

## **NOTE! This pre-study will assist you to pass the assessment required to obtain a High Risk Work Licence for Forklift!**

Thank you for booking our Forklift Course (TLILIC0003 – Licence to operate a forklift truck)

Completing this pre-study is not mandatory, however when you undertake the National Assessment Instrument (NAI) you will complete a written theory and a calculations assessment, both of which are closed book; this means you will not be able to refer to a learner guide, notes or any other reference material during the assessments.

**Please Note:** There are 61 short answer questions, and 9 calculations questions in the NAI that you will need to know the answers to; the questions in this pre-study are very similar to the ones you will complete in the NAI. If you do complete the pre-study questions, we strongly recommend that you read over the questions and answers several times until you feel confident you know the material.

If you are not able to print the 14 pages of the Pre-study Questions that follow, you can still benefit from completing the activity on note paper.

If you would like paper copies of the Learner Guide and Pre-study questions you are welcome to pick up a copy from our office.

---

The information below is provided for your convenience and interest, however should you have any questions, please give us a call.

### **WorkSafe's English Language Requirement**

Regulation 6.20(2)(d) of the Occupational Safety and Health Regulations 1996 required that an assessor must not issue a notice of satisfactory assessment (NOA) unless satisfied that the applicant for the High Risk Work Licence (HRWL) has sufficient knowledge of the English language, both written and oral, to safely do the work relevant to the HRWL applied for.

WorkSafe considers that to assist in the ensuring safety at the workplace, and to comply with the above regulatory requirement, applicants for a HRWL must have sufficient knowledge of the English language to communicate orally with other workers and where appropriate be able to read and understand:

- Safety signs at workplaces.
- Operator manuals in the case of plant such as, for example, fork-lift trucks, work platforms and cranes.
- Load charts and/or compliance plates in the case of plant as exemplified above.
- Assembly instructions and drawings associated with rigging and scaffolding work.
- Job Safety Analyses (JSAs).

In undertaking the written component of the Assessment Instrument WorkSafe does not permit, under any circumstances, an interpreter to be used and requires that applicants attempt the written examination in their own hand. Being able to write answers to the written questions is an essential means of applicants demonstrating to the assessor that they can read the English language.

However, when marking written assessments assessors can seek verbal clarification / enhancement of questions not fully answered.

Worksafe also wishes to confirm that all written assessments for HRWLs must be 'closed book' in that applicants must not have access to any information, such as course text books or other learning material, that will assist them in providing answers to the Assessment Instrument questions.

This page is followed by:



- WorkSafe's English Language Requirement
- Pre-Study Questions (14 pages)
- Learner Guide

Student Name: \_\_\_\_\_

<b>1.</b>	List two things involved in your duty of care as a worker.	
	1.	
	2.	
<b>2.</b>	If you fail to work safely when performing high risk work in your licence class, what can a work health and safety regulator do? List three.	
	1.	3.
	2.	
<b>3.</b>	There are numerous sources of information about workplace safety. List four of them.	
	1.	3.
	2.	4.
<b>4.</b>	Employers need to ensure the health and safety of workers. List three things employers should do.	
	1.	
	2.	
	3.	
<b>5.</b>	Before you use an unfamiliar forklift, what must your employer must provide?	
	1.	3.
	2.	4.
<b>6.</b>	How is a hazard defined (what does hazard mean)?	
<b>7.</b>	How is a risk defined (what does risk mean)?	

<b>8.</b>	Before you start work, which personnel should you talk to about workplace hazards. List four.	
	1.	
	2.	
	3.	
	4.	
	Give one reason why this is important?	
<b>9.</b>	Why is it important to check the path of movement you're planning to take?	
<b>10.</b>	You need to consider and plan for hazards before you start using a forklift. List eight of the hazards.	
	1.	5.
	2.	6.
	3.	7.
	4.	8.
<b>11.</b>	Before you operate a forklift, what are six things <b>OTHER</b> than workplace hazards that you need to plan for?	
	1.	4.
	2.	5.
	3.	6.
<b>12.</b>	To identify and warn people about powerlines, what are three visual systems can be used?	
	1.	
	2.	
	3.	
<b>13.</b>	What are the minimum clearance distances that must be observed, as required by Regulation 3.64 of the Occupational Safety and Health Regulations 1996, when working near or in the vicinity of the following overhead power lines?	
	a) Live insulated powerlines with a voltage of not more than 1,000 volts:	
	b) Live uninsulated powerlines with a voltage of not more than 1,000 volts:	
	c) Live overhead powerlines with a voltage exceeding 1,000 volts but not more than 33,000:	
	d) Live overhead powerlines with a voltage exceeding 33,000 volts:	

<b>14.</b>	If you don't know the voltage of powerlines, what is the best way to find out?	
<b>15.</b>	There are a number of hazards that are associated with weather conditions. List four of them.	
1.		3.
2.		4.
<b>16.</b>	A weather forecast can assist in planning forklift operations for the day - how?	
1.		3.
2.		
<b>17.</b>	List the steps of the hierarchy of control in a logical order. The first step has been provided.	
<b>Elimination</b>		
<b>S</b>		
<b>I</b>		
<b>E</b>		
<b>A</b>		
<b>P</b>		
<b>18.</b>	What must you have to operate a forklift at night or in darkened areas?	
<b>19.</b>	Control measures can be used during forklift operations to protect the safety of workers, pedestrians, vehicles and mobile plant. List four of them?	
1.		3.
2.		4.
<b>20.</b>	When your workplace has a Traffic Management Plan, what should you ensure?	
<b>21.</b>	You must never raise or lower a load near or over people - why is it unsafe to do so?	
<b>22.</b>	On a forklift, when are you allowed to carry passengers?	

<b>23.</b>	When operating a forklift in an area with restricted air flow, why would it be dangerous to use a fuel powered forklift?
In this situation, what type of forklift would be best?	
<b>24.</b>	Draw on the diagram below where the fulcrum (point of balance) is on a forklift.
 <p>A side-view diagram of a counterbalanced forklift. The mast is on the left, the operator's seat is in the middle, and the counterweight is on the right. The forklift is shown on a horizontal ground line.</p>	
<b>25.</b>	When using a forklift, why is rear end swing dangerous?
<b>26.</b>	Draw on the diagram below where the load centre distance is.
 <p>A side-view diagram of a counterbalanced forklift with a rectangular load on its forks. The mast is on the left, the operator's seat is in the middle, and the counterweight is on the right. The forklift is shown on a horizontal ground line.</p>	
<b>27.</b>	There is a 'most common' load centre distance, what is it?
<b>28.</b>	Loads must be placed hard against the heel of the fork arms, if they are not, what effect will it have on the forklift?
1.	
2.	
<b>29.</b>	You need to know the rated load capacity for the forklift and attachment. Where can you find them?

<b>30.</b>	When securing an attachment to a forklift, where would you find information on the correct way to attach it?	
<b>31.</b>	When you add an attachment to a forklift, what is the likely effect on the load capacity?	
1.		
2.		
<b>32.</b>	It is unsafe to carry a load on one fork arm / tyne. List three reasons why.	
1.		
2.		
3.		
<b>33.</b>	Other than fork arms/tynes, what are four other attachments that can be fitted to a forklift?	
1.	3.	
2.	4.	
<b>34.</b>	Before travelling with a load, why should a side-shift attachment be centralised?	
<b>35.</b>	What effect does a jib attachment have on a forklift?	
1.		
2.		
3.		
4.		
<b>36.</b>	In the workplace, you need to communicate with people to ensure their safety. List four ways you can do this?	
1.	3.	
2.	4.	
<b>37.</b>	What should you do if a co-worker gives a signal that is unclear?	
<b>38.</b>	When a forklift has a logbook, why is it important to check it when preparing for forklift operations?	

<b>39.</b>	During 'pre-start' (before starting the engine), what are eight of the checks you should do?	
1.		5.
2.		6.
3.		7.
4.		8.
<b>40.</b>	If you find that a data plate is unreadable or damaged, what should you do?	
1.		
2.		
3.		
4.		
5.		
<b>41.</b>	Air-filled tyres need to be kept at the correct operating pressure - why?	
<b>42.</b>	When checking wheels and tyres, what are five defects that you might find?	
1.		4.
2.		5.
3.		
<b>43.</b>	Why is it dangerous to refuel a forklift while the engine is running?	
<b>44.</b>	If you need to refuel a forklift, what must you always do?	
<b>45.</b>	When charging a battery, why must it be done in a well-ventilated area?	
<b>46.</b>	How many points of contact should you use when getting in and out of a forklift?	
<b>47.</b>	Why is it important to wear a seatbelt when operating a forklift?	
1.		
2.		

<b>48.</b>	After starting the engine, what are four operational checks ('start-up' checks) you should carry out?	
1.		3.
2.		4.
<b>49.</b>	What are a forklifts three guards and what purpose/function do they serve?	
Guard 1:		
Guard 2:		
Guard 3:		
Function of Guard 1:		
Function of Guard 2:		
Function of Guard 3:		
<b>50.</b>	When you are going to stack loads on top of one another, what are three things must you consider?	
1.		
2.		
3.		
<b>51.</b>	List four ways that you can determine the weight of a load.	
1.		3.
2.		4.
<b>52.</b>	When operating a forklift on a wet or slippery surface, what are two of the precautions you should take?	
1.		2.
<b>53.</b>	What risk is there if you travel with the load raised high?	
<b>54.</b>	What is the safe height to carry a load when driving a forklift?	
<b>55.</b>	If the load is obstructing your view, what do you need to do before you move? List three things.	
1.		3.
2.		



<b>56.</b>	Load movement should be constantly monitored, why?
<b>57.</b>	Before shifting a load, what should be placed over the gap between the loading dock and the truck?
1.	2.
<b>58.</b>	When you are travelling up a ramp, which way should a load be facing?
<b>59.</b>	When on a ramp or sloping surface, why would it be unsafe to turn a loaded forklift? List two reasons.
1.	2.
<b>60.</b>	When travelling with a load, what could cause a forklift to tip sideways? List four.
1.	
2.	
3.	
4.	
<b>61.</b>	When travelling or moving loads, what could cause a forklift to tip forwards or backwards? List four
1.	
2.	
3.	
4.	
<b>62.</b>	If a forklift was tipping sideways, what should you do?
1.	
2.	
3.	
<b>63.</b>	If the forklift you are operating comes into contact with electric lines, list the five steps you should take (in order)?
1.	
2.	
3.	
4.	
5.	

<b>64.</b>	When operating a forklift, if you experience a loss of brakes or steering or experience some other failure (eg. hydraulics), what are three things you should do.
1.	
2.	
3.	
<b>65.</b>	What are the five steps involved in parking a forklift?
1.	
2.	
3.	
4.	
5.	
<b>66.</b>	Where would you <b>NOT</b> park a forklift in a workplace? List four.
1.	
2.	
3.	
4.	
<b>67.</b>	When leaving a forklift unattended, why should you remove the ignition key?
<b>68.</b>	Because procedures for reporting / recording workplace records will differ from one employer to another, what do you need to do?

Please turn to the next page for practice calculation questions.

**Calculation Question 1:**

The load to be moved is cartons that are stacked on a pallet:

- Twelve cartons to a layer
- Four layers on the pallet
- Each carton is 30 kg
- The pallet weighs 40 kg

What is the combined weight of the cartons and pallet?

Show all calculations

Answer:


**Calculation Question 2:**

The load to be moved is cartons that are stacked on a pallet:

- Ten cartons to a layer
- Six layers on the pallet
- Each carton is 18 kg
- The pallet weighs 38 kg

What is the combined weight of the cartons and pallet?

Show all calculations

Answer:


**Calculation Question 3:**

The load to be moved is drums stacked on a pallet:

- Four drums on the pallet
- Each drum is 240kg
- The pallet weighs 40 kg

What is the combined weight of the drums and pallet?

Show all calculations

Answer:


**Calculation Question 4:**

The load to be moved is drums stacked on a pallet:

- Four drums on the pallet
- Each drum is 315kg
- The pallet weighs 40 kg

What is the combined weight of the drums and pallet?

Show all calculations

Answer:


**Calculation Question 5:**

The load to be moved is bags of concrete stacked on a pallet:

- 68 bags on the pallet
- Each bag is 20kg
- The pallet weighs up to 40kg

What is the combined weight of the bags and pallet?

Show all calculations

Answer:


**Calculation Question 6:**

The load to be moved is bags of concrete stacked on a pallet:

- 45 bags on the pallet
- Each bag is 40kg
- The pallet weighs up to 40kg

What is the combined weight of the bags and pallet?

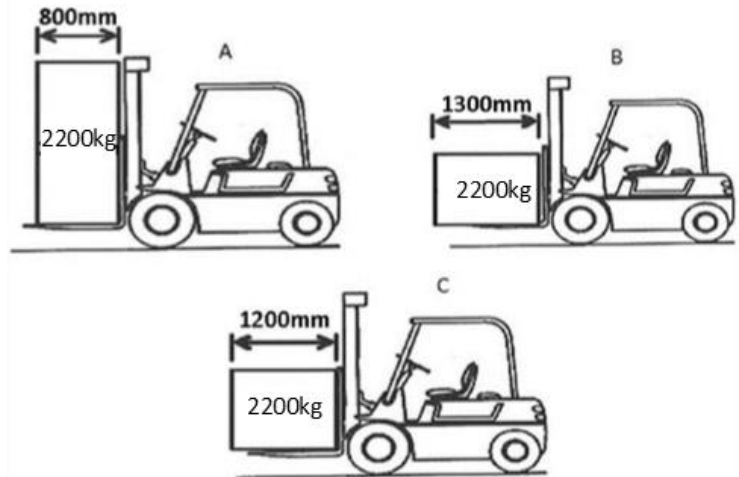
Show all calculations

Answer:


### Calculation Question 7:

The forklift trucks below are rated at 2200kg at 600mm load centre. Which of the loads are within the capacity of the forklift truck?

