Creative Training group
Mobile : **0425 123676**
Email; nathalie@creativetraininggroup.com

TLILIC2001 LICENCE TO OPERATE A FORKLIFT TRUCK

CONTENTS

UNIT DESCRIPTOR

This unit specifies the outcomes required for the operation of a powered industrial truck equipped with a mast and an elevating load carriage to which is attached a pair of fork arms or other attachment, for licensing purposes. This definition also includes a truck on which the operator is raised with the attachment for order picking.

APPLICATION OF THE UNIT

This unit requires the operator to be able plan the work, conduct routine checks on the forklift, shift loads in a safe manner, and shut down and secure the equipment after the completion of operations.

This unit is based on the National Standard for Licensing Persons Performing High Risk Work.

This unit in its current form meets state and territory licensing requirements. Any alteration will result in a unit which is not acceptable to regulators for the purpose of licensing.

ELEMENTS AND PERFORMANCE CRITERIA

Element	Performance Criteria
1. Plan work	1.1 Potential workplace hazards are identified 1.2 Hazard control measures are identified consistent with appropriate standards to ensure the safety of personnel and equipment 1.3 Appropriate forklift truck is selected according to the load and workplace conditions 1.4 Working area is inspected to determine appropriate path of movement for loads and forklift truck 1.5 Communication methods are identified according to procedures
2. Conduct routine checks	2.1 Forklift is visually checked for any damage or defects 2.2 All signage and labels are visible and legible according to the appropriate standard 2.3 All controls are located and identified 2.4 Pre-start operational checks are carried out according to procedures 2.5 Forklift is started according to procedures and checked for any abnormal noise 2.6 Post-start operational checks are carried out according to procedures 2.7 All forklift functions and safety devices are tested to their maximum according to procedures 2.8 Defects and damage are reported and recorded according to procedures, and appropriate action is taken
3. Shift load	3.1 The weight of load is assessed to ensure compliance with forklift truck data plate specifications 3.2 Appropriate hazard prevention/control measures are implemented and communicated with personnel in the work area 3.3 Forklift is operated at a safe speed and according to procedures 3.4 Loads are moved and placed to ensure stability of material and avoidance of hazards 3.5 Load movement is monitored constantly ensuring safety to personnel and load, and structural stability 3.6 Unplanned and/or unsafe situations are responded to in line with procedures
4. Shut down and secure forklift truck	4.1 Forklift truck is parked to avoid hazards 4.2 Forklift is shut down according to procedures 4.3 Routine post-operational forklift checks are carried out according to procedures 4.4 Forklift is secured to prevent unauthorised access/use 4.5 All defects and damage are reported and recorded according to procedures, and appropriate action is taken

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level required for this unit.

Required Skills

- Accurately interpret information relating to conducting forklift truck operations (e.g. procedures, data plate limits)
- Safely conduct forklift truck operations including all functions to the maximum height and load capacity
- Identify hazards associated with the operation of the forklift truck, assess risks and put into place effective hazard prevention/control measures for those hazards identified
- Use communication skills at a level sufficient to communicate with other site personnel (e.g. receive and interpret work instructions, safety information, emergency procedures)
- Drive forklift with load in forward and reverse, maintaining visibility
- Verify problems and equipment faults and demonstrate appropriate response procedures

Required Knowledge

- Methodology of determining the weight of a load
- Commonwealth, state or territory OH&S legislation, standards relevant to the safe operation for the forklift trucks
- Understanding of forklift characteristics and capabilities (including use of load data plates)
- Understanding of the hierarchy of hazard identification and control
- Organisational and workplace standards, requirements, policies and procedures for conducting operations for the crane class
- Procedures for the recording, reporting and maintenance of workplace records and information
- Forklift truck operations and safe operating techniques
- Typical routine problems encountered in the operation of the crane and equipment and adjustments required for correction

LEGISLATIVE REQUIREMENTS

Applicants who are applying for a High Risk Work Licence must

- Provide their full name, signature, evidence of identity with photo identification with any application for the licence. (original documents must be provided – copies not accepted)
- Not give any false or misleading information.
- Declare is you have been convicted of a WHS Offense
- Declare that you have had a licence refused suspended/ cancelled or refused
- Never issued the same licence from another state

Once a Statement of attainment has been issued by a registered training organisation (RTO) or a Notice of Satisfactory Assessment, you have **60 days** from the date of issue, to complete the application for the licence itself.

Operators have responsibilities to work safely. YOU the operator are responsible for the safe operation of a lift truck and its movements at all times. YOU are responsible for the safety of all personnel in the area of operation of the lift truck, and that your acts or omissions do not adversely affect the health and safety of others. YOU are responsible for the safe parking and shutting down of the lift truck.

You also have an obligation to report any hazards you see and any injuries you have.

As a responsible HRW licence holder YOU must take reasonable precaution and exercise proper diligence and safety at all times when working.

If you do not have a High Risk Work License you may not conduct any High Risk Work duties, unless you have been deemed competent (awaiting your actual licence), or are enrolled in an appropriate course or working under supervision during training on a logbook with a supervising HRW licence holder . As a trainee you will be the person who is receiving formal training and informal learning in a class of High Risk Work (HRW).

There are penalties issued for improper and unsafe use of High Risk Work machines that put others at risk. **You can have your HRW licence suspended, cancelled or you may have your licence refused upon renewal by the Work Health & Safety regulator.**

EMPLOYERS

An employer can only allow you to carry out work that requires a HRW licence if you hold the relevant licence **or** you are enrolled with an RTO for training in HRW **and** are being supervised on a Log Book.

RENEWAL OF YOUR HRW LICENCE

Once you have your new HRW licence, you will notice an expiry date printed on the license. These licenses need to be renewed every **(5) FIVE years.** You must hold a High Risk Work licence to conduct high risk work duties. If you are not licensed or no longer competent, you must cease performing these duties immediately. If you don't renew your 5 year licence within **12 months** of this expiry you will need to conduct training and be reassessed again. No extension of time will be given past this 12 months.

DUTY OF CARE

The obligation that a person has to exercise reasonable care with respect to the interests of others. Including protecting them from harm.

Under the Work Health and Safety Act 2011 you are required to:

- Fulfil obligations before operating equipment.
- Fulfil obligations whilst operating equipment.
- Operate the equipment in accordance with forklift safety rules.

Failure to comply with these obligations would deem you responsible & liable in the event of an accident.

Workers are required to show a duty of care at all times:

Personal safety. Employees must take reasonable care to protect their own health & safety. No one is going to inspect the equipment for you. It is your responsibility to check that all your safety equipment is in good condition & that it is worn when it is appropriate.




If an employer issues you with equipment that is designed for your health & safety protection such as Footwear, Hi-visibility clothing, safety glasses, ear plugs, seat belts & safety harnesses, Then you are obligated to wear them.

Safety of workmates. Employees must take reasonable care to protect others who may be affected by their actions or omissions at work. Be aware of the people around you, equipment such as forklifts can inflict horrific injuries & can cause fatalities. You will be held accountable for un-acceptable behaviours. When moving loads around other people use signs, barricades, lights & horn (Warning devices), a 3M exclusion zone (explained on page 18) can help.

Safe work practices. Companies should establish Safe Work Practices/Safe Job Procedures for addressing significant hazards or for dealing with circumstances that may present other significant risks/liabilities for the company. They should reflect your company's approach to controlling hazards.

Some regulations require employers to have written procedures/instructions for specific activities/conditions. The number of practices/procedures and the degree of detail will depend on the range of work activities your company performs. It is important that management and supervision are involved in the development of safe work practices and that they provide adequate training for workers likely to follow these practices.

EMPLOYERS RESPONSIBILITIES

Every employer has a duty to each employee to ensure so far as is reasonably practicable that while at work they are safe from injury & risks to health.

Under the Work Health and Safety Act 2011 they are required to:

- Provide & maintain a safe working environment.
- Provide & maintain safe systems at work.
- Provide & maintain machinery, equipment, appliances, implements, tools & substances in a safe condition.

Facilities. The condition & design (ergonomics) of the working environment & the equipment can be affected by things such as congestion, Clutter, Poor lighting & visibility, noise & vibration. All reasonable efforts should be made to keep areas where equipment is operated free from hazards. This is why you should conduct a risk assessment of the area before commencing operations.

Equipment. Forklifts need to be maintained by qualified & authorized personnel. Regular servicing should be carried out on the equipment you are using to ensure that it will operate to its full potential & that it is kept in a safe condition. If the equipment is found to have a defect it should have a warning notice placed on it, remove the key & inform the supervisor, record in the logbook and turn off the fuel.

Information. It is the duty of the employer to ensure that the employees are provided with the information, instruction training & supervision that may be necessary to ensure health & safety at work. Employers should regularly review the training needs of their workers. Particular regard should be given to training required by new & young employees.

Systems of work. A safe system of work is the systematic examination of a task in order to identify all hazards. The aim is to produce a safe work method that will eliminate or reduce the risks associated with the identified hazards. It is important to involve employees that carry out the work or with detailed knowledge of the activity, so that the system of work produced is effective and practical as well as safe. Involving employees with the process helps them to understand why this level of control has to be established and maintained

"EVERYBODY HAS A RESPONSIBILTY TO EVERYONE ELSE TO MAKE SURE WE ARE SAFE IN THE WORKPLACE"

BEFORE OPERATING A FORKLIFT

Unfortunately, you can't guarantee that the last person that used the Forklift has left it in good condition. So it is always a good idea for you to check the equipment before use. Conducting pre and post start operational checks is the best way to determine this.

Using your equipment Pre Start/Start-up checklist to check items such as looking under the equipment to check for leaks, hydraulic oil, engine oil, water coolant or brake fluid may be visible. Check the wheels are in good condition & that the wheel nuts are tight. Visually inspect all the guards are in place & secure. Check fuel and battery levels.

Test all the functions on the equipment. Check that the lights, mirrors & horn work. Do a test on the brakes, steering, & mast assembly and all operating controls/levers

Don't get complacent, although you might work at the same location on a daily basis its worth your while conducting a risk assessment of the site. Check above for lights, gas pipes, air conditioners & building structure. Check the floor for obstructions, other equipment, dangerous materials & other personnel. Also look around for overhanging pallets, powerlines & doorways. If you are starting out on a new job or have never seen the site before speaking to relevant site safety officer for example before performing these checks are particularly important.

DO YOU KNOW HOW TO READ A DATA PLATE?
This training will show you how.

Forklifts like all machinery have limitations which must be adhered to. Every Forklift must have a Data Plate that is clearly **readable** attached to it. If the Data Plate is not easily read or not on the Forklift you should not be using it.

If your Forklift Data Plate is missing or unreadable you should place a warning notice on the Forklift (TAG IT OUT) report it to your supervisor & remove the Key, record in the logbook and turn off the fuel.

The Data Plate tells you all about the limits of the forklift such as how much weight it can lift, how high you can lift it, the Load centre & how long your Forks are etc.

If you are using any Attachments such as Jibs, Carpet Spikes or Work platforms they must be indicated with specific capacities on the Data Plate.

Not all Forklifts are the same, so it's important that you know how to read the Data Plate. As part of the Training the Trainer will show you how to do this.

When you do your Practical Assessment, you will be required to read out the Data Plate information for the Forklift. This is so the Assessor knows that you can read & understand it.

OCCUPATIONAL HEALTH & SAFETY (WH&S)

Hazard control measures.

