

FORKLIFT TRUCK LEARNER WORKBOOK

TLILIC0003

Licence to operate a forklift truck



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National Licence
RTO-VET Learning Materials

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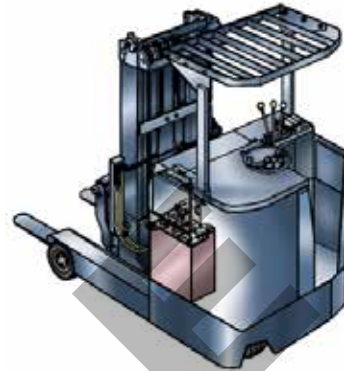
What is a forklift truck?

A forklift is a powered industrial truck used to lift and move loads. It has a mast and an elevating load carriage with a pair of fork arms or other load-holding parts.

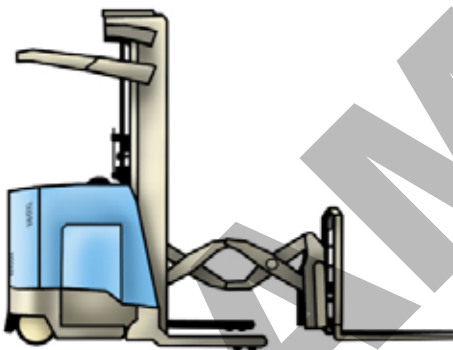
As you can see below, there are different types of forklifts. The most common forklift is the counterbalance truck.



Counterbalance forklift truck



**Reach truck
(non-counterbalance) forklift**



Double-deep reach truck



Truck mounted forklift truck



Rough terrain forklift truck



Articulated narrow aisle forklift truck

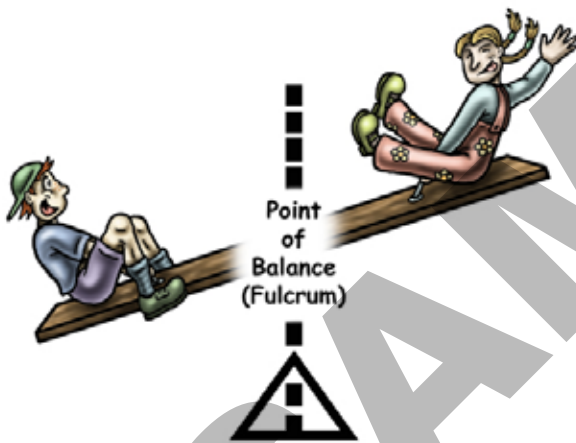
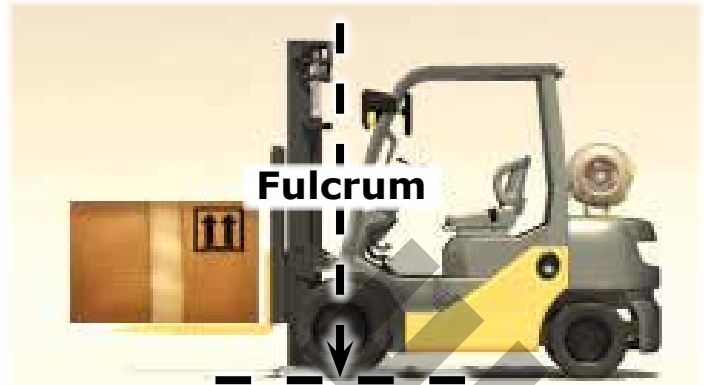
Basic forklift concepts

Point of balance (fulcrum)

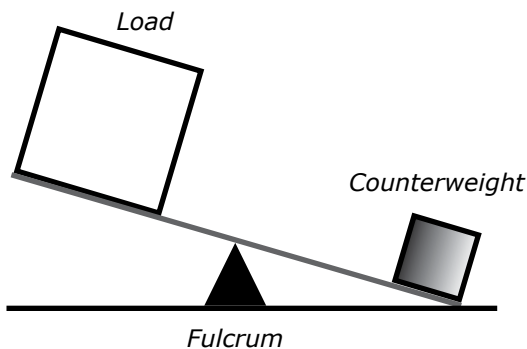
The most common forklift is the counterbalance type.

