MANUAL***

Reachforks®

Extension Range - 17B, 24B TFE

Number 6926044-R2



KOOI

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Definitions



Warning:

Text blocks marked by a “Warning” icon (as shown on the left) and starting with the text “ **Warning:**” provide information on actions which may result in serious injury.



Caution:

Text blocks marked by a “Caution” icon (as shown on the left) and starting with the text “ **Caution:**” provide information on actions which may result in damage to the Reachforks, parts of the Reachforks or goods.

“*Only applies to:*” texts (italics) indicate that a text only applies to a certain situation or certain type of Reachforks.

Note

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Quality Standards/Norms and Directives

Cascade KOOI complies with the following quality standards: ISO 9001

Reachforks comply with the following norms/directives:

- ISO 13284 – Fork Arm Extensions and Telescopic Fork Arms;
- ISO 4406 – Hydraulic Fluid Power – Fluids – Method for Coding the Level of Contamination by Solid Particles
- ISO 2328 – Forklift Trucks – Hook-On Type Fork Arms and Fork Arm Carriages
- CE (2006/42/EC) – Machinery Directive
- ISO 3834-2 Quality Requirements for Fusion Welding of Metallic Materials - Part2: Compressive Quality Requirements
- CE (94/9/EC) – ATEX (**only applies to forks with an ATEX name plate!**)

Reachforks are randomly subjected to dynamic testing in accordance with ISO 2330.

Safety

**Warning:**

Do not ride on the Reachforks or on the load.

**Warning:**

Do no walk or stand under the Reachforks.

**Warning:**

Do not reach through the mast of the forklift truck.

**Warning:**

Do not load the Reachforks beyond the limits of the lifting capacities and load center stipulated by the manufacturer.

**Warning:**

Do not weld anything onto the Reachforks without the express permission of the supplier. Welding carried out without permission shall void any warranty.

**Warning:**

Do not use faulty Reachforks before they have been either professionally repaired or replaced.

**Warning:**

Do not carry out maintenance work on the Reachforks while there is pressure in the hydraulic system (remove key from forklift ignition switch).

**Warning:**

Do not place limbs between pallet stops and the inner fork (vertical section) of the Reachforks. If the load shifts, limbs can become trapped which can result in serious injury.

**Warning:**

Do not use the Reachforks in areas where the temperature is below -30°C (-22°F) unless otherwise agreed with the manufacturer.

**Warning:**

Do not extend or retract Reachforks of types 'REE' and 'RGE' with load. These types are extension forks only.

**Caution:**

When leaving the forklift the engine must be switched off and the handbrake applied.

**Caution:**

Bear in mind the space above and beneath the Reachforks.

**Caution:**

The load must be distributed as evenly as possible on the Reachforks and may consist of one or multiple pallets.

**Caution:**

Retract the Reachforks as soon as possible.

**Caution:**

If possible, retract the Reachforks before driving.

**Caution:**

Always drive with the Reachforks in the lowest possible position.

Identification

Type plate legend:

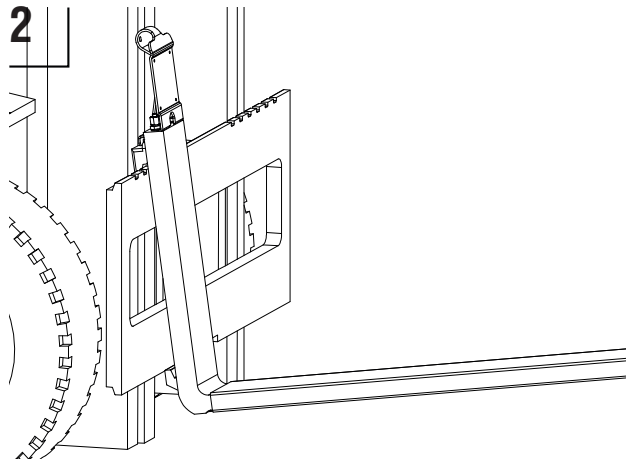
	Type Description		Weight
	Serial Number		Max. Capacity on Retracted Load Center
	Retracted Center of Gravity		Max. Capacity on Extended Load Center
	Extended Center of Gravity		Maximum Allowed Oil Pressure
	Retracted Load Center		Production Year
	Extended Load Center		Extra Information
	<p>Warning: Never exceed the maximum truck capacity as seen on the truck type plate. Rated capacity of both truck and attachment is the responsibility of the original truck manufacturer and may be less than the capacity shown on the attachments type plate.</p>		

Mounting type description of Reachforks:

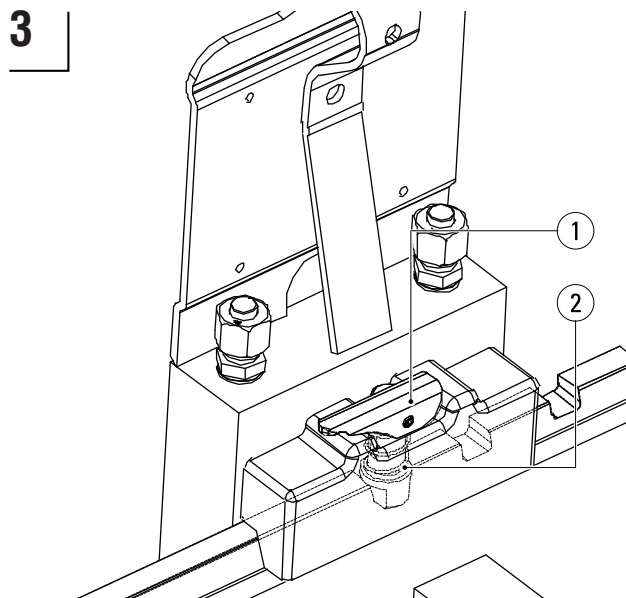
	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>
type															
no. of cylinder per fork															
capacity X 100 kg															
retracted length (mm)															
stroke (mm)															
mounting															