This refers to the systematic process of eliminating or reducing the risk to personnel & property through the application of controls. It includes the application of the hierarchy of controls. The 6 step preference of control measures to manage & control risk.

HIERARCHY OF HAZARD CONTROL

ELIMINATION	**Completely remove the Hazard**
SUBSTITUTION	**Use a Safer work method**
ISOLATION	**Prevent Access**
ENGINEERING CONTROLS	**Redesign equipment or procedure**
ADMINISTRATION	**Implement Training, follow documents**
PPE	**Wear appropriate PPE for the Job**

An easy way to remember the hierarchy of controls may be to remember:
'Every Sunday I Eat Apple Pie'….

Every	**E**limination – remove it all together
Sunday	**S**ubstitution – for something safer
I	**I**solation – away from people
Eat	**E**ngineering – a different product or design
Apple	**A**dministration – paperwork process & procedures for dangerous situations
Pie	**P**PE – safety for yourself and others

When should an operator check hazard controls are in place?

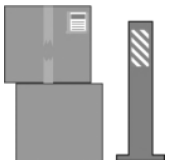
Hazard controls should be applied, using the Hierarchy of Control above as soon as the hazard has been identified and BEFORE commencing the task, to remove the potential for a workplace accident.

Suitable safety equipment and **PPE (Personal Protective Equipment) should be selected** at the **planning stage** for the **job during the risk assessment**.

Your safety equipment like vests, hardhats, glasses and boots **MUST** be inspected **prior** to use, to ensure it is safe to use. As per AS1666.1 (Australian Standards)




HAZARD IDENTIFICATION AND RISK CONTROL

	Doorways People and other traffic may enter the area through doorways at any time. Low overhead clearance may become an issue.		Overhead service lines Lighting, fire sprinkler systems, air con ducts, gas pipes, water pipes, sewerage pipes, cable trays, etc.
	Other equipment Other forklifts, pallet jacks, vehicles or machinery etc. may be operating in the area.		Surrounding structures or buildings Site sheds, separate warehouses or other businesses operating in the area. Racking systems
	Obstructions Loose stock, bollards, building supports, rubbish or anything that's in the way.		Power lines May include domestic or transmission lines.
	Dangerous materials Flammable, explosive, poisonous or corrosive materials stored, used or present in the area.		Railway lines It is not uncommon to find railway lines running through a workplace.
	Pedestrians and Walkways May include other personnel (employees) or the public or both.		Bridges Low overhead clearance may become an issue.
	Uneven surfaces Cracked concrete or rough terrain. Also ramps and sloping surfaces.		Weather conditions Hazardous weather may include rain, strong winds, lightning storms etc.
	Poor lighting		Barricades and Signage

	First Aid Equipment		Unique Hazards to the workplace Drains, dips and pot holes

HAZARDS IN THE WORKPLACE AND RISK CONTROLS

Potential workplace hazards are identified

What is a hazard? A hazard is anything that presents a risk of harm or damage to people or property.

Who should you talk to onsite?

Before starting work, you should inspect the site; in case any changes or hazards have been found. It is a good idea to consult with the following people:

- Safety officers
- Site engineers
- Department managers
- Supervisors
- Fellow workmates
- The person responsible for the workplace or operations.

It's important that workplace policies and site specific procedures are followed. So ensure you communicate with your team in the workplace.

You can communicate with people in the workplace by written instructions, email, two way radio, signage, listening and questioning.

Site Inspection / Site Hazards

Before conducting any high risk work you should check for danger and ensure that you are in a safe workplace. Inspection of the site should include checking for the following site hazards:

- Electrical power lines
- Underground services
- Pedestrians and personnel
- Vehicle traffic
- Plant and equipment
- Obstructions
- Potential non-weight bearing surfaces
- Ground bearing pressure (can the ground hold the combined weight of the forklift and load)
- Wind, bad weather conditions (wet surface)
- Lighting / illumination
- Overhead service lines
- Bridges
- Dangerous materials and chemicals

- Surrounding structures (including buildings and bridges)
- Railway lines
- Unique hazards to the workplace
- Workplace congestion and activities

PLANNING YOU WORK.

Working area is inspected to determine appropriate path of movement for loads and forklift truck

Determining the Most Appropriate Path of Travel

All hazards and controls need to be considered when determining the path of movement for your forklift and/or load. It is important to inspect the work area, before beginning work, to determine the most appropriate path of movement for the loads and forklift. Work place conditions, load conditions or even potential hazards may prevent access or the ability to travel along a certain path.

When choosing a path of travel, consider the following:

- Workplace conditions: ramps, one way areas, traffic management plans and site policies.
- Load conditions: load type, dimensions, weight, placement/positioning requirements.
- Potential hazards: where other personnel are working, areas with dangerous goods/environments.

Other planning considerations:-

- **Specifics of task**
- **Characteristics of load**
- **Blind corners**
- **Availability of Equipment**
- **Doorways are clear of obstruction**
- **Capacity of forklift must suit the load**
- **Access for the load and forklift**
- **Location of task**
- **Permit required**
- **Communications with co workers**
- **The area the load is to be placed is accessible**

Note: always continue to monitor the conditions and activities in the workplace to ensure any necessary changes to your planned travel path are managed safely. Pedestrians should always look out for forklifts and never assume that they have seen you. While forklifts should always give way to pedestrians be prepared to get out of their way quickly if necessary. **Forklift drivers should also give right of way to all emergency vehicles.**

Exercise: *List 6 hazards that you may find in your workplace:*

1. _____

2. _____

3. _____

4. _____

5. _____

6.

Communication.

Communication is a major factor in creating and maintaining a safe and efficient workplace. Many different forms of communication are used across the industry and include but are not limited to:

- Verbal and non-verbal language
- Written instructions
- Signage
- Hand signals
- Listening
- Appropriate worksite protocol
- Questioning to confirm understanding
- Two way radio
- Warning lights

Note: always follow your workplace communication procedure

Emergency Procedures

In the event of an emergency the forklift operator must give way to all emergency services, and follow their instructions if required.

Furthermore, the forklift operator MUST:-

- **Alert personnel of the danger and advise of situation**
- **Communicate the nature of the emergency to everyone**
- **Inform personnel of unsafe areas**
- **Give directions to emergency services to locate type of incident**

In the case of an emergency

1. **Notify your co-workers of the present danger**
2. **Inform the Supervisor/Safety Office about or type of Emergency**
3. **Contact Emergency Services & tell them the location**

Power Lines

The safest power lines have been isolated BEFORE commencing works.

Each state has a standard for the distance you should keep your forklift away from power lines.
These figures vary from state to state and you should check in your state.

NSW

In New South Wales, equipment operation may not be any closer than the following distances to electric/power lines:

Electric/Power Line Type	Distance
Up to 132kV	3.0m
132kV up to 330kV	6.0m
more than 330kV	8.0m

To work closer than these distances requires authority from the relevant electrical authority and adherence to cl.64 (2) (e) of the regulations.

VIC

In Victoria the *Framework for Undertaking Work Near Overhead and Underground Assets* states that equipment must not be closer than the following distances to electric/power lines:

Electric/Power Line Type	Distance
Distribution lines up to and including 66kV (power poles)	6.4m or 3.0m with a qualified "spotter"
Transmission lines greater than 66kV (towers)	10m or 8m with a qualified "spotter"

QLD

The Queensland *Electrical Safety Regulation* breaks down the distances in detail. Exclusion zones are broken down not only by size of electric/power line but also by the competency level of the operator. This means that the requirements should be clarified with the electrical authority before work commences even if the distance appears to be outside the zones. The Code of Practice gives the following minimum distances as guidance:

Electric/Power Line Type	Distance
Up to 132kV	3.0m
132kV up to 330kV	6.0m
330kV to 500kV	8.0m

SA / TAS / ACT (AS2550.1)

In South Australia, Tasmania and the ACT, equipment must not be closer than the following distances to electric/power lines:

Electric/Power Line Type	Distance
Distribution lines up to and including 133kV (usually poles)	6.4m or 3.0m with a qualified "spotter"
Transmission lines greater than 133kV (towers)	10m or 8m with a qualified "spotter"

A "spotter" is a competent person who watches and guides plant and equipment around electric/power lines. Check with each state authority for their spotter requirements.

WA

In Western Australia this falls under *Regulation 3.64* from the *OSH Regulations* and states the following as the minimum distances:

Electric/Power Line Type	Distance
Less than 33kV	3.0m
Over 33kV	6.0m
Over 133kV	8.0m

NT

In the Northern Territory safe electric/power line working distances falls under the *Electricity Reform (Safety and Technical) Regulations*. *Table 2, Schedule 3* gives the following minimum distances:

Electric/Power Line Type	Distance
Up to 33kV	1.5m
Above 33kV to 132kV	3.0m
Above 132kV to 275kV	4.0m
Above 275kV to 330kV	6.0m
Above 330kV to 500kV	8.0m

Safety Note:
If work needs to be completed closer than these distances?

- If possible, **have the power shut off**. If this is not possible the power lines must be insulated by an authorised and competent person.
- You must use a competent **safety observer** and operator within the exclusion zone that both have been adequately trained, depending on legislation within your state.
- You must **seek an exemption from the relevant authority**.
- Always confirm with the local authority, to comply with legislation that applies to that state or territory. **Only the local power authority in your state can accurately advise on safe distance you can approach and the voltages of power lines.**
- Check signage for voltage of overhead power lines

Always be aware of power lines and exercise extreme caution!

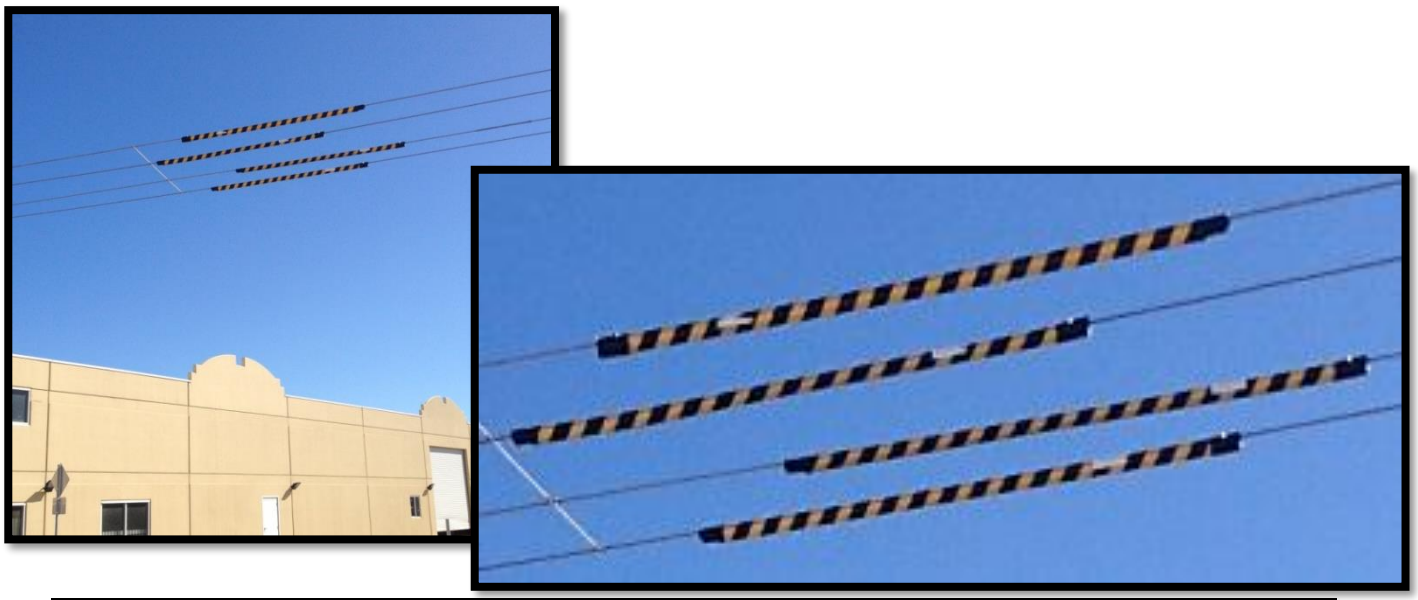
If your forklift makes contact with power lines, you should do the following;

- Warn other people to stay clear at least 8m away.
- Try and break contact with the power lines if safe to do so.
- Stay on the forklift until you are sure it is safe to exit the machine.
- If you must exit the machine, jump clear at least 2m away from the forklift without touching the forklift and ground at the same time landing with both feet on the ground.
- You should then bunny hop away 8m or shuffle to avoid electrocution while on the ground.
- If safe remain close enough to the scene to prevent others touching the forklift.
- Report the incident to your supervisor and follow site reporting procedures.
- When safe, have machine checked for damage prior to the next use.

