

USE AND MAINTENANCE MANUAL

FORKS POSITIONER Mod. FR-FP-FFP

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 connected to forklifts, for use where frequent repositioning of the forks is required to lift pallets of different sizes; consisting of a frame, with or without lateral shifting, with ISO 2328 profile at the front; the forks are driven by opposing linear hydraulic actuators positioned at the upper part of the frame itself; the forks supplied by the forklift manufacturer are used for versions with positioners (**FR** model where the forks are flanked by shaped plates) or with fork support (**FFP** model where the FEM class forks are hooked to the support), modified forks are required for the **FP** model version.

SYMBOLS USED



Situation with possible risk to the operator's safety.



Mandatory procedures to be carried out.



Notes to be read carefully.

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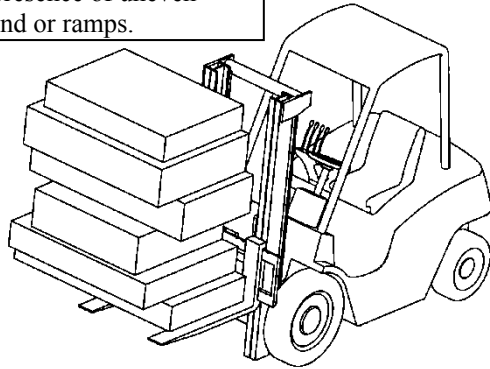
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1. ADVICE FOR THE EQUIPMENT'S USE

1.1. PROHIBITED HANDLING

Transporting a load that is unstable, off centre or on one platform 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 lifting-lowering movements, tilting or lateral displacement of the load with the forklift moving.

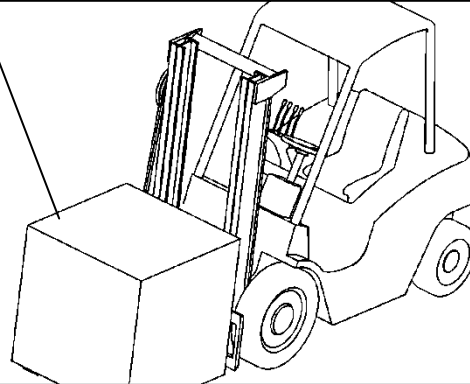
Performing movements or manoeuvres with the load lifted high.

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

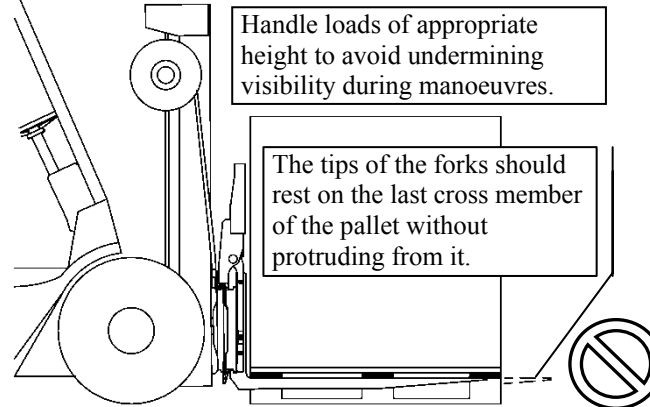
Parking the forklift with the engine running and/or load lifted on uneven ground or ramps.

1.2. CORRECT HANDLING

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 platform up), the load slightly off the ground and centred on the forklift, adjusting the speed according to the state of the road surface and any obstacles or presence of people along the route.



Handle loads of appropriate height to avoid undermining visibility during manoeuvres.

The tips of the forks should rest on the last cross member of the pallet without protruding from it.

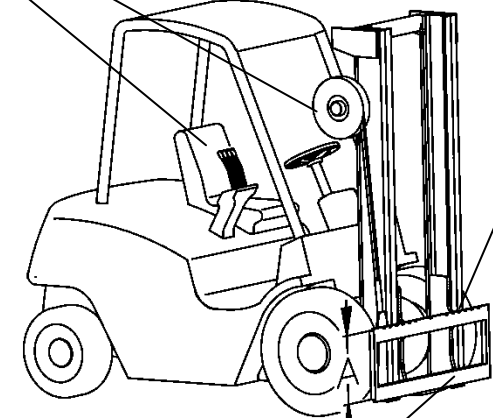
2. FORKLIFT CONTROLS

The hydraulic pump of the forklift must have a max. delivery pressure of 23 to 25 MPa from the distributor, and a capacity of: Class II = 15-20 l/min. Class III = 18-28 l/min.

4-lever distributor for movements control.

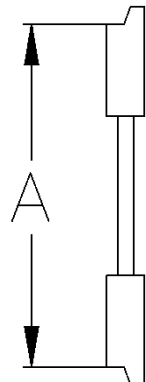
The recommended internal diameter for any additional supply system is min. 6.5 mm.

The fork positioning slots must be intact and not clogged.



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

Class II = min. 380 - max. 381 mm
Class III = min. 474.5 - max. 476 mm



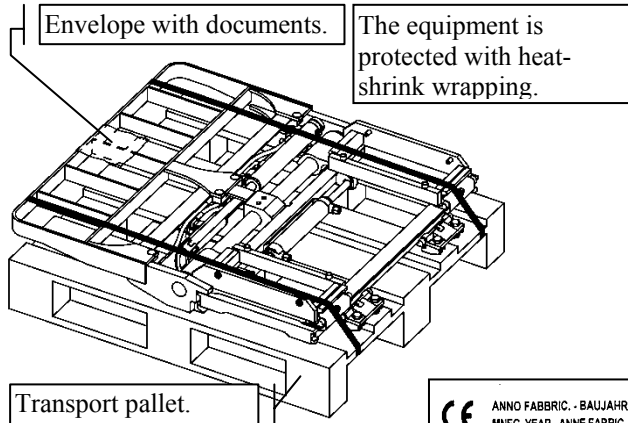
! THE EFFECTIVE COMBINATION CARRYING CAPACITY BETWEEN THE FORKLIFT TRUCK AND THE EQUIPMENT IS THE RESPONSIBILITY OF THE FORKLIFT TRUCK MANUFACTURER AND MAY NOT CORRESPOND TO THAT INDICATED ON THE RATING PLATE.

! USE OF THE EQUIPMENT FOR PURPOSES OR HANDLING DIFFERENT FROM THAT INDICATED IS PROHIBITED.

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3. EQUIPMENT DESCRIPTION

3.1 SHIPPING LAYOUT CLASS2-3 3.5 TON MOD. FFP



Hydraulic infeed. DIN 3861 10 mm dia. connector with seal.



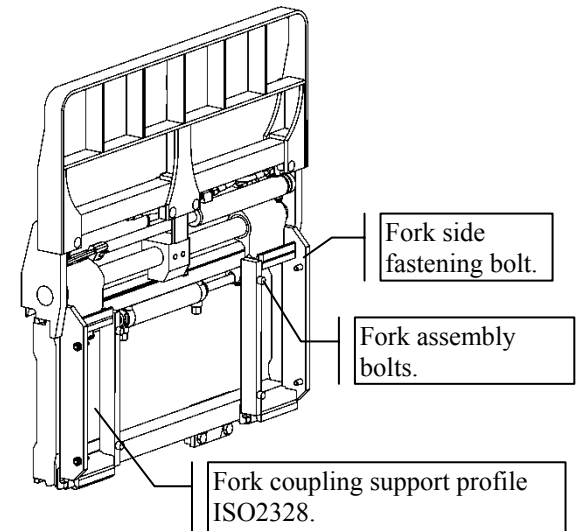
Safety stickers.

Safety guard.

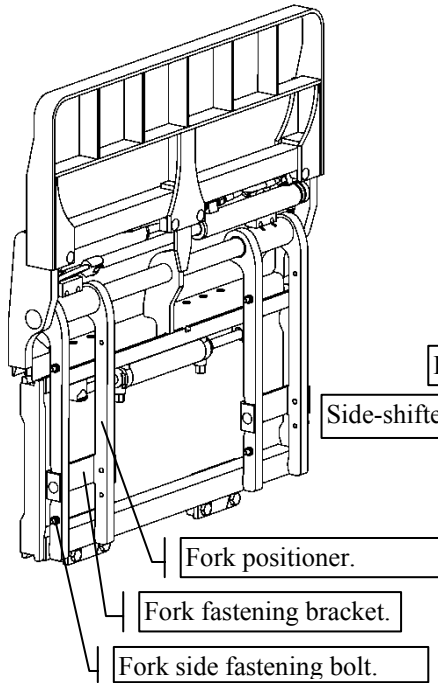
Hydraulic system.

Forks positioning chromed guide pin.

Forks positioning cylinder.

