Introductory Guide to Driving a Forklift Truck

Counterbalance or Reach
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Dear Forklift Trainee,

Congratulations on taking the first step to becoming a Forklift Driver.

Once you have finished your course you will have a qualification that will allow you to become the most important function in any warehouse. Without you, goods cannot be stored, moved, re-arranged or packed. Without a forklift driver, any warehouse stops to a halt, and with it, the entire operation around it.

However before you get to your forklift job, you need to get the qualification.

This is why we have produced this guide to give you a bit of introductory reading before you start your course. Some of it you will think is common sense, some of it you will understand immediately, and some of the later part will be very intimidating. Don’t worry if you find it a bit confusing, the idea of the week’s training it to explain everything to you so you have the tools to pass. This guide is just to give you a bit of head start and to whet your appetite for the training to come.

So it just leaves me to say “good luck” on the course, enjoy every moment of it and if you do have any questions or queries then please don’t hesitate to call us up and we’ll be ready to help.

We’re with you every step of the way.

Best Wishes,

James Clifford
CEO
Specialised Training Services
Your Responsibilities

Forklift safety is of the utmost importance, and driving a forklift improperly presents various risks to both yourself and others, as well as your surroundings and the things you’re lifting.

These risks can be minimised with the proper training, checks and good practice on the part of operators and employers.

Proper forklift use

The main thing you need to be responsible for as an operator or employer is the condition of your forklift trucks and their appropriateness for the work they need to do.

Knowing how to operate the particular kind of forklift truck you’ll be driving, and ensuring it’s right for the job, is the first part of your due diligence.

On top of this, you’ll need to maintain your forklift and make sure you use it properly to keep it in safe and workable condition.

Within the Health and Safety at Work Act 1974 is the stipulation that everyone should have the relevant training to use their forklift in a safe and proper manner, while the Code of Practice for forklift training from the H&S Executive gives further guidance on this matter.

On top of the basic training you’re given, you can also pick up extra skill and efficiency in forklift driving by using a forklift truck regularly and getting to know its capabilities – what it can’t do as well as what it can.

Know the risks

While you might think it’s enough to know how a forklift works before you use one, you should never underestimate the value of proper hands-on training and experience.

People are injured and even killed while using forklift trucks without the proper skills and knowledge, or because they haven’t taken the proper precautions and care that all forklift operators should do as a matter of course.

If you’re ever unsure about any aspect of using your forklift, stop and ask for help rather than trying to figure it out for yourself. It’s part of your employer’s responsibility to make sure you have someone to ask for advice, so never feel daunted by the prospect of seeking out a manager or supervisor if you need to.
Safety checks

Part of your responsibility as a forklift operator is to make sure your forklift is always in a good and safe condition, posing no unnecessary risk to you or anyone else.

Before you use it every single day, there are some basic examinations you need to go through that cover every safety aspect of the truck.

Among the things you need to check are the forks, mast, carriage, hoist chain and – if relevant – reach channel of your truck.

What you need to look for are any signs of damage such as cracks or distortions, as well as anything stuck in the mechanisms, and any dirt that could affect the operation of the truck.

Just as you would with a car, you need to observe the truck’s tyres for pressure, wear and tear, making sure they can give you the vital level of control you need to operate the truck safely.

Check the truck over in general for anything that shouldn’t be there that is, or anything that isn’t there but should be. Your seat belt should fasten and unfasten with ease, and the seat should be secure and undamaged.

Your forklift’s engine should have enough coolant and oil levels, and should be topped up if needed. Should you notice that your oil levels are decreasing faster than they should be, you should always turn your engine off immediately and report the problem in case there’s a potentially dangerous leak.

All the truck’s levers, controls and pedals should be in full working order, so test each of them slowly as part of your checks. Make sure your lights are working properly, including your indicators.

If you spot anything you think is not quite right, always report it to your supervisor right away. Sometimes the type of faults that might seem minor and harmless can lead to accidents you’re not able to foresee, so play safe and report anything that’s not as it should be.

A FAULTY TRUCK SHOULD NOT BE USED UNTIL IT HAS BEEN REPAIRED

Conclusion

There are some basic rules to observe in order to be safe when driving a forklift truck.