Unless you are trained it is not easy to determine the voltage of a power line. **Seek expert advice from your local power company** if you are not certain.

Tiger Tails

Tiger Tails are a distinct visual **warning device usually yellow & black indicating the presence of overhead power lines and to keep clear.** They do not insulate power lines!



If you find a hazard in the workplace you are responsible for doing something and/or telling someone. Follow the simple steps below that help deal with hazards and prevent accidents:

1. If you find an obstruction or hazard and can remove it safely, do so.
2. If you can't remove it or eliminate it, safeguard it with signs, barriers or whatever needs to be done to make it safer.
3. Your forklift is a hazard to people nearby, always make sure you alert people that you are near with verbal communication, lights and horns.
4. A forklift may be required to operate in areas open to the public like roadways or footpaths. For safety, barriers and signs should be erected or a flag person used to protect the public from danger.
5. Signage for visitors entering your site helps alert them to forklifts on site before they even get near you. Pedestrian/vehicle exclusion zones or traffic management plans
6. You and others around you must be wearing the required Personal Protective Clothing and equipment. PPE such as Hi-visibility clothing is commonly used to easily identify pedestrians even in poor light.

All hazards and controls must be identified during the **planning of the task** when determining the path you will take with your forklift.

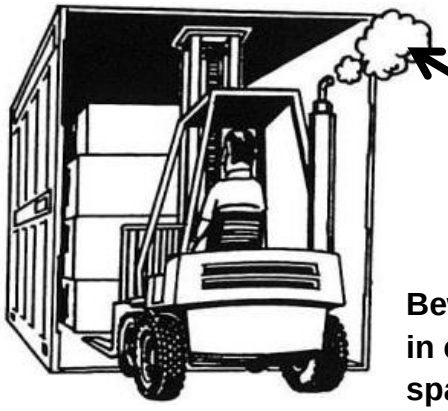
Plant and equipment movements need to be controlled as well by separating them from pedestrians this could be instigated by using a flag person, hazard lights, signs and barriers.

Factory Lighting

Working with **factory lights "on" at night** is sometimes necessary, and can be dangerous. You must ensure there is sufficient lighting. Ensure the area is **well lit** and that your l**ights on your forklift truck are operational**, to ensure safe operation of the forklift.

Internal Combustion Engines

Internal Combustion Engine (IC): running on combustible fuel (petrol, diesel, Liquid Petroleum Gas (LPG) or Compressed Natural Gas (CNG), these engines produce toxic fumes while in use. Operating this type of forklift in a **confined/restricted** or poorly ventilated area is dangerous as the operator may be overcome with carbon monoxide fumes and even cause death.



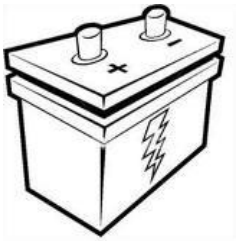
Carbon monoxide may cause death!

Beware of exhaust fumes in confined/restricted spaces

Warning!

When refueling a forklift the engine should be turned off to prevent the risk of the fuel igniting. Fumes can be ignited by the engine heat or a spark from electrics.

Battery / Electric Forklifts



Battery / Electric: powered by large heavy batteries made up of many connected cells, **battery electric forklifts are most suited to spaces with restricted airflow as they do not produce carbon monoxide**

(Note: most forklift batteries produce a highly explosive gas (hydrogen) during the charging process.)

When charging batteries, flammable gases are produced. **Batteries must be charged in a well-ventilated area to prevent the build-up of dangerous/explosive fumes**. You must not smoke when charging or changing batteries as it may ignite the gas.

Industrial powered batteries carry large amounts of lead submerged in Sulphuric Acid which makes them dangerous by nature, care must be taken when checking levels and the appropriate PPE such as gloves, face shield and apron should be worn.

For safety reasons on a battery powered forklift, it may be necessary to shut off the power to the machine in an emergency. You can use the Emergency Isolator Button on a Battery Powered Forklift to isolate the power supply quickly.

Appropriate hazard prevention/control measures are implemented & communicated with personnel in the work area

HOUSE KEEPING

- Remove obstructions – clean up the workplace, keep it tidy, keep it safe.
- Use caution when shifting obstructions from the area to ensure they are placed in the appropriate safe location.
- Check safety tags are in place on electrical switches/isolators as required.
- Running over objects on the floor causes instability so clean up

Risk Control

Before you start driving your forklift you should prepare the area for safety using bollards, witches hats, barrier rails, Flag person, Signage etc.

Controlling Pedestrians & Equipment.

Controlling pedestrian movement is essential, this can be done by implementing barriers, signs, having a flag person keep bystanders away, flashing lights, or even implementing exclusion zones. High visibility clothing is particularly useful and can assist in pedestrian awareness.

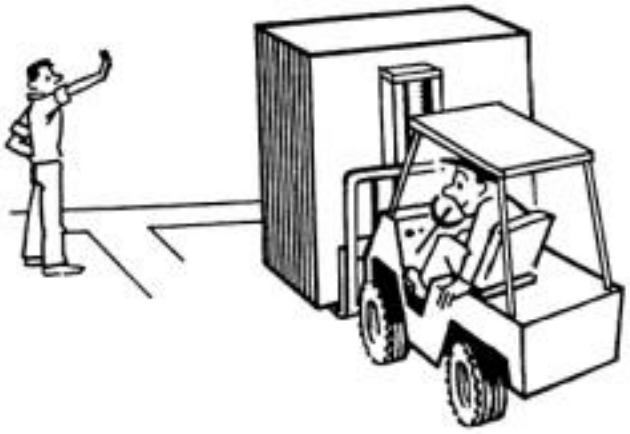
Pedestrians and forklifts do not mix well. Pedestrians are a hazard to forklift operations; therefore you need to put in control measures which include:

- Flag (stop/go) person
- Warning signs and barriers
- Verbal communication
- Flashing lights
- Horn/beeper
- Exclusion zone

Exclusion Zone – 3 metre rule

Some sites will need to observe particular safety procedures such as a 3 metre exclusion zone for pedestrians. If there is no other safer option for a pedestrian than to approach a forklift operator the pedestrian must alert the forklift driver by signalling the need to speak. The forklift operator must lower the fork arms to the ground, apply the hand brake and turn off the forklift ignition before the pedestrian may approach. The forklift is not to be started until the pedestrian is completely clear of the area.

REMEMBER THE 3M RULE



Conduct Routine Checks

Before use walk around and visually inspect all parts of the forklift for damage or defects, (e.g. bent or cracked fork arms, leaking hydraulic cylinders, etc.). Check the general condition, security and cleanliness of parts as well as liquid levels where necessary. Liquid levels that may be able to be checked depending on the forklift are hydraulic, engine and transmission oil, brake fluid and power steering, coolant, fuel, battery electrolyte level in each cell. All guards these should include overhead guard also known as Rolling-Over Protection (ROP) and Falling Object Protection (FOP) mast and tynes.

Carry out the checks explained in this section to ensure the equipment being used is compliant and in safe working order. A forklift should be checked each time before use, at a minimum, at least once a day

PRE-START INSPECTION (BEFORE YOU START THE MACHINE) ARE CARRIED OUT ACCORDING TO PROCEDURES

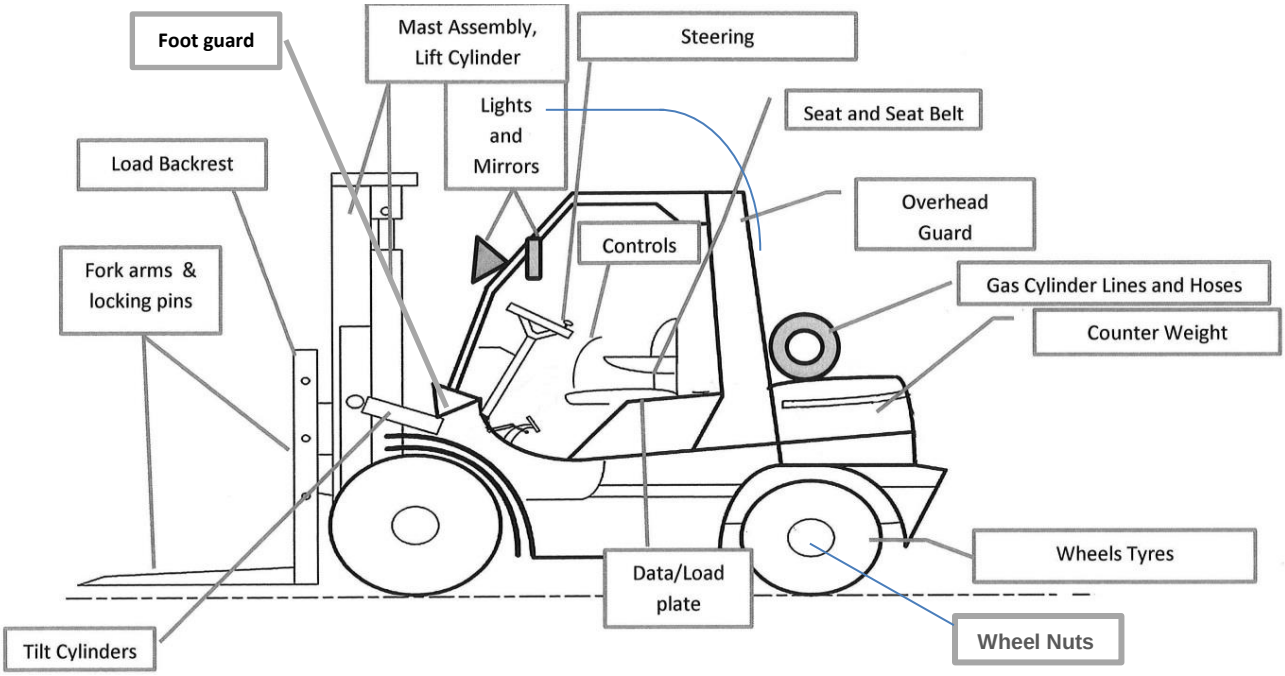
Inspecting the forklift and carrying out checks before use is a necessary step to identify damage, prevent accidents and ensure safe operation of the forklift. Defective equipment can be extremely dangerous.