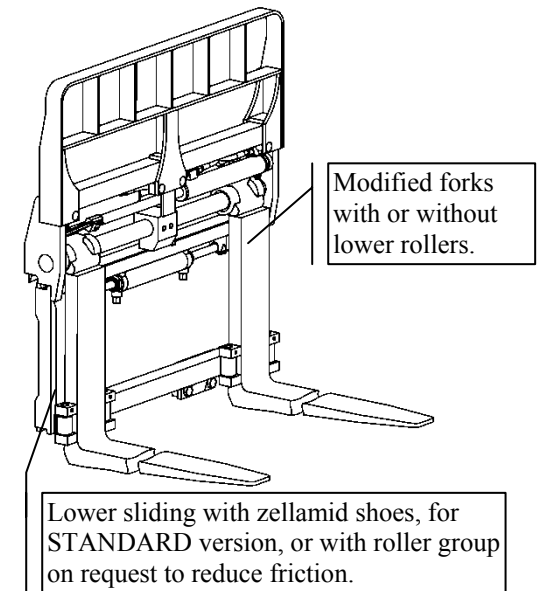


3.3. CLASS2-3 3.5 TON MOD FR



CE	ANNO FABBRIC. - BAUJAHR	
	MFG. YEAR - ANNE FABRIC.	
TIPO - TYP		
TYPE - TYPE		
MATRICOLA - FABRIK NR.		
S. NUMBER - NR. FABRIC.		
PORTATA STRUTT. - TRAGKRAFT		KG
STR. CAPACITY - CAPACITE STRUCT.		
CON BARIC. A - MIT L. SP.		MM
WITH C.O.G. AT - AVEC C.D.G. A		
SPESSORE - VORBAUMASS		MM
THICKNESS - EPAISSEUR		
MASSA - EIGENGEWICHT		KG
WEIGHT - MASSE		
BARICENTRO - SCHWERPUNKT		MM
C.O.G. AT - C.D.G. A		
PRESSIONE MAX ESERCIZIO - MAX		BAR
BETRIEBSDRUCK - MAX WORKING		
PRESSURE - PRESSION MAX SERVICE		
RISPETTARE LA PORTATA COMPLESSIVA DEL CARRELLO E DELLA ATTREZZATURA - TRAGFÄHIGKEIT VON STAPLER UND ANBAUERÄT BEACHTEN - RESPECT CAPACITY OF TRUCK AND ATTACHMENT ASSEMBLY - RESPECTER LA CAPACITÉ DE L'ENSEMBLE CHARIOT / ACCESSOIRE		

3.4. CLASS2-3 3.5 TON MOD. FP



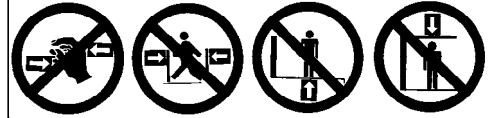
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3.5. CLASS3 4.9 TON MOD. FFP

CE	ANNO FABBRIC. - BAUJAHR	
	MNFG. YEAR - ANNE FABRIC.	
TIPO - TYP		
TYPE - TYPE		
MATRICOLA - FABRIK NR.		
S. NUMBER - NR. FABRIC.		
PORTATA STRUTT. - TRAGKRAFT		KG
STR. CAPACITY - CAPACITE STRUCT.		
CON BARIC. A - MIT L. SP.		MM
WITH C.O.G. AT - AVEC C.D.G. A		
SPessore - VORBAUMASS		MM
THICKNESS - EPAISSEUR		
MASSA - EIGENGEWICHT		KG
WEIGHT - MASSE		
BARICENTRO - SCHWERPUNKT		MM
C.O.G. AT - C.D.G. A		
PRESSIONE MAX ESERCIZIO - MAX		BAR
BETRIEBSDRUCK - MAX WORKING		
PRESSURE - PRESSION MAX SERVICE		
RISPETTARE LA PORTATA COMPLESSIVA DEL CARRELLO E DELLA ATTREZZATURA - TRAGFÄHIGKEIT VON STAPLER UND ANBAUGERÄT BEACHTEN - RESPECT CAPACITY OF TRUCK AND ATTACHMENT ASSEMBLY - RESPECTER LA CAPACITE DE L'ENSEMBLE CHARIOT / ACCESSOIRE		

Identification plate.

Hydraulic infeed. DIN 3861 10 mm dia. connector with seal.



Safety stickers.

Positioner cylinder union.

Hydraulic system.

Forks positioning chromed guide pin.

Forks positioning cylinder.

Pressure relief valve.

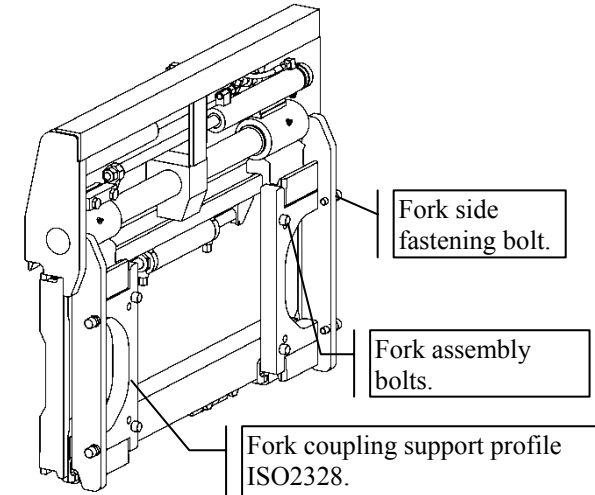
Side-shift frame.

Side-shifter cylinder.

Side-shifter sliding shoes support.

Side-shifter hydraulic infeed.

Side-shifter lower hooks and shoes.

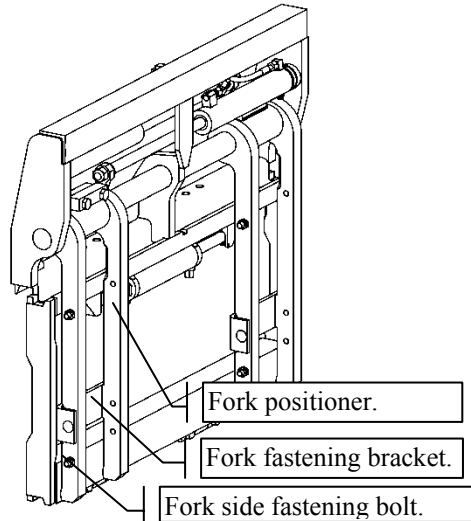


Fork side fastening bolt.

Fork assembly bolts.

Fork coupling support profile ISO2328.

3.6. CLASS3 4.9 TON MOD. FR

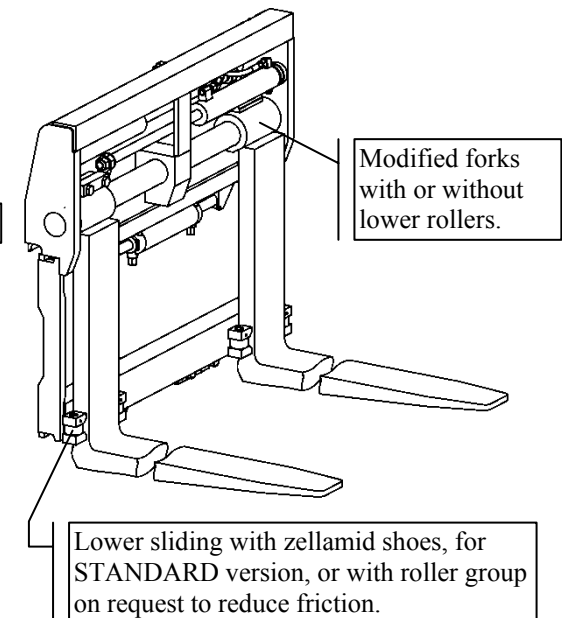


Fork positioner.

Fork fastening bracket.

Fork side fastening bolt.

3.7. CLASS3 4.9 TON MOD. FP



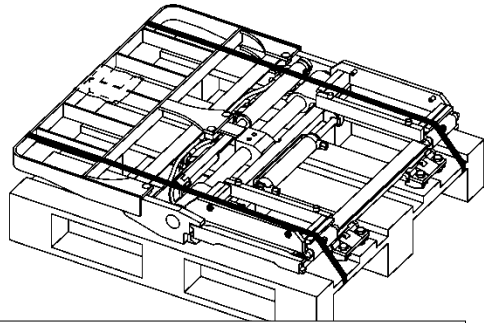
Modified forks with or without lower rollers.

Lower sliding with zellamid shoes, for STANDARD version, or with roller group on request to reduce friction.

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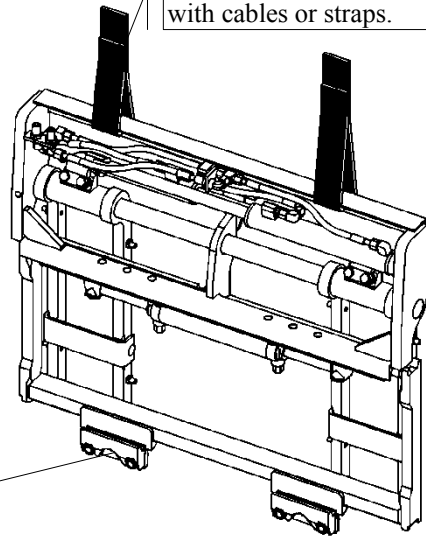
4. FASTENING TO THE FORKLIFT

4.1. COUPLING

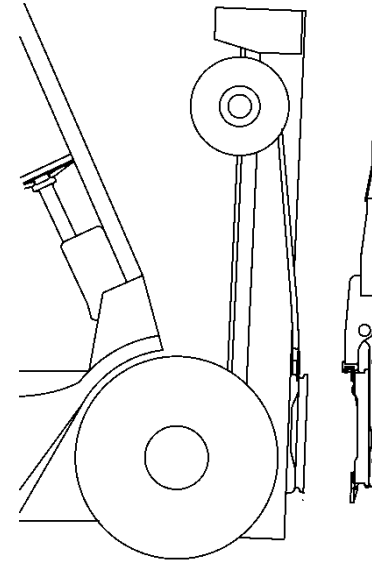


Remove the straps that secure the equipment and the plastic sheeting.

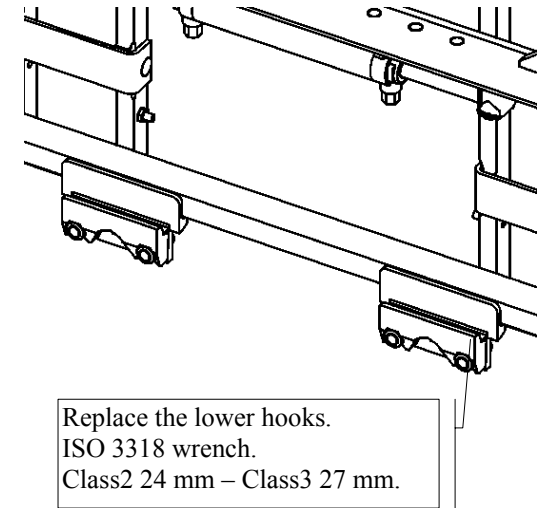
Remove the lower hooks.
ISO 3318 wrench.
Class2 24 mm – Class3 27 mm.



