USE AND MAINTENANCE MANUAL

MARK 55™ PUSH/PULLS

ORIGINAL INSTRUCTIONS

INTRODUCTION

This manual includes instructions for assembly, maintenance (regular and extraordinary), and for possible faults with remedies.
The instructions provided in this manual do not replace but complement obligations for compliance with existing legislation on safety and accident prevention, which are the obligation of the User. The User is also bound to follow all instructions in this manual including training of personnel both in the use of the equipment and its maintenance.

SPECIFICATIONS AND USE OF EQUIPMENT

Equipment to be hooked to the forklift to handle loads either on pallets or placed on a pressed sheet of cardboard or plastic. It consists of a rear frame to be mounted on the forklift carriage with ISO 2328 profile; load supporting platforms, internal fixed and external can be positioned manually or hydraulically; clamp controlled by hydraulic linear actuator to grip the sheet; front grid with ample visibility to optimize the grip of the sheet; pantograph controlled by hydraulic linear actuators to pull the load onto platforms attached to the rear frame.

SYMBOLS USED


Hazardous situation for operator safety.


Mandatory procedures to be carried out.


Notes to be read carefully.

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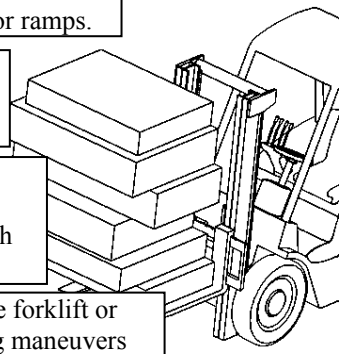
1. TIPS FOR USE OF THE EQUIPMENT

1.1. PROHIBITED HANDLING

Transporting a load that is unstable, off-center or on one fork only, too bulky reducing visibility, with weight greater than the specified capacity, moving a load already deposited using the load to be deposited, using the equipment for purposes other than those specified, or when the same has deformed structure or operating anomalies.

Proceeding at high speed in the presence of uneven ground or ramps.

Performing movements or maneuvers with the load lifted high.



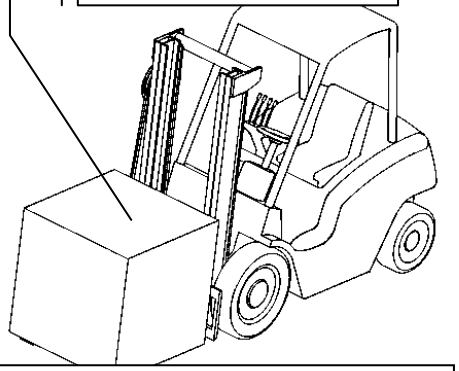
Performing lifting-lowering movements, tilting or lateral displacement of the load with the forklift moving.

Transporting people with the forklift or the equipment or performing maneuvers with people in the operating range.

Parking the forklift with the engine running and/or load lifted on uneven ground or ramps.

1.2. CORRECT HANDLING 2

The load must be stable, cross-layered or with heat-shrink wrapping.



When moving with the forklift, keep the mast tilted (the tip of the fork up), the load slightly off the ground and centered on the forklift, adjusting the speed according to the state of the road surface and any obstacles or presence of people along the route.

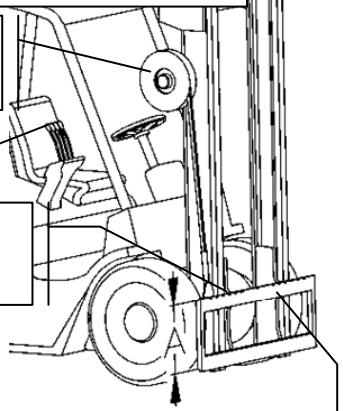
. FORKLIFT CONTROLS

The forklift's hydraulic pump must have a min. capacity of 7 GPM and a max. of 8 GPM and max. pressure of 2000 PSI.

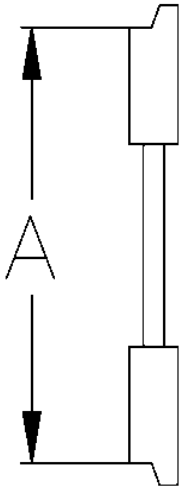
The recommended inner diameter for any additional supply system is at least 8 mm.

4-lever distributor for movements control.

The slots for positioning the forks must be intact and unobstructed.

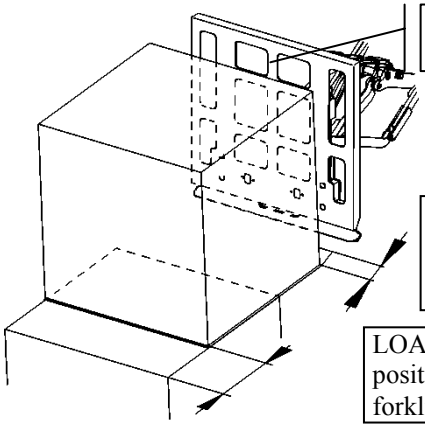


The forks carriage must be flat without protrusions on the front.



Dimension « A » ISO 2228 (mm) :
Class I = min. 304 – max. 305
Class II = min. 380 - max. 381
Class III = min. 474.5 – max. 476
Class IV = min. 595,5 – max. 597

1.3. LOAD PICKUP-DEPOSIT



Position the grid parallel and central to the load with the mast tilted forward.

The dimensions of the sheet (or pallet) must be equal to the size of the load with a minimum projection of 80 mm for pick-up.

PULLING THE LOAD ON THE PLATFORMS: With the grid in contact with the load, operate the return lever, and move forward with the forklift truck at the same time.

LOAD DEPOSIT Stop about 20 cm away from the deposit position and operate the extension lever backing up the forklift at the same time.

USE OF THE EQUIPMENT FOR PURPOSES OR HANDLING OTHER THAN INDICATED IS PROHIBITED.

THE ACTUAL COMBINED CARRYING CAPACITY OF THE FORKLIFT AND EQUIPMENT IS THE RESPONSIBILITY OF THE FORKLIFT MANUFACTURER AND MAY NOT CORRESPOND TO THAT INDICATED ON THE RATING PLATE. CONTACT THE MANUFACTURER OF THE FORKLIFT TRUCK FOR THE DEFINITIVE CARRYING CAPACITY.

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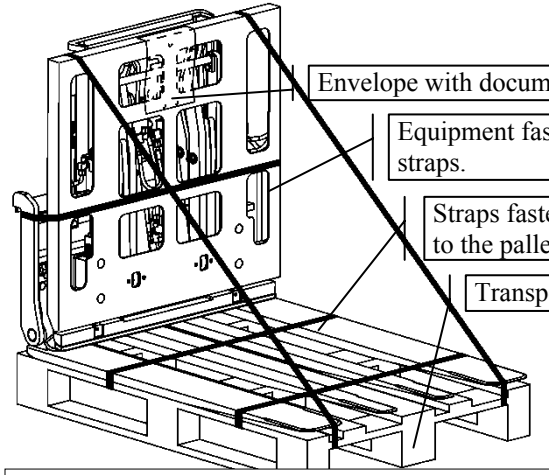
3. EQUIPMENT DESCRIPTION

3.1. SHIPPING LAYOUT



Envelope with documents.

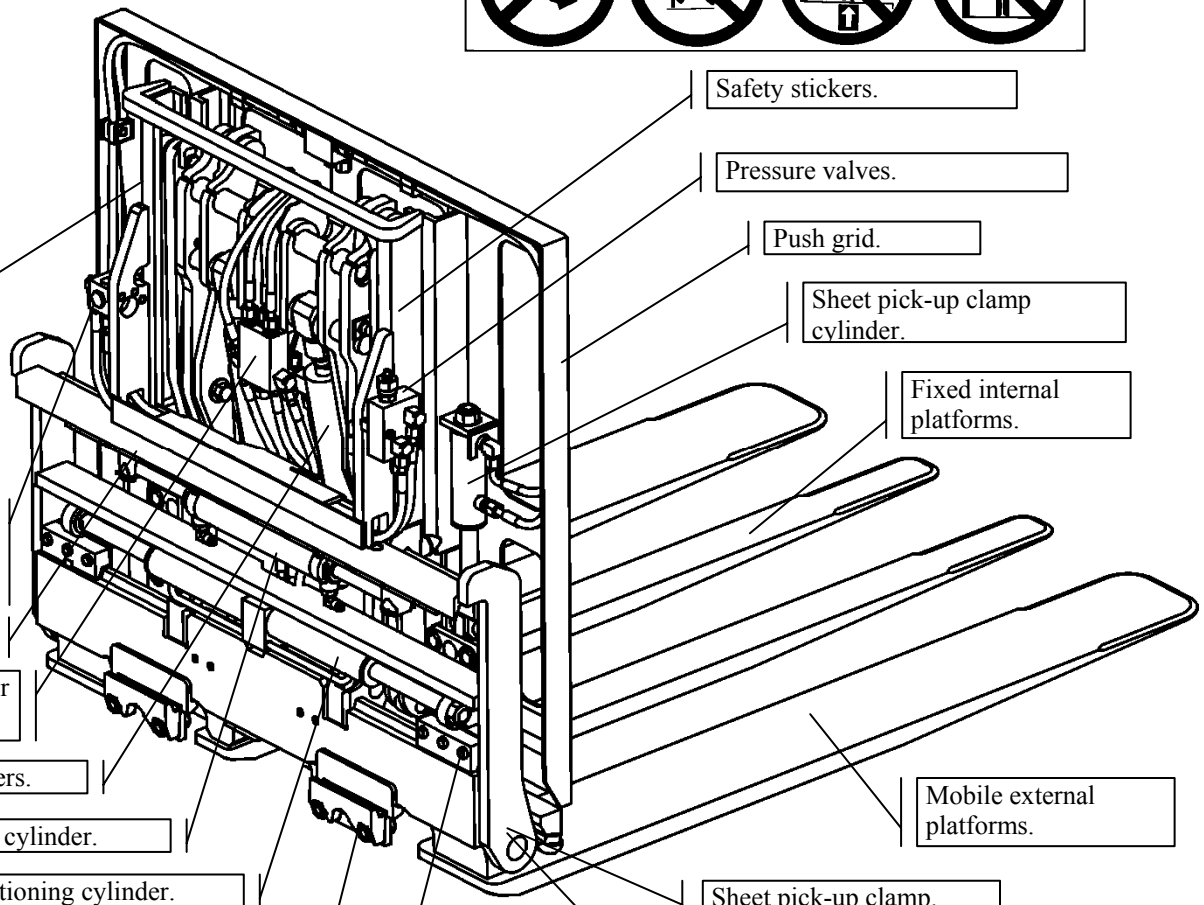
Equipment fastening straps.