Assembly

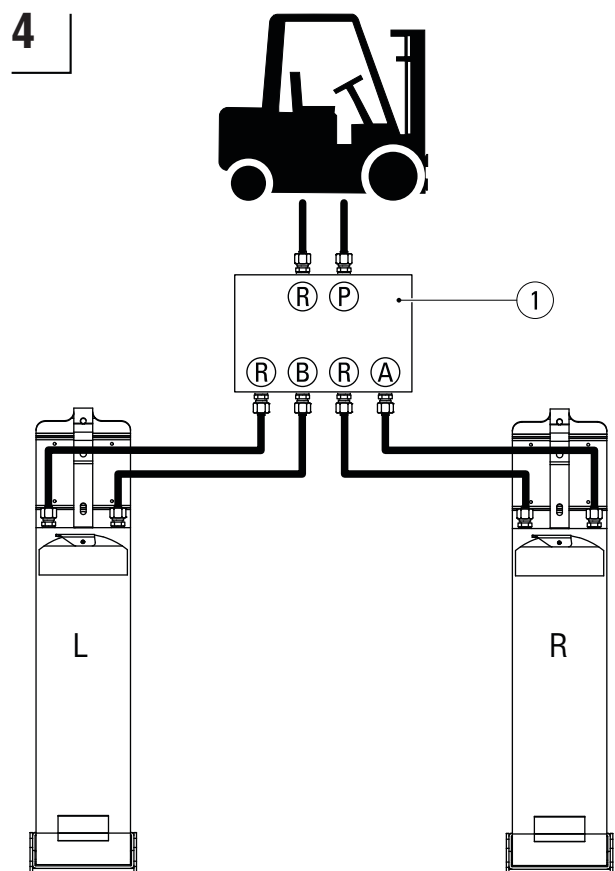
- 1 The Reachforks type plates are stamped with an 'L' and an 'R'. Mount the Reachforks on the left (L) and right (R) as viewed from the forklift operator's seat.



Slide the Reachforks onto the carriage plate.



Make sure that each of the Reachforks locking pins (2) drops into one of the notches on the carriage plate. Use catch (1) before operating.



Connect the Reachforks to the hydraulic system via the flow divider (1).

Type Reachforks	Recom- mended oil flow	Recom- mended hose diameter	Maximum operating pressure	Connection
REE2	7,5-12,5 (L/ min) 2-3.3 (gal/ min)	3/8"	250 bar (3626 psi)	12L / 10L / 8L / 7/16" JIC (USA) / 9/16" (USA)

- 5 Bleed the hydraulic system:

- Tilt the forklift truck mast forwards and backwards several times.
- Tilt the forklift mast forwards and slide the Reachforks in.
- Extend and retract the Reachforks several times.







Check that hydraulic hoses are unobstructed and that there are no oil leakages.

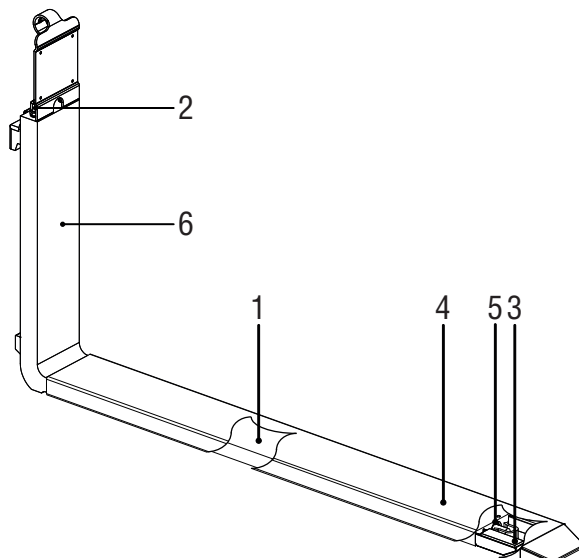
Working with Reachforks

To minimize wear, avoid allowing the Reachforks to come in contact with the ground during operation. In order to reduce wear:

- The chains in the forklift mast can be shortened so that the Reachforks cannot reach the ground.
- The manufacturer can replace the wear-resistant plate under the sleeve when worn out.