- Check the data plate, read and understand the data plate limits
- Check the seat and seatbelt is not worn or damaged and locks into place
- Mirrors clean and adjusted
- All fork arms and locking pins free from damage
- Lift and tilt systems for leaks and security
- Gas cylinder for leaks, date code, compliance plate
- Check for leaks
- Tyre Condition and wheel nut/tyre pressure
- All fluids brake fluid, engine oil, transmission, power steering, coolant,
- Battery connections, security and battery fluid
- The seat (adjust if required), you are wearing your seat belt, adjust mirrors and steering wheel to your comfort
- Ensure the gas cylinder (if applicable) is securely fastened, connected correctly with no leaks and the expiry date is current.
- Check that the attachments are approved and fitted as per the manufacturer's specifications.
- Check for any modifications or alterations that are not included in the manufacturer's specifications (e.g. not listed on the data plate of the forklift or attachments data plate).
- All appropriate signage and warning labels must be clearly visible, legible and understood.

All controls are located and identified

During the operational checks the operator must check all controls of the forklift to the fullest extent. The operator must be familiar with (able to use, locate and identify) the controls of the selected forklift. Always familiarise yourself with any new equipment or control features before starting work.

Below is a diagram, labelled with the main parts of a typical forklift. All parts should be inspected and checked for damage prior to operating a forklift. For inspection points for the machine, please refer to the below example as well as the *Daily Checklist* on the following page.



NOTE: YOUR FORKLIFT MANUAL MUST BE ON THE FORKLIFT AND ACCESSIBLE TO THE OPERATOR – CHECK YOUR OPERATOR MANUAL FOR SPECIFIC FEATURES OF YOUR FORKLIFT.

Operator Safety Guards

There are three guards fitted to most forklifts. These are overhead guard, load backrest (load guard) and foot guard. Check for security and damage.

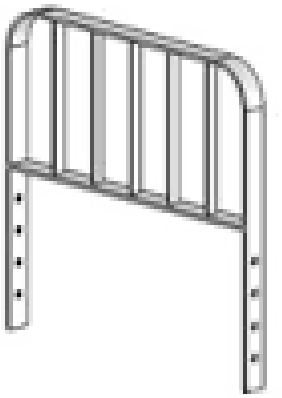
The OVERHEAD GUARD protects the operator from falling objects and also forms part of the rollover protections. Check for cracks and damage

When load shifting, you must ensure you have a secure **LOAD BACKREST (Guard)** to stabilize the load whilst travelling. This will protect the operator from falling objects and to stop the load from fouling the mast.

If the load stands taller than ⅓ above the load backrest, you should always have it secured by wrapping or strapping to stop a carton falling from the pallet. In addition the overhead guard will also protect the operator from any loads falling on them.

The load backrest is the first defence from the load falling back onto the operator, although the overhead guard is the second line of defence for the operator. Make sure the overhead guard is secure and hasn't been damaged by collision, as its integrity may have been compromised (no cracks or flaking paint at weld points).

A **FOOT GUARD** protects the operator's legs and feet from falling and protruding objects. A foot guard must also be provided on forklifts which have been designed to carry a passenger (Note. Very few forklifts will ever have a facility for carrying a passenger).



Name three guards fitted to a Forklift?

1. _____

2. _____

3. _____

What is their purpose?

1. _____

2. _____

3. _____

Tyre Checks

Solid rubber tyres must be checked for:

- no large chunks of rubber missing
- tyres are worn evenly
- outside end of steer tyres not worn down

Pneumatic Tyres (Air filled tyres) must be checked for:

Check tread for wear damage or punctures

Tyre Pressure (usually 120PSI check manufacturer handbook if unsure)

<u>A pre-start safety checklist is a legal document and must be kept.</u>

On the following page is an example of a pre-start operational checklist used by a workplace:

FORKLIFT CHECKLIST

This checklist is to be used prior to operating a forklift on a daily basis. Complete the checklist and report all issues to your supervisor. IDENTIFY FROM THE CHECKLIST AREAS THAT NEED TO BE ADDRESSED

Date checklist completed: _____/_____/_____ Date checklist to be reviewed: _____/_____/_____

Name of person who completed checklist: Signature:

Forklift: Serial # Rated Lifting Capacity:

	PRE-START OPERATIONAL CHECK OF THE FORKLIFT	Yes	No
1.	Is there any structural damage? Eg cracked welds, flaking paint, stress cracks in framework or mast	❒	❒
2.	Are the wheel nuts tight?	❒	❒
3.	Are tyres in good condition and at recommended tyre pressures?	❒	❒
4.	Are all the rollers on the mast still in place and turning?	❒	❒
5.	Chains in good order (not stretched, broken) and correctly adjusted?	❒	❒
6.	Is the backrest in place and undamaged?	❒	❒
7.	Are the hydraulic cylinders leaking?	❒	❒
8.	Are the tynes (forks) worn, cracked or bent?	❒	❒
9.	Are the tynes (forks) properly attached and secured with locking pins?	❒	❒
10.	Cables, hoses and fittings are in good condition?	❒	❒
11.	Safety devices in good condition? (seatbelts, flashing lights, beepers etc)	❒	❒
12.	Are liquid levels OK? (battery, hydraulic oil, engine oil, transmission oil, brake fluid, cooling water only if the radiator is cold, fuel)	❒	❒
13.	Are there any leaks under the forklift (water/oil etc)?	❒	❒
14.	Battery/LPG system is in good working condition?	❒	❒
15.	Guards are in place, and in good working condition?	❒	❒
16.	Is the forklift fitted with an overhead Roll-over Protection (ROP) Falling Object Protection (FOP) in good condition?	❒	❒
17.	Is the seat firmly attached and not broken or worn?	❒	❒
18.	Is the steering wheel moving smoothly? (Note: There should be no slack or play or free movement in the steering wheel before the wheels start to turn.)	❒	❒
19.	Is the manufacturer's data plate/load rating plate attached and able to be read? (and do you understand these ratings)	❒	❒
20.	Is the horn working?	❒	❒
21.	Are the controls clearly marked and working properly?	❒	❒
22.	Are the lights, flashing lights (if fitted) working?	❒	❒
23.	Do the hand, foot and parking brakes work properly?	❒	❒
24.	Are approved attachments used on this forklift and are they listed on the data plate?	❒	❒
25.	Is the operator manual readily available?	❒	❒
26.	Are warning devices attached to the forklift (forward and reversing beepers, horn, lights, flashing lights etc) in good working order?	❒	❒
27.	Forklift has no 'non-standard approved' modifications	❒	❒
	WORKPLACE ENVIRONMENT		
28.	Area is well ventilated for non-electric forklifts	❒	❒
29.	Workplace has an efficient layout/plan?	❒	❒
30.	Are the floors and surfaces in good condition?	❒	❒
31.	Are fixtures clearly visible?	❒	❒
32.	Are pathways for travel of pedestrians clearly marked and separate from forklift paths?	❒	❒
33.	Are forklift travel routes clearly identified?	❒	❒

Action Required? _____

Note: This checklist is not a maintenance checklist. You must consult the owner's manual or manufacturer for the maintenance and checking requirements of your forklift.

START-UP OPERATIONAL CHECKS (AFTER YOU START THE MACHINE) ARE CARRIED OUT ACCORDING TO PROCEDURES

First ensure the forklift is in neutral and the park brake is engaged fuel system must be turned **on** before starting.

Start the forklift as per the manufacturer's specifications and listen for any abnormal noise.

If an abnormal noise is heard, do not operate the forklift. Shut down the machine and follow the tag out procedure.

Checking your forklift is important to ensure it is safe to use. Start-up checks may include but is not limited to:

- Hazard warning systems (for example lights and horns) are functional
- Attachment movements and control functions, operated to the full extent of movement, are smooth and comply with operating requirements
- Steering, transmission and brake functions comply with operating requirements

Check:

- Mount the forklift using three points of contact and fasten your seat belt
- Insert key & start the forklift according to the operator manual
- All gauge panels and safety devices fitted to the forklift are trouble free. E.g. water temperature, oil pressure etc All lights and warning devices function correctly
- The battery charge level and temperature readings where necessary
- Test all hydraulic controls and accessories to the full extent of movement, without a load
- Check that your pathway is clear
- Test forward and reverse functions (look over your shoulder before reversing)
- Test the park brake and pedal or automatic brakes while moving
- Steering lock to lock **while moving** - drive the machine
- Where the forklift was parked for any signs of leaks

As part of the start-up checks, check all functions, controls and safety devices of the forklift for damage, defects and malfunction in accordance with the manufacturer's guidelines. Remember each function or device MUST be tested to its fullest extent.

Defects and damage are reported and recorded according to *procedures*, and appropriate action is taken

If you find a fault with the machine while conducting operational checks:

- Stop the machine straight away and park it in a safe location if possible
- Switch the machine off and take out the key to stop unauthorised use
- Shut off fuel supply
- Warn other people that the machine is not working properly by placing an **"Out of Service"** or similar tag on the forklift then tell your supervisor about the fault
- Record damage /defects on checklist or Log

Defects and Damage

Major defects or damage to a forklift can affect the safe operation of the machine. Some common defects and damage that render the forklift unsafe to use are listed below:

- Horn not working
- A crack in the heel of a fork arm
- The data plate is missing or unreadable
- Hydraulic oil leaking on ground
- Locking devices not functioning on attachments
- Safety devices not functioning
- Brakes or steering not functioning correctly
- A fuel leak
- Structural damage to the forklift. Check all visible welds for signs of cracking
- Adjusting lifting chains

Other measures that may need to be taken:

- An extra precaution for fuel leaks is to isolate the fuel supply (if LPG/CNG) by shutting off the fuel tap and ensure there are no ignition sources in case the leak is flammable. Then ventilate the area as much as possible.
- If an oil or water leak is detected use a spill kit or appropriate means to contain or clean up the leak to prevent accidents and injuries and damage to the environment.
- Record details of the defect as per site procedure, this may be by completing and submitting a daily checklist and follow tag out procedure.

The correct action for these defects is to:

- Park machine a safe location if able
- Place an OUT OF ORDER tag on the machine
- Remove the key to prevent use
- Shut off fuel to prevent leaks
- Report it to your supervisor so repairs can be organised
- Record in machine logbook

The **"Out of Order"** tag must not be removed until a service technician has rectified the problem.

FRONT **BACK**

Minor Repairs. – YOU MUST BE COMPETENT AND AUTHORISED.

