



## Forklift Safety Refresher

Forklifts are basically simple machines, but they are also massive and powerful. If they are not operated safely, the results can be destructive and devastating. While there are a lot of potential hazards associated with operating a forklift, you can avoid incident and injury by knowing 1) how your forklift operates, 2) how to safely carry your loads and 3) by following the rules of the road.

Topics include the differences between forklifts and cars, load stability, forklift inspection, refueling/recharging, lifting and placing loads, safe driving procedures, loading trucks and railcars and working near pedestrians and other forklifts.

### FORKLIFTS VS. AUTOMOBILES

- Although we drive both cars and forklifts, there are some big differences between the two. The steering, acceleration, braking and stability are all quite different.
- Unlike cars and trucks, a forklift steers from the rear. That makes maneuvering very different from what we are accustomed.
- If you're near an obstruction or edge, you might think you're steering clear when the back of the machine is heading straight for trouble.
- Another difference between cars and forklifts is that forklifts have a relatively short wheelbase so they can maneuver in tight spaces. They also have no shocks or springs, so you can feel every bump or irregularity.
- When compared to cars, the forklift's narrow width, short wheelbase and lack of shocks can also make them less stable on corners and uneven surfaces.

### HOW STABILITY IS AFFECTED BY THE LOAD

- The load a forklift is carrying affects its handling and stability much like a teeter-totter works. The weight of a load is offset by the weight of the forklift counterbalance; the front wheels of the forklift are the pivot point.
- A forklift has the greatest stability and most lifting capacity when the load is close to the backrest, centered over the forks and close to the ground. The forklift's load limit is calculated for this position; however, the higher you lift a load, the lower the load limit of a forklift.



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- The load limit can vary from one forklift to another. You'll find that information on the forklift data plate.
- The further a load is positioned from the backrest, the less stable the forklift and the less weight it can carry.
- As you approach the load limit of the forklift, the weight of the load begins to reduce the weight on the rear wheels. This dangerously reduces your rear wheel traction and your ability to steer; trying to lift an oversized load can even cause the rear end to come off the ground.
- Most forklift operators will know the weight of the loads they carry on a day-to-day basis, but if you come across something out of the ordinary, it's important to determine if the load is beyond your load limit. You can start by looking for weight markings on the load or you can ask someone who's familiar with the load.
- No matter what its weight, if a load isn't stable, it's a hazard. Some examples are damaged pallets, overhanging loads, off-center loads or loose loads.
- If a load is loose, slippery or consists of individual pieces, it should be secured before moving.
- A forklift can handle heavy loads at a considerable height, but the higher the lift, the less stable the forklift becomes. Be especially careful that the load is positioned and balanced correctly when handling an elevated load.

#### FAMILIARITY WITH YOUR FORKLIFT

- You need to be familiar with the forklift you're going to operate, both for your safety and the safety of your co-workers.
- Not only are there different types of forklifts, there are also different forklift manufacturers and different models that will have different features. For example, you might use different types of fork attachments, which means knowing the correct safety procedures for each type.
- You also have to be familiar with the location and purpose of the instruments and the controls.
- You should know if the forklift has an electric motor or an engine powered by propane, gasoline or diesel.
- For every forklift we operate, we should be aware of any specific instructions or precautions for that machine. Some of this important information can be found on the forklift's data plate.
- You should also know if there are areas in your workplace where operating forklifts could create a fire or explosion hazard or where exhaust fumes could affect people working nearby.
- Keep in mind that you may need special personal protective equipment for different areas of your facility.

#### FORKLIFT INSPECTION



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- Forklift inspections should be performed daily. If the forklift is used during more than one shift, it should be inspected before each shift.
- You can start by walking around the machine to look for any obviously damaged or loose parts.
- Be sure to look for any leaks, especially around the hydraulic hoses and cylinders.
- Check for stress cracks or damage on the forks, mast and overhead guard.
- If it's an electric forklift, be sure the battery is well-charged.
- Check that the tires are in good condition. Look for cracks, cuts or pieces missing from the tires. If the tires are pneumatic, be sure they are correctly inflated.
- If the machine has a seatbelt, make sure it's in good condition.
- Before starting out, check that the gauges and controls are operating. Make sure the lights and the horn are working and be sure to check that the brakes are working well.
- Test the operation of the mast by raising, lowering and tilting it; make sure the movements are smooth and not jerky. Also test the side shifting operation if the forklift has that capability.
- If you find any defects, don't operate the machine; record the defects on the checklist. Contact your supervisor immediately so an authorized technician can make repairs.

#### REFUELING/RECHARGING

- Another important task that requires special precaution is forklift refueling or recharging.
- Use only a designated refueling or recharging area with adequate ventilation. Park the forklift in the appropriate area, turn off the engine and set the parking brake.
- Avoid using anything that could generate a spark or open flame. Observe "no smoking" in these areas.
- Be sure to use the right personal protective equipment. For instance, if you're adding electrolyte to batteries, the personal protective equipment could include acid-resistant gloves, plus face and eye protection.
- Make sure that no metal tools or material is near any uncovered batteries.
- If refueling, be sure to check for damage or leaks. Clean up any fuel spills before starting the equipment.