Maintenance Schedule

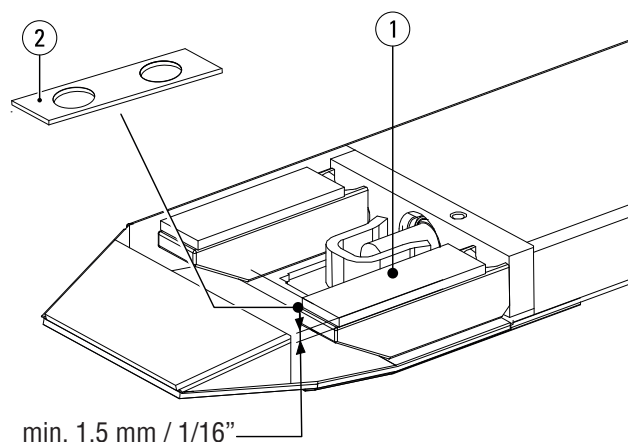
Nº	Description	Weekly	Monthly	6 months or every 1000 hours	Annually or every 2000 hours
1.	Grease the underside and topside of the inner fork				
2.	Check inner fork for leaks				
3.	Check wear strips for any sign of wear				
4.	Check for and remove any dirt in the sleeve				
5.	Check for any cylinder head leaks				
6.	Check inner forks in accordance with ISO 5057 standards				



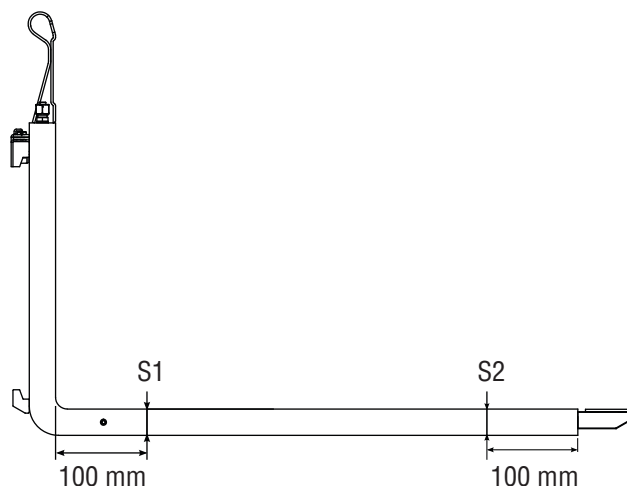
Notes on 'Maintenance Schedule'

- Recommended lubricating grease: Nova - tex EP2 (point 1).
- In the event of leakage, immediately remove the forks from the forklift and contact your supplier (point 2).
- If defects are detected, solve the problem / replace parts before proceeding to work with the Reachforks.
- See chapter on 'Instructions for Replacement of Sleeve' and 'Instructions for Replacement of Hydraulic Parts' for further explanation about replacing parts and required tools.

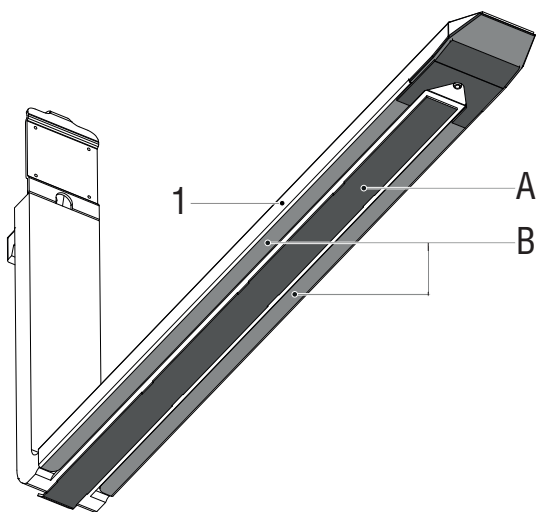
Wear



The thickness of Wear Strips (1) may not be less than 1.5 mm (1/16"). When Wear Strips (1) have worn to this thickness, replace them or fill with spacers (2) (Art. N° RE0092002). See point 3 of the Maintenance Schedule.



The inner fork must be replaced when S1 is 5% thinner than S2. See point 7 of the Maintenance Schedule.



When surface A (dark grey, integrated wear plate) is worn to the extent that it is level with or below surface B (light grey), then the sleeve (1) must be replaced or fitted with a welded-on wear plate. For more information about welded-on wear plates, please contact your fork supplier. See point 4 of the Maintenance Schedule.

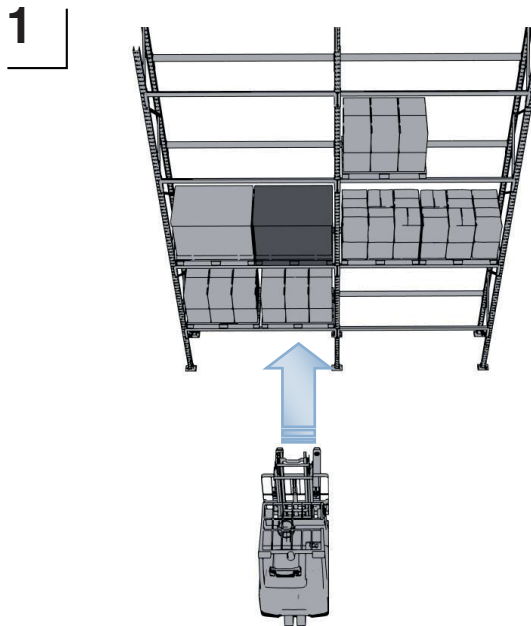


Caution:

