ATIB MATERIAL HANDLING

# USE AND MAINTENANCE MANUAL

**BOOM**

**TYPE 940**

I-D02-01-066 - Rev.3

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## BOOM
## TYPE 940

**⚠ ATTENTION ⚠**

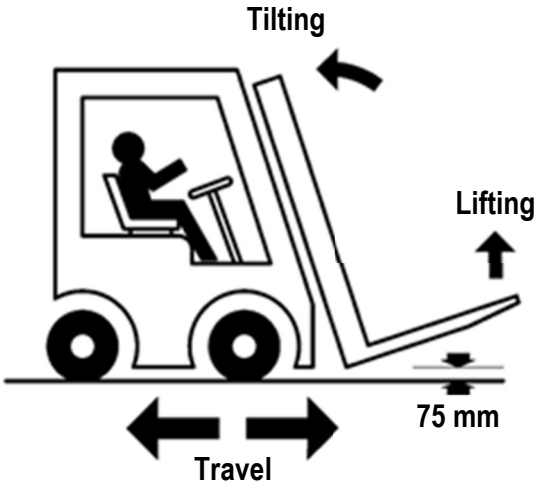
**READ THIS USE AND MAINTENANCE MANUAL CAREFULLY BEFORE COMMISSIONING THE MACHINE**

# 1 SAFETY REGULATIONS FOR THE OPERATOR

Do not transport passengers

Do not cross the upright

Do not stand under the load



# 2 INTRODUCTION

## 2.1 Use and Storage of the Manual

This "Use and Instruction Manual" (hereinafter referred to as the Manual) is issued together with the A.T.I.B. equipment. – "BOOM TYPE 940" in accordance with DIRECTIVE 2006/42/EC of the European Parliament and of the Council of 17/05/2006 and subsequent additions.

The following indications are essential for correct use of the equipment and must be brought to the attention of the personnel assigned to installation, use, maintenance and repair.

This Manual must be considered an integral part of the equipment and must be kept until it is dismantled in an accessible, protected and dry place and must be available for quick reference.

In the event of loss and/or damage, the user can request a copy from the manufacturer.

**The manufacturer reserves the right to modify this manual without prior notice and without the obligation to update previously distributed copies.**

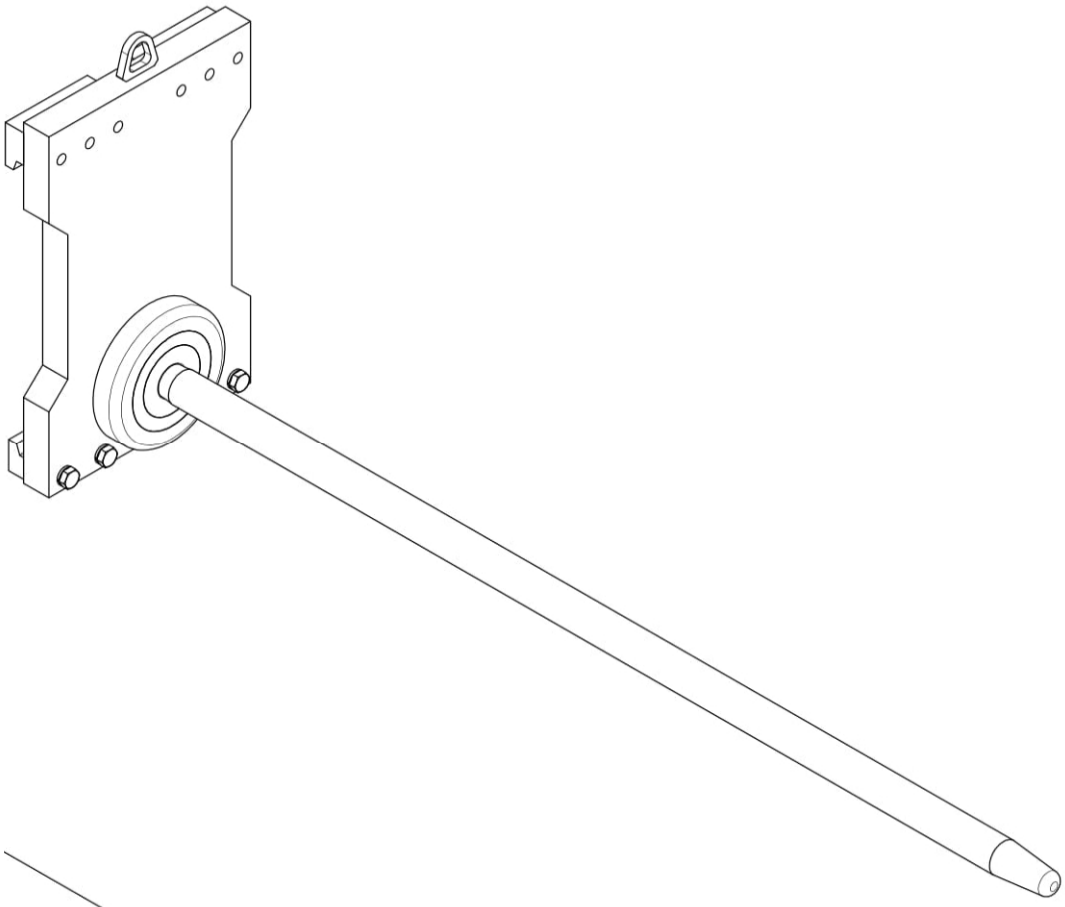
### The manufacturer is exempted from any responsibility in the event of:

- Improper use of equipment;
- Use of equipment by untrained personnel;
- Use contrary to any national or international regulations;
- Inadequate scheduled maintenance;
- Unauthorised intervention or modification;
- Use of non-original and/or non-model specific spare parts;
- Full or partial non-compliance with instructions;
- Exceptional events.