Straps fastening equipment to the pallet.

Transport pallet.

The equipment is to be protected against weathering with heat-shrink nylon.

3.2 DESCRIPTION WITH SOLENOID VALVE



Safety stickers.

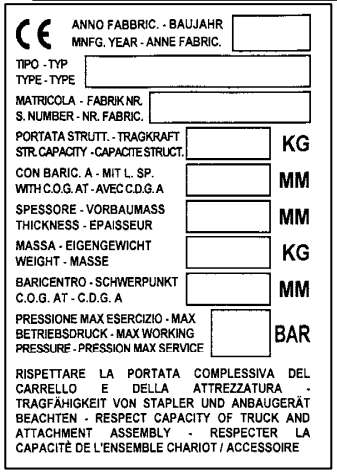
Pressure valves.

Push grid.

Sheet pick-up clamp cylinder.

Fixed internal platforms.

Identification plate.



Pantograph movement or platforms shift selector. Feed input (9/16-18 JIC).

Side-shifter sliding shoes

Clamp sequential valve or pantograph closure.

Pantograph cylinders.

Side-shift cylinder.

Platforms positioning cylinder.

Side-shifter lower hooks and shoes.

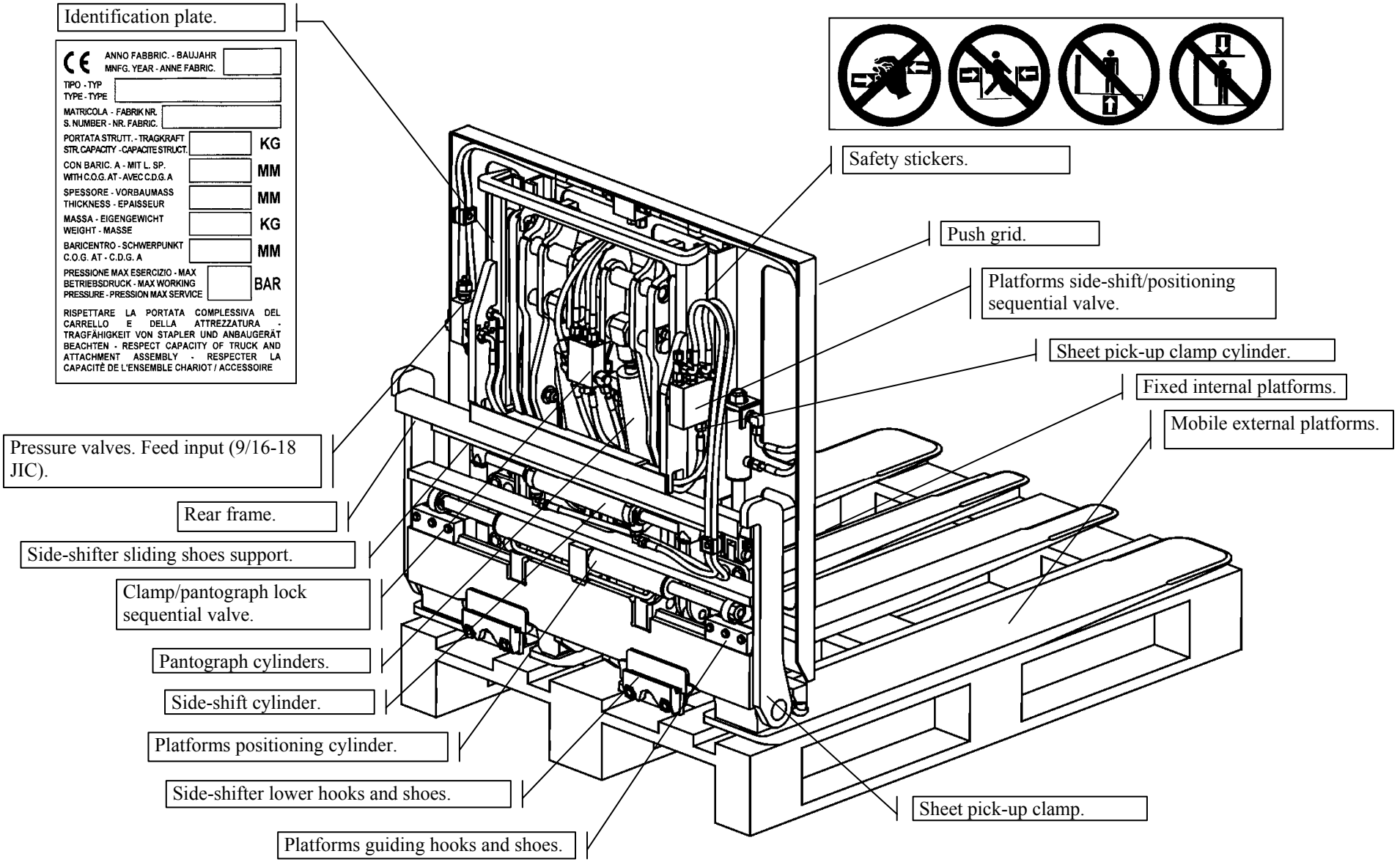
Platforms guide hooks.

Mobile external platforms.

Sheet pick-up clamp.

Rear frame.

3.3. DESCRIPTION WITH SEQUENTIAL VALVE



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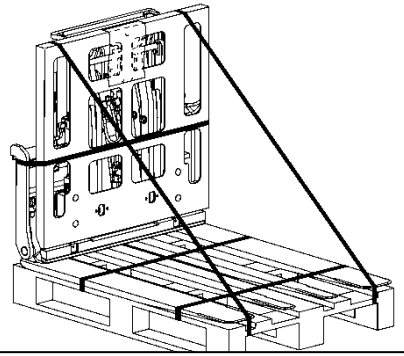
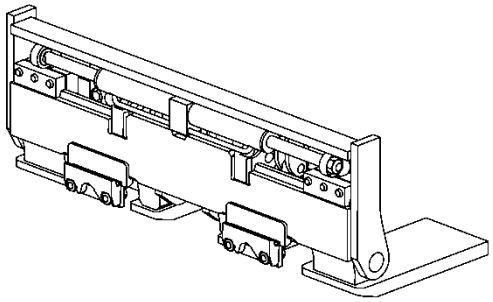
4. COUPLING TO THE FORKLIFT

4.1. COUPLING

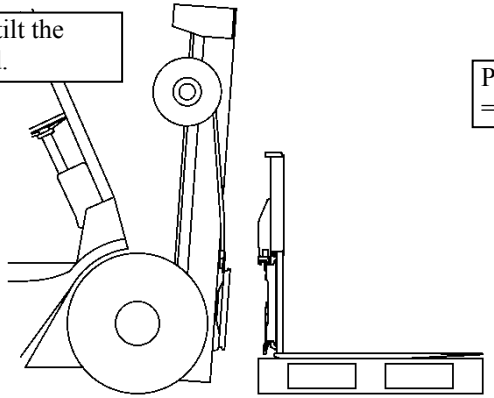


Remove the straps securing the equipment and nylon coating.



Remove the lower hooks. ISO 3318 24 mm wrench.

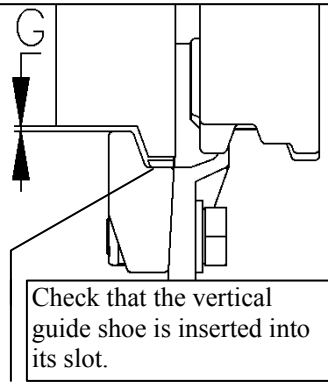
If necessary tilt the mast forward.



Hook the equipment to the forklift check that the central tooth of the shoe support engages the central notch of the forklift carriage.

4.2. LOWER HOOK ADJUSTMENT

Position the lower hooks as indicated below, G = 1-1.5 mm. Tighten the screws 240 Nm.



Check that the vertical guide shoe is inserted into its slot.

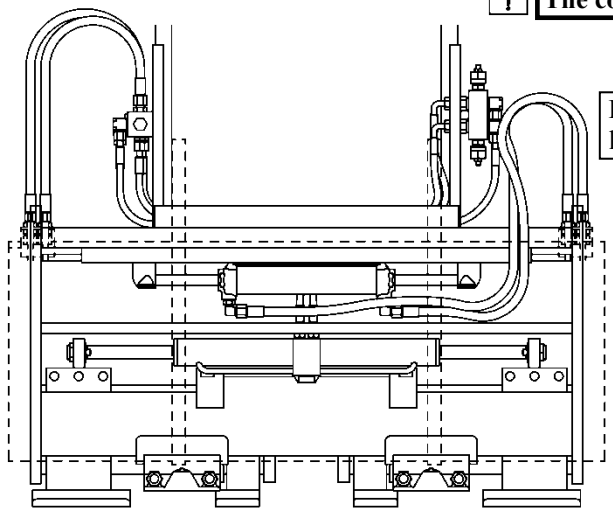
4.3. HOSE CONNECTIONS

4.3.1. SOLENOID VALVE HOSE CONNECTION

! Before connecting/disconnecting the hydraulic hoses, vent any pressure from the forklift's feed system according to the manufacturer's instructions.

! Perform a few maneuvers without any load to check the seal of the hydraulic connections.

! The connecting hoses between the valve and the system of the forklift are optional.