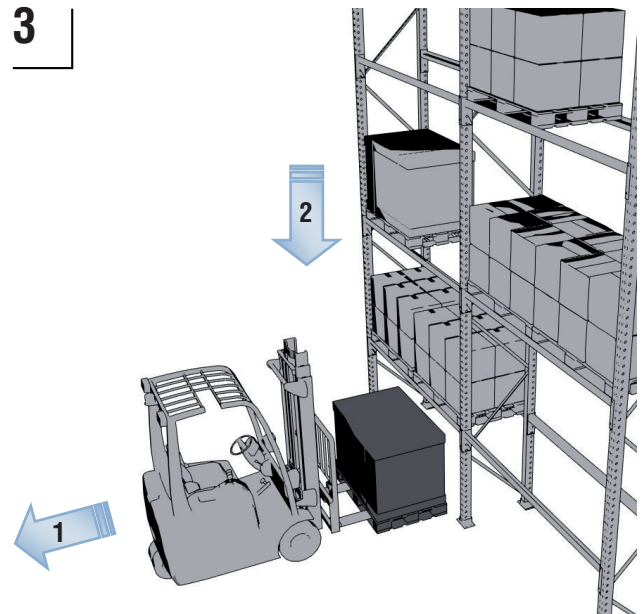
The sleeves must be removed from the Reachforks before welding work can proceed. Pistons, piston rods and cylinder heads must be removed before welding is carried out at the inner fork.

Taking goods from the racking

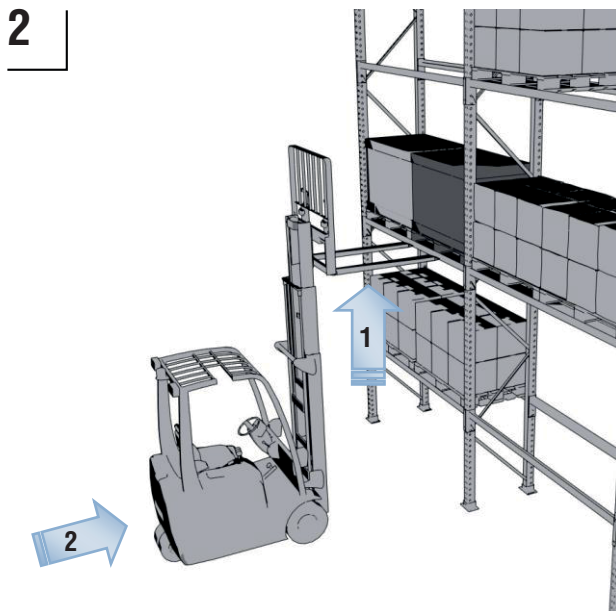
1. Position the lift truck straight in front of the racking



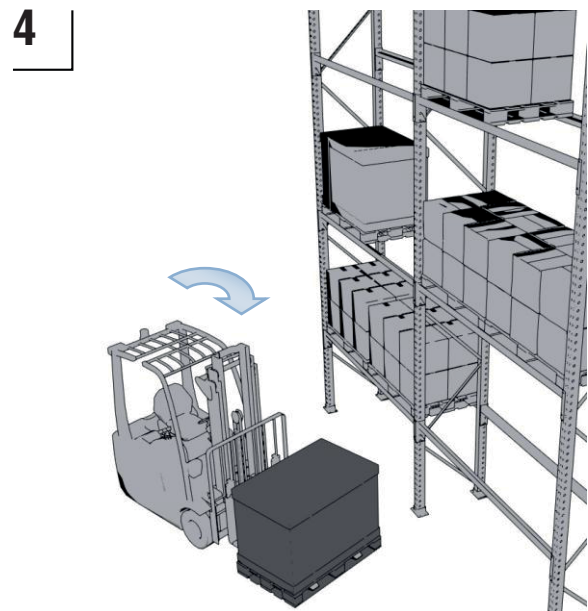
3. drive straight backwards and only then lower the goods in the lowest possible position.