Operators can only make repairs to a machine if you are competent and authorised. These repairs would be classed as minor:

- Topping up fluids
  - Water
  - Oils etc
- Adjusting fork tynes/arm
- Fitting attachments
- Tyre pressures

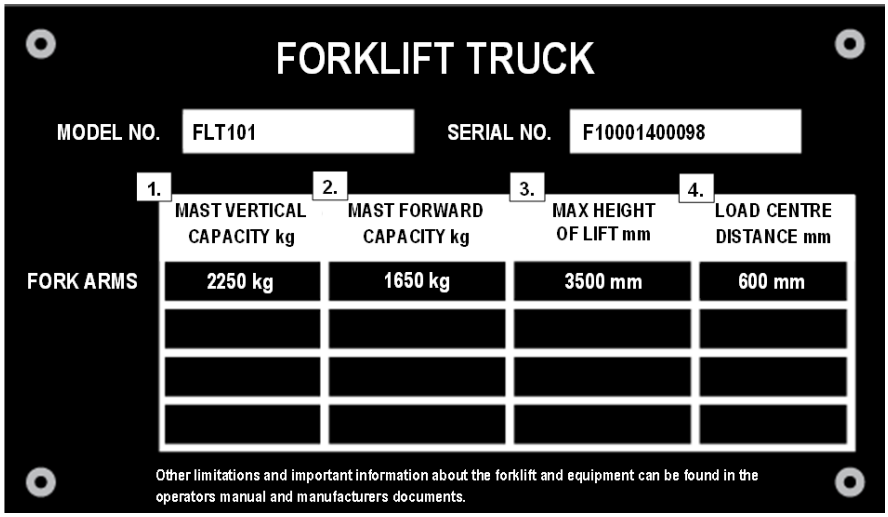
Important signage and labels:

- The data plate – It is illegal to operate a forklift if the data plate is missing or the ratings are unreadable (it must be replaced by the manufacturer). Park the forklift correctly, remove the key from the forklift, place a warning (out of service) tag on the forklift, report it to the authorised person so repairs can be started.
- The LPG compliance plate –This is a mark of the installer/tester to state that the gas system was up to standards when tested.
- The registration plates and labels – a forklift may be road registered if it meets the appropriate criteria, which includes displaying valid registration plates and labels.

Notes:

- Warning decals on the forklift must be maintained and not tampered with (removed, defaced or covered (e.g. keep away from pinch points, do not ride on fork arms, emergency tip over procedure, etc.). Do not stand or walk under raised fork arms.
- Also ensure that the operators manual and maintenance logbooks for the forklift are available onsite.

THE DATA PLATE



1. **MAST VERTICAL CAPACITY:** Tells you the maximum amount of weight you can carry and is rate in kg.
2. **MAST FORWARD CAPACITY:** maximum amount of weight you can carry in tilt forward position
3. **MAX HEIGHT OF LIFT:** Tells you how high you can lift the load.
4. **LOAD CENTRE DISTANCE:** is the distance measured from the vertical face of the fork arms to the centre of gravity of the load (can vary)

To comply with the data plate limits of your machine the load size must not exceed the load centre distance stated on the data plate. E.g. if the load centre distance is stated at 600mm the load size cannot exceed 1200mm.

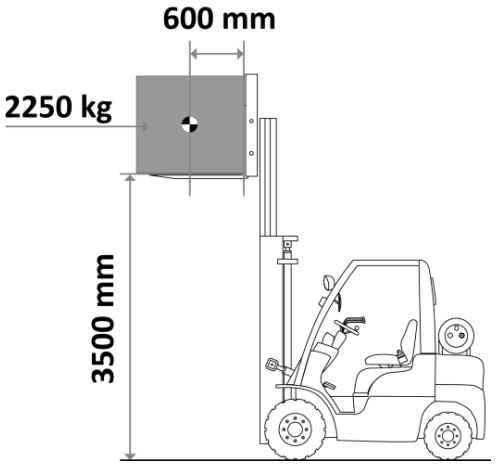
Please note that safe working load (SWL) can also be known as working load limit (WLL).

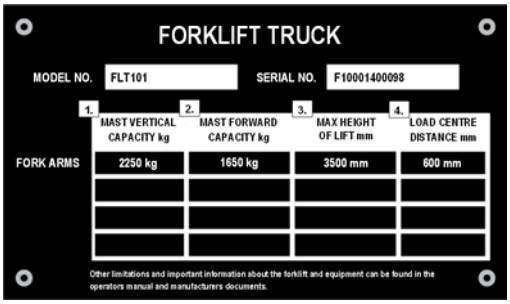
Counter balance Forklifts have 2 readings for rated capacity. *Mast Vertical & Mast Forward tilt.* This is because when you tilt the Mast forward on the Forklift, you are moving away from the point of balance of the Forklift, which reduces the Capacity of the Forklift.

Hi-reach Forklifts only have a Mast Vertical reading because the Mast doesn't tilt forward.

RATED CAPACITY

Is made up using 3 items from your data plate remember;
Maximum Weight the Forklift can Lift
Maximum Height the Load can be Lifted
Maximum Load Centre Distance





Rated Capacity

The data plate below shows that the forklift can lift a load with a maximum weight of 2250 kg up to a maximum height of 3500 mm with a load centre distance no more than 600 mm.

In short, rated capacity is the maximum weight, max. height, at the specified load centre distance a forklift is designed to carry.

These three factors that allow us to determine the rated capacity of the forklift. The “rated capacity” is the maximum load that a forklift truck is designed to carry at a specified load elevation at a specific load centre distance.

If at any time the load must be tilted forward so that the mast is beyond the vertical position, then the maximum capacity of the forklift must be reduced below 1650 kg. This is not a safe practice!

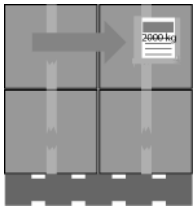
If you check the weight of the load against the forklifts “rated capacity” you should prevent accidents and overloading because this should ensure the load is within the lifting capacity of the forklift.

How can you assess the weight of a load?

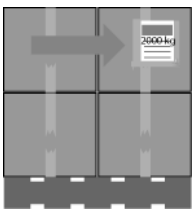
As a responsible and licenced operator you will be required to calculate load weights and capacities to ensure you do not overload the forklift truck. Standard loads on pallets are easier to calculate than irregular shaped loads. Most products will have labels that will identify product weights to help determine safe lifting procedures when manual handling. As forklift operators, we can use these to calculate the combined weight of the pallet using the single carton weight.

The **TOTAL** weight of the load must be determined BEFORE shifting to ensure that the load is within the rated capacity of the forklift. This will help to prevent overloading and accidents. The following may be used to determine the weight of the load if it is unmarked:

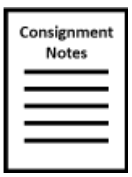
Load Markings



Weighing Load

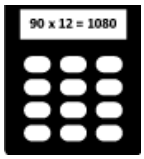


Consignment Paperwork



Weighbridge Certificates

Estimating by Calculations

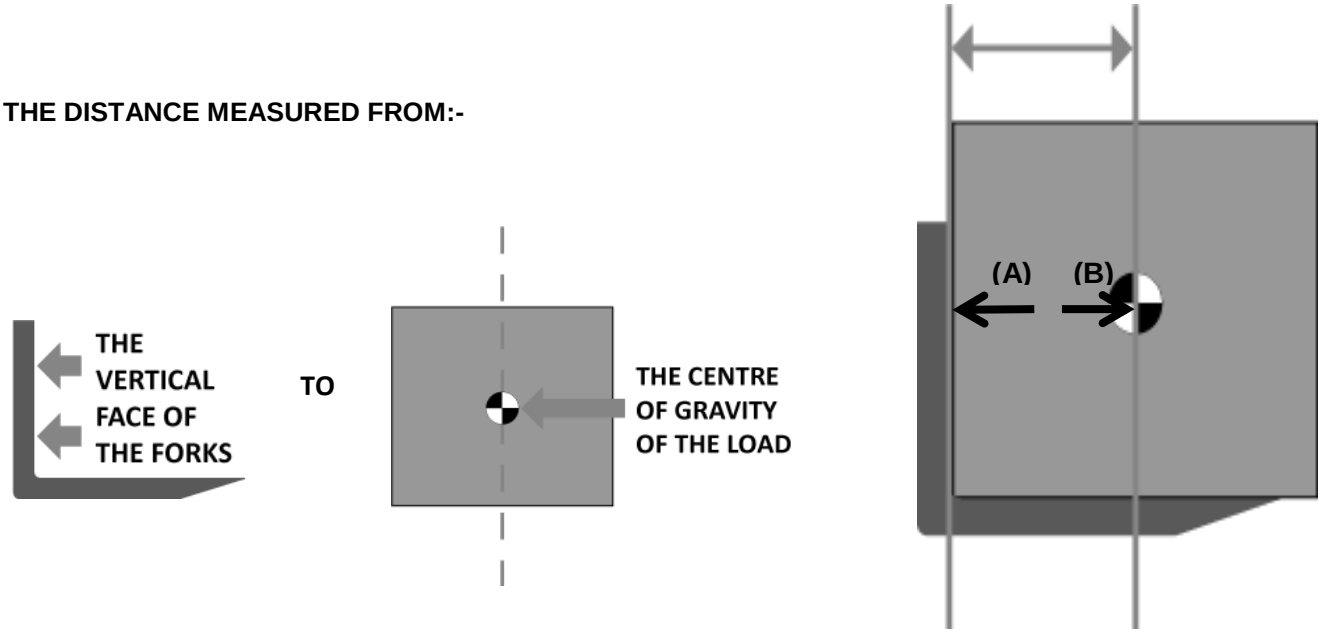


The weight of load is assessed to ensure compliance with forklift truck data plate specifications.

The type, dimensions, weight and distribution of a load are all important factors when assessing if a forklift is suitable for the task. If a forklift is overloaded it should not be used to lift the load.

LOAD CENTRE DISTANCE (LCD)

This is the measurement taken exactly from the vertical face of the forks **(A)** to the center of gravity of the load **(B)**. This is a very important factor when considering if a load can be lifted safely by the forklift.

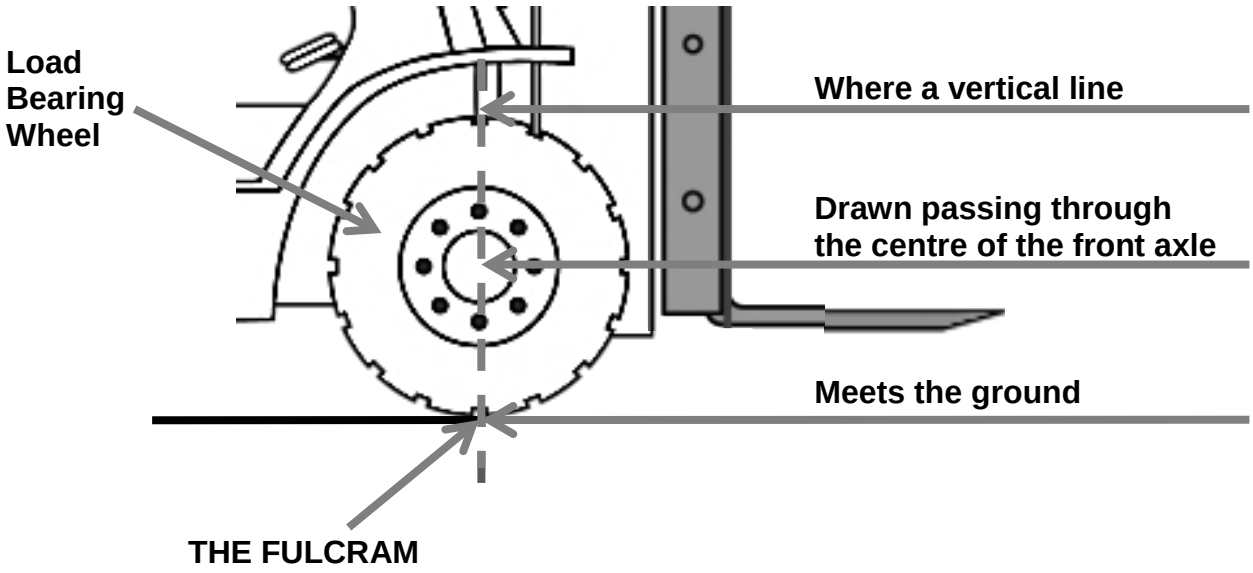


Longer loads with increased LCDs may become something that must be handled in your work place. If this happens, the forklift manufacturer can calculate the changed lifting capacity at the increased LCD and stamp the ratings onto the data plate. This will reduce the lifting capacity of the forklift because the weight of the load will be further away (this may require the use of different type of attachment e.g. adding slippers to the forks).
Other ways that loads may exceed the forklifts LCD ratings is if the load is not hard against the vertical face of the forks when lifted or if you pick up a load with the heavy end away from the forklift. Always pick up the heavy end closest so it is closest to the forklift.
The size of a standard pallet in Australia is approximately 1200 mm x 1200 mm. Therefore the maximum capacity rating of most forklifts in Australia is calculated for a maximum load centre distance of 600 mm.