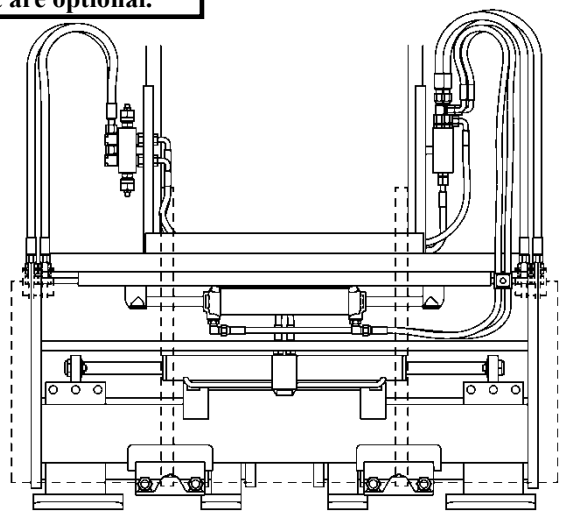


Equipment in STANDARD layout with solenoid valve.

! The frame moves laterally right and left; during the connection of the hoses, ensure that the hoses allow the said movement to avoid rubbing against fixed parts.

4.3.2. SEQUENTIAL HOSE CONNECTION

! Possible oil leakage. Prepare a container to collect fluid.



Equipment in OPTIONAL layout with sequential valve.

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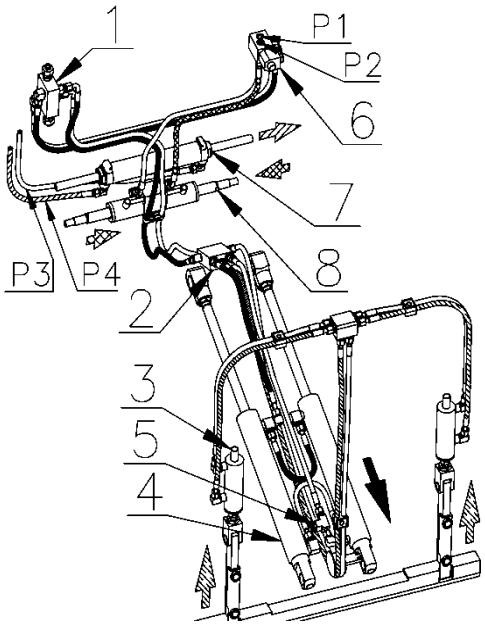
5. HYDRAULIC SYSTEM CONNECTION AND LAYOUT

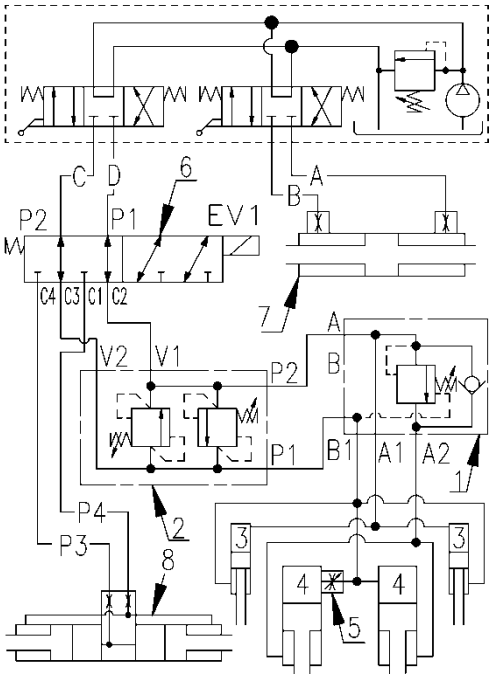
Before connecting/disconnecting the hydraulic hoses, vent any pressure from the forklift's feed system according to the manufacturer's instructions.

Possible oil leak. Prepare a container to collect fluid.

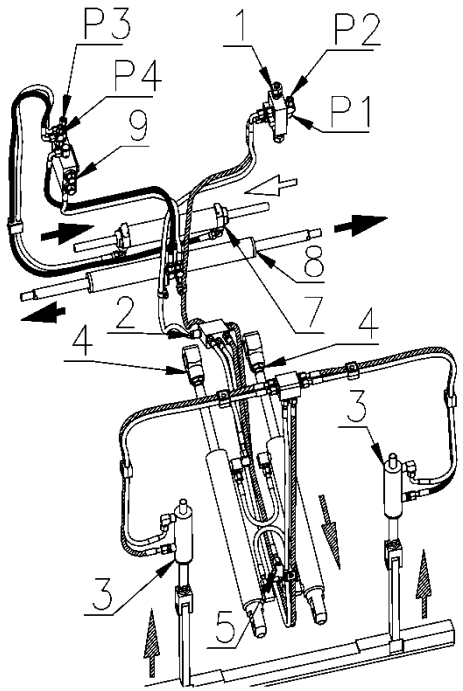
5.1. WITH SOLENOID VALVE

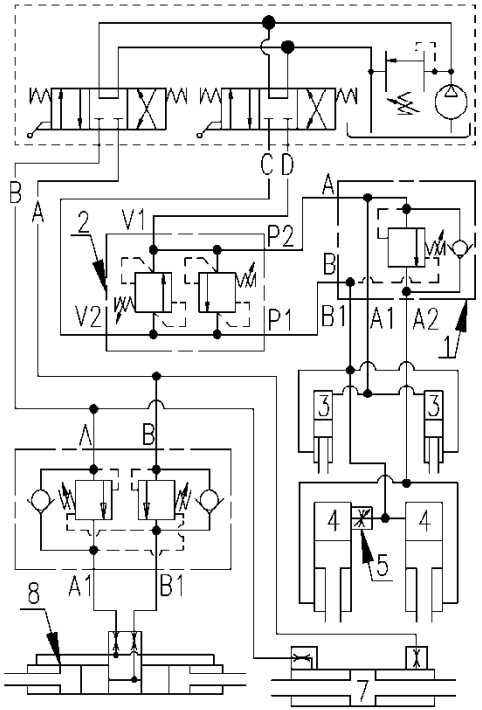
Choose between pantograph and platforms positioning with the selector (pos. 6) at the feed input.



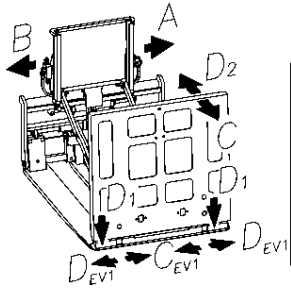


5.2. WITH SEQUENTIAL VALVE



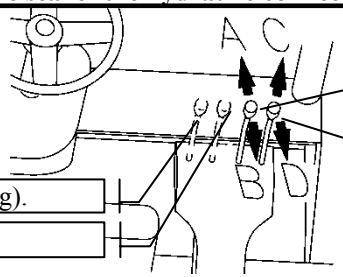


5.1.1. MOVEMENT CONTROL



Pantograph sequence:
Sheet tightening (D1), Grid re-entry (D2).
With energized solenoid valve:
Spacing of platforms (D), narrowing of platforms (C).

Perform a few maneuvers without any load to check the seal of the hydraulic connections.



Lever 3.

Lever 4.

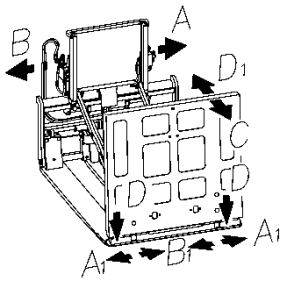
Lever 1 (lifting).

Lever 2 (tilt).

5.2.1. MOVEMENT CONTROL

Side-shift sequence:
Left side-shift (A), Spacing of platforms (A1).
Right side-shift (B), Closing of platforms (B1).

Pantograph sequence:
Sheet tightening (D1), Grid re-entry (D2).



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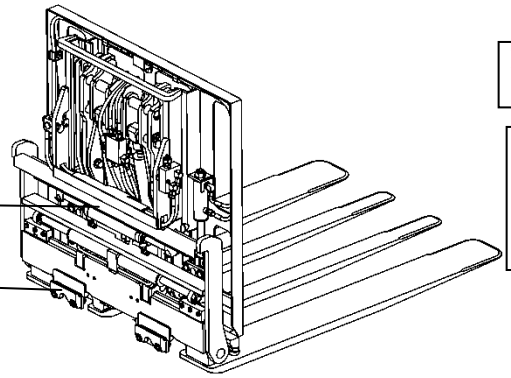
6. DAILY CONTROLS

At the beginning of shifts check the points indicated and report any problem to maintenance personnel.

The center retainer of the cylinder support must engage the central notch of the forklift's fork carriage.

The lower hooks correctly positioned and locked, see point 4.2. LOWER HOOK ADJUSTMENT



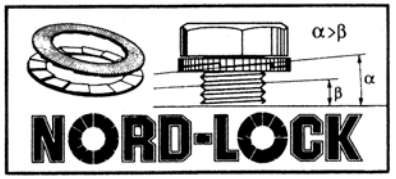
Inspection for any leaks from the cylinders or hydraulic system

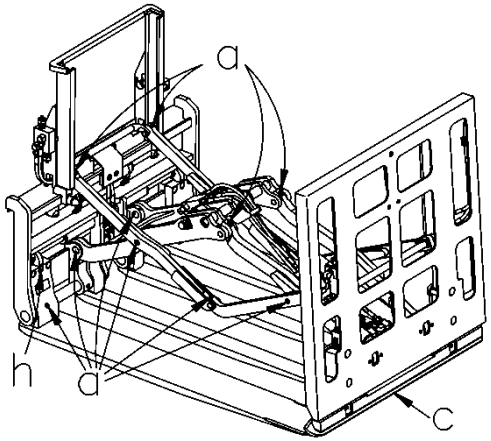
Verifying the integrity and cleanliness of the sheet clamp, blade and shoe, and the platforms.