2. Lift the forks to the right position to take out the goods.

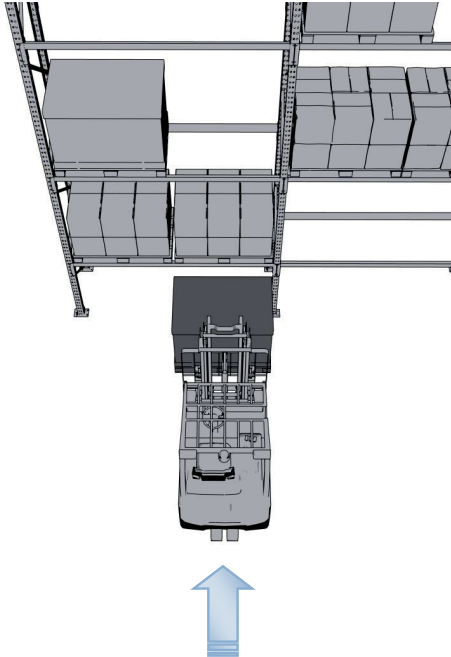


4. Then turn the lift truck into a new driving direction

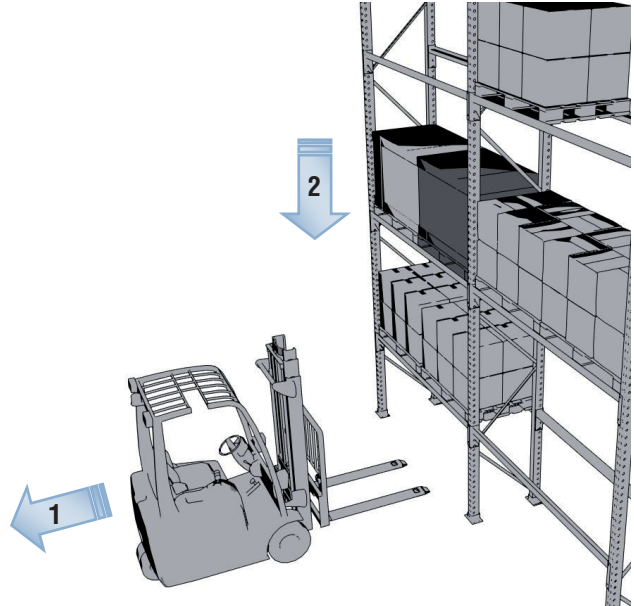


Loading goods into the racking

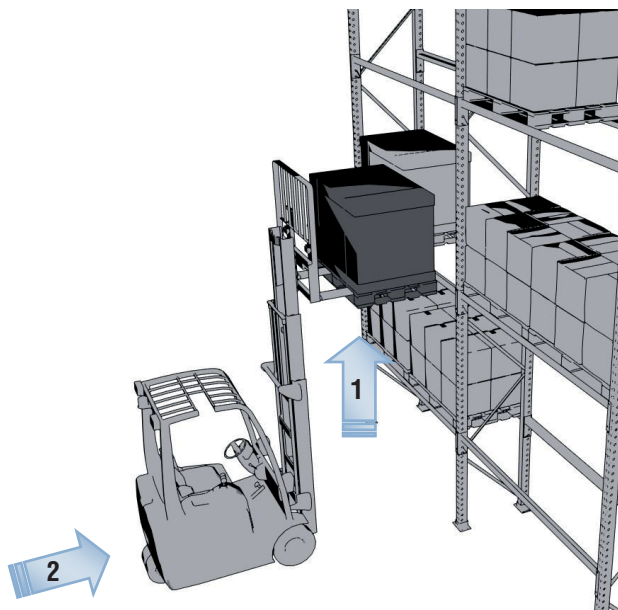
1. Position the lift truck straight in front of the racking with the load still in the lowest position.



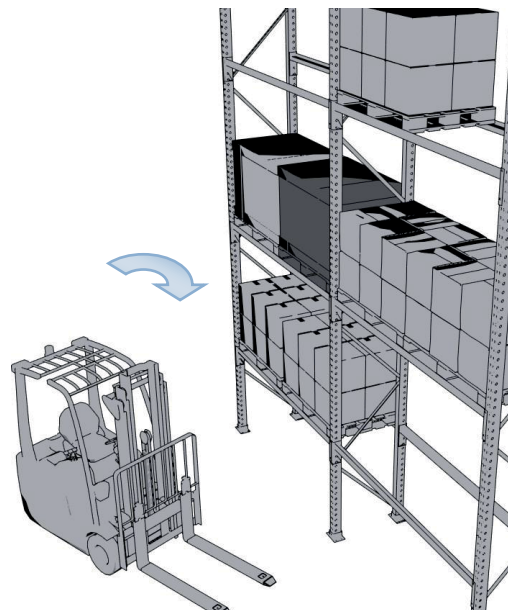
3. Drive straight backwards and only then lower the forks in the lowest possible position.



2. Lift the load and place the goods inside the racking.



4. Then turn the lift truck into a new driving direction



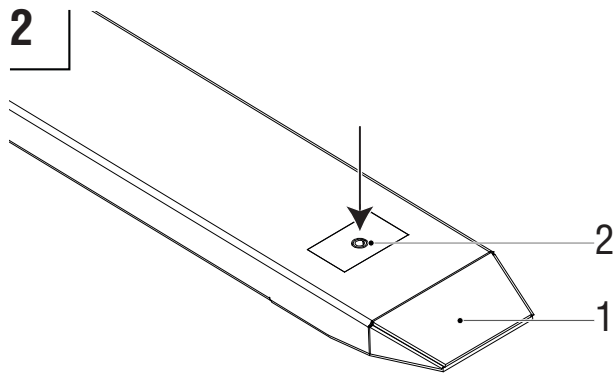
Instructions for Replacement of Sleeve

- 1** Position the Reachforks at hip height, tilt the mast of the forklift slightly forward and remove the key from the ignition switch of the forklift.



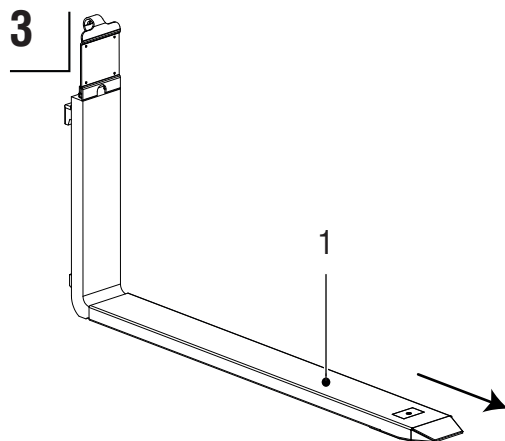
Warning:

Do not carry out maintenance work on the Reachforks while there is pressure in the hydraulic system (remove key from forklift ignition switch).