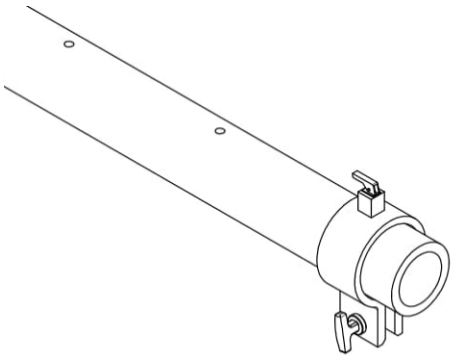
**The nominal capacity of the forklift truck/equipment combination has been set by the original manufacturer of the forklift truck and may be less than that indicated on the equipment plate.**
**Consult forklift truck plate (Directive 2006/42/EC).**

## 2.2 Equipment Description

**TYPE 940**



WITH COUPLING



COATED

All the A.T.I.B. equipment – "BOOM TYPE 940 " is identified by means of an adhesive plate (see *Table* 1) positioned on the equipment (see *Figure 1), always refer to the serial number.*

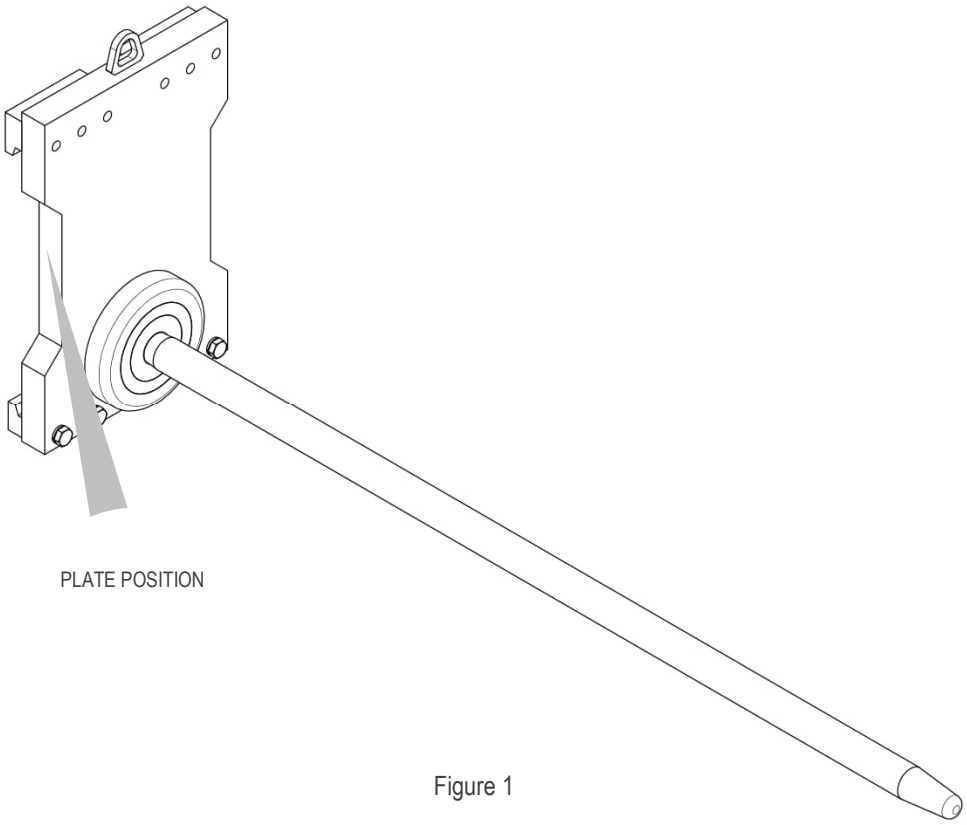



Figure 1

| | | | | | |
|---|---|---|---|---|---|
| **1.** | **TIPO / TYPE** | **8. PORTATA NOMINALE / NOMINAL CAPACITY** | **kg/mm** | **11. COPPIA MAX / MAX. TORQUE** | **daNm** |
| **2.** | **CODICE / CODE** | **9. PORTATA IN SERRAGGIO / CLAMPING CAPACITY** | **kg/mm** | A.T.I.B. CE | |
| **3.** | **MATRICOLA N° / SERIAL N°** | | | | |
| **4.** | **ANNO DI COSTRUZIONE / YEAR OF MANUFACTURE** | **10. PRESSIONE MAX. DI ESERCIZIO / MAX. OPERATING PRESSURE** | **bar** | **A.T.I.B. S.r.l.**<br>Via Quinzanese snc,<br>25020 Dello (BS) - ITALY<br>+39 030 9771711<br>info@ATIB.com - **ATIB.com** | |
| **5.** | **PESO / WEIGHT** | | | | |
| **6.** | **SPESSORE / THICKNESS** | **NOTE: OSSERVARE I LIMITI DI PORTATA DELL'INSIEME CARRELLO CON ATTREZZATURA / WARNING: OBSERVE THE NOMINAL CAPACITY OF TRUCK AND ATTACHMENT COMBINED** | | | |
| **7.** | **CENTRO DI GRAVITÀ / CENTER OF GRAVITY** | | | | |

Table 1

1. **TYPE**
   Indicates equipment model as shown in the catalogue.

2. **CODE**
   Indicates the equipment ordering code.