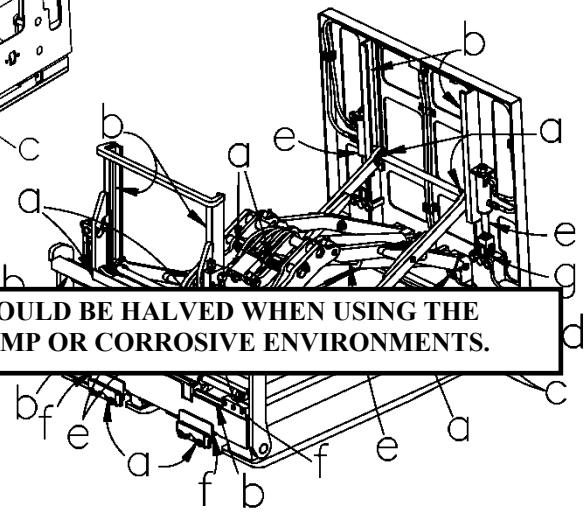
7. ROUTINE MAINTENANCE

PERIODIC MAINTENANCE SCHEDULE	
OPERATIONS	**Working hours**
Lubrication in point “a”.	500
Cleaning and lubrication in points “b”.	
Control of bolts tightness and hydraulic connections.	
Check of platforms alignment.	
In addition to the operations every 500 working hours, carry out:	
Control of the platform and blade in pos.”c”. Remove any deformations or dents.	1000
Check the condition of the sheet contact shoe “d”. Replace in case of wear greater than 4 mm.	
Check the cylinder stems "e" and hydraulic seals.	
Check the condition of the side-shift shoes (f) and sheet clamp guide (g).	
Check of the condition of bushings and scrapers for outer platforms sliding.	
Control the condition of the mobile hoses.	
In addition to the operations every 500 and 1000 working hours, carry out:	
Replacement of shoes for side-shift (f).	2000
Control of the bushings and ball joints in the fulcrum of the arms.	
Replacement of platforms sliding shoes (h).	
Examination for deformation or break in the structure or welds.	

Respect the direction as indicated by the sticker during the assembly or tightening of the washers "h". The washers must be replaced after 5 uses.







THE WORKING HOURS SHOULD BE HALVED WHEN USING THE EQUIPMENT IN DUSTY, DAMP OR CORROSIVE ENVIRONMENTS.

Position “a” grease nipple UNI 7763-AM6-5.8

Recommended lubricant:
Internal use: ISO X M2 (SHELL ALVANIA GREASE R2).
External use: ISO CB 32 (ESSO NUTO32).

8. EXTRAORDINARY MAINTENANCE

8.1. REMOVAL OF SIDE-SHIFTER 8.2. DETACHMENT OF THE CYLINDER

Before connecting/disconnecting the hydraulic hoses, vent any pressure from the forklift's feed system according to the manufacturer's instructions.

Possible oil leak. Prepare a container to collect fluid.

To carry out the operations indicated below, the equipment must be dismantled from the forklift.

1) Remove the lower hooks, ISO 3318 wrench. Class2 24mm; class3 27 mm.

2) Disconnect the side-shifter and equipment supply hoses, ISO 3318 17 mm wrench.

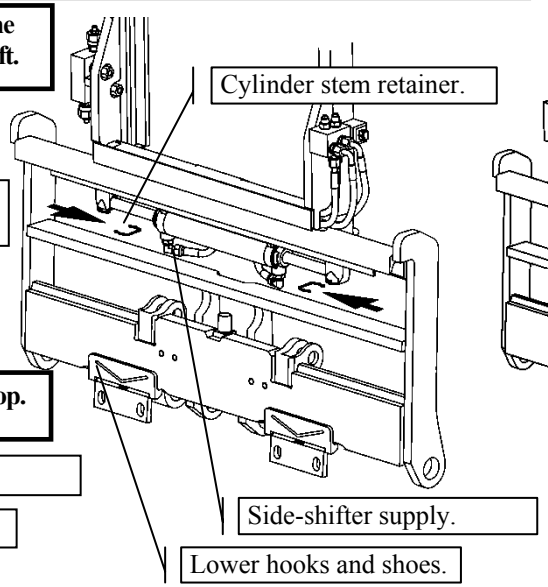
3) Disconnect the equipment from the forklift and place it on the ground.

4) Remove the cylinder stem retainers.

The cylinder block-shoes support is free to drop.

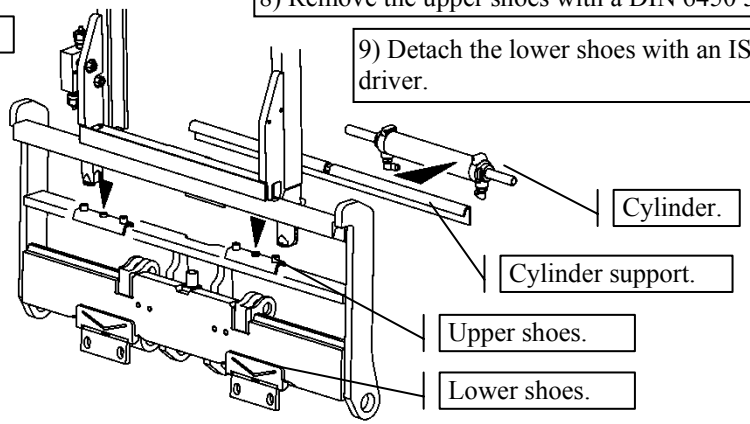
5) Dismantle the cylinder block and shoes support.

6) Disconnect the cylinder from the support.



8) Remove the upper shoes with a DIN 6450 5 mm punch.

9) Detach the lower shoes with an ISO 2380 screw driver.

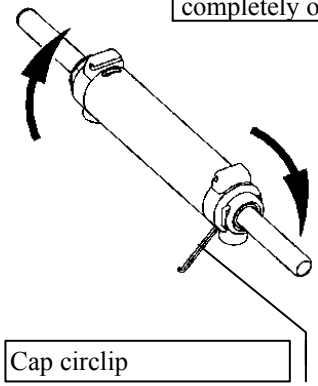


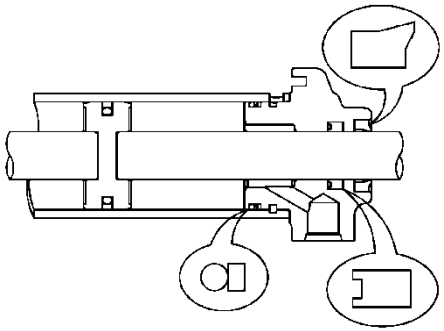
CARRY OUT THE PROCEDURE IN REVERSE ORDER TO RESTORE THE DISMANTLED PARTS.

8.3. REPLACEMENT OF GASKETS

Possible oil leak. Prepare a container to collect fluid.

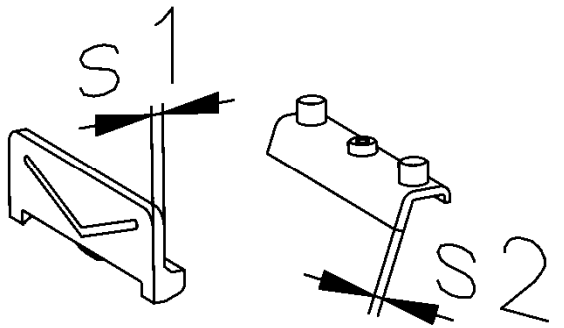
Rotate the cap until the circlip is completely out.





Respect assembly direction when replacing the seals and work in a dust-free environment.

8.4. SHOES CONTROL



Replace the shoes if there are cracks, permanent deformation or the thickness is less than: s1 2 mm; s2 3 mm.

8.5. REMOVAL OF GRID

Before connecting/disconnecting the hydraulic hoses, vent any pressure from the forklift's feed system according to the manufacturer's instructions.

Possible oil leak. Prepare a container to collect fluid.

1) Support the grid with a cable or strap.

2) Disconnect the 2 lower couplings, ISO 3318 19 mm wrench, from the branch block.

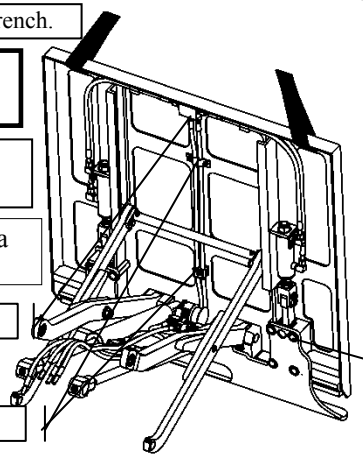
3) Remove the hoses fixing bracket, ISO 2936 5 mm, ISO 3318 10 mm wrench.

4) Remove the 8 screws, ISO 3318 19 mm wrench.

At this stage the contact shoe is not guided and can fluctuate.

5) Lift until the rollers are completely detached from the guide and move forward.

6) Position the grid on the ground or on a work bench as illustrated.

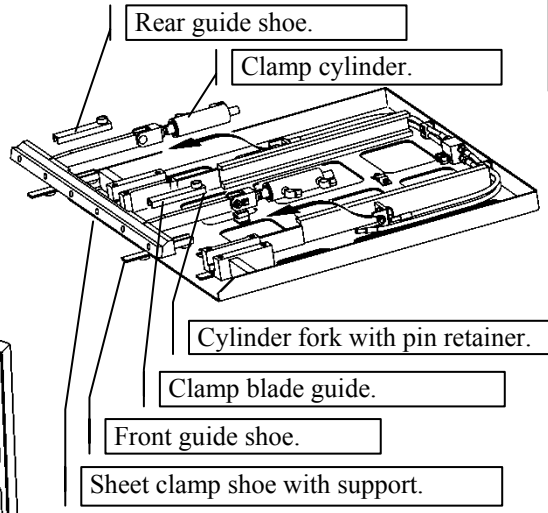


Hydraulic branch block.

Hoses fastening brackets.

Grid fastening screws.

8.6. SHEET CLAMP SHOE AND CYLINDERS



Rear guide shoe.

Clamp cylinder.

Cylinder fork with pin retainer.

Clamp blade guide.

Front guide shoe.

Sheet clamp shoe with support.

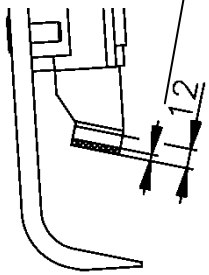
7) Remove the self-locking nuts with an ISO 3318 30 mm wrench, and remove the cylinder unit, guides and clamp shoes.

8) Use an ISO 3318 10 mm wrench to disconnect the cylinder fork from the guide; remove the pin retainer and extract the pin.