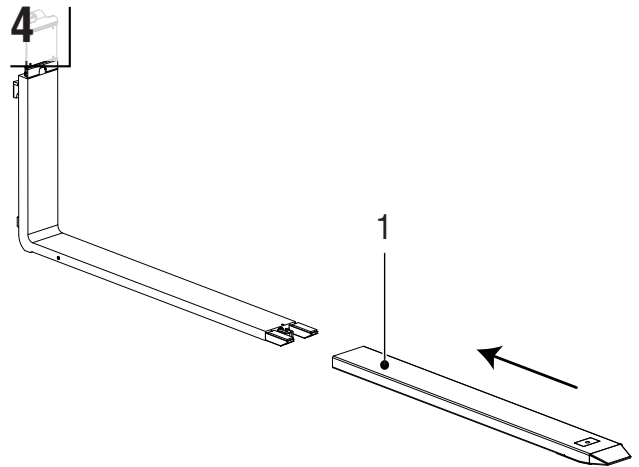


Tap the clamping bush (2) out of the sleeve (1).

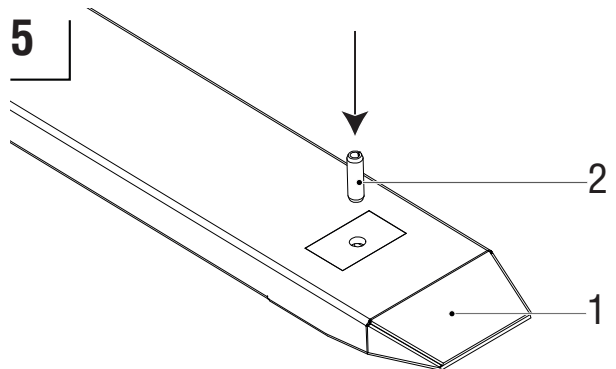
Tools required: Hammer, punch Ø10.



Pull the sleeve (1) off the fork.



Slide the (new) sleeve (1) over the fork.



Tap the clamping bush (2) into the (new) sleeve (1).



Caution:

Ensure that the holes in the sleeve (1) are aligned with the opening in the bracket(s) that are welded onto the piston rod(s). DO NOT tap the clamping bush onto the bracket or piston rod!

Tools required: Hammer.

Replacement of Hydraulic Parts

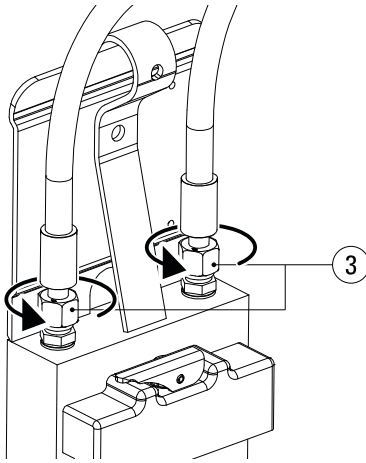
- 1** Follow steps 1 to 3 in chapter on 'Instructions for Replacement of Sleeve'.



Warning:

Do not carry out maintenance work on the Reachforks whilst there is pressure in the hydraulic system (remove key from forklift ignition switch).

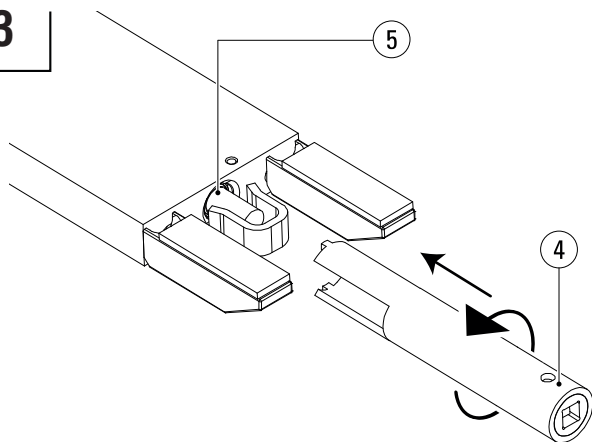
2



Loosen the hose connectors (3) slightly so that the pistons do not create a vacuum when removing the hydraulic parts.

Tools required: Open-ended spanner size 19.

3

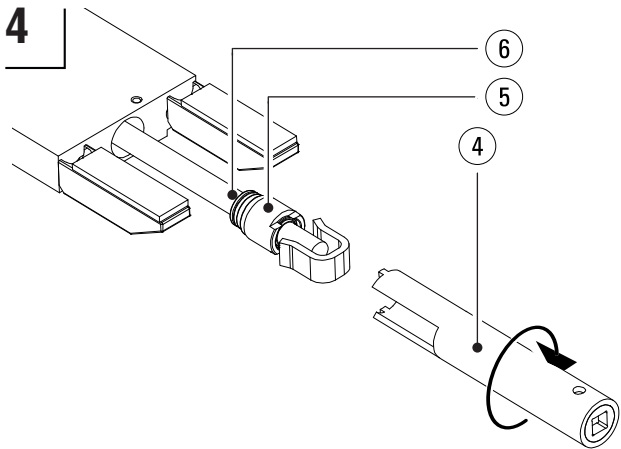


Place a drip tray below the fork. Unscrew the cylinder head(s) (5) using a cylinder head spanner (4) and a ratchet.

Tools required: Cylinder head spanner, 1/2" ratchet.

