

## Fork inspection

Forks are safety items. Therefore, highest attention should be paid to a regular inspection of forks.

**Note:** The use of safe forks, which are in perfect condition, is not only your duty but also an advantage. Working safely means working at lower costs! Ensuring safety at all times prevents disturbance and guarantees that your equipment is always at your disposal.

### WHAT HAS TO BE INSPECTED?

Detailed information is provided by the following norm:  
**ANSI/ITSDF B56.1**  
This international standard defines general instructions for inspection and repair.

### INSPECTION PERIODS:

According to the international standard ANSI/ITSDF B56.1 tests should be carried out on a regular basis, at least every 12 months. Depending on the application, e.g. multi-shift operation or hard working conditions, test intervals should be reduced accordingly. Furthermore, drivers or operators of lift-trucks are responsible for regular visible inspections of the forks.

**By using the VETTER guidelines for fork inspections you can easily and safely estimate the condition of your forks!**

### WHO INSPECTS?

The yearly inspection shall be carried out carefully only by trained personnel. This service is mainly provided by acknowledged forklift service companies. Only the manufacturer of the fork arm or an expert of equal competence shall decide whether and how a fork may be repaired.

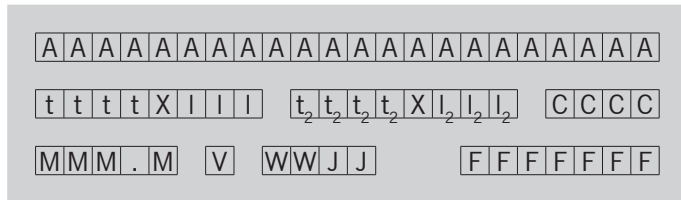
### WHO REPAIRS?

Repairs shall only be carried out by the manufacturer or an acknowledged service company (ANSI/ITSDF B56.1). Each modification of a fork may lead to irreparable damages or even safety risks. Only small repairs (f.ex. exchange of locking devices) can be carried out by the operator.

The illustrations only represent the basic principles and do not constitute a contractual entitlement. Technical information will not be updated automatically.

## Fork inspection

For an explicit identification of the fork, please note down the information of the stamping field!

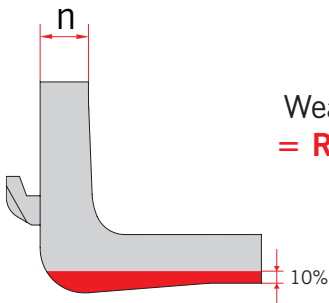


- A: Article number
- t: Rated capacity / piece
- l: Load center (LC)
- M: Material
- V: Manufacturer
- W: Week of production
- J: Year of production
- C: Material code
- F: Production order

**Please note:**

If the stamping is no longer clearly readable, the fork needs to be taken out of service.

### WEAR



Wear „n“ - 10%  
= **Replace forks!**



By using the **ForkWearMeasuringCard**, you can easily decide whether a fork needs to be replaced or not.

1. Determine the nominal thickness „N“ of fork by using the scale (for example at the shank of the fork).

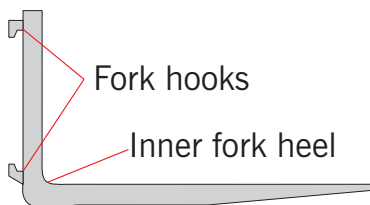
2. Put opening allocated to the nominal thickness „N“ (for example N 45 for 45 mm nominal thickness) at the area of the most wear. (typically in the heel area).

3. If the opening fits on the fork, the fork has to be replaced (regardless the manufacturer). In this case, wear is already higher than 10% of nominal thickness!

Extract from ANSI/ITSDF B56.1: „If 10 % of the original fork thickness is worn, the fork has to be taken out of service.“ 10 % wear of the fork thickness already means a reduction of fork capacity by 20 %. Basis for wear measuring is the original nominal thickness (n) of the fork (f.ex. nominal thickness (n) = 40 mm -> wear limit = 36 mm). Worn forks must not be welded.

**Attention:** If the original fork blade thickness deviates from the original fork back thickness, please observe wear limit Smin (see stamping).

