

# OPERATORS HANDBOOK

For Powered Industrial Truck  
Operator Training



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**I.T.A. CLASS  
I, II, III, IV, & V**





## Powered Industrial Truck Safety Handbook

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# Introduction

Forklift operators must have classroom instruction, hands-on training, and be evaluated to determine their competency. The goal of this course is to provide the information needed to be a safe and



responsible forklift operator. Every employer must evaluate the forklift operator's competence on each forklift they are required to drive. The employer must certify that each operator has been trained and evaluated. The certification must include the operator's name, the trainer's name, and the training and evaluation dates.

## Site-Specific Training is Required

Someone other than the employer can do the training and the evaluation. However, training out of the workplace must be supplemented with on-site training that covers the conditions under which the vehicle will be operated, such as surface conditions, ramps and slopes, hazardous locations, visibility, and pedestrian traffic. Operators must receive training for each type of Powered Industrial Truck they will be operating, including the use of any attachment (e.g., work platforms, drum attachments, clamps, etc.).

Operators must be re-evaluated at least once every three years or receive refresher training...

- When the operator is observed operating the forklift unsafely
- After a forklift accident or near-miss incident
- When the operator is assigned to operate another type of forklift
- When there is a change in the workplace that could affect the safe operation of the forklift



## Pedestrian safety

It is always the forklift driver's responsibility that pedestrians around them are safe. Most forklift-related incidents involve pedestrians. Establish clear, separate pathways for pedestrians and forklifts. High visibility apparel should be worn when walking outside of the designated walkways. Minimize blind spots and highlight intersections and restricted areas. If there is a right-of-way, ensure that everyone is aware of it. Otherwise, operators should make eye contact with the pedestrian (and get acknowledgment) before moving the forklift.

Not every situation that could be encountered while operating a forklift can be covered in this class. However, we hope that through the aid of this course and handbook, we can provide you the tools necessary to make the right decision for any situation.

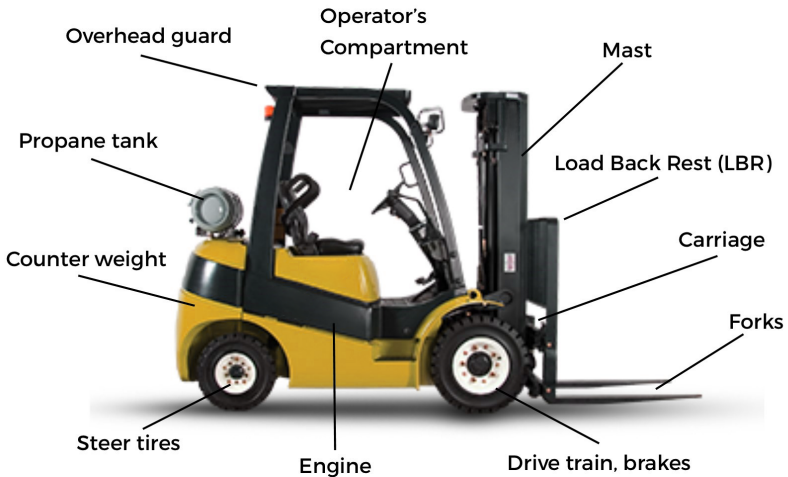
# Lift Truck Basics

Powered Industrial Trucks, as referred to by OSHA, includes any mobile power-propelled truck used to push and pull, carry, lift, stack or tier materials. Powered industrial trucks can be controlled by a seated or walking operator. They can range from internal combustion engines, which are powered by propane (LPG), gas or diesel fuel, to electric forklifts, which are powered by batteries that often weigh thousands of pounds.



## Components of a forklift

When learning about forklifts, it is important to know all of the parts of a forklift so that you can better understand this training. Although many forklifts vary in size and classification, most have components that are common to all forklifts.



