

Powered Industrial Truck (forklift) Reference Card

New Standard, OSHA Powered Industrial Truck Operator 1910.178

Requires employers to develop a training program specific to the type of truck to be driven and the working conditions encountered. Employers must certify and provide documentation that each forklift operator has received proper training and evaluation from a competent Powered Industrial Truck trainer. The certification must include the name of the operator, the date of training, the date of evaluation and the identity of the person conducting the training. An evaluation of each trained operator must be conducted during the initial training, at least once every three years, and after refresher training.

Powered Industrial Truck – Any mobile power-propelled truck used to carry, push, pull, lift, stack or tier materials.

Classes of Forklifts:

- Class 1 Electric motor, sit down rider, counter balanced trucks (solid or pneumatic tires)
- Class 2 Electric motor, narrow aisle trucks (solid tire)
- Class 3 Electric motor hand trucks or hand rider trucks (solid tires)
- Class 4 Internal combustion engine trucks (solid tires)
- Class 5 Internal combustion engine trucks (pneumatic tires)
- Class 6 Electric and internal combustion engine tractors (solid or pneumatic tires)
- Class 7 Rough terrain trucks (pneumatic tires)

Manuals

All forklifts should be equipped with Operator Manuals and Safety Manuals. Read the manuals before operating any forklift. If the manuals are missing, contact a supervisor, equipment dealer, or the manufacturer directly for more copies.



Recognize safety decals:



And safety symbols:



DANGER This signal word indicates an imminently hazardous situation which, if not avoided, will result in death.

WARNING This signal word indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION This signal word indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

Personal Protective Equipment (Always be aware of "site" PPE requirements)

- *Hard hat
- *Safety shoes
- *Safety gloves
- *Reflective clothing
- *Safety glasses
- *Hearing protection

- Know where to get assistance in case of an emergency
- Know where to find a fire extinguisher and first aid kit
- Be familiar with all site-specific safety markings and posted signs
- Make sure all parties involved in the forklift's operation are familiar with basic hand signals



Automobile vs. Forklift (Although forklifts and automobiles operate similarly, they are invariably different)



Automobile

- *70+ Mph
- *Prepared roads
- *Transport people
- *One or more occupants

Forklift

- *Max 10-20 Mph
- *Varied terrain
- *Transport materials
- *Operator only

Automobile

- *Relative comfort
- *Maximum visibility
- *Limited turning radius
- *Weight (2-4K)

Forklift

- *Functional seating
- *Visibility obscured
- *Tight turning radius
- *Weight (5-30K)

Site Inspection

Before operating any forklift, learn as much about the work area as possible. Walk around the worksite and inspect for environmental hazards. Note the hazards that may affect your tasks.

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|-------------------------------|--------------------|------------------------|
| Look for any Hazards such as: | -Slippery surfaces | -Confined areas |
| | -Water hazards | -Underground utilities |
| | -Holes | -Speed considerations |
| | -Overhead hazards | -Moving equipment |
| | -Slopes | -Scattered materials |
| | -Deep ditches | -Pedestrian traffic |
| | -Obstructed vision | -Deep mud |
| | -Narrow aisles | -Oil spills |
| | -Powerlines | -Any other hazard |

Site inspections must be done before each shift. Also inspect the site when conditions change

Forklift Inspection

Before each shift, the operator should always inspect the forklift. The following are areas that warrant attention:

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| -Hydraulic fluid level | -ROPS |
| -Tires | -Forks and mast |
| -Horn and alarms | -Brakes |
| -Frame components | -Fuel, battery levels |
| -Safety equipment | -Hoses, belts and cables |
| -Steering | -Seatbelt |
| -Manual | -Any other damaged or malfunctioning component |

If your inspection reveals damage or any other potential hazard, do not operate the forklift.

Operation of a Forklift

- Never modify a forklift without manufacturer's written approval
- Mount the forklift using three points of contact (two hands and one foot)
- Adjust the seat and mirrors - put the seat belt on and adjust accordingly
- Take in consideration all workplace hazards
- Make sure the unit is in neutral and start the engine
- Look at the gauges and make sure everything is normal
- Familiarize yourself with the controls
- Raise the forks two to four inches off the ground (higher if rough terrain)
- Make sure no pedestrians are around the lift
- Release the parking brake and proceed with extreme caution

Picking up a Load

- Only stable or safely arranged loads shall be handled
- Make sure the load does not exceed the capacity of the forklift and is balanced
- Forklifts equipped with attachments shall be operated as partially loaded
- Center the forks to evenly distribute the weight of the load
- The forklift should be completely stopped before the load is raised or lowered
- Check for overhead obstructions before raising the forks
- Drop the forks to the floor (or height of item being picked)
- Drive into the load as far as possible, tilt the load back slightly and then lift
- Do not leave the forklift with the engine running
- Never attempt to adjust the load while it is lifted
- Do not allow anyone to enter the load area (under, around or near)
- Lower the load to the safe traveling height before moving (as low as possible)