3. **SERIAL N°**
   It progressively identifies the individual equipment.
   In the event that the plate is missing or damaged, the serial number is also stamped on the slip-on arm; for any information, always refer to the serial number.

4. **YEAR OF MANUFACTURE**
   Indicates the year of manufacture.

5. **WEIGHT**
   Indicates the weight of the equipment in kg.

6. **THICKNESS**
   Indicates the thickness of the equipment in mm.

7. **CENTRE OF GRAVITY**
   Indicates the distance in mm of the *CG* centre of gravity of the equipment from the support plane of the slip-on arm.

8. **NOMINAL CAPACITY**
   Indicates the maximum load applicable to the lifting equipment and the maximum centre of gravity of the load itself.

9. **CLAMPING CAPACITY**
   Not applicable to this equipment.

10. **MAX. OPERATING PRESSURE**
    Not applicable to this equipment.

11. **MAX. TORQUE**
    Not applicable to this equipment.

The A.T.I.B. equipment – "BOOM TYPE 940 " has been conceived, designed and constructed to lift and transport materials in reels (e.g. carpet rolls and the like) or pipes (e.g. concrete pipe) .

The equipment has no moving parts and must be installed on the fork carriage plate of the forklift truck:

for images see chapter "2.2 - Equipment Description".

POLE: "COATED": pole coated in plastic material to allow material to be moved without coming into direct contact with metal

POLE: "WITH COUPLING": pole equipped with a special coupling to move material by means of ropes and/or chains;

Fork carriage coupling components are manufactured in accordance with ISO 2328

# 3 INSTALLATION

## Checking the Nominal Capacity of the Equipment

To check the nominal capacity of the clamp, consult the plate of the equipment itself (See *Table* 1 on page *5*).

**⚠ ATTENTION ⚠**

**Ensure that the driver of the forklift truck is aware of the maximum capacity of the equipment so that they do NOT constitute a hazard to themselves or to persons working in proximity.**

**The forklift truck manufacturer is responsible for calculating the residual load capacity of the truck/equipment combination.**

## 3.1 Installation Procedure

### 3.1.1 Installing the Equipment

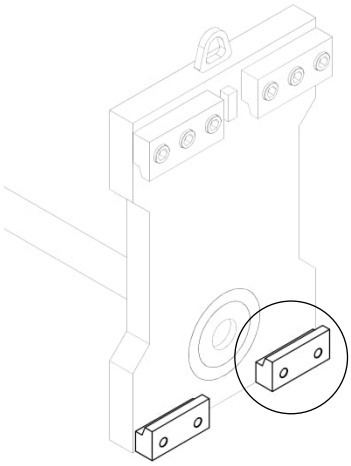
940

1. Prior to installation, check the condition of the fork carriage, ensuring that the lower profile is smooth.

2. Also make sure that the profiles of the fork-holder plate are not deformed, in order to ensure good coupling with the equipment.

**N.B.** Although only type 940 is shown in the installation phase, the installation phases are the same for all types of equipment.

3. Remove the lower couplings from the equipment (see Figure 2).



If quick-release couplings are fitted, simply remove the cotter pin and turn them downwards (**a**).

If standard couplings are present, remove the bolts and their washers (**b**).

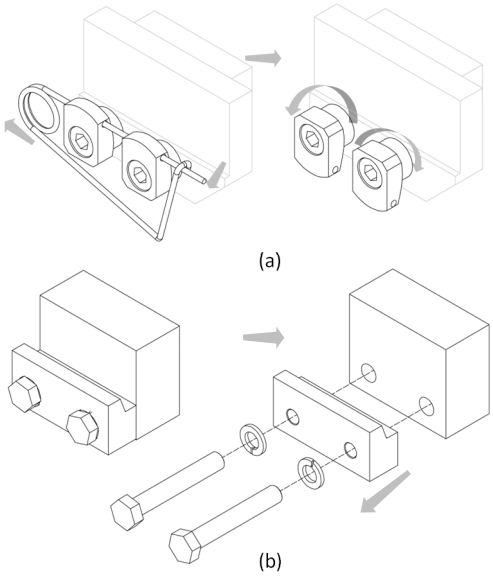



Figure 2

4. For handling, appropriately sized belts and/or chains must be used with regard to the weight of the equipment as indicated on the plate (see Figure 1 and Table 1 on page 4).