Sustain the equipment with cables or straps.



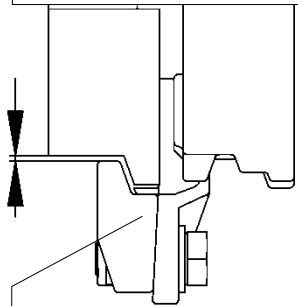
If necessary tilt the mast forward.
During coupling, check that the central tooth of the shoe support engages the central notch of the forklift's plate.



Replace the lower hooks.
ISO 3318 wrench.
Class2 24 mm – Class3 27 mm.

4.2. ADJUSTMENT

Adjustment of lower hooks
Max. 1 mm. Bolts tightness:
Class2 min. 240 Nm.
Class3 min. 300 Nm.



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

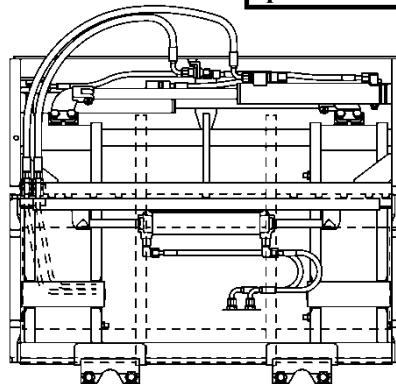
4.3. CENTRAL INLET HOSE CONNECTION 4.4

LEFT INLET HOSE CONNECTION

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

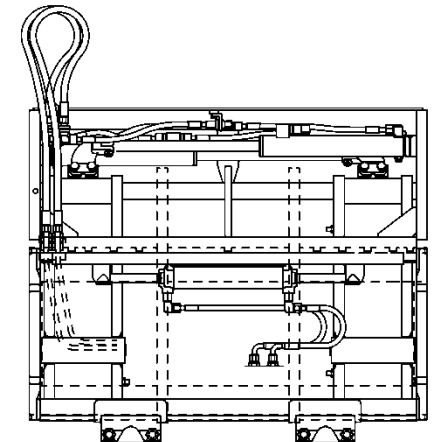
! Possible leakage of oil from pipelines. Prepare a container to collect fluid.

! The connecting hoses between the equipment and the forklift are optional.



! The frame with the fork positioning cylinder, move sideways left and right; during the pipe connection of the hoses, from the forklift to the equipment, ensure that the hoses allow the movement and do not rub against fixed parts.

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



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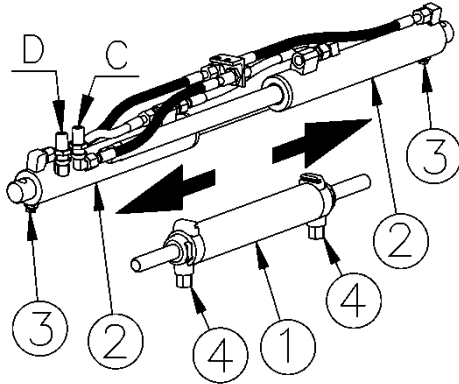
5. HYDRAULIC SYSTEM

5.1. CONNECTION AND DIAGRAM CLASS2 – 3,5 TON

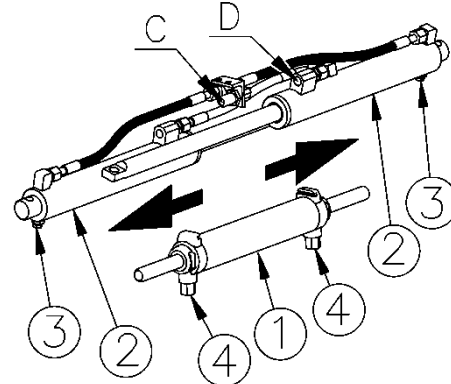
5.2. CONNECTION AND DIAGRAM CLASS3 4,9 TON

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

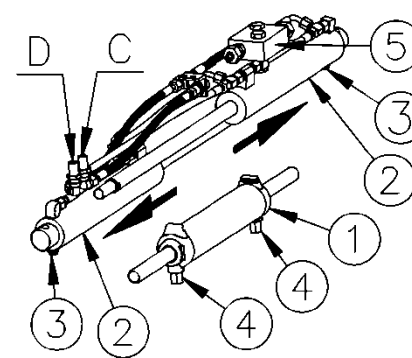
5.1.1. LEFT INLET



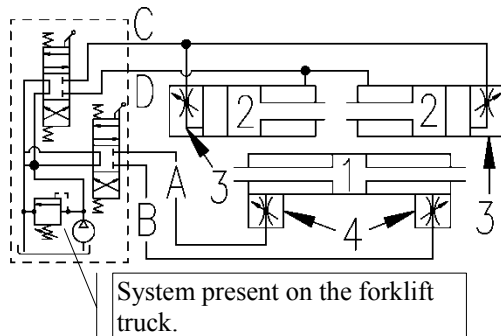
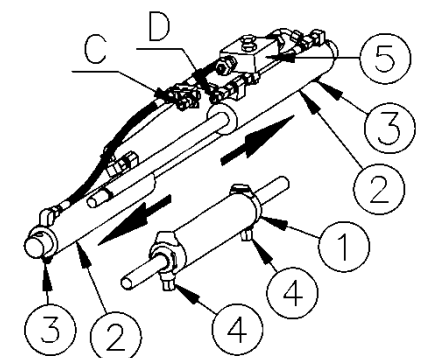
5.1.2. CENTRAL INLET



5.2.1. LEFT INLET



5.2.2. CENTRAL INLET

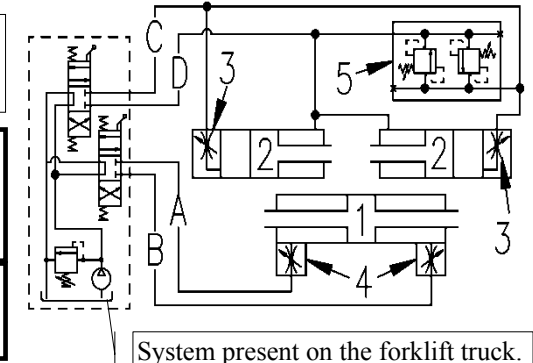


! Vary the forks' shift speed with adjusters (position 3), with ISO 3318 16 mm wrench for the locking nut and 12 mm for the bolt. Unscrew to increase and screw to decrease the speed. Lock the nut when adjustment is complete.

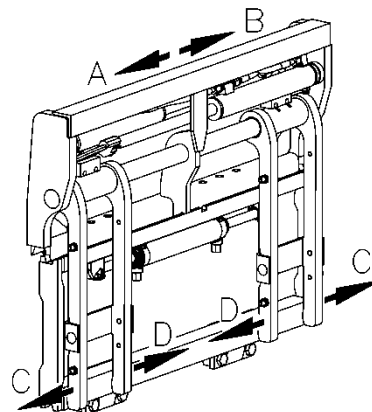
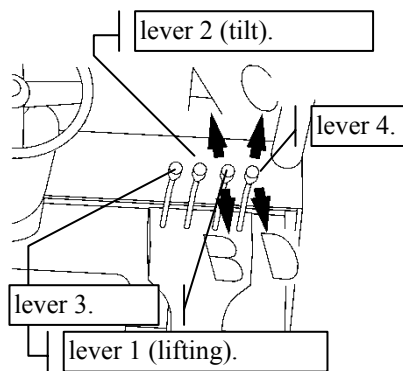
! Possible leakage of oil from pipelines. Prepare a container to collect fluid.

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

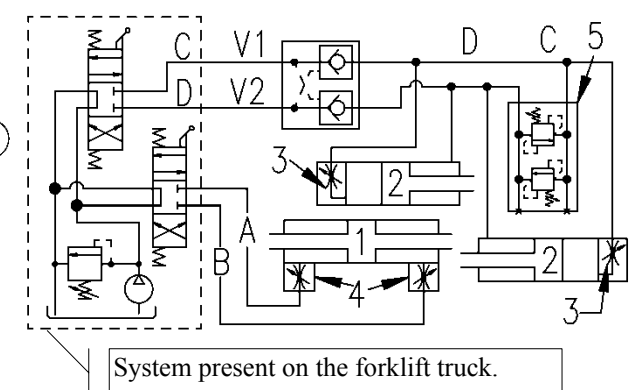
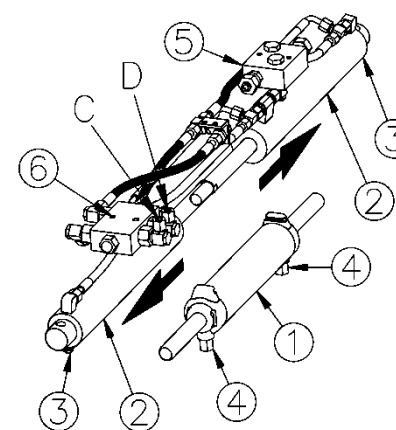
! IF THE SYSTEM HAS A NON-RETURN VALVE, A SAFETY DEVICE IS REQUIRED ON THE FORKLIFT'S DISTRIBUTOR TO PREVENT ACCIDENTAL USE.