These are to make sure you have the proper training, to do your daily safety checks, and to seek assistance or advice if you have questions or find faults with your forklift.

If you remember these golden rules you should be safe at all times when operating your vehicle.
All About Batteries

Your forklift truck will run on its own battery if it’s an electric vehicle. The battery is a vital piece of equipment and must be cared for and kept charged in order for your truck to work properly.

While an engineer is responsible for the care and replacing of the battery itself, as the operator it’s your duty to take the battery into account when doing your daily checks and any general maintenance.

Caring for the battery extends its life, meaning they don’t need to be replaced as often. Because replacement batteries are very expensive, your employer will appreciate you treating it properly.

In addition, without a battery you can’t use your forklift truck at all, which means your workplace is less productive and again costs your employer money in lost time.

General Battery safety

There are some basic safety rules to observe when dealing with batteries.

The first is to ensure you never ever smoke close to the area where you charge your battery. And don’t use your lighter, or any other naked flame, to check the battery level. Batteries are highly flammable and if in doubt you should keep any and all forms of fire away from them. Batteries also contain acid, which is highly corrosive if it comes into contact with your skin. For this reason, there should always be a supply of clean water close by wherever you’re using the forklift. If anyone should come into contact with the acid from a battery, they should rinse themselves thoroughly and seek a first aider immediately.

If you ever need to check or handle the battery, it is highly recommended that you should wear protective clothing including safety glasses and gloves while doing so. You should also disconnect the battery from the truck or the charger before you inspect or handle it.

To make sure you’re not at risk of injury including electric shocks, you should make sure any loose metallic objects are kept away from the battery completely. This means tucking in or removing dangling jewellery or watches, and making sure any metal objects or tools are removed from your top pockets.

A general rule to observe is that the manufacturer’s instructions should be followed throughout both maintenance and care of your battery.

Charging Procedure

Your forklift truck, if used as much as they tend to be in a busy warehouse or other business, will need to be recharged daily or even more often.

As the operator of the forklift, this job will usually fall to you to take care of.

To recharge the battery, you should first disconnect it from the truck and then remove the battery cover. Any gas coming from the battery will this way be released into the air instead of building up and causing a hazard while charging.

Your battery should indicate what the electrolyte levels are in each cell, and you will need to check the levels to see if they need to be charged any further.
To charge the battery, add distilled water until it only just covers the plates but without overfilling. You should clean up any excess water right away and add the cell tops back on again.

There are some basic checks you need to do before you begin the charging process itself. You should make sure the charger is switched off and then look closely at the cables and plugs to see if there is any damage. If you don’t see any problems, you can then connect the charger to the battery.

Please bear in mind that while the majority of batteries are charged this way, every battery is slightly different, and you should follow the manufacturer’s instructions very closely at every step of the charging process.

When the battery has been fully charged, you should always turn the charger off before you disconnect it from the battery. This means there’s a minimal chance of accidental electric shocks.

The battery tops should be completely dry, and securely fasted to the battery. Reconnect the battery to the truck and do any further securing or locking in place required by your particular forklift and battery.

Extra precautions

When charging your battery, you should only ever used water that has been distilled, or has been formulated especially for the purpose of charging your battery.

Containers should be made of glass or non-metallic material, and should be kept clean and dry. If you notice your container is corroded, it should be neutralised using diluted ammonia or a sodium bicarbonate solution.

You can prevent corrosion from happening by training and drying the container, and then covering the battery terminals with petroleum jelly followed by acid proof paint where appropriate.

The vent holes should always be clear, and the cell tops tightly fitted, and the battery should be stored in a cool, dry place when not in use.

Diesel and LPG Engines

Any trucks that aren’t powered by electric batteries have their own safety and maintenance procedures which must be followed at all times.

These general rules will help you to stay safe and keep your vehicle in good condition during refuelling of diesel or LPG engines.