9) Use a DIN 6450 5 mm punch to disconnect the sheet clamping blade.

10) Use an ISO 2936 5 mm wrench to disconnect the sheet clamp shoe from the support.

Maximum wear.

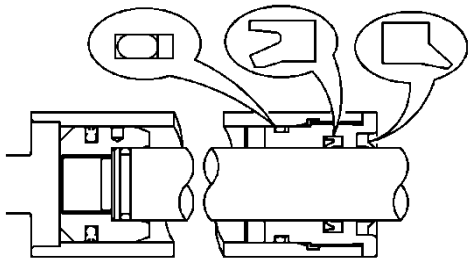


Replace shoes with max. wear of 4 mm.

CARRY OUT THE PROCEDURE IN REVERSE ORDER TO RESTORE THE DISMANTLED PARTS.

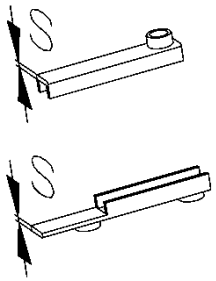
8.7. REPLACEMENT OF SEALS

Respect assembly direction when replacing the seals and work in a dust-free environment.



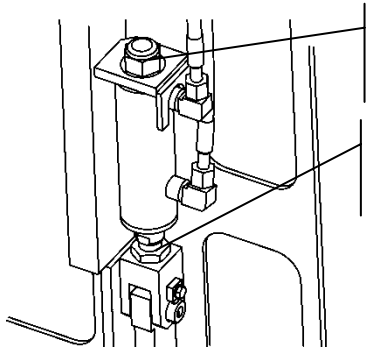
Pin wrench DIN 1810 for diameters 45-50 mm

8.8. SHOES CONTROL



Replace the shoes if there are cracks, permanent deformation or the thickness is less than 3.5 mm

8.9. CYLINDER ASSEMBLY AND SHEET CLAMP ADJUSTMENT



FASTENING OF CYLINDER. Tighten the nut until the washer is completely squashed; loosen by 180°.

CLAMP ADJUSTMENT. Loosen the locking nut, ISO 3318 30 mm wrench. Turn the stem, ISO 3318 22 mm wrench.

The cylinder length is increased by turning counter-clockwise and decreases by turning clockwise.

With adjustment complete, tighten the locking nut at 90 Nm.

8.10. DETACHMENT OF THE PANTOGRAPH

Before connecting/disconnecting the hydraulic hoses, vent any pressure from the forklift's feed system according to the manufacturer's instructions.

Possible oil leak. Prepare a container to collect fluid.

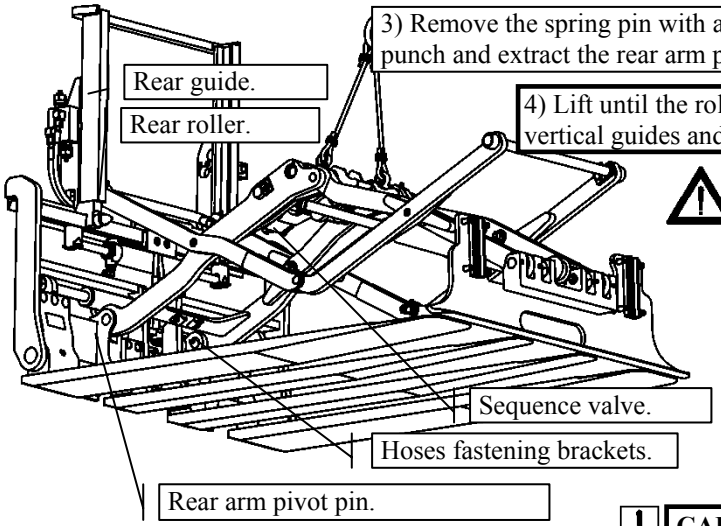
At this stage the pantograph loses stability and may move suddenly.

1) Support the pantograph with cable or strap.

2) Remove the feed hoses, ISO 3318 19 mm wrench, of the sequential valve and remover their mounting brackets on the rear arm.

3) Remove the spring pin with a DIN 6450 d.5 mm punch and extract the rear arm pivot pins.

4) Lift until the rollers are free from the vertical guides and move forward.



8.11. DISASSEMBLY OF PANTOGRAPH CYLINDERS

Place on the ground and support with cable or strap.

Possible oil leak. Prepare a container to collect fluid.

1) Disconnect the hoses of the cylinders, ISO 3318 19 mm wrench.

2) Remove the pin retainer, ISO 2936 8 mm wrench, and extract the fork pin from the cylinders.

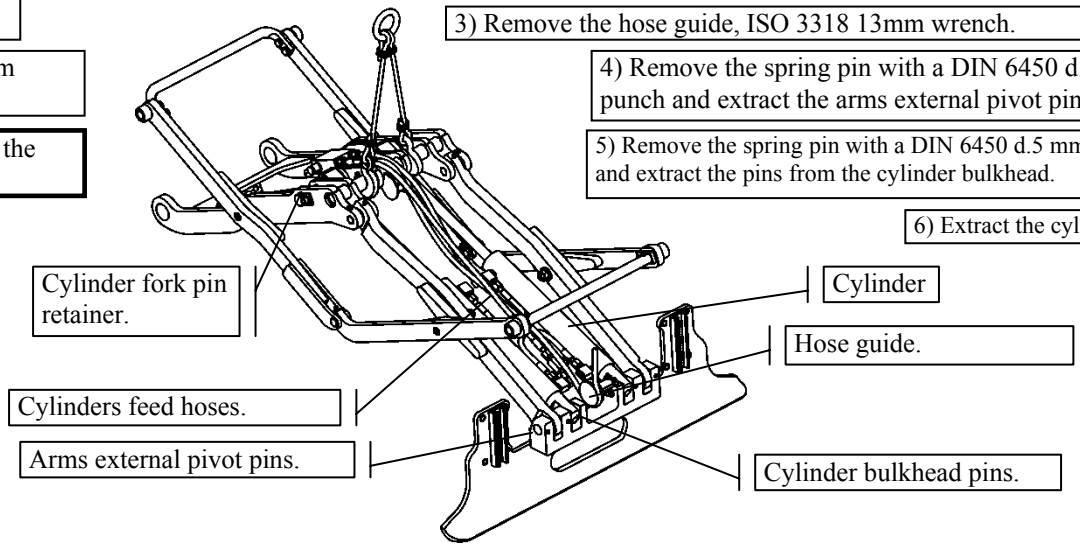
In this phase the cylinder rotates freely on the fork pin.

3) Remove the hose guide, ISO 3318 13mm wrench.

4) Remove the spring pin with a DIN 6450 d.5 mm punch and extract the arms external pivot pins.

5) Remove the spring pin with a DIN 6450 d.5 mm punch and extract the pins from the cylinder bulkhead.

6) Extract the cylinders.



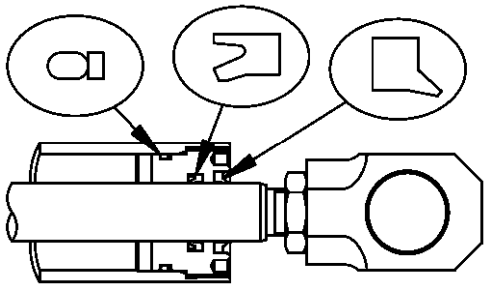
CARRY OUT THE PROCEDURE IN REVERSE ORDER TO RESTORE THE DISMANTLED PARTS.

8.12. GASKET REPLACEMENT AND CYLINDER ADJUSTMENT

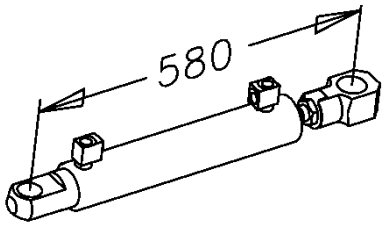
Possible oil leak. Prepare a container to collect fluid.

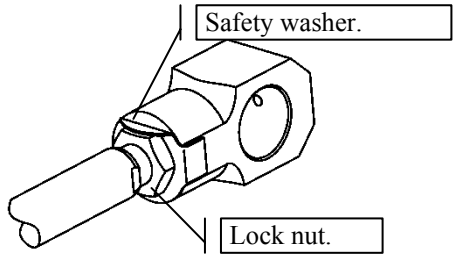
Follow assembly order when replacing the gaskets and work in a dust-free environment.

WRENCHES TO USE:
3318 22-mm Allen wrench
3318 30-mm Allen wrench
Fork wrench for diameters of 14 to 100 mm.
ISO 2380 screwdriver to release the fork lock nut.



With the replacement of the gasket complete, restore the dimensions of the closed cylinder, tighten the lock nut (570 Nm) deforming the washer with an ISO 2380 screwdriver.





USE AND MAINTENANCE MANUAL

8.13. ARMS DISASSEMBLY

⚠ **At this stage the pantograph is not stable and may move suddenly.**

Washers of different thickness have been inserted around the pivot points of the arms to limit lateral movement. Their number, quantity and thickness should not be changed in the assembly after maintenance.

Possible oil leak. Prepare a container to collect fluid.

1) Position the arms resting on the right side, see diagram.

2) Disconnect the hoses of the valve, ISO 3318 19 mm wrench.

3) Remover the rollers and guide shoes of the external arms.

4) Disconnect the valve, ISO 2936 6 mm wrench.

5) Remove the rear spacer and the front spacer fixing screws from the external arms, ISO 3318 17 mm wrench.

Unscrew front and rear spacer screws of the arms with an ISO 2380 screwdriver.

