

	AI TAKAMUL COMPANY FOR ENGINEERING TESTS AND PROFESSIONAL SAFETY LIMITED Lifting Inspection	Doc No: QC-LIF-P-012
		Level: 3
		Page 1 of 5
Title: Inspection Procedure of Forklifts		Rev: 2
Established By: Ashraf Elsaid	Position: Lifting Supervisor	Date: JULY-2022
Approved By: Ahmed Mohamed	Position: Operation Manager	

Inspection Procedure of Forklifts

	AI TAKAMUL COMPANY FOR ENGINEERING TESTS AND PROFESSIONAL SAFETY LIMITED Lifting Inspection	Doc No: QC-LIF-P-012
		Level: 3
		Page 2 of 5
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Contents	Page
1 YOUR SAFETY IS FIRST	3
2 SCOPE	3
3 REFERENCE STANDARDS	3
4 INSPECTION OF FORKLIFTS	3
4.1 THOROUGH EXAMINATION AND FUNCTIONAL TEST	3
4.2 INSPECTION OF FORK ARMS	4
5 PROOF LOAD TESTING	5
6 REPORTING AND CERTIFICATION	5

	AI TAKAMUL COMPANY FOR ENGINEERING TESTS AND PROFESSIONAL SAFETY LIMITED Lifting Inspection	Doc No: QC-LIF-P-012
		Level: 3
		Page 3 of 5
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1. YOUR SAFETY IS FIRST:

Your safety wear is mandatory at job sites including in general: suit, shoes, helmet, gloves, ear plugs, glasses, and mask.

2. SCOPE:

This procedure covers the inspection and testing of forklifts.

3. PRODUCT/ MANUFACTURE STANDARDS:

BS ISO 5057	<i>Industrial trucks – Inspection and repair of fork arms in service on fork-lift trucks</i>
BS ISO 2330:2002	<i>Fork-lift trucks. Fork arms. Technical characteristics and testing</i>
BS ISO 13284:2003	<i>Fork-lift trucks. Fork-arm extensions and telescopic fork arms.</i>

4. INSPECTION OF FORKLIFTS:

4.1. THOROUGH EXAMINATION AND FUNCTIONAL TEST:

Inspection intervals of forklifts shall not exceed 12 months. The following shall be checked:

- Marking of SWL, and identification number
- The load chain for stretch and wear using 3% elongation and wear as rejection criteria, or as specified by manufacturer, over at least 6 pitches on each chain.
- The load chain for seized links paying particular attention to the connection to load Carriage.
- Load chain pins for wear or deformation, or loose pins
- Chain rollers for wear or damage.
- Link plates for cracks and distortion
- Chains for stiffness in movement
- Anchor pin and anchor for wear, damage
- Braking system condition: damage, wear.
- Hydraulic hoses and connectors for leaks, wear, or external physical damage.
- Hydraulic cylinders for wear, scoring, pitting, corrosion, or deformation.
- Hydraulic ram seals for oil leaks.
- Mast welds
- Mast cap for wear or damage and securing pin tightness.
- Mast bearing for wear or damage.
- The carriage structure for wear, cracks, damage or distortion.
- Structure rollers for wear, seizure or damage.
- Forks (as per INSPECTION OF FORK ARMS)
- Track rod ends and steering arms for damage.
- Rear axle pivot for free movement and lubrication.
- Condition of wheels and tires for damage and wear.

	AI TAKAMUL COMPANY FOR ENGINEERING TESTS AND PROFESSIONAL SAFETY LIMITED Lifting Inspection	Doc No: QC-LIF-P-012
		Level: 3
		Page 4 of 5
Title: Inspection Procedure of Forklifts		Rev: 2
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- Wheel retaining bolts for tightness, hammer test if necessary.
- Operator seat, check seat mounting, operator restraint system (seat and seatbelt)
- Battery condition, cell connections, battery restraint, battery voltage and weight (compare between battery data plate and manufacturer's data plate on the truck)
- If the forklift is equipped with seat witch-off device, inspect this function: when the driver leaves the seat, the power to the drive motor shall be switched off
- Truck frame for cracks, damage
- Mounting points condition
- Electrical wires for damage (insulation), and fuses
- Cabin condition, marking of levers, internal and external lights, gauges, alarms, horn, windscreen and wipers
- Functionally throughout forklift's complete lifting and movement operations: check all movements and functionality of all pedals and brakes without a load (acceleration, reversing, steering wheel, brakes, lifting, tilting, side-shifting), the functional test shall include lifting a load equals to the rated capacity - or WLL – of the forklift to the maximum height of the mast and keeping the load in this position for 10 minutes, the forklift shall not drop or lower the load during the 10 minute period.