1. Make sure the building or room you’re in is well ventilated if you’re indoors
2. Always make sure you use your vehicle in a big enough space - no confined spaces
3. When it comes to refuelling, only ever do this outdoors
4. Ensure no smoking signs are placed in areas where these vehicles will be used or refuelled
5. Switch off the engine when you’re refuelling the vehicle
6. Change any LPG cylinders outside or in well ventilated areas only
7. Disconnect LPG cylinders only when the valve is firmly shut
8. Mount LPG cylinders with the downward arrow pointing down
Keeping Your Forklift Stable

Making sure your forklift remains stable is one of the most important things you need to do while it’s in use. Unstable forklifts are the cause of many injuries and deaths each year, when they fall on operators.

Generally speaking, your forklift truck will stay stable as long as it’s properly loaded and is operated carefully by a professional driver. This is why it’s important that forklifts are not operated by anyone who doesn’t know what they’re doing, and doesn’t understand what the truck can and can’t do.

Trucks themselves are very safe and secure when loaded and operated properly, and there’s no need to worry as long as you follow the appropriate rules and instructions.

As a general rule, your truck’s stability will depend on its weight, height, speed and distance.

Weight

The weight of your truck is one of the main factors in determining its stability.

If you think of it as a seesaw, you will be able to understand that the back end of the truck must always be heavier than the load it carries. If the load should be the same weight or heavier than the truck itself, the truth is in danger of tipping over.

You can avoid this by always paying attention to the lifting capacity of the truck and ensuring you never exceed it. You can see the load centre on the data plate which is fixed to your truck, and you can also see any differing load centres showing what you can lift and how.
Height

The height at which your load is raised affects the centre of gravity and therefore the stability of your forklift.

Simply put, when you need to lift your load, you should move very carefully and aim to move only when you have to – mainly when loading or unloading, and not raising the load while driving.

Failure to observe this rule could lead to injury, broken goods and other serious damage.

Speed

No unnecessary speed should be used when operating your truck. While you need to drive efficiently, you should not be moving around at speeds which could cause your forklift to become unstable.

Speed affects the weight of your load, increasing it the faster you go. If you’re already carrying a heavy load, making it heavier will cause it to become unstable in exactly the same way as if you had overloaded it.

This can cause the truck to tip over, a danger which must be avoided.

Causes of truck instability

Longitudinal (forward)
1. Overloading
2. Undercutting (not picking up load to heel of forks)
3. Tilting forward with the load raised
4. Listing or raising the load while going downhill
5. Braking too hard
6. Travelling at fast or erratic speeds

Lateral (sideways)
1. Turning too sharply
2. Turning on slopes
3. Turning sideways while lifting the load
4. Driving over obstacles
5. Driving over potholes
6. Picking up a load while off-centre
7. Not using the side shift correctly
8. Turning while the load is raised

Distance (Load centre)

Distance is yet a further factor that could cause your forklift to tip over if safety rules are not properly observed.
If you bear in mind the seesaw analogy as previously mentioned, and the tipping effect it can have on your truck.

Taking a look at what happens when a load is moved away from the truck’s fulcrum (see diagram 6) you’ll see that it’s not been set by the carriage or the backrest of the truck.

You could then find the truck tipping over forwards, causing breakages and expensive damage, so always pay attention to the distance.

Should your truck tip at all, you must follow the right safety procedures. This means staying in the truck, holding on tight, bracing your feet and leaning away from the point of impact.

Trying to jump out of the truck could cause you to be put in even greater danger.

Load centre

Always check your data plate for the information about the distance from the heel to the back of the forks outwards to the centre of gravity.

You can also see on some forklifts how much you can lift and at what load centres.

Remember that the weight of the load indicated on the truck’s capacity plate is MAXIMUM. It must NEVER be exceeded and in some applications the actual load handled should be considerably less.

If your truck tips
Rules of the Road

The following are some general rules you should always follow in order to safely operate a forklift.