Traveling with a Load

- Keep the load as low as possible to the ground
- Travel at a safe, slow speed
- Avoid traveling with the load near pedestrians or other workers
- Keep the load tilted back slightly (always adjust for slopes)
- Lift or lower the load only when completely stopped, never when traveling
- If the load is large and blocks the operators view, travel in reverse or use a "spotter"
- On ramps and inclines (10% grade or more), always drive a loaded forklift with the load "uphill;" driving up the ramp or incline and backing down
- Avoid sudden braking and other jerking movements
- If the load begins to disassemble or fall, stop the operation immediately

Placing a Load

- Stop the forklift in front of the desired location
- Slowly raise the load to the required height
- Move forward slowly with the load raised
- Never walk or stand under a raised load or let anyone else stand/walk under your load
- Place the load square and straight
- Extreme care shall be used when tilting a load forward or backward
- Lower the load onto the surface (e.g. ground, truck bed, rack, etc.) maintaining stability
- Once the load is settled, prepare to back up
- Before backing, check behind and on both sides for pedestrians or obstacles and sound horn
- Make sure the forks clear the pallet before turning or changing the height

Shut Down

- Come to a full stop (on a level surface)
- Set the parking brake and lower the forks to the ground
- Shut the engine off and cycle hydraulic controls to relieve pressure
- Remove ignition key
- Lock any anti-vandalism covers or guards
- **Exit the forklift using 3 points of contact (facing the machine)**

Attachments

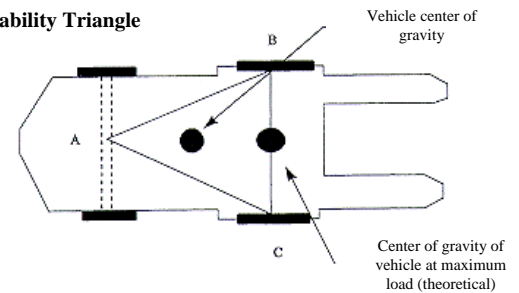
Some forklifts are engineered for special attachments. Enhancements for the boom, fork, engine, and wheels are not unusual. Review all attachment manuals before use.

The use of unapproved attachments, options or other devices on a forklift can result in death or serious injury. Use only attachments or options that have been approved for use by the forklift manufacturer. All such approvals by the manufacturers must be documented.

Traveling

- Comply with all company, facility, or location speed limits
- When traveling, pedestrians/emergency vehicles have the right of way
- Slow down and sound horn when approaching intersections
- When ascending/descending grades in excess of 10% (or manufacturer's recommendation), loaded forklifts shall be driven with the load upgrade
- Slow down on slippery surfaces, when turning corners, and when loaded
- Avoid running over loose objects
- A safe distance shall be maintained from edges, docks, drop-offs
- Arms and legs shall not be placed between the uprights of the mast
- Forklifts usually steer from the rear; make turns from the inside
- If a forklift begins to roll over, brace yourself and ride it out (do not attempt to jump off)

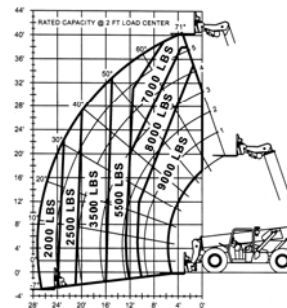
Stability Triangle



When the forklift is loaded, the combined center of gravity shifts toward the front of the triangle. Theoretically, the maximum load will result in the CG at the furthest point forward on the triangle. In actual practice, the CG should never be at this point.

Telescopic Forklifts

- Become familiar with all controls and features (all telescopic forklifts are unique)
- Always drive with the boom/mast low to the ground and retracted
- Some lifts may require driving with the boom raised 4-5 feet (boom obstruction)
- Avoid driving on slopes. If unavoidable, adjust the "frame level"
- Drive as close to a load as possible before attempting to pick up
- Use outriggers/stabilizers per manufacturer guidelines
- Be aware of powerlines and other overhead obstructions before raising the forks (boom)
- Never allow anyone under the boom while it is raised
- Never use the fork carriage to lift a worker unless he/she is in an approved personnel basket



Every telescopic forklift should have a load chart or load rating posted on the machine. A copy of that chart/rating will also be posted in the operator's manual. A load chart indicates lifting capabilities within certain "lifting regions." A telescopic forklift (picture at left) will lose capacity as the boom extends outward.

Be aware, however, that these charts reflect conditions where the load is centered.

Maintenance

Forklift malfunctions can often be attributed to improper or lack of regularly scheduled maintenance. Follow a regular maintenance schedule as defined in the Operator's Manual(s) to minimize accidents and injuries.

- Inspect the unit daily for loose, worn, broken or leaking components
- Check all safety lights, gauges, warning alarms and horns
- Perform scheduled lubrication and fluid level checks recommended
- Drain and change all fluids per operator's manual
- Inspect all tires for cuts, nails, and other obstructions