4.2. INSPECTION OF FORK ARMS:

- **Inspection Intervals:**

Fork arms in service shall be inspected at intervals of not more than 12 months and whenever any defect or permanent deformation is detected. Severe applications may require more frequent inspections.

- **General:**

The inspection of a fork arm shall be carried out carefully by trained personnel with the aim of detecting any damage, failure, deformation, etc., which may impair safe use. Any fork arm which shows such a defect shall be withdrawn from service, and not be returned to service unless it has been satisfactorily repaired and tested in accordance with (YIELD TEST) if applicable.

- **Surface Cracks:**

The fork arm shall be thoroughly examined visually for cracks and, if considered necessary, subjected to a non-destructive crack detection process (such as magnetic particles inspection in accordance with ATS-NDT-P-001). Special attention shall be paid to the heel and the top and bottom hooks including their attachment to the shank. Fork arm shall be withdrawn from service if surface cracks are detected.

- **Difference in Height of Fork Tips:**

A set of fork arms shall be checked for any difference in height when mounted on the fork carrier. If the difference in tip heights exceeds 3 % of the blade length or that recommended by the truck manufacturer, the set of fork arms shall be withdrawn from service. The set of fork arms shall not be returned to service until they have been re-set as necessary, see (REPAIR), and tested in accordance with (YIELD TEST).

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			Level: 3
			Page 5 of 5
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- **Positioning Lock:**

It shall be confirmed that the positioning lock, where originally provided, is in good repair and correct working order. If any fault is found, the fork arm shall be withdrawn from service until satisfactory repairs have been affected.

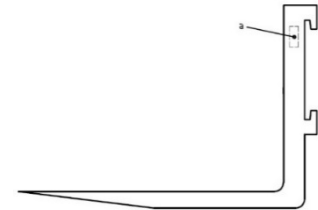
- **Legibility of marking:**

Marking shall be clear and legible.

According to ISO 2330: marking shall be in position (a) as shown:

each fork arm shall be marked permanently with the following:

- a) the specified fork arm capacity C, in kilograms;
- b) the specified load centre distance D, in millimeters;
- c) the fork arm manufacturer's identification;
- d) the week or month and year of manufacture or agreed serial number.



- **Wear of Fork arm blade and shank:**

The fork arm blade and shank shall be thoroughly checked for wear, special attention being paid to the vicinity of the heel. If the thickness of the blade or shank is reduced to 90 % of the original thickness, or to the minimum thickness specified by the fork arm or truck manufacturer, the fork arm shall be withdrawn from service.

- **Wear of fork arm mountings:**

The support face of the top hook and the retaining faces of both hooks shall be checked for wear, crushing and other local deformations. If these defects are apparent to such an extent that the clearance between the fork arm and the fork carrier becomes excessive, the fork arm shall be withdrawn from service. For other types of mounting, similar checks shall be carried out.

5. PROOF LOAD TESTING:

After repair / alternation, exceptional circumstances, or as per client requirements, the forklift is proof load tested with a test load of (1.1 X SWL), as follows:

- The area of which the proof load test is to be performed shall be with sufficient ground bearing capacity, the surface shall be level and firm.
- The forklift is loaded to the SWL at load center designated by the manufacturer
- The load is raised to approximately half the full working height and the forklift is operated through all of its normal functions.
- The load is increase to the proof load value (1.1 X SWL)
- The load is lifted 3" to 6" clear of the ground and the forks operated through all of their normal functions. During this part of the test, special note should be taken of the stability of the vehicle as well as its ability to lift the load.

After proof load testing, a thorough examinations shall be undertaken by, the forklift is considered safe if it has withstood testing without signs of structural damage that could affect the safety.

6. REPORTING AND CERTIFICATION:

A certificate of test and thorough examination will be issued upon the satisfactory completion of the examination, i.e. the lifting equipment is safe to operate

A defect report will be issued if the lifting equipment fails to meet the requirements.