#### LIFTING & CARRYING A LOAD

- When picking up a load, first square up the forklift with the load. For stability, make sure the load is centered and the forks are as far apart as possible, then drive forward allowing the forks to go smoothly under the load until it touches the backrest.
- Lift the load a few inches and then tilt the mast back slightly. If you're going to back up, look behind you before backing.
- Picking up an elevated load requires some special precautions. Remember, the higher the load, the less stable your forklift becomes and the less safely you can lift.



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- As with a load on the floor, square up the forklift with the load. Make sure the load is centered and the forks are an appropriate distance apart. Drive forward until the load contacts the backrest.
- Lift the load a few inches and tilt it back slightly. Look behind you, then back up very slowly; an elevated load makes the forklift less stable, so slow movements are important.
- After the load is clear, gently bring the forklift to a stop and lower the load before proceeding.
- Don't turn or travel with an elevated load. You could tip the forklift and spill the load.

#### PLACING THE LOAD

- With the load lowered and the mast tilted back, carry the load slowly and square the machine up with the drop point.
- If the load needs to be elevated, bring the forklift to a full stop and raise the load slowly until it's at the proper height. Drive forward slowly, level the forks and move the load into position. Stop and lower the forks until all of the weight is released.
- Look over both shoulders to make sure your path is clear and then back out until the forks are free of the load. Come to a full stop and lower the forks before proceeding.
- Whether you're picking or placing an elevated load, always watch out for overhead hazards such as power lines, pipes and fixtures.

#### DRIVING SAFELY

- Before starting out, make sure your load is in the most stable position: a few inches above the ground with the mast tilted back. Never attempt to raise or lower the load once you're in motion.
- Accelerate slowly and smoothly to a safe operating speed. Whether or not your facility has posted speed limits, always drive at a speed that is safe for existing conditions.
- Keep the forks close to the ground whether you're traveling with or without a load.
- Stay alert for obstructions or pedestrians and be ready to slow down and stop if necessary.
- Trying to stop a loaded forklift quickly is both difficult and dangerous. When you come to a stop, do it slowly and smoothly.
- Turning while you're moving causes the center of gravity of the forklift to shift. If you take a turn too fast, you could lose the load or even tip the forklift over; always slow down at corners and never turn sharply at operating speeds.
- If a large load blocks your forward view, drive backward with the load. Before starting, look over both shoulders and keep looking in the direction you're traveling until you stop. Also check the load occasionally to be sure it's clear of obstructions.



## HAZARDOUS DRIVING CONDITIONS

- Be aware of the surface conditions where you're driving. Bumps, potholes, curbs, gutters or debris can affect your control or unbalance a load.
- Be especially alert when traveling between indoor and outdoor locations with dramatically different light levels.
- If you have to cross a set of tracks, crossing at an angle will help minimize the effect on the truck and the load.
- There's only one way to travel on a slope or a ramp. Drive slowly, straight up and straight down; never travel at an angle or try to turn on an incline.
- Whether the forklift is loaded or empty, the forks should face uphill. That means driving up the slope and backing down while looking behind you.
- Remember that the load capacity is less when you're on an incline than on level ground.

## LOADING TRUCKS AND RAILCARS

- If you're loading a truck or railcar, make sure the ramp or bridge plate is secure before driving into it. Check to see that the flooring is in good condition to drive on.
- The trailer or car should also be secured with wheel chocks or wheel stops. Use dock locks if they're available.
- If the cab is attached to the trailer, make sure the hand brake is set.
- If a trailer is separated from the tractor, it should be supported with a jack stand that's rated to take the weight of the trailer and the forklift.

## TIPS FOR WORKING NEAR PEDESTRIANS & OTHER FORKLIFTS

- Pedestrians can get indifferent around forklifts; sometimes they ignore backup alarms and horns or they get indifferent about being in traffic ways. In the end, it's the forklift operator's responsibility to drive safely around people and other forklifts.
- Intersections can be hazardous; slow down when approaching intersections, sound your horn as a warning and use overhead mirrors if they're in place. Other forklifts and pedestrians may be slow in getting out of your way even if they can see you.
- When approaching a blind spot, slow down until you have a clear view. Check any mirrors for traffic and then proceed with caution.
- Sometimes people are tempted to use forklifts for things they weren't designed to do, such as carrying passengers. As the operator, it's your responsibility not to let people ride on the forklift.



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- A forklift is designed to lift material, so don't lift people unless your forklift is equipped with an approved safety cage.
- Never let someone stand or walk under a load or where material could fall on them. Instead, make sure the area is clear of people before picking up or placing a load.
- You should also be aware of your surroundings when you're moving. Never approach a person who could get trapped; the slightest contact with a person caught between a forklift and another object is extremely dangerous.
- If you're traveling behind another forklift, keep at least three truck lengths in between and never attempt to pass a moving forklift. Slow down and give the lead truck the right of way.
- If you have to leave your forklift unattended, you need to take some special precautions. When you get off the machine, leave it with the handbrake on and the forks resting on the ground.
- If you're more than 25 feet away or if you can't keep the forklift under direct observation, also turn off the engine