5.3. MOVEMENTS CONTROL



5.2.3. WITH NON-RETURN VALVE



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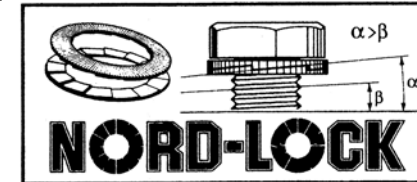
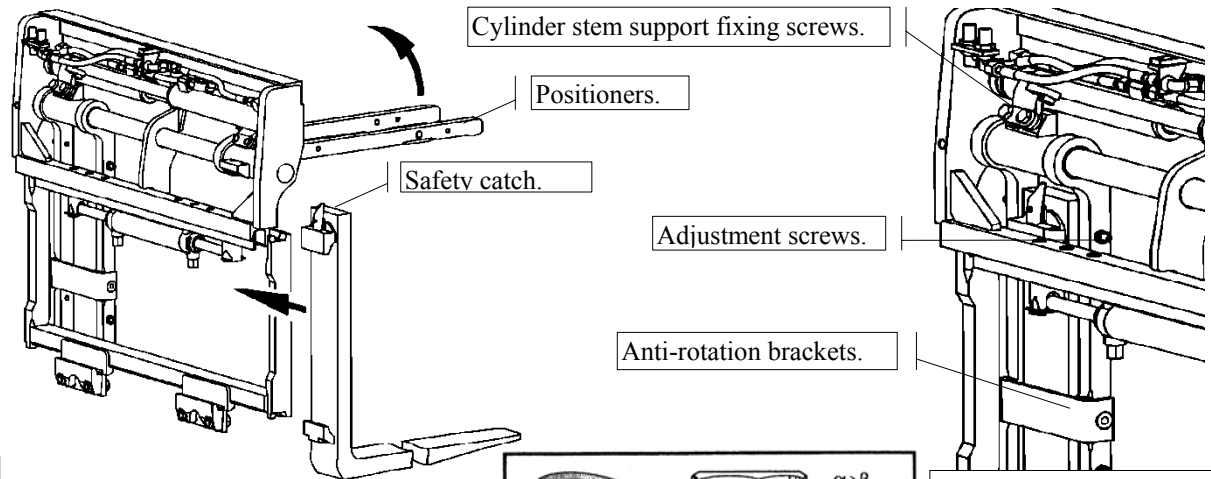
6. FORKS ASSEMBLY

6.1. FR MODEL

- 1) Open the equipment to its maximum.
- 2) Remove the cylinder stem fixing screws, ISO 3318, 19 mm class2-e 3.5 TON and 24 mm class3 4.9 TON wrenches.
- 3) Loosen the adjustment screws. Class2-3 3.5 TON, ISO 3318 16 mm and ISO 2936 5 mm wrenches. Class3 4.9 TON, ISO 3318 21 mm and ISO 2936 8 mm wrenches
- 4) Remove the anti rotation brackets, ISO 2936 10 mm wrench.
- 5) Rotate the positioners upwards.
- 6) Position the safety catch of the forks in the released position or remove it completely.
- 7) Insert the fork laterally onto the ISO 2328 profile at the front of the frame and position it in the centre of the positioner. rotate the positioner into its original position.
- 8) Tighten the bolts with ISO 3318 wrench. Class2-3 3.5 TON 19 mm wrench 115 N/m. Class3 4.9 TON 21 mm wrench 279 N/m.
- 9) Secure the brackets. ISO 2936 10 mm wrench 85 N/m.
- 10) Secure the fork inside the positioners, tightening the adjustment screws, to obtain a smooth and linear slide. With adjustment completed, tighten the locking nut at 50 N/m.



Pay attention during the operation. Precariously balanced pieces.



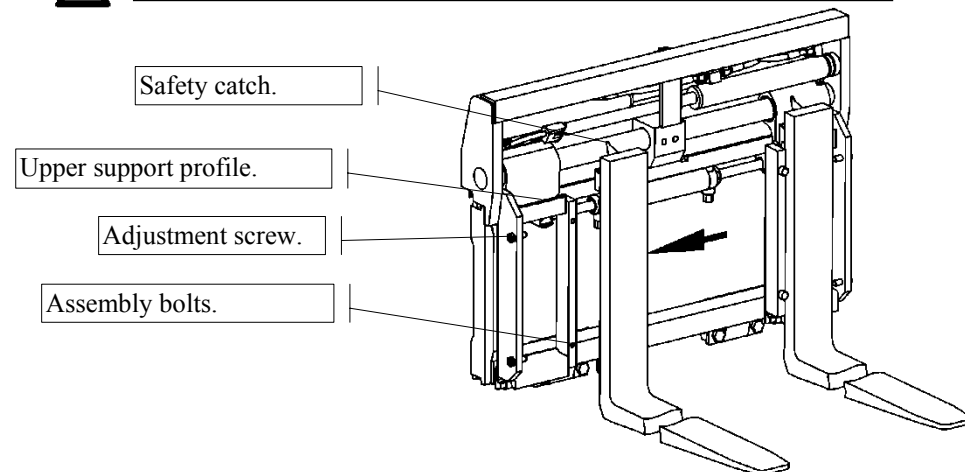
Respect the direction as indicated by the sticker when fitting the washers. The washers must be replaced after 5 uses.

6.2. FFP MODEL

- 1) Place the safety catch of the forks in the unlocked position.
- 2) Loosen the adjustment bolt, ISO 3318 18 mm and ISO 2936 6 mm wrench class2-3 3.5 TON, 24 mm and 14 mm wrench class3 4.9 TON.
- 3) Remove the 2 assembly bolts with washers, ISO 2936 10 mm wrench class2-3 3.5 TON, and 14 mm class3 4.9 TON.
- 4) With the equipment fully open, insert the fork onto the ISO 2328 profile in the upper section of the support.
- 5) Tighten the 2 assembly bolts with washers, 85 N/m class2-3 3.5 TON, 360 N/m class 4.9 TON.
- 6) Attach the forks inside the support, tightening the 2 adjustment screws until fully tightened and tighten the locking nut at 50 N/m class2-3 3.5 TON, 135 N / m Class3 4.9 TON.



Pay attention during the operation. Precariously balanced pieces



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7. ELIMINATION OF SIDE-SHIFTER

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

The equipment must be disconnected from the forklift in order to

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

1) Use appropriate straps to support the equipment.

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

3) Remove the lower hook, ISO 3318, class2 24mm, class3 27 mm wrench.

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

5) Remove the cylinder stem stops.

⚠ The upper cylinder block with support and shoes is free to drop.

6) Replace the cylinder block, cylinder support and upper shoes with spacers.

7) Hook the spacer of the forklift's carriage with ISO 2328 profile with the central tooth inserted into the notch at the centre of the carriage.

8) Attach the equipment to the spacer with the side stops of the spacer inside the cylinder thrust dowel.

9) Reposition the lower hook, ISO 3318 class2 24 mm, class3 27 mm wrench.

Cylinder support and upper shoes.

Lower hooks

Cylinder stem stop.

Side stop.

Spacer.

Cylinder thrust dowel.

! Perform the hook adjustment as in point 4.2.

8. MODIFICATION TO THE HYDRAULIC SYSTEM

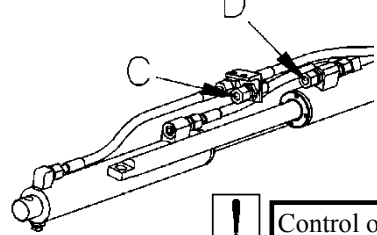
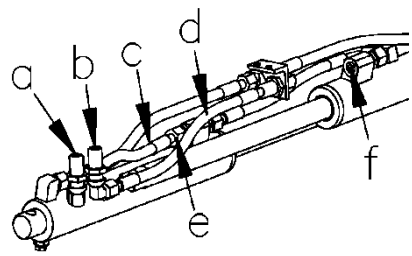
! Before connecting - disconnecting the hydraulic hoses, follow the manufacturer's instructions to remove the pressure in the forklift's circuit.

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

8.1.CLASS2 – 3 3.5 TON

8.2.CLASS3 4.9 TON

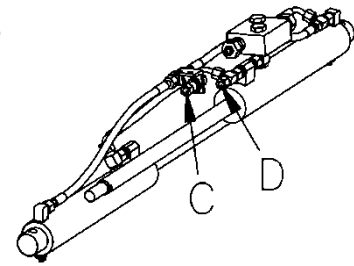
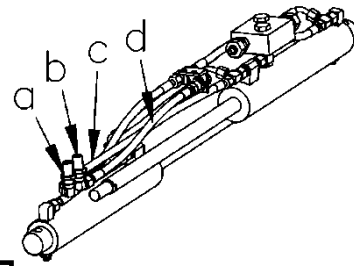
FROM SIDE INLET TO CENTRAL INLET → LET FROM SIDE INLET TO CENTRAL INLET



Remove connectors a – b and hoses c – d. Invert the position of the connector e with plug f.

! Control of movements as in point 5.3.

! To check the connections, perform 5 complete movements, with and without the



Remove connectors a – b and hoses c – d.

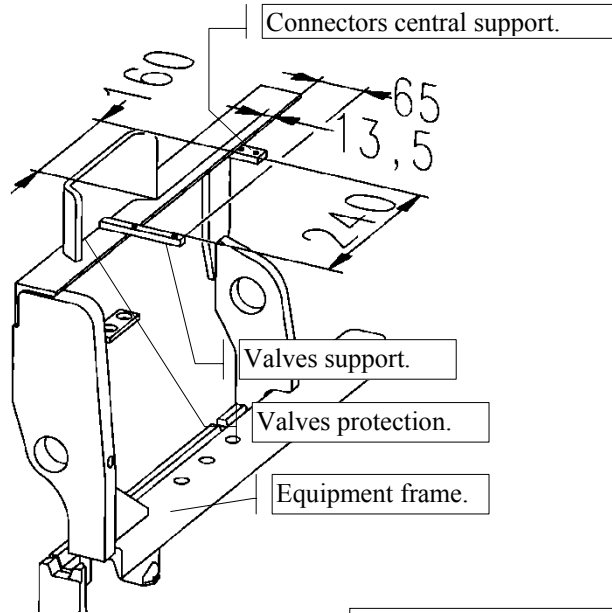
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8.3. SUPPLEMENTARY VALVE APPLICATION CLASS2 – 3 3.5 TON

8.3.1. VALVE SUPPORT APPLICATION

! Application possible for equipment with central inlet only.