This means they carry the load on the front mounted tynes and use all the weight behind the front wheels to counterbalance the load.

The point of balance on a forklift is called the fulcrum. Think of it as a vertical line through the axle of the front wheel, where the line meets the ground.



Think of a counterbalance forklift truck as being like a see-saw. If you put too much weight on one end it tips over.



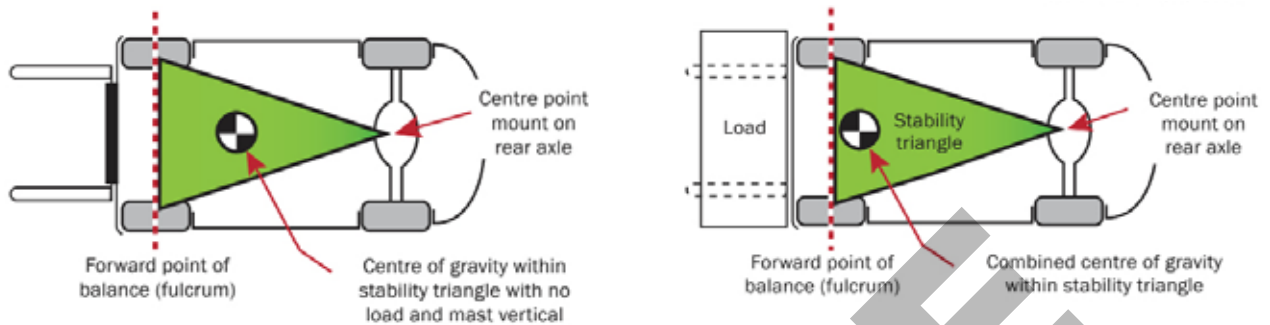
All the weight behind the point of balance acts as a counterweight.

The stability triangle

A forklift has a three-point suspension that is called the **stability triangle**.

The stability triangle is formed by the front axle (drive wheels touching the ground) and the centre point mount in the middle of the rear (steering axle).

The forklift centre of gravity must stay within the stability triangle

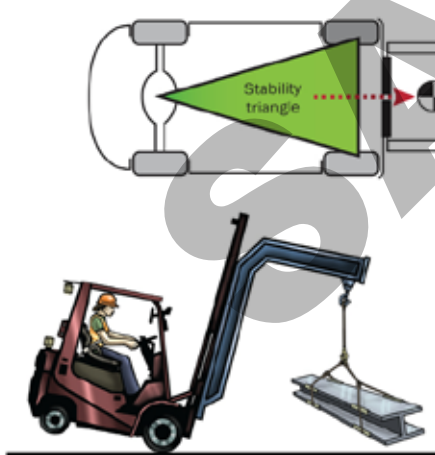


ALWAYS KEEP THE CENTRE OF GRAVITY INSIDE THE STABILITY TRIANGLE

The centre of gravity in the stability triangle is like a ball floating in water and can easily move. The centre of gravity moves by the driver lifting, lowering, tilting, turning, accelerating, braking, and driving over uneven ground. Any of these movements done too quickly can send the centre of gravity **outside the stability triangle**.

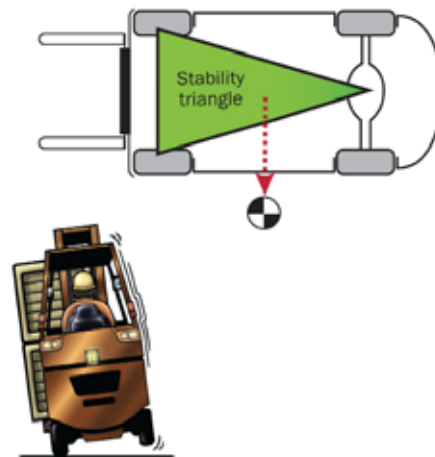
If the centre of gravity goes outside the fulcrum (forward point of balance) then the forklift will tip lengthways (longitudinal tipping).