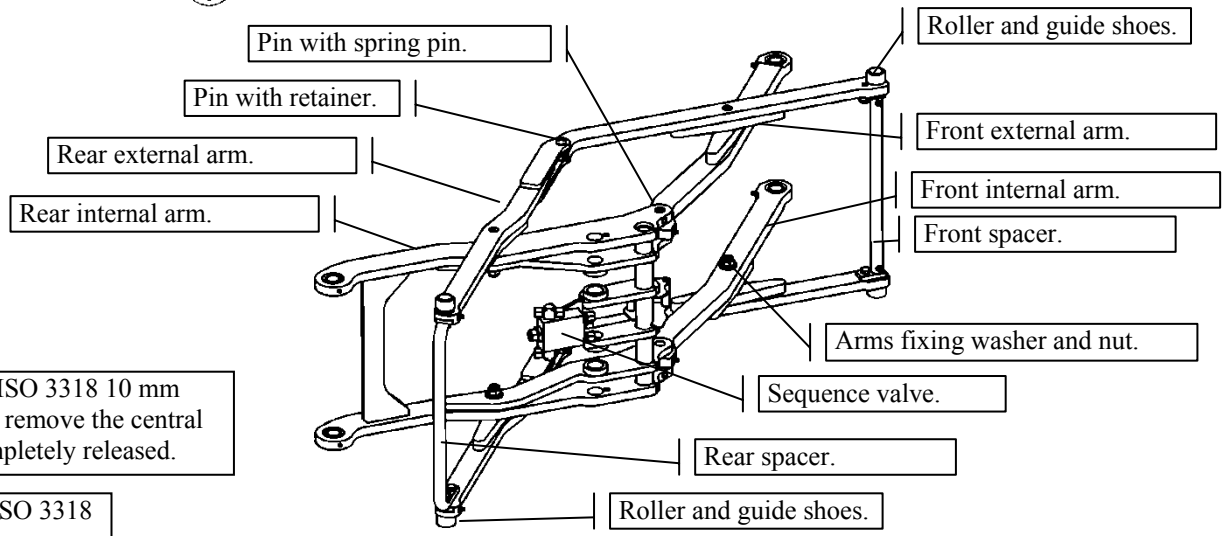
Proceed with the dismantling of the left side.

6) To remove the front external arm: remove the screw and pin retainer, ISO 3318 10 mm wrench, and extract the pin from the coupling with the rear external arm, remove the central nut and washer, ISO 3318 22 mm wrench, and extract the arms until completely released.

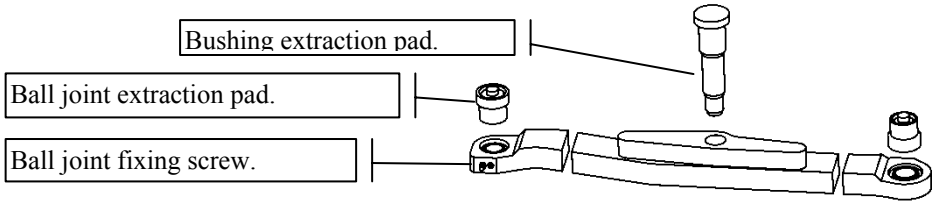
7) To remove the rear external arm: remove the central nut and washer, ISO 3318 22 mm wrench, and extract the arm until completely released.

8) To remove the front internal arm: remove the spring pin, DIN 6450 5 mm punch, and extract the pin.

Repeat steps 6), 7) and 8) to dismantle the right arms.



8.14. DISASSEMBLY OF BUSHINGS AND BALL JOINTS



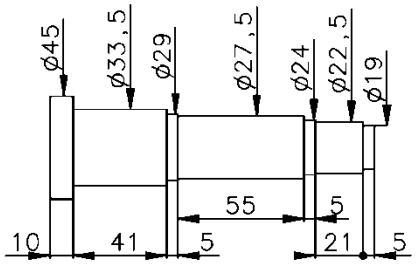
REPLACEMENT OF BALL JOINTS:
Remove the ball joint fixing screw, ISO 3926 3 mm wrench, and remove the worn ball joint with pad 10PPDED144. Introduce and position the new part at the centre of the spacer. Tighten the screw in contact with the outer ring without forcing; use LOCTITE 243.

REPLACEMENT OF THE BUSHINGS: Remove and replace the bushing with pad 10PPDED145.

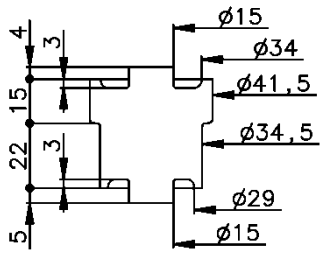
Control and eventual replacement of guide rollers, bushings and lateral sliding shoes in the presence of wear, breakage or permanent deformation.

CARRY OUT THE ABOVE PROCEDURE IN REVERSE ORDER TO RESTORE THE DISMANTLED PARTS.

8.15. BUSHINGS AND BALL JOINTS PADS



REF. 10PPDED145



REF. 10PPDED144

USABLE FOR ALL THE BUSHINGS AND BALL JOINTS

8.16. TIGHTENING OF FRONT AND REAR SPACER SCREWS

Tighten with an ISO 3318 17 mm wrench (46 Nm) and tighten the screws deforming the washers with an ISO 2380 screwdriver.

Rear spacer.

Fixing screw.

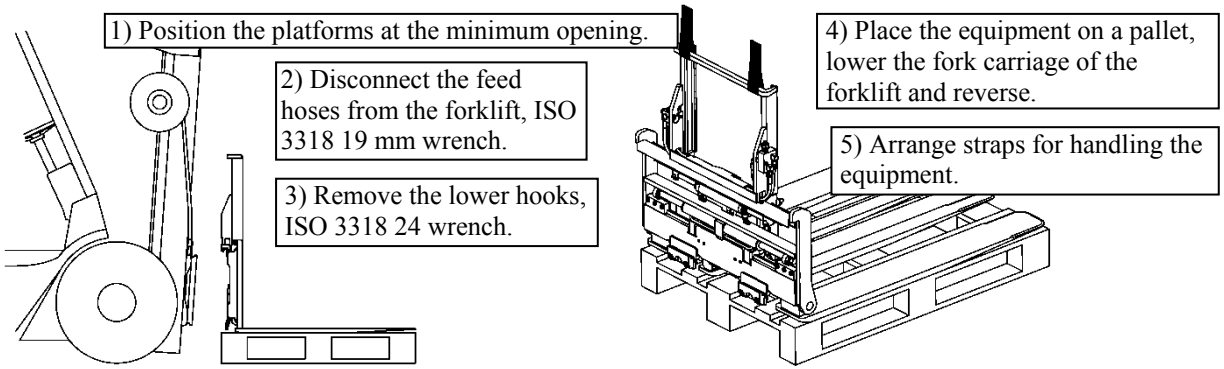
8.17. DISASSEMBLY OF PLATFORMS CYLINDER

Before connecting/disconnecting the hydraulic hoses, vent any pressure from the forklift's feed system according to the manufacturer's instructions.

Possible oil leak. Prepare a container to collect fluid.

The equipment must be disconnected from the forklift in order to proceed with maintenance.

8.17.1. DETACHMENT OF THE EQUIPMENT



1) Position the platforms at the minimum opening.

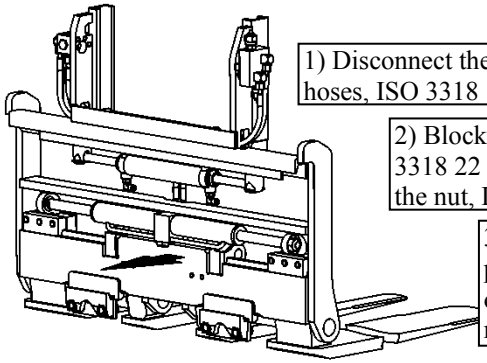
2) Disconnect the feed hoses from the forklift, ISO 3318 19 mm wrench.

3) Remove the lower hooks, ISO 3318 24 wrench.

4) Place the equipment on a pallet, lower the fork carriage of the forklift and reverse.

5) Arrange straps for handling the equipment.

8.17.2. CYLINDER DETACHMENT

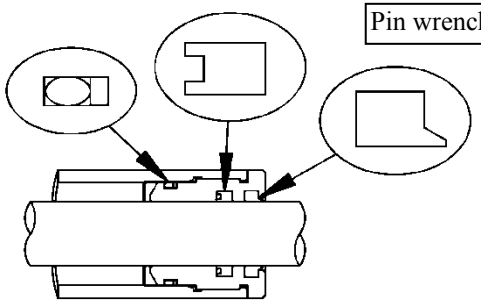


1) Disconnect the platform cylinder feed hoses, ISO 3318 19 mm wrench.

2) Block the cylinder stem, ISO 3318 22 mm wrench, and remove the nut, ISO 1174 30 mm wrench.

3) Open out the outer platforms by hand and pull out the cylinder from the rear.

8.17.3. REPLACEMENT OF SEALS



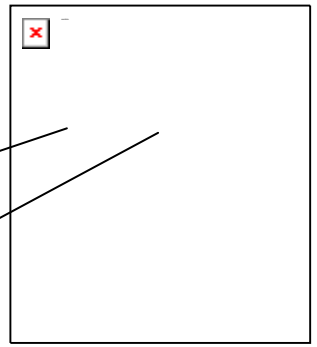
Pin wrench DIN 1810 for diameters from 45 to 50 mm.

Replace the seals in a clean and dust-free environment and comply with the assembly order.

Possible oil leak. Prepare a container to collect fluid.

8.17.4. CYLINDER ASSEMBLY

Lock the cylinder stem with an ISO 3318 22-mm wrench and tighten the nut with an ISO 1174 30-mm wrench until the Belleville washer is completely pressed.



Cylinder stem.

Self-locking nut.

CARRY OUT THE ABOVE PROCEDURE IN REVERSE ORDER TO RESTORE THE DISMANTLED PARTS.

8.18. DISASSEMBLY OF PLATFORMS

During this phase the platforms without screws or pins may swing or drop off.

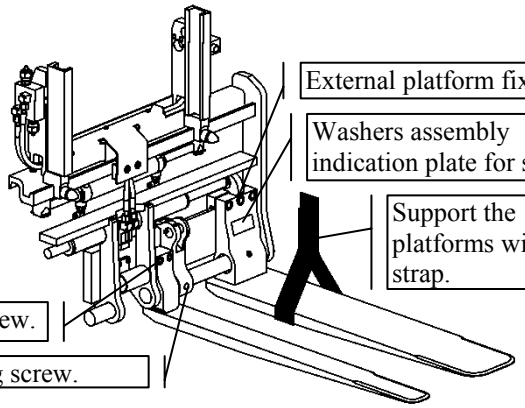
Disassembly of the internal platform.