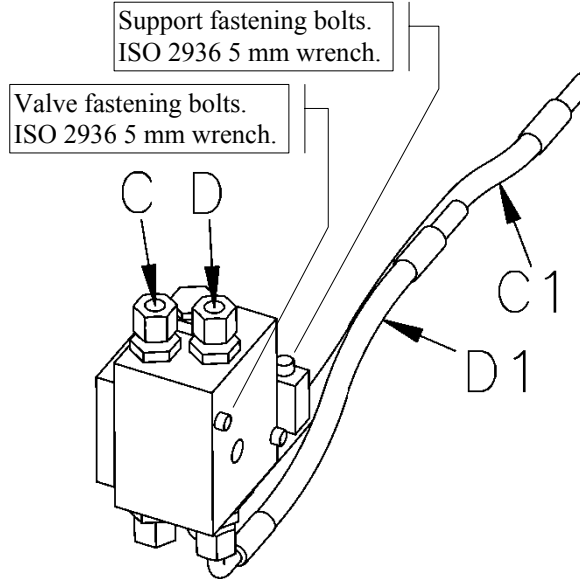
Place and weld the valves support and protection to the base frame of the equipment.



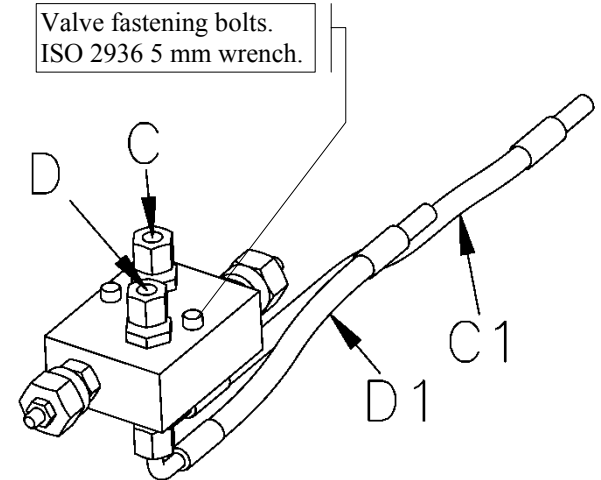
8.3.2. NON-RETURN VALVE 8.3.3. PRESSURE RELIEF VALVE

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

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



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

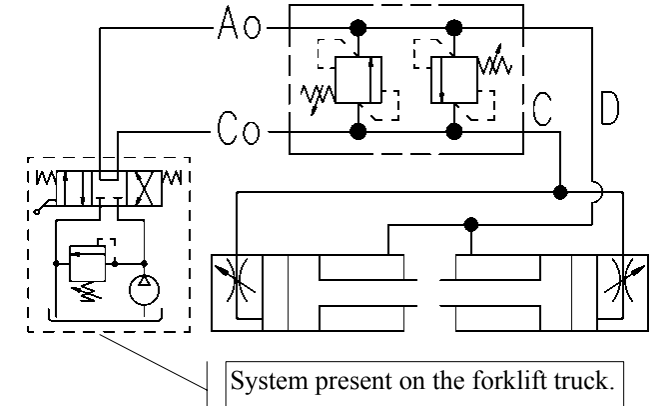
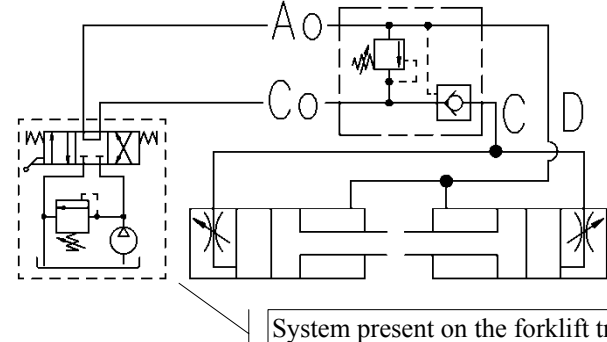
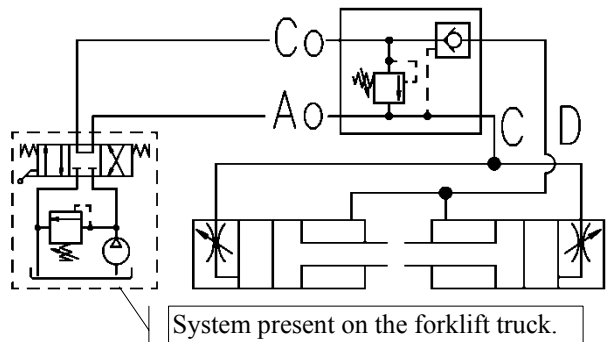


System layout with non-return valve.

OPTIONAL layout with non-return on fork opening.

STANDARD layout with non-return on fork closure.

Hydraulic system layout with pressure relief valves.



! Invert the hoses to obtain the OPTIONAL layout.

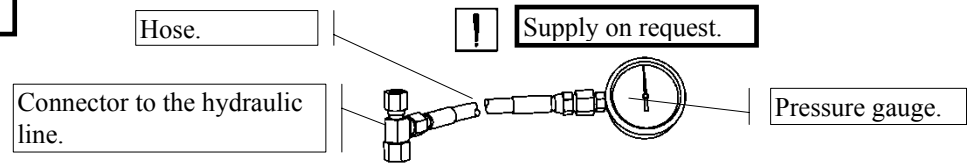
USE AND MAINTENANCE MANUAL

8.4. VALVE ADJUSTMENT

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

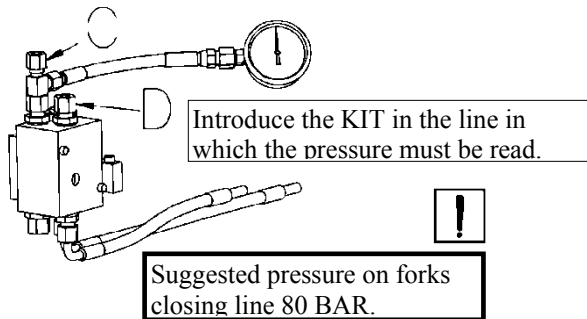
! Possible leakage of oil from pipelines. Prepare a container to collect fluid.

8.4.1. PRESSURE READING KIT



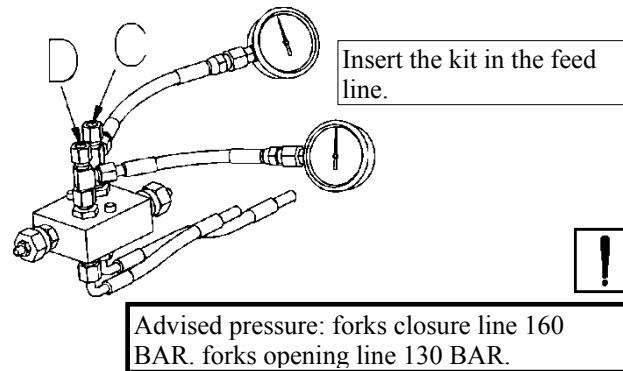
8.4.2 .CLASS2 – 3 3,5 TON

SIMPLE RELIEF VALVE



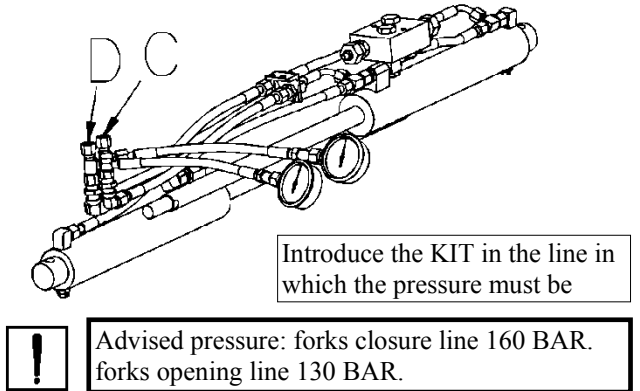
ADJUSTMENT: remove the closure plug, ISO 3318 22 mm wrench, use a ISO 2380 screwdriver to adjust the pressure; unscrew to decrease, screw to increase. Tighten the plug again once adjustment is complete.

DOUBLE RELIEF VALVE



ADJUSTMENT: loosen the locking nut, ISO 3318 17 mm wrench, and use an ISO 2936 5 mm wrench to adjust the pressure; unscrew to decrease, screw to increase. Tighten the locking nut once adjustment is complete.

8.4.3. CLASS 3 4.9 TON



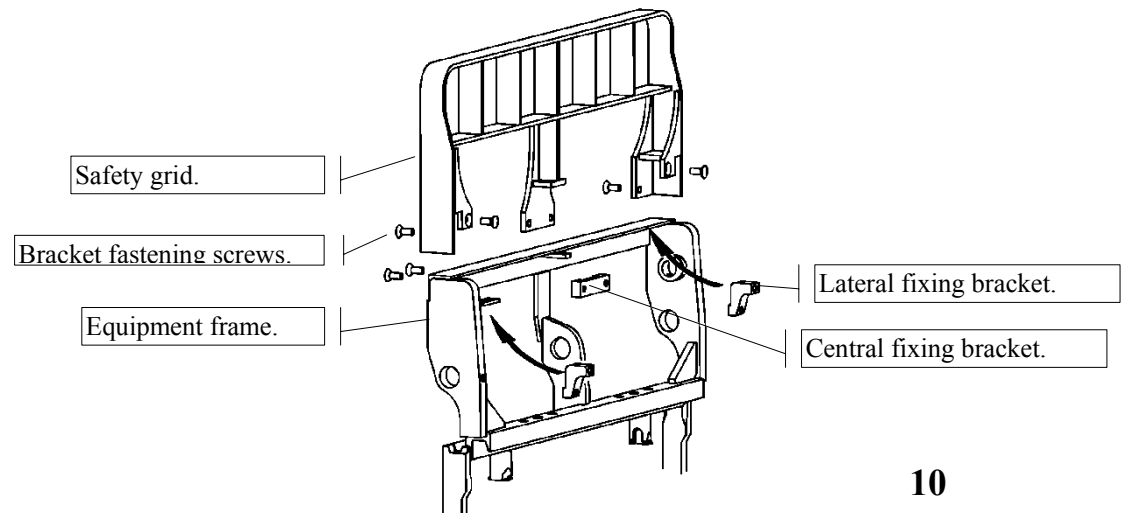
ADJUSTMENT: loosen the locking nut, ISO 3318 17 mm wrench, use an ISO 2936 5 mm wrench to adjust the pressure; unscrew to decrease, screw to increase. Tighten the locking nut once adjustment is complete.