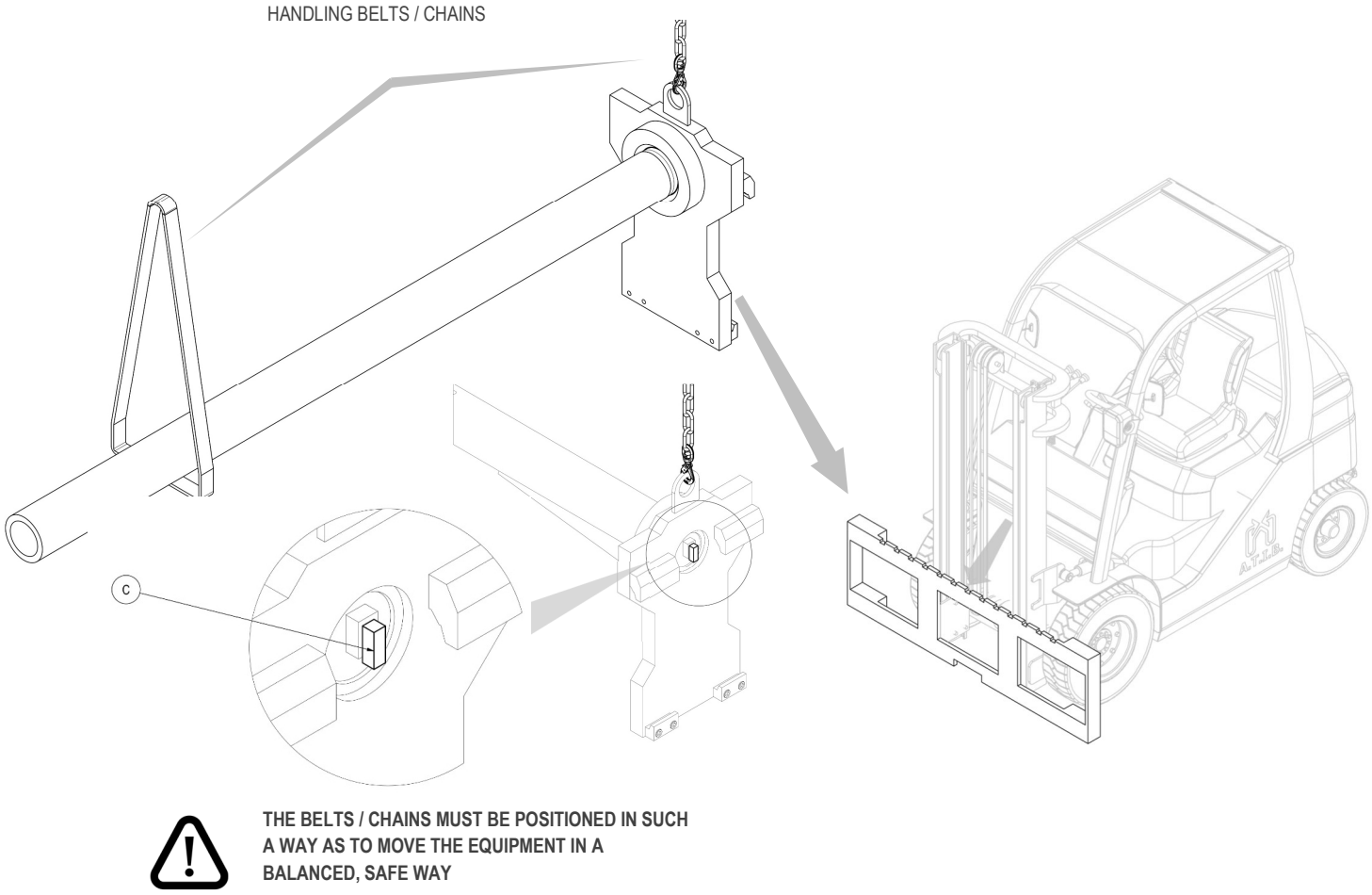



Figure 3

5. Hook the equipment with an overhead crane or a hoist of sufficient capacity and place it on the fork carriage plate, taking care to engage the centring pin **C** in its central notch (see Figure 3).

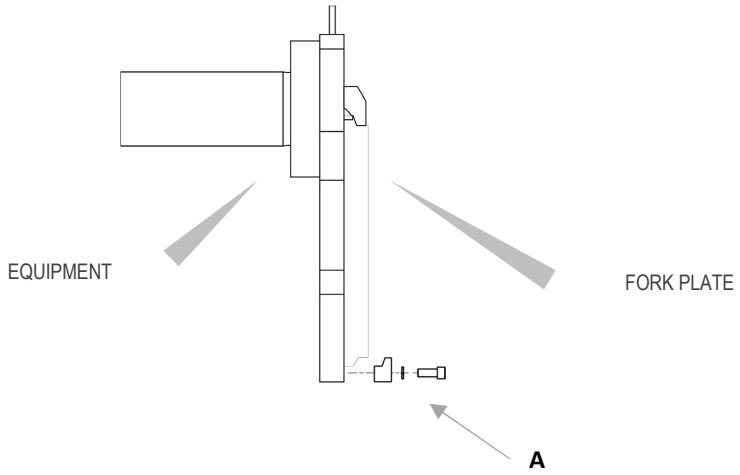



Figure 4

6. Tighten the 2 lower couplings G (detail **A** in Figure 4**)** so that the body of the couplings remains coupled to the lower fork carriage plate P (with max. 1.5mm clearance, see detail), tightening with the torque indicated in Table 2.

| CLASS | THREAD | TIGHTENING TORQUE |
|---|---|---|
| **ISO II** | **M12** | **90 Nm** |
| **ISO III** | **M14** | **140 Nm** |
| **ISO IV** | **M16** | **220 Nm** |

Table 2

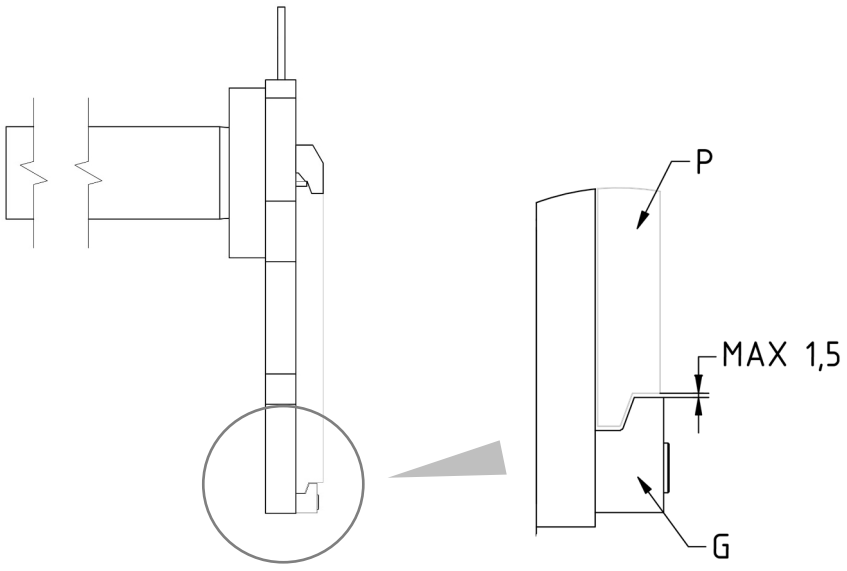



Figure 5

# 4 RULES GOVERNING USE

*Before using the equipment, check the tightness of the piping and the correctness of assembly and also the connection by performing a dozen preliminary operations.*