If the centre of gravity goes outside either side of the triangle the forklift will tip over sideways (lateral tipping).



Some causes include:

- Overloading the forklift
- Braking too hard
- Sudden tilting forward of a high load
- Shifting load centre.



Some causes include:

- Driving too fast (especially without a load)
- Turning too fast
- Turning on an incline
- Travelling with a raised load.

Plan Work





Theory Training Task 5

Performance Criterion: 1.5

a) What is rear-end swing?

.....
.....

b) Who do you think is most at risk from forklift rear-end swing?

.....



Theory Training Task 6

Performance Criterion: 1.5

a) Circle which would be considered an enclosed or poorly-ventilated area.

freezer

carpark

shed

cold storage room

b) Why do you think you shouldn't use a petrol forklift truck in a small freezer room?

.....
.....



Theory Training Task 7

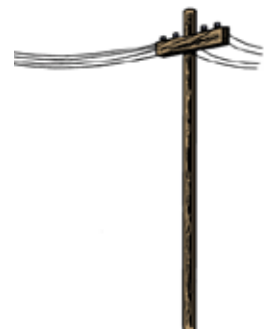
Performance Criterion: 1.5, 2.3

Check the safe working distances for powerlines in your state or territory. How many metres is the NO GO zone for distribution lines on poles in your state or territory?

The NO GO zone for

..... (state/territory)

is metres.



Performance Criterion: 1.7

Choose the right forklift truck

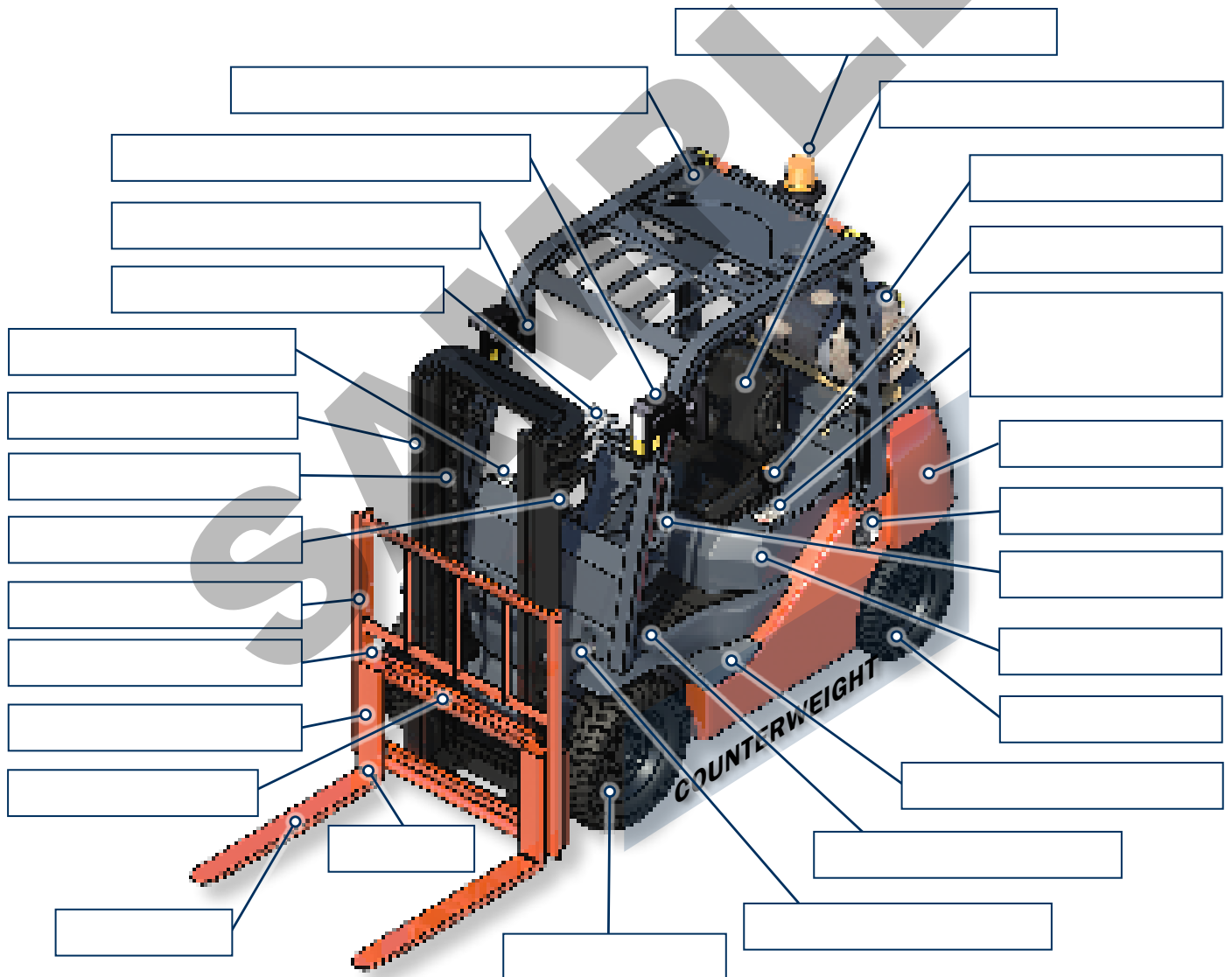
There are different types of forklift trucks. Depending on the job and the work area you may need to use a certain type of forklift truck. It's important to use the right type of forklift truck.