9. GRID ASSEMBLY

1) Insert the grid from above onto the upper surface of the frame.

2) Place the brackets at the ends of the frame, under the crossbar and bolt them to the front and back with ISO 2936 5 mm wrench at 90 N / m.

3) Fix the grid centrally on the vertical reinforcement with the appropriate bracket; screw in the bolts from the front with an ISO 2936 5 mm wrench at 90 N/m.



USE AND MAINTENANCE MANUAL

10. DAILY CONTROLS



At the beginning of each shift, check the points indicated below and report any problem to the maintenance personnel.

FR MODEL

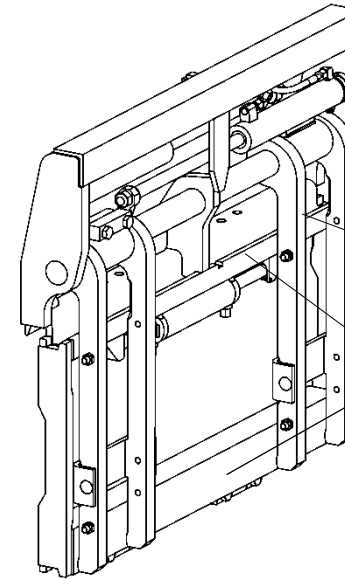
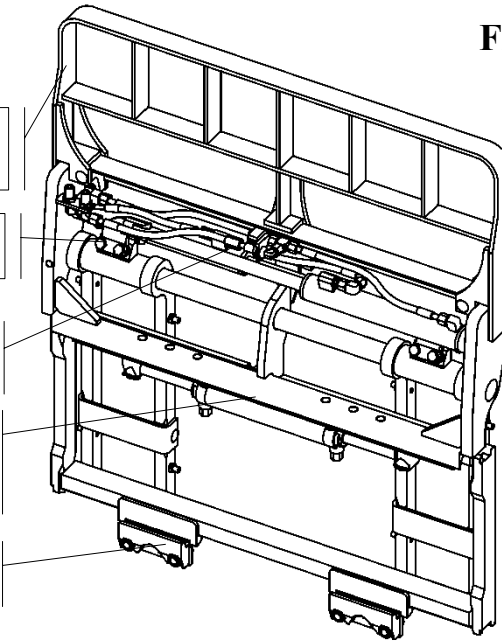
With the safety grid in use, make sure that it is properly secured.

Check the tightness of the screws between the stem support and forks positioner.

Check for oil leaks from the cylinders or from the hydraulic system.

The centre stop of the cylinder support must engage the central notch of the forklift carriage.

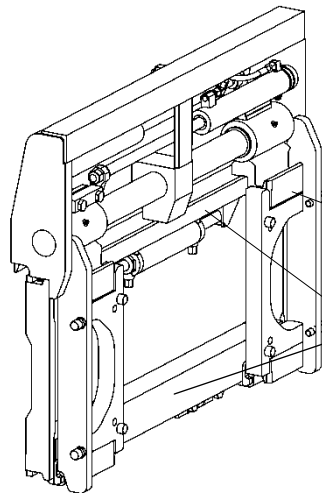
Lower hooks correctly positioned and secured, see point 4.2. ADJUSTMENTS.



The forks correctly attached to the upper profile and blocked in the positioner.

The sliding tracks of the forks must be free of dirt and obstructions.

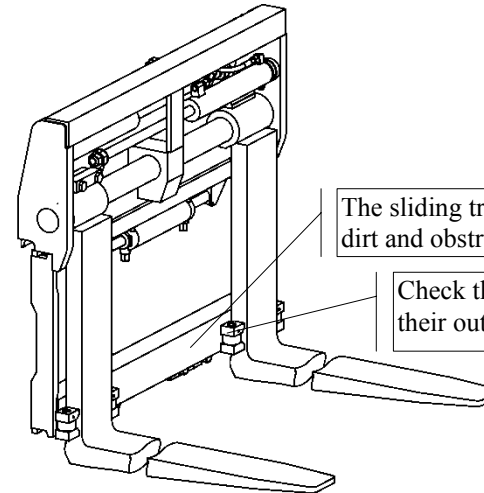
FFP MODEL



The forks correctly connected to the ISO 2328 profile of the support and secured by the side screws.

The sliding tracks of the forks must be free of dirt and obstructions.

FP MODEL



The sliding track of the forks must be free of dirt and obstructions.

Check that the rollers are not blocked and their outer surface is intact.

USE AND MAINTENANCE MANUAL

11. ROUTINE MAINTENANCE

PERIODIC MAINTENANCE SCHEDULE		
OPERATIONS	Working hours	
Cleaning in points "b"; greasing also in point "b1".	500	
Lubrication in point "a".		
Control of bolts tightness and hydraulic connections.		
Control of forks fastening with bolts "g" for FR and FFP models.		
In addition to the operation every 500 working hours, carry out:		
Check the vertical play of the lower hooks.	1000	
Tightness control of bolts "h" (follow NORD-LOCK instructions)		
Control the condition of the hoses and connectors.		
Check the wear of shoes "d", replace if thickness is less than 2 mm.		
Check point "c" of cylinder stem and the seals.		
Control of the guide surface "e", scrapers and bushings "f".	2000	
In addition to the operation every 500 and 1000 working hours, carry out:		
Control the wear of the lifting forks.		
Examination for deformation or break in the structure or welds.		

Position "a" grease nipple UNI 7763-AM6-5.8



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

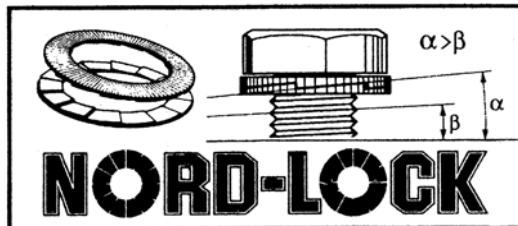
THE WORKING HOURS SHOULD BE HALVED WHEN USING THE EQUIPMENT IN DUSTY, DAMP OR CORROSIVE ENVIRONMENTS.

ADVISED LUBRICANTS.

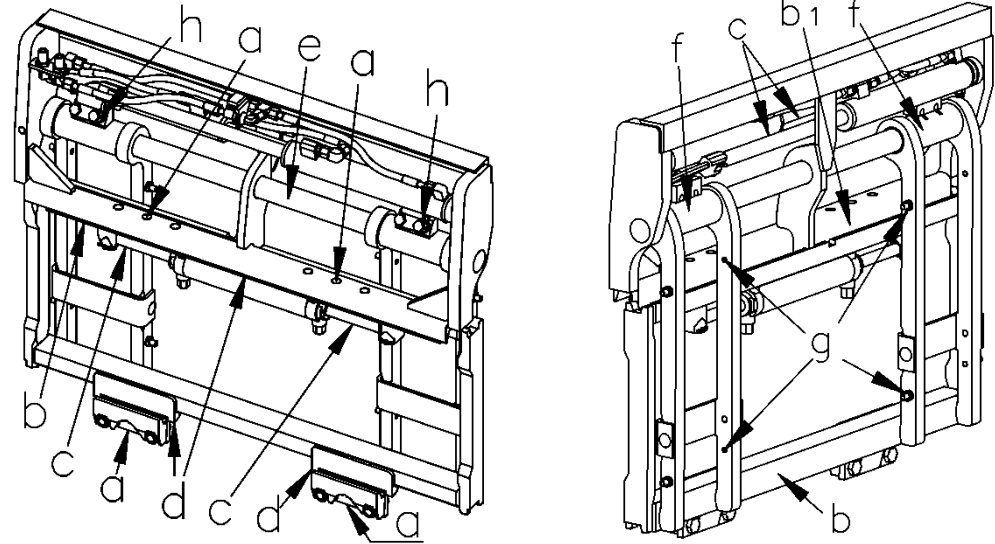
Internal use: ISO X M2 (SHELL ALVANIA GREASE R2).

External use: ISO CB 32 (ESSO NUTO32).

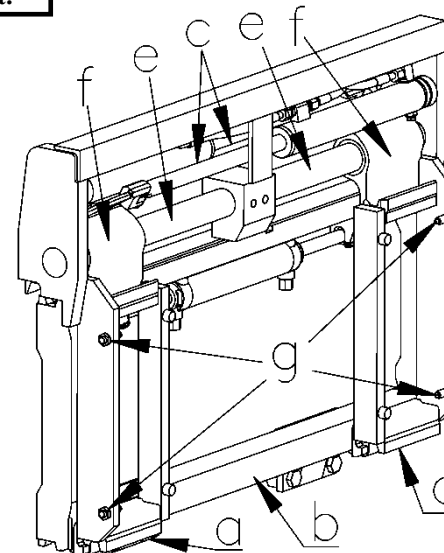
Respect the direction as indicated by the sticker during the assembly or tightening of the washers "h". The washers must be replaced after 5 uses.