*Cylinder head spanners are only available from Cascade KOOI (Art. N° RE0058049).

4



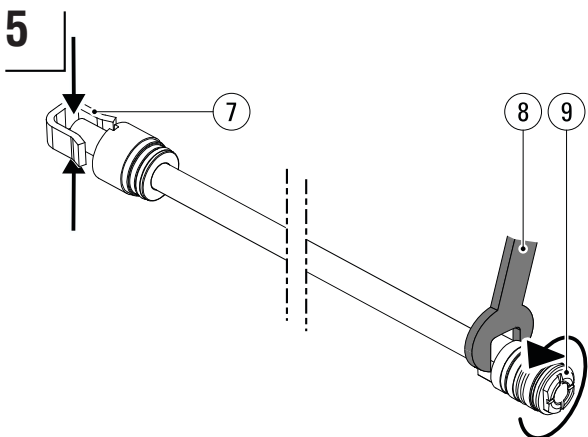
Pull the entire hydraulics set (6) consisting of the piston, cylinder head and piston rod out of the fork.



Caution:

Take care with the surface of the piston rod. Minor damage to surface can cause leaks.

5



Clamp the piston rod at the rod end (7), not on the piston rod itself to prevent damage (see step 4 in this chapter). Use a size 19 (8) open-ended spanner to loosen the piston (9). If the piston cannot be loosened, heat the piston with a burner.

Tools required: Open-ended spanner size 19, clamp.

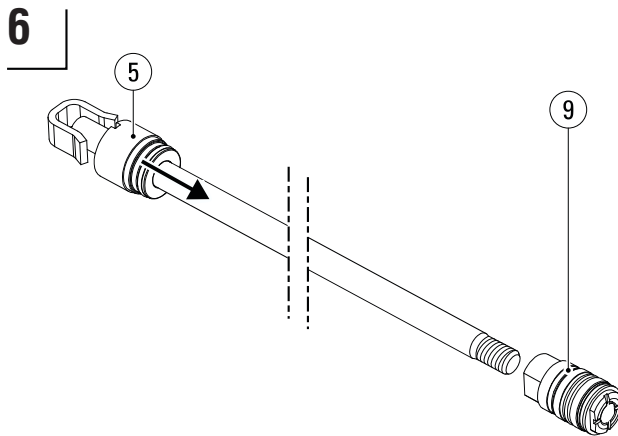
Note: When heating the piston with a burner, it must be re-placed due to the damage to the seals caused by heating.



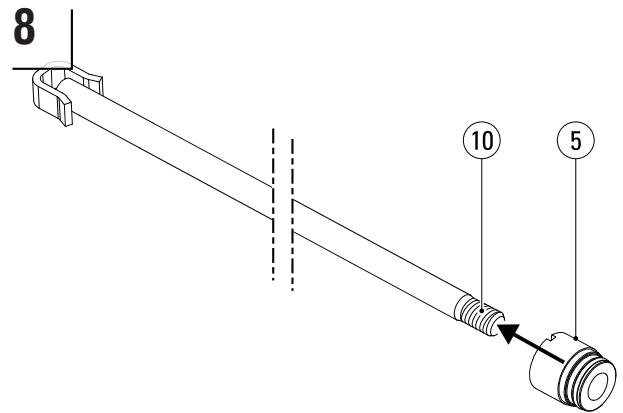
Warning:

Do not use a burner in an area not equipped/intended for this purpose because of fire hazard.

Replacement of Hydraulic Parts (continued)



When piston (9) is removed, the cylinder head (5) can be removed, should it need to be replaced.

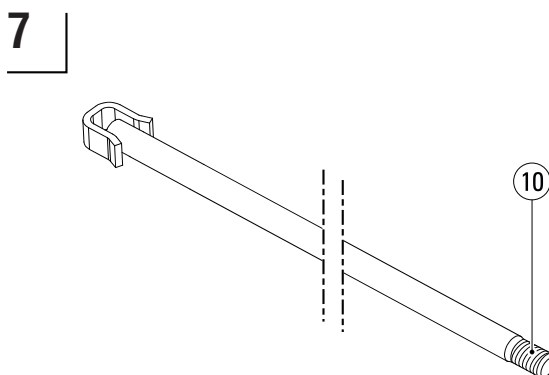


Slide the (new) cylinder head (5) onto the piston rod (10).



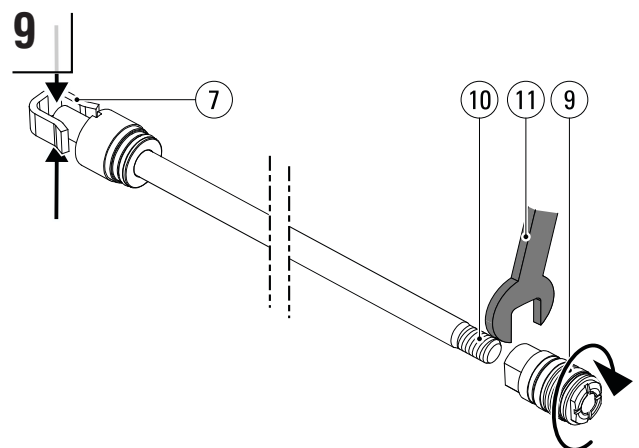
Caution:

Do not damage the cylinder head seals (5) during assembly as this can result in leakage. Pay particular attention when the sliding cylinder head (5) over the thread (10) of the piston rod.