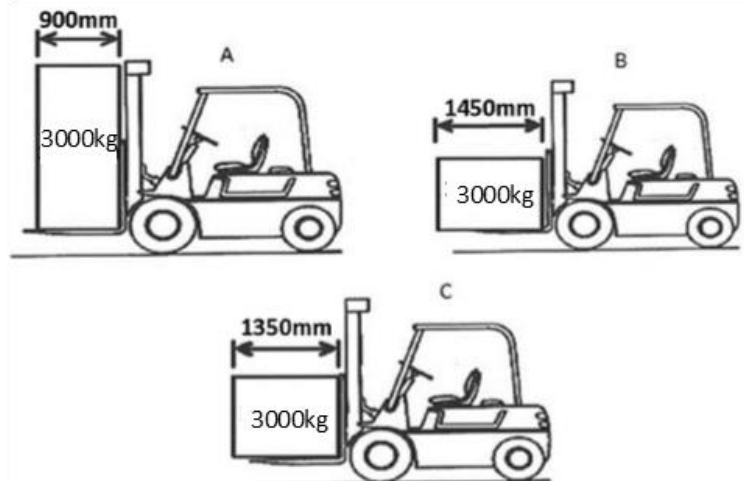
Answer:



### Calculation Question 8:

The forklift trucks below are rated at 3000kg at 600mm load centre. Which of the loads are within the capacity of the forklift truck?

Answer:



## WARNING

**Trained Operators and Mechanics Only**

**Read Operating Manual located on seat or in operator's compartment**

**Failure to follow operating, inspection, and maintenance instruction can cause serious injury or death!**

**CAPACITY WITH MAST VERTICAL AND EQUIPPED AS SHOWN**

Lift Truck Model **GDLRAIS155KXH123**

Serial No. **ABXYZ14325**



Attachment: **1981 mm (78in) Carriage + Sideshifting Fork Positioner NMHG 70L-FPS-c205 + 1830 mm Forks**

Truck Weight **9750 kg**

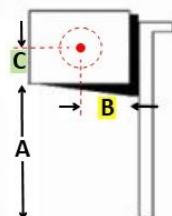
Tread Width **1844 mm**

Back Tilt **10.0 Degrees**

Tyre  
Size **8.25-15/14-PLY Dual Pneu**  
Pressure **800 KPA (116 PSI)**

Rear  
Size **8.25-15/14-PLY Dual Pneu**  
Pressure **800 KPA (116 PSI)**

MAXIMUM CAPACITY	Load Height Dim. A	Load Centre	
		Dim. B	Dim. C
6130 kg	4400 mm	915 mm	915 mm
0 kg	0 mm	0 mm	0 mm



**Calculation Question 9:**

Using the **Data Plate** on the previous page.

For each load described below, complete the calculations (reasonings) to determine if the load is safe to lift. Indicate your answer by circling yes (Y) or no (N).

Load	Calculations / Reason	Load safe to lift?
<b>Load 1:</b> A pallet <b>1165mm</b> in length by <b>1165mm</b> wide. Load height of <b>1600mm</b> and a total weight of <b>1900kg</b> .		Y / N
<b>Load 2:</b> A container with a <b>6100kg</b> load inside (the tare weight of the container is <b>2600kg</b> ). The container is <b>2.4m</b> wide, <b>2.5m</b> high and <b>3m</b> in length.		Y / N
<b>Load 3:</b> A pallet <b>1165mm</b> in length by <b>1165mm</b> wide. Load height of <b>1300mm</b> and a total weight of <b>2000kg</b> .		Y / N
<b>Load 4:</b> A container with a <b>5900kg</b> load inside (the tare weight of the container is <b>2400kg</b> ). The container is <b>2.4m</b> wide, <b>2.5m</b> high and <b>4m</b> in length.		Y / N
<b>Load 5:</b> The empty container from Load 4.		Y / N

## Fork truck load and warning notice

### Load conditions

AFTCO MODEL MCP4 SERIAL No AWE287 MAX HEIGHT OF LIFT 3708 MM MAX BACK TILT 10 DEGREES

TYRES 700X12X12 FRONT 32KPA REAR 40KPA

#### WARNING

##### USE OF FORKLIFT TRUCK

1. DO NOT LIFT LOAD UNLESS LOAD PLACED EVENLY
2. DO NOT TRANSPORT WITH LOAD RAISED
3. DO NOT TILT MAST FORWARD UNLESS NECESSARY
4. DO NOT REVOLVE GRAB WHEN TRAVELLING
5. DONOT TILT MAST FORWARD WHEN TRAVELLING

	VERTICLE MAST				MAST TILTED FORWARD 3 DEGREES			
	Length mm	Fork Height	Load Centre	Safe Working Load in Kgs	Length mm	Fork Height	Load Centre	Safe Working load in Kgs
Forks	1066	3708	600	2105	1066	3708	600	1765
Slippers								
Ram								
Paper Grab								

MAXIMUM DISTANCE FROM CENTRE OF LOAD TO FRONT OF FACE OF A. FORKS B. RAM APRON C. GRAB APRON

### Calculation Question 10:

Using the **Load Chart** above.

What is the maximum working load limit (WLL) the fork can lift with the mast tilted forward 3 degrees?

Answer:

### Calculation Question 11:

Using the same **Load Chart** above.

What is the maximum WLL the fork can lift with the mast in a vertical position?

Answer:

### Calculation Question 12:

Using the same **Load Chart** above.

Can a load weighing 2105kg and a load centre of 600mm be raised with the mast in the vertical position?

Answer:

### Calculation Question 13:

Using the same **Load Chart** above.

Can a load weighing more than 2105kg be raised with the mast in a vertical position?

Answer:

# IMPORTANT!

## CHECKLIST – Are you ready for the course?

Complete the checklist - these items are essential for you to attend and complete the course.

### Pre-Study:

We strongly recommend that you read through the learner guide and **COMPLETE Pre-Study Questions**, then **STUDY the completed questions several times** until you feel confident that you know the information.

During the assessment for the NAI you cannot look at any reference material or notes, so it is vital you spend adequate time to learn the content of the pre-study.

✓

### Identification:

You **MUST** bring **two (2)** forms of ID with you. All ID supplied must be current, with at least one month of validity remaining past the date of the course.

At **least one MUST be a primary ID**, such as;

- Australian Driver's Licence
- Current Passport
- Current High Risk Work Licence
- Birth Certificate

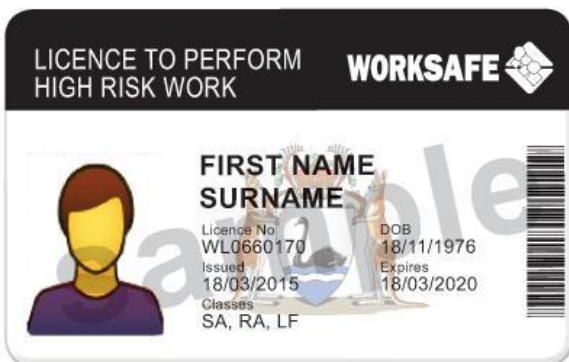
The second form of ID can be a Medicare Card, a current Credit or Debit Card, Skippers Ticket.

For other acceptable forms please contact our office on 08 9592 2535

✓

### Passport Photos:

You **MUST** to bring **two (2)** passport photos if you **DO NOT** hold a current **WA issued** High Risk Work Licence that looks like this.



The passport photos will be attached to your licence application to WorkSafe.

Regular photos or a photocopy of a passport is not acceptable.

You can have passport photos taken at a Post Office.

✓

### High Risk Work Licence from Another States:

If you hold a valid/current high risk licence issued in a state other than WA you must bring it with you on the day of the course. To apply for a WA issued high risk work licence we are required to send a photocopy of any other high risk work licence you hold.

✓

### Personal Protective Equipment (PPE):

Enclosed footwear is required for operating a Forklift.

✓





TRAINING &  
ASSESSING

# Learner Guide

## Forklift Truck



## **TLILIC0003**

### Licence to operate a forklift truck

#### **Application:**

This unit specifies the skills and knowledge required to operate a forklift truck safely.

Forklift truck means a powered industrial truck equipped with lifting media made up of a mast and an elevating load carriage to which is attached a pair of fork arms or other arms that can be raised 900 mm or more above the ground, but does not include a pedestrian-operated truck or a pallet truck.

A person performing this work is required to hold a forklift truck high risk work (HRW) licence.

This unit requires a person operating a forklift truck to plan the work, conduct routine checks on a forklift truck, shift loads in a safe manner, and safely shut down and secure equipment after completing operations.

#### **Licensing/Regulatory Information:**

This unit is based on the licensing requirements of Part 4.5 of the Model Work Health and Safety (WHS) Regulations, HRW and meets Commonwealth, state and territory HRW licensing requirements.

Any alteration to this unit would result in a unit that would not be acceptable to work health and safety (WHS)/occupational health and safety (OHS) regulators for the purpose of licensing.

# Table of Contents

<b>1.1 Introduction</b>	<b>4</b>
1.1.1 What is a Forklift?	4
1.1.2 Parts of a Forklift	4
1.1.3 High Risk Work Licence Requirements	4
<b>1.2 Plan Work</b>	<b>5</b>
1.2.1 Work Health & Safety Requirements	5
1.2.2 Duty of Care	7
1.2.3 Work Instructions and Procedures	7
<b>1.3 Manage Hazards and Risks</b>	<b>7</b>
1.3.1 Consulting with Other Workers about Hazards and Risks	8
1.3.2 Identify Hazards	8
1.3.2.1 Other Planning Considerations	9
1.3.2.2 Working Near Power Lines	9
1.3.2.3 Unsafe Environmental Conditions	11
1.3.3 Assess Risks	11
1.3.4 Control Hazards to Reduce Risks	12
1.3.4.1 Apply Hazard Control Measures	13
1.3.4.2 Personal Protective Equipment (PPE)	13
1.3.4.3 Control Strategies for Operating at Night or in Dark Areas	13
1.3.5 Control Measures for Traffic	14
1.3.5.1 Traffic Management Plans	14
1.3.6 Report All Actions	14
<b>1.4 Types of Forklift Trucks</b>	<b>14</b>
1.4.1 Counterbalanced Forklifts	15
1.4.1.1 Rear End Swing	15
<b>1.5 Forklift Stability &amp; Centre of Gravity</b>	<b>15</b>
1.5.1 Centre of Gravity	16
1.5.2 Stability Triangle	16
1.5.3 Load Centre Distance	17
1.5.4 Forklift Rated Capacity	18
<b>1.6 Forklift Attachments</b>	<b>18</b>
1.6.1 Check Attachments	19
1.6.2 Types of Attachments	19
1.6.2.1 Rotating and Side Shift Attachments	19
1.6.2.2 Jib Attachments	20
1.6.2.3 Drum Clamps	20
1.6.2.4 Forklift Work Platforms	20
1.6.2.5 Carpet Spike Attachments	20
<b>1.7 Workplace Communications</b>	<b>21</b>
<b>2.1 Pre-Start Checks</b>	<b>21</b>
2.1.1 Visual Checks	21
2.1.1.1 Decals and Signage	21
2.1.1.2 Tyres	22
2.1.1.3 Refuelling / Battery Charging	22
<b>2.2 Operational Checks</b>	<b>22</b>
2.2.1 Start the Forklift	22
2.2.2 Start-up Checks	23
2.2.2.1 Safety Devices	23
<b>2.3 Report All Faults</b>	<b>23</b>
2.3.1 Isolation Procedure (Lock-out Tag-out)	23
<b>2.4 Shift a Load</b>	<b>24</b>
2.4.1 Check the Load	24
2.4.1.1 Calculating Load Weight	25
2.4.2 Picking Up a Load	26
2.4.3 Travelling Safely with a Load	26
2.4.4 Travelling Safely on Ramps	27
2.4.5 Placing a Load	27
<b>2.5 Emergency Procedures</b>	<b>27</b>
2.5.1 Lateral Instability - Tipping Sideways	28
2.5.2 Longitudinal Instability - Tipping Frontwards or Backwards	28

2.5.3 Forklift Rollover Procedure.....	28
2.5.4 Contact with Power Lines .....	28
2.5.5 Forklift Malfunction .....	28
<b>2.6 Shut Down and Secure Forklift Truck .....</b>	<b>29</b>
2.6.1 Parking the Forklift .....	29
<b>2.7 Post-Operational Checks .....</b>	<b>29</b>
2.7.1 Report All Defects.....	29
<b>Examples - Calculation, Load Centre, Load Chart.....</b>	<b>30</b>
<b>Appendix A .....</b>	<b>37</b>

# 1.1 Introduction

This training course is based on the National High Risk Licence Unit of Competence **TLILIC0003 Licence to Operate a Forklift Truck**.

You will learn about:

- ◆ Planning out your work.
- ◆ Carrying out routine checks on the forklift before you use it.
- ◆ Shifting loads safely with a forklift.
- ◆ Shutting down the forklift when you have finished.



## 1.1.1 What is a Forklift?



A forklift is a powered industrial truck equipped with a mast and an elevating load carriage with a pair of fork arms or another load handling attachment.

This can also include trucks where the operator is raised with the attachment for order picking.

## 1.1.2 Parts of a Forklift



## 1.1.3 High Risk Work Licence Requirements

After passing the course, you have **60 days** to apply for a high risk work licence with Worksafe.



If you don't renew your high risk work licence within **24 months** of its expiry date it cannot be renewed.

If you don't have a high risk work licence, you can only undertake high risk work, if you are;

- ◆ Enrolled in a RTO course for that work class, **AND**
- ◆ You're being supervised at work by a person with the relevant high risk work class.

\*A licence holder has a 'duty of care' as a worker. This means you MUST:

- ◆ Take reasonable care for your own health and safety
- ◆ Take reasonable care for the health and safety of others who may be affected by your acts or omissions
- ◆ Cooperate with anything the employer does to comply with WHS/OHS requirements
- ◆ Not 'intentionally or recklessly interfere with or misuse anything provided at the workplace for WHS/OHS.

\*If you as a licence holder fail to work safely when performing high risk work, the work health and safety regulator, can:

- ◆ Suspend your licence.
- ◆ Cancel your licence.
- ◆ Refuse to renew your licence.