1. Only operate vehicles you are trained and authorised to operate

2. Read the manufacturer’s instructions thoroughly before you attempt to operate any vehicle

3. Carry out thorough and proper safety checks every time you use the vehicle

4. If you feel tired or unwell, or you have been drinking or taking medication, do not drive any vehicle

5. If you need glasses to drive, make sure you don’t operate a vehicle without them

6. Wear hard hats and any other appropriate safety equipment you need

7. Always wear a seat belt

8. Familiarise yourself with the signs and road markings wherever you’re working

9. Note any height restrictions for your vehicle in the place you’re working

10. Give clear and timely signals to other people working in your area

11. Observe other people’s signals too

12. Check your way is clear before you move off

13. Drive on the left wherever you can, unless it’s safer to drive in the middle for better visibility

14. Slow down at junctions or crossings and sound your horn several times

15. Take care to avoid pedestrians no matter who has right of way

16. Drive at an appropriate speed and with due caution

17. Make sure nobody is underneath your forks at any time

18. Do not allow anyone to mount your forks at any time

19. Take care to look out for any objects in your way

20. Keep a safe distance from any other vehicles

21. In case of a tall load blocking your view, drive backwards while looking where you’re going

22. If a load is in danger of collapsing, leave and tell a supervisor before trying to de-stack it

23. Always keep your head and limbs inside the truck when driving

24. Drive at a safe speed ensuring you have time for emergency stops if needed

25. Observe ground surfaces to check whether they may be unsuitable for your truck

26. Drive with loads as close to the ground as possible

27. If you’re not carrying a load, raise your forks clear of the ground while driving
28. If driving outside without a load, always tilt your forks back

29. Tilt your forks back when carrying a load

30. If you can’t see properly when going up a slope, ask for assistance

31. When going downhill without a load, the forks should face down

32. Carry the load facing upwards if you need to go up a slope. When no load is carried, the forks should be downhill.

33. Tilt the forks backwards and raise them above the ground when on a slope

34. Stick to a safe speed when on a slope

35. Never turn when on a slope

36. Drive at a 45-degree angle across bumps, railway lines, sleeping policemen etc

37. Never stack while on a slope

38. Never leave a forklift unattended on a slope

39. If you need to leave a forklift on a slope in an emergency, the wheels should be wedged securely

40. Always check the load weight, weight limit and load centre before picking up a load

41. If you’re in danger of exceeding any limits, reduce the weight or get a forklift with a larger weight capacity

42. Enter the load from the wide side wherever possible

43. Insert and space the forks properly for the particular load width and type

44. Take extra care if the tips of the forks extend beyond the load
Stacking and De-stacking, with Counterbalance Trucks

The safe way

The following steps will help you to stack and de-stack your counterbalance forklift efficiently and safely.

Please note that if your truck has a forward/neutral/reverse lever, it should always be placed in neutral whenever you apply the handbrake.

Stacking

1. When approaching the rack or stack, you should be straight and slow. The load should be low and tilted back on approach.

2. You should stop approximately 150mm in front of the rack or stack. Reduce the backwards tilt until it’s just enough to keep the load stable.

3. Lift the load to a height just higher than the height at which it needs to be stacked.

4. Release the handbrake and slowly approach the stack until the load is halfway over it. Visually check for clearance all around the truck and stack.

5. Lift the mast to a vertical position and release the brake. Drive forward to a point where the load is directly over the stack. Apply the handbrake and lower the load until it’s in the right position. Visually check that you have clearance for the wheels and mast and that they are not touching the stack.
6. Lower the forks until you can release them from the pallet, with a slight forward tilt helping you to get clearance. Check behind you and release the handbrake. Release the forks from the stack by reversing slowly.

7. Apply the handbrake as soon as you’re clear of the stack and lower the forks to just above ground level. Tilt the forks backwards slightly and move off again.

8. Stop at the rack 150mm away and apply the handbrake. Adjust the mast to vertical position.

9. Lift the forks to give clearance, release the handbrake.

10. Drive into the load, stop and apply the handbrake.
11. Check for clearance behind you. Lift the load clear of the rack. Release the handbrake and drive backwards, taking care to clear walls, stacks etc. Stop and apply the handbrake.

Tilt the mast backwards to stabilise the load.

12. Move backwards slowly, checking the way, until the load and forks are clear of the rack or stack. Stop and apply the handbrake.