Remove remaining adhesive residue from the piston rod thread (10), then clean the piston rod and thread (10) using Loctite 7063¹.

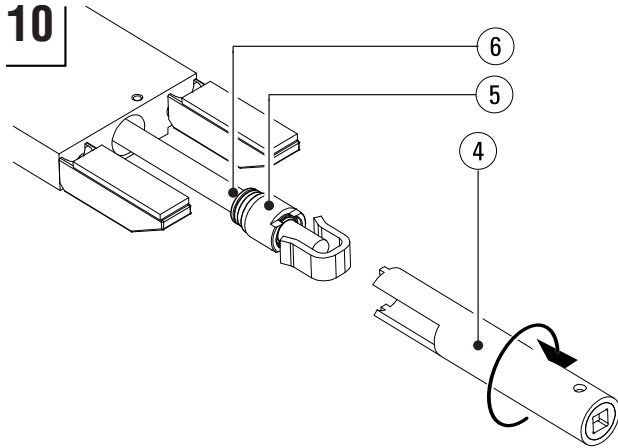
Tools required: Loctite 7063.



Apply Loctite 270 to the thread (10) of the piston rod¹. Clamp the piston rod at the rod end (7), not on the piston rod itself to prevent damage (see step 4 in this chapter). Clean the piston thread with Loctite 7063¹. Use a torque wrench 19 (11) to tighten the piston (9) onto the piston rod (10) to a torque of 40 Nm.

Tools required: Loctite 270¹, Loctite 7063¹, torque wrench 19.

Replacement of Hydraulic Parts (continued)



Smear Copaslip² onto the thread of the cylinder head (5). Line up the hydraulic set (6) with the cylinder and use a hammer to tap it carefully into the bore. Screw the cylinder head tight using the cylinder head spanner (4) and a torque wrench. See table below for torque value.

Tools required: Hammer, Copaslip², cylinder head spanner*, 1/2" ratchet.

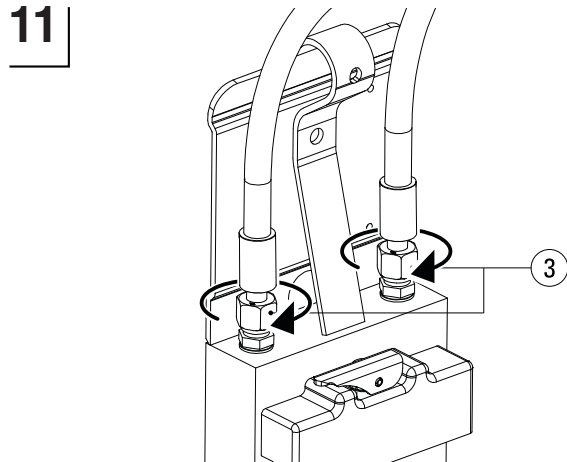
Cylinder diameter (mm)	Torque (Nm)
25	30

*Cylinder head spanners are only available from Cascade KOOL (Art. N° RE0058049).



Caution:

Do not damage the piston or cylinder head seals during assembly as this can result in leakage.



Screw the hose connectors (3) tight.

Tools required: Open-ended spanner 22.

12 Follow steps 4 to 5 in chapter on 'Instructions for Replacement of Sleeve'.

13 Finally, follow step 5 of the chapter on 'Assembly'.

¹ See www.loctite.com

² See www.kroon-oil.com

Troubleshooting

Observation	Symptom	Possible Cause	Possible Solution
Oil leak	Oil leak between cylinder head and piston rod	Bent piston rod	Replace piston rod and cylinder head
		Scratched/damaged piston rod	
		Leaking piston seal	Replace cylinder head
	Oil leak between cylinder head and fork blade.	Leaking O-Ring	Replace O-ring
	Oil leak at connector	Leaking copper ring	Replace copper ring
		Loose connector	Tighten connector
	Forks leaking oil	One or both Reachforks are cracked	Remove Reachforks from carriage immediately and contact supplier.
Forks not moving in unison	Sleeves not moving in unison	A piston seal is leaking	Replace the piston with the leaking seal
	Left or right sleeve extends without operating lever being used.	Air in hydraulic system	Follow step 5 of the chapter on 'Assembly'
Difference in length between the sleeves	Stroke length difference	Piston rods are not same length.	Please contact your supplier.
		Loose piston	Dismantle outer fork, remove hydraulic set from fork and tighten piston (40 Nm)
Difference in height between forks	One fork point hangs lower than the other	One of the Reachforks has been permanently deformed as a result of overloading.	Remove Reachforks from carriage immediately and contact supplier
		One of the Reachforks is not hanging on the carriage plate	Hang the Reachforks properly onto the carriage plate (check locking mechanism)
		Carriage plate is not completely horizontal	Please do contact your forklift truck supplier.
		The forks do not match (forks belong to different sets)	Check serial N°s.
		Wear strips on one Reachforks are more worn than the other	Replace wear strips
	Excessive play between fork blade and sleeve	Wear strips worn out	Replace sleeves
		Sleeves worn out	

Do you have questions you need answered right now? Call your nearest Cascade KOOI Service Department. Visit us online at www.cascorp.com

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