Theory Training Task 17

Performance Criterion: 1.7

Label the common parts shown on the diagram below of a counterbalance forklift truck.





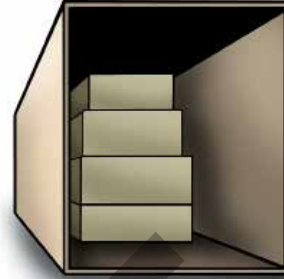
Theory Training Task 20

Performance Criterion: 1.2, 1.3

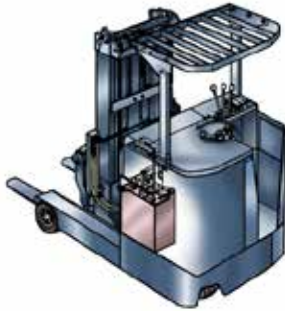
- a) Draw a line to match the forklift truck with the work area you think it is best suited for.



A four wheel drive (4WD) forklift



Enclosed space



A battery (electric) powered forklift



Elevated load destination



LPG powered forklift



Indoor work area



Telehandler or reach truck



Rough terrain

Shift Load



c) Calculate the total weight for each of the loads shown below.

There is a load to be moved. It is drums full of water, on a pallet.

- Each empty drum weighs 13 kg (kilograms)
- Each drum can hold 200 L (litres)
- Water = 1 kg per litre
- The pallet weighs 35 kg



What is the weight of three (3) drums of water, and the pallet?

Give your final answer in tonnes.

.....

.....

.....

.....

.....

.....

.....

You have to move a load of 44 bags of flour on a pallet.

- Each bag weighs 25 kg
- Pallet weighs 35 kg



What is the total weight of the load?

Show how you worked it out.

.....

.....

.....

.....

.....

.....

.....

There is a load to be moved. The load is stacked cartons on a pallet.

- Four (4) cartons per layer
- Six (6) layers
- One (1) carton = 25 kg
- Pallet = 35 kg



What is the total weight?

Show your working out.

.....

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6 Planks of wood

Weight of each plank = 185 kg

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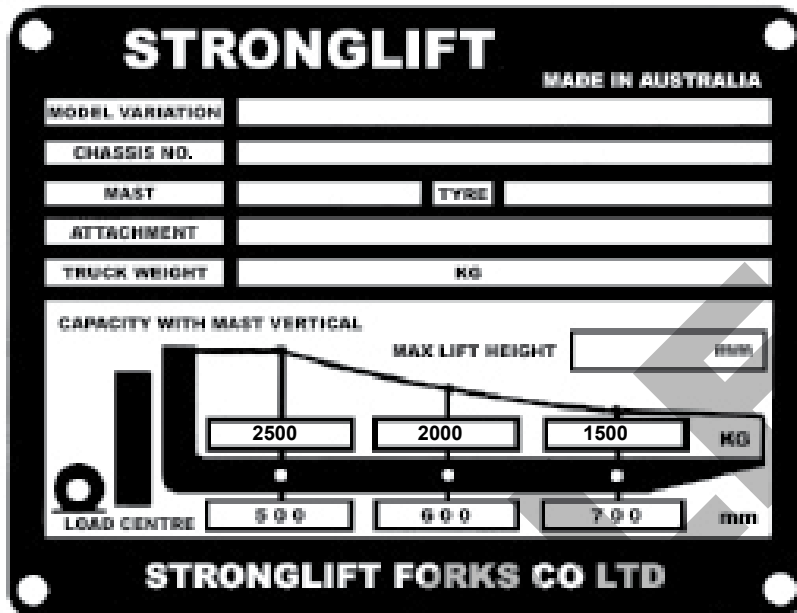
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Theory Training Task 61

Performance Criterion: 1.3, 3.1



Data plate

Look at the data plate picture above.

Work out if the four loads shown below can be lifted.

Weight = 1800 kg
Load Centre = 600 mm

Direction of Approach

1.

Weight = 2200 kg
Load Centre = 600 mm

Direction of Approach

2.

Weight = 1900 kg
Load Centre = 700 mm

Direction of Approach

3.

Weight = 1900 kg
Load Centre = 500 mm

Direction of Approach

4.

Performance Criterion: 1.5, 2.3

Control hazards

Talk with your supervisor to find out what hazard controls are used on the work site. Set up the hazard controls if you need to.



Theory Training Task 62

Performance Criterion: 1.5, 2.3

Before you begin work you need to put in place the hazard controls. Look at the pictures below and write the hazard controls you would use.



Handwriting practice area with horizontal dotted lines for writing answers.



Theory Training Task 63

Performance Criterion: 2.9

Who do you need to communicate with about hazard controls?

.....

.....

.....

.....

.....

.....



Theory Training Task 64

Performance Criterion: 2.3

Batteries give off gasses which can explode.

What should you do to control this hazard when changing a battery?

.....

.....

.....





Theory Training Task 65

Performance Criterion: 2.3



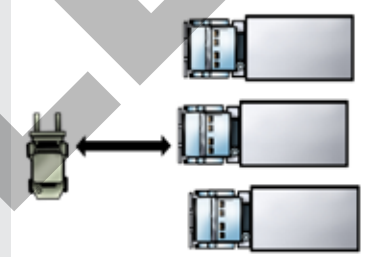
Why would it be a good idea to make sure there is no grease, mud or other liquid on the controls or your hands and shoes?



Performance Criterion: 3.3

Operating the forklift safely

Drive the forklift at a safe speed and follow the safety procedures.



Theory Training Task 66

Performance Criterion: 3.2

Think about safe work practices and answer the following questions by placing a circle around the correct answer.

- a) A workmate jumps on the forks of your truck as you are about to move off. Do you move off thinking it will be a 'bit of fun'?

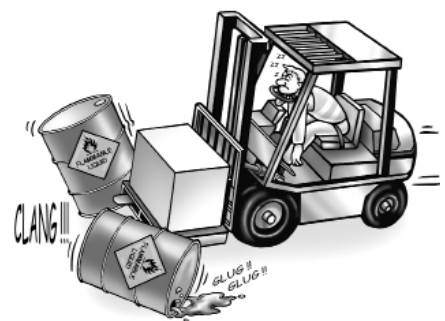
Yes No

- b) There is a STOP sign a few metres up ahead. You're fairly sure there are no other vehicles operating in the area and decide not to bother stopping. Was this the correct thing to do?

Yes No

- c) Your doctor has given you medication for a minor illness. After taking the tablets you feel a little sleepy. Should you drive a forklift truck?

Yes No





Theory Training Task 67

Performance Criterion: 2.2, 3.3

Speed is a major cause of workplace accidents. Using the picture below circle the things that might affect the speed you choose to travel at.



Performance Criterion: 2.3

Move the load

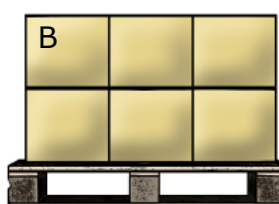
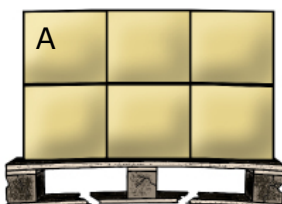
You are ready to start moving the load. Place the load on the forklift in a way that allows the forklift to operate safely and keep stable. Move the load slowly and remember to watch out for hazards and possible challenges.



Theory Training Task 68

Performance Criterion: 2.7

Which pallet is the safest to use? Why?





Theory Training Task 69

Performance Criterion: 3.2

a) Write underneath each picture the basic movements a forklift truck makes.



b) What could happen if you use too much backward tilt with the forks raised?

.....

.....

.....

c) What could happen if you use too much forward tilt with the forks raised?

.....

.....

.....



Theory Training Task 70

Performance Criterion: 3.2

Place a number in each box to show the correct order in which you would **pick up** a load.

<div data-bbox="167 407 282 519" style="border: 1px solid black; width: 72px; height: 50px; margin-bottom: 10px;"></div> <div data-bbox="320 495 695 819"></div> <p data-bbox="225 882 743 918">Check the area behind you is clear.</p>	<div data-bbox="833 407 948 519" style="border: 1px solid black; width: 72px; height: 50px; margin-bottom: 10px;"></div> <div data-bbox="935 517 1398 775"></div> <p data-bbox="904 844 1390 918">Raise or lower the forks to enter the pallet. Mast is vertical.</p>
<div data-bbox="167 965 282 1077" style="border: 1px solid black; width: 72px; height: 50px; margin-bottom: 10px;"></div> <div data-bbox="244 1070 695 1317"></div> <p data-bbox="264 1359 703 1473">Move the forklift clear of the rack/stack and lower the load to correct travel height.</p>	<div data-bbox="833 965 948 1077" style="border: 1px solid black; width: 72px; height: 50px; margin-bottom: 10px;"></div> <div data-bbox="919 1025 1382 1361"></div> <p data-bbox="922 1400 1369 1473">Position the forklift so you are directly in front of the load.</p>
<div data-bbox="167 1523 282 1635" style="border: 1px solid black; width: 72px; height: 50px; margin-bottom: 10px;"></div> <div data-bbox="304 1576 735 1951"></div> <p data-bbox="312 1998 655 2033">Keep the mast vertical.</p>	<div data-bbox="833 1523 948 1635" style="border: 1px solid black; width: 72px; height: 50px; margin-bottom: 10px;"></div> <div data-bbox="970 1554 1342 1921"></div> <p data-bbox="970 1960 1326 2033">Enter the pallet without scraping anything.</p>



Theory Training Task 71

Performance Criterion: 3.4

Circle the picture below that shows the correct height of the forks when travelling with a load.



Theory Training Task 72

Performance Criterion: 3.4

What important functions does the load backrest perform?

- It stops the load getting in the way of the mast.
- It makes the forklift easier to see if you are a pedestrian.
- It helps to slow down the raising and lowering of the mast.
- It stops the load from falling onto the forklift operator.
- It stops the load from falling into the mast.