13. Slowly lower the load to travelling position. Apply backwards tilt and move off.

Summary

1. Straight line stacking or de-stacking should be done instead of turning with the forks and load in the air.

2. Apply the handbrake before you operate a hydraulic lever otherwise you may accidentally roll the truck forwards.

3. Ensure smooth operation of controls.

4. Look behind before moving off.
Reach Trucks

Reach trucks are meant to be driven with a fully retracted mechanism and never with the reach extended. Doing so is dangerous and can affect your accuracy and efficiency.

Stacking and de-stacking

The safe way

As before, if your truck has a forward / neutral / reverse lever, it should be in neutral when you apply the handbrake.

Stacking

1. Keep your speed low as you approach the rack or stack. Approach in a straight line with the load low and tilted back.

2. Stop approximately 150mm from the rack or stack. Apply the handbrake and reduce the back tilt. Check the load for stability. Lift the load until it’s just above the height of the stack.

3. Check for clearance all around you. Release the handbrake. Drive forward until the load is just over the rack or stack. Check that the reach legs and wheels are clear of the bottom of the rack or stack. Put the handbrake on. Extend the reach until it’s approximately halfway down the rack or stack.

4. Make sure the mast is tilted vertically and the reach is fully extended. Take the handbrake off. Move the truck slowly forward until the load is in position. Put the handbrake on. Carefully lower the load.
5. Pull the reach back fully but make sure the pallet isn’t being pulled back at the same time. Check behind you and take the handbrake off. Move off until the truck is clear of the rack or stack. Put the handbrake on.

6. Lower the forks to the travelling position. Look behind you and move off.

De-stacking

1. Make sure the forks are in travelling position as you approach the rack or stack. Don’t move too fast. Make sure you’re facing the right way. Stop in front of the rack or stack approximately 150mm away. Put the handbrake on. Take the tilt off and make sure the mast is in a vertical position.

2. Lift the forks until they’re the right height for the pallet.

3. Take the handbrake off. Drive forwards and put the forks just inside the pallet. Put the handbrake on and
reach the mast out fully.

4. Take the handbrake off. Move the truck forward slowly until the forks are fully into the pallet. Put the handbrake on.

5. Lift the load clear of the rack or stack. Pull the reach back until it’s clear of the rack or stack. Tilt the mast back to stabilise the load.

6. Pull the reach back fully. Check behind. Release the brakes and move to clear the rack or stack.

7. Carefully lower the load to just above the reach legs. Tilt the mast back and move off.
Vehicle Loading and Unloading

Introduction

Operating a forklift isn't all driving, and you will actually spend a lot of your time loading and unloading your vehicle from trucks and bays.

It's vital to get this right and to do it properly and safely, otherwise this part of the job can lead to accidents and injury.

Loading and unloading from ground level

Before you do any loading or unloading at all, you'll need to do your basic safety checks. That means taking note of the weight limit, making sure the load is within it, and also making sure you have all the relevant paperwork.

Ensure that the vehicle is clear on all sides, on level ground, stable and away from any potential obstacles such as potholes.

Put on the brakes and turn the engine off, then you can start loading from the cab end or unloading from the back end. You should always load or unload from side to side so you don't have a hugely uneven weight distribution.

Placing the load in delivery order is very important, otherwise you won't be able to get to the right items.

Loading and unloading trailers

Once the trailer has been unhooked, there's always a chance it could tip over.

Either support the front of the trailer or add a load to the rear to ensure this doesn't happen.

Trailer Loading/Unloading

If the tractor unit is removed from the trailer, care must be taken to prevent the trailer from tipping.

Either support the front of the trailer or place a load at the rear (over the axles) to prevent the risk of tipping and ensure trailer brake is applied and wheels chocked.

Vans or Containers

Proper equipment or attachments must be used to tow these.

Loading docks

Always park the lorry properly. Make sure the truck operator has the ignition key for the tractor unit. Always see that weight limits are observed and the dock lever or bridge plate is strong enough. Check that the mast can fit, and don't allow anyone inside the container until loading is done.

Summary

A safe driver is one who does checks regularly and knows the limits of the vehicle, and not just one who drives safely. Always check the weight limits, loads and correct operation of your vehicle before you sit in it and begin operating it.