FORKLIFT STABILITY

The Forward Point of Balance

The forward point of balance also known as “the fulcrum” is at the exact point where a line drawn vertically, passing through the center of the load bearing axle meets the ground.

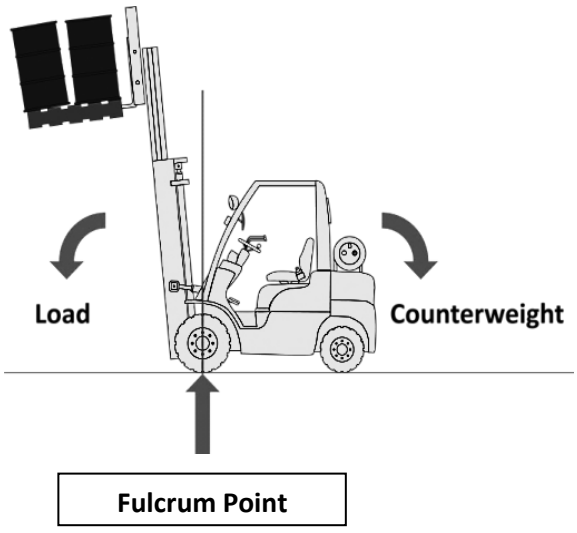


This is the forward tipping point of the forklift, which means that if the forklift overbalances and tips in the forwards direction this point stays in the same position while the rest of the forklift tips around this point.

Everything that is behind the fulcrum (towards the counterweight) acts as the counterweight (including the operator), while everything in front of the fulcrum acts like the load (including the mast assembly especially when tilted forward).

The force of the counterweight pushing down on the rear must always be stronger than the force of the load in order to keep the forklift stable and the rear wheels on the ground.

The further away from the fulcrum that the weight of the load is, the more likely it will be to cause the forklift to tip forwards.



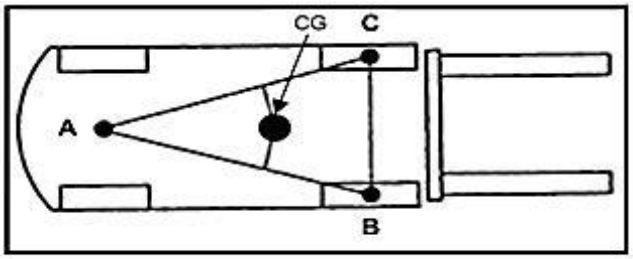
Note: You must never add any extra counterweights to the forklift as the existing counterweights have been designed for the maximum safe working load of the forklift.

Only the manufacturer or a suitably qualified professional can (if possible) add an extra counterweight to a forklift after engineering calculations have been made and the manufacturer has stamped the ratings onto the data plate.

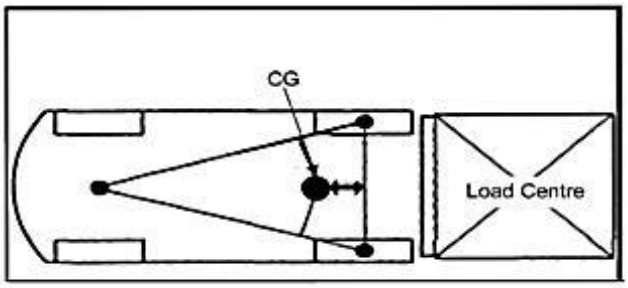
STABILITY TRIANGLE

It doesn't matter what type of Forklift or how big it is, it will always have what's known as a Stability Triangle. Counter balance Forklifts that have 2 Front wheels & 2 wheels at opposite sides on the back, have a centre pivoting axle in the middle of the 2 wheels.

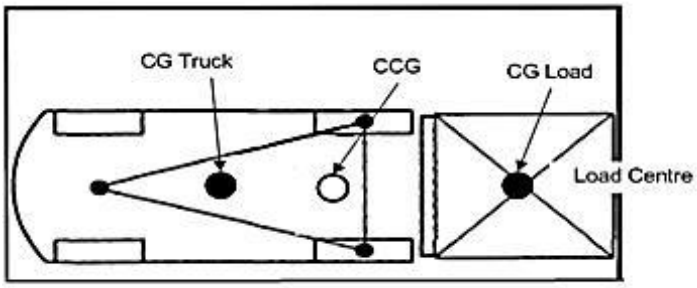
Keep in mind that as you turn & drive up & down inclines the centre of gravity will move. The load that you will be lifting will also have a centre of gravity. When you lift up the load, the centre of gravity of the Forklift & the centre of gravity of the load will form what's known as the **"Combined centre of gravity"**



- Point "A" is the centre pivot point of the rear steer axle
- Point "B" and "C" is the straight line between the centreline of each front wheel's drive axle

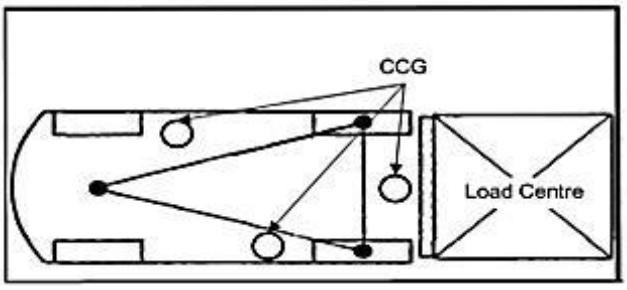


- When a load is placed on the lift centre of gravity (CG) moves forward



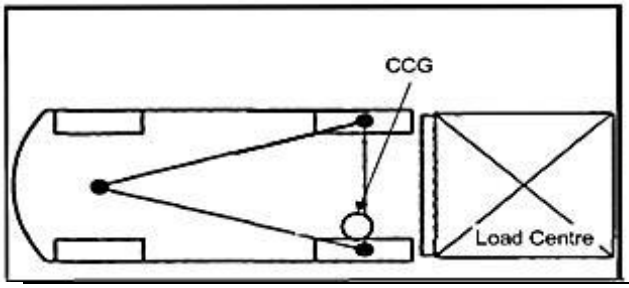
- The truck is stable as long as the combined CG (CCG) of the truck and load remains within the stability triangle

  Dynamic forces could shift the CCG outside the stability triangle which will destabilize the lift truck



- When the CCG is outside the stability triangle the truck will be unstable

  As a load elevates the CCG rises and the stability triangle gets smaller

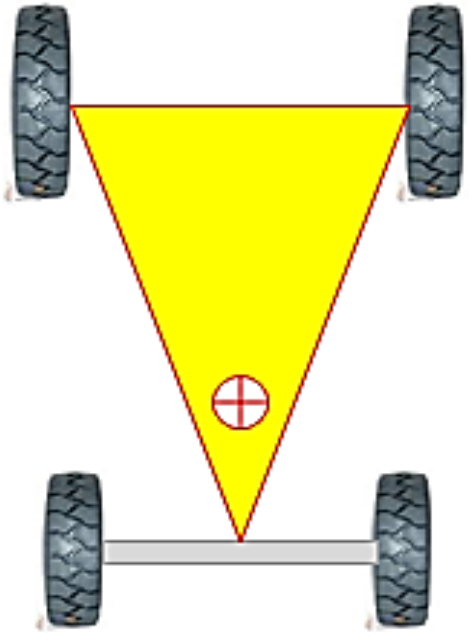


- When the heaviest part of a load is to one side and the lift truck turns, the momentum will shift further creating an unstable condition

LATERAL STABILITY (Sideways)

If you draw a line from both the front wheels, then up to the rear axle it will form a Triangle. The operators of Forklifts need to keep the centre of gravity in the middle of the Stability Triangle otherwise there is the potential of tipping the Forklift over.

In the Forklift test there will be questions about what can make the Forklift tip over sideways. Below are some of the reasons for Forklifts tipping over sideways.



LATERAL STABILITY (Sideways)

1. **Turning at speed.**
2. **Driving on or over uneven surfaces.**
3. **Unevenly distributed load.**
4. **Driving with a flat tyre.**
5. **Driving too fast when turning.**
6. **Turning with a raised load.**
7. **Breaking too hard when cornering.**
8. **Side shift not centred.**
9. **Driving across sloping surfaces**
10. **Load on 1 fork arm.**
11. **Rotating a load while traveling**
12. **Turning with a swinging load on a jib.**

A commonly overlooked issue is the pressure in Pneumatic (air filled) tyres, although they may only look a little underinflated, it can have a serious effect on the stability of the machine, causing the machine to overturn sideways. Inflate immediately to maintain stability of the forklift. Check your operator manual for correct tyre pressure.

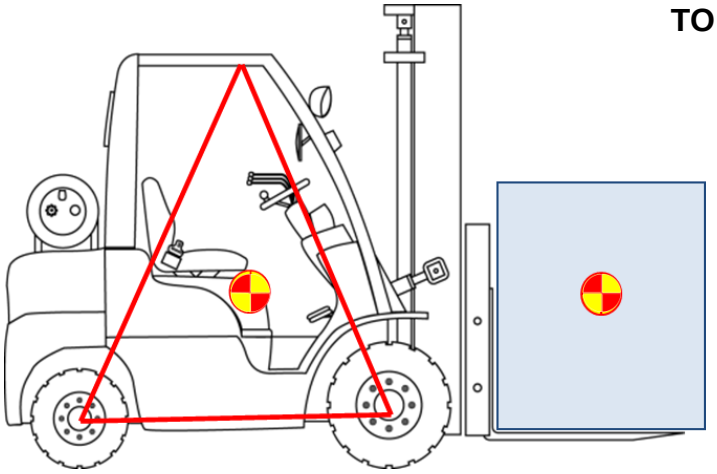
Note: some are around 120 psi – this is very hard!

Side shift.

Most modern forklifts are fitted with a side shift function which allows you to move the fork arms left or right. This is a useful function to allow adjustments and placing of loads. Side shift should always be centralised before travelling to keep the forklift stable and help prevent it from tipping over sideways.

LONGTUDINAL STABILITY (Forward)

Forklifts often tip over through actions or circumstances that have affected the stability of the forklift. Forklifts are designed to carry loads at low heights, when travelling with a load raised in a straight line, severe breaking creates a hazard and stability is greatly affected.



THINGS THAT CAN CAUSE A FORKLIFT TO TIP FORWARDS ARE

1. **Over loading**
2. **Severe braking**
3. **Too much forward tilt**
4. **Load centre to large**
5. **Load not against heel**
6. **Loaded facing down a ramp**
7. **Load shifting forward**
8. **Travelling with load raised and braking**
9. **Accelerating hard in reverse**
10. **Picking up heavy end of load away from forklift**

If you look at a Forklift from side on & draw a line from the rear axle to the front axle, then up to the Overhead guard, this will form a second Stability Triangle. The operators of Forklifts need to keep the centre of gravity behind the point of balance otherwise the Forklift can tip forwards.