Before you do high risk work for an employer, you need to be able to provide your the relevant licence class.



## 1.2 Plan Work

It is important that you understand all of the health and safety rules relevant to your job including:

- ◆ Work Health and Safety requirements.
- ◆ Duty of care.

### 1.2.1 Work Health & Safety Requirements

Work Health & Safety (WHS) laws and guidelines help keep your workplace safe. When undertaking forklift activities, you must always comply with workplace safety information.

These can be broken down into four main types:

<b>Acts</b>	Laws to protect the health, safety and welfare of people at work.
<b>Regulations</b>	Gives more details or information on particular parts of the Act.
<b>Codes of Practice</b>	Are practical instructions on how to meet the terms of the Law.
<b>Australian Standards</b>	Give you the minimum levels of performance or quality for a hazard, work process or product.

These requirements are the basis of all policies, procedures and safe work practices within a company and/or workplace.

\*Documented sources of workplace safety information include:

- ◆ Legislation and regulations
- ◆ Relevant Australian Standards
- ◆ Management Plan
- ◆ WHS/OHS Policy
- ◆ Codes of Practice
- ◆ Manufacturer's Instructions
- ◆ Operations Manual
- ◆ Safe Work or Job Procedures

For further information regarding what is required of Employers and Employees, excerpts from the Occupational Safety and Health Act 1984 and the Mines Safety and Inspection Act 1994 have been provided on the following page.



## **Occupational Safety and Health Act 1984**

### **19. Duties of employers**

- (1) An employer shall, so far as is practicable, provide and maintain a working environment in which the employees of the employer (the **employees**) are not exposed to hazards and in particular, but without limiting the generality of the foregoing, an employer shall —
  - (a) provide and maintain workplaces, plant, and systems of work such that, so far as is practicable, the employees are not exposed to hazards; and
  - (b) provide such information, instruction, and training to, and supervision of, the employees as is necessary to enable them to perform their work in such a manner that they are not exposed to hazards; and
  - (c) consult and cooperate with safety and health representatives, if any, and other employees at the workplace, regarding occupational safety and health at the workplace; and
  - (d) where it is not practicable to avoid the presence of hazards at the workplace, provide the employees with, or otherwise provide for the employees to have, such adequate personal protective clothing and equipment as is practicable to protect them against those hazards, without any cost to the employees; and
  - (e) make arrangements for ensuring, so far as is practicable, that —
    - (i) the use, cleaning, maintenance, transportation and disposal of plant; and
    - (ii) the use, handling, processing, storage, transportation and disposal of substances, at the workplace is carried out in a manner such that the employees are not exposed to hazards.
- (2) In determining the training required to be provided in accordance with subsection (1)(b) regard shall be had to the functions performed by employees and the capacities in which they are employed.

### **20. Duties of employees**

- (1) An employee shall take reasonable care —
  - (a) to ensure his or her own safety and health at work; and
  - (b) to avoid adversely affecting the safety or health of any other person through any act or omission at work.
- (2) Without limiting the generality of subsection (1), an employee contravenes that subsection if the employee —
  - (a) fails to comply, so far as the employee is reasonably able, with instructions given by the employee's employer for the safety or health of the employee or for the safety or health of other persons; or
  - (b) fails to use such protective clothing and equipment as is provided, or provided for, by his or her employer as mentioned in section 19(1)(d) in a manner in which he or she has been properly instructed to use it; or
  - (c) misuses or damages any equipment provided in the interests of safety or health; or
  - (d) fails to report forthwith to the employee's employer —
    - (i) any situation at the workplace that the employee has reason to believe could constitute a hazard to any person that the employee cannot correct; or
    - (ii) any injury or harm to health of which he or she is aware that arises in the course of, or in connection with, his or her work.
- (3) An employee shall cooperate with the employee's employer in the carrying out by the employer of the obligations imposed on the employer under this Act.

## **Mines Safety and Inspection Act 1994**

### **9. Employers, duties of**

- (1) An employer must, so far as is practicable, provide and maintain at a mine a working environment in which that employer's employees are not exposed to hazards and, in particular, but without limiting the generality of that general obligation, an employer must —
    - (a) provide and maintain workplaces, plant, and systems of work of a kind that, so far as is practicable, the employer's employees are not exposed to hazards; and
    - (b) provide such information, instructions and training to and supervision of employees as is necessary to enable them to perform their work in such a manner that they are not exposed to hazards; and
    - (c) consult and cooperate with safety and health representatives, if any, and other employees at the mine where that employer's employees work, regarding occupational safety and health at the mine; and
    - (d) where it is not practicable to avoid the presence of hazards at the mine, provide employees with, or otherwise provide for the employees to have, such adequate personal protective clothing and equipment as is practicable to protect them against those hazards, without any cost to the employees; and
    - (e) make arrangements for ensuring, so far as is practicable, that —
      - (i) the use, cleaning, maintenance, transportation, and disposal of plant; and
      - (ii) the use, handling, processing, storage, transportation, and disposal of substances, at the mine is carried out in such a manner that that employer's employees are not exposed to hazards.
  - (2) In determining the training required to be provided in accordance with subsection (1)(b), regard must be had to the functions performed by employees and the capacities in which they are employed.
- [(3)-(4) deleted]
- (5) The duties imposed under subsection (1) on an employer who is the principal employer at a mine are not taken to be carried out only by the appointment of a manager for the mine.
  - (6) Notwithstanding subsection (1), any duty imposed under that subsection on an employer who is not the principal employer at the mine applies only in relation to matters over which the employer who is not the principal employer has control, or but for an agreement between the 2 employers, would have had control.

### **10. Employees, duties of**

- (1) An employee at a mine must take reasonable care —
  - (a) to ensure his or her own safety and health at work; and
  - (b) to avoid adversely affecting the safety or health of any other person through any act or omission at work.
- (2) Without limiting the generality of subsection (1), an employee contravenes that subsection if that employee —
  - (a) fails to comply, so far as the employee is reasonably able, with instructions given by that employee's employer or the manager of the mine for the employee's own safety or health or for the safety or health of other persons; or
  - (b) fails to use such protective clothing and equipment as is provided, or provided for, by the employer as mentioned in section 9(1)(d) in a manner in which the employee has been properly instructed to use it; or
  - (c) misuses or damages any equipment provided in the interests of safety or health; or
  - (d) being an underground worker, fails on leaving work at the end of a shift to report to the person in immediate authority over that employee and, where practicable, the person relieving that employee, on the state of that part of the works where the employee has been working.
- (3) An employee must cooperate with his or her employer and the manager of the mine in the carrying out by those persons of the obligations imposed on those persons under this Act.

For information on Breaches / Penalties, please refer to 'Occupational Safety and Health Act 1984, Part III, Division 2 - General workplace duties' and/or 'Mines Safety and Inspection Act 1994, Part 2, Division 2 - General duties'

## 1.2.2 Duty of Care

Everybody in the workplace has a responsibility to keep themselves and others as safe as possible while they are at work. This is called a 'Duty of Care'.

To keep yourself and other workers safe you need to:

- ◆ Follow your instructions.
- ◆ Follow all workplace rules.
- ◆ Have the right qualification or licence for a job (licences, tickets or certificates of competency).
- ◆ Make sure all equipment is safe to use.
- ◆ Carry out your work safely.
- ◆ Report any problems.
- ◆ Meet any other relevant state and territory WHS requirements.

\*Employers are also required to ensure the health and safety of workers, and are required to:

- ◆ Provide and maintain a work environment without risks to health and safety
- ◆ Provide and maintain safe plant and structures
- ◆ Provide and maintain safe systems of work
- ◆ Provide adequate facilities
- ◆ Provide any information, training, instruction or supervision for the work to be undertaken safely
- ◆ Make arrangements to ensure the safe use, handling and storage of plant, structures and substances.

\*Once you have your High Risk Work Licence, before you undertake work on an unfamiliar forklift, an employer is required to provide:

- ◆ Information
- ◆ Training
- ◆ Instruction, and
- ◆ Supervision

## 1.2.3 Work Instructions and Procedures



All work needs to follow worksite and company safety procedures. Procedures help to make sure that all work is done in a safe way, without damaging equipment or putting people in unsafe situations. They also help to make sure that work is done in the correct order and doesn't interrupt or get in the way of other work that is happening on the site.

Your work instructions will tell you the safest way to do the job, and the equipment that you will need to use. It is a good idea to check your work instructions with your boss or supervisor to make sure you know exactly what you need to do.

Forklift instructions can include:

- ◆ Manufacturer's guidelines (instructions, specifications, checklists).
- ◆ Industry operating procedures.
- ◆ Workplace procedures (work instructions, operating procedures, checklists).

If you don't know where to get your instructions or you can't understand them, you can ask your boss or supervisor. They will tell you where to find your work instructions and explain what they mean.



## 1.3 Manage Hazards and Risks



Before starting any work it is important to manage any hazards or risks in the area, or related to the work.

\*A **Hazard** is a situation or thing that has the potential to harm a person.

\*A **Risk** is the possibility harm (death, injury or illness) might occur when exposed to a hazard.

By lowering or removing risks we can make hazards less dangerous.



## 1.3.1 Consulting with Other Workers about Hazards and Risks

\*Before you start high risk work, you should talk to the following people about workplace hazards:

- ◆ Safety officers
- ◆ Supervisors
- ◆ Other workers
- ◆ Health and safety representatives
- ◆ Managers who are authorised to take responsibility for the workplace or operations
- ◆ Work health and safety committee members
- ◆ Workplace engineers (where applicable).



\*It's important to consult with these people to:

- ◆ To identify (or be made aware of) any workplace specific hazards / ground conditions
- ◆ Ensure that any workplace policies and/or site procedures are adhered to
- ◆ Identify hazards and controls.

## 1.3.2 Identify Hazards

Part of your job is to look around to see if you can find any hazards before you start forklift operations. When you start checking for hazards, make sure you look everywhere.

A good way to do this is to check:

- ◆ **Up high** above your head.
- ◆ All around you **at eye level**.
- ◆ **Down low** on the ground (also think about what is under the ground).



\*It is important to check the path of movement you're planning to take to identify all the hazards in the path of movement and put effective control measures in place.

Also check that the forklift will fit and that there are no obstacles in the way, and for any other equipment or people working in the area.

\*Before you start work, the hazards you **MUST** consider and plan for are;

- ◆ Electric powerlines
- ◆ Underground services
- ◆ Pedestrians and workers
- ◆ Ground conditions
- ◆ Variable operating surfaces / routes (eg. slopes, ramps, imperfections)
- ◆ Plant and equipment
- ◆ Obstructions
- ◆ Potential non-weight bearing surfaces
- ◆ Wind, bad weather conditions
- ◆ Poor lighting
- ◆ Overhead service lines
- ◆ Bridges
- ◆ Surrounding structures (including buildings)
- ◆ Dangerous materials
- ◆ Vehicle traffic
- ◆ Blind corners
- ◆ Wet surfaces
- ◆ Surface conditions
- ◆ Loading docks



Other ground conditions that could affect the surface suitability for forklift operations are:

- ◆ Potholes, other damage or cracked surface
- ◆ (eg. concrete, bitumen).
- ◆ Hard compacted soil, soft soil (eg. backfilled ground).
- ◆ Rough or difficult terrain, steel decks, grates, trench covers and railway tracks.

### 1.3.2.1 Other Planning Considerations

\*Before you start work, there are things **other than hazards** you **MUST** consider and plan for, they are:

- ◆ Characteristics of load
- ◆ Method of attachment
- ◆ Communications (safe and adequate)
- ◆ Location of task
- ◆ Specifics of task
- ◆ Permits required for the task
- ◆ Equipment required for the task
- ◆ Availability of equipment
- ◆ Capacity of the forklift
- ◆ Route of travel
- ◆ Blind spots - due to corners, the mast or the load

### 1.3.2.2 Working Near Power Lines

Working near power lines can be dangerous.

#### Visual Indicators

\*There are a number of visual indicators that can be used to warn people about overhead electric power lines. They include:

- ◆ Tiger tails
- ◆ Markers of different colours (eg. alternating white and orange)
- ◆ Power line marker balls
- ◆ Safety warning / danger signs
- ◆ Painting the lower section of the pole up to 3 metres above ground



Tiger tails **DO NOT** insulate the power lines so exclusion zones and safe operating distances must still be used, even when tiger tails are in use.

#### Safe Distances

It is very important that you know the safe operating distances for different types of power lines. The “Danger zone” is anywhere that the mast or the machine can enter the minimum safe distance from the power lines.

\*In Western Australia, Regulation 3.64 from the OSH Regulations states the following as the minimum safe distances:

Electric/Power Line Type	Distance
*Live <u>insulated</u> power lines with a voltage not more than 1000 volts	0.5m
*Live <u>uninsulated</u> power lines with a voltage not more than 1000 volts	1.0m
*Live power lines exceeding 1000 volts <u>but not more than</u> 33000 volts	3.0m
*Live power lines with a voltage exceeding 33000 volts	6.0m

\*If you need to find out the voltage of overhead electric power lines, the **BEST** way is to **refer to the authority responsible for them**.

To work closer to power lines than the minimum safe distances, you must;

1. Seek an exemption from the relevant authority
2. Where possible, have the electrical power disconnected or electric lines insulated by contacting the relevant authority.
3. Make use of a spotter within the exclusion zone where appropriate, dependant on legislation within the state/territory (this is mandatory in WA).

Distances are different depending on the state or territory you are working in.

### Northern Territory

In the Northern Territory equipment must not be closer than the following distances to electric/power lines:

Electric/Power Line Type	Distance
Up to and including 132kV (distribution lines)	6.4m (or 3m with a spotter)
Greater than 132kV (transmission lines)	10m (or 8m with a spotter)

### Tasmania

In Tasmania equipment must not be closer than the following distances to electric/power lines:

Electric/Power Line Type	Distance
Up to and including 133kV (poles)	6.4m (or 3m with a safety observer)
Greater than 133kV (towers)	10m (or 8m with a safety observer)

### Victoria

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)

### Queensland

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 following minimum distances are provided as guidance:

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

### New South Wales

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

Electric/Power Line Type	Distance
Up to and including 132kV	3.0m
Above 132kV up to and including 330kV	6.0m
Above 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.