The following instructions must be followed when using the equipment:

1. Observe the capacity limits of the equipment.
2. Do not operate the equipment when persons or animals are within range of the forklift truck.
3. Do not attempt to move loads sideways by dragging them across the floor.
4. Do not exceed the maximum pressure indicated on the rating plate.
5. Operate the equipment from the forklift truck driver's seat using only a single operator.
6. Operate the sideshift control lever gently to avoid water hammer as far as possible.
7. All operations relating to installation, use and maintenance must be carried out by specialist personnel using suitable equipment for the type of work to be carried out.
8. Carry out maintenance and/or repairs with the forklift truck stationary and the hydraulic circuit inactive, using appropriate means of protection (gloves, safety shoes, etc.).
9. Only operate cylinder rods when they are correctly fitted on the equipment;
   The rods may otherwise be ejected at great speed by the elevated oil pressures.

The weighted sound pressure level is less than 70 dB (A).

All A.T.I.B. equipment is designed and manufactured with a load positioned (with respect to its centre of gravity) at a certain distance from the vertical plane of the fork.

If the distance of the centre of gravity from the vertical part of the jaws needs to be increased, the weight of the load must be reduced.
In this case, consult the chart shown in Figure 6, where, as the distance from the centre of gravity increases (x-axis line), a multiplicative factor is included for load reduction purposes (y-axis line).

The multiplicative factor, obtained on the basis of the desired centre of gravity position, will be multiplied with the nominal capacity of the equipment. The product of this multiplication will be the actual transportable load.

The continuous line is to be considered for equipment declared with a 500mm centre of gravity load.
The dashed line is to be used for equipment declared with a 600mm centre of gravity load.

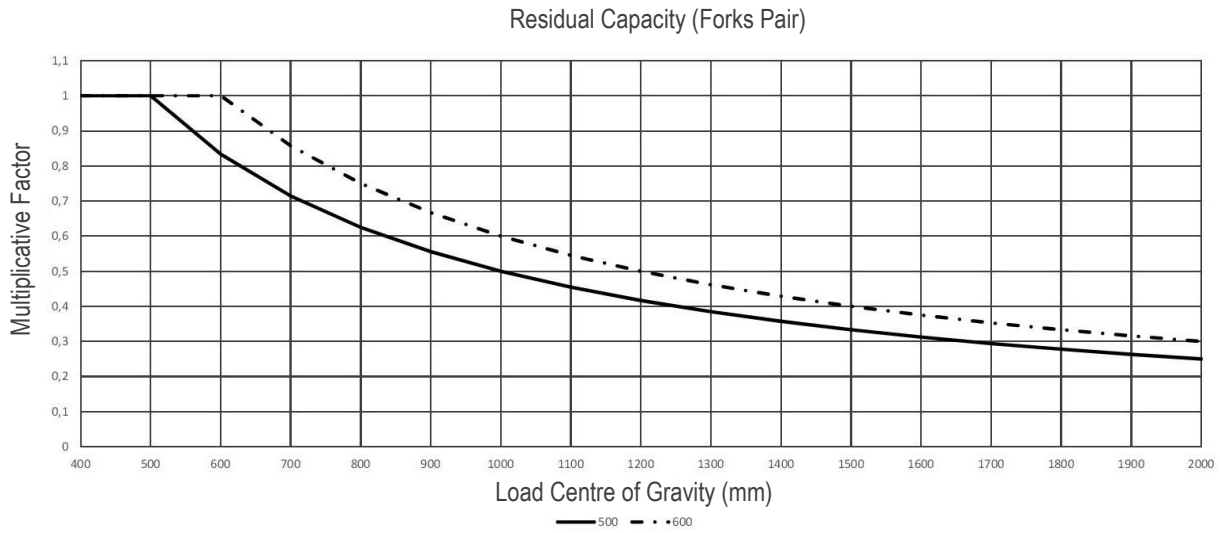



Figure 6

*NOTE: calculations are valid only for "stable" loads. Contact the manufacturer for transporting liquid containers.*

It is advisable to consult the manufacturer of the forklift truck to check the residual capacity of the forklift truck-equipment assembly.

The condition of the road surface, the speed at which the load is handled and the elevation may all affect the load's grip, which must be taken into account on a case-by-case basis.

The nominal capacity of the forklift truck/equipment combination is established by the original manufacturer of the forklift truck and may be less than that indicated on the equipment plate.

Consult forklift truck plate (Directive 2006/42/EC).

## 4.1 Handling Loads

*Avoid handling and/or sideshift of the forklift truck/equipment with a load that is excessively high off the ground, as this may affect its stability.*

*Avoid displacing/handling unstable loads.*

*Avoid displacing/handling loads with an uncentred centre of gravity.*

# 5 PERIODIC MAINTENANCE

Failure to comply with the rules and intervals established for maintenance will compromise the correct operation of the equipment and will void the conditions of the warranty.