EMERGENCY PROCEDURE FOR ROLL OVER

If your forklift becomes unstable and the forklift starts to tip sideways and you think it may roll over.

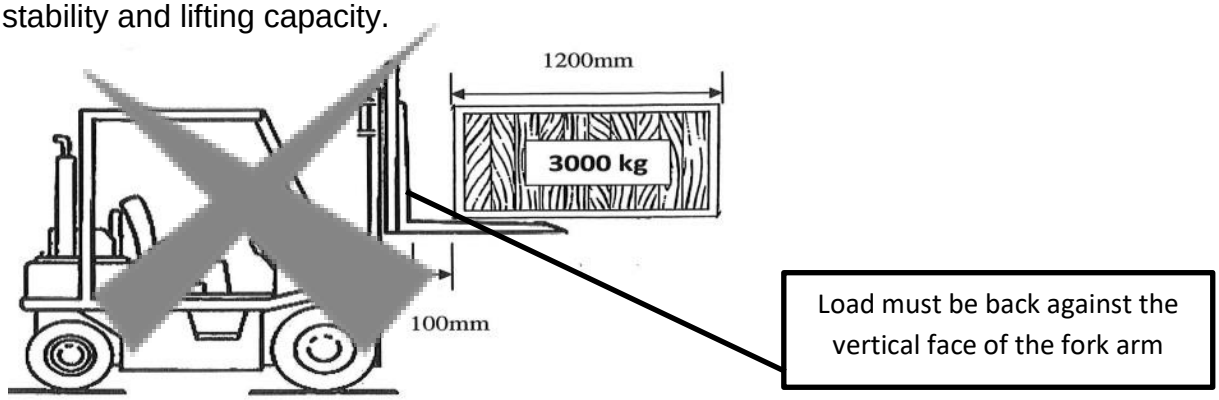
- Remain in or on the forklift
- Brace your feet / Hold on to the steering wheel
- Lean away from the direction the forklift is tipping
- Do not jump from the forklift whilst it is moving.
- Wait until the forklift comes to a complete stop then get out.

Note this is why it is **law** to always wear your seat belt. **The seat belt holds you in the cabin and keeps you safe in the event of rolling over sideways**, collision or a sudden change in direction.

SHIFTING LOADS

Loads must be moved and placed to ensure stability of material and avoidance of hazards

Picking up a load like this increase the load centre distance as the load centre distance is from the vertical face of the forks to the loads centre of gravity. The further away from the vertical face of the forks, the greater the load centre distance. This will reduce the forklifts stability and lifting capacity.



Always travel with the mast tilted backwards when moving a load. This will help to keep the forklift stable and prevent it tipping forwards. As a general rule forward tilt should only be used when picking up a load, putting down a load or when parking a forklift.

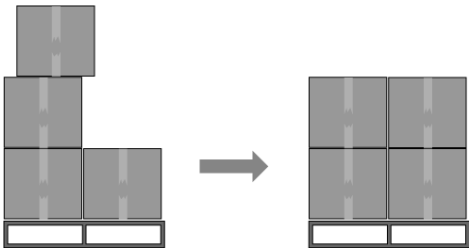
Block Stacking

Block stacking refers to loads being stacked on top of one another rather than in racking. It is a way of stacking bulk amounts of stock in a small area. There are three crucial considerations when block stacking:

1. Only block stack on hard, level ground so the load doesn't sink and tip over.
2. Heaviest and firmest load on the bottom. Not all loads can be stacked, take notice to avoid product damage and accidents.
3. Never stack too high to become unstable, take note of work place policy regarding block stacking restrictions.

Distribution

Knowing the distribution of the load helps to determine what the load centre distance will be when lifted. A load must always be lifted with the heavier end against the vertical face of the forks, this will ensure a shorter load centre distance.



If the pallet is unevenly distributed to the side or not safely loaded, then it must re-stacked to ensure the load is stable and safe to lift. Consider shrink wrapping the pallet.

Pallet movement

Pallets become damaged as a result of poor handling and wear and tear. A badly damaged pallet will not have the same load handling capacity or effective safety as an undamaged pallet. Inspect and ensure pallets you are shifting are not damaged or broken.

Examples of a damaged pallet may include - broken, cracked or missing pallet boards, or a twisted pallet will also reduce the safety of a pallet.

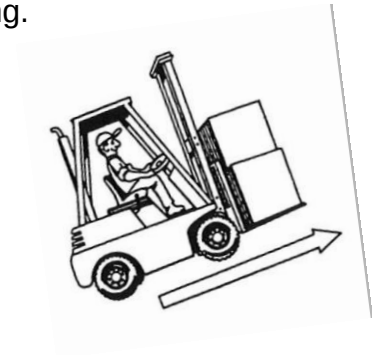
If you find a load supported by a damaged pallet you should reload the goods onto an undamaged pallet before shifting

Never try to pick a load up with **only one arm of a fork**. This can overstress the fork arm and break it or may result in damaging the forklift. The forklift may become unstable and could tip it over sideways.

Forklifts and Ramps

Some forklifts are able to travel up and down slopes and ramps, check the operator manual for the degree of incline each machine is capable of climbing.

Loaded Forklift



Load MUST ALWAYS face UPHILL

When travelling up and down ramps you must use caution to ensure the slope does not affect the stability which would cause it to tip over forwards.

Unloaded Forklift

When travelling down a slope you must travel with the load UPHILL while driving in reverse to ensure your load does not slide off the forks or cause the forklift to be unstable.
When travelling up a slope you must travel FORWARDS with the load UPHILL again to prevent the load shifting or affecting the stability.

It is very dangerous to turn a forklift across a ramp or inclined surface loaded or unloaded or turn the forklift with the load raised high in the air. This will affect the machines lateral stability which will cause it to tip over sideways and the load to fall off the fork arms.

Forklifts are designed to be able to turn very tight corners. Operators must be careful when turning because most forklifts have rear wheel steering and the rear end of forklifts can travel three and a half times faster than the front wheels when cornering. This can cause the rear of the forklift to swing out quickly which is a hazard. The rapid sideways rear movement creates a hazard. Many people are injured as a result of being caught unaware of the rapid rear end swing.

Rear End Swing

Forklifts have rear end steering which makes them more manoeuvrable in tight spaces, but this creates an inherent Hazard.

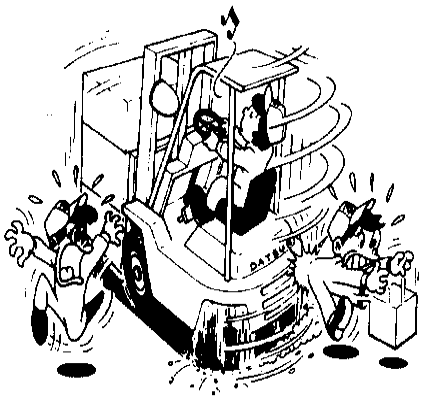
Forklift operators need to be aware that the rear end of the Forklift can turn 3 and a half times faster than the front. This is known as rear end swing or rapid sideways movement.

Pedestrians can be killed or injured. Always look over both shoulders before reversing the Forklift to ensure that there are no people or obstructions in your travel path. Allow extra room for the back of the Forklift to turn when going around corners.

The rear end steering & the rear end swing is often what Beginners struggle with when they first start driving Forklifts.

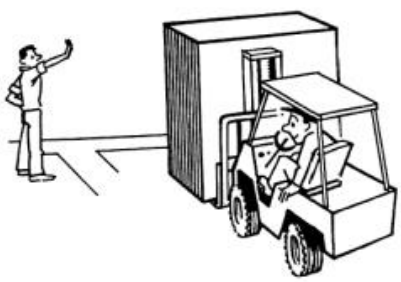
Basically the steering on a Forklift is the same as a car, except the back wheels steer instead of the front.

A lot of beginners think that the steering is opposite, but left is left & right is right.



Oversized Loads

Sometimes you may need to pick up a load which is so big it prevents you from seeing where you are going. If you can't see where you are going, the operator should drive in reverse or **get someone to guide them.**



Monitoring Loads when travelling, It is your responsibility as an operator to ensure the stability of the load you are carrying. An unsecured load, which shifts on a pallet while moving, can create a hazardous condition and cause a load and the forklift to become unstable. At all times the load should be constantly monitored to ensure it does not shift.

Never raise or lower loads near or over people.
This is very unsafe as **the load could fall and cause serious injury or death to someone if all or part of load falls from the forklift truck.**

Never lift or travel with people on the bare fork arms or on a load. **People may fall, be killed or injured** and it's against safe work practices. Not only is this very unsafe, it is against regulations.

No Passengers

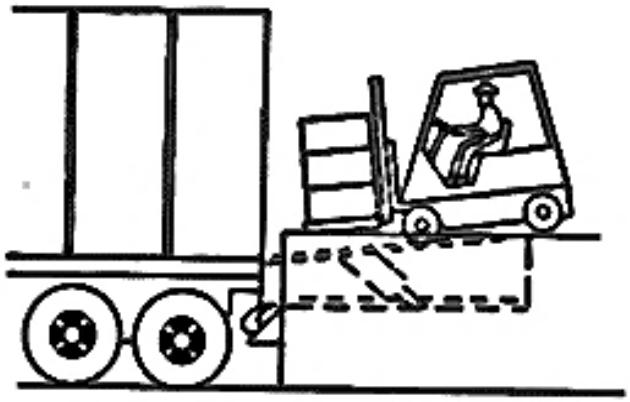
The only way a passenger may be carried on a forklift is if the forklift is specifically designed and built to carry more than one person. This is very rare. **It will have an approved second seat, seat belt and foot rest and the seat will be contained underneath the overhead guard.**

Unplanned and/or unsafe situations may include but are not limited to:

- Failure/loss of control e.g. brakes and steering
- Failure of equipment e.g. hydraulic system
- Environmental condition

Bridge Plates and Dock Plates

In a loading dock, one problem to overcome is the problem of **bridging the gap** between a truck and the dock or warehouse floor. Ensure to secured **Dock Plates and Bridging Plates** before shifting loads to bridge the gap. Not all trucks are the same height, and the height of the trailer floor within a truck can vary according to how heavily the truck is laden so dock levelers are used in this case.



SAFE DRIVING TIPS:

SAFE Speed

Forklifts should only be driven at a safe speed. The operator should consider the following factors to monitor them travelling at a safe speed:

- Visibility
- Speed limit signs
- Workplace policy
- The type of surface (wet, dry, bumpy, smooth, concrete, bitumen, dirt)
- How close are people? (pedestrian exclusion zones)
- Physical layout of work area
- Any hazards or potential hazards
- The size of the load to be moved
- Weather conditions

Travelling

Always ensure the fork arms are lowered to a safe travel height as soon as it is safe to do so, the fork arms should be lowered to the safe travel height which is be below the front axle or as close to the ground as possible allowing for ground irregularities.

Travelling or turning with the load raised creates a stability hazard and the forklift may overturn. One of the most common accidents relating to forklifts is rollovers.

Reversing

- If you're driving a forklift and your forward vision is obscured you should travel in reverse, before reversing you should always **check behind** you **using mirrors** and checking **over both shoulders**, to ensure it is **safe to reverse**. Check the pathway is clear.
- Use appropriate warning devices such as **horns**, **reversing beeper** and lights.
- If your **vision is obstructed**, **use can also use a safety observer to give you directions**.