### Australian Capital Territory

In the ACT mobile plant operators and persons erecting or working from scaffolding must maintain a safe minimum distance to power lines as outlined in the table below:

Electric/Power Line Type	Distance
Less than 33kV	4.0m
33kV or more (transmission lines)	5.0m

### South Australia

In South Australia mobile plant operators and persons erecting or working from scaffolding must maintain a safe minimum distance to power lines as outlined in the table below:

Electric/Power Line Type	Distance
Up to 132kV (including 132kV poles)	6.4m (or 3.0m with a spotter)
132kV or more (including 132kV towers)	10.0m (or 8.0m with a spotter)

### 1.3.2.3 Unsafe Environmental Conditions

Environmental conditions can create unplanned and/or unsafe problems that can impact forklift operations. Workplaces should have safe systems of work and procedures to lower the risk of injury from hazards associated with environmental conditions. It is important that you know how to respond to unsafe environmental conditions.

\*Weather associated hazards that can affect forklift operations are:

- ◆ Wet and/or slippery conditions
- ◆ Strong winds
- ◆ Heat and sun exposure (ultra violet - UV exposure)
- ◆ Smoke
- ◆ Limited visibility
- ◆ Snow and/or ice impacted surface/ground
- ◆ Rain/water impacted surface/ground.
- ◆ Lightning

\*Obtaining a weather forecast can assist you to plan for the day's operations by helping you to:

- ◆ Prepare for suitable risk controls
- ◆ Plan the work environment
- ◆ Schedule the work activities.

Further information is available from:

<https://www.commerce.wa.gov.au/worksafe/lightning>  
<https://www.commerce.wa.gov.au/worksafe/sun-safety-workplace>

To find out the appropriate way to respond to unsafe environmental conditions, access the appropriate procedures / systems of work from your employer.

### 1.3.3 Assess Risks

Once you have identified the hazards on site or related to the work you will be doing you need to assess their risk level.

Risk levels are worked out by looking at 2 factors:

- ◆ **Consequence** - How bad will it be if the hazard causes harm?
- ◆ **Likelihood** - What is the chance of the hazard causing harm?

You can use a table like the one shown here to work out the risk level:

	Consequence				
Likelihood	1. Insignificant	2. Minor First Aid Required	3. Moderate Medical Attention and Time Off Work	4. Major Long Term Illness or Serious Injury	5. Catastrophic Kill or Cause Permanent Disability or Illness
1. Rare	Low	Low	Moderate	Moderate	Moderate
2. Unlikely	Low	Low	Moderate	Moderate	High
3. Possible	Low	Moderate	High	High	Extreme
4. Likely	Moderate	Moderate	High	High	Extreme
5. Almost Certain	Moderate	High	High	Extreme	Extreme

For example, a hazard that has a **Major** consequence and is **Almost Certain** to occur has a risk level of **Extreme**.

	Consequence				
Likelihood	1. Insignificant	2. Minor First Aid Required	3. Moderate Medical Attention and Time Off Work	4. Major Long Term Illness or Serious Injury	5. Catastrophic Kill or Cause Permanent Disability or Illness
1. Rare	Low	Low	Moderate	Moderate	Moderate
2. Unlikely	Low	Low	Moderate	Moderate	High
3. Possible	Low	Moderate	High	High	Extreme
4. Likely	Moderate	Moderate	High	High	Extreme
5. Almost Certain	Moderate	High	High	<b>Extreme</b>	Extreme

The risk level will help you to work out what kind of action needs to be taken, and how soon you need to act. The action you take will depend on the organisation's policies, procedures and relevant laws and regulations.

The table below is an example of a site risk policy:

Risk Level	Action
<b>Extreme</b>	<b>This is an unacceptable risk level.</b> The task, process or activity <b>must not proceed</b> .
<b>High</b>	<b>This is an unacceptable risk level.</b> The proposed activity can only proceed, provided that: <ol style="list-style-type: none"> <li>1. The risk level has been reduced to as low as reasonably practicable using the hierarchy of risk controls.</li> <li>2. The risk controls must include those identified in legislation, Australian Standards, Codes of Practice etc.</li> <li>3. The risk assessment has been reviewed and approved by the Supervisor.</li> <li>4. A Safe Working Procedure or Work Method Statement has been prepared.</li> </ol> The supervisor must review and document the effectiveness of the implemented risk controls.
<b>Moderate</b>	<b>This is an unacceptable risk level.</b> The proposed activity can only proceed, provided that: <ol style="list-style-type: none"> <li>1. The risk level has been reduced to as low as reasonably practicable using the hierarchy of risk controls.</li> <li>2. The risk assessment has been reviewed and approved by the Supervisor.</li> <li>3. A Safe Working Procedure or Work Method Statement has been prepared.</li> </ol>
<b>Low</b>	The proposed task or process needs to be managed by documented routine procedures, which must include application of the hierarchy of controls.

### 1.3.4 Control Hazards to Reduce Risks

The 'Hierarchy of Control' lists 6 steps that can eliminate or reduce risk level. You start at the top of the list and see if you can take away (eliminate) the hazard or danger. If you can't take it away, you move down the list to see if you can swap it for something safer (substitution). You keep working through the list until you find something (or a combination of things) that controls that hazard or danger.

To control hazards, you should consider the steps of the Hierarchy of Control.

\*The 6 steps of the Hierarchy of Control listed in a logical order are:

1. Elimination
2. Substitution
3. Isolation
4. Engineering Controls
5. Administrative Controls
6. Personal Protective Equipment (PPE)



This table shows the 6 steps and their related action:

Hierarchy Step	Action
<b>1. Elimination</b>	Completely remove the hazard. This is the best kind of hazard control.
<b>2. Substitution</b>	Swap a dangerous work method or situation for one that is less dangerous.
<b>3. Isolation</b>	Isolate or restrict access to the hazard. Includes using signage and barricades.
<b>4. Engineering Controls</b>	Use equipment to lower the risk level.
<b>5. Administrative Controls</b>	Site rules and policies attempt to control a hazard.
<b>6. Personal Protective Equipment</b>	The least effective control. Use PPE while you carry out your work.

It is important to think about all of the options available when deciding on the best hazard controls. You may need to use more than 1 control measure to bring the risk level down to an acceptable level.

### 1.3.4.1 Apply Hazard Control Measures

Risk control measures need to be applied before you start any work and as soon as a hazard is identified during the work.

Talk to the other workers in the area to make sure they are aware of the work you are doing, and the control measures you have put in place.

Control measures you can apply include:

- ◆ Flag Person / spotter
- ◆ Warning signs
- ◆ Barriers / barricades
- ◆ Pedestrian exclusion zone
- ◆ Vehicle exclusion zone
- ◆ Flashing hazard lights
- ◆ Traffic management plan

Check the situation after you have applied a control measure to see if more controls, or different controls are needed to make the job safe. If more controls are needed, make sure they are applied before you start or continue the work.

\*If you come across operations and the risk control measures are not in place or are deficient, you should report it to **your supervisor**.



### 1.3.4.2 Personal Protective Equipment (PPE)

Personal Protective Equipment (PPE) is clothing and equipment designed to lower the chance of you being hurt on the job. It is required to enter most work sites.

You need to check your PPE (safety and personal protective equipment), before you start any work.

PPE may include:

- ◆ **Head protection** – hard hats and helmets.
- ◆ **Foot protection** – non-slip work boots.
- ◆ **Hand protection** – gloves.
- ◆ **Eye protection** – goggles, visors or glasses.
- ◆ **Ear protection** – plugs or muffs.
- ◆ **Breathing protection** – masks or respirators.
- ◆ **Hi-visibility clothing** – clothing that makes you stand out and lets other people know where you are.
- ◆ **Weather protection** – clothing that protects you from the sun or from the cold.

Make sure any PPE you are wearing is in good condition, fits well and is right for the job.

If you find any PPE that is not in good condition, tag it and remove it from service. Then tell your supervisor about the problem and they will organise to repair or replace the PPE.



### 1.3.4.3 Control Strategies for Operating at Night or in Dark Areas

\*If you are using a forklift at night or in dark areas, you **MUST** make sure the area has **adequate lighting** to allow for safe operations.

To make sure you and other workers can see properly and work safely, additional lighting needs to be used across the entire work area.



## 1.3.5 Control Measures for Traffic

If the work area is going to be shared with pedestrians, site personnel, vehicles or mobile plant, you will need to make sure you have control measures in place before you start.

\*To protect the safety of other workers, pedestrians and vehicles, control measures you could use are;

- ◆ Flag Person / spotter
- ◆ Warning signs
- ◆ Barriers / barricades
- ◆ Pedestrian exclusion zone
- ◆ Vehicle exclusion zone
- ◆ Flashing hazard lights
- ◆ Traffic management plan



### 1.3.5.1 Traffic Management Plans

Where a workplace has a higher volume of traffic, a Traffic Management Plan can communicate how traffic risks are managed. A Traffic Management Plan may include details of:

- ◆ The desired flow of pedestrian and vehicle movements.
- ◆ The expected frequency of interaction between vehicles and pedestrians.
- ◆ Diagrams of the layout for barriers, walkways, signs and other arrangements to guide and/or warn any around, past, or through a work site or a temporary hazard.
- ◆ How complex traffic situations, short term or mobile work will be managed.

A Traffic Management Plan may also set out:

- ◆ The responsibilities of those managing traffic in the workplace.
- ◆ The responsibilities of those who are expected to interact with traffic in the workplace.
- ◆ Procedures/instructions for controlling traffic including during an emergency.

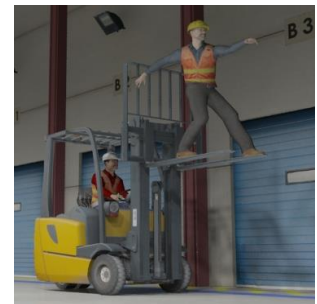
\*When your workplace has a Traffic Management Plan, you should ensure that you are familiar with it and understand it.

**NEVER lift loads over people's heads.**

\*You **MUST** not raise or lower a forklift load near or over people, as there is a risk of injury or death to bystanders, if the load or part of the load falls from the forklift.

**NEVER let people ride or be lifted on the forks or a pallet.**

\*You are only allowed to carry passengers on a forklift, when the forklift is specifically designed to do so.



## 1.3.6 Report All Actions

It is important that you report the details of all identified hazards and all action taken to your supervisor. This includes any risk control measures that are not in place or are deficient. Complete any forms required by site policies and procedures. Speak with anybody who is affected by the actions you have taken to make sure they are aware of them, and know if they need to do anything differently.

## 1.4 Types of Forklift Trucks

Choosing the right equipment for the job is very important. There are a few kinds of forklift trucks that you might use, such as;

- ◆ Internal Combustion (LPG, Diesel, Petrol)
- ◆ Electric
- ◆ Rough Terrain.

Before starting work, you need to think about the factors that Will affect your choice of forklift and attachment, such as:

- ◆ The ground conditions.
- ◆ Ventilation in the work area.
- ◆ How much room you have to work in.
- ◆ The type of load.



**Electric Forklift** - For use in confined spaces



**Petrol/LPG/Diesel Forklift (Internal Combustion)** - Where there is plenty of open air/ventilation



**Rough Terrain Forklift** - Where ground is uneven, boggy or unstable

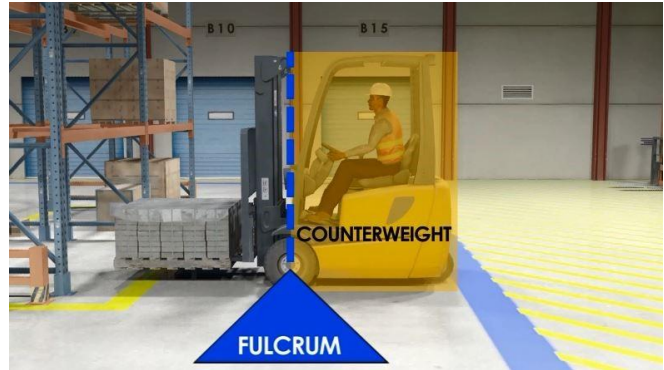
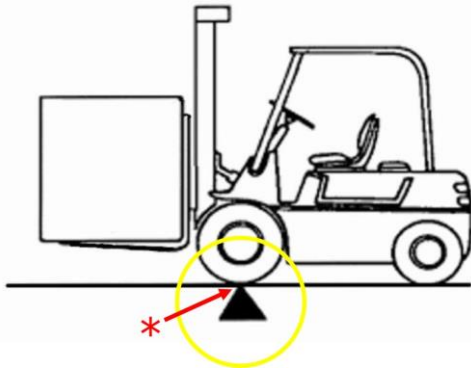
\*If a space has restricted air flow, it is dangerous to use a fuel powered forklift (eg. LPG, diesel or petrol) as **people could be overcome by dangerous gases.**

\*To operate in a space with a restricted air flow, the most suitable type of forklift would be **a battery powered (electric) or a hydrogen forklift.**

## 1.4.1 Counterbalanced Forklifts

Counterbalanced forklifts use the entire weight of the forklift (behind the point of balance) as a counterweight to the weight of the load. By using the entire weight of the forklift, a load can be lifted safely without tipping the forklift forwards.

\*The point of balance (fulcrum) on a forklift, is **where the front tyres touch the ground.**



Never add extra counterweights to the forklift truck without checking the manufacturer's instructions first.

### 1.4.1.1 Rear End Swing

Rear end swing is the fast, sideways movement of the back of the forklift. Forklifts steer with the back wheels so the rear of the forklift turns up to three and a half times faster than the speed of travel. With the rear end steering operators need to keep to the inside of every turn to allow enough room for the back of the forklift to swing around.

\*Rear-end swing is dangerous because the rapid sideways movement of the forklift **creates a risk of collision with people, structures and plant.**



You may need to set up barriers to stop people and plant getting too close to where you are using the forklift.

