



Forks and chains lift hundreds of thousands of pounds each shift, and unchecked wear on either can cause a load to come crashing to the ground. This can result in severe damage to property, or even the death of an employee.

That's one reason OSHA requires a daily inspection of each lift truck in operation. OSHA offers some guidance through an online tool (click [here](#) to use it), however they provides few specifics on what or how to inspect it. Below are some specific areas to inspect to help ensure forks and chains are in safe operating order.

**Fork Inspection.** Knowledge of metallurgy or its equivalent is not necessary to perform OSHA inspections, but operators must nonetheless pay attention to these key metal-related areas when examining forks.



- **Rated load capacity.** Are the forks rated to carry the loads they are handling? An excellent online calculator is available [here](#).
- **Surface cracks.** Inspect each fork top and bottom for surface cracks. Pay close attention to the heel area and the welds to the areas that attach the forks to the lift truck. These areas are most likely to develop cracks. If a crack is found, the fork must be replaced before the lift truck is put back into service. OSHA does not permit a damaged fork to be repaired.
- **Straightness of the blade and shank.** If either the shank or the blade has any sort of bend, the fork must be replaced before the lift truck is put back into service.
- **Excessive angle.** If the shank and blade angle exceed 93 degrees, the fork must be replaced before the lift truck is put back into service.
- **Fork tip height variances.** If the fork tips exceed 3 percent of the length of the blade, the forks need to be replaced before the lift truck is put back into service. For example, for 48-inch forks, the differences in the heights of the tips of your blades cannot exceed 1.44 inches.
- **Positioning lock.** If the positioning lock is inoperable, it must be replaced before the fork is put back into service on the lift truck.
- **Normal wear.** Use calipers to measure the heel and the blade for wear. These are the areas that wear most quickly. Once wear reaches 10 percent, the fork must be replaced. Ten percent wear results in a 20 percent reduction in rated fork capacity and represents a significant exposure for accident.



**Chain Inspection.** Forklift chains endure tremendous stress during operation and are subject to additional damage and wear by environmental conditions such as dust, rain and industrial chemicals. Carefully inspect chains for the following:

- **Chain elongation.** Elongation of more than 3 percent indicates a 15 percent reduction in strength and means the chain should be replaced.
- **Rust and corrosion.** Chains showing any rust or corrosion should be replaced. For maximum protection, chains must be completely lubricated at all times.
- **Plate cracking.** Inspect closely for cracks. The discovery of any crack means the chain should be replaced before the forklift is put back into service.
- **Protruding or turned pins.** Lack of lubrication results in friction between the plates and the pins, causing the pins to twist and turn their way out of place. The result is chain failure.
- **Misalignment.** Look for wear patterns on pinheads or outside plates. Continued operation will result in damage to the chain and sheaves, potentially causing the chain to fail.
- **Chain anchors and sheaves.** Inspect anchors for misalignment, damage or undue wear. Anchors with worn or broken fingers must be replaced.

[Cardinal Carryor](#) strives to help operators maintain compliance with OSHA regulations, but more importantly, we help maintain both forklifts and chains, ensuring employees are safe and productive.

Cardinal Carryor inspects thousands of forklifts each year and would be glad to help inspect your forks and chains. As forklift service professionals, we can perform these inspections quickly and thoroughly, and assist you in teaching your operators effective inspection techniques. Call us at 502-363-6641 to set up an inspection.