## Forklift Classifications

### Class I – Powered Industrial Trucks

- Electric counterbalanced forklifts
- Sit-down or Stand-up with cushion or pneumatic tires



### Class II – Powered Industrial Trucks

- Electric narrow aisle forklifts
- Walkie stackers, reach trucks, and order pickers



### Class III – Powered Industrial Trucks

- Electric pallet jacks and walkie / rider jacks
- Walk beside or ride



### Class IV – Powered Industrial Trucks

- Internal combustion engine forklifts
- Cushion tires



### Class V– Powered Industrial Trucks

- Internal combustion engine forklifts
- Pneumatic tires



## Differences between forklifts and cars:

Some types of forklifts look similar to cars. They have a drivers seat, steering wheel, brake pedal and gas pedal, but the similarities end there.



- Forklifts are often 2-3 times heavier than cars
- They have no shocks or bumpers
- Most forklifts have rear wheel steering and a tight turning radius, which leads to rear-end and front-end swing
- Operators are often required to drive with one hand on the controls and the other on the steering wheel.
- Forklifts are less stable and are prone to tip overs
- Forklifts will often carry tall or wide loads and sometimes must be driven in reverse with a spotter
- Forklifts are often driven indoors, outdoors, through doorways, down aisles and around other people

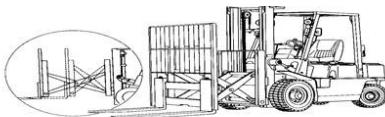


## Attachments

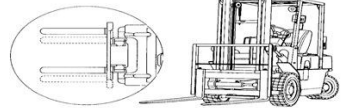
Forklift attachments generally reduce the capacity of a forklift. Before any attachments can be added to a lift truck, written permission must be obtained from the forklift manufacturer, and they must be installed by knowledgeable technicians. The forklift must be marked to identify the attachment and the capacity of the forklift with the attachment (at maximum elevation and load center).

If a fork extension is being used, then each should be stamped on the side with the individual load rating. Fork extensions should not be longer than 150 percent of the supporting fork's length.

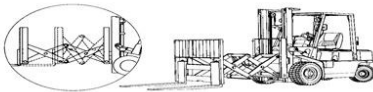
Single Pantograph Reach



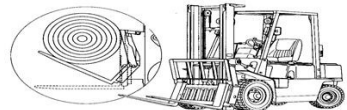
Side Shift



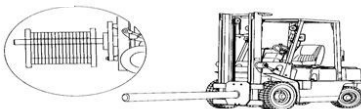
Double Pantograph Reach



Hinged Fork



Ram Lift



Hinged Input Bucket



# Pre- Operation Inspection

Prior to operating a forklift each shift, it must be inspected. The goal of performing this inspection is to reduce the downtime of the vehicle, increase productivity, reduce accident risks, and satisfy OSHA requirements. If a repair is needed, or the lift is deemed unsafe or defective in any way, then it must be removed from service. Only when it is properly restored, can it be returned to the fleet.

## OSHA Requirements

Every operator must have the knowledge to inspect the vehicle, and it must be done each shift that it is used. If the lift is used around the clock, then it must be inspected before or after each shift.

## Operator's Daily Checklist

According to OSHA, the checklist must include the operator's name, the date, what shift the truck is being used for, the day of the week, serial number or unit number of the vehicle, and the hour meter reading.



## Visual Checks

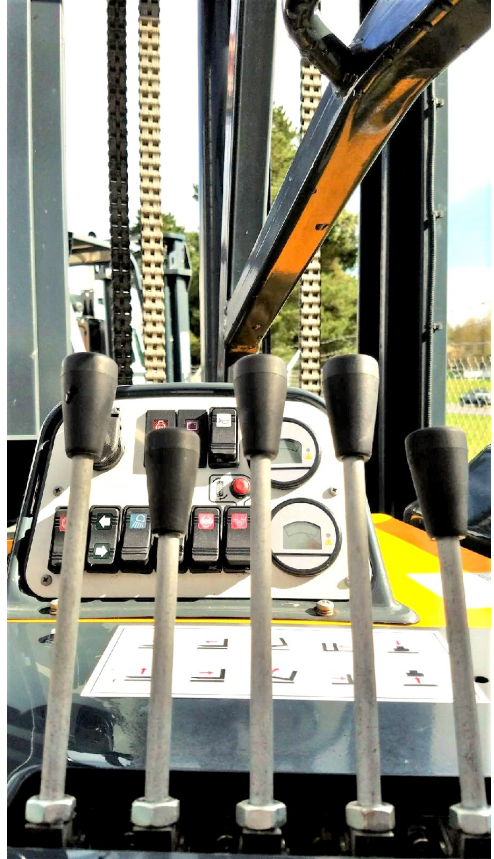
The following items will need to be visually and/or manually inspected before the truck is operated.