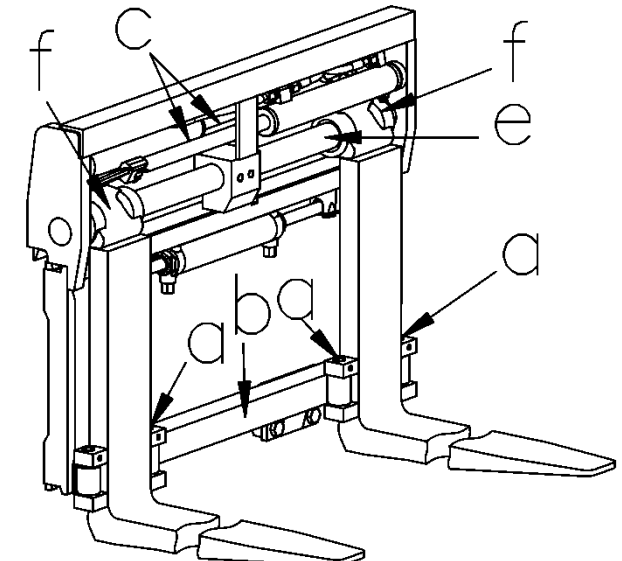
FR MODEL



FFP MODEL



FP MODEL



Check the wear of the forks in accordance with the ISO 5057 standard.

USE AND MAINTENANCE MANUAL

12. EXTRAORDINARY MAINTENANCE

12.1. SIDE-SHIFTER SHOES AND CYLINDER

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

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

! The equipment must be detached from the forklift to perform maintenance on the side-shifter.

1) Use appropriate straps to support the equipment.

2) Disconnect the 4 hoses from the forklift, ISO 3318 17 mm wrench.

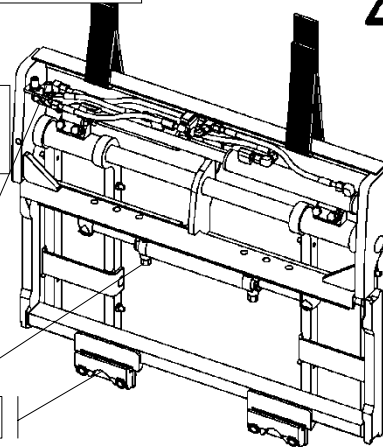
3) Remove the lower hooks, ISO 3318, class2 24mm, class3 27 mm wrench

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

Forks positioner feed.

Side-shifter feed.

Lower hooks



The upper cylinder block with support and shoes is free to drop.

5) Remove the cylinder stem stops.

6) Disconnect the cylinder from the

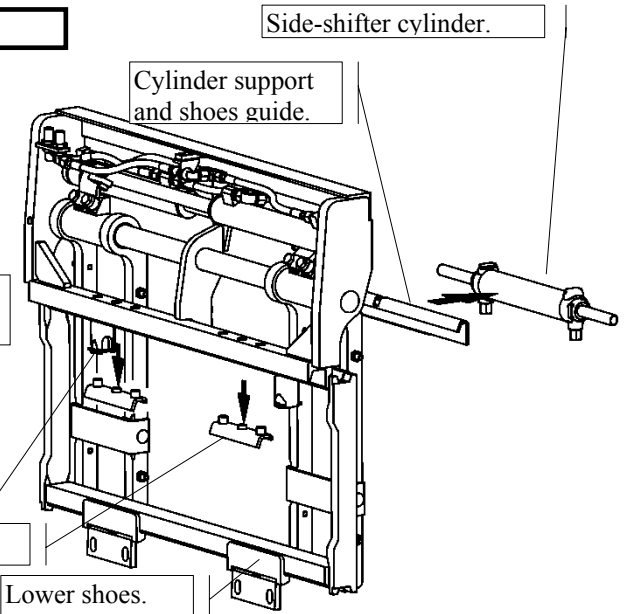
7) To extract the upper shoes, use a DIN 6450 5mm punch.

8) To disconnect the lower shoes, use a ISO 2380 screwdriver.

Cylinder stem stops.

Upper shoes.

Lower shoes.

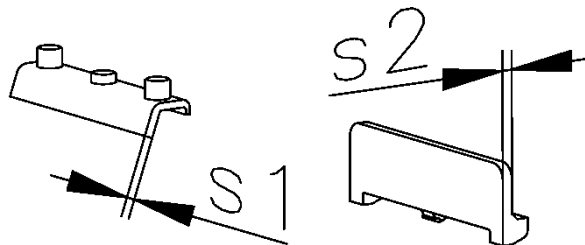


Side-shifter cylinder.

Cylinder support and shoes guide.

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

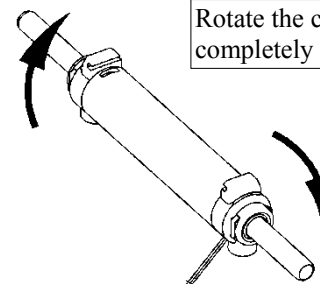
12.1.1. SHOES CONTROL



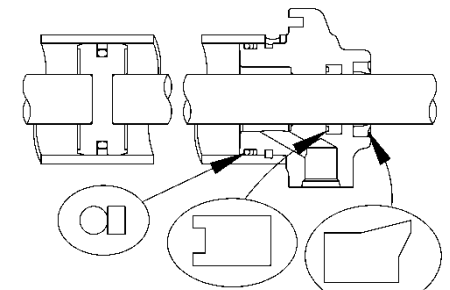
Replace the shoes if there are cracks, permanent deformations or the thickness is less than: s1 2 mm, s2 3 mm.

12.1.2. REPLACEMENT OF SEALS

Rotate the cap until the circlip is completely out.



Circlip



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

USE AND MAINTENANCE MANUAL

12.2. FORK MOVEMENT CYLINDER DISASSEMBLY

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

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

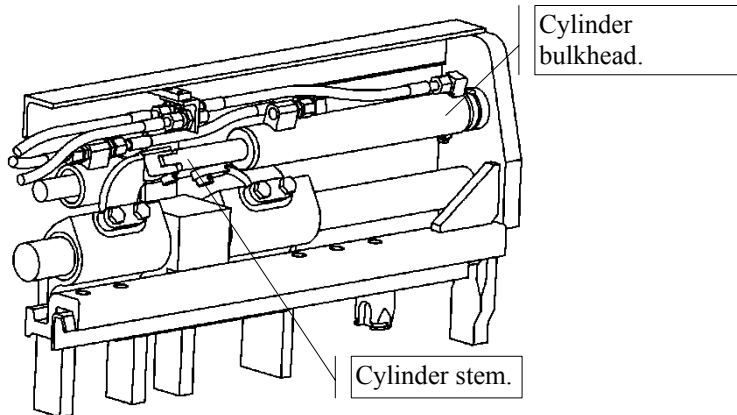
12.2.1. CLASS2 – 3 3.5 TON

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

2) To remove the snap ring in the cylinder bulkhead, use a ISO 2380 screwdriver. Extract the pin with a DIN 6450 8 mm punch.

3) Extract the spring pin with a 6450 4 mm DIN 6450 punch. Extract the pin with M5 threaded hole.

4) Move the disconnected fork and extract the cylinder.



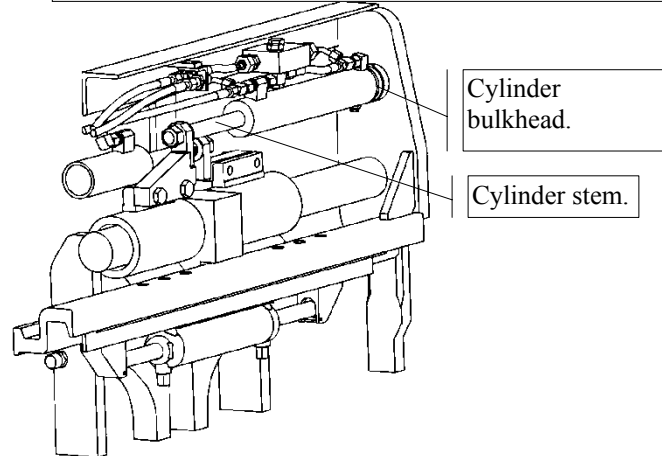
12.2.2. CLASS3 4.9 TON

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

2) To remove the snap ring in the cylinder bulkhead, use a ISO 2380 screwdriver. Extract the pin with a DIN 6450 8 mm punch.

3) Use an ISO 3318 22 mm wrench to block the stem and an ISO 1174 30 mm socket wrench to tighten the nut.

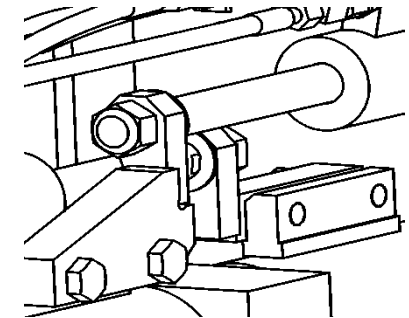
4) Move the disconnected fork and extract the cylinder.



! Cylinder assembly procedure.

1) Fasten the cylinder stem, ISO 3318 wrench.

2) Tighten the nut, ISO 1174 30 mm wrench, until the Belleville washer is completely crushed, and loosen by 180°.



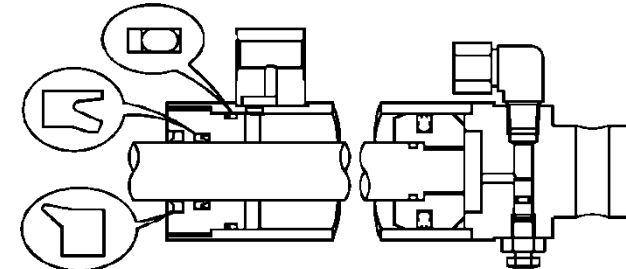
! CARRY OUT THE PROCEDURE IN REVERSE ORDER TO RESTORE THE DISMANTLED PARTS.

12.2.3. REPLACEMENT OF SEALS

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

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

Use a fork wrench for diameters 12 – 60 mm and with 4 mm diameter pin to remove the cylinder cap.