## 1.5 Forklift Stability & Centre of Gravity

Some factors that affect the stability of the forklift are:

- Centre of gravity moving outside of the Stability Triangle.
- Load centre distance.
- Forklift rated capacity.

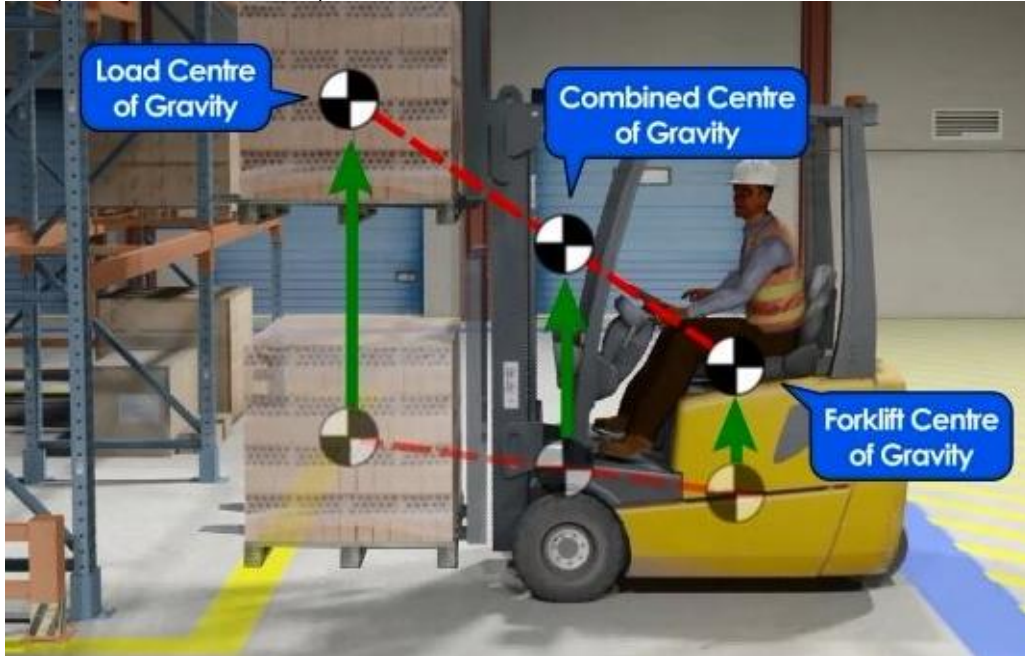


## 1.5.1 Centre of Gravity

The centre of gravity (CG) of any object is the single point where the object is balanced in all directions. Every object has a centre of gravity.

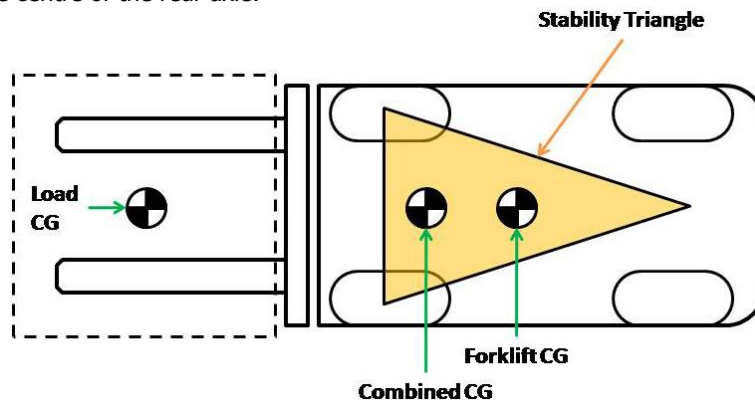
The forklift truck has moving parts which means it has a CG that moves. The CG moves forward and back as the mast is tilted forward and back. The CG moves up and down as the forks move up and down.

When you pick up a load, the forklift and load have a new combined CG. The stability of the forklift depends on the location of its CG, or if the truck is loaded, the combined CG.

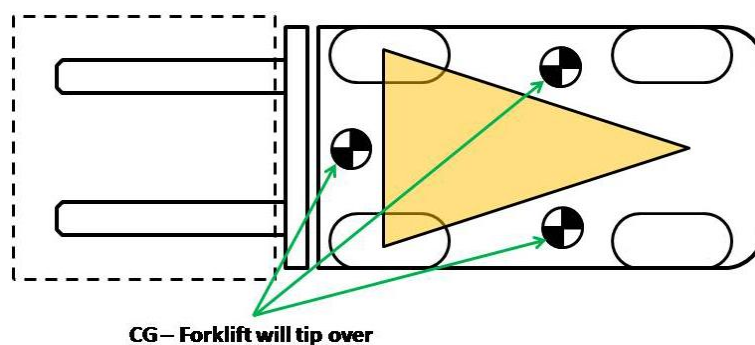


## 1.5.2 Stability Triangle

For the forklift truck to be stable, the CG must stay within an area called the 'stability triangle'. This triangle sits between the drive wheels and the centre of the rear axle.



If the CG moves forward past the drive axle, the forklift can tip forward (longitudinal). If the CG moves out sideways from the stability triangle, the forklift can rollover on its side (lateral).





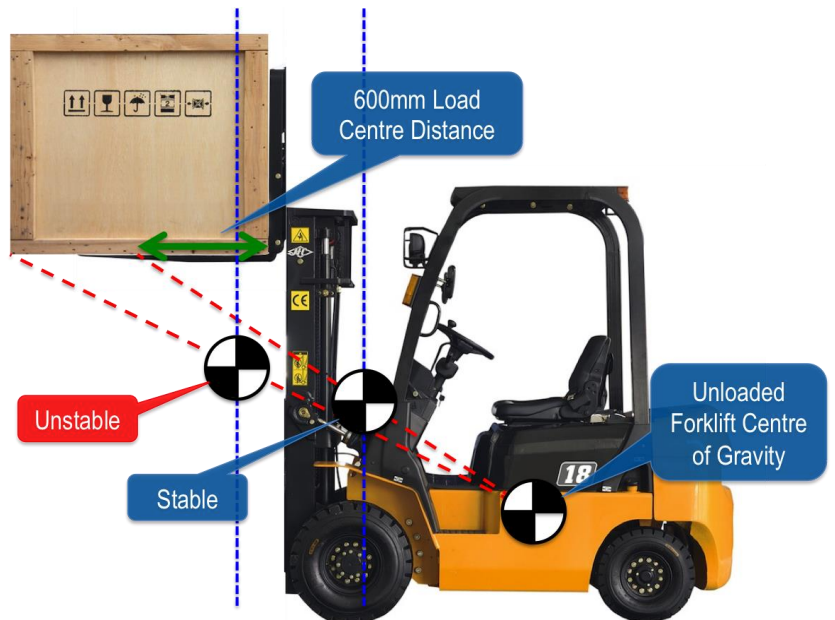
The stability of the loaded forklift is affected by a number of factors including:

- ◆ Load size.
- ◆ Load weight.
- ◆ Load shape.
- ◆ Load position.
- ◆ Height to which the load is lifted.
- ◆ The amount of forward or backward tilt.
- ◆ Tyre pressure.
- ◆ Speed and momentum created when the forklift is moving, turning or coming to a stop.
- ◆ Uneven surfaces and inclines.

You need to be aware of these factors when travelling with an unloaded forklift as well, because an unloaded truck will tip over to the side more easily than a loaded truck with its load in the lowered position.

The centre of gravity of the forklift can move outside the stability triangle if:

- ◆ The load is picked up on the tip of the forks.
- ◆ The load is tilted forward.
- ◆ The load is tilted too far back when raised.
- ◆ The load is wide.
- ◆ Forklift movement causes the centre of gravity to shift.



### 1.5.3 Load Centre Distance

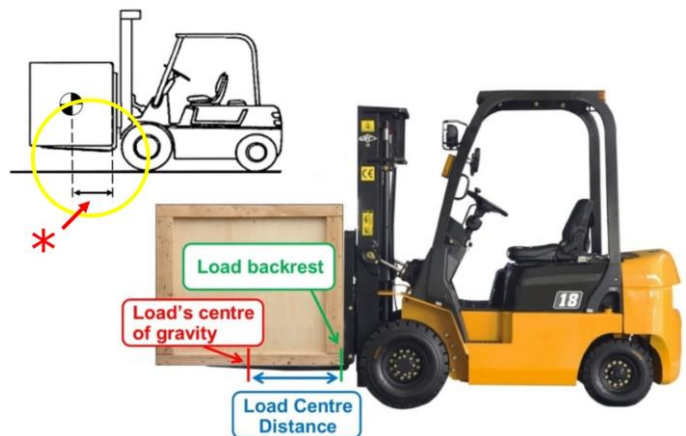
\*Load centre distance is measured from the vertical face of the forks (load backrest), to the load's centre of gravity - refer to the diagram on the right

\*The most common load centre distance is 600mm

As load centre distance increases, the forklift's capacity decreases. The use of special attachments instead of forks will also decrease the regular capacity of the forklift truck.

\*If a load is not hard against the heel of the fork arms,

- ◆ The forklift's capacity will be reduced
- ◆ The stability may be affected.



The forklift trucks shown below are rated at 4200kg at 600mm load centre:



Of these forklifts, only forklift B has a load that is within the rated capacity of the forklift. The load centre distance for forklift B is 500mm (within the 600mm limit for 4200kg). Forklifts A and C have a load centre distance of 700mm and 650mm (both beyond the 600mm limit).

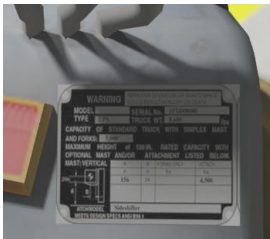
## 1.5.4 Forklift Rated Capacity

The rated load capacity of a forklift is 'The maximum load that a forklift is designed to carry, at a specific load centre distance as shown on the load chart'.

\*You will find the rated load capacity of a forklift and any attachment used **on the forklift data plate**

Shown here is an example of a forklift load chart or data plate:

FORKLIFT LOAD CHART (example only)				
MODEL	SERIAL NO	MAX HEIGHT	MAX BACK TILT	WARNING 1. DO NOT LIFT LOAD UNLESS PLACED EVENLY ON FORKS. 2. DO NOT TRANSPORT OR MANOEUVRE WITH LOAD RAISED EXCEPT TO CLEAR OBSTRUCTION AND THEN ONLY WITH MAST TILTED BACK TOWARD DRIVER.
XTQ300a	ACLF-011	3855mm	10 DEGREES	
MAST VERTICAL				
	LENGTH mm	FORK HEIGHT mm	LOAD CENTRE mm	WORKING LOAD LIMIT kg
Forks	1065	3855	800	2010
MAST FORWARD TILT 10 DEGREES				
	LENGTH mm	FORK HEIGHT mm	LOAD CENTRE mm	WORKING LOAD LIMIT kg
Forks	1065	3855	800	1755



By reading the chart we can see that the maximum working load limit (WLL) of the forklift when using forks with the mast tilted **forward** is **1755kg**.

We can also see that the maximum WLL the forklift can lift with a load centre distance of 800mm and the mast in a **vertical position**, with forks is **2010kg**.

The same weight load with a load centre distance of 900mm **could not** be lifted by this forklift. But a heavier load with a smaller load centre distance for example 700mm might be safely lifted if the data plate has working load limits for different load centres.

## 1.6 Forklift Attachments

There are various attachments that can be used with forklift trucks.

Before using an attachment, you should check the manufacturer's instructions (specifications) and the load chart to check that it can be used safely.

If you have never used an attachment before, in addition to accessing the manufacturer's instructions, you should ask somebody to show you how to use it.

Always make sure the attachment is secured properly before trying to lift a load, and never use an attachment for any purpose other than what it was designed for.

Make sure any attachments (including the forks) are securely fixed.

\*You will find information on the correct way to secure an attachment to a forklift in the **manufacturer's instructions**.

\*When you add an attachment to a forklift, it will likely have an effect, such as:

- ◆ The load capacity could be reduced
- ◆ The load centre distance could increase.

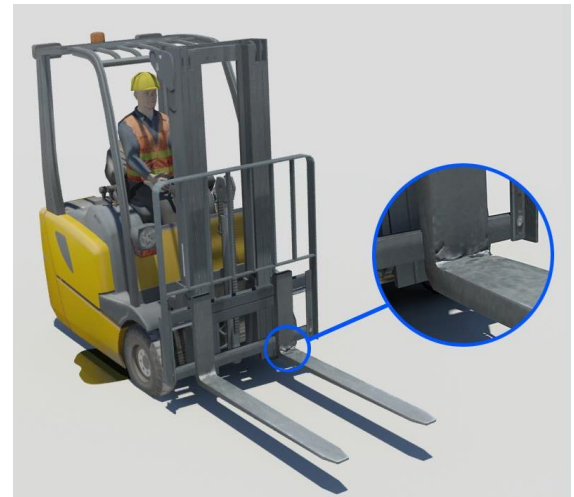
\*It is unsafe to carry a load on only one fork arm or tyne, as;

- ◆ Stability of the forklift is affected
- ◆ Stability of the load is affected
- ◆ It may damage the fork arm / tyne
- ◆ It may damage the mast or carriage.

## 1.6.1 Check Attachments

Check that any modifications to an attachment are Approved and that attachments are fitted to the manufacturer's specifications.

Do not use any forklift or attachment that has been modified beyond the manufacturer's recommendations.



## 1.6.2 Types of Attachments

\*There are different attachments that can be fitted to a forklift, including:

- ◆ Bale clamp
- ◆ Carpet spike for carpet rolls
- ◆ Drum carrier (or clamp)
- ◆ Jib attachment
- ◆ Paper roll clamp
- ◆ Personnel work platform (or work basket)
- ◆ Rotator
- ◆ Slippers/fork extensions on arms / tynes



Rotating Attachment



Drum Clamp



Carpet Spike



Jib Attachment



Blade Attachment



Work Platform/Work Basket



Fork Extensions



Bale Clamp

### 1.6.2.1 Rotating and Side Shift Attachments



\*Side-shift attachments **MUST** be centralised before travelling with a load to maintain stability of the forklift and the load.