- Forks and Carriage
- Load Back Rest
- Mast
- Tires/Wheels
- Engine Oil
- Hydraulic Oil
- Radiator
- Fuel
- Battery Connections and Cable
- Covers/Sheet Metal
- Overhead Guard
- Warning Decals/Operators Manual
- Data Plate

## Operational Checks

The following inspections will be performed from the safety of the operators riding point.

- Hour Meter
- Operator Restraint
- Instrument Panel
- Horn
- Head/Tail/Working Lights
- Brakes
- Inching Pedal
- Parking Brake
- Mast
- Carriage and Attachments
- Lift and Tilt
- Control Levers
- Battery
- Directional Control
- Engine
- Steering
- Backup Alarm



Once the pre-operation checklist is complete, alert a supervisor if anything is in need of repair.

If everything is in working condition, then return the list to its designated location.

# Handling Procedures

## Entering and Exiting

Only enter or exit a lift truck when it is turned off, with the parking brake engaged. While each truck design will allow for different entering and exiting procedures, an operator should always use 3-point contact while mounting and dismounting. Never jump onto or off of a moving truck.

If the lift truck has a seat belt or a safety harness, make sure that once on the lift truck, it is properly secured. Stay buckled/harnessed until the lift truck is at a full stop, the parking brake applied, and the truck turned off.

## Driving the Forklift

While operating, keep hands and feet inside of the operator's compartment at all times. Never put any part of the body within the mast mechanism or reach mechanism.

## Parking the Forklift

While parking, be sure to allow for room to safely exit the truck. Once the truck has come to a stop, engage the parking brake and exit the truck.

The lift truck will be considered 'attended' while the operator is less than twenty five feet from the truck, and can still see the truck. If the operator will be leaving the truck unattended, then it should be parked away from traffic.

## Know Your Forklift

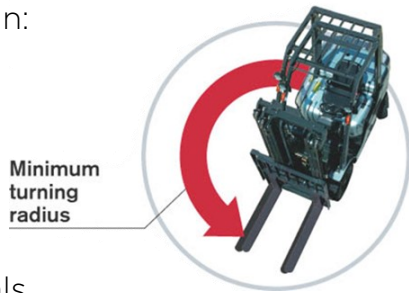
Before operating a new lift truck, become familiar with it. The essential information needed can be found in the operators manual. The characteristics of trucks will change from model to model.

## Each Model is Different

Prior to operating a forklift for the first time, make sure to become familiar with the vehicle's functions. Begin by understanding the controls, check if any of the controls are located differently, or if they have changed completely.

Pay attention to changes in:

- Rear-end swing
- Front-end swing
- Weight
- Capacity
- Controls and foot pedals



To help understand the vehicle, read through the operator's manual. This will inform the operator of the functions of the controls. All vehicles come with a manual when the lift is originally shipped. If the unit does not have a manual, be sure to contact the dealer to obtain one.