### CRACKS



Critical areas:

- ▶ Inner heel
- ▶ Welding seams

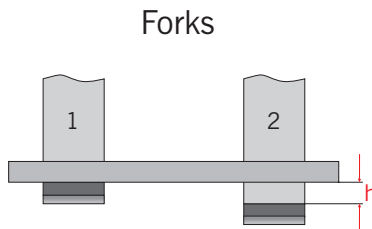
Testing methods

- ▶ Magnetic particle inspection
- ▶ Penetrant flaw detection

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## HEIGHT DIFFERENCE OF FORK TIPS



Height difference of fork tips should not exceed 1.5 % of the length of fork blade (L).

*Acceptable:*

$$h \text{ max} = L[\text{mm}] / 66$$

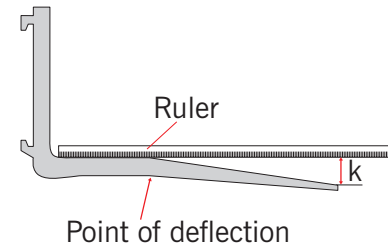
*Level fork:*

$$h \text{ max} = L[\text{mm}] / 66 \text{ bis } L[\text{mm}] / 33$$

*Replace fork:*

$$h > L[\text{mm}] / 33$$

## PERMANENT DEFLECTION



*Acceptable:*

$$k \text{ max} = L[\text{mm}] / 66$$

*Level fork:*

$$k \text{ max} = L[\text{mm}] / 66 \text{ bis } L[\text{mm}] / 33$$

*Replace fork:*

$$k > L[\text{mm}] / 33$$

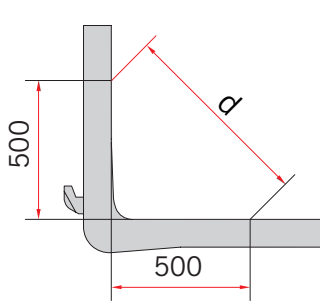
Reference measures for height difference / permanent deflection:

Blade length (mm)	Acceptable (mm)	Level fork from .... (mm)	Replace fork (mm)
800	< 12	12 to 24	> 24
900	< 14	14 to 27	> 27
1,000	< 15	15 to 30	> 30
1,100	< 17	17 to 33	> 33
1,200	< 18	18 to 36	> 36
1,300	< 20	20 to 39	> 39
1,400	< 21	21 to 42	> 42
1,500	< 23	23 to 45	> 45
1,600	< 24	24 to 48	> 48
1,700	< 26	26 to 52	> 52
1,800	< 27	27 to 55	> 55
1,900	< 29	29 to 58	> 58
2,000	< 30	30 to 61	> 61
2,100	< 32	32 to 64	> 64
2,200	< 33	33 to 67	> 67
2,300	< 35	35 to 70	> 70
2,400	< 36	36 to 73	> 73

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## ANGULARITY



Forks are manufactured with a 90° angle. Constant overload and misuse may cause permanent deformation.

1. Mark the horizontal and vertical distance at 500 mm (see sketch).

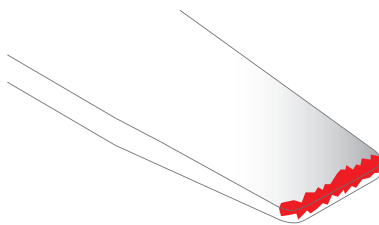
2. Take the diagonal measure d:

Perfect 90 °:	d = 707 mm
Acceptable:	d = 695 - 713 mm
Level fork:	d = 714 - 730 mm
Replace fork:	d > 730 mm

### Attention:

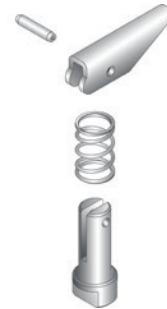
For special applications, forks can be manufactured with a different angle (e.g. limited mast tilt). Please check before inspection. Levelling of forks shall only be carried out by the manufacturer or acknowledged forklift service companies.

## DAMAGE / WEAR OF TIP



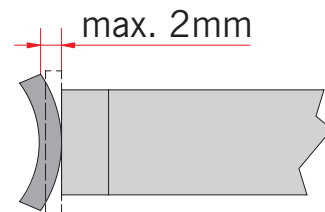
As soon as the fork tip is worn, the fork needs to be shortened or replaced.

## LOCKING DEVICES



Locking devices prevent the forks to slip unintentionally off the fork carrier. It is not allowed to use forks with defective locking devices.

## LATERAL BENDING OF HOOKS



Lateral forces and long-term use may cause lateral bending of the fork hook. In this case, fork hooks or forks need to be replaced.