***All maintenance operations must be carried out with the forklift truck stationary and the hydraulic circuit disconnected and depressurised. The entire maintenance area must be barricaded using regulation protection devices and, if the cylinders require disassembly, a tray or container must be provided to catch the oil present in the cylinder.***

To prevent issues when using the equipment, A.T.I.B. recommends changing the hydraulic oil and filters regularly and keeping the system as clean as possible during maintenance operations.

**ATTENTION!!!**

Hydraulic parts may be very hot. Use suitable protective equipment.
Watch out for leakage. High-pressure oil can injure eyes and skin. Wear protective eyewear that includes side shields.
Do not remove valves, lines or other potentially pressurised parts when this is active.

## 5.1 Maintenance Every 200 Hours

Check the tightening torque of the bolts of the lower retaining hooks of the equipment.

## 5.2 Maintenance Every 1000 Hours

*In the coated version, check the integrity of the coating, replace if necessary.

## 5.3 Maintenance Every 2000 Hours

1. Carry out a thorough inspection of the equipment. If possible, this should be carried out by qualified personnel who are able to identify any issues that may compromise the safety and efficiency of the equipment. There may be a number of defects, such as the following:

   - Check the condition of all equipment components (safety screws, cylinders, seals, couplings, grease nipples, etc.) to ensure that they are in good condition and replace any worn parts.

   - Check condition of sliding and working surfaces and replace if damaged.

   For further possible problems (and related solutions) refer to *Table 3* on page *21*.

   *N.B. Reduce intervals in the event of use under particularly harsh conditions*

# 6 DISASSEMBLY AND REASSEMBLY PROCEDURES

***All maintenance operations must be carried out with the forklift truck stationary and the hydraulic circuit disconnected and depressurised. The entire maintenance area must be barricaded using regulation protection devices and, if the cylinders require disassembly, a tray or container must be provided to catch the oil present in the cylinder.***

## 6.1 Removing the Equipment from the Forklift Truck

Disassemble the equipment as indicated in chapter "3.1 Installation Procedure" on page 9, following it backwards. Start from point 6 and work towards point 1.a

## 6.2 Disassembly of Coated Pole

1. Place the equipment in a safe position on the ground and turn off the forklift
2. Remove the front cap by unscrewing the screw in the hole of the cap using the appropriate spanners, then remove the cap, the screw and the washer (Figure 7).

