

# **MSI**<sup>TM</sup>

## **MSI-Forks**

**Fork arms  
Safety & Inspection**

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# Fork Inspection

for lift trucks and construction machinery

According to ISO 5057,

forks in service must be inspected at least once a year by a trained professional.

### Lift truck details:

(Make, model and/or capacity)

### Fork-arm details:

(Width – Thickness – Length)

Internal control number/identification:

Suspension type:

## Inspection point

### 1. Wear

Original thickness (N) – 10% = replace

Measure the thickness on the back of the fork (N) and compare with the heel area.

### 2. Surface cracks

Surface crack = replace

- Check all welds
- Check heel area

### 3. Blade deformation / Tip alignment

- (d) < 3% of blade length = ok
- (d) > 3% of blade length = replace or re-set

If difference in tip heights > 3% = replace or re-set

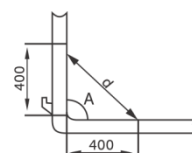
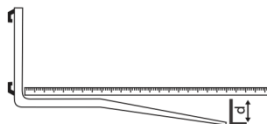
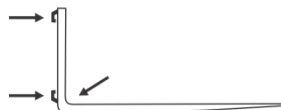
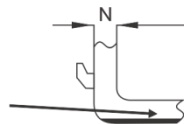
### 4. Heel angle

- (d) = 560 - 570mm (A = 88,9 - 90,9°) = ok
- (d) = 571 - 580mm (A = 91 - 92,9°) = re-set
- (d) > 580mm (A > 93°) = replace

### 5. Marking, tips, suspension & locking devices

- Damaged locking system = fix or replace
- Bent or deformed suspension = fix or replace
- Damaged tip = fix or replace

## Example



## Result

( ) ok  
( ) not ok  
Notes:

( ) ok  
( ) not ok  
Notes:

( ) ok  
( ) not ok  
Notes:

( ) ok  
( ) not ok  
Notes:

( ) ok  
( ) not ok  
Notes:

## FINAL RESULT:

- ( ) Fork ok  
( ) Fork not ok  
    ( ) Replace  
    ( ) Repair

Notes:

Inspected by:

Date:

Signature:

# Fork Safety & Inspection

Industrial fork arms are an important safety item of your lift truck or construction equipment.

The points below will significantly reduce the life of the forks:

- **Handling loads above the forks capacity**
- **Using only one fork to handle loads**
- **Applying side pressure/force on the forks**
- **Dragging the forks on the ground**

## VISUAL INSPECTION

Fork arms in service should be submitted to periodic visual and dimensional inspection.

The recommended frequency are as follows:

- For operations with 1 shift (up to 8 hours per day) = at least every 12 months.
- For operations with 2 shifts (up to 16 hours per day) = at least every 6 months.
- For operations with 3 shifts (up to 24 hours per day) = at least every 3 months.

The above intervals shall be reduced in case of suspected damage or severe working conditions.

## INSPECTION PROCEDURE

- Surface cracks:** attention to all welds and internal heel area. Fork arms should be replaced if surface cracks are detected.
- Blade deflection or Tip height:** the difference of tip heights can not exceed 3% of the blade length.
- Marking legibility:** fork identification according to ISO 2330 should be easily legible. In case of missing or unclear marking the fork should be removed from service.
- Angle opening:** the internal angle of the fork heel can not exceed 93°.
- Locking & suspension devices:** check if forks are securely locked to the equipment carriage. In case of extra clearance or damaged attachments, the forks should be repaired.
- Wear:** the material wear on the heel area of the forks can not exceed 10% of the original section of the fork. Capacity of the fork is drastically reduce due to material wear.



# Fork Safety & Inspection

## TECHNICAL CRACK TESTING

### Traditional crack detection tests:

- Contrast spray
- Magnetic particles
- Ultra-sound

The above tests should only be carried out after a visual inspection has been carried out and a crack indication is detected. Technical crack tests should be performed by a trained professional.

Based on the ISO 5057, at any circumstance surface cracks can be repaired by welding.

## FORK REPAIR AND REPLACE

Defected fork arms should be promptly replaced or repaired to maintain the maximum safety and performance of your machinery.

Fork repairs can only be performed by the fork manufacturer or a certified company.

Always request the fork manufacturer authorization before carrying any modification or repair. Any modification performed without authorization will cancel the fork arm warranty.

Be sure to replace the pair of forks, not a single piece.

Chart: Capacity X Wear