1) Remove the fixing screw, ISO 3926 10 mm wrench.
Warning: the adjustment spacers may fall.

2) Remove the pin locking screw with an ISO 3926 8-mm wrench.

3) Extract the platform support pin so that the internal platform is free.

4) Place on the ground.



Disassembly of the external platform.

1) Remove the hook, ISO 3926 14 mm wrench.
Warning: the adjustment spacers may fall.

2) Extract the platform support pin so that the external platform is free.

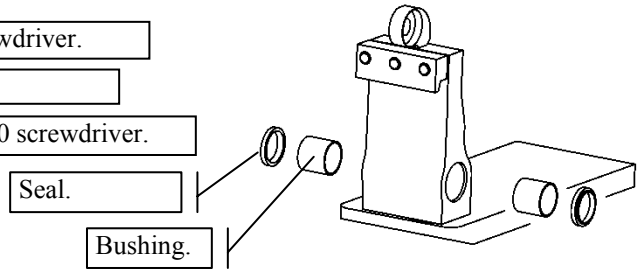
4) Place on the ground.

8.19. REPLACEMENT BUSHES AND SCRAPERS

1) Remove the seal using an ISO 2380 screwdriver.

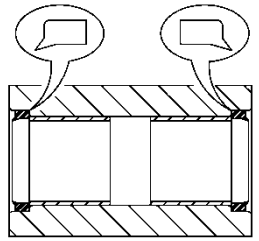
2) Use the puller to remove the bushings.

2) Remove the upper shoe with an ISO 2380 screwdriver.



Follow the order of assembly when replacing the gaskets.

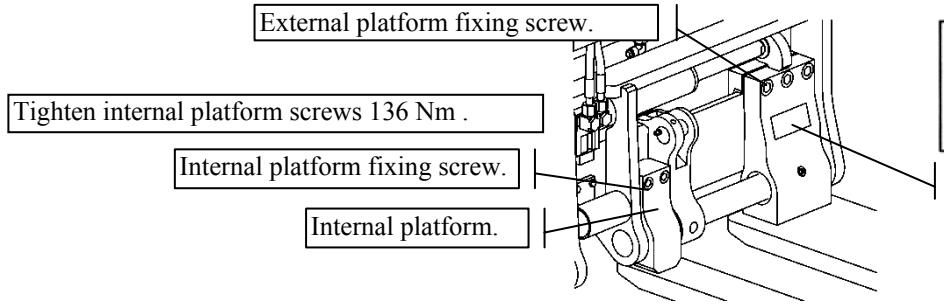
Replace the seals in the presence of cracks or permanent deformation

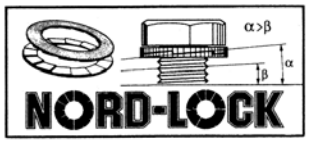


Replace the bushings if there are cracks, permanent deformation or worn internal coating.

CARRY OUT THE ABOVE PROCEDURE IN REVERSE ORDER TO RESTORE THE DISMANTLED PARTS.

8.20. TIGHTENING OF PLATFORM SCREWS





Respect the direction as indicated by the sticker during the assembly or tightening of the washers "h". The washers must be replaced after 5 uses.

Washers assembly indication plate for screws.

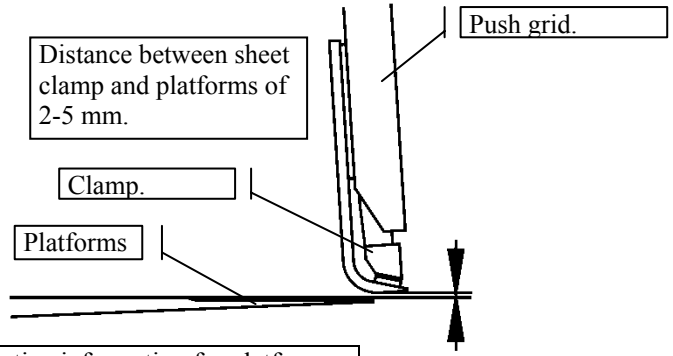
Tighten external platform screws 570 Nm .

8.21. PLATFORMS ADJUSTMENT

! **The platforms are to be adjusted without any load. Check after 20-30 handling operations.**

! **Make checks or adjustments with the equipment fully extended.**

8.21.1. STANDARD ADJUSTMENT



Indicative information for platform adjustment		
External platforms	Added spacer	0.5 mm
	Movement	4.2 mm
Internal platforms	Added spacer	0.5 mm
	Movement	7.5 mm

8.21.2 INTERNAL PLATFORMS

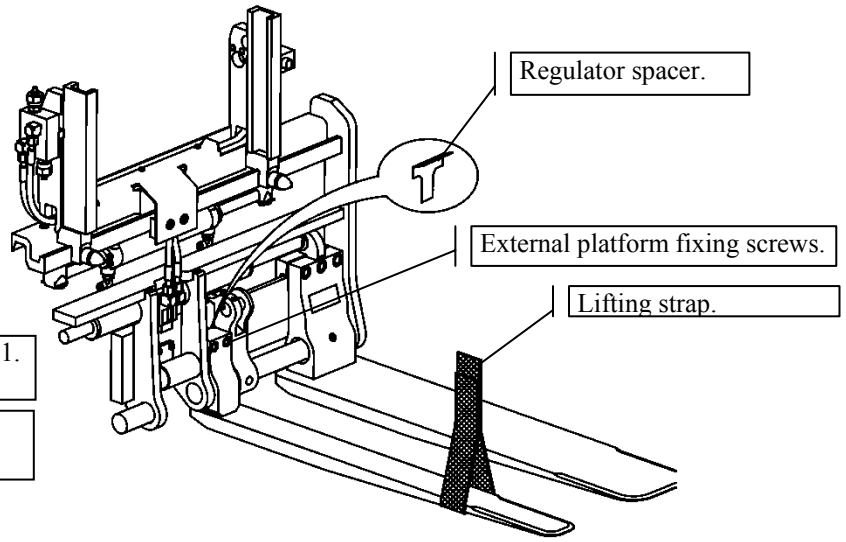
1) Hold the platforms with straps.

2) Loosen the screws, ISO 3926 14 mm wrench, and lower the tip of the platform.

3) Add or remove spacers between the platform and the rear frame.

4) Check the adjustment, see point 8.19.1. Standard adjustment.

5) Once the adjustment is completed, tighten the screws to 570Nm.



8.21.3. EXTERNAL PLATFORMS

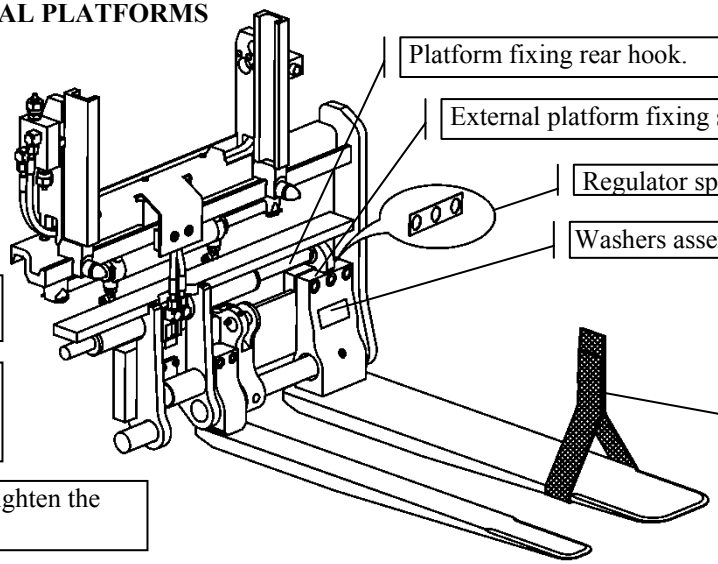
1) Hold the platforms with straps.

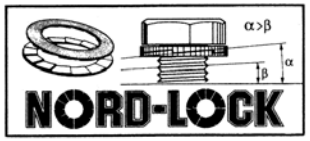
2) Disconnect the hook, ISO 3926 14 mm wrench.

3) Add or remove spacers between the rear hook and the platform.

4) Reposition the hook and shoe and check the adjustment, see point 8.19.1. STANDARD ADJUSTMENT.

5) Once the adjustment is completed, tighten the screws to 136 Nm.





Respect the direction as indicated by the sticker during the assembly or tightening of the washers. The washers must be replaced after 5 uses.

8.22. ELIMINATION OF SIDE-SHIFTER

The equipment must be disconnected from the forklift in order to proceed with maintenance.

Possible leakage of oil from pipelines. Prepare a container to collect fluid.

Before disconnecting the hydraulic hoses, follow the manufacturer's instructions to remove the pressure in the forklift's circuit.

1) Disconnect the 4 forklift feed hoses, ISO 3318 17 mm wrench.

2) Remove the lower hooks,
ISO 3318 class2 24 mm, class3 27 mm wrench.

3) Use the appropriate strap to lift the equipment (see point 8.16.1. DETACHMENT OF THE EQUIPMENT)

4) Remove the cylinder stems retainers.

⚠ **In this phase the cylinder block and shoes support are free to drop.**

5) Disconnect the cylinder feed hoses, ISO3318 17 mm wrench.

6) Dismantle the cylinder support block and upper shoes.