Rain or wet ground

Wet and slippery surfaces from a spill or rain can cause traction issues and instability in your forklift and dramatically change the braking ability of your equipment. When driving on a wet or slippery surface:

- **Slow down**
- **Drive with caution**
- **Make turns slowly**
- **Stop smoothly** as you may need a greater stopping distance
- **Avoid using ramps or inclines**
- **Avoid sudden changes in direction**

SHUT DOWN AND SECURE FORKLIFT TRUCK

Where NOT to PARK

When choosing a suitable and safe location to park, ensure the forklift is parked clear of the following:

- Doorways and access ways - May cause injury or prevent access during an emergency. People may not be able to escape safely in an emergency
- First aid stations and supplies - Do not block access as most injuries require swift attention.
- Walkways and crossings - May cause injury or force pedestrians to walk into the line of danger.
- Firefighting equipment - Emergency equipment must be easily accessible at all times, do not block access.
- Other traffic and moving vehicles - Can prevent access for others and lead to accidents.
- Railway lines - Never park within 2m of the nearest rail of a railway track.
- Blind corners - Can create a hazard for operators and pedestrians moving through the workplace.
- Refueling stations - May be required by other operators in the workplace, do not block access.
- Emergency exits – This may make it hard to people to exit the building quickly in an emergency.
- **Sloping surfaces**.

Shutting down

It is important that the forklift is shut down correctly and checked with any problems reported and addressed.

Shut down procedures may include but are not limited to the following:

1. **Choose a suitable location**
2. **Lower the fork arms** / attachment appropriately (place fork arms flat on the operating surface so they are not a trip hazard may require forward tilt)
3. Ensure access ways are clear
4. Put the travel controls to the neutral position
5. Engage the park brake
6. Switch off the engine / power and **remove the key**
7. Isolate the fuel supply if LPG/CNG powered (this is done to reduce the risk of leaking gases exploding)
8. Connect the battery to the charger (if required)
9. Check for hazards
10. Conduct post operational checks
11. Secure forklift against unauthorised operation
12. Identify and isolate defective equipment and report to authorised personnel for repair and tag out if required
13. Follow site specific safety procedures
14. If you need to park the forklift on a **sloping surface** you should, in addition to normal parking procedures, **chock the wheel** to prevent roll away

Chock the wheel

The forklift should always be inspected after operation as well as before use. During shutdown the operator must check the forklift for any damage or leaks ensuring it is safe for the next operator and make sure all systems are shutdown correctly.

Forklift is secured to prevent unauthorised access/use

A forklift can be a very dangerous tool if the operator has not been trained to use it correctly. Never leave the keys in your forklift whilst unattended. Removing the keys prevents un-authorised use. Operation of a forklift should only be carried out by someone who is:

- A holder of a valid forklift licence
- A trainee under supervision of an authorised trainer
- Conducting high risk work (HRW) under supervision of a suitably qualified person (with use of an RTO issued logbook)
- A trainee being assessed by an authorised assessor

CALCULATIONS & WEIGHTS

Calculating the weight of a load is VERY important to ensure that you have selected the correct capacity forklift for the task and that you do not overload your forklift and cause serious damage to yourself or others.

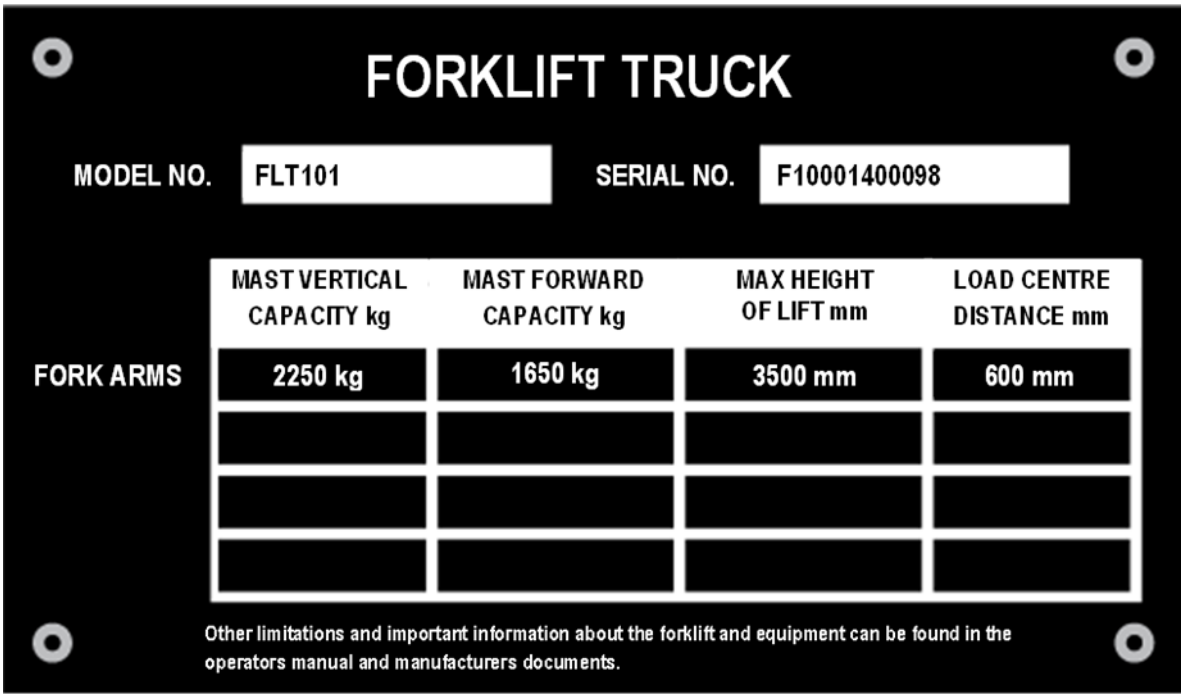
Remember to add 60kgs for CHEP/ LOSCAM pallets if you don't know the actual weight.

An example of calculation would be a 200litre drum full of water. 1litre of water weighs 1kilogram and there are 1000 kilograms in a tonne. So 200 litres of water would weigh 200kgs.

Don't forget to allow for the weight of the drum, allow 13kgs for this so the total weight would be 213kgs. If a load is denser than water (will sink if put in water), then it will weigh more. Petrol floats on water so weighs less. Below is a data plate to help you calculate the weights of loads. Other methods include checking consignment note or paperwork with stock / goods to ensure you don't exceed the forklifts capacity or by weighing the stock on the load.

As an operator you must always be aware of the limitations and specifications of the forklift you are using

From the information below, **you MUST showing ALL workings out**, determine the weight and load centre of the following loads. You **must** indicate the correct **unit of measurement**, such as **kgs, mm, litres, m etc**., in your answers.



The Forklift Data Plate shows:

Maximum Mast Vertical Capacity _____

Maximum Mast Forward Capacity _____

Maximum Height of Lift. _____

Maximum Load Centre Distance _____

Calculations

Load A – work out the total load weight

Load measures 1200 x 1200 on a hardwood Chep or Loscam pallet which weighs 40kg. The pallet is stocked full with boxes of soft drink. Each box weighs 15kg and there are 5 layers. Each layer has 8 boxes.

What is the total weight of the load?

Load B – work out the total load weight *(Tip: a litre of water weighs 1 kg)*

3 drums containing 150 litres of water are loaded onto a pallet. Each DRUM IS MADE OF PLASTIC AND WEIGHS 10kg. What is the total weight of the load?

Load C – work out the total load weight

You start working at the flour mill and have a full pallet of flour which has been loaded by hand higher than normal. The boss has asked you to shift the pallet up to the mezzanine floor with your forklift. Determine the weight of the load before shifting the load.

You count the bags and find 150 bags each weighing 25kg. The pallet weighs 40kg.
How much does the total pallet weigh?

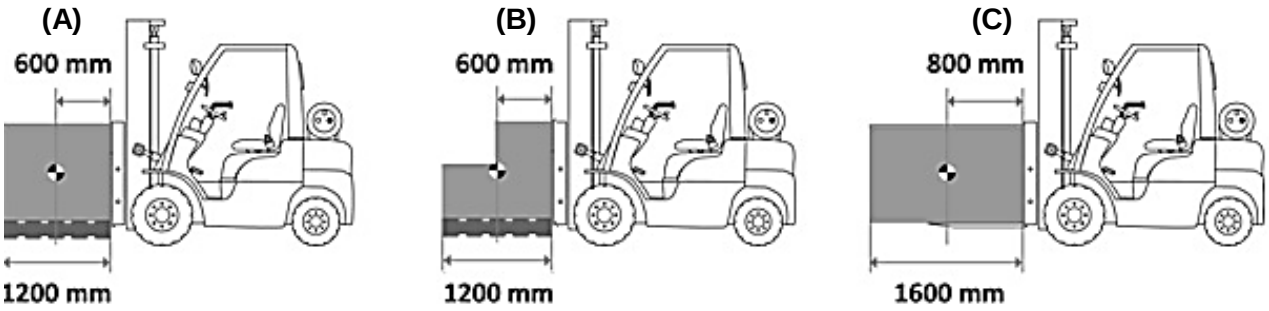
Load D – work out the total load weight

10 Cartons to a layer, 8 layers on a 25 kg pallet, each carton is weighs 40kg. What is the total weight of the load?

How high can you legally shift the load in Load D above?

The forklift in the diagram below is rated to lift loads of up to 2250 kg with a maximum load center of 600 mm.

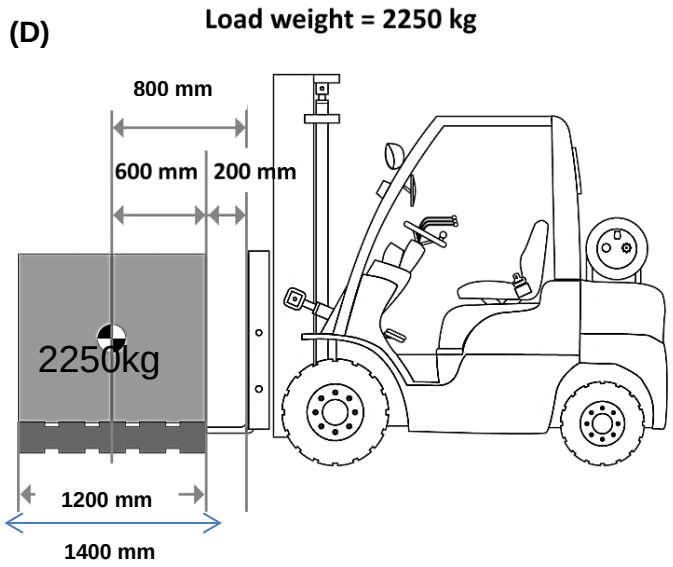
Each of the loads weigh 2250 kg



Which forklifts are overloaded? _____

Which forklifts are within capacity? _____

(D)



Forklift Ratings:
Lifting Capacity = 2250 kg
Load Centre Distance = 600 mm

The forklift cannot lift the loads in examples C and D because the weight is too far away from the vertical face of the forks. The forklift would no longer be able to lift 2250 kg at a LCD of 800 mm and may tip forwards.

*Note: The further the load centre distance increases the more the forklift's **capacity** is **reduced.***

What is the load centre of this loaded forklift? _____

Can the forklift pick up this load this way? _____