This is because the centre of gravity of the load is off to one side.

While travelling, a revolving attachment must never be used to rotate the load. It can impact on the forklift's stability.

Rotation of loads should only be done once the forklift has stopped.

### 1.6.2.2 Jib Attachments

The jib attachment should have the Safe Working Load (SWL) marked at every hook position. The hook on the jib attachment should be able to swivel (not be a fixed hook).

Always make sure the jib attachment hook is centred directly over the load before lifting it to prevent the load from swinging on lift and to maintain the forklift's stability.

\*Using a jib attachment will effect the forklift in a number of ways, including:

- ◆ Reduce the load capacity
- ◆ Change the centre of gravity
- ◆ Reduce stability due to the change of centre of gravity
- ◆ Swing the load.



Whenever using a jib attachment make sure you:

- ◆ Travel at low speed and make all turns slowly.
- ◆ Keep the load as low to the ground as possible.
- ◆ Keep the jib as low as possible.
- ◆ Keep the jib vertical or tilted back at all times.
- ◆ Treat the forklift as if it is partially loaded at all times, even when no load is on the jib.

Make sure a qualified person has checked and selected the lifting gear used to attach the load to the jib.

### 1.6.2.3 Drum Clamps

Drums can be carried by the forklift using a drum clamp. Alternatively, drums can be transported while loaded on a pallet.



### 1.6.2.4 Forklift Work Platforms



Work platforms are used to elevate workers where other equipment cannot easily access an area.

The work platform must be secured to the forklift.

The operator of the forklift must stay seated at the controls of the forklift at all times while personnel are elevated in the work platform.

No more than two people are to be lifted in a work platform and they must stay in the work platform during raising or lowering. While workers are in the platform, it must not be moved from place to place other than for small positional adjustments.

The load capacity of the platform must not exceed 250kg unless the type and design of the forklift is manufactured in accordance with *AS 2359 Powered industrial trucks* and the appropriate hazard identification and risk assessment has been done.

You **MUST NOT** use ladders while in the work platform to gain additional height.

### 1.6.2.5 Carpet Spike Attachments

When using a carpet spike the length of the spike causes the longitudinal stability and load capacity of the forklift to be reduced.

Be careful when turning the forklift and make sure you have enough room to move properly.



## 1.7 Workplace Communications

It is important to coordinate your activities with other workers when you are planning and carrying out the work to make sure everyone knows:

- ◆ The work being completed.
- ◆ How, when and where you will be operating.
- ◆ What they need to do.

You need to understand instructions and be able to communicate with the people around you while you work to ensure safe forklift operations.



\*In the workplace, you can communicate with other people to ensure their safety by:

- ◆ Written instructions
- ◆ Signage
- ◆ Warning devices
- ◆ Two-way radio
- ◆ Appropriate workplace protocol
- ◆ Questioning to confirm understanding
- ◆ Eye contact
- ◆ Prestart meetings
- ◆ Hand signals
- ◆ Verbal instructions

\*During forklift operations, if you are given a signal by a co-worker that is unclear, or that you do not understand, **you MUST stop all motions of the forklift and ask them to clarify their last signal.**

## 2.1 Pre-Start Checks

Before you use the forklift, you need to check that it is safe to use. Always use a forklift inspection checklist to make sure you check everything properly and so that you can report any problems that you find.

\*When a forklift has a logbook, it is important to check it **to make sure any previous faults have been fixed.**

An example of a daily inspection checklist can be found in Appendix A and the end of this learner guide.

### 2.1.1 Visual Checks

You need to visually check the forklift for any damages or defects before you use it.



\*You should carry out the following pre-start checks on a forklift;

- ◆ Fluids - levels and leaks
- ◆ Tyres - condition, air and pressure
- ◆ Structure - obvious damage
- ◆ Data Plate - secured and legible
- ◆ Guards for damage
- ◆ Mast - obvious damage
- ◆ Tynes / fork arms - condition and wear
- ◆ Controls
- ◆ Lights and beacon for damage
- ◆ Battery - secured
- ◆ Gas operated forklift
- ◆ No danger or out-of-service tags
- ◆ Log book - applicable to the forklift, entries up to date

#### 2.1.1.1 Decals and Signage

Check that the forklift has the right signage and labels. This includes the data plate. Make sure you can read it clearly and that it is firmly attached to the forklift.

DO NOT use a forklift without a data or load plate!

\*During pre-start checks, if you find the data plate or load chart is damaged, unreadable/missing, or if there is damage or defects to the forklift, you **MUST** make sure you:

- ◆ Do not operate
- ◆ Isolate forklift, so it cannot be used
- ◆ Tag out of service
- ◆ Report to supervisor
- ◆ Fill in logbook



### 2.1.1.2 Tyres



\*It is important that air-filled tyres are at their correct operating pressure, **to assist in maintaining stability of the forklift.**

\*It is important to check the condition of the tyres and wheels. Defects that you might find while checking wheels and tyres include:

- ◆ Tyres are worn down
- ◆ Wear is uneven
- ◆ Tyre / wheels insecurely fitted
- ◆ Damaged sidewall
- ◆ Large pieces of rubber missing
- ◆ Flat or underinflated tyre

### 2.1.1.3 Refuelling / Battery Charging

#### Refuelling

\*Refuelling while the engine is running may run the risk of **the fuel OR the fuel vapour igniting** (catching on fire).

\*If you need to refuel the forklift, you **MUST** always;

- ◆ **Ensure the engine is switched off.**
- ◆ **Wear PPE** when re-fuelling. Whether refuelling petrol, replacing a gas bottle or connecting/disconnecting a battery to a charger (and then reconnecting to the forklift), the appropriate PPE is:
  - ◇ Gloves.
  - ◇ Safety glasses.



#### Battery Charging

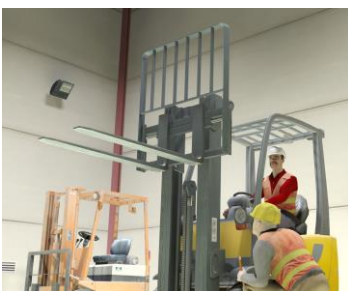
Electric forklifts have batteries that require charging.

\*You **MUST** charge batteries in a well-ventilated area **to avoid an explosion.**

Do not smoke around a charging battery – the fumes could ignite, causing an explosion or a fire.

## 2.2 Operational Checks

Operational checks are done once the forklift has been started, the checks include:



- ◆ Hazard warning systems (for example lights and horns) and gauges are functional.
- ◆ Safety devices are functional (for example deadman's switch, emergency decent device if applicable, reversing alarm or beeper).
- ◆ Attachment movements and control functions are smooth and comply with operating requirements.
- ◆ Steering, transmission and brake functions comply with operating requirements.
- ◆ Check all movements and functions to their full extent.

### 2.2.1 Start the Forklift

Once you have visually checked the forklift, you will need to get into the forklift and start it. Always start the forklift according to the manufacturer's specifications.

\*When getting in and out of a forklift, always use **3 points of contact.**

\*When you start up a forklift, you should listen for any abnormal noises as **they may indicate a fault with the forklift.**



Always wear your seatbelt whenever you operate the forklift.

\*Seatbelts are important and mandatory on forklifts for 2 reasons;

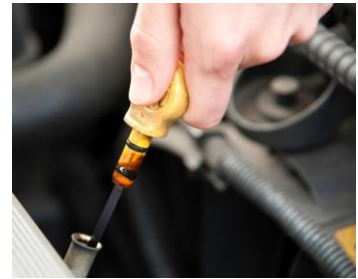
1. **It stops the operator from falling out in the event of a tip over.**
2. **It stops the operator being propelled into the forklift structure or out of the forklift in a collision.**

## 2.2.2 Start-up Checks

Make sure you can find and identify the forklift controls, if you are unsure, check the operator's manual.

\*After you have started the forklift, you should carry out the following operational checks on the forklift:

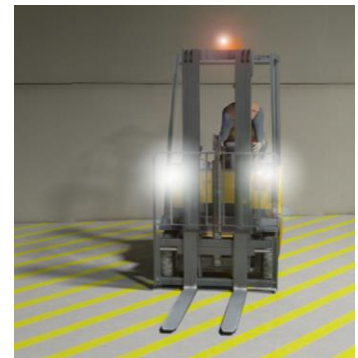
- ◆ Hydraulics (lift and tilt systems)
- ◆ Brakes
- ◆ Steering
- ◆ Reverse buzzer and horn
- ◆ Warning Devices
- ◆ Lights (if fitted)
- ◆ Gauges



### 2.2.2.1 Safety Devices

Forklift safety / warning devices include:

- ◆ Horn
- ◆ Reversing beeper
- ◆ Lights:
  - ◇ Flashing amber light.
  - ◇ Head lights.
  - ◇ Brake lights.
  - ◇ Reverse lights.



Forklifts are also fitted with;

- ◆ \*Guards:
  - ◇ Overhead guard
  - ◇ Foot guard
  - ◇ Load backrest

\*The functions of the guards are as follows;

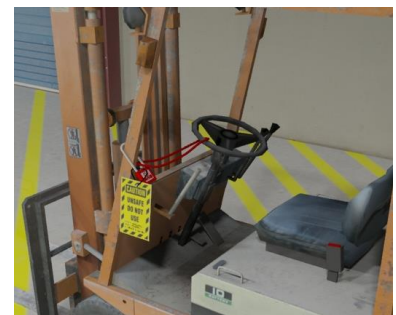
- ◇ **OVERHEAD GUARD** - protects operator from falling objects
- ◇ **FOOT GUARD** - protects the operator's feet
- ◇ **LOAD BACKREST** - stops the load from hitting the mast, and protects the operator

## 2.3 Report All Faults

Once all checks on the forklift are finished, you will need to report any problems, faults, defects and damage that you found so that they can be repaired and the machine and equipment are safe for you or the next operator to use.

If you find anything wrong with the forklift during your routine checks you must:

1. Immediately stop the forklift and remove the keys.
2. Isolate the forklift, so it cannot be used
3. Tag out of service
4. Fill in logbook
5. Report to supervisor



**DO NOT** use the forklift until repairs are carried out.

### 2.3.1 Isolation Procedure (Lock-out Tag-out)

An Isolation Procedure, often called 'Lock-out Tag-out', or just 'Tag-out', is a set of steps that workers follow if a forklift malfunctions, is damaged, or before required maintenance or repairs are carried out. The procedure includes isolating (or shutting down) all forms of energy/power and applying the appropriate warning tag.

A tag is a means of providing information to other workers. The two tags generally used are an 'out of service tag' or a 'personal danger tag':

- ◆ **Out of Service Tag** - warns that the forklift is unserviceable and should not be used (i.e. is faulty or defective).
- ◆ **Personal Danger Tag** - warns that the forklift is in an unsafe condition and starting the forklift could endanger the worker who applied the tag. Personal danger tags should only be used by workers who will be working on the forklift.





Before attaching an out of service tag to a forklift, complete the details on the tag, be sure to include the reason you are tagging out the forklift. Attached the tag in such a way that it is secure and is clearly visible.

Because 'out of service tags' and 'personal danger tags' relate to two different things they cannot be used at the same time. Tags should only be removed by the worker who applied them, or an authorised person. For example, an authorised repairer would remove an 'out of service tag' and apply a 'personal danger tag' before they commence repairs. When repairs/maintenance have been completed, the 'danger tag' is removed before the forklift is returned to operation. Should the repairs/maintenance not be complete by the end of the shift, an 'out of service tag' should again be attached before the 'personal danger tag' is removed.

Lock-out Tag-out procedures will vary from employer to employer (or site to site).

A basic isolation procedure for a forklift that has malfunctioned or is damaged is:

1. Lower the load, switch off the forklift, isolate energy sources (e.g. turn off gas), remove the key
2. Identify any other hazard
3. Check hydraulic lines for splits or bulges, check forklift for other damage / wear
4. Tag-out the forklift
5. Report the fault to an authorised person
6. Complete logbook

Problems and faults with equipment can create unsafe situations, and it is important that you know how to respond appropriately when one occurs, so make sure you access and understand the appropriate workplace procedures including 'Lock-out Tag-out' procedure.

## 2.4 Shift a Load

To shift a load with a forklift you need to:

1. Check the load.
2. Make sure the work area is safe to move through.
3. Pick up the load.
4. Drive safely with the load.
5. Place the load.

### 2.4.1 Check the Load

Before you try to lift something, make sure the forklift will be able to shift it safely. Check the data plate to see if the load within the safe Working Load Limit of the forklift. Check the shape of the load. Make sure the heaviest part of the load is against the load backrest.

Loads cannot be unstable or poorly stacked, and even a properly stacked load may even need to be secured using shrink wrap, strapping or banding.

\*When stacking loads on top of one another, things you **MUST** consider are:

1. Loads must be stacked on a firm level surface
2. Heavy goods must be placed at the bottom
3. The stack must not become unstable due to height
4. Whether the load below can support loads above

If a pallet appears to be unsafely loaded, before trying to lift it, you will need to safely repack the load.

Check the pallet that the load is sitting on. If it is too damaged to lift, re-stack the load onto a new pallet.

\*There are a number of ways to find out the weight of a load;

- ◆ Weighbridge docket
- ◆ Weigh the load
- ◆ Calculate the load
- ◆ Weight may be marked on the load
- ◆ Check inventory systems.



**NOTE:** When using an attachment, always make sure you have included the weight of the attachment with your calculations.