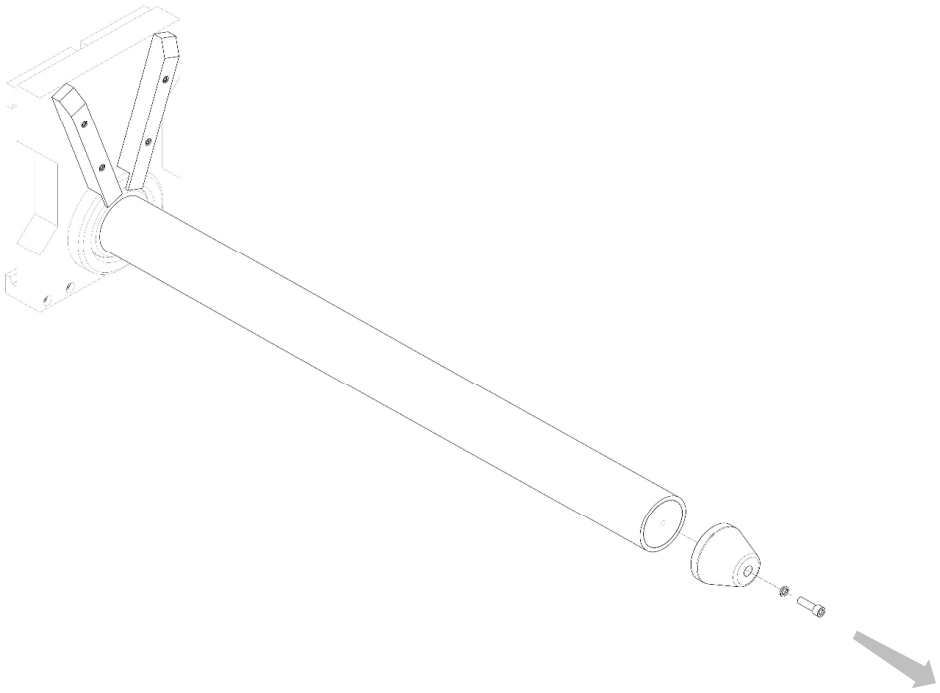


Figure 7

3. Remove the cover tube * by sliding it off the pole (Figure 8) (* there may be several tubes fitted on the pole)

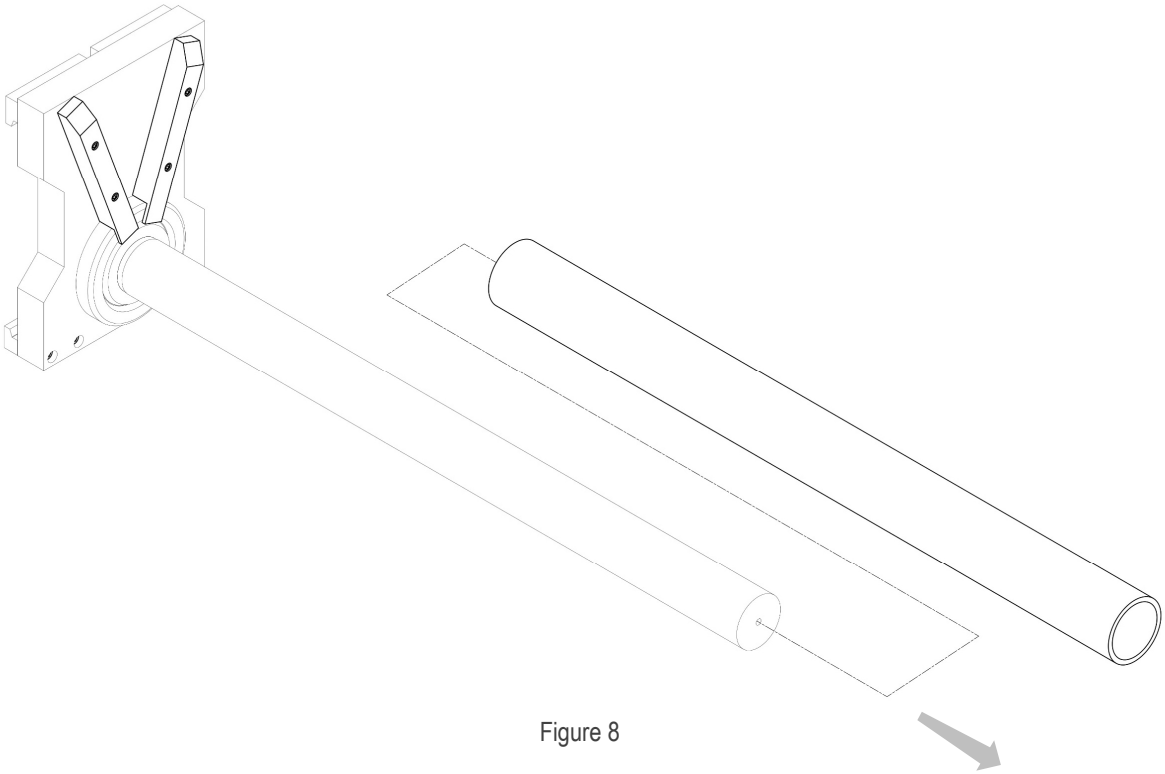


Figure 8

4. Remove the front stops by unscrewing the screws in the holes using the appropriate spanners, then remove the stops, screws and washers (Figure 9)

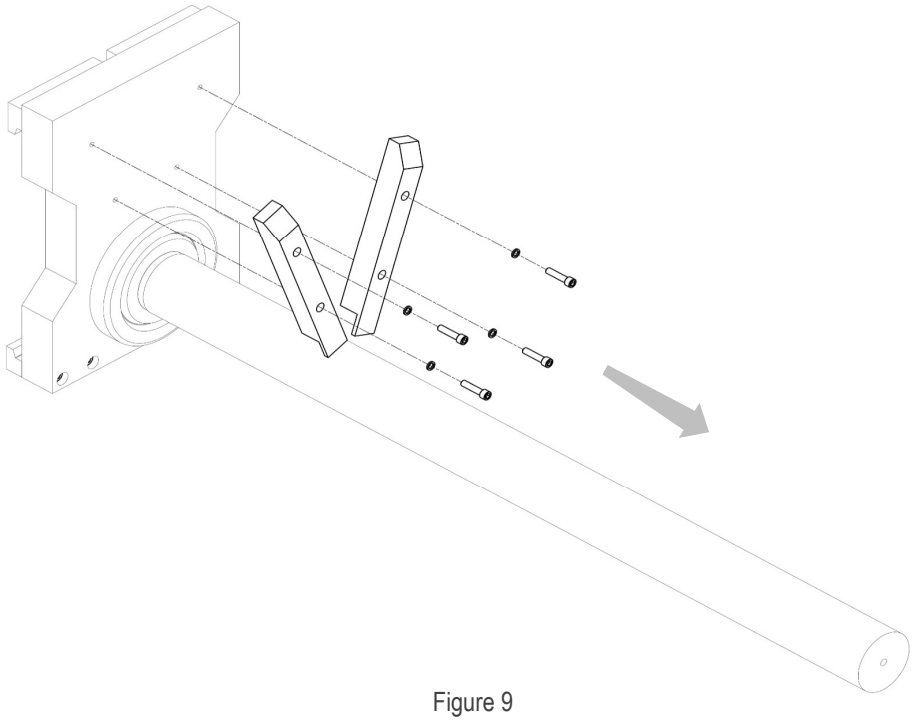


Figure 9

## 6.3 Disassembly of Pole with Coupling

1. Place the equipment in a safe position on the ground and turn off the forklift
2. Lift the ratchet (**A**) and slide the collar out (Figure 10)