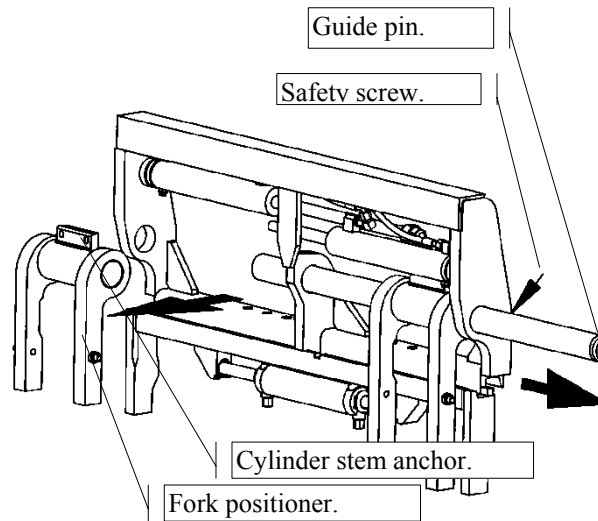
USE AND MAINTENANCE MANUAL

12.3. POSITIONER DISASSEMBLY MOD. FR

! The equipment must be without forks attached to proceed with maintenance.

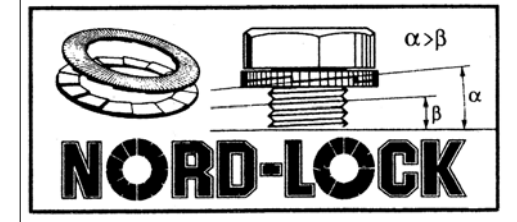
- 1) Open the positioners to their maximum.
- 2) Remove the stem anchor, ISO 3318 class2-3 3.5 TON 19 mm wrench, class3 49 TON 21 mm wrench.
- 3) Remove the safety screw, ISO 2936 6 mm wrench.
- 4) Extract the guide pin to the right to release the left positioner.
- 5) Extract the guide pin to the left to release the right positioner.

⚠ Once freed from the guide, the positioner, support and fork can drop.



Screws tightness to anchor the cylinder stems:
class2-3 3.5 TON 115 N/m; class3 49 TON 270 N/m

When fitting the cylinder stems anchor screws, the fitting direction of the washers must also be respected, as indicated by the sticker. The washers must be replaced after 5 uses.



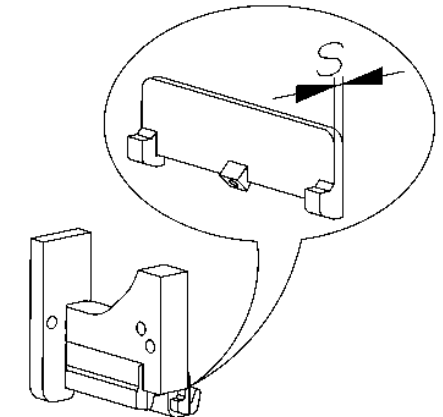
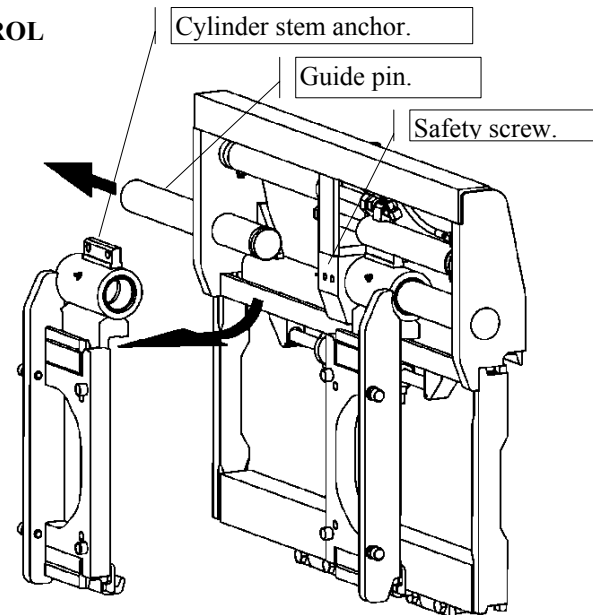
! CARRY OUT THE PROCEDURE IN REVERSE ORDER TO RESTORE THE DISMANTLED PARTS.

12.4. FORK SUPPORT DISASSEMBLY MOD. FFP 12.4.1 SHOES CONTROL

! The equipment must be without forks attached to proceed with maintenance.

- 1) Open the positioners to their minimum.
- 2) Remove the stem anchor, ISO 3318 class2-3 3.5 TON 19 mm wrench, class3 49 TON 21 mm wrench.
- 3) Remove the safety screw, ISO 2936 6 mm wrench.
- 4) Extract the guide pin to the right to release the right positioner.
- 5) Extract the guide pin to the left to release the left positioner.

⚠ Once freed from the guide, the fork support can fall.



Replace the shoes if there are cracks, permanent deformations or the thickness "s" is less than 3 mm.

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

USE AND MAINTENANCE MANUAL

12.5. FORKS DISASSEMBLY MOD. FP 12.5.1 ROLLERS DISASSEMBLY

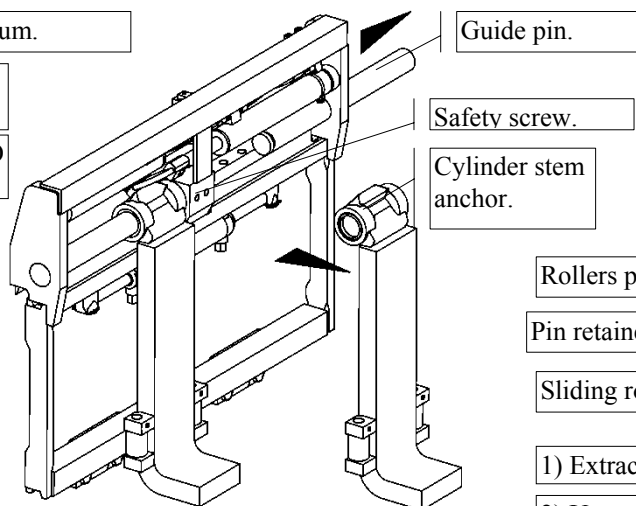
1) Open the forks to their minimum.

2) Remove the cylinder stem screws, ISO 3318 wrench.

3) Remove the safety screw, ISO 2936 6 mm wrench.

4) Extract the guide pin to the right to release the right fork.

5) Extract the guide pin to the left to release the left fork.



1) Extract the spring pin with a DIN 6450 4 mm punch

2) Use a DIN 6450 punch to extract the roller pin.

3) Use the puller to remove the bushings.



Once freed from the guide, the fork support can fall.

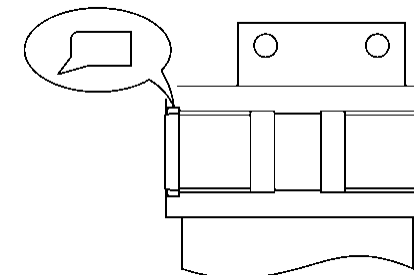


CARRY OUT THE PROCEDURE IN REVERSE ORDER TO RESTORE THE DISMANTLED PARTS.

12.6. BUSHES AND SCRAPERS REPLACEMENT

1) Remove the seal with a ISO 2380 screwdriver.

2) Use and expansion puller to remove the bushings.



Replace the seals in the presence of cracks or permanent deformations.

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



Respect the direction when replacing the scraper.

13. LIST OF POSSIBLE FAULTS WITH CAUSES AND REMEDIES

The translation is not performed and/or the movement is slow or irregular.	Insufficient oil pressure and/or flow rate.	Control and/or regulation of the forklift's hydraulic pump.
	Sliding tracks dirty or deformed.	Clean, eliminate the deformation and grease.
	Hydraulic circuit blocked or broken.	Eliminate obstruction or replace damaged hose.
	Defective cylinder.	Control or replacement of the cylinder guides and seals.
	Residual air in the hydraulic circuit.	Control of the oil level in the tank; Eliminate the air in the hydraulic circuit.
The fork movement is not performed and/or the movement is slow or irregular.	Insufficient oil pressure and/or flow rate.	Control and/or regulation of the forklift's hydraulic pump. Control and/or regulation of the pressure relief valve (for class3 4.9 TON only)
	Sliding tracks dirty or deformed.	Clean, eliminate the deformation and grease.
	Hydraulic circuit blocked or broken.	Eliminate obstruction or replace damaged hose.
	Defective cylinder.	Control or replacement of the cylinder guides and seals.
	Residual air in the hydraulic circuit.	Control of the oil level in the tank; Eliminate the air in the hydraulic circuit.
The movement of the forks is not performed in a synchronous manner.	Sliding tracks dirty or deformed.	Clean, eliminate the deformation and grease.
	Incorrect calibration of the flow regulators.	Adjust the throttle located at the bottom end of the cylinder.

IN CASE OF PROBLEMS OTHER THAN THOSE DESCRIBED ABOVE, PLEASE CONTACT OUR SALES SERVICE.

USE AND MAINTENANCE MANUAL

14. NOISE EMISSION

- 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).

16. WARRANTY

The manufacturer guarantees all its products for 12 months or 2000 working hours (whichever situation occurs first) from the date of shipment.

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 labour 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.

15. 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
Straps and protective cover for shipment	Heat shrink polyester
Lower hooks	Cast iron
Sliding shoes	Nylon
Hoses / connectors	Polyester / steel
Seals	Polyurethane and NBR
Paint	Epoxy polyester
Gearmotor oil and grease	Dispose of in compliance with local legislations

17. FACSIMILE OF THE EC CONFORMITY CERTIFICATE

Dichiarazione CE di Conformità

Noi NOME COSTRUTTORE

INDIRIZZO COSTRUTTORE

XXXXXXXXXXXXXXXXXXXX

Dichiariamo sotto la nostra esclusiva responsabilità che il prodotto:

Tipo YYYYYYYYYYYYYYYYYY

Marca XXXXXXXXXXXXXXXXXX

Modello XXXXXXXXXXXX

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 Feroni

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