## 2.4.1.1 Calculating Load Weight

If you find you need to calculate the weight of a load, make sure you consider:

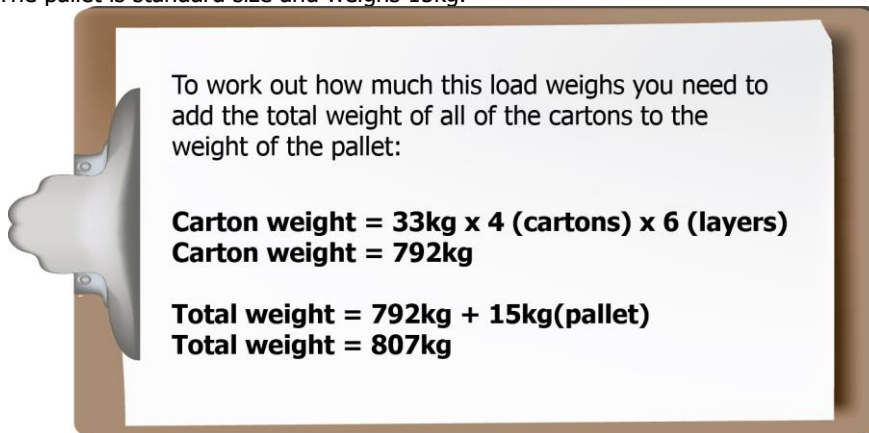
- ◆ How many items there are.
- ◆ What each item weighs.
- ◆ The weight of the pallet the items are placed on.



### Example 1:

You need to move a load of cartons that have been stacked on a pallet.

- ◆ There are 4 cartons per layer and 6 layers on the pallet.
- ◆ Each carton weighs 33kg.
- ◆ The pallet is standard size and weighs 15kg.



To work out how much this load weighs you need to add the total weight of all of the cartons to the weight of the pallet:

**Carton weight = 33kg x 4 (cartons) x 6 (layers)**  
**Carton weight = 792kg**

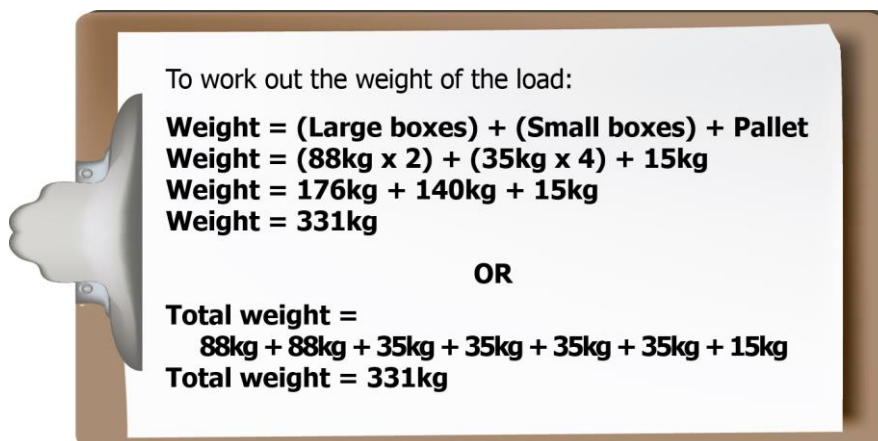
**Total weight = 792kg + 15kg(pallet)**  
**Total weight = 807kg**



### Example 2:

You need to move a load on a pallet that is made up of:

- ◆ 2 large boxes marked as 88kg each.
- ◆ 4 smaller boxes marked as 35kg each.
- ◆ The pallet is standard size and weighs 15kg.



To work out the weight of the load:

**Weight = (Large boxes) + (Small boxes) + Pallet**  
**Weight = (88kg x 2) + (35kg x 4) + 15kg**  
**Weight = 176kg + 140kg + 15kg**  
**Weight = 331kg**

**OR**

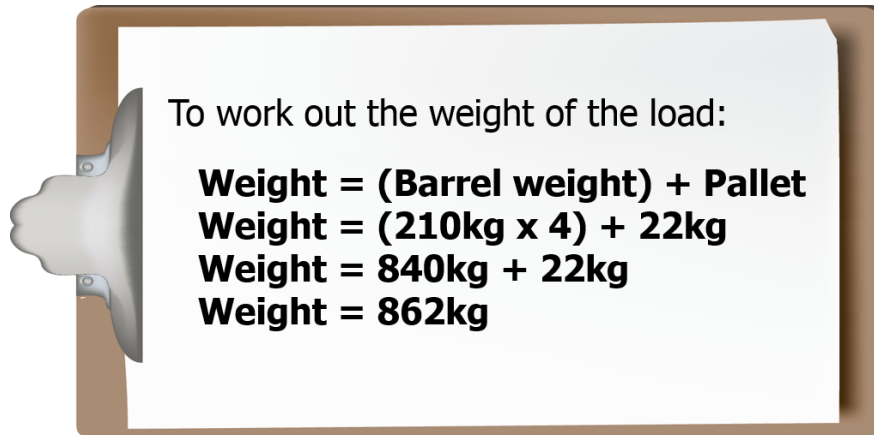
**Total weight =**  
**88kg + 88kg + 35kg + 35kg + 35kg + 35kg + 15kg**  
**Total weight = 331kg**



### Example 3:

You need to move a pallet loaded with 4 barrels of liquid.

- ◆ Each barrel weighs 210kg.
- ◆ The pallet weighs 22kg.



To work out the weight of the load:

$$\text{Weight} = (\text{Barrel weight}) + \text{Pallet}$$
$$\text{Weight} = (210\text{kg} \times 4) + 22\text{kg}$$
$$\text{Weight} = 840\text{kg} + 22\text{kg}$$
$$\text{Weight} = 862\text{kg}$$


## 2.4.2 Picking Up a Load

When picking up a load with the forklift make sure that you:



1. Approach the load from front on.
2. Insert the forks all the way into the pallet.
3. Raise the forks and reverse the load out of the rack
4. Lower the load, then tilt the load back slightly for stability.
5. Position the load at axle height or as low to the ground as possible for safe travel.

**NOTE:** It is unsafe to carry a load on only one fork arm, as;

- ◆ The stability of the forklift may be affected
- ◆ It may overstress the fork arm
- ◆ It may cause damage to or failure of the forklift

## 2.4.3 Travelling Safely with a Load

Always be careful when driving a forklift. To ensure safe operations:

- ◆ \*When operating on a wet (or slippery) surface, precautions you should take are;
  - ◇ Reduce speed
  - ◇ Proceed with caution
  - ◇ Avoid using ramps or other inclined pathways
  - ◇ Avoid sudden braking.
- ◆ \*Driving (travelling) with the load raised high can affect stability, making the forklift more likely to tip over.
- ◆ \*When driving, the 'safe height' to carry a load is at axle height OR as low to the operating surface as practicable.
- ◆ \*If your view is obstructed when operating a forklift, before you move, you **MUST**;
  - ◇ Operate in reverse (look over both shoulders)
  - ◇ Use a guide (spotter) if required
  - ◇ Repack the load
  - ◇ Use warning devices, such as horn and flashing lights

It is also important to:

- ◆ Drive slowly and avoid using ramps or other inclined pathways where possible.
- ◆ Use your horn when approaching blind corners.
- ◆ Keep to forklift zones and barricade off the work area if there are people nearby.
- ◆ Make sure you do not travel or turn the forklift with the load raised up in the air as it can affect stability, creating a hazard that could result in the forklift tipping over, rolling over or losing the load.
- ◆ Tilt the mast backwards for stability when driving with a load.



Maintaining a safe operating speed is based on:

- ◆ The size and type of the load.
- ◆ Worksite policies, procedures and signage.
- ◆ Weather conditions.
- ◆ Ground or floor conditions.
- ◆ Personnel and other equipment in the area.
- ◆ Forklift size, capacity, turning circle and technical limitations or capabilities.

\*Load movement should be constantly monitored to ensure stability of both the load and forklift, and safety of people.

\*Before shifting a load from a truck or loading dock, the gap between the truck and the loading dock **MUST** have secured dock plates **OR** bridge plates.

## 2.4.4 Travelling Safely on Ramps

When driving on a ramp (or incline) always be sure to travel directly up or down.

\*When driving a loaded forklift on a ramp, the load and forks **MUST ALWAYS** be pointing **up the ramp**.

Turning or travelling across a ramp can affect the stability of the forklift.

\*It is unsafe to turn a loaded forklift when you're on a ramp or sloping surface for 2 reasons:

- ◆ You could lose the load
- ◆ You could tip the forklift



## 2.4.5 Placing a Load



When placing a load using a forklift truck, follow these steps:

1. Approach the load destination slowly.
2. Tilt the forks slightly forward.
3. Raise the load (where required) to ensure clearance.
4. Lower the load onto the stack or ground.
5. Look over both shoulders and reverse the forklift to remove the forks, making sure you don't scrape the forks on the pallet.

You may need to lean out slightly to one side for a better view of the load.

If you are refilling stock into racking or shelves, you need to make sure that:

- ◆ Loads are stacked on a firm level site.
- ◆ Heavy goods are placed at the bottom.
- ◆ The stack does not become unstable because of height.

## 2.5 Emergency Procedures

If something goes wrong while you are using the forklift it is important that you know what to do.

If there is an emergency in your workplace you need to let others know.

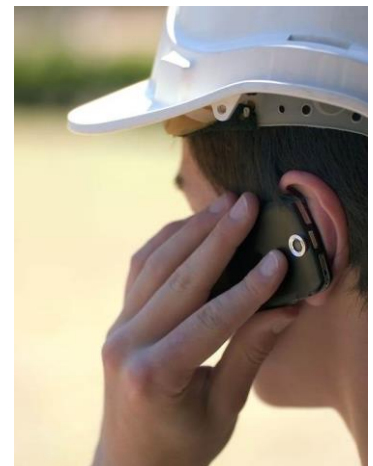
The things you need to communicate are:

- ◆ There is an emergency situation
- ◆ The nature of the emergency
- ◆ Where the unsafe area or areas are

The people you should communicate these things to are:

- ◆ Other people at the workplace
- ◆ Workplace safety officer
- ◆ Management, supervisors
- ◆ Emergency services

During an emergency you **MUST** give right of way to **ALL** emergency vehicles.



## 2.5.1 Lateral Instability - Tipping Sideways

\*When you are travelling, there are a number of actions that could make the forklift tip over sideways, they are:

- ◆ Turning at an unsafe speed
- ◆ Driving over uneven surfaces
- ◆ Unevenly distributed load
- ◆ Driving with a flat or under-inflated tyre
- ◆ Driving too fast (loaded or unloaded)
- ◆ Turning with the load raised
- ◆ Side shift not centred
- ◆ Operating across a sloping surface



## 2.5.2 Longitudinal Instability - Tipping Frontwards or Backwards



\*When you are travelling, there are a number of actions that could make the forklift tip over frontwards or backwards, they are:

- ◆ Driving over uneven surfaces
- ◆ Unevenly distributed load
- ◆ Driving too fast, including reversing (loaded or unloaded)
- ◆ Overloading
- ◆ Severe braking
- ◆ Load not positioned against the heel of the fork arms
- ◆ Operating on a sloping surface
- ◆ Carrying the load too high
- ◆ Colliding with overhead structure.
- ◆ Incorrect use of the mast tilt (especially with the load carried at a high level)
- ◆ Shifting the load centre forward (centre of load is forward of the approved load centre)

## 2.5.3 Forklift Rollover Procedure

\*If the forklift was tipping over sideways, you should;

1. Remain in/on the forklift (the seatbelt will hold you in)
2. Brace yourself until the forklift is stationary and is safe to exit
3. Lean away from the point of impact



## 2.5.4 Contact with Power Lines

\*When you're operating a forklift, if it comes into contact with power lines, you should do the following (in the listed order):

1. Warn others to stay away
2. Try to break contact with powerlines
3. Remain in the forklift
4. Report / notify authorities
5. Have the machine inspected before reuse

## 2.5.5 Forklift Malfunction

Faults with a forklift can create problems and unsafe situations. Workplaces should have procedures that advise how you should respond to equipment faults and unsafe situations.

Procedures will vary from employer to employer (or site to site).

\*In the event of machine failure (eg. loss of brakes, steering, hydraulics, etc.), you should;

1. Stop the forklift where possible
2. Activate the emergency stop procedure as per the manufacturer requirements, instructions or operator's manual
3. Return forklift to lowered position using applicable procedure or emergency procedure
4. Lock-out and Tag-out the forklift
5. Report to management and complete logbook
6. Have the machine checked and repaired before reuse.

It is important that you know how to respond to equipment faults and other problems because they are unplanned. To be prepared, make sure you access and understand the appropriate workplace procedures.

## 2.6 Shut Down and Secure Forklift Truck

When you have finished using the forklift, you need to park it, remove the keys and conduct post-operational checks.

### 2.6.1 Parking the Forklift

Always park the forklift on a flat surface out of the way of other traffic.

\*When parking the forklift, follow the below steps:

1. Fork arms lowered and tips to the ground
2. Forklift to neutral
3. Park brake applied
4. Turn of the forklift
5. Remove the key.



It is important to turn the engine off and remove the keys from the ignition to prevent unauthorised use/movement of the forklift.

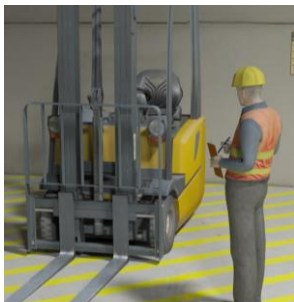
You should also shut off the LPG gas cylinder valve (if applicable) and carry out any other site-specific procedures such as securing the equipment and site as required.

\*Within a workplace, there are a number of places you **SHOULD NOT** park a forklift, they are:

- ◆ Near first aid station or emergency showers
- ◆ Near firefighting appliances
- ◆ Near doorways
- ◆ On sloping surfaces
- ◆ On or near pedestrian walkways
- ◆ Emergency exits
- ◆ Where it is obstructing other traffic

If you did have to park on an incline, make sure you chock the front wheels in addition to normal parking procedures.

## 2.7 Post-Operational Checks



As part of your job as a forklift operator, you need to inspect the machine to find and report any faults or damage that may have occurred during your work activities, and to make sure it is ready for the next operator.

Your inspection should include:

- ◆ **Visual Inspection of the Forklift** - Physically looking for anything odd, wrong, broken or damaged.
- ◆ **Visual Inspection of the Environment** - Is any fluid leaking?
- ◆ **Signals** - Alarms, lights, electronic indicators showing that something may be wrong.
- ◆ **Gauges** - Showing temperatures and the levels of the fuel, oil and other fluids.