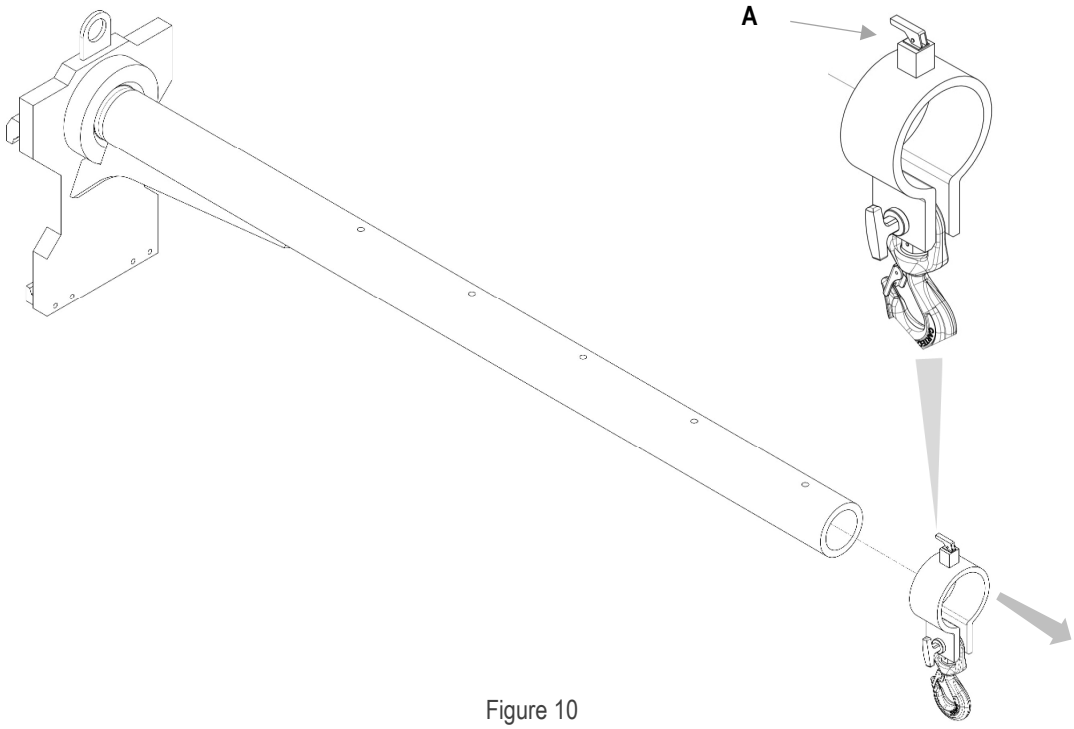



Figure 10

3. Remove the safety cotter pin (**B**), remove the pin and remove the coupling (Figure 11)

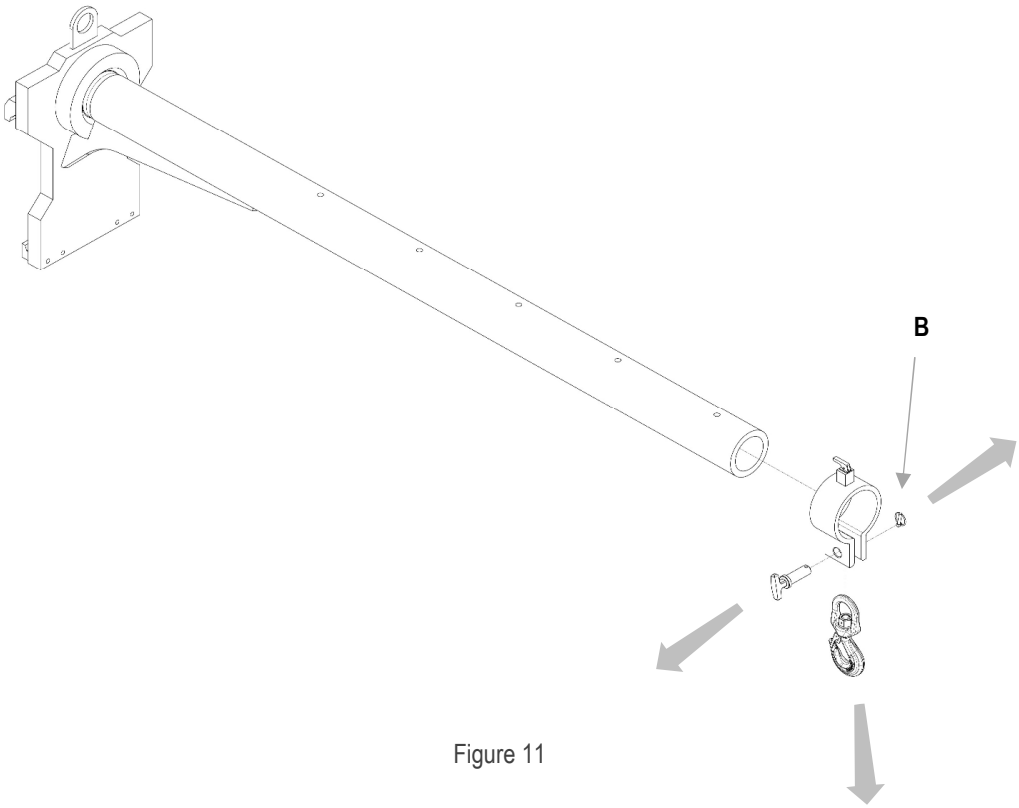



Figure 11

# 7 TROUBLESHOOTING

## 7.1 Probable Faults and Solutions

| FAULT | CAUSE | SOLUTION |
|---|---|---|
| Insufficient force | | |
| | Insufficient pressure | Contact the forklift truck manufacturer |
| | Worn pump | Replace it |
| | Worn cylinder seals | Replace them |
| | No oil in the tank | Fill up |
| Pressure drop | Oil leakage through pipes and fittings | Tighten the fittings or replace them |
| | Oil leakage from the cylinders | Replace the seals or, if necessary, the cylinders |
| | Load loss | Check the phasing of the plates |
| Slow rotation | Low oil flow rate | Check the tank level and/or the pump |
| | | Constrictions in the system: search for them and remove them |
| | Mechanical deformations of some parts | Repair or replace |
| | Worn cylinder seals | Replace them |
| | No oil in the tank | Fill up |
| Erratic displacement | Air in hydraulic system | Purge system |
| | Worn out sliding bushing | Replace |
| | Excessive friction between sliding parts | Clean and grease sliding parts |
| | Worn cylinder seals | Replace them |
| | No oil in the tank | Fill up |

Table 3

**For further issues, contact A.T.I.B. S.r.l.**

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