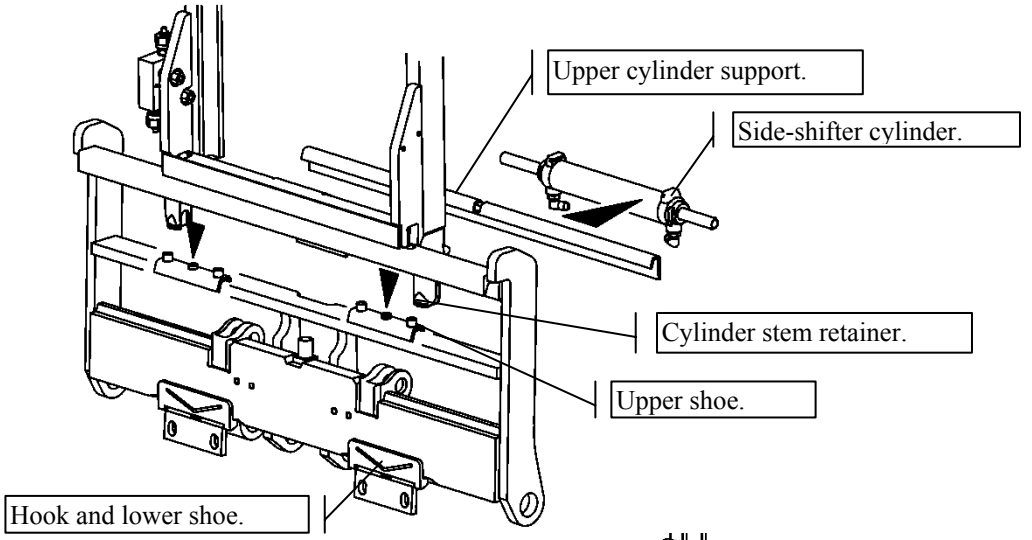
7) Attach the spacer to the ISO 2328 carriage of the forklift with the central tooth inserted into the notch at the centre of the carriage.

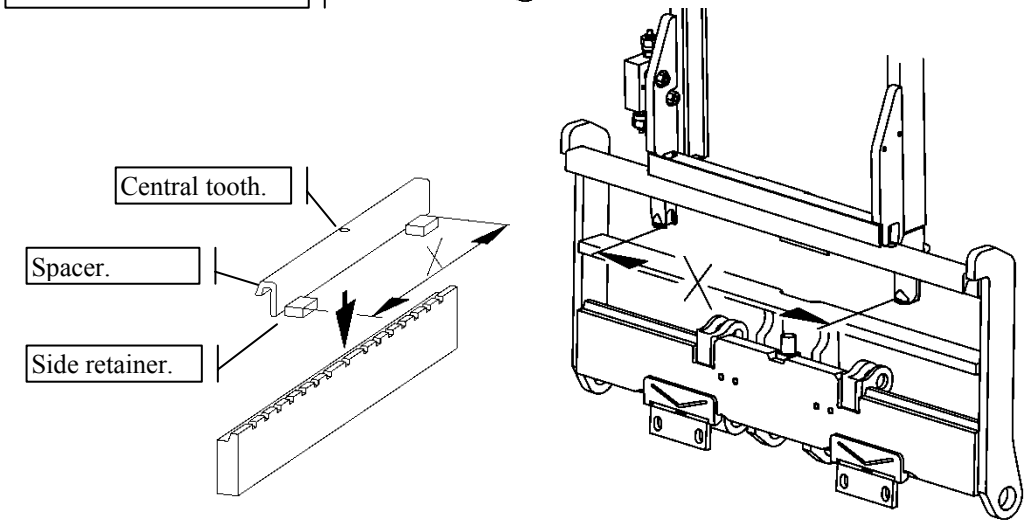
8) Attach equipment to the spacer, making sure that the lateral retainers of the spacer are inside the side-shifter cylinder thrust dowels.

9) Reposition the lower hooks and make adjustments as per point 4.2
. HOOKS ADJUSTMENT.

10) Connect the hoses to the forklift's system.

❗ **To check the connections, perform 5 complete movements, with and without the load.**





9. LIST OF POSSIBLE FAULTS WITH CAUSES AND REMEDIES

9.1. SIDE-SHIFTER AND PLATFORMS UNIT

platforms do not shift to the side and/or move	Insufficient oil pressure and/or flow rate.	Check and/or adjust the forklift's hydraulic pump
	Sliding tracks dirty or distorted	Clean, remove distortion and grease
	Malfunction of solenoid valve EV1(only for platforms movement)	Check electric contacts, magnet and mechanical movements
	Malfunction of sequential valve between side-shifter and platforms.	Check or clean the sequential valve
	Hydraulic circuit blocked or broken.	Eliminate obstruction or replace damaged hose.
	Defective cylinders	Check or replace gaskets and stem guides or cylinders
	Pads and/or sliding tracks not greased	Clean and grease
Slow or irregular platform side-shifting and/or movement	Insufficient oil pressure and/or flow rate.	Check and/or adjust the forklift's hydraulic pump
	Sliding tracks dirty or distorted	Clean, remove distortion and grease
	Defective cylinders	Check or replace gaskets and stem guides or cylinders
	Residual air in the hydraulic circuit.	Check oil level in the forklift's tank; vent any residual air

9.2. PANTOGRAPH UNIT

Do not extend and/or return the front grid	Insufficient oil pressure and/or flow rate.	Control and/or regulation of the forklift's hydraulic pump.
	Malfunction of the pressure relief valve	Adjustment of the valve setting
	Malfunction of solenoid valve EV1	Check electric contacts, magnet and mechanical movements
	Sliding tracks dirty or obstructed	Clean, eliminate the obstruction and grease.
	Hydraulic circuit blocked or broken.	Eliminate obstruction or replace damaged hose.
	Faulty cylinders	Control or replacement of the seals and of the cylinders or stem guides
The extension and/or the return of the front grid occurs slowly and/or irregularly	Insufficient oil pressure and/or flow rate.	Control and/or regulation of the forklift's hydraulic pump.
	Sliding tracks dirty or obstructed	Clean, eliminate the obstruction and grease.
	Faulty cylinders	Control or replacement of the seals and of the cylinders' stem guides
	Cylinder flow control valve not adjusted correctly	In order to optimize the speed, screw or unscrew the adjuster. Lock after making the adjustment.
	Residual air in the hydraulic circuit.	Check oil level in the forklift's tank; Bleed the residual air in the hydraulic circuit.

9.3. GRID UNIT WITH SHEET CLAMP

Does not clamp the load supporting sheet (or pallet)	Sheet (or pallet) incorrectly inserted in the clamp	Check the load overhang and sheet straightness
	Insufficient oil pressure and/or flow rate.	Check and/or adjust the forklift's hydraulic pump.
	Sliding tracks dirty or obstructed.	Clean, eliminate the obstruction and grease.
	Hydraulic circuit blocked or broken.	Eliminate obstruction or replace damaged hose.
	Defective cylinders	Check or replace the seals and the stem guides of the cylinders
The clamp does not perform the sequence of movements and/or does not hold the sheet during the return of the grid	Insufficient oil pressure and/or flow rate.	Check and/or adjust the forklift's hydraulic pump
	Sequence valve malfunction	Adjustment of the valve setting
	Faulty cylinders	Check or replace the gaskets and the stem guides of the cylinders
	Clamp shoe dirty or worn	Clean the surface of the shoe. Replace if worn

IN CASE OF PROBLEMS OTHER THAN THOSE DESCRIBED ABOVE, PLEASE CONTACT OUR SERVICING DEPT.

10. NOISE EMISSION

THE FOLLOWING SPECIFICATIONS APPLY TO THE FORKLIFT-EQUIPMENT UNIT.

- Sound pressure level of the weighted emission A in the workplace, where this exceeds 70 dB (A); if said level does not exceed 70 dB (A), it must be indicated.

-Maximum weighted instantaneous sound pressure C in the workplace, where this exceeds 63 Pa (130 dB relative to 20 µPa).

- Weighted sound power level A emitted by the machine, if the sound pressure level of the weighted emission A in workplaces exceeds 80 dB (A).

11. RECYCLING

Replaced parts should be disposed of, as in the case of complete destruction, separately depending on the nature of the material and in compliance with the requirements of the law on the disposal of solid industrial waste.

NB: The pieces not mentioned in the table are made of steel.

Transport pallet	Wood
Retaining straps and covering for shipment	Polyethylene and heat shrink
Side-shifter and grid shoes	Nylon
Hoses / connectors	Nylon / steel
Bushings	Bronze / Teflon
Cylinder caps	Cast iron
Cylinder gaskets	Polyurethane and NBR
Paint	Epoxy polyester
Hydraulic oil	Dispose of in compliance with local regulations
Hose fastenings	Nylon

12. WARRANTY

The manufacturer guarantees all its products for 12 months or 2000 working hours (whichever occurs first) from the date of shipment.
If used more than 8 hours per day the warranty period shall be reduced proportionately.
The warranty is limited to the replacement, ex-factory of the manufacturer, of those parts identified as being defective due to defects in materials or workmanship;
it does not include the cost of labor or travelling expenses for the replacement of such parts.
It is further understood that recognition of the warranty is void if the anomaly results from the inappropriate use of the product, if the implementation was not
carried out according to the manufacturer's specifications or if non-original parts have been used for modifications or replacement.
The equipment is not guaranteed for uses that exceed the performance
indicated on the rating plate and in the documentation.
All equipment is covered by insurance for any damage caused to third parties by defective parts or their malfunction; damage caused by improper use or misuse is not included.

13. FACSIMILE OF THE EC CONFORMITY CERTIFICATE

Dichiarazione CE di Conformità

Noi NOME COSTRUTTORE
INDIRIZZO COSTRUTTORE
XXXXXXXXXXXXXXXX

Dichiariamo sotto la nostra esclusiva responsabilità che il prodotto:

Tipo YYYYYYYYYYYYYYYY
Marca XXXXXXXXXXXXX
Modello WWWWWWWWW
Matricola JJJJJJJJJJ
Anno di fabbricazione VVVV

è conforme alle disposizioni della Direttiva Macchine 2006/42/CE
e alle disposizioni della norma EN 1726-2

Persona autorizzata a costituire il fascicolo tecnico
Nome Pietro
Cognome Foroni
Posizione Direttore Ufficio Tecnico
Indirizzo 29027 Casoni di Podenzano - Piacenza (Italy)

Persona autorizzata a redigere la dichiarazione
Nome Claudio
Cognome Carnieletto
Posizione Direttore Assicurazione Qualità e Post Vendita

Piacenza, 10 dicembre 2009