\*Make sure the forklift is secured by removing the ignition key when you leave the forklift unattended **to prevent unauthorised use by others.**

**Note:** If a forklift needs repairing, the only circumstances that allow a forklift operator to make minor repairs to a forklift is when they are competent and authorised to do so.

### 2.7.1 Report All Defects

If you notice a defect or fault when checking the forklift after you have finished using it, you must make sure you;

1. Do not operate
2. Isolate the forklift from further use
3. Tag out of service
4. Report it to the appropriate person (e.g. supervisor)
5. Enter in service logbook

Sites may also have a Fault Report Form that will need to be completed. The form will generally need the machinery or equipment make and model numbers, the site identification numbers, the type of fault and the person reporting the fault.

\*Procedures for reporting and recording workplace records will differ from employer to employer, **you need to find out what your site's procedures are so you can follow them.**

# Examples - Calculation, Load Centre, Load Chart

## Calculations - Cartons

### Calculation Example Question:

The load to be moved is **cartons** that are stacked on a **pallet**:

- **Thirteen** cartons to a layer
- **Five** layers on the pallet
- Each carton is **20 kg**
- The pallet weighs **40 kg**

What is the combined weight of the cartons and pallet?

Show all calculations



### CALCULATION

Cartons per layer x number of layers = Number of cartons

$$13 \times 5 = 65 \text{ cartons}$$

Number of cartons x weight per carton = Weight of cartons

$$65 \times 20\text{kg} = 1300 \text{ kg}$$

Weight of cartons + pallet weight = Total weight of load

$$1300\text{kg} + 40\text{kg} = 1340\text{kg}$$

### OR

Cartons per layer x number of layers x weight per carton + pallet weight = Total weight of load

$$13 \times 5 \times 20 + 40 = 1340\text{kg}$$

## Calculations - Drums

### Calculation Example Question:

The load to be moved is **drums** that are stacked on a **pallet**:

- **Four** drums on a pallet
- Each drum is **180 kg**
- The pallet weighs **38 kg**

What is the combined weight of the drums and pallet?

Show all calculations



### CALCULATION

Number of drums x weight per drum = Weight of drums

$$4 \times 180\text{kg} = 720\text{kg}$$

Weight of drums + weight of pallet = Total weight of load

$$720\text{kg} + 38\text{kg} = 758\text{kg}$$

### OR

Number of drums x weight per drum + weight of pallet = Total weight of load

$$4 \times 180 + 38 = 758\text{kg}$$



## Calculations - Bags

### Calculation Example Question:

The load to be moved is **bags of gravel mix** that are stacked on a **pallet**:

- **Forty-two** bags on a pallet
- Each bag weighs **40 kg**
- The pallet weighs **40 kg**

What is the combined weight of the bags and pallet?

Show all calculations



### CALCULATION

Number of bags x weight per bag = Weight of bags

$$42 \times 40\text{kg} = 1680\text{kg}$$

Weight of bags + weight of pallet = Total weight of load

$$1680\text{kg} + 40\text{kg} = 1720\text{kg}$$

### OR

Number of bags x weight per bag + weight of pallet = Total weight of load

$$42 \times 40 + 40 = 1720\text{kg}$$

# Load Centre

## Load Centre Example Question:

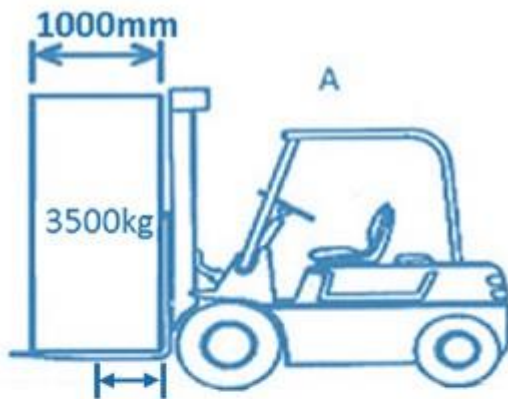
The forklift has rated capacity of 3500kg at 600mm load centre distance.

Which of the loads are within the capacity of the forklift truck?

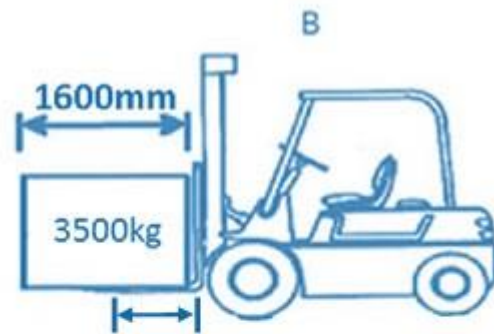
### Answer:

**Forklift A** is the only forklift operating within capacity.

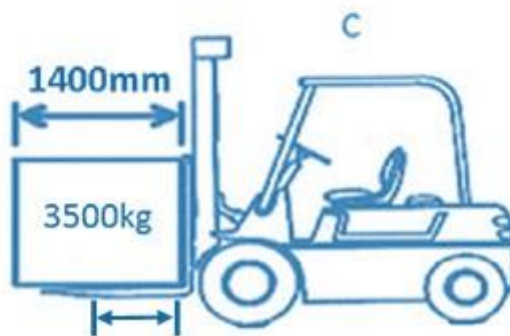
**Forklift B and C** are not operating within their capacity and are overloaded because the load centre distance is greater than 600mm.



Load centre distance for A is 500mm



Load centre distance for B is 800mm




Load centre distance for C is 700mm

# Load Centre/Capacity (Data Plate)

## Load Centre/Capacity Example Questions:

For each load below, the calculations (reasonings) have been completed to determine if the load is safe to lift.



**WARNING**

**Trained Operators and Mechanics Only**

**Read Operating Manual located on seat or in operator's compartment**

**Failure to follow operating, inspection, and maintenance instruction can cause serious injury or death!**

**CAPACITY WITH MAST VERTICAL AND EQUIPPED AS SHOWN**

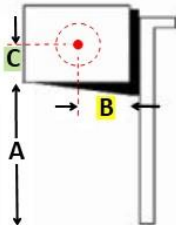
**Lift Truck Model GDLRAIS155KXH123**  
**Serial No. ABXYZ14325**

Attachment: 1981 mm (78in) Carriage + Sideshifting Fork Positioner NMHG 70L-FPS-c205 + 1830 mm Forks

Truck Weight 9750 kg  
 Tread Width 1844 mm  
 Back Tilt 10.0 Degrees

Tyre	Front	Rear
Size	8.25-15/14-PLY Dual Pneu	8.25-15/14-PLY Dual Pneu
Pressure	800 KPA (116 PSI)	800 KPA (116 PSI)

MAXIMUM CAPACITY	Load Height Dim. A	Load Centre	
		Dim. B	Dim. C
6130 kg	4400 mm	915 mm	915 mm
0 kg	0 mm	0 mm	0 mm



Load	Calculations / Reason	Load safe to lift?
<p><b>Load 1:</b>                      A pallet <b>1165mm</b> in length by <b>1165mm</b> wide. Load height of <b>1800mm</b> and a total weight of <b>1700kg</b>.</p>	<ul style="list-style-type: none"> <li>- <b>1700kg</b> is less than the forklift's capacity of <b>6130kg</b>.</li> <li>- The forklift's load centre <b>B</b> is <b>915mm</b></li> <li>- The load's load centre <b>B</b> is <math>1165 \div 2 = 582.5\text{mm}</math></li> <li>- The forklift's load centre <b>C</b> is <b>915mm</b></li> <li>- The load's load centre <b>C</b> is <math>1800\text{mm} \div 2 = 900\text{mm}</math></li> </ul> <p>Therefore, the load <u>is within</u> the forklift's rated capacity <b>AND</b> the load centre of the forklift.</p>	Y / N
<p><b>Load 2:</b>                      A container with a <b>4800kg</b> load inside (the tare weight of the container is <b>2900kg</b>). The container is <b>2.4m</b> wide, <b>2.5m</b> high and <b>3.1m</b> in length.</p>	<ul style="list-style-type: none"> <li>- <b>4800kg</b> load + <b>2900kg</b> container = <b>7700kg</b></li> <li>- <b>7700kg</b> is more than the forklift's capacity of <b>6130kg</b>.</li> </ul> <p>Therefore, the load is <b>above</b> the rated capacity of the forklift and <u>is not safe</u> to lift regardless of the load's load centre.</p>	Y / N
<p><b>Load 3:</b>                      The empty container from Load 2.</p>	<ul style="list-style-type: none"> <li>- The forklift's load centre <b>B</b> is <b>915mm</b></li> <li>- The load's load centre <b>B</b> is <math>2400 \div 2 = 1200\text{mm}</math></li> </ul> <p>Therefore, the load's load centre is <b>greater</b> than the load centre of the forklift and the load <u>is not safe</u> to lift.</p>	Y / N

## Load Chart (Data Plate)

### Load Chart Example Question 1:

Using the image of the **Data Plate (Load Chart)** below.

What is the maximum working load limit (WLL) the fork can lift with the mast tilted **forward** 6 degrees?

### Load Chart Example Question 2:

Using the same image.

What is the maximum WLL the fork can lift with the mast in a **vertical** position?

The Mast tilted **Forward** Capacity is 750kg.

The answer to Load Chart Example Question 1 is - **750kg**

**NISSAN FORKLIFT FORK TRUCK LOAD AND WARNING NOTICE**

OPERATORS MUST BE TRAINED AND AUTHORISED. DO NOT OPERATE THE LIFT TRUCK IF IT IS IN NEED OF REPAIR. THIS CAPACITY PLATE IS NOT TRANSFERABLE AND IS INVALIDATED BY ANY CHANGE TO SPECIFICATIONS.

MODEL: **1F1A18U** S/No: **000369** MAST: **2W450**

MAST/CARRIAGE TILT DEGREES: **6** TYRE PRESSURES kPa: **SOLID** DRIVE WHEELS: **SINGLE**

FORWARD/DOWN: **6** FRONT: **SOLID** TYRE TYPE: **SOLID**

BACK/UP: **6** REAR: **SOLID** DEFLATE PNEUMATIC TYRES BEFORE LOOSENING NUTS

TRACTION BATTERY WEIGHT kg MIN: **N/A** MAX: **N/A** VOLT: **N/A**

TARE WEIGHT WITHOUT TRACTION BATTERY kg: **3115**

RATED CAPACITIES - ATTACHMENT & LOAD IN CENTRE POSITION				
	LOAD CENTRE mm	LIFT HEIGHT mm	MAST VERTICAL CAPACITY kg	MAST FORWARD CAPACITY kg
CASCADE SIDESHIFT 55F SSS A177	600	4300	1340	750

MANUFACTURER: NISSAN MOTOR Co. LTD. TOKYO JAPAN  
 NISSAN FORKLIFTS: POWERLIFT (NISSAN) PTY. LIMITED SYDNEY ABN 62000135259 Ph: 61 2 9771 9666

PLATE I.D.: **09-04-022** DEALER: **POWERLIFT NISSAN 1300 550 607**

WHERE FITTED - USE THE SEAT BELT

**WARNING**  
 USE OF FORK LIFT TRUCK-FORKS, GRAB, SLIPPERS OR JIB

1. STAY CLEAR OF OVERHEAD WIRES
2. DO NOT LIFT LOAD UNLESS PLACED EVENLY ON FORKS
3. DO NOT TRANSPORT OR MANOEUVRE WITH LOAD RAISED ABOVE 300mm EXCEPT TO CLEAR OBSTRUCTIONS AND THEN ONLY WITH MAST TILTED BACK TOWARDS DRIVER.
4. DO NOT TILT MAST FORWARD EXCEPT WHERE NECESSARY TO PICK UP OR DEPOSIT A LOAD.
5. DO NOT NEGOTIATE ANY INCLINE UNLESS MAST END IS UP HILL!
6. DO NOT REVOLVE GRAB WHEN RAISED OR WHILST TRAVELLING.
7. GRIP ROLL ONLY IN ITS CENTRE WHEN REVOLVING.
8. CENTRALISE GRAB ARMS ON CARRIAGE BEFORE LIFTING.
9. DO NOT TILT MAST FORWARD WHEN LOAD SUSPENDED ON JIB.
10. KEEP JIB AS LOW AS POSSIBLE AT ALL TIMES BY USING MINIMUM LENGTH SLINGS OR LIFTING BEAM.
11. DO NOT USE JIB ATTACHMENT UNLESS THE ALLOWABLE LOAD IS MARKED ON THE JIB AT EACH HOOK POSITION.

AUSTRALIAN STANDARD DUTY OF CARE AS2359 Part 6 15.2  
 Only Qualified and Authorised Personnel shall be permitted to maintain, repair, adjust and inspect industrial trucks.  
 Déalers - [www.nissanforklifts.com.au](http://www.nissanforklifts.com.au)

NISSAN FORKLIFT GENUINE PARTS IMPORTANT NOTICE:

- Legislation increasingly requires that components meet original forklift manufacturer's standards.
- Ensure compliance by fitting only genuine Nissan replacement parts available from a Nissan genuine parts franchised distributor or dealer.
- The use of incorrect parts can impair safety and performance, and may invalidate forklift warranty.

The Mast **Vertical** Capacity is 1340kg.

The answer to Load Chart Example Question 2 is = **1340kg**

### **Load Chart Example Question 3:**

Using the same image of the **Data Plate (Load Chart)** on the previous page.

Can a load weighing 1340kg and a load centre of 650mm be raised with the mast in the vertical position?

### **The answer to Load Chart Example Question 3 is:**

No, as the maximum allowable load centre for the forklift, at 1340kg, is 600mm.

### **Load Chart Example Question 4:**

Using the same image of the **Data Plate (Load Chart)** on the previous page.

Can a load weighing more than 1340kg be raised with the mast in the vertical position?

### **The answer to Load Chart Example Question 4 is:**

No, as this exceeds the capacity of the forklift.





[www.kgtraining.wa.edu.au](http://www.kgtraining.wa.edu.au)  
(08) 9592 2535

Unit 1 / 8 Day Road, Rockingham  
[admin@kgtraining.com.au](mailto:admin@kgtraining.com.au)  
RTO Code: 52112