## Rules of The Road

- Avoid running over loose objects
- Yield to pedestrians
- Under normal traffic conditions, keep to the right
- Travel with your forks in a low position, 4-6 inches off the floor when on a level surface
- Maintain a clear view of the path of travel
- Keep truck under control at all times
- Consider driving backwards for better visibility
- Slow down for wet and slippery floors
- Never drive up to a person standing in front of a fixed object
- No stunt driving or horseplay
- Maintain a safe distance of 3 truck lengths behind those in front of you
- Never pass a forklift going in the same direction
- Slow down and sound your horn:
  - \* Through and near doorways
  - \* Blind Corners and intersections
  - \* Pedestrian areas
  - \* Dangerous locations
- When negotiating a turn, reduce speed to a safe level consistent with the operating environment
- Use the seatbelt every time you drive a forklift



## Entering and Exiting Trailers

Prior to entering and exiting any type of trailer there are a few things to check:

- Check that the trailer can handle the capacity of the lift truck.
- Brakes are applied on the trailer, and the wheels are chocked
- Make sure that the trailer is properly supported.

Next, examine the interior of the truck and the path the lift will take. Make sure the dock board or dock plate is secured. Check that there is proper lighting. Look the trailer over for any weaknesses, holes, or cracks. Determine the working path, and remove any debris that may be in the way.

Be sure to alert anyone nearby that the lift will be in use, and sound the horn. Depending on the situation, a spotter should be used to assist. Be mindful of the rear end swing while operating and keep an eye out for pedestrians.



## Rail Cars

When operating with a rail car, be sure that it is secured. Check for adequate lighting and any wear or cracks on the dock plates. Prior to entering the rail car, know that the floor will support the weight of the lift truck.

## Railroad Tracks

When crossing a railroad track, never cross it head on, always cross at an angle, diagonally. When coming to a stop, park a minimum of eight feet from the center of the tracks.



## Elevators

Do not drive trucks onto any elevators unless specifically authorized to do so. Check the capacity of the elevator, do not exceed this capacity. Once on the elevator, shut off the lift's power and set the brakes.

## Docks and Ramps

If the ramp has a grade in excess of 10%, then the load must face uphill, whether driving up or down. For safety reasons, do not turn around on a ramp, do not pass anyone on a ramp, and never park on a ramp, unless the wheels are chocked.



## Stand-Up Electric Trucks

- Can work in more confined areas
- Steering controlled by rotary tiller
- Be aware of drive tire direction
- Accelerate by moving knob or handle
- Be aware of overhead clearance
- Dead-man brake is used as parking brake



## Walkie and Rider Pallet Jacks

- Steer tiller is pulled towards the operator
- Pull tiller in either direction to steer
- Load and truck is pulled behind the operator
- The accelerator is a rotating handle or thumb control
- Safety button on tiller changes direction when activated
- To stop, reverse the accelerator (plugging), let go of tiller, or pull the tiller down



# Load Handling

When picking up a load, know the capacity of the lift truck and the weight of the load. Never pick up a load if it is beyond the rated capacity of the lift truck.

## Data Plates

Electric Lift Truck:

AS SHIPPED FROM THE FACTORY  
THIS TRUCK CONFORMS TO ASME/ANSI B56.1

MODEL VARIATION			UL TYPE	
CHASSIS NO.			BAT. TYPE	
MAST		TIRE		
ATTACHMENT				
TRUCK WT. <small>W/OUT BATT.</small> ± 5%	KG (	LBS)	VOLTAGE	V
BAT. WT.   MAX.	KG (	LBS)	MIN.	KG (
				LBS)
CAPACITY WITH MAST VERTICAL	MAX. LIFT HEIGHT		mm (	
LOAD CENTER	( )	( )	( )	KG
				LBS
	( )	( )	( )	mm
				IN

99070 8G082

Liquid Propane Gas:

MADE IN THE U.S.A.

MODEL VARIATION	MPL02A25LV	TYPE	LP
CHASSIS NO.	PL02-9H1790		
MAST	3F475	TIRE	SINGLE
ATTACHMENT	FORKS S/S 70810—FB40A		
TRUCK WEIGHT ± 5%	4055	KG (	8925 LBS)

CAPACITY WITH MAST VERTICAL

LOAD CENTER	MAX. LIFT HEIGHT		4750	mm(	187	IN)
	( 4050 )	( 3720 )	( 3435 )			KG
						LBS
	( 24 )	( 28 )	( 32 )			mm
						IN

99070 FB401

## Creep into a Load

A well-trained operator will know how to use the inching pedal. This will allow them to creep into a load, while keeping the forklift under control at all times.

## Picking Up a Load From the Floor

Before lifting the load, check that it is stable. If it is not stacked properly, or appears unstable, then it is an accident waiting to happen. Correct any issue that is detected, and ensure the load is safe to handle.

To pick up the load, approach slowly and straight on. Before engaging the load, check that the forks are properly lined up, and adjust if needed. Keep the mast vertical and slowly drive forward, using the inching pedal, if driving a Class IV or V, to creep into the load. If the load is loose, double check that it will not exceed the height of the load backrest. Once the forks are in the load and the load touches the backrest, then stop the forward momentum.

Lift the load up enough to clear the floor, roughly four to six inches. Then, tilt the load so it rests against the backrest. Then proceed to move, and check for clearance on all sides. If the load is extremely wide, then have a spotter assist. Keep your eyes open for any overhead obstructions and pedestrians. Then proceed to the destination.

## Picking Up an Elevated Load

Prior to approaching an elevated load, look for overhead obstructions that may have to be avoided. To pick up a load, approach it head on. Raise the forks to the pallet height. Once the forks and load are on the same level, check the leveling of the forks and their width. Move the forklift forward until the forks are as far into the load as possible.



Lift the load off of the shelf, and tilt back the mast. Check behind the truck and honk the horn to alert anyone in the area that the lift will be backing up. Proceed to back up while watching the pallet exit the racking. Once free from the shelving, lower the load to four to six inches from the floor. Be sure to keep your eyes open for any obstructions or pedestrians. Then proceed to the destination.

## Setting Down a Load

Before setting down a load check that the area is free from debris. Then line the truck up squarely and stop the truck's movement. Tilt the mast forward so that it is straight up and down. If necessary 'side shift' to center the load.

Lower the mast down so that the weight of the load is fully in contact with the surface the load is being placed on. Avoid slack in the chains and slowly back away from the load.

## High Stacking

Be aware of overhead obstructions:

- Lights
- Beams
- Heating and AC units
- Overhead Doors
- Gas Lines
- Sprinkler Lines

Depending on the situation, you may need a spotter to better navigate the obstructions.



# Balance and Stability

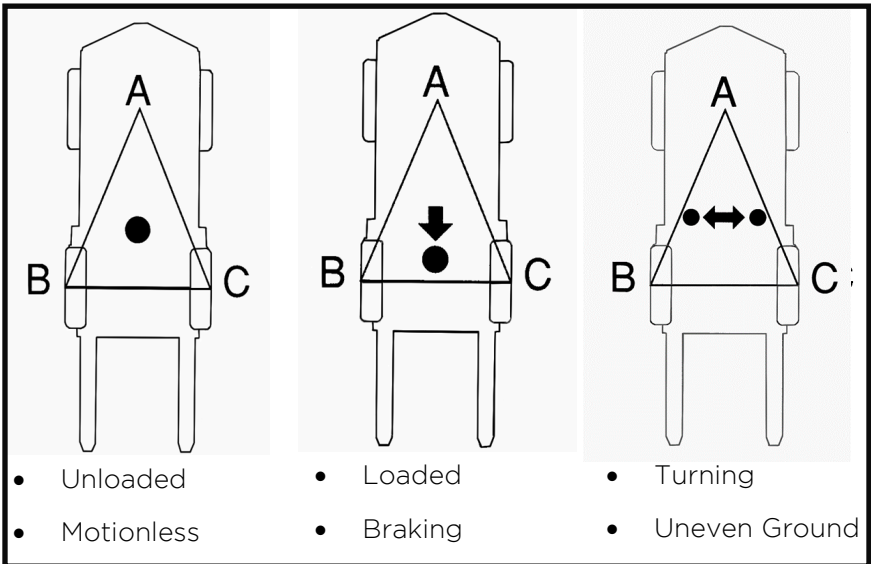
All forklifts must have a legible capacity plate. The plate must also be up-to-date and accurate. If the forks have been changed or an attachment added, then a new plate will need to be ordered. Capacity ratings are based on a 24" load center. Use the information on the plate to know whether or not the truck can lift a load.

## Stability Triangle

No matter the wheel configuration, lift trucks are supported at three points. The rear steer wheels are attached to the truck via the pivot point in the center of the rear axle (A). The stability of the truck is centered within this triangle.

The center of gravity will move during:

- Loading
- Stopping
- Stacking
- Turning
- Traveling



## Attachments

Operators must be trained in the proper use of the attachments associated with the lifts that will be used. When an attachment is mounted, always consider the truck to be partially loaded. As with any load being carried on forks, when traveling, keep the load four to six inches from the floor and cradle the load by tilting the mast back.



## Caution

- Never brake suddenly
- Never raise or lower the forks while moving
- Never turn with the forks elevated
- Don't travel with a raised load



# Fueling Procedures

## Gasoline and Diesel Fueling

The best place to check the fuel level is while outside or in a well-ventilated area. Many companies will have proper procedures when handling gasoline or diesel; be sure to follow these procedures. Only refuel using properly marked (OSHA approved) gas cans with a covered spout. Refuel your tank to the proper level, do not over fill or spill any fuel. If there is a leak in the truck, then do not operate the truck until the leak has been fixed.



Once the fuel level is at the proper level, then reclose the gas container and the tank with the correct covers. Place the container back into the designated storage spot. If any fuel did happen to spill, wipe it up immediately or wash the area of the spill. Make sure all fuel has evaporated before attempting to restart the truck.

## Propane (LPG) Gas

Liquefied Petroleum Gas or Propane containers are only filled to eighty percent capacity.

Do not refuel near any heat sources, sparks, flames, elevators, underground entrances, or depressions.

- 1) Use proper personal protection equipment (PPE)
- 2) Turn valve slowly clockwise, until the valve locks shut
- 3) Start and idle truck until fuel is depleted
- 4) Unscrew the LP connection hose
- 5) Inspect hose, connector, and 'O' rings
- 6) Unlatch tank straps
- 7) Remove tank



When remounting the LP tank, check the tank for a properly working gauge. Do not use a tank if it has dents, gouges, or any damage that could cause a leak. Never roll, drag, drop, or throw a propane tank.

- Check that tank corresponds with the locating pin.
- Latch LP tank brackets
- Reconnect the LP tank connector
- Slowly open valve counter clockwise until it stops, and inspect for leaks before use

When storing an LP-gas canister, ensure that the relief valve is above the liquid level of the tank.

# Battery Changing and Charging

Operators should remain aware of the battery discharge indicator. Operating a truck with a low battery charge will harm both the battery and the truck.



When changing and charging a battery, wear protective apparel. This includes eye and face protection, impervious gauntlet gloves, an apron, and a hard hat.

Most companies will have set procedures for charging batteries; adhere to these procedures. When working with a battery powered lift, remember the 3 cycles: work cycle, charge cycle, and cool down cycle.

Extra care should be taken with batteries. They need proper maintenance to work to their fullest capacity. If improperly cared for, then they can give off explosive gases. To be safe, the proper PPE should always be worn when handling the battery.

# Driving Safety

## A Well-Trained Operator NEVER:

- Drives in an unsafe manner or in violation of OSHA regulations
- Uses drugs or alcohol before operating a forklift
- Raises or lowers the forks while moving
- Turns or drives with the forks raised
- Leaves the forks raised
- Drives with a blocked view
- Places a load on the tips of the forks
- Overloads the forklift

## A Well-Trained Operator ALWAYS:

- Yields to pedestrians
- Uses horn as needed (often)
- Uses operator restraint system
- Keeps loads balanced and stable
- Keeps vehicle under control at all times
- Slows down and uses caution
- Gets a spotter when needed
- Drives in reverse when needed
